The Development and Formative Evaluation of a Human Performance Intervention Evaluation Model

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THE FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION

THE DEVELOPMENT AND FORMATIVE EVALUATION OF A HUMAN PERFORMANCE INTERVENTION EVALUATION MODEL

By
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Department of Educational Psychology and Learning Systems
in partial fulfillment of the
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Doctor of Philosophy

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This work is humbly dedicated to my family who has unwaveringly supported all of my undertakings. I am eternally rich because of you.
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ABSTRACT

This paper describes the development and formative evaluation of a model for evaluating the effectiveness of interventions designed to reduce a specified performance gap within an organization. The model is based upon the human performance technology (HPT) process of problem solving, which is a five-step process to (a) identify a performance problem, (b) identify its causes, (c) identify potential solutions, (d) implement the selected solution, and (e) evaluate the resulting performances. While several models exist to guide practitioners in the early steps of the HPT process, few models are available related to evaluation.

The development of the initial model was based on current evaluation practices and known barriers to evaluation conduct. Two panel reviews were conducted, with revisions to the model following each review. The model was then utilized in two case studies in organizations to ascertain the effectiveness, efficiency, and usefulness of the model.

Findings from the panel reviews indicated that early drafts of the model relied too heavily on the conduct of a rigorous front-end analysis and that the purpose of the model required further clarification. The panel indicated that too much analysis time was spent upfront prior to creation and implementation of the evaluation plan, and that the level of detail would need to be modified for a novice evaluator.

Findings from use of the model in two case studies indicated that additional guidance was required in identification of direct versus indirect measures, determination of appropriate timing of the evaluation, and presentation of limitations in data collection. In light of these findings, the tasks from the negotiation step were subsumed into the preparation step, and linkage between initial data collection and creation of the evaluation plan was improved.

While further research is required to determine the efficiency of the model, based on reviews and employment of the model, it was determined that the model was effective and useful
in guiding a novice evaluator through the stages of evaluation. The model provides a standard, systematic process for conducting summative evaluation of performance interventions.
CHAPTER 1
INTRODUCTION

Overview of Human Performance Technology

Human performance technology (HPT) is a problem-solving process used in organizations to identify performance problems or opportunities, their causes, and appropriate solutions that, when implemented, will improve performance as evidenced by evaluation data. As is often true of an emerging field, many definitions of HPT are in existence, each emphasizing different aspects of the broad field of human performance. Stolovitch and Keeps (1999) define HPT as “the application of what is known about human and organizational behavior to the enhancement of accomplishments, economically and effectively, in ways that are valued within the work setting” (p. 5) thus emphasizing the purpose of HPT. A definition espoused by Harless includes the purpose and mentions the process in a broad nature. Harless (1995) states that HPT is “an engineering approach to attaining desired accomplishments from human performers by determining gaps in performance and designing cost-effective and efficient interventions” (p. 75). To synthesize these definitions, human performance technology can be defined as the process of analyzing performance-related data to identify a performance gap, its causes, and solutions to close the gap, implementing the solutions, and evaluating the outcome and process used; all for the purpose of improving human performance within an organization.

The field and practice of human performance technology has its background in a diverse array of disciplines and the focus of its many practitioners reflects this varied framework. Disciplines and areas from which HPT pulls its methods and processes include human resource management, industrial psychology, human resource development, educational psychology, human engineering, instructional systems, and communications. Theories that form the
foundation of HPT practice include learning theories, systems theory, and management theory (Dean & Ripley, 1997).

The International Society for Performance Improvement is arguably the most well known professional organization devoted to the process of human performance technology. The HPT process can be summarized in the model espoused by this organization (see Figure 1.1). HPT is made up of five broad phases: performance analysis, cause analysis, intervention selection and design, implementation, and evaluation.

Various models exist, specific to the HPT process, which address each of these phases. The majority of models, however, emphasize the performance analysis, cause analysis, and intervention selection phases. For example, the organizational elements model (Kaufman, 1992), the behavior engineering model (Gilbert, 1996), the performance improvement process (Harless,
1994), and the performance analysis flow diagram (Mager & Pipe, 1997), all address the phases of performance analysis, cause analysis, and intervention.

In contrast, few models, specific to the HPT process, exist which address the implementation phase. A main reason why few HPT-specific implementation models have been developed is that frequently HPT practitioners are hired as external consultants that an organization brings in to identify the performance problem, its causes, and to propose solutions to the problem. The organizations themselves will often be responsible for the implementation of the solutions. Secondly, implementing a solution can be viewed as making a change within an organization and therefore falls within the area of change management. Most of the models that are referred to by HPT practitioners on solution implementation come from this area, the most notable being Everett Rogers’ innovation process model (Rogers, 1995).

The final phase, evaluation, is also rarely addressed in any detail by HPT-specific models. Instead, HPT practitioners tend to utilize models that were either designed for a specific intervention (e.g. Kirkpatrick’s four-level framework was designed to evaluate trainings), or they adopt models from other disciplines such as program evaluation or human resource development.

Yet even with the use of outside models, evaluation is conducted infrequently at best. There are many barriers to evaluation actually happening as part of the HPT process. When it comes to evaluating, the organizational cards are stacked against it. Business climates of today’s market are very dynamic in nature. A global, highly competitive market requires organizations to be lean, pliable and quick to respond, or better yet, it requires them to anticipate necessary changes. This strategic, proactive atmosphere does not nurture the reactive nature of evaluation.

Another major barrier to evaluation is a workforce that is sensitive to the repercussions of downsizing. The threat of accountability that could result from an evaluation looms heavy. This perceived threat is even more prevalent in organizations where the hierarchical framework has been flattened, forcing decisions to be made at the job performance level.

An additional impediment to conducting evaluations involves the time and cost required in completing an evaluation. Although steps can be taken to speed up the process, evaluations have historically remained time and dollar consuming. Couple this with a dynamic environment,
and by the time the results from an evaluation are available, the company may have moved on to another intervention or entirely away from the particular performance under evaluation.

Perhaps having the largest repercussions for HPT practitioners, is the earlier mentioned fact that there is no HPT-specific model in the area of evaluation. Because the evaluation models used by HPT practitioners come from outside disciplines and fields, and no strategic guidance is available to help the potential evaluator decide which model would be most effective in a given situation, it has been said that few people actually know how to conduct an evaluation (Gordon, 2000).

In light of the above, an evaluation model is needed that is closely related to the human performance technology process and that addresses the aforementioned barriers to conducting evaluations.

The purpose of this study was to develop and formatively evaluate an evaluation model designed to guide HPT practitioners in determining the degree of success of the interventions they propose to close performance gaps, and provide guidance in examining and evaluating the process they use to determine which solutions to implement. As such, the model is designed for use after an intervention has been implemented and informs the owner of a performance problem about the value of the intervention that was employed. Additionally, the model provides information about how each phase in the HPT process was conducted. The primary intended users of the model are individuals who are serving as evaluators of an HPT intervention. These individuals may be either internal or external (e.g., consultants) to an organization. Additionally, this model can be used by individuals who are involved in the entire HPT process (from front-end analysis through implementation) or by persons who are not familiar with any decisions made prior to the implementation of the intervention.

While the main focus of the evaluation model is on conducting a summative evaluation (depending on the amount of time elapsed since the intervention was implemented), portions of the model can be used in a formative manner to inform persons conducting front-end analysis of the thoroughness of their process. Finally, information is collected using this model to provide continuous improvement information back to the HPT community.

The model is intended to primarily support a novice HPT practitioner. However, aspects of the model may be helpful to the entire continuum of users ranging from novice through expert HPT practitioners. For this study, a novice HPT practitioner is defined as a person with an
understanding of the foundational knowledge and skills required to implement the HPT process, but who has little to no practical application experience applying it. An expert is defined as a person with both the knowledge and skills of HPT as well as one or more years of experience in applying the process in real-world applications.

Specifically, the model was developed and tested on the following criteria:

Criterion One: Effectiveness

1. Does use of the model provide a means to identify the degree to which the performance gap was closed?
2. Did use of the model provide information about the thoroughness of each phase of the HPT process?
3. Are there additional, unanticipated benefits or limitations involved in using the model?

Criterion Two: Efficiency

1. What is the time required to conduct the evaluation using this model?
2. What is the cost required to conduct the evaluation using this model?

Criterion Three: Usefulness

1. What are the barriers to the use of this model?
2. Do the sponsors of the evaluation find the information to be useful?
3. How difficult is it to use the model?
4. To what degree does the model guide the user in conducting the evaluation?
5. How intuitive is the model’s representation? (Are expectations clear to both a novice and an expert?)
CHAPTER 2
REVIEW OF RELATED LITERATURE

Overview of the Human Performance Technology Process

The goal of any organization is to perform efficiently in order to reach identified accomplishments. However, for a myriad of reasons, these desired accomplishments are not always reached. The HPT process is designed to address such situations. The human performance technology (HPT) process, broadly speaking, is a five-step, systematic approach to (a) identifying the difference between what is actually accomplished and the desired accomplishment, (b) identifying the causes of the difference in accomplishments, (c) identifying a means to diminish or eliminate the difference, (d) affecting the change within the system, and (d) evaluating the degree to which the desired accomplishments are being met with the revised system in place. These five steps are commonly referred to as performance analysis, cause analysis, intervention selection/design, intervention implementation, and evaluation (International Society for Performance Technology, 2001).

Definitions of Human Performance Technology

While there is no one agreed upon definition for human performance technology, several have been posed which highlight various facets of the purpose, process, or foundations of HPT. From these various definitions, several common characteristics of HPT emerge. HPT is a process that looks at an entire system. HPT recognizes that human performance occurs in a complex, technical and social environment. Problems which are manifested in one area of the system may have causes which tie into multiple diverse parts of the system. Any interventions into one part of a system must take into account the effects on the entire system as a whole.

Harless’ definition (cited in Geis, 1986) focuses on both purpose and process by stating that human performance technology is “the process of selection, analysis, design, development, implementation, and evaluation of programs to most cost-effectively influence human behavior and accomplishment” (p. 1). This definition is procedural in nature, focusing on the steps
involved in HPT, as well as the purpose of HPT. Also focusing on purpose and process are Dick and Wager (1995) who identify HPT as “a fundamental commitment to the identification of organizational performance problems and the development of the most appropriate solutions” (p. 35).

Relating HPT to its foundational underpinnings, Stolovitch and Keeps (1999) refer to HPT as “the application of what is known about human and organizational behavior to enhance accomplishments, economically and effectively, in ways that are valued within the work setting” (p. 4). An additional definition by Harless (1995) also highlights the foundation of HPT identifying it as “an engineering approach to attaining desired accomplishment from human performers by determining gaps in performance and designing cost-effective and efficient interventions” (p. 75).

A definition which focuses on the purpose of HPT is the 1990 National Society of Performance Improvement (NSPI) definition (cited in Rosenberg, 1990) which describes HPT as “a set of methods and processes for solving problems or realizing opportunities related to the performance of people. It may be applied to individuals, small groups, or large organizations” (p. 46). Thomas Gilbert (1996), a founding member of NSPI, states that “the purpose of HPT is to increase human capital, which can be defined as the product of time and opportunity... technology is an orderly and sensible set of procedures for converting potential into capital” (pp. 11-12).

No matter which definition is used, it is agreed that the general purpose of HPT is to improve human performance related to a predefined accomplishment. HPT uses a systematic approach which focuses on achieving a specified accomplishment or outcome. Changes in human behavior and in non-human systems are prescribed to realize these goals. The prescribed solutions must be cost-effective and efficient. For any identified problem with its related causes, there are a plethora of solutions which can effect a change to realize the desired outcome. A tenet of HPT is to select the intervention that is the most cost-effective and efficient, bringing about the most change for the least amount of cost in monetary and non-monetary terms (Harless, 1995). HPT follows a systematic and systemic process that includes problem selection, analysis, design, development, implementation, and evaluation. Alternatives to this approach might include a more micro-level analysis that does not consider the ramifications of changes on an entire system or ad hoc trial and error attempts at solutions. HPT’s empirical grounding
focuses the process on a systematic and thorough understanding of the problem, its setting, and its underlying causes in order to select, design, implement and evaluate an intervention.

HPT is not, however, a discipline. Rather it is a practice that borrows theories, methods, and tools from multiple fields and disciplines. These related theories and practices include behaviorism, cognitive psychology, industrial psychology (ergonomics and human factors engineering), organizational development (change management), general systems theory, instructional systems design practices, and program evaluation (Stolovitch & Keeps, 1999, chap. 3).

**Phases in the Human Performance Technology Process**

In its most generic form, HPT is a problem-solving process applied in a systematic fashion within an organization. However, within the practice of performance technology, many specialized models have been developed to aid in formalizing or, at a minimum, standardizing the process. For most of the major phases within the HPT process, several models have been developed which serve as guides to practitioners for application of the process.

**Performance Analysis Phase**

The performance analysis phase is intended to provide a broad understanding of the organization. This includes an initial agreement on the scope of the problem to be addressed, initial indication of who is affected by the problem, and identification of the stakeholders or owners of the problem. Also part of the performance analysis phase is consideration of the overall culture of the organization, including its mission, vision, strategic approach, communication and workflow structure, diversity, and political environment. These steps are critical for setting the stage prior to focusing on a detailed analysis of the performance problem. Gap analysis is a major step in the performance analysis phase. The goal of gap analysis is simply to state in measurable terms both the desired accomplishment or outcome and the current, actual accomplishment. The gap is then stated as the difference between the desired and actual accomplishments.

Models that aid the HPT practitioner in the performance analysis phase include Kaufman’s organizational elements model (OEM) which focuses on three levels of desired results (Kaufman, 1992). The first level, mega, focuses on societal outcomes external to the organization; macro level relates to the entire organization and looks at the organization’s outputs. Micro level identifies products within the organization that result in outputs. The OEM
provides a thorough framework for gathering information about the environment in which the problem is taking place.

The performance development system process model, based on the work of Marc Rosenberg and on which the current ISPI-HPT model is based, offers an outline of areas on which to focus during the performance analysis phase. Besides the organizational mission, goals, and strategies that are a standard part of the performance analysis phase, the performance development system process highlights the reactive versus proactive focus of using the HPT process for solving performance problems and for identifying opportunities for new performance (Keller, 1994; Rosenberg, 1990).

The Swanson performance diagnosis process model (Swanson, 1996) also provides detailed guidance in the performance analysis phase. Prior to conducting any type of gap analysis, a four-step process is followed to articulate the initial purpose. The gap analysis is further broken down into three areas: assessing performance variables, specifying performance measures, and determining performance needs. This culminates in a draft proposal for a performance diagnosis.

**Cause Analysis Phase**

The next major phase in the HPT process model is cause analysis. Once the performance gap has been identified, it is necessary to determine all causes, both direct and indirect, which are bringing about the deficiency in accomplishment. This is accomplished by collecting data by such means as interviews, surveys, observations, and review of existing data and documentation. Based on the findings, causes are then grouped by related categories.

Several models exist which aid in the standardization of this process. Probably the most well known in the HPT area is the Gilbert behavioral engineering model (BEM; Gilbert, 1996). This model, based on the behavioral work of Skinner, relates causes to six categories; three at the environmental level (data, instruments, and incentives) and three at the individual level (knowledge, response capacity, and motives). By categorizing the findings from the data collected into each of these six categories, it is possible to identify whether the majority of the causes of less than optimal performance lie in the environment or within individuals.

Another well-known model that serves as a guide to identifying causes is the Rummler and Brache three-level performance variables table (Rummler & Brache, 1995). This table
divides performance into three levels: organizational, process, and job/performer. Additionally, three performance needs are to be assessed at each level: goals, design, and management.

**Intervention Selection and Design Phase**

In the intervention selection and design phase, potential solutions are identified to address the identified causes. Using various criteria for solution selection, the chosen interventions are then designed. In most models, the categories identified in the cause analysis phase often are used for solution selection as well. In contrast, the intervention selection and design phase of the Mager and Pipe performance analysis flow diagram is based on a heuristic which leads to a specific solution category based on answers to specific performance questions (Mager & Pipe, 1997).

**Intervention Implementation and Change Phase**

In the intervention implementation and change phase, the solution is introduced into the system in a planned, systematic, and managed fashion. Models specific to this phase in the HPT process are rare and those used in this phase are often borrowed from the change management and diffusion of innovations arena.

**Evaluation Phase**

Evaluation has been a recognized step in the human performance technology process from the field’s inception. Pulling from such fields and disciplines as instructional systems design, behavioral psychology, organizational behavior, human resources development and program evaluation, the ability to make decisions based on data is paramount to the HPT process. The importance of evaluation is widely accepted among HPT professionals. In a 1995 survey of National Society for Performance and Instruction (NSPI) members regarding defining characteristics of the HPT field, the keyword *measurement* was the second most frequently mentioned word (Dean, 1995). The 1997 National HRD Executive Survey reported that over 81% of the respondents viewed their organizational measurement and evaluation practices as important to the organization (American Society for Training and Development, 1997). Further, findings of the survey suggest that training evaluation is prevalent within organizations, with only 10% of the respondents saying they did not conduct course evaluations.

Evaluation within the HPT process encompasses four areas: formative evaluation, summative evaluation, confirmative evaluation, and meta-evaluation. Formative evaluation occurs during each phase of the HPT process in an iterative fashion. The HPT practitioner
makes decisions via methods such as data collection or team/inter-rater judgment regarding the thoroughness and quality of each step in the process. Summative evaluation is an attempt to identify the value of the intervention that was implemented related to the degree to which it closed the performance gap and its effects on the system. Confirmative evaluation, similar to summative, looks at the value of the intervention, but over a longer length of time. Finally, meta-evaluation adds value to the HPT field by providing collective knowledge on the value of interventions, processes, methodologies and tools (Van Tiem, Moseley, & Dessinger, 2000).

For the owners of performance problems for which the HPT process is used, evaluations inform about the current status of the problem. Thus they provide necessary information about a situation to determine what the appropriate next steps should be (Watkins & Kaufman, 2002). Because of the similarity between front-end analysis and evaluation within the HPT process, evaluation findings can form the basis for a new front-end analysis of identified problems. Additionally, evaluation processes and findings can be built into a more comprehensive continuous improvement system (Phillips, 1997; Watkins & Kaufman, 2002).

While there is no question among HPT professionals that evaluation can serve an important purpose, there is little discussion in the professional literature of the actual processes used to evaluate interventions or of the outcomes of such. So while most would agree that evaluation is important, as evidenced by past surveys (ASTD, 1997; Dean, 1995), little is being reported back to the HPT community on how evaluations are conducted. All these factors contribute to the success or failure of interventions used in various contexts, models and methods used for evaluation, or areas of improvement within the HPT process.

**Barriers to Conducting Evaluations**

The reasons why evaluations are conducted infrequently are well documented in the literature and have remained fairly consistent over the years. A 1971 survey of change consultants revealed that the main reason evaluations were not conducted was due to the time required to conduct an evaluation (Bidwell & Lippett, 1971). Twenty-six years later, in the 1997 HRD Executive Survey, the time required to conduct an evaluation was the second most frequently mentioned obstacle, with difficulty in determining financial impact being first (American Society for Training and Development, 1997). In the fast-paced and dynamic environment of industry, time is critical. By the time a lengthy evaluation is conducted, several changes to the environment may have taken place which might either greatly decrease the value
of the findings or make it increasingly difficult to conduct a quality evaluation due to the new circumstances and situations introduced.

Another major obstacle to conducting evaluations is the fear of accountability (Kaufman & Thomas, 1980; Swanson & Holton, 1999). Because the agreed purpose of the evaluation is to gauge the merit or worth of an intervention, and because individuals are usually involved in an intervention, those involved may fear that an evaluation that reports less than favorable results will reflect poorly on them. Further, such results may influence management to react with demotions, reorganizations, or release of individuals.

Evaluations are also conducted infrequently because the retrospective nature of an evaluation is often seen to clash with today’s forward-focused business culture. The demands of the corporate environment require forward-thinking strategies. Evaluation, by its very nature, is a reflection on what has already taken place. It looks back on what was accomplished (Watkins & Kaufman, 2002). While an evaluation is being undertaken, new fires are being put out. New problems have been identified and new interventions are being implemented to fix those problems. Because flat organizations require more work from fewer employees, rarely is anyone tasked with evaluating an intervention that has already been implemented. Instead, an informal self-report is assumed (Gordon, 2000).

Besides the barriers to actually conducting evaluations, several additional obstacles have been identified in the literature which relate to the quality of the actual evaluation. These include such issues as difficulty in attaching monetary value to various soft interventions, difficulty in determining which parts of an intervention contributed to the change in performance, and difficulty in isolating the effect of the intervention in a dynamic environment (Abernathy, 1999; Phillips, 1997; Russ-Eft & Preskill, 2001; Swanson & Holton, 1999; Todesco, 1997).

While it is highly desirable to convert all forms of measurement to an easily quantifiable format, the process of converting non-observable (soft) data to an easily measurable format is not a straightforward one and the credibility of the resulting converted data may be questionable (Phillips, 1997; Todesco, 1997). Examples of soft data may include perceived value, changes in attitudes, changes in corporate culture, or increases in motivation. The methods used to convert soft data to a measurable format often rely on subjective estimates from management, employees, and field experts, increasing the possibility of bias due to potential conflicts of interest in the outcome of the evaluation.
A further related difficulty in evaluation relates to the dynamic nature of an organizational setting. Often, by the time the HPT intervention is evaluated, several other change initiatives may have occurred within the organization. The difficulty becomes determining the impact of the changes to the environment on the HPT intervention. If the evaluation reveals that the performance gap has indeed been lessened or closed, to what degree can credit be given to the HPT intervention, to other interventions or environmental changes, or to a combination of all interventions and changes that have taken place (Phillips, 1997; Russ-Eft & Preskill, 2001; Todesco, 1997)?

Although not mentioned in the current literature, an additional difficulty related to the rigor of an evaluation is that of identifying or isolating the impact of the components of a solution set called an intervention. Depending on the magnitude and causes of the performance problem, often when a solution has been identified by an HPT professional, it is in fact a set of solutions. Because identified problems are usually complex in nature, seldom will one solution close the identified gap. So evaluating an intervention often means evaluating the impact of multiple solutions such as a training intervention coupled with a job redesign and a motivation program, all of which have been implemented as part of the intervention. During an evaluation, the difficulty lies in knowing to which component(s) of the solution to attribute the changes in performance and to what degrees.

A final difficulty in evaluation that is noted in the literature is the lack of availability of evaluation information, tools, models and methods (American Society for Training and Development, 1997; Swanson & Holton, 1999). In the introduction of the results assessment system in their 1999 book, Results, Swanson and Holton state that “the biggest barrier(s) to results assessment in HRD are fear of accountability and the inadequate evaluation models and methods that permeate the profession” (Swanson & Holton, 1999, p. 7). While a myriad of models, methods, and tools exist from such disciplines and fields as human resource development, program evaluation, and training evaluation, most models are vague in nature, offering high-level guidance on conducting evaluation. As Russ-Eft and Preskill have noted, “they [models] fail to offer any direction on what critical variables need to be studied or how to conduct rigorous, credible, useful evaluations in dynamic, evolving, and political environments” (Russ-Eft & Preskill, 2001, p. 88).
The model developed as part of this study attempts to address many of these obstacles. Specifically, the model attempts to simplify the evaluation process, thus potentially impacting time and cost to conduct an evaluation. Additionally, the model narrows the number of variables to be considered based on the parameters outlined in following the HPT process. Finally, the model provides tools to aid in standardizing the evaluation process. As such, the model makes the assumptions that a measurable performance gap has been identified, along with its related causes, and that a set of solutions known as an HPT intervention has been selected and implemented.

Models Currently Used To Evaluate Human Performance Technology Interventions

Despite the lack of a specific HPT evaluation model, several models for evaluating HPT interventions have been adopted from such fields and areas as instructional design, human resource development and program evaluation. These models vary broadly in terms of their intended purpose, their framework, and their descriptiveness.

Kirkpatrick’s Four-Level Framework

Arguably the most well-known model and the one most frequently cited by many members of the HPT community is the Kirkpatrick four-level framework. In a series of four articles, which spanned the time period from November of 1959 to February of 1960, Donald Kirkpatrick outlined four steps to follow in evaluating training (Kirkpatrick, 1959a, 1959b, 1960a, 1960b). The 1997 ASTD National HRD Executive Survey reported that 67% of those asked which evaluation models they used in evaluating training indicated that they use the Kirkpatrick framework (American Society of Training and Development, 1997).

Kirkpatrick stated that there are four evaluation steps with regard to training. They are reaction, learning, behavior, and results. Reaction evaluation refers to how well the trainees like the training. This tells the trainer about the level of acceptance of the training program. Learning evaluation refers to measuring objectively the amount of learning that occurred. Behavior evaluation asks about the use of what was learned in the actual job performance requirement. Results evaluation looks at why the training program was even conducted to begin with. It asks questions about whether there was an impact on the business environment.

Interestingly, Kirkpatrick’s decision about sequencing of steps was based on order from least difficult to conduct to most difficult. So even though the original model is outlined as steps one through four, it is not necessary to conduct step one prior to step two, and so on (Kirkpatrick,
Additionally, even though through the years the model has come to be commonly referred to as the four levels of evaluation, no hierarchical interrelationships were inferred in the original model.

Kirkpatrick’s model can be described as conceptual, with some general procedural guidance for each step. It is conceptual in that it is based on several theories and principles such as learning theory, organizational development, and accounting practices. Regarding its procedural nature, while some detail is given about how generally to evaluate at each step, no specific guidance is given regarding use of various methods.

The Kirkpatrick model has been very popular through the years. Kirkpatrick himself captured what he believes to be the reason why in a 1996 revisiting of his model for Training & Development magazine. “People have asked me why the model is widely used. My answer: It’s simple and practical” (p. 55). An important contribution of this model to the HPT field is that it asks the evaluators to look at an intervention from multiple perspectives.

Because of the model’s strong bent toward conceptualization, little attention is given to the rigor of conducting the four evaluations. The validity and reliability of the instruments used in each type of evaluation are the responsibility of the evaluator. It should be noted however, that at the time this model was proposed, control group comparisons were the accepted norm for evaluations. This could be a reason why in the original model, Kirkpatrick did not feel it necessary to address this issue.

Stufflebeam’s CIPP Model

From the discipline of program evaluation, Stufflebeam’s CIPP model is often used to evaluate interventions in the workplace. CIPP stands for context, input, process and product (Worthen, Sanders, & Fitzpatrick, 1997). The CIPP model encompasses four distinct evaluations that would be conducted at four times in the life of an intervention. The four evaluations attempt to address different management decisions related to the intervention.

The context evaluation is the equivalent of a front-end analysis in the HPT field. This evaluation takes place at the point that a problem or opportunity for performance improvement has been identified. The methods frequently used to collect data are review of extant data, surveys, observations, interviews and focus groups. From the context evaluation, objectives are created that outline potential solutions.
Input evaluation assesses the resources available to design and develop the solution. Areas of interest are organizational capability, budget, time, strategies, politics, and existing processes. From the input evaluation, a decision to continue with the identified solution or to revise and revisit the context evaluation is made.

Process evaluation looks at the process of the actual development of the solution as well as the implementation of the solution. Data collection efforts focus on reviewing the design specifications and processes in progress to design them. Additionally, focus is placed on process control measures during the implementation of the intervention.

Product evaluation brings the evaluation process full circle. The evaluator assesses the outcome of the intervention based on the desired performance objectives. The data collection focuses on performance matrices that were established during the context and input evaluations. From a program management decision perspective, the product evaluation phase gives management information on whether to continue an effort, stop a program, or change it.

A strength of this model is its breadth of coverage from the beginning of an intervention to its completion. The model encompasses both formative and summative evaluation and provides feedback at the point of need. The model is conceptual in nature, offering some narrative guidance on which data collection tools would be helpful at each step. However, due to the scope of the model and its conceptual nature, such issues as reliability and validity are left to the discretion of the evaluator. There is little guidance within each type of evaluation as to how to apply it in practice. A potential shortcoming of the model is that it may contribute to the lack of clarity of understanding of the distinction between analysis and evaluation. Analysis is a priori while evaluation is post hoc. A final limitation of the model is the time required to complete an evaluation at each of the four levels.

Results Assessment System/PLS Evaluation System

The Swanson and Holton results assessment system (RAS) is a framework similar to Kirkpatrick’s. It outlines an assessment framework consisting of six areas to evaluate categorized into the three results domains of performance, learning, and perception. Within the performance category, expected results relate to system and financial areas. Related to learning, the focus of the assessment is on knowledge and expertise. And within the perception category, the evaluator should assess participants and stakeholders perceptions. The RAS model is from the human resource development discipline and is a revision of an earlier version, the PLS
evaluation system (with PLS standing for the three domains of performance, learning, and satisfaction) (Swanson, 1997; Swanson & Holton, 1999). Besides offering the six-category framework, the RAS model provides a toolbox that includes template-framed guidance on developing the plan, tools, schedule, and evaluation report.

Similar to the Kirkpatrick model, a stated strength of the RAS model is that it is a simple structure. Only six areas are measured, and it is not necessary to measure all six. The model is intended to speed up the evaluation process by providing a clear and simple framework and guidance on evaluation steps. One of the stated purposes of the model is to educate the organization on the benefits of evaluation.

By including templates for measurement tools, project plans and schedules, and various reports with the model, Swanson and Holton were trying to balance comprehensiveness with simplicity of use. However, the result is an outline for each area, with very little detail to guide the user of the model in its application. So while the model may be helpful in speeding up the evaluation process, the rigor of the evaluation is potentially weak, which may in the end be detrimental in educating the sponsor on the benefits of evaluating.

Phillips ROI Process

HPT consultant Jack Phillips has built upon Kirkpatrick’s model and focused his return on investment model (ROI) on the results evaluation, while including all of Kirkpatrick’s perspectives. His ROI process model attempts to quantify all measures at all levels and then calculate a total return on investment for an intervention (Phillips, 2001).

Some notable characteristics of the model are that it is both conceptual and procedural in nature. Basing the model upon the accounting concept of return on investment and the previous Kirkpatrick model, Phillips also provides detailed procedural information both within the graphical representation of the model and in additional supportive narrative to the steps in the model. A primary strength of this model is that it allows the HPT practitioner to speak the language of the business world. It has often been difficult for HRD departments or programs to justify the costs involved in such human-oriented interventions as training mainly because the results of such programs were in descriptive narratives or soft measures. Phillips provides some guidelines on how to convert intangible measures to monetary values; an area which is a point of difficulty for many evaluation models. Another strength of the model is that the levels of evaluation have been clearly operationally defined. Finally, the Phillips model does attempt to
help the user to address some of the issues of reliability and validity by using such qualitative techniques as triangulation and inter-rater estimation. Phillips provides training along with the model on such issues as types of validity and suggestions on how to address each type.

A potential difficulty to use of the model is that it requires some knowledge of basic accounting principles. Also, the responsibility of providing as reliable and valid of measures as possible when converting from data to monetary measures is of critical importance. This is due to the fact that an intangible measure is often made tangible by connecting it to an existing tangible measure. In doing so, the measure of the intangible now becomes an indirect measure, and potential spurious correlation becomes an issue. That is, in a qualitative sense, the intangible measure may be corrupted by a third measure or by repeated measures (e.g., measurement error). A final area of weakness might be the time involved to conduct such an evaluation. Phillips addresses this issue by attempting to incorporate into the front-end analysis the performance measures that will be examined during the evaluation. Additionally, he suggests the building of an evaluation database of performance measures. Many companies currently have software applications (ex.: SAP and PeopleSoft) which allow for the seamless tracking of performance measures on a company-wide basis. The evaluation program can be incorporated into these systems and, to some degree, based on the data currently collected.

Model Development and Formative evaluation

The purpose of this study is to develop and test an evaluation model designed for use in evaluating HPT-process related interventions. This is a valuable exercise for two reasons, (1) there are currently no evaluation models specific to the HPT process and (2) evaluation is a major step within the HPT process. The output of this study is an evaluation approach for use by HPT practitioners. As such, it includes methods to aid in the completion of each step within the model.

A model is some type of representation of what exists. It could be graphical, pictorial, or prose. Richey and Nelson outline three categories of models: conceptual models, procedural models, and mathematical models. A conceptual model is a representation of a theory. It is descriptive in nature and includes major components of the theory being represented. A procedural model guides in how to perform a stated endeavor. Mathematical models use the symbols of mathematics (generally equations) to describe relationships (Richey & Nelson, 1986).
In contrast, a method is a set way of accomplishing something, usually in a step-by-step format. Whereas models are often graphical in nature, a method is typically in a narrative format. Methods usually have more detailed explanations that models. Often a combination of model and method are used to represent both a theory and its application.

In deciding how to best represent a model on evaluating human performance technology interventions, it is important to consider several factors including the purpose of the model, the complexity of the situation being modeled, which variables should be included, and the target audience and intended users of the model. A model will, at best, be a representation of reality. To be useful to the intended audience, it should be a simplification of a time-consuming and complex reality. The intent of the HPT model developed in this study is to be “an approximation, usually a simplification, and hopefully an aide to insight” (Borko, 1967, p. 1).

While the human performance technology field is replete with models, few works have been published related to the process of developing and testing these models. Some have equated the model development process to that of theory development (King, 1994). There are, however, some important differences in purpose between models and theories. As Gordon A. Lippitt (1973) has stated, a model is “a symbolic representation of the various aspects of a complex event or situation. A model is by nature a simplification and thus may or may not include all the variables. It should include, however, all of those variables which the model-builder considers important and, in this sense, models serve as an aid to understanding the event or situation being studied” (p. 2). As such, a model may be based on one or more theories. However, a model would most likely not be able to encapsulate all the complexities of a theory, but would instead be a simplification. An additional difference between a theory and a model is their intended purposes. A theory offers a more detailed explanation of a phenomenon, whereas a model offers a simplified understanding of a phenomenon. The purpose of a model is to quickly and easily represent some portion of reality.

While many HPT and instructional design models exist, there does not appear to be recent literature in the HPT or instructional design arenas related to the process of model development. Several works have been published, however, related to the development of behavioral models and change management models (Lippitt, 1973; Stogdill, 1970). While the two approaches vary in detail, there are striking similarities.
Related to model building from the behavioral sciences, Morris purports three foundational hypotheses to model building. These hypotheses are stated below:

1. Model building should be viewed as a process of enrichment and elaboration. Start with the simple and evolve into more complex and elaborate schemes.
2. It is important to tie the model in with known, well-developed associated logical structures.
3. Include loops or alternations by using the data to test the model and make identified revisions (Stogdill, 1970, pp. 79-81).

From change management literature, Lippitt (1973) defines the model building as “the process of putting together symbols according to certain rules to form a structure which corresponds to a real-world system under study” (p. 30). The rules referred to are a seven-step process which includes (a) describing the situation or system under study and identifying the essential, influential variables and their relationships, (b) establishing the symbols to be used, (c) developing an analogy from a previous experience using the established variables, (d) setting the criteria for measuring the effectiveness of the purpose of the model, (e) identifying subparts that make up the variables (if applicable), (f) making the model dynamic, if looping or branching is necessary, and (g) validating the model empirically (Lippitt, 1973).

Regarding testing of models, Richey and Nelson’s work on type II developmental research outlines some questions that this type of research should answer. The intended outcome of such research can be any or all of the following: “(1) provide evidence of the validity and/or effectiveness of a particular technique or model, (2) explain the conditions and procedures that facilitate the successful use of a particular technique or model, (3) explain the successes or failures encountered in using a particular technique or model, (4) synthesize the events and/or opinions related to the use of a particular technique or model, and (5) describe a new or enhanced design, development, and/or evaluation model” (Richey & Nelson, 1986). This research study attempts to provide evidence related to all five areas of consideration.

Lippitt further suggests that a possible way to empirically validate a model would include consulting with people involved in the use of the model, comparing the model with other similar models, or applying the model in either a real-world situation or a simulation of an authentic environment (Lippitt, 1973).
Additionally, during the process of model-building, Stogdill believes the following questions should be considered: “(1) why were the variables selected for the model, (2) why were other possibly relevant variables omitted, (3) why was the specific set of relationships between variables postulated for the model, (4) what other relationships might have been hypothesized, (5) to what extent does the model appear to describe the set of events in the real world that it was designed to explain?” (Stogdill, 1970, pp. 11-12).

In a recent work, Richey further refines the specific areas of interest relative to internal and external validation of procedural models (Richey, in press). She indicates that internal validation of a model should focus on the model’s components and use, whereas external validation is concerned with the resulting products from use of the model and the impact on the user and the client. Components of interest for a procedural model include the clarity, order, and completeness of the steps and the guidance for completing each step. In validating use of the model, the researcher should focus on the degree to which the model can be implemented in the environment for which it was developed and by the type of user for which it was developed. Additionally, data should be collected relative to client satisfaction, time, and cost. The products resulting from use of the model should meet the needs of the user and the client.

Based on the development and testing processes outlined above, I followed a modified, three-step, iterative process of combined development and formative evaluation for the model. These steps are listed below:

1. Develop the model, including statement of purpose(s), assumption(s), intended audience(s) of the model; establishment and definition of the symbols and terminology to be used; identification of relevant variables to be included, their relationships, and rationale for their inclusion; explanation of exclusion of other potential variables.
2. Create a testing plan. The components of the plan included: an iterative process of dialogue with an expert panel, researcher testing of the model in realistic environment, and practitioner testing of the model in realistic environment.
3. Report findings and suggested revisions with rationale.

The next chapter describes the development methods used for the initial model, the initial formative evaluation by an expert panel, and subsequent revisions to the model.
CHAPTER 3
DEVELOPMENT AND FORMATIVE EVALUATION OF A PERFORMANCE INTERVENTION EVALUATION MODEL

This study was conducted to create and formatively evaluate a model related to the evaluation of performance interventions implemented within an organization. The model is intended for use in identifying the degree to which a performance intervention helped close an identified performance gap and the reasons why the intervention was or was not successful in doing so. Given the characteristics of both Type I and II developmental research as outlined in the previous chapter, it could be reasonably argued that this study be viewed in either developmental research focus. However, the fundamental objective of Type II developmental research is “the production of knowledge in the form of a new (or enhanced) design or development model” (Richey & Nelson, 1986, p. 1225) and the primary emphasis of Type II research is on the “use of a specific process, the use of a comprehensive model, and examination as it is commonly practiced in the workplace” (Richey & Nelson, 1986, p. 1225). As such, I argue that this study best fits into the field of Type II developmental research.

The scope of this study included the development of an evaluation model, reviews by a panel of expert practitioners and academicians, and two case studies to test the effectiveness, efficiency, and usefulness of the model for the evaluation of performance interventions. This chapter presents the methodology for creation of the initial model (Draft 1), explains the procedures for the expert panel reviews, and describes the panel’s feedback and subsequent changes to the model. I then provide an overview of Draft 2 and the subsequent revisions based on findings from a second panel review. Chapter 4 presents Draft 3 of the model, findings from the model’s use in each of two case studies and the resulting revisions to the model following each case study. The final chapter discusses the details of the revised model, rationale for changes, recommended future changes to the model, and future directions for research in the areas of evaluation and evaluation models.
Methodology for Development of the Initial Model

Based on the model building process outlined by Lippett (1973) and Stogdill (1970), the development and initial testing of the evaluation model encompassed two steps:

1. Development of initial model which included (a) a statement of the purpose of model, (b) assumptions of the model, (c) the intended audience for the model, (d) identification of initial relevant variables, (e) a rationale for inclusion of variables, and (f) an explanation for exclusion of other potential variables.

2. An iterative process of subject matter expert reviews and model revisions.

In following these two steps, I created the initial model (Draft 1). I then provided the model to a panel of experts in the area of evaluation and HPT practice. Based on their feedback, I revised the model, resulting in Draft 2. The panel then reviewed the second draft and provided feedback on this version. I again revised the model based on the panel’s feedback. Draft 3, which is fully described in Chapter 4, was then employed in a case study to provide further evidence of its effectiveness, efficiency, and usefulness in a practical setting.

In the next sections of this chapter, I outline the steps in the creation of the initial model. I then describe the purpose, assumptions, and audience for the model as well as the variables included in and excluded from the initial draft. I then explain Draft 1 and describe its relation to common barriers in evaluation practice.

Purpose, Assumptions, and Intended Audience of Initial Model

The purpose of the model is to provide a systematic process for evaluating the effectiveness of the interventions which have been implemented as a result of a front-end analysis. The model is intended to guide the novice evaluator through a standardized procedure to determine the value of a performance solution. As such, the primary focus of the model is to guide the evaluator in answering two major questions: whether the performances in question are now reaching the desired levels, and if not, why not.

The model provides a systematic, step-by-step framework for conducting an evaluation of performance interventions. It guides the evaluator in identifying the depth and breadth of options for the evaluation based on data availability, the time and cost requirements for conducting the evaluation, the plan for collecting and analyzing the data, and the presentation requirements for the evaluation.
The first assumption on which the initial model was created is that a systematic problem-solving approach (e.g. the human performance technology process) was used to identify the performance problem, causes, and solutions. This systematic approach is referred to as a front-end analysis. The second assumption is that the selected solution was then implemented within the organization. Finally, the model assumes an evaluation was requested to determine the impact of the intervention.

The audience for the initial model is the human performance technology (HPT) practitioner, someone versed in the entire human performance technology process. It was originally intended that the model would support both novice and expert practitioners in the evaluation process. Feedback from the expert panel questioned the degree to which the model could sufficiently support the often divergent requirements for such a broad audience base. Specific panel feedback and subsequent decisions about revisions to the model are detailed later in this chapter. In its final form, the model is intended to be of use to a novice-level practitioner by providing a standard process and method for conducting HPT evaluations, including tools to standardize the outputs of each step or phase in the model. While there may be drawbacks to an expert using such a structured model, potential benefits include a general framework within which to conduct the evaluation and a reminder of basic areas for reflection in the evaluation process.

Identification of Relevant Variables and Rationale for Inclusion in Initial Model (Draft 1)

Components to be included in the initial model were drawn from a review of literature on evaluation models and practices, desired evaluation outcomes, and the human performance technology process. Additionally, I desired that the model address as many current barriers related to evaluation quality and practice as possible. Identified components and barriers are discussed in this section.

Most models of evaluation are conceptual in nature, categorizing important variables to be considered in the act of evaluating. Kirkpatrick’s four-level framework (Kirkpatrick, 1959) and Stufflebeam’s CIPP (Worthen, Sanders, & Fitzpatrick, 1997) are examples of conceptual models in evaluation. Procedural models of evaluation are often referred to as methodologies. These processes are less formal than conceptual models and are often not even recognized as models. They range from high-level processes to fairly detailed steps. Three such procedures for conducting evaluations include the results assessment system (Swanson & Holton, 1999)
from the human resource development discipline, Worthen, Sanders, and Fitzpatrick’s program evaluation methodology (1997), and Shrock and Geis’ evaluation process from the performance technology area.

As outlined in the previous chapter, the results assessment system (RAS) is primarily a conceptual model, identifying three main categories for evaluation results, performance, learning, and perception. Each category is further divided into two additional areas of focus. Tools and templates are provided to guide the evaluator in capturing and analyzing data relative to each category. Beside these conceptual areas, a procedural methodology is overviewed which includes five steps: (a) specify expected results, (b) plan assessment of results, (c) develop measures of results, (d) collect and analyze results data, and (e) interpret and report results assessment. Because the primary focus of the model’s guidance relates to conceptual areas, the procedural steps are general in nature.

From the program evaluation field, Worthen, Sanders, and Fitzpatrick (1997) outline eight steps in conducting an evaluation. A primary focus of this model is planning for the evaluation, with five of the eight steps occurring prior to collecting any data related to evaluation questions. The steps are: (a) clarifying the evaluation request and responsibilities, (b) setting boundaries and analyzing the evaluation context, (c) identifying and selecting the evaluation questions and criteria, (d) planning how to conduct the evaluation (design, data collection, and agreements), (d) dealing with political, ethical, and interpersonal aspects, (f) collecting, analyzing, and interpreting information, (g) reporting and using information, and (h) evaluating the evaluation.

The Shrock and Geis (1999) evaluation process, outlined in the *Handbook of Human Performance Technology*, provides one of the most detailed procedural models of intervention evaluation in the literature. Their model is comprised of four stages: (a) early – determining evaluability, (b) middle – designing and implementing, (c) concluding – analysis and reporting, and (d) follow-up – learning and institutionalizing.

Determining evaluability is a highly iterative and collaborative stage in which the evaluator conducts an analysis of the evaluation situation in order to determine if an evaluation should occur. The non-linear steps in this stage are described in Table 3.1 below.
<table>
<thead>
<tr>
<th>Steps</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify key players</td>
<td>Who requested the evaluation? Who will be involved in the evaluation? Who is the audience for the findings?</td>
</tr>
<tr>
<td>Identify purpose and use</td>
<td>Why is the evaluation being requested? How will the findings be used?</td>
</tr>
<tr>
<td>Identify objectives</td>
<td>What are the purposes of the intervention? What expected outcomes are known?</td>
</tr>
<tr>
<td>Secure collaboration</td>
<td>If stakeholders will be involved, their cooperation should be assured early in the process, in preparation for the work to be done.</td>
</tr>
<tr>
<td>Assess the importance of the evaluation</td>
<td>Is the evaluation being conducted as a standard operating procedure or will the findings allow the client to make a decision for action?</td>
</tr>
<tr>
<td>Become familiar with the program and players</td>
<td>During data gathering in the evaluability stage, it is important to become familiar with the program or intervention being evaluated and to create and maintain rapport with all persons involved with the intervention. This is an informal assessment of the nature and culture of the organization.</td>
</tr>
<tr>
<td>Consider criteria and standards</td>
<td>Identify any preferred or required standards such as norm-referenced or criterion-referenced decisions. Will it be necessary to identify causality?</td>
</tr>
</tbody>
</table>
Table 3.1
Early Stage – Determining Evaluability (continued)

| Choose models and methods | Identify any models (conceptual) which will drive the evaluation. Will a utilization-focused approach be used? Will stakeholder involvement be a focal point of the evaluation? |
| Make the evaluability decision | Based on the information gathered, decide if the evaluation should be conducted. |

The middle stage, designing and implementing, builds on the information gathered in the evaluability analysis stage. Five non-linear steps are followed, leading the evaluator through the data collection process (see Table 3.2).

Table 3.2
Middle Stage – Designing and Implementing

<table>
<thead>
<tr>
<th>Steps</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design the evaluation</td>
<td>Determine data sources and instruments. Outline a budget and timeline. Identify existing data formats (e.g. extant data).</td>
</tr>
<tr>
<td>Prepare the required materials</td>
<td>If using purchased materials, determine if they must be modified. Assess the validity and reliability of instruments.</td>
</tr>
<tr>
<td>Conduct a pilot study</td>
<td>Pilot the instruments and how they will be used.</td>
</tr>
<tr>
<td>Implement the design</td>
<td>Collect the data. Monitor the emergent nature of evaluating.</td>
</tr>
<tr>
<td>Inform clients and stakeholders</td>
<td>As the evaluation progresses, keep the client and stakeholders informed on progress and initial findings.</td>
</tr>
</tbody>
</table>
The concluding stage includes analyzing the collected data, interpreting the findings, deciding on a format for presenting the findings, and distributing the results. Steps in this stage are listed in Table 3.3.

### Table 3.3

**Concluding Stage – Analysis and Reporting**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze the data</td>
<td>Based on the type of data collected, conduct appropriate analysis.</td>
</tr>
<tr>
<td>Consider the ethical</td>
<td>If information is uncovered which can be damaging, consider its ethical</td>
</tr>
<tr>
<td>implications of results</td>
<td>implications and how the results should be presented.</td>
</tr>
<tr>
<td>Report results</td>
<td>Select a format appropriate to the audience.</td>
</tr>
<tr>
<td></td>
<td>Disseminate the findings.</td>
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</tbody>
</table>

The final stage, learning and institutionalizing, asks the evaluator to reflect on the impact of the evaluation, the need for further evaluation, and what can be learned from the process.

A fairly consistent list of barriers to evaluation has been documented over many years (American Society for Training and Development, 1997, Bidwell & Lippett, 1971, Dean, 1995, Kaufman & Thomas, 1980). From the literature, the most commonly mentioned barriers include time and cost required in conducting the evaluation, difficulty determining financial impact, difficulty in attaching monetary value to soft measures, difficulty in isolating the impact of an intervention (and its component parts) within organization, and difficulty determining the impact of changes to the environment on the intervention. Other common barriers are fear of accountability, the retrospective nature of evaluation which clashes with the forward focus of organizations, the lack of availability of tools, models, and methods related to evaluation, and discontent with findings, resulting in lack of their use.

In an attempt to categorize these barriers and to better understand their relationships, I created a concept map which, while not exhaustive in terms of possible categories, outlines one view of the relationships between the various barriers and potential causes (see Figure 3.1). From the map, these relationships can be stated as:
1. There is a lack of standard models, methods, processes and tools. Existing models are related to conceptual ideas as opposed to procedural guidance. Processes, methods, models and tools used to conduct evaluations are not reported back to the community of practice as standard practice. Also, no one model, method, process, or set of tools has emerged as a standard.

2. Evaluation has high time and cost requirements. Frequent difficulties in this area include problems in isolating the impact of an intervention, including identifying the financial impact. It is often difficult to identify the contribution of parts of an intervention and to identify the impact of various environmental changes on intervention’s success or failure.

3. There is discontent with evaluation findings. Often, evaluations are not rigorously conducted, resulting in non-usable findings. Evaluation findings may be poorly synthesized or the reports may be improperly formatted for the audience.

4. A fear of accountability may exist on the part of evaluation participants due to fears of demotion, reorganization, or reputation. The evaluator may also fear accountability, due to a desire to build client rapport for future work prospects.

A disparity of focus may result if the nature of evaluation is too retrospective, which may not be highly valued in a proactive, aggressive and forward-focused business environment.

Focusing on the variables described and the evaluation barriers related to a lack of standard models, methods, and tools, high time and cost, and discontent with findings, I created the initial evaluation model draft shown in Figure 3.2. For the full model, refer to Appendix A.

Exclusion of Other Potential Variables

While the two remaining barriers to evaluation, fear of accountability and disparity of focus, are both important, I decided that they were beyond the scope of the model. Addressing the issue of fear of accountability relates to addressing the culture within the organization relative to participants’ perceptions of the repercussions of their involvement in an evaluation. While this is a valid concern, its resolution may be beyond the scope of an evaluation. At a minimum, evaluators should attempt to put the participants at ease during all interactions.
The disparity of focus between the retrospective nature of evaluation and the proactive focus of a business is a fundamental problem. Evaluation is retrospective by definition, examining over time the value of an intervention that has already been implemented. Since this model begins at the point that an evaluation has already been requested, the assumption is made that the client already perceives value in the evaluation process.

**Overview of Draft 1**

The human performance technology intervention evaluation evaluation model (Draft 1) provides a standardized procedure for the conduct of an evaluation of an implemented intervention. The model guides the evaluator through five steps: (a) Conduct Evaluation Environment Analysis, (b) Negotiate Purpose, Audience, and Output of Evaluation, (c) Create Evaluation Plan, (d) Implement Data Collection and Analysis Plan, and (e) Create Evaluation Reports. For each step, a narrative overview is provided which outlines the purpose, intended outcomes, tools, and outputs. Additionally, detailed guidance is provided for each step in two formats: procedures and in-depth explanation, and tools, guides, and templates.
In the initial step, Conduct Evaluation Environment Analysis, the evaluator assesses the evaluation potential of the intervention. The purpose of this step is to collect sufficient information about the intervention, organization, change initiatives, and process which led to the intervention being selected and implemented, in order to allow the evaluator to create an initial evaluation plan which will serve as the communication focus for the negotiation meeting in step two. Major tasks within this step include a review of the gaps and their causes identified in the initial front-end analysis, review of the solution which was selected in the front-end analysis, review of the solution that was actually implemented, and an analysis of the environment into which the solution was placed.

In the second step, Negotiate Purpose, Audience, and Output of Evaluation, the evaluator has the foundational information necessary to discuss the evaluation potential. That is, the
evaluator can now meet with the client and stakeholders to determine what questions can and should be answered in the evaluation. Armed with the information from the review of the front-end analysis and initial investigation, the evaluator meets with the stakeholders to identify and clarify the evaluation scope, audience, and desired outcomes for the evaluation.

Discussion and agreement from step two will result in the creation of the official evaluation plan (step three). This plan includes the questions to be answered, data collection and analysis methodologies, and the logistical information related to budgets and timelines.

Once all parties finalize the evaluation plan, the data collection and analysis begin in step four. Following the evaluation plan, the necessary instruments for data collection are either created or leveraged. Data are then collected and analyzed related to each evaluation question.

In the final step, Create Evaluation Reports, the evaluation process and findings are interpreted relative to each evaluation question. The findings and recommendations are then reported to the evaluation client and stakeholders. Additionally, the evaluation process and outcomes are reported to the human performance technology community.

Relation of Draft 1 to Evaluation Barriers

This model attempts to directly address the first three categories of barriers to evaluation described previously in this chapter. Relative to a lack of standard models, methods, processes and tools, the procedural nature of this model provides a systematic means to progress through the evaluation. Also addressing the issue of lack of standard tools, specific templates and job aids are included to guide the interpretation and output formats for most of the steps in the model. By delineating a standard process and providing procedural and conceptual guidance, the novice evaluator can easily progress through the evaluation process.

Unique to this model is the inclusion of reporting both process and findings from the evaluation back to the community of human performance technologists. The intent and hope of making this a part of the evaluation model is to draw attention to the importance of this activity and to elevate this sharing of knowledge with the community of practice to the point of being recognized as a necessary and essential part of the evaluation process.

Related to the high time and cost requirements of conducting an evaluation, time is spent early in the process (step one) to determine the evaluation potential. Guidance is provided to identify the steps and processes of the front-end analysis which led to the intervention being selected and implemented. A review of the environment should identify change initiatives which
transpired during the course of the intervention’s conception and implementation. Finally, guidance is given so that the intervention itself is broken into its component parts and the objectives of each component are outlined. With more time spent in the understanding of the evaluation potential, it is anticipated that less time will be necessary to determine what data can be readily collected, thereby saving time in the data collection stages.

Lack of use of findings is addressed in both the first, fourth, and final steps of the model. In step one, the evaluator identifies the evaluation potential. The intent is that, from this undertaking, the evaluator will be able to better inform and educate the owner of the evaluation about reasonable expectations regarding the rigor of the evaluation. This honesty in evaluation may range from the determination that sufficient baseline data do not exist to provide a rigorous evaluation to the determination that it is too early to conduct an evaluation. The evaluation’s owner may then make an informed decision as to whether the evaluation should continue or be rescheduled for a time when sufficient data will be available. Additionally, if sufficient baseline measures do not exist, this situation may be addressed during negotiation so that the measures may be put in place or taken to allow for an evaluation at a more appropriate future date.

In the fourth step and related to the reporting of the evaluation findings, guidance is provided to aid the evaluator in analyzing and synthesizing the findings in order to construct meaning, as opposed to simply reporting raw or aggregated data. In the final step, both the processes for data collection and analysis, as well as the findings from the analysis process, are reported. Additionally, a standardized reporting format is provided based on the type of audience.

Criteria and Procedures for Panel Reviews

The established criteria on which to formatively evaluate the model fall into three categories of effectiveness, efficiency, and usefulness. Feedback from the panel review was intended to test the effectiveness and usefulness categories. Specifically, I collected feedback from the panel about how well use of the model provides sufficient means to identify the degree to which the performance gaps were closed and how well the model aids in identifying the thoroughness of the front-end analysis which led to the implemented solution. Additionally, the panel was asked to identify any benefits or limitations related to use of the model.

Relative to usefulness, the panel was asked to predict the degree to which use of the model would provide guidance for the creation of useful outputs for the evaluation sponsors.
Panel members were also asked to determine whether use of the model would provide sufficient guidance for novice HPT practitioners. Finally, the panel was questioned about the intuitive nature of the model’s representation. Detailed questions asked of the panel can be found in Appendices B and D respectively, for both the first and second panel reviews.

**Qualifications of the Expert Panel**

The subject matter expert panel consisted of four reviewers with collective expertise in evaluation practices, conducting developmental research, model-building, and performance technology practices. Each member of the panel was purposefully selected based on their particular area of expertise in either practice, academia, or both.

One panel member was selected because of her work in the area of developmental research and model validation. A second panel member was selected based on her work in evaluation. She is the co-author of a seminal chapter on evaluation in a leading performance technology handbook in the field. One member was selected based on her role as a senior global performance technologist for a Fortune 100 company. The final member was selected due to her dual role as an academician as well as her prolific consulting practice in performance improvement.

Two panel members’ primary roles are as full professors in academia at the graduate level. One member is both a fulltime performance consultant and full professor in instructional design. The fourth member is a fulltime practitioner in a business and industry. All four members have experience in teaching graduate-level courses in evaluation, research methodology, and/or instructional design.

The panel’s years of experience in academia range from two years in an adjunct capacity to twenty-four years in a full professor position. Three of the four members are practitioners in performance technology, either as external consultants or as practitioners within an organization. One member has ten years experience as a performance technologist within a leading US company, with nine years of prior performance consulting experience with a global performance consultant organization.

Panel memberships in professional organizations include the International Society for Performance Improvement, Academy of Human Resource Development, Organizational Development Institute, International Board of Standards for Training and Performance Improvement, Association for Educational Communication and Technology, American
Educational Research Association, American Evaluation Association, and the International Association of Business Communicators. Panel members have taught performance improvement courses in a variety of areas and specialties including communication in organizations, program evaluation, advanced instructional design, systems techniques in educational planning and management, and designing instruction for adult learners. A table outlining the detailed qualifications for each member of the expert panel is available in Appendix B.

Process for Each Review

For each of the two reviews conducted by the subject matter experts, a protocol document was provided which outlined the review process, questions to be answered, the model’s background, purpose, assumptions, and audience, and a dictionary of terminology used in the model. The model was provided in an electronic format which consisted of a graphic representation, a detailed explanation for each step, and tools for each step. The specific questions asked of the panel members were:

1. Do you perceive that use of the model provides a sufficient means to identify the degree to which the performance gap was closed? If not, why not?
2. Do you perceive that use of the model provides sufficient information about the thoroughness of each phase of the HPT process? If not, what is lacking?
3. What do you perceive to be barriers to the use of this model?
4. What are the benefits (if any) of using this model?
5. Do you perceive that the sponsors of the evaluation will find the information to be useful? Are there any improvements that could be made to the reporting content/format?
6. Do you perceive the guidance to be sufficient for a novice HPT practitioner? Is the model and supporting guidance intuitive to a novice HPT practitioner?
7. What overall problems do you see?

I also posed additional review questions to the panel, specific to each of the five steps in the model.

1. Overall, what do you perceive to be the value (if any) of this step?
2. Are there any other areas that should be covered in this step?
3. Is the support provided sufficient for a novice? If not, what is lacking?
4. How helpful are the tools in guiding the evaluator through this step?
5. Open comments

Initially, I created a web-based discussion board and provided passwords to the four panel members. The board was divided into sections based on each of the three general categories of effectiveness, efficiency, and usefulness. An additional section was created for open comments. The panelists were instructed to post their answers to the listed questions for each section. Hyperlinks to the draft of the model, to the list of questions, and to the panel review protocol were included on the discussion board website.

I chose the discussion board format because I believed it would allow all panel members to have immediate access to the comments of all other members and would create the format for easy dialogue and discussion of differing opinions. However, several panel members had difficulty posting to the discussion board due to connection issues. Several panel members contacted me directly asking if they could just email their responses to me for the list of questions.

For the first panel review process, all panel members emailed me their responses to the questions. I then posted their responses to the discussion board. I notified the entire panel that the comments had been posted and asked them to review the panel’s comments to determine if any further discussion would be beneficial. For the second panel review, I created an email listserv and asked each panel member to use the “reply to all” function of their respective email programs to ensure that all panel members received their feedback.

In the first review, feedback was received from all four panel members. However, for the second panel review, I received feedback from three of the four members, with one member unable to respond during the designated timeframe due to work-related responsibilities. Approximately one month following the receipt of feedback from the three panelists, the fourth panelist responded. She stated that she had reviewed the model information and the feedback of the other panelists. She indicated that she was in agreement with their comments and had nothing additional to add.

In reviewing the panel’s feedback, I developed a list of emerging codes. The process included grouping feedback from all four panelists by question. I then read all feedback for the question, identifying patterns in the responses. Finally, I labeled the various patterns, resulting in the list of codes. The codes used were (a) clarification of purpose, (b) issues with rigor of front-end analysis requirement, (c) issues with novice versus expert requirements, (d) issues with level
of detail (too much or too little provided), (e) missing elements, and (f) strength of model. In the feedback from the first panel review, one panel member strongly urged that two steps in the first draft of the model be transposed. This is reported as a finding unique to the first draft.

Having reviewed the panel’s feedback according to these categories, I then determined the required changes to the model. The categorized feedback from the panel along with a rationale for modifications to the model can be viewed in Appendix B.

In the next section, I discuss the findings from the first panel reviews and outline the rationale for my decision to revise the model or retain current state. I then present the revised model, Draft 2.

Findings from First Panel Review

From the feedback of the expert panel relative to Draft 1, I noted seven major findings. These are (a) the transposition of steps two and three, (b) the need to clarify the purpose of the model, (c) issues with the rigor required in the front-end analysis, (d) issues with novice versus expert requirements, (e) issues with level of detail, (f) missing elements, and (g) identified strengths of the model. Each of these areas is discussed, along with their related changes, in Draft 2 of the model. Specific feedback from the panel is categorized by code and outlined in Appendix B.

Finding One: Transposition of Steps Two and Three

One panel member suggested that I transpose steps 2 and 3 in the model. In Draft 1, I had arranged the negotiation step to transpire before the creation of the final evaluation plan. The reason for this order was my assumption that the evaluation plan would be generated based on the discussion that transpired during the negotiation meeting. This would allow for more stakeholder input into the evaluation purpose, process, and outputs.

The panelist’s feedback indicated that, although stakeholder involvement is important, it would be more efficient to first create a draft evaluation plan. This plan could then serve as the basis for the negotiation. She indicated that this would be a more efficient use of the client’s time while still allowing stakeholder input into the evaluation plan. This change is reflected in Draft 2.

Finding Two: Need to Clarify Purpose of Model

One panel member’s feedback indicated that the actual process and guidance of the model were not consistent with the model’s stated purpose. Specifically, the stated purpose was
to determine the effectiveness of the solution. However, the initial model focused heavily on evaluating the thoroughness of the front-end analysis. The panel agreed that with the exception of the person or group who conducted a front-end evaluation, there would be little interest in the process which led to the solution being selected. Instead, the primary question to be answered is whether or not the desired performance is now being reached.

While not dropping the process orientation from the model, the emphasis was changed in the model’s narrative to focus more on the overarching question of the effectiveness of the solution. The model overview was revised to clearly state the major evaluation questions which include whether the desired performances are now being met. Additionally, I included guidance on identifying measures that would provide specific answers to this question.

**Finding Three: Issues with the Rigor Required in the Front-end Analysis**

One of the assumptions for using the model was that a front-end analysis led to the selection of the solution under evaluation. In the first step, the evaluator is guided in thoroughly assessing the process that led to the particular intervention being selected. The framework for this analysis is a review of the performance gap, its causes, and the solution selection process. Feedback from three panel members, representing the practitioners, stated that unfortunately, this is not realistic in practice. In most organizations, a thorough front-end analysis is not conducted prior to selecting solutions. In many organizations, no analysis is conducted.

Based on this, it would either be necessary to stay with the original assumption because it is the ideal to which the HPT community is striving, or to broaden the model to include evaluation of solutions which had been selected by a myriad of other selection methods that are not systematic in nature. In Draft 2 of the model, the overview was changed to reflect other means by which a solution may be selected. Step one, Conduct Evaluation Analysis, was modified to reflect potential impacts of these solution selection methods on the evaluation. A flowchart was created as a visual representation of the various ways in which a solution may be selected and each method’s implications for the conduct of the evaluation.

**Finding Four: Issues with Novice Versus Expert Requirements**

In developing the initial model, an attempt was made to create a model which would have sufficient detail and guidance for a novice HPT practitioner, while still allowing flexibility for an expert. Based on one panel member’s feedback, the original model satisfied neither extreme. This panel member’s research area is related to model development and validation. The
The suggestion of this panelist was that the model should be aimed towards either the novice or towards the expert, or that two models should be developed.

The second draft of the model was refined with a novice evaluator in mind. Though geared towards the novice, it can still be of use to an expert by providing a framework in which to conduct an evaluation. I determined that the development of two separate models was beyond the scope of this study.

Finding Five: Issues with Level of Detail

One panelist indicated that too little detail was provided related to choosing and implementing methodologies for data collection. In the third step of the model, Create Evaluation Plan, the evaluator selects a method for collecting data relative to each evaluation question. However, no guidance was given for determining which method (e.g. observation, interviews, or extant data review) was most appropriate and under what conditions.

In Draft 2, I included guidance related to different types of data collection methodologies and the advantages and disadvantages of each. Also related to creating the evaluation plan, I provided guidance on different sampling techniques and the appropriateness of each type of various situations.

Finding Six: Missing elements

The entire panel identified various items they felt the model lacked within each step. In the Create Evaluation Plan step, these items included information on when the evaluation should occur, a reminder to involve the stakeholder throughout the evaluation, guidance on determining the impact of time constraints on the quality of the evaluation, and dealing with unanticipated outcomes. Guidance related to each of these areas is included in Draft 2.

Related to the Implement Data Collection and Analysis Plan step, one panelist indicated that the evaluator should be reminded to simply reflect early during data collection to create a general picture of what is happening. Narrative guidance in Draft 2 prompts the evaluator to begin reflection as soon as data collection begins. Additionally, two panel members suggested that a glossary of terms be included in the model. A glossary is included in Draft 2.

Finding Seven: Strengths of the Model

The panel identified several areas of strength of the first draft of the evaluation model. One strength is that the model serves as a “visual roadmap” for both a novice evaluator as well as novice clients. It allows the novice evaluator to prepare and conduct the evaluation in a step-by-
step fashion. It also allows the evaluator to prepare the evaluation client for each step of the evaluation process.

Two panel members also deemed sharing findings with the community of practice to be a strength of the model, and indicated that it was a novel approach. By making this task a step in the model, it raises awareness of the importance of sharing evaluation practices, methodologies, and findings with the professional evaluation community.

Overview of Draft 2

Based on the feedback from the expert panel’s review of the initial model, various changes were made, resulting in Draft 2 (see Figure 3.3). The Draft 2 model begins with identification that an initial request for an evaluation has been placed.

Following this initial request, the model is then divided into two contracting phases. I chose to break the process into a two-contract approach based on the amount of work required in the initial conduct evaluation analysis step. By breaking the model into these two areas, a contract is created which leads to an evaluation plan. The second contract then covers the implementation of the plan and presentation of findings.

In phase one, the contract covers all work required to conduct the evaluation front-end analysis. The purpose of this analysis is to determine the potential scope of the evaluation. The steps to be completed in this phase include a review of the gap, cause, and solution analysis that led to the intervention to be evaluated as well as an analysis of the organizational and societal environment to identify changes which occurred during the intervention identification process.

From this information, the evaluator can make an informed determination of what can be evaluated and with what degree of fidelity. For example, high fidelity might include an evaluation environment where baseline performance measures are available and the instruments used to collect measures were tested for reliability and validity. A situation of low fidelity might include an environment which has little to no baseline data or where the majority of the data comes from soft sources such as self-reported data. Additionally, the evaluator may determine that an evaluation of the intervention would not be beneficial at this point due to lack of sufficient data collection opportunities.

Information collected in the evaluation front-end analysis phase is used to create an evaluation plan which serves as the communication tool for the negotiation of the evaluation
Human Performance Technology-specific Summative Evaluation Model (HPT-SEM)
Draft 2
Figure 3.3
parameters. The final output of the evaluation front-end analysis phase is a contract for the actual conduct of the evaluation.

In the second phase, the evaluation plan is implemented. Data are collected and analyzed related to each evaluation question. This process is iterative in nature, with analysis often resulting in the need to collect additional data. The data analysis results in synthesis to ascertain meaning from the patterns and information obtained.

Finally, the results are reported back to the evaluation owner and to the community of evaluation practitioners. This step, Present Evaluation Findings, includes guidance on determining the appropriate reporting formats for various audience and requirements. The evaluator is also encouraged to report both the evaluation methodology and findings to the community of practice using such forums as professional journals, conference presentations, and professional forums. During the negotiation step, agreement is reached related to publishing potential. The evaluator is encouraged to involve the evaluation owner in the publishing process as a means of increasing knowledge within the community of practice.

As was the case with the initial model, each step includes narrative support as well as tools and templates relative to the required outputs. The narratives provide procedural guidance as well as informational support. Refer to Appendix C for the detailed Draft 2 model.

Findings from Second Panel Review

The revised model represented in Figure 3.3 was presented to the expert panel for review. Several areas of concern were identified by the panel. These included a continued concern with the required rigor of the front-end analysis, issues with the level of detail provided, the need for further clarification of the purpose of the model, a need to simplify the title, and noted missing elements in the model. Additionally, strengths of the model were noted. Specific categorized feedback is outlined in Appendix D.

Finding One: Required Rigor of Front-end Analysis

A major concern in the panel’s second review was the amount of up front work required in assessing evaluability prior to negotiating the evaluation parameters. In the second draft, I recommended an approach that required two contracts to be generated. The first contract (Phase 1: Evaluation Front-End Analysis) covered the initial evaluation environment analysis, and the creation of the proposed evaluation plan. The second contract (Phase 2: Evaluation Implementation) was an outcome of the negotiation step and covered the implementation of the
evaluation plan and the presentation of findings. The two primary practitioners on the panel viewed this as unrealistic in practice. Their feedback indicated that the amount of front-end analysis was unrealistic and that it would be necessary to get to the negotiation point much sooner than Draft 2 of the model allowed.

Draft 3 returns to a one-contract model and streamlines the front-end analysis required. This was done by making better use of the initial client contact. Much of the detail of the front-end analysis was put into questionnaire format. In Draft 3, when the client requests an evaluation be conducted, the questionnaire serves as a guide for the dialogue to collect the initial information. The client can also be requested to complete the questionnaire, thereby increasing stakeholder involvement in the early evaluation analysis process.

Finding Two: Too Much Detail Provided in Model

Two panel members (one practitioner and one expert in model development) also questioned whether the amount of detail provided by the Draft 2 model had gone beyond the point of usefulness. They felt that in providing enough detail for a novice, the model might become intimidating and awkward to navigate and seemed more academic in nature rather than a guide to practice. Specific feedback suggested that the detailed guidance be paired using a layered approach so that the evaluator gets only the most pertinent information in the initial model with the ability to seek more guidance as required.

The detailed support of Draft 3 has been tailored so that the model (in electronic format) allows the user to hyperlink to detail for various sections within each phase. Additionally, a list of suggested readings for further support is provided as an additional layer of information for the evaluator.

Finding Three: Clarification of Purpose of Model

Clarity of the model’s purpose remained an issue. Two reviewers indicated that the model still did not clearly guide the evaluator in answering the appropriate questions related to the organization or unit, but instead focused too heavily on the process which led to the intervention’s selection. One of the two reviewers noted that the evaluator was not clearly guided to identify the unit of analysis for the evaluation.

In Draft 3, evaluation zones are defined and added to the initial evaluation process. These zones include society, the organization, the unit, and the process. For each zone, a
purpose and example of typical measures is provided. Additionally, a rationale for who is concerned about each zone is provided.

**Finding Four: Simplification of Title of Model**

Additional revisions to Draft 3 relate to language. Specifically, one reviewer suggested that the title of Draft 2, Human Performance Technology-Specific Summative Evaluation Model, was too restrictive in both meaning and terminology. I simplified the title of Draft 3. It is entitled Performance Intervention Evaluation Model.

**Finding Five: Missing Elements**

One reviewer noted that the verbiage of the model addresses performance problems but fails to address opportunities for improvement. Draft 3 of the model includes verbiage related to both performance problems and opportunities.

**Finding Six: Strengths of the Model**

All panel members listed various strengths of the model. The two practitioner panelists indicated that consistent use of the model would give credibility to the process, and professional clients would come to see the process as a benchmark for how evaluation should be conducted. The same two panelists indicated that the model provides ample guidance for conducting an evaluation even if the evaluator has very little prior experience. One panel member also indicated that the model would serve as a useful starting point for a team approach to conducting an evaluation.

Based on these findings from the two reviews by the expert panel, I further revised the model, resulting in Draft 3. This model was then used as the guide for an intervention evaluation for the first case study. Draft 3, the case study methodology and findings are described in Chapter 4.
CHAPTER 4
METHODS AND FINDINGS FROM TWO CASE STUDIES

In this chapter, I present Drafts 3 and 4 of the model and their relationship to previous versions of the model, their usage in two case studies, findings from each case study, and overall effectiveness, efficiency, and usefulness of the model following each case study.

In the next section, I present an overview of Draft 3 of the model and discuss how it differs from previous drafts. I then discuss how I employed the model in a preliminary case study, findings from the case study, and resulting modifications to the model. Finally, I discuss the overall effectiveness, efficiency, and usefulness of Draft 3 based on data collected in the case study and my reflections on usage of the model.

Overview of Draft 3

Based on feedback from the two panel reviews, I modified the model to reflect identified areas of concern. This resulted in Draft 3, shown in Figure 4.1 below. Draft 3 guides the evaluator through four phases; Preparation, Negotiation, Implementation, and Presentation. The Preparation phase begins with an initial client contact, the purpose of which is to provide sufficient information in order to identify the client’s evaluation requirements and appropriate evaluation questions. Next, an evaluation plan is created that includes the questions to be answered by the evaluation, the data collection and analysis plan (e.g., sample, data collection and analysis method), the timeframe for tasks within the evaluation, and the associated costs of conducting the evaluation. Finally, a contract is developed which serves as the communication tool for negotiating the scope and details of the evaluation with the client. The contract incorporates the evaluation plan, outlines the intended stakeholder involvement and access, and identifies deliverables from the evaluation.
The contract serves as the primary communication tool for the Negotiation phase. In this phase, the evaluator and all relevant stakeholders meet to come to agreement on the parameters of the evaluation. Based on the outcome of this meeting, the contract is revised and finalized for signature.

In the Implementation phase, the evaluator puts the evaluation plan into action. This phase includes three non-linear steps: prepare instruments, work with data, and manage evaluation. The evaluator begins preparation for data collection by identifying available instruments or by
creating new instruments as outlined in the evaluation plan. Data are then collected relative to all evaluation questions. An iterative cycle of data collection, analysis, and synthesis is the hallmark of this phase. Additionally, the evaluator monitors the progress of the evaluation by managing the logistics related to such issues as accuracy of data, time, and costs.

In the final Presentation phase, the evaluator presents findings to two primary communities: the client and the professional community of evaluation practice. The findings from the Implementation phase are presented to various stakeholders during the Implementation phase, if required, as well as in a final presentation format. Finally, the process and outcomes of the evaluation are presented to various communities of practice. The complete model, including narrative guidance and tools, is provided in Appendix E.

**Major Differences Between Prior Drafts and Draft 3**

Based on feedback on Drafts 1 and 2 from the expert review panel, primary revisions of Draft 3 included transferring the initial information-gathering responsibility from the evaluator to the client via a standard questionnaire, clarifying the evaluation priorities (including a project management aspect in the Implementation phase), representing the iterative nature of various steps on the graphical representation of the model, and simplifying the model’s title.

**Transferring Initial Data-Gathering Responsibility from the Evaluator to the Client**

Draft 2 of the model required the evaluator to conduct extensive data collection and analysis prior to creating a formal evaluation plan and contract. Specifically, the evaluator had to clarify the problem or opportunity statement with the client, outline the identified causes of the problem, document the proposed solution components, document and compare the proposed solution components with those actually implemented, and identify other change initiatives that could potentially impact the success or failure of the solution. Feedback from the panel review indicated that since this work was being completed prior to a signed contract, it was not billable, and therefore should be minimized. However, ensuring the quality of the information gathered at the outset of the evaluation is critical because it enables the evaluator to create an accurate evaluation plan.

To address these two concerns, I made two changes in Draft 3. First, I combined the *conduct evaluation analysis* and *create proposed evaluation plan* steps from Draft 2 into a single phase, Preparation, in Draft 3. This combination is possible because I also designed a data
collection tool (i.e., the Initial Analysis Questionnaire) to transfer initial data collection responsibility from the evaluator to the client.

The Initial Analysis Questionnaire (IAQ) includes questions related to identification of the initial problem or opportunity, rationale for why this particular intervention was chosen, what the expected outcomes were, and what changes have occurred in the environment. The client gathers the requested information and returns the completed questionnaire to the evaluator. The evaluator’s work does not begin until the completed IAQ is returned, thereby diminishing the upfront time prior to the creation of the contract. When the client requests the evaluation, it is suggested that the IAQ be forwarded to the client electronically. This allows the client to gather the necessary data in order for the evaluator to create the evaluation plan. The initial data collection impetus is on the client.

When the IAQ is received from the client, the evaluator begins working on the evaluation plan and related contract. It is anticipated that further discussion will be needed to clarify issues or to gather additional necessary details. Depending on the information needed, the questions can be sent back to the client, or a face-to-face meeting may be required to efficiently gather any missing information.

Clarification of Evaluation Priorities

The expert panel also indicated that the model did not provide sufficient guidance to help clarify the purpose of the evaluation. To overcome this deficit, I created four evaluation zones. These zones represent four areas of priority that the evaluation may focus upon: society, organization, unit, and process.

The evaluation zones, including definitions and examples of typical measures, are included with the IAQ and the client is asked to rank them in order of importance related to their particular evaluation requirements. Based on the client’s response to this question as well as the client’s deadline for the evaluation and the availability of measures, guidance is given to the evaluator as to what evaluation zones should be included in the evaluation plan and what general questions are related to each zone.

Inclusion of Project Management Guidance in Implementation Phase

Based on my reflection of the work required in implementing the evaluation plan, I added manage the evaluation as a separate task within the Implementation phase. The purpose of this addition is to emphasize the importance of the project management tasks that take place during
data collection, analysis, and interpretation. The evaluation plan serves as a project management tool.

**Graphical Representation of Iterative Nature of Phases**

Based on panel feedback and my own reflection on the tasks within each phase, I added dotted lines to represent the iterative nature of the actions between phases. For example, major changes or unanticipated outcomes from the Negotiation phase may require that the evaluator gather more initial data or revise the evaluation plan. Likewise, when working with the data in the Implementation phase, findings from the data analysis may require that the contract be renegotiated. Feedback from the stakeholders during interim or final presentations may necessitate further data collection or even renegotiations of the evaluation contract.

**Simplification of Title of the Model**

The final major change was to simplify the model’s title to de-emphasize the human performance technology process. In Drafts 1 and 2, the model focused heavily on a thorough analysis of the HPT process used to select and implement the solution. In Draft 3, this process task is only conducted when the client indicates that the process evaluation zone is a priority for their evaluation. Thus, a more encompassing title better represents the general nature of the evaluation model.

**Pilot Test of Draft 3**

In order to examine the effectiveness, efficiency, and usefulness of Draft 3 of the evaluation model, I employed it in a case study to evaluate the impact of a performance intervention within an organization. In this section I present an overview of the case study, a description of the evaluator and data collection tools used, and a description of how the model was employed in the case study. I then present findings from the case study and an overall summary of the effectiveness, efficiency, and usefulness of the Draft 3 of the model based on usage in the case study.

**Overview of Case Study 1**

Three criteria guided my selection of this project: (a) the implemented intervention was of a small enough scope to allow one person to complete an evaluation within approximately one month; (b) the organization would allow use of the data collected from the evaluation as part of a research study and (c) the evaluation could commence within a short timeframe and allow immediate access to data sources. Based on these criteria, an evaluation was requested from the
purchasing and facilities manager of a state government agency, to determine the impact of a
document imaging system on the purchasing and facilities function and the agency.

The document imaging system is an electronic, searchable library of images. Main
features of such a system include a central repository for documents, document version control,
and reduced printing and document dissemination costs. An identified opportunity for
improving performance led to the selection of the document imaging system. A similar system
had been fully implemented within another state department. That department had recognized
significant performance improvement agency-wide.

Benchmarking the other department’s success, my case study agency reviewed the
features of the document management system and identified the purchasing and facilities
function (a subgroup within the agency) as the initial implementation area. The expected
outcomes from implementation of the system within the function included a reduction in time
required to generate a purchase order, a reduction in costs associated with production of purchase
orders, and reclamation of space because use of the imaging system would allow paper copies of
purchase orders and related back-up materials to be discarded.

Additionally, the imaging system was implemented within the finance and accounting
function and was expected to positively impact the time and cost required to generate vouchers
and payment information as well as increase available space in the finance and accounting
function since hard copies could be destroyed. When fully implemented, all employees within
the agency would have the ability to view purchase order and voucher related information.

Besides the two above-mentioned groups (i.e., the purchasing and facilities function and
the finance and accounting function), a pilot group within the agency (the child support group)
also had access to the document imaging system. For this pilot group, it was anticipated that
access to the system would significantly reduce the amount of time needed in researching
purchase order and voucher related information in order to reconcile monthly financial records.

The Evaluator

I served as the evaluator in this case. I had conducted two evaluations prior to this study
and had completed two courses directly related to evaluation, one in the area of program
evaluation and the second in qualitative evaluation. I was familiar with the HPT process, having
taken several courses in this area and having taught an introductory course on the analysis
process. Additionally, I had over ten years of experience related to areas of the HPT process,
including problem identification, cause analysis, solution selection and design, implementation, and evaluation.

**Data Collection Tools**

In preparation for collecting data regarding use of Draft 3, I prepared an evaluation log to track tasks related to each phase and task times for each phase. Additionally, I maintained a journal throughout the evaluation process, noting deficiencies in the model’s guidance as well as areas of strength in the model. Details from these instruments, as well as further reflections, are presented in detail in the Findings from Case Study section in this chapter. The evaluation process log, journal, and all products from this evaluation are found in Appendix F.

**How the Model was Employed in Case Study 1**

In this section, I describe how I used the model relative to each phase. Additionally, I highlight any areas I noted for modification related to use of the model.

**Preparation phase.** Using Draft 3 and beginning with the Preparation phase, I used the Initial Analysis Questionnaire (IAQ) as a communication tool to identify the scope of the evaluation in a face-to-face meeting with the client. The client and two stakeholders attended this initial meeting. One stakeholder was the manager of the finance and accounting function. The second was the person within the purchasing and facilities function who was responsible for the ongoing implementation of the document imaging system.

In the model, I propose forwarding the IAQ to the client initially, then following up to clarify details of the information. For this case study, I chose to use a face-to-face format to better assess the usability of the IAQ tool. I read each question to the group and elicited their responses, which I recorded with the IAQ tool. Use of the tool in this manner led me to realize a need to reorder several questions based on the logical flow of the conversation. I also modified the tool from a table format to a list of numbered questions. This allowed more usable space for writing responses.

A final modification to the instrument was to include a description of the evaluation zones within the body of the IAQ. The description includes a definition and example of each evaluation zone as well as typical measures for each zone. Originally this description of the evaluation zones had been included as an attachment to the IAQ. This proved somewhat awkward in managing the various pages of the questionnaire. Details of the changes I made as a result of this pilot test of Draft 3 are provided in the Findings section for this case study.
Following the initial meeting, I began the preparation of the evaluation plan. Using the model’s guidance, I began by reviewing the evaluation priorities the client had identified. Overall, related to moving from the client’s information to the creation of evaluation questions, I felt that sufficient guidance was not provided in the model. The client indicated her primary interest was the impact of the document imaging system on the purchasing and facilities function (unit) and on the program (organization) to which the function reports. In reflecting on the information provided, I attempted to identify specific evaluation questions for these two priorities. In this process, I noted that more specific guidance related to identifying direct and indirect measures of the intervention and relating these measures to specific evaluation questions would be helpful.

During the initial client meeting, action steps included the client locating various additional relevant documents. I followed up with the client to obtain organizational charts, information on the events which led to the implementation of the imaging system, purchase order process information, and contact information for identified stakeholders.

Upon identifying the evaluation questions, I began preparing a time schedule for the evaluation plan. I worked backwards from the client’s requested evaluation deadline. Realizing that as a sole evaluator, I would not be able to meet this deadline, I contacted the client to ascertain the firmness of the specified date. I was able to modify the date to accommodate my suggested timeframe.

In preparing the budget, I researched the pricing schemes of vendors currently contracting with the agency to conduct similar work. I selected the lowest pricing scheme, relating this to my novice level as an evaluator. The pricing scheme reflected my role as an external evaluator and included costs related to services, resources, travel, and equipment. Based on the completed evaluation plan, I generated a contract and agenda for the negotiation meeting.

**Negotiation phase.** Moving to the Negotiation phase, I contacted the client, requesting a meeting in which to negotiate the evaluation specifics and contract. I forwarded the agenda, evaluation plan, and contract to the client and requested information on which stakeholders would be in attendance at the negotiation meeting.

The negotiation meeting included the client, one stakeholder, and me. The stakeholder present was from the purchasing and facilities function and was involved in the implementation of the imaging system. One minor change I immediately noted in reviewing the agenda and
contract was that the order of agenda items to be discussed did not follow the order of items in the contract. Since the contract naturally served as the communication tool, I modified the agenda to follow the order of items in the contract.

The client noted two items missing from the contract: (a) mention of confidentiality issues, and (b) standard verbiage required by the state agency. Additionally, the client identified information I had misstated related to the chronology of the solution selection and implementation. She agreed to review the historical information and provide me with a corrected chronology. The client and stakeholder both were in verbal agreement with the terms of the contract, which included the evaluation questions, data collection and analysis plan, budget, schedule, and reporting requirements.

Implementation phase. The evaluation plan served as a checklist for the implementation phase. Specifically, the plan included the following evaluation questions:

1. What was the impact in terms of time, cost, and space of the imaging system on the purchase order process, the warrant and voucher process, and on the document searching process for the pilot user group?
2. What was the impact in terms of time and cost of the imaging system on the technical support infrastructure for the administrative program?
3. What was the impact in terms of standard program productivity measures of the imaging system on the administrative program?

To collect data relative to these questions, I interviewed users of the imaging system on their frequency of usage, training on the system, and perceptions. Additionally, I observed users while they completed tasks on the imaging system. Finally, I conducted reviews of extant data related to the imaging system’s impact on outputs.

In order to familiarize myself with the document management system, I first reviewed the online training and user’s manual for the system. Additionally, I logged into the system and reviewed the screens and reports available within the system. I then conducted an observation of the scanning and indexing process within the purchasing and facilities function. I documented the steps of the process undertaken, as well as time on each task. I reviewed my documented process with the person I had observed to validate that I had documented the process accurately.

I then began interviews with the child support group and the finance and accounting function. After three interviews with the child support group, one interview in the finance and
accounting function, and one observation session in finance and accounting, it became evident that the imaging system had not been implemented to the extent indicated by my client. While the system had been fully implemented within the purchasing and facilities function, it was evident that sufficient time had not elapsed to assess the full impact of the system on performance within both the finance and accounting function and the child support group.

I requested a meeting with my client and stakeholders from these two groups to present these findings and renegotiate the scope of the evaluation. The client, two stakeholders from the purchasing and facilities function, and one stakeholder from the finance and accounting function attended. I presented the findings in a face-to-face format, focusing on the lack of availability of data in the finance and accounting function and the fact that the child support group relied heavily on data from the finance and accounting function. Since the data were not yet available, I proposed that the evaluation scope be narrowed to eliminate questions related to the child support group and the finance and accounting function. Additionally, I suggested that the final report would include a proposed timeframe for the evaluation related to these two groups.

The client and stakeholders agreed with the provided information and agreed to the narrowed scope. The resulting questions for the evaluation were:

1. What was the impact in terms of time, cost, and space of the imaging system on the purchase order process?
2. What was the impact in terms of time and cost of the imaging system on the technical support infrastructure for the administrative program?
3. What was the impact in terms of standard program productivity measures of the imaging system on the administrative program?

The client indicated that if the evaluation were actually being contracted, as opposed to a research study, she would have renegotiated the cost. However, we did not discuss details of this renegotiation.

As a modification to the model, I documented that the Preparation phase should be enhanced to include guidance on how to determine if an evaluation can be conducted. In this case study, I did not identify that the solution had not been fully implemented until I was deep into data collection in the Implementation phase. Had I asked more specific questions in the Preparation phase related to the degree to which the intervention had been implemented in each
of the areas to be evaluated, I could have potentially saved the time I spent in detailed data collection.

The evaluation plan served as an excellent checklist to manage the evaluation process. I referred to it frequently throughout the Implementation phase to verify that I had addressed all evaluation questions and had followed the intended data collection and analysis methodologies.

I identified two specific problems within the Implementation phase that went against the suggested guidance of the model. When the imaging system had been implemented within the purchasing and facilities function, no system had been put in place to capture measures related to usage. Given this situation, I was not able to triangulate my data sources to a degree that I felt brought the evaluation to a rigorous level. I added narrative guidance to the model to note such limitations and their potential impact in the presentation of findings.

Also in Draft 3 of the model, I had suggested that all instruments be piloted and tested for reliability and validity when possible. In collecting data related to usage of the imaging system, I did not use a sample because the entire population consisted of eight purchasing agents. Because the population size was so small, I chose to use a semi-structured interview technique in which I interviewed the first agent, modified the instrument according to the conversation, and then continued to the next agent. As the questions were modified, I returned to agents I had previously interviewed to ask them any additional questions I had identified. While I did not feel this was an ideal method to pilot the instrument, the value of collecting data from the entire population outweighed the problems I expected from a poorly constructed interview instrument. I modified the model’s narrative to instruct the evaluator to pilot all instruments when possible. I also noted in the model that in situations such as mentioned above, the instruments should, at minimum, be reviewed by a fellow evaluator or practitioner.

Presentation phase. In this final phase, I used both a face-to-face presentation and written report format to present the findings. The evaluation client and one other major stakeholder, who would make the decision on any future usage or modifications to the intervention, were both present. I began by providing an overview of the document imaging system and the evaluation methodology. I then presented each evaluation question, the collected data, and the interpretation of the data relative to each question. I concluded the presentation with seven recommendations based on my findings from the evaluation. The recommendations included the completion of the scanning process of all finance and accounting function documentation,
Findings from Case Study One

Based on use of Draft 3 of the model in the manner described above, I identified six major modifications to the model. The majority of these changes were to the Preparation phase of the model. The changes and rationale are explained in detail in this section.

Modification One: The Initial Analysis Questionnaire (IAQ)

The IAQ tool was developed to transfer the majority of the initial information gathering responsibility from the evaluator to the client. The tool is intended to be electronically forwarded to the client upon request for the evaluation. However, the format of the IAQ used in Draft 3 proved to be awkward. It was originally formatted as a three-column table, with columns for the question, the response, and contract information relative to each question. Besides being difficult to use as a table in the software application, I considered that clients might prefer to write their answers by hand. A simple list of questions was more user-friendly for both electronic and handwritten use. Additionally, I improved the logical organization of the questionnaire by dividing it into two separate categories of performance intervention information and evaluation requirements. I also reordered the questions based on the logical flow of the conversation with the client during the initial meeting. A final change to the tool was to incorporate the evaluation zones information as part of the related questions within the tool. Originally the evaluation zones were provided as a separate sheet at the end of the tool. This proved difficult in managing the paper. Also related to the evaluation zones, I modified the unit zone to require the client to define unit in terms of their organization. As an evaluation zone, a unit may refer to an entire department, a work team, or an individual.

Modification Two: Guidance on Identification of Direct Versus Indirect Measures

In moving from the client’s provided information on the IAQ to the creation of evaluation questions, I felt that more support was needed in the model’s narrative to help focus the
evaluation questions. I added guidance on identifying direct versus indirect measures and the 
implications of each in refining the questions. For example, a direct measure of the impact of the 
use of a document management system would be a report on system usage by the user. An 
indirect measure would be time to complete a purchase order before, versus after, the 
implementation of the document management system.

Modification Three: Guidance Related to Determining If and When an Evaluation Should Occur

In implementing the evaluation plan of the document imaging system, it became evident 
that the client felt that the solution had been implemented to a degree greater than what was 
actually the case. Had I asked more detailed questions related to this in the Preparation phase, I 
could have conserved time spent in data collection. Additionally, time would have been saved 
related to meeting with the client to determine her agreement to narrowing the scope of the 
evaluation. In light of this, I decided to provide further guidance related to criteria for deciding 
if an evaluation is possible, and if so, to what degree. I also added guidance related to offering 
the client options for a future evaluation if the intervention has not been fully implemented.

Modification Four: Changes to Agenda and Contract Template

The agenda meeting template provided for the negotiation meeting should follow the 
same item order as the contract or vice versa. Since the contract served well as a communication 
document for the meeting, I modified the agenda template to match the contract item order. 
Based on the client’s observation, I also added guidance related to including confidentiality 
statements as part of the contract and to soliciting any specific verbiage required by the hiring 
agency as part of the contract template.

Modification Five: Guidance Related to Stating Limitations in Data Collection

Two issues arose in the Implement phase that I felt should be better addressed in the 
model. The first issue related to the impact of a small population on the ability to pilot 
instruments. The population of agents within the purchase and facilities function consisted of 
ine individuals. With such a small population, because I did not want to lose data from one 
member of the population in order to pilot the interview protocol, I used a semi-structured 
interview technique to allow for ongoing modification of the interview instrument. My process 
was to create the initial interview instrument and conduct each interview noting any changes to 
the instrument. If questions were changed or added, I returned to prior interviewees to ask these
additional questions. I added a description of this technique to the model as a means of dealing with small population sizes.

Secondly, in Draft 3 of the model, I placed a strong emphasis on the triangulation of data for each evaluation question. In the case study, although I made repeated attempts to identify multiple measures for each question, I was unable to do so. This was due in part to the fact that the solution had not been fully implemented. In light of this situation, I added guidance in the model, emphasizing that if data triangulation cannot take place, all presentations of findings should clearly state this limitation. This is highlighted in both the Implementation and Presentation phases.

Modification Six: Increasing Details on Graphical Representation of Model

During the expert review, panel members had suggested using a layered approach to providing information. After this case study, I decided to follow this suggestion by adding one additional level of detail on the graphical representation of the model. Draft 4 of the model includes a fairly detailed graphical representation, narrative step-by-step guidance for each phase, standard templates for collecting, organizing, and presenting data for various steps, and detailed help related to specific areas within the model.

Effectiveness, Efficiency, and Usefulness of the Model

The purpose of employing Draft 3 of the model to conduct an actual evaluation was to gather data to formatively evaluate the model’s effectiveness, efficiency, and usefulness. Related to effectiveness, I was primarily concerned with whether use of the model allowed the evaluator to determine the degree to which the performance gap was closed. Also of interest was the identification of any benefits or limitations related to using the model. I was unable to collect data related to one of the originally stated criteria (i.e., does use of the model provide information about the thoroughness of each phase of the human performance technology process?). Drafts 1 and 2 of the model required a thorough analysis of the process that led to the solution being evaluated. However, in Draft 3, this information is only collected if a process evaluation zone is identified by the client as an evaluation priority. The process zone was not selected as a priority in this case study.

To determine the effectiveness of the model, I relied heavily on my reflections on the evaluation process and my use of the model in the case study. I maintained a journal for each phase relative to the tasks I had undertaken and recorded my reflections on the support the model
provided in conducting each task. I also reviewed documentation from the evaluation which included the Initial Analysis Questionnaire, the evaluation plan, the contract, and the final report and presentation.

In reflecting on the effectiveness of Draft 3, I determined that use of the model provided sufficient guidance to identify if the performance gap was closed. Specifically, by using the Initial Analysis Questionnaire and the synthesis processes outlined in the narrative guidance of the model for the Preparation phase, I was able to quickly identify evaluation questions appropriate to the priorities identified by the client. The narrative guidance helped to identify appropriate measures for each question. This led to the creation of a thorough evaluation plan. The plan was useful as a project management and a focusing tool throughout the entire evaluation.

Regarding the model’s efficiency, I collected time and cost data relative to the evaluation. The intent of the formative evaluation criteria for stating times and costs was to compare these to times and costs from other evaluations using different evaluation models. While the times and costs are reported here, they cannot be compared to other similar evaluation models at this point. This issue is discussed in detail in the Discussion section of Chapter Five.

The total time required to conduct the evaluation was 176 hours. The times for the various phases were 27 hours (Preparation phase), 4 hours (Negotiation phase), 118 hours (Implementation phase), and 27 hours (Presentation phase). It should be noted that the Presentation phase is not complete at the time of this discussion since a presentation to the community of practice has not yet been undertaken. However, the time required to make this presentation most likely should not be considered part of the time necessary to conduct the evaluation.

The total cost of the evaluation was $14,960. This amount is based on 176 total hours multiplied by a rate of $85 per hour for one evaluator. To identify an appropriate hourly rate, I reviewed the contracts from five similar consulting groups that were currently conducting business with the state agency. I selected the lowest individual rate ($85 per hour), based on my relative experience in evaluation. This rate reflects the cost of professional services, travel, and resources.

With regard to the usefulness of Draft 3 of the model, I was interested in such criteria as how difficult the model was to use, barriers to its use, the evaluation clients’ perceptions of the
usefulness of the information resulting from the evaluation, and how intuitive the representation of the model was to the evaluator. To gather information related to this final criterion, I further reflected on my use of Draft 3. Also, I interviewed the evaluation client to ascertain her perception of the thoroughness of the evaluation and the usefulness of the findings.

Related to ease of use, the step-by-step nature of the tasks within each phase provided an easy-to-follow process for conducting each phase. Additionally, the evaluation plan was thorough enough to provide guidance in the Implementation and Presentation phases. The Initial Analysis Questionnaire was difficult to use, as noted in the previous section. However, the changes mentioned should provide better organization that will contribute to its ease of use. I did not note any barriers to using Draft 3 of the model.

To ascertain the client’s perception of the usefulness of the resulting findings of the evaluation, I interviewed the client one week following the presentation of evaluation findings. Overall, the client stated that she was quite pleased with the rigor of the evaluation, especially since no direct measures had been available.

One finding surprised the client related to the time required to produce a purchase order. A stated goal for the purchasing and facilities function was to produce a purchase order in five days or less, on average. Due to delays on two initiatives related to creating standard performance measures for the function, this goal had not been measured for two years. However, the client had intuitively believed that the function was meeting this goal. In an attempt to identify indirect performance data to answer the evaluation question related to time required to process a purchase order, I documented the process time during a six month period prior to implementation of the imaging system and a six month period after implementation of the imaging system. The time required to process a purchase order decreased from 10.4 to 7.03 days on average. I emphasized that this was not a direct measure of the impact of the system and that there could be multiple causes for the decrease in time. While being pleased with this finding related to the imaging system, the client was surprised to learn that the function was not meeting the stated five-day goal.

The client indicated her satisfaction with the clarity of the reporting overall and especially with the fact that the limitations related to lack of direct measures were clearly stated in the report. I asked her if she or others within the agency would use the evaluation findings. She stated that a newly legislated, statewide intervention related to outsourcing the purchasing
process had just come under discussion and was a major focus for the agency and especially the purchasing and facilities function. She indicated that the evaluation report would be used as a basis for upcoming discussions related to the need for expansion of the document imaging system in light of the outsourcing option.

I further queried the client as to anything she thought should have been done differently in the evaluation process. She indicated that she would like to have seen an implementation plan included with any recommendations presented in the final evaluation report.

At my request, the client also agreed to participate in writing an article related to presenting the evaluation process, outcomes, and lessons learned to the community of interest. This activity will take place in the near future and is beyond the scope of this study.

Draft 4 of the Evaluation Model

Incorporating the changes outlined above resulted in Draft 4 of the model, which can be seen in full in Appendix G. In the following sections I provide an overview of Draft 4 and highlight the major differences between this draft and previous versions of the model. I then discuss the details of a pilot test of Draft 4. This discussion includes an overview of a second case study, a description of the evaluators and data collection procedures, and a discussion of how the model was employed in the second case study. I then identify findings from the case study and the resulting modifications to the model. The chapter ends with a discussion of the effectiveness, efficiency, and usefulness of Draft 4.

Overview of Draft 4

Draft 4 leads the evaluator through four phases: Preparation, Negotiation, Implementation, and Presentation. In the Preparation phase, the evaluator uses the initial client contact as an opportunity to gather initial information about the evaluation and the intervention via the Initial Analysis Questionnaire (IAQ). Follow-up clarification is conducted as needed, based on the information provided on the questionnaire. Information from the IAQ tool is synthesized in order to develop an initial evaluation plan and to create the initial contract.

In the Negotiation phase, initial meeting preparation includes the creation of an agenda and scheduling of the negotiation meeting. The contract serves as a communication tool during the negotiation meeting, guiding the stakeholders through various aspects related to the parameters of the evaluation, such as the evaluation questions to be addressed, the plan for data collection and analysis, securing access to data sources, stakeholder involvement, the timeframe
for the evaluation, the cost of the evaluation, expected deliverables, and contingencies. Based on the outcome of the meeting, the evaluation plan and contract are revised for final sign-off by the client.

The Implementation phase begins with a review to determine which instruments are available and can be leveraged for reuse and which instruments will need to be developed. All instruments then go through a piloting and revision process as necessary. Based on the evaluation plan, data are then collected and analyzed. The evaluator seeks to synthesize the data in order to create meaning. The evaluation plan serves as a project management tool, assisting the evaluator in monitoring the progress of the evaluation.

In the final Presentation phase, findings are disseminated to two audiences, the client and communities of practice. If needed, presentations are made to the client during the Implementation phase. At the completion of the data collection, analysis, and interpretation process, a formal presentation is given to the client. The evaluation is not considered complete, however, until the evaluator presents to the community of practice. This presentation relates to methodology of the evaluation, outcomes, and lessons learned.

Guidelines for coordinating all of the aforementioned steps are contained in the narrative guidance in Draft 4 (see Appendix G). Additionally, templates are provided for various steps within the four phases (see Figure 4.2). The entire model is available in Appendix G.

Major Differences Between Draft 3 and Draft 4

The major differences between Draft 4 and prior drafts are due to the changes made based on the six major findings outlined previously in the Findings from Case Study One section of this chapter. These modifications are (a) the Initial Analysis Questionnaire, (b) guidance on identifying direct and indirect measures, (c) guidance on identifying if and when an evaluation should occur, (d) changes to the agenda and contract templates, (e) guidance related to stating limitations in data collection, and (f) providing more details on the graphical representation of the model.

Pilot Test of Draft 4

As mentioned in earlier in this chapter, I used Draft 3 of the model to conduct an evaluation in case study one. One shortcoming of that study lies in the fact that I served as both evaluator and developer of this model. As such, it is likely that I had a greater understanding of the model than would most evaluators who may not have seen the model before attempting to use it.
overcome this problem and to gather data related to the effectiveness, efficiency, and usefulness of the model, Draft 4 was then utilized in a second case study by an independent evaluator to guide his evaluation process. In the following sections, I present an overview of the second case study, a description of the evaluator and data collection procedures, and a description of how the model was employed in the case study. I then present findings from the case study and an overall summary of the effectiveness, efficiency, and usefulness of the Draft 4 of the model based on usage in the case study.

Two issues of note related to the two case studies are (a) both case studies took place within the same state agency and (b) there was overlap between the time the two case studies were conducted. However, even though both evaluations took place within the same agency, there was no evaluation-related interaction between the clients of the two evaluations.

While ideally the second case study should have begun only after completion of the first study and resulting revisions to the model, constraints related to both case studies prevented this situation. In the first case study, the timeframe had to be lengthened due to data collection efforts and a personal commitment on the part of the evaluation client. In the second case study, the evaluation had a short timeframe for completion due to the need to make a decision on the renewal of a contract without a break in services.

Overview of Case Study 2

Data were collected on the Draft 4 of the model via a second case study. In selecting a second case study, the primary criterion was that an evaluator would be available and willing to use the model to conduct the evaluation. The remaining criteria were identical to the first case study: (a) the implemented intervention was of a small enough scope to allow an evaluation to be completed within approximately one month, (b) the organization would allow use of the data collected from the evaluation as part of a research study, and (c) the evaluation could commence within a short time frame and allow immediate access to data sources.
Phase 1: PREPARATION

- **Initial Client Contact**
  - Distribute Initial Analysis Questionnaire (IAQ)
  - Clarify Information

- **Develop Evaluation Plan**
  - Synthesize
  - Create Initial Plan

- **Develop Contract**
  - Create initial contract

Phase 2: NEGOTIATION

- **Negotiate Contract**
  - Prepare agenda
  - Schedule meeting
  - In negotiation meeting, agree upon...
    - Evaluation question
    - Data collection/analysis plan
    - Budget / timeline
    - Access / involvement
    - Deliverables
    - Contingencies

- **Finalize Contract**
  - Revise evaluation plan
  - Revise contract
  - Obtain sign-off

Phase 3: IMPLEMENTATION

- **Prepare Instruments**
  - Leverage / Develop
  - Pilot / Revise

- **Work with Data**
  - Collect
  - Analyze
  - Reflect

- **Manage Evaluation**
  - Monitor progress

Phase 4: PRESENTATION

- **Present Findings**
  - To Client(s)
    - Interim (if necessary)
    - Final
  - To Community of Practice
    - Journal Articles
    - Conference Presentations
    - Discussion Forums

Performance Intervention Evaluation Model
Draft 4
* Template available
Figure 4.2
In this study, an evaluator used Draft 4 to guide the evaluation of the impact within a state agency of a suite of electronic courses. The purpose of the evaluation was to determine the future status of an ending contract for the suite of electronic courses that had been available to all employees within the agency for the past three years. Based on the findings from the evaluation, a decision would be made to renew the contract as it existed, renew the contract with modifications, or not renew the contract.

A specific focus of the suite of courses was on technical knowledge related to computer applications. The courses covered such general applications as Microsoft Word® and Excel®. It also included courses related to specific technical programs such as Java and Visual Basic programming. The suite of courses had been selected in an attempt to address an agency-wide initiative to increase the technical knowledge of the agency’s employees. In selecting the suite, an interdisciplinary group had evaluated various off-the-shelf courses using such criteria as diversity of courses, quality of content, and cost. In selecting this suite, they determined that use of electronic courses would allow for point-of-need training, would reduce travel costs and training costs, reduce overall training time, and would increase consistency of learning due to the same material being delivered to all learners.

The courses were available to all employees of the agency via the agency intranet. As such, access to the course was only available within the agency’s internal web infrastructure. Related to incentive to complete the courses, an employee, in conjunction with his or her manager, creates a personal development plan that serves as a planning and communication tool for individual performance assessment. Employees are encouraged to include completion of electronic courses as a part of this plan.

The Evaluator

The internal evaluator in case study two was the training manager in the administrative support program and was responsible for the coordination of training activities for the entire agency. He had been at the agency in a training capacity for eleven years. The evaluator had nearly thirty total years experience in the area of training and held a degree in instructional systems.

Although he estimated that he had conducted approximately twelve needs assessments and evaluations, the evaluator considered himself to be a novice evaluator based on the fact that he conducted evaluations infrequently and had only taken two courses related to evaluation. He
had completed a program evaluation course which provided overviews of various evaluation models and issues. Additionally, he had completed a qualitative evaluation course that had required him to conduct an actual evaluation of an organization within the community.

I further queried the evaluator as to what models had guided his past evaluations. He noted that Thomas Gilbert’s behavioral engineering model (Gilbert, 1995), Roger Kaufman’s organizational elements model (Kaufman, 1998), and Michael Patton’s utilization-focused evaluation model (Patton, 1997) had all been instrumental in his practice in past needs assessments and evaluations.

Because he had mentioned both needs assessment models as well as evaluation models, I had some concerns that the evaluator did not make a clear distinction between a needs assessment and an evaluation. I asked the evaluator to describe the distinction, if any, he saw between evaluation and needs assessment. He stated that needs assessment is the front-end of the process, looking at the setting and comparing optimal performance to actual performance to determine a solution to improve performance. Evaluation, he stated, happens at the back end when you’ve completed a needs assessment, and asks did you achieve the desired result. However, there is often an overlap in that an evaluation reveals gaps and leads directly into a needs assessment, and a needs assessment often begins with looking back at desired achievement. For example, in his count of evaluations conducted, he included what he referred to as a court-ordered needs assessment. The situation he described, however, could be categorized as a program evaluation that was requested due to litigation. The results from the evaluation led to an additional proactive needs assessment. Based on the distinction he had just made between evaluation and needs assessment, I asked the evaluator to identify the number of evaluations he had conducted. He stated that he had conducted about ten to fifteen evaluations.

Although the evaluator considered himself to be a novice evaluator, I would consider him to be more advanced because of the experience he had over his career. I did think that he was a good candidate for use of the model and would provide insight, especially related to the effectiveness of the model. However, because I did not think he was a novice evaluator, his perceptions related to the usefulness of the model for novice evaluators must be viewed with some caution.

The evaluator utilized various members of his staff throughout the conduct of the evaluation. Including the primary evaluator described above, the evaluation team included four
persons in total. Team member one (hereafter referred to as intern) was an intern in the unit who had not conducted any evaluations prior to this study. He was tasked with the creation of the survey instrument used in the Implementation phase and with helping in the analysis of the collected data. Team member two (database specialist) was a full-time employee within the unit who specialized in database maintenance. He was tasked with collecting data from the electronic course suite database. Team member three (SME) was a member of an internal computer-based training (CBT) work team and served as a subject matter expert on computer-based training and helped in analysis and interpretation of data collected during the evaluation. The primary evaluator managed the evaluation process, assigned tasks, and was responsible for the primary analysis and interpretation of the collected data.

Data Collection Procedures

As researcher, I interacted with the evaluator at two points during use of the model: at the completion of the Preparation phase and at the completion of the Presentation phase. Besides these two interview points, I reviewed the documents created through use of the model and the formal reports prepared as part of the evaluation process. Additionally, I interviewed stakeholders of the evaluation regarding the usefulness of the findings and their satisfaction with the evaluation. All documentation related to the evaluation can be found in Appendix H.

How the Model Was Employed in Case Study 2

In the next sections I describe how Draft 4 of the model was used in this case study. I begin by outlining the measures taken to ensure that the evaluator had a sound understanding of the model and expectations prior to conducting the evaluation. Next, I discuss how the evaluator used the model in each of the phases. (It should be noted that the evaluator was also the evaluation client and as such, did not conduct a Negotiation phase.) I then describe my interactions with the evaluator following the Preparation and Presentation phases. Following this, I identify the findings from this case study, describe changes made to the model, and provide a rationale for the changes. Finally, I summarize findings related to the effectiveness, efficiency, and usefulness of Draft 4 based on its use in the case study.

Procedures to Ensure the Evaluator’s Understanding of the Model

Prior to conducting the evaluation, I met with the evaluator during two instructional sessions. The purpose of these sessions was to ascertain that the evaluator understood the model and its use relative to the evaluation. Prior to the first session, I forwarded to the evaluator the
graphic representation of the model, the narrative guidance, and the tools and templates for his review. I requested that he read them prior to our first session. In the initial session, we reviewed the Preparation phase. I asked him to describe the purpose of the phase and to verbally walk me through the steps involved, referring to the tools and guidance, as he felt appropriate. During the first session, the evaluator asked that I provide a rationale for the questions related to change initiatives in the synthesis task in the Preparation phase. I explained why each question was included and documented that this explanation should be added to the narrative of the model.

Additionally, the evaluator identified several terms that he felt to be beyond a novice level. These related to the data analysis section of the evaluation plan. He suggested that I provide a more thorough explanation with examples of such terms as nonparametric and inferential statistics. The total time spent in the first session was two hours.

We used the same strategy in the second instructional session, focusing on the Negotiation, Implementation, and Presentation phases. The total time for this session was three hours. We began by discussing the Negotiation phase in light of the evaluator’s role as the evaluation client. As such, he stated that no formal negotiation was needed. However, some of the issues related to access to data sources and stakeholder involvement were still pertinent to the evaluation team in planning the evaluation. This is an area for improvement in the model and is discussed further in the section on findings from the case study. We discussed the tasks to be completed in the Implementation and Presentation phases. From his descriptions, I determined that the evaluator had a thorough understanding of the processes outlined in the model.

We then discussed the products that would be created as part of the evaluation, and the research study itself, and my involvement in the process. Specifically, I asked that we meet at the completion of the Preparation phase and that the evaluator forward the Initial Analysis Questionnaire and his evaluation plan to me. I also requested that we meet again after the presentation of his findings and that he forward his evaluation reports to me prior to our meeting. I requested that he document time and costs related to each phase of the evaluation and that he maintain a log of any strengths and weaknesses related to use of the model.

Preparation phase. As both the evaluator and client of the evaluation, the evaluator began by completing the Initial Analysis Questionnaire (IAQ). On the IAQ, he outlined a needs assessment which had led to the selection of the computer-based electronic suite three years prior
to this evaluation. He also indicated that the priorities for this evaluation, ranked from most important to least important, were organization (i.e., What is the impact of the intervention on the organization into which it was implemented?), process (i.e., Could any areas of the process which led to the selection and implementation of this intervention be improved?), unit (i.e., What is the impact of the intervention on the units or individuals that are direct users of the intervention?), and society (i.e., What is the impact of the intervention on the community outside of the organization in which it was implemented?).

Additionally, on the IAQ, the evaluator identified sixteen strategic factors that were introduced during the lifespan of the intervention being evaluated. These included a new culture of strategic planning and process reengineering, a formal change management methodology, a newly elected governor and legislature, and a downturn in the state economy and tax revenues.

The evaluator then met with the evaluation team to discuss the appropriate evaluation questions to help determine if the contract should be renewed. It was determined that user perceptions related to satisfaction and learning, as well as data regarding course usage, would be collected. There were four specific questions to be answered by this evaluation.

1. What were the reasons, if any, for employees not registering for CBT courses?
2. What were the reasons, if any, for employees registering for courses, but not completing them?
3. Which were the courses the employees registered for the most?
4. What was the evaluation feedback from employees who completed the computer-based training (CBT) courses?

Based on this list of questions generated, the team then completed the data collection and analysis section of the evaluation plan (see the evaluation plan template in Appendix H). For questions one, two, and four above, the team chose to create an online survey instrument (see Appendix H) to collect data from the general population of the agency. They indicated that the data would be analyzed based on descriptive data and coding of open comments. For question three, information from the CBT registration and usage database was reviewed. The data analysis plan was to use descriptive data such as frequency of use and average usage.

According to the model, the next step would be to create a timeline and budget for the evaluation. Although the deadline for the evaluation was known (one month), the evaluator did
not create a timeline or budget for this evaluation. His reason for this is discussed later in the chapter.

**Negotiation phase.** The evaluator, as the evaluation client, did not complete the Negotiation phase. The model guides the evaluator in preparing a contract that outlines the information provided in the evaluation plan as well as other related issues, such as access to data sources, involvement by stakeholders, and contingency plans if the evaluation must be modified. The evaluator made the decisions from the evaluation plan as outlined in the previous section. He did discuss access to data sources and stakeholder involvement with his evaluation team. However, no formal negotiation or contracting process was undertaken for this evaluation.

**Implementation phase.** Next, the evaluator began the Implementation phase. The timeframe for the completion of the evaluation was one month, requiring an aggressive data collection and analysis effort. To answer evaluation questions one, two, and four related to how many had registered for the courses, why courses were not completed, and overall comments on the courses, an online survey format was used.

The intern created three separate surveys related to the user groups of (a) those who never accessed any courses, (b) those who accessed courses but did not complete them, and (c) those that completed one or more courses. The survey questions were reviewed by the SME and revisions made prior to dissemination. The samples for the three surveys came from the database of potential users, which included all employees within the agency. Prior to survey dissemination, the evaluation team generated a hypothesis for each evaluation question. The hypotheses reflected the anticipated codes from the data (see the final report in Appendix H). The surveys were disseminated electronically and data were analyzed using descriptive statistics to provide percentages for each response category. Simultaneously, the database specialist reviewed the CBT usage database to determine which courses had most registrants and which had the highest completion rates. The data were summarized in terms of number of students and costs.

Upon completion of data collection, two software applications were used to aid in the analysis process. SPSS was used to generate tables and graphs from the survey data. Nud*ist was used to code the open comment questions related to general feedback on the courses. The questions were coded based on the hypothesis made for each survey question asked (see the final report in Appendix H).
Following the completion of data collection and analysis, the entire team met to discuss possible interpretations of the findings and to identify any recommended actions based on the data. The overarching question for this evaluation was whether the CBT contract should be renewed as is, renewed but modified, or canceled. Answering this question was the focus of the interpretation process.

**Presentation phase.** The findings from these data collection, analysis, and interpretation efforts were translated into a formal report consisting of an executive summary, introduction, data collection methodology, findings relative to each question, and recommendations. The findings were presented to the CBT work team in written form. A handout of the results was provided to each stakeholder.

The final report presents each evaluation question with related survey questions, hypotheses, and data. Following the presentation of the findings, recommended actions are stated. The recommendation from the evaluator was that the agency renew the contract but modify it to include only the courses identified as being in high demand by current users. Additionally, the evaluator recommended that the courses be offered over the agency’s intranet. A final recommendation from the evaluation was that further data be collected regarding the potential CBT users’ concern with lack of time to complete courses within the work environment. The report is available in full in Appendix H.

**Researcher/Evaluator Interaction Following Preparation and Presentation Phases**

As indicated earlier in the data collection procedures section, I interacted with the evaluator at two points during his evaluation: following completion of the preparation phase and completion of the presentation phase. Upon completion of the preparation phase, the IAQ and the evaluation plan were forwarded to me. Review of these documents revealed four major areas of concern. These concerns were:

1. Did the evaluator actually use the model to guide the evaluation, and if so, to what extent did he use it?
2. If the evaluator did use the model, why were the evaluation priorities indicated on the IAQ not the same as those of the actual evaluation?
3. Why was investigation of the impact of the change initiatives mentioned on the IAQ but not included in the actual evaluation?
4. Were the questions included in the evaluation the most appropriate questions based on the evaluation priorities?

First and of major concern, I was unsure of the degree to which the evaluator had actually used the model to guide his evaluation. My concern was based on a general lack of impact of the evaluator’s IAQ on his evaluation plan and a lack of completion of the entire evaluation plan. Evidence of use (or nonuse) of the model during the preparation phase can be based on the IAQ, the evaluation plan, the negotiation meeting agenda, and the contract. In reviewing the IAQ, it appears that the document was completed but then had little to no impact on the creation of evaluation questions. The evaluation plan was only partially completed. And due to the evaluator being the owner of the evaluation, no negotiation agenda or contract was created.

I suggest that there are two possibilities related to this concern. Either the model was not fully used or use of the model did not have the intended impact on the creation of the evaluation plan. To help identify which concern was the reality, I met with the evaluator upon completion of the Preparation phase. Prior to the meeting, I reviewed the completed IAQ and the evaluation plan. I then queried the evaluator regarding my above concerns on use of the model and its impact on his practice.

Specifically, I asked the evaluator how often he referred back to the model. He stated that he had referred to the model about ten to fifteen times during the Preparation phase. He indicated that it was most helpful during the discussions in refining the evaluation questions because it led the evaluator through a refining process. He stated that the evaluation team brainstormed potential questions and used the proposed process in the model narrative for refining them into the resulting four questions. He also indicated that the model provided valuable cues as reminders of good practice. The evaluator stated that a question had been added to the survey based on prompts from the model.

Also of concern related to the degree to which the model was employed was that the evaluation plan provided to me by the evaluator was incomplete. It included the evaluation questions and details regarding data collection and analysis for each. However, the schedule and budget sections were not included. Additionally, the master coding scheme was also not included, although it is considered optional, depending on the data analysis plan. Since the timeframe for the evaluation was very tight (one month), I considered the schedule to be a very important project management tool for this evaluation.
I questioned the evaluator regarding these concerns. Related to the schedule and budget, he stated that again he just did not have time to complete this portion. The agency did not require any kind of monetary tracking or reporting for the conduct of the evaluation. Moreover, he stated that since time was the biggest constraint, he did not create a budget.

Regarding the evaluation schedule, I asked the evaluator how he had determined when each of the data collection measures should be undertaken. He stated that there were really only two tools or measures used, the CBT usage database and the online survey. These were done simultaneously and immediately upon identification of the evaluation questions. Since the timeframe was so short, he stated that he did not need a schedule to manage the process. I requested that he retrospectively account for the time and cost of conducting the evaluation, which he agreed to do.

Related to the second concern, if I assume that the evaluator was using the model to guide the process, then the model’s support is insufficient in linking the information on the IAQ with the creation of the evaluation plan. In reviewing the IAQ, the evaluator indicated that his evaluation priorities were ranked as (a) the impact of the CBT suite on the organization, (b) the process for selecting the CBT suite, (c) the unit (technical group), and (d) society. However, in reviewing the identified questions for the evaluation, I determined the actual priority to include only the impact on the organization and the unit, ranked respectively.

In my meeting with the evaluator, I queried him as to the relationship between the IAQ ranking of evaluation priorities and the actual evaluation questions. He stated that he completed the IAQ alone prior to the team meeting and that during the meeting they immediately started brainstorming evaluation questions. I asked if they had referred back to the IAQ during the meeting. He stated that they did not.

The evaluator stated that in retrospect, he felt that if he had required the group to complete the IAQ, the evaluation questions would have been directly related to the evaluation priorities indicated. He also stated that as the manager of the training function and the one responsible for selecting the CBT option three years prior, he was personally very interested in the process they had used for selection of this particular suite, and that was why he had selected process as his second evaluation priority. However, in the reality of making a decision about the CBT contract, he stated that the true priorities were organization and unit, given the limited time to conduct the evaluation.
My third concern was that sixteen change initiatives had been identified on the IAQ. In the narrative guidance of the model related to generating evaluation questions, the user is prompted to include questions specific to any change initiatives that may have impacted the success or failure of the intervention being evaluated. The lack of inclusion of any evaluation questions related to the impact of the various change initiatives that the evaluator indicated had taken place during the lifespan of the intervention indicated a need for clearer support in the model.

I asked the evaluator why no questions were included related to the initiatives. He indicated that time constraints didn’t allow the team to include any questions of this nature. He stated that he was very interested in the impact of the initiatives on the success of the courses and believed that many of the initiatives, such as a new personnel development plan, had in fact impacted use of the intervention. For example, the personnel development plan included reference to the CBT courses as a means to further develop individuals within the agency. This tool was being used to conduct annual performance reviews. However, the tool had been modified every year, resulting in the individual performance plan being modified annually. As such, individuals were not able to create any long-term career planning efforts and receive feedback on their progress. He felt this should have been evaluated. However, because of the short turn-around time for this evaluation, it was not possible to further research this issue.

My final concern following completion of the Preparation phase was the appropriateness and comprehensiveness of the evaluation questions included in the evaluation plan. The evaluator had indicated that when the suite of electronic courses was originally selected, the basis for the selection was that “they determined that use of electronic courses would allow for at-the-point-of-need training, would reduce travel costs and training costs, reduce overall training time, and would increase consistency of learning due to the same material being delivered to all learners,” as stated in the section, Overview of the Case Study. Additionally, two questions of primary concern related to any training-type solution are whether the users learned the material and whether their newly gained knowledge and skill is having an impact on their job performance (where relevant). In my review of the actual evaluation questions, I believed they failed to address any of these issues. Instead they related to which courses were used most, why courses weren’t used or completed, and general user perceptions about the courses (see
Appendix H for the list of questions). I questioned if the answers to these questions would be sufficient grounds upon which to base a decision of contract renewal.

When I discussed this issue with the evaluator, he agreed that there were many additional questions that he would like to have asked, but that the time it would have taken to gather data to answer these questions would have extended his work beyond the deadline for the evaluation. Since the contract would shortly expire and a break in service would impact ability to renew the contract, they could not extend the evaluation deadline.

Related to the effect of the CBT suite on learning and performance, the evaluator indicated that they had previously conducted a course review with the CBT team. In this review, each member of the team had been asked to complete specific courses. Their learning, as indicated by a pre and post-test, was reported. The course review had been completed two months prior to the conduct of this evaluation. The findings from the review would also be presented to the individuals making the re-contracting decision.

Additionally, the evaluator indicated that a 360-degree feedback survey was being developed in conjunction with the revisions to the personal development plan. This survey would attempt to address impact of the courses on on-the-job performance. The evaluator stated that it was not possible to complete the feedback survey prior to making the contracting decision.

My second interaction with the evaluator took place following completion of the Presentation phase. Via email, I received a copy of the final presentation and the written report. Following my review of these documents, I conducted a final interview with the evaluator. Prior to the interview, I created an interview instrument to guide the discussion. The interview tool focused on the use of the model and the evaluator’s perceived value of each phase. I taped the interview session and later transcribed the evaluator’s comments for each question. The completed instrument is available in Appendix H.

Related to implementing the evaluation, the evaluator stated that the model had again served as an excellent refresher as to best practice. He stated, for example, that the note to pilot all instruments was a good reminder. I asked if he had followed this guidance for the survey tools. He indicated that he had not truly piloted the instruments. Instead, the content was reviewed by the SME in an attempt to ensure validity. The evaluator noted that he used the evaluation plan as a checklist throughout the Implementation phase, referring to it approximately
five times. It served as a project management tool in the sense that he checked back to make sure they had covered all of the stated areas.

The evaluator indicated that he would like to see more specific guidance related to interpreting the data. He felt it would be helpful to provide specific questions, similar to the format used in the Preparation phase, to prompt the user of the model to attend to critical areas in making sense of the data.

In reviewing use of the model relative to the Presentation phase, the evaluator stated that the guidance was helpful in identifying the appropriate delivery method. He felt that due to the variety of levels of interest of the audience, the written report format, which included an executive summary, was best. He also suggested that the model include alternative reporting options such as the 11x17 results summary handout that he used in this evaluation.

I queried the evaluator related to his interest in presenting the evaluation methodology and findings to specific communities of practice. He indicated that he was not sure who would be interested in his process and the findings. He suggested that the model include specific examples of communities of practice. He suggested a potential community of interest in this area would be the Southeast Evaluation Association. I asked if he had any plans to present to any such community through any of their venues. He indicated that although he realized the importance of the task, time would not allow him to do so.

As an overall debriefing, I asked the evaluator about his perceptions as to the possible uses of the model and its usefulness in each instance. He suggested that the model would serve as an excellent guidance tool for novice evaluators because it gives a standard structure for the evaluation and good prompts along the way to keep the evaluator on track. Additionally, he felt that the model would be useful to anyone who, like himself, conducts evaluations on an infrequent basis. He stated that the main strength of the model in this situation is the specific questions in the narrative and the reminders of good practice.

Finally, he suggested several minor improvements to the model. These included simplifying the language to use more vernacular terminology, including a glossary for technical terms, using an electronic format for the tools, and including completed examples of all tools.

In the next section, I describe specific findings and modifications to the model used in this case study. However, due to my aforementioned concerns related to the degree to which the evaluator actually used the model in conducting the evaluation, the need for these modifications
should be considered with caution. Perhaps prior to modifying Draft 4, it would be beneficial to use the model in another case study where actual employment of the model is more rigorous. This concern is further discussed in chapter five related to future research.

Findings From Case Study 2

Based on the described use of the model in the case study, review of the resulting documents, interviews with the evaluator and CBT team members, and my reflection on the process, documents, and results, I identified several modifications to the model. Additionally, as this was the final data collection point for the study, I reflected on the entire data collection process.

In my review, I identified eight modifications to be made to the model. These are: (a) subsuming the negotiation phase within the Preparation phase, (b) improving the impact of the IAQ on the creation of evaluation questions, (c) improving the guidance related to interpretation of data, (d) inclusion of examples of communities of practice, (e) simplification of language, (f) inclusion of a glossary, and (g) use of a two-part evaluation approach. I now describe each modification along with the rationale for the change.

Modification One: Subsuming of Negotiation Tasks Within the Preparation Phase

In developing the model, I had inadvertently used an external evaluator perspective. In so doing, I made the assumption that contracting to conduct the evaluation is a standard step in the evaluation process. When an evaluator internal to the organization conducts an evaluation, an official contract often is not necessary. In case study two, for example, the evaluator was internal and no formal contract negotiation was required.

However, various tasks, which are currently integrated in the contract negotiation, are still helpful and often necessary even if no formal contract is needed. These include stakeholder involvement, gaining access to data sources, specifying deliverables, and identifying contingency plans and confidentiality requirements. In Draft 5, I integrated these various tasks into the creation of the evaluation plan. In so doing, I eliminated the Negotiation phase. A formal negotiation is included as an optional step in the Preparation phase.

Modification Two: Improving the Link between the IAQ and the Creation of Evaluation Questions

From the findings in case study two, it was evident that completion of the IAQ had little impact on the development of the evaluation plan. The purpose of the IAQ is to provide
background information about the intervention to be evaluated and to provide the client’s specific priorities and requirements for the evaluation. In particular, the evaluation priorities (e.g. society, organization, unit, and process) identified by the client on the IAQ should drive the selection of appropriate evaluation questions. Additionally, any change initiatives that are identified on the IAQ that may have impacted the success or failure of the intervention should be investigated as part of the evaluation.

In Draft 5 of the model, I clarified the step-by-step process for generating evaluation questions. I also identified (in table format) the link between questions from the IAQ and specific areas in the evaluation plan. For example, question 9 on the IAQ asks the client to identify the change initiatives that took place during the lifespan of the intervention through the point of the evaluation. The table identifies the link between this question and appropriate evaluation questions that should be included in the evaluation plan.

Modification Three: Improving the Guidance Related to Interpretation of Data

The evaluator in the second case study suggested that the model should include more guidance related to interpreting the collected and analyzed data. Specifically, he stated that providing step-by-step guidance, similar to that provided for creating evaluation questions, would have been helpful. In light of this concern, I modified the guidance in the Implementation phase to include tips on interpreting data that prompt the evaluator to use various review techniques to create meaning from the resulting data.

Modification Four: Inclusion of Examples of Communities of Practice

Based on feedback from the evaluator in the second case study, I included specific examples of communities of practice in various areas (e.g. evaluation, performance technology, and training). The examples include the names of major professional organizations in each area and various journals from each organization.

Modification Five: Simplification of Language

In the second case study, the evaluator noted several areas within the narrative of the model where he felt the language to be beyond the novice level. Specific examples of advanced terms include non-parametric statistics and inferential statistics. In Draft 5, when possible, the vocabulary was simplified to be more user-friendly. When specific terms had to be used which were likely unfamiliar to the novice evaluator, they were included in the glossary (see next modification).
Modification Six: Inclusion of Glossary

Draft 2 of the model had included a glossary. In subsequent drafts, I had inadvertently removed the glossary. In response to feedback from both the panel reviews and the evaluator in the second case study, I have included the glossary in Draft 5.

Modification Seven: Use of a Two-Part Evaluation System

In Draft 5, I return to a two-part evaluation model. This decision is not a direct result of any finding from case study two. It is, instead, a result of my reflection on the entire study and my personal opinions on the evaluation process and current practice. The first part of the evaluation encompasses the current Preparation and Negotiation phases. Completion of part one results in a completed evaluation plan which identifies the most appropriate timing of the evaluation, the evaluation questions which can be answered (related to the four evaluation priorities), and how each question can be answered. The second part of the evaluation (Implementation and Presentation phases) implements the evaluation plan at the appropriate time. The evaluator uses the evaluation plan as a project management tool, collects, analyzes, and interprets the required data, reports the findings to the client and stakeholders, and reports the methodology, models, processes, findings, and lessons learned to various communities of practice.

I believe that there are two main reasons why this approach is merited at the current point in evaluation practice. First, at present, thorough front-end analysis of performance problems or opportunities is conducted infrequently. This is frequently noted in literature in the field of HPT. Additionally, feedback from both expert panel reviews noted this to be the current situation in practice. Findings from a front-end analysis should result in documented measures of the performance gap or opportunity. A thorough front-end analysis also should include the selected solution, an implementation plan, and an evaluation plan for the solution.

Because thorough front-end analyses are conducted so infrequently, this information, which is critical in conducting a solid evaluation, does not exist. It then becomes the responsibility of the evaluator to identify if an evaluation should be conducted and the appropriate timing, to identify appropriate performance measures, and to determine if the necessary data can be collected. All of these tasks must be conducted in order to determine what evaluation questions are appropriate and how well they can be answered.
The second reason why a two-part evaluation model is appropriate is that it allows a more systematic management of the evaluation process. Since the result of the first portion of the evaluation is an evaluation plan that includes appropriate timing for the evaluation to be conducted, the evaluator (or appropriate department) can plan ahead for evaluations. This may include scheduling, instrument development and piloting, preparation of personnel in terms of training and resources, and methodology planning for presentations to communities of practice.

Draft 5 of the model includes guidance on how the two-part evaluation model can be used within an organization to provide a systematic means of planning for and conducting evaluations.

**Effectiveness, Efficiency, and Usefulness of the Model**

The primary purpose of having an independent evaluator employ Draft 4 in the case study was to determine the effectiveness, efficiency, and usefulness of the model. Effectiveness was to be measured by examining whether the model provided a means to identify the degree to which performance gaps were closed. Additionally, the model was expected to provide sufficient guidance related to all areas in conducting the evaluation (e.g. no steps were missing, sufficient guidance to execute each step). Related to efficiency, I was primarily interested in the time and cost related to use of the model. Also of interest was how use of this model impacted time and cost factors, compared with other similar models. Finally, in terms of usefulness of the model, the criteria for validation included ease of use (e.g. intuitiveness of the representation, clarity and simplicity of language, and barriers to use of the model) and the evaluation client’s satisfaction with the evaluation process and resulting findings.

Based on the findings from this case study, and assuming that the evaluator used the model to guide his conduct of the evaluation, I have major concerns about the effectiveness of the model. It is clear that the IAQ and the narrative guidance did not help the evaluator create appropriate evaluation questions for identifying the degree to which a performance gap was closed. Although the feedback from both the evaluator and the stakeholders indicates that they were satisfied with the findings from the evaluation and that they felt the evaluation addressed the appropriate questions, I thought that there were additional questions that should have been included in the evaluation (e.g., whether learning occurred, whether the learning translated into improved performance). The feedback from the evaluator indicated that he did think of some of these questions, but that the time constraint on the evaluation was such a driving factor, that the
questions were not included. It appeared that simplicity of data collection was partially responsible for driving the selection of evaluation questions. Additionally, because the evaluator was also the owner of the evaluation, the IAQ may not have been as effective as anticipated in this case study. The model narrative now includes guidance related to the evaluator as owner situation and encourages use of the IAQ with a team of evaluators or with the stakeholders.

Regarding the efficiency of use of the model, I collected data related to time and cost from the evaluator. The total time required to conduct the evaluation was 320 hours. The times for each phase were: Preparation phase (120 hours), Negotiation phase (included in Preparation phase), Implementation phase (160 hours), and Presentation phase (40 hours). The time for the presentation phase does not include the final task of presenting to communities of practice. All reported times reflect the work of a four-person evaluation team.

The total cost of the evaluation was $4,800. This is based on an average agency hourly rate of $15. The cost calculation reflects only costs associated with time. No other cost categories such as travel or resources were included in the formula. It should be noted that the evaluator did not complete the schedule or budget portion of the evaluation plan. Although the original intent for stating both time and cost data was to compare these times and costs to data collected using different evaluation models, it is not possible at present to make such a comparison. This issue is discussed in chapter five in the section related to future research.

Finally, with regard to usefulness of the model, the evaluator noted various areas in which the model could be improved. Related to ease of use, he felt that the language in several parts of the model was too advanced for a novice evaluator. He also felt that the paper-based tools and templates were clumsy to work with. Because of multiple documents containing the various tools, templates, and narrative guidance, it was cumbersome to flip back and forth between all the items. On the other hand, the evaluator pointed to several positive features of the model. For example, he stated that the model’s representation was clear and that the step-by-step guidance in various parts of the model’s narrative was excellent for a novice evaluator. Additionally, he indicated that the various prompts and cues provided in the model’s narrative were excellent reminders of good practice, especially for persons such as himself, who conduct evaluations infrequently.

In summary, related to the effectiveness of the model, if the evaluator actually used the model to conduct his evaluation, then the model was not highly effective in guiding his practice.
The efficiency of the model cannot currently be compared between the two case studies due differences in the nature of internal versus external evaluator times and costs. However, the time and cost data are still reported in hopes that over time, it will be possible to conduct such comparisons. Related to usefulness, feedback from both the evaluator and the stakeholders indicated that the model was useful in guiding the evaluation and that the stakeholders were pleased with the findings from the evaluation. However, for the same reason as previously mentioned (regarding whether the evaluator actually used the model sufficiently), this finding must be interpreted with caution.

In the next chapter, I summarize the methodology for the study, the overall findings from the study, and the resulting evaluation model (Draft 5). Additionally, I discuss implications from the findings in this study. The chapter concludes with recommendations for future research related to the model.
CHAPTER 5
SUMMARY, DISCUSSION, AND RECOMMENDATIONS

The purpose of this study was to develop and formatively evaluate a performance intervention evaluation model. The initial model was developed based on a review of current procedural methods for evaluation and barriers to evaluation conduct. In an iterative nature, data were then collected via two expert panel reviews and two case studies, with revisions made to the model following each data collection activity. This process resulted in five drafts of the model. The modifications made to Draft 4 of the model are based on findings from the second case study, reflection on findings from the entire study, and reflection on current evaluation practices.

In this chapter, I describe the overall validation of the model based on data collected from this study. I then provide an overview of the final model (Draft 5). Following this, I outline implications from the findings of the study and recommendations for future activities. The chapter ends with a suggested research agenda related to validation of the evaluation model.

Formative Evaluation of the Model

The intent of collecting data via the panel reviews and case studies was to validate each iteration of the model in terms of its effectiveness, efficiency, and usefulness. A discussion of the versions of the model in light of these criteria is presented below.

Effectiveness of the Model

To review, the suggested criteria related to the effectiveness of the model are listed below:

1. Did use of the model provide a means to identify the degree to which the performance gap was closed?
2. Did use of the model provide information about the thoroughness of each phase of the HPT process?
3. Were there additional, unanticipated benefits or limitations involved in using the model?
In reflecting on the first criterion, feedback from the expert panel reviews of the first and second drafts of the model indicated that I had focused too heavily on identifying the rigor of the process that led to selecting the intervention, as opposed to focusing on the ability to determine if the performance gap had been closed. Beginning with Draft 3, I modified the model to correct this deficiency. Drafts 3, 4, and 5 of the model all require that the owners of the evaluation identify the priorities for their evaluation (e.g. society, organization, unit, and process) and that appropriate evaluation questions be generated based on these priorities. The model’s guidance now focuses on the impact of the intervention relative to the performance gap for the particular evaluation priorities selected.

In reflecting on my use of Draft 3 of the model in the first case study, I decided that using the IAQ to identify the evaluation priorities and then following the narrative guidance in the model (related to generating appropriate questions) provided a sufficient means to identify the degree to which the performance gap was closed. However, since I had developed the model and therefore was very familiar with its details and tools, findings from the second case study may be more appropriate to validate this criterion.

In the second case study, the evaluation priorities indicated on the IAQ did not match the evaluation questions generated. The evaluation questions generated may not have been the most appropriate choice to identify if the performance gap had been closed. (See the Findings from Case Study Two section of chapter four for a detailed discussion.) Based on this finding, there are not sufficient data to determine whether the model met this criterion.

The second criterion related to the effectiveness of the model dealt with how well use of the model allows the evaluator to determine the thoroughness of each phase of the HPT process that led to the solution being selected. Although this was a primary focus in the first two drafts of the model, feedback from the review panels indicated that this focus was only of interest to a very small audience related to evaluation (e.g., training departments, and users of the HPT process). The panel suggested that the model should focus on the impact of the intervention, as opposed to the process that led to selection of the intervention.

In drafts 3 through 5, I allow the evaluation clients to identify their priorities for the evaluation. If they include *process* as a high evaluation priority, then this criterion becomes important. However, in the first case study, the client did not select process as a high priority. In the second case study, although process was chosen as the second-highest evaluation priority, the
evaluation did not focus on process. As such, I did not collect data that would provide evidence that use of the model provides sufficient guidance to determine the thoroughness of each phase of the HPT solution selection process.

Finally, related to effectiveness, various additional benefits and limitations related to use of the model were identified by the review panel and through use of the model in the case studies. Feedback from the expert panel indicated that a benefit of continuous use of the model would be a thorough and standardized process for conducting evaluations within an organization. The evaluator in the second case study identified a second benefit. He indicated that an additional benefit of the model is its usefulness as a refresher of good practice. As someone who conducts evaluations on an infrequent basis, he stated that the model provides excellent prompts and cues for good practice.

Regarding identified limitations of the model, in the early drafts the review panel identified the amount of work required prior to collecting data as a disadvantage to using the model. However, in subsequent model revisions, this limitation was addressed through use of the Initial Analysis Questionnaire, and in Draft 5, by dividing the evaluation process into two parts. No additional limitations to using the model were identified.

**Efficiency of the Model**

The original intent in validating the efficiency related to use of the model was to compare the time and cost related to use of this model with the same variables from use of other similar models. While time and cost data were collected and reported, it was not possible to compare these with other similar models. Various reasons why it was not possible to do so include the lack of other similar models, the anticipated time and cost variance for evaluations of different types of interventions (e.g., evaluating the impact of a single training course versus evaluating the impact of a job process redesign), and the variance in time and cost depending on which evaluation priorities are included in the evaluation.

While it is good practice to collect and report time and cost data for using the model, it will only be possible to make any comparisons after the model has been used to evaluate many comparable interventions. Additionally, it will be necessary to standardize how time and cost data should be collected and reported. For example, in reviewing the time and cost data collected in the two case studies, a comparison would be difficult because the first case study used an external evaluator paradigm for costing of the evaluation whereas the evaluator for the
second case study was internal to the organization and did not include any additional costs other than time on task. This issue will be discussed further in the section on future research.

**Usefulness of the Model**

The final evaluation criterion was the usefulness of the model. There were five specific questions related to usefulness:

1. What were the barriers to the use of this model?
2. Did the sponsors of the evaluation find the information to be useful?
3. How difficult was it to use the model?
4. To what degree did the model guide the user in conducting the evaluation?
5. How intuitive was the model’s representation (e.g., are expectations clear to both a novice and an expert)?

Related to barriers to use of the model, each draft of the model was modified to address the barriers to its use that were identified in either the panel reviews or the case studies. For example, the panelists indicated that one barrier to use of the model was the amount of time needed to prepare for conducting the evaluation. This barrier was addressed in subsequent drafts by incorporating the IAQ and by using a two-part evaluation system. In the second case study, the evaluator indicated that advanced or technical vocabulary was a barrier to use of the model. Draft 5 attempts to address this barrier by simplifying the language and adding a glossary to the model.

To identify if the evaluation sponsors found the resulting evaluation information useful, I interviewed sponsors and stakeholders from both case studies. The sponsor of the first case study indicated her satisfaction with the rigor of the evaluation, the formatting of the presentation of findings, and the usefulness of the findings in order to take necessary actions. In the second case study, members of the stakeholder group indicated that the evaluation provide sufficient information on which to base their decision regarding renewal of the computer-based training contract.

Based on feedback from the expert panel and my use of the model in the first case study, it appears that the model is not difficult to use. The evaluator in the second case study also indicated that he found the model easy to use. However, this finding must be interpreted with caution since there is evidence that he may not have used the model extensively to guide the evaluation process. The panel review experts indicated that they believed the model would be
easy to use because it provided sufficient detail and step-by-step guidance. It should be noted however, that this is a prediction on their part, though based on their experience.

From my perspective in using the model in case study one, the step-by-step approach, use of the templates, and the narrative guidance provide a clear process for conducting the evaluation. I did, however, identify various areas where improvement of the format of tools was necessary. For example, it was difficult to use the table format of the Initial Analysis Questionnaire from Draft 3.

During the interview following the second case study, I asked the evaluator to discuss the thoroughness of the model in providing guidance on conducting the evaluation. He stated that he felt the model sufficiently covered all areas involved in conducting the evaluation. However, due to my concerns related to the degree to which he used Draft 4 of the model, further data are needed to determine the degree to which the model guides the evaluator in conducting the evaluation.

Finally, related to the intuitiveness of the model’s representation, I made significant changes between the graphical representations in Draft 4 and Draft 5. For example, the Draft 5 graphic shows more detail related to the iterative nature of the steps within each part of the evaluation. For this reason, it will be necessary to collect further data related to this criterion.

Related to the overall effectiveness and usefulness of the model, based on all of the data collection efforts (e.g. two panel reviews and two case studies), I believe that the main tasks, indicated by the various phases and steps, have been validated. However, data collection regarding use of the model in additional case studies specific to each of the evaluation priorities is necessary to more extensively validate the effectiveness and usefulness of use of the model in guiding the evaluator through all of the various sub-tasks.

Regarding overall efficiency, continued collection of data related to time and cost, and standardization of how the data collection units, will generate information over time which can be analyzed to ascertain the efficiency of use of this model. Regarding the usefulness of the model, the feedback seems to be consistent related to the clarity of the model’s representation and guidance. However, additional data are needed related to its usefulness to evaluators of varying experience levels.
Overview of Draft 5

Based on the findings from both case studies, which were outlined at the end of chapter 4, and on feedback from the two panel reviews that was discussed in chapter 3, I modified the Draft 4 of the model, resulting in Draft 5. The graphical representation of the fifth draft is shown in Figure 5.1.

Although on the surface, the graphical representation of Draft 5 looks different from the previous drafts, it is similar in that the majority of the tasks remain the same. However, several tasks are subsumed, reducing the number of steps. For example, the tasks in the Negotiation phase in draft 4 are subsumed within the Preparation phase in Draft 5.

A second reason why the model looks different on the surface is that I divided it into two parts: preparing the evaluation and implementing the evaluation. The benefits of this approach are two-fold. First, by identifying the evaluation potential, both the client and the evaluation community benefit. Focusing on evaluation potential allows the evaluator to provide the client with a more realistic forecast of what can be evaluated, when it should be evaluated, and how best to evaluate. This is an important contribution to evaluation practice, as the literature reports that a common barrier to evaluation conduct is discontent with the evaluation itself (Dionne, 1996, Moller & Mallin, 1996).

Additionally, focusing on the evaluation potential as a task that is separate from conducting the evaluation allows evaluators to manage the evaluation process in a more systematic fashion. For example, the evaluator can be more efficient in planning evaluations well in advance, based on the optimal timeframe for data collection.

It should be noted that the choice to return to a two-part evaluation system goes directly against feedback received from the expert panel. In Draft 2 of the model, I had used a two-contract approach as an attempt to manage the amount of up-front work required in preparing an evaluation prior to actually collecting data towards answering the evaluation questions. The panel indicated that because this is not current practice it would be difficult to change. However, I believe the benefit from a project management point of view as described above, merits the change.
Part One: PREPARING THE EVALUATION

Gather Intervention Information & Evaluation Requirements*

Clarify Details

Synthesize Information

Create Evaluation Plan* & Contract**
- Evaluation timing
- Evaluation priorities & questions
- Data collection & analysis plan
- Budget
- Schedule
- Data Coding Plan**

Prepare Stakeholder Negotiation Agenda*

Schedule Stakeholder Negotiation Meeting

Negotiate Contract** & Evaluation Plan

Formalize Approved Evaluation Plan

Performance Intervention Evaluation Model
Draft 5
* Templates available
** If necessary
Figure 5.1
Part Two: IMPLEMENTING THE EVALUATION

IMPELEMENATION PHASE

Review / Revise * Evaluation Plan
- Verify evaluation timing
- Verify priorities & questions
- Verify data source access
- Review budget & schedule

Prepare Instruments
- Leverage / Create
- Pilot
- Revise

Collect Data

Reflect/ Synthesize/ Interpret Data

Analyze Data

Present Interim Findings

Present Final Findings

Present Findings from Preparation Phase, Implementation Phase, and Presentation Phase to Communities of Practice

PRESENTATION PHASE

Monitor Evaluation Progress

Draft 5
* Templates available
** If necessary

Figure 5.1 continued
Preparing the Evaluation

In the evaluation preparation component, the evaluator begins by gathering information about the intervention to be evaluated and about the client and stakeholder evaluation requirements. The Initial Analysis Questionnaire described in the previous chapter can serve as a tool to facilitate this information collection process. The gathered information is then synthesized and clarified in an iterative fashion in order to generate the evaluation plan.

The evaluation plan consists of a timeline for implementing the evaluation, the questions to be answered for each evaluation priority identified by the client, the data collection and analysis plan for each question, the budget, and the time schedule for the tasks in the evaluation. Additionally, a master coding plan can be included, if dictated by the data analysis method. The evaluator then creates a contract, if necessary, based on the evaluation plan.

Following the creation of an agenda, the evaluation plan is then presented to the client and stakeholders of the evaluation to ensure that the suggested timing for the evaluation is appropriate. Additionally, the stakeholders agree upon the questions to be asked, the appropriateness of the data sources and methods to be used, the cost of the evaluation (if applicable), and the schedule for the tasks. Any resulting changes are then made to the evaluation plan and contract to allow for formal approval of the plan.

Implementing the Evaluation

Once the evaluation plan is formalized and, at the appropriate time, identified in the plan, implementation of the evaluation begins. The evaluation implementation component consists of two phases, Implementation and Presentation.

In beginning the Implementation phase, the evaluation plan is reviewed to determine if any details of the plan are in need of revision. This is especially important if a significant amount of time has passed since the evaluation plan was created. When the plan is finalized, it then serves as a project management tool throughout the Implementation and Presentation phases of the evaluation.

Prior to collecting data, the required instruments must be created or leveraged as needed. All instruments should be piloted and any resulting revisions made prior to their use in data collection. Once the instruments have been finalized, data are collected according to the evaluation plan for each question. In an iterative nature, the data are analyzed and interpreted in
order to answer the evaluation questions and to identify any emerging information of interest in the evaluation.

Depending on the nature of the findings, results are presented to the client or stakeholders during the Implementation phase and/or in the Presentation phase. The presentation of interim findings may result in the need to collect and analyze further data or even in a revision to the evaluation plan itself. The presentation of final findings is of a formal nature, usually involving a group presentation to the client and stakeholders as well as written documentation. The written report allows the stakeholders to review the details of the evaluation and to focus in on areas of specific interest to them.

The final step in the evaluation is presentation of the models and methodologies used in the evaluation, the process and resulting findings from the evaluation, and the lessons learned in the process to various professional communities of practice. These communities may include professional evaluation organizations, human performance technology groups, human resource management groups, or professional training organizations. Potential presentation formats include professional journals, organizational newsletters, discussion forums, and conference presentations. The purpose of this step is to provide information to these communities in order to allow for improvement of the models, methods, and processes for conducting evaluation. Draft 5 of the model is provided in full in Appendix J.

Implications of Findings and Recommended Future Activities

During this study, several unanticipated difficulties, questions, benefits, and insights came to light, as well as specific areas in which the model should be further refined. Following is a discussion of five such areas for further reflection and action.

Area One: Use of time and cost data. A difficulty that arose in attempting to answer the question of efficiency was how to compare times and costs from one evaluation to another. My original validation question proposed to compare time and cost from use of my model to time and cost associated with use of similar models. This is an important question, especially since a commonly stated barrier to evaluation conduct is the associated time and cost. However, the high variability between two evaluations makes it difficult to make a direct comparison. While time and cost data should continue to be collected and reported to the evaluation community, some standards may need to be set as to how these variables are described. For example, clear explanations of what is included in a cost figure should be outlined. Only after evaluation
studies including reports of time and cost have been reported in literature, can we begin to look at patterns based on such factors as evaluation procedures used, organizational contexts, evaluation commonalities, and intervention similarities.

**Area Two: Improving the frequency and quality of front-end analysis conduct.** Two insights that resulted from conducting this study relate to the front-end analysis of the human performance technology process. Based on the feedback from the expert panel, it became evident that the conduct of a front-end analysis is not prevalent in current practice. Because the steps in the HPT process are highly interrelated, the thoroughness of a front-end analysis impacts the ability to conduct an evaluation in an efficient and effective manner.

In light of this, we first must encourage the use of systematic analysis leading to solution selection, design, development, implementation, and evaluation. That is, it should become standard practice to conduct a front-end analysis prior to selecting a solution for a performance gap or opportunity.

Second, solution design must include the identification of performance metrics that will be put in place during implementation in order to monitor performance. In reviewing the feedback from the expert panel related to the amount of work necessary in preparing for an evaluation, it became evident that some of the work could be minimized if the selection and design of a solution (during the front-end analysis) included a plan for how the solution would be evaluated. While various competency lists in human performance technology make reference to the development of an evaluation plan in earlier phases of the HPT process (e.g. solution design), the inclusion of an evaluation plan must be recognized as a standard output of the front-end analysis process. The impact of this on the current evaluation model proposed (Draft 5) would be to decrease the time required to identify the evaluation potential, thereby decreasing the overall time and cost required in conducting the evaluation.

**Area Three: Further refinement of guidance in the model.** Two areas requiring improvement in the model are providing more in-depth support related to each of the evaluation priorities and offering evaluation guidance relative to the type of intervention being evaluated. During the course of this study, findings from both the panel reviews and the case studies helped to identify changes to the model, resulting in Draft 5. At present, the model narrative provides general guidance in completing each step within the various phases of the model.
In the Preparation phase, the client is asked to rank desired priorities for the evaluation (e.g., impact on society, organization, unit, and/or process). The evaluator is then guided in identifying appropriate evaluation questions related to each of these priorities. Based on my own reflection on the evaluation priorities, more detailed guidance could be provided related to how to measure the impact of an intervention for each of these priorities. For example, performance measures related to impact on society will almost always be indirect measures. At present, the model does not provide detailed guidance related to the differences in potential impacts of in each of these evaluation priorities.

Secondly, and based solely on my reflection on how I conducted the evaluation, I conclude that different types of interventions may lead the evaluator to ask different questions. Existing conceptual evaluation models such as Kirkpatrick’s four levels are evidence of this. For example, level two of the Kirkpatrick framework asks the evaluator to consider whether the participant learned the information presented. This is obviously specific to an intervention where learning was a desired outcome. It most likely would not be pertinent to most other intervention types. For example, if a new incentive program had been put into place and were now being evaluated, the question of learning might not come into play. However, many other intervention-specific questions might arise, such as whether or not the incentives provided were extrinsically motivating to the participants.

While it may not be possible or desirable to provide guidance on questions for every type of intervention, there may be categories of interventions for which specific guidance can be provided. If this is the case, future versions of the model should include guidance related to these categories of interventions.

Area Four: Benefits of use of the model. One identified benefit of use of this procedural model will be the increased publication of evaluation processes, outcomes, and impacts. Currently, very little is known about the details of evaluation processes. This is true in most all evaluation disciplines. In a recent article entitled “Toward an Agenda for Research on Evaluation,” the authors state,

“The views you hear on the key issues in evaluation – such as what kind of evaluation to do in various circumstances, or when and why evaluation affects important actions – almost certainly are not based on rigorous, systematic evidence. Why not? Because there is a serious shortage of rigorous, systematic evidence that can guide evaluation or
that evaluators can use for self-reflection or for improving their next evaluation.” (Henry & Mark, 2003, p. 69)

The final step in the evaluation model is to contribute to the community of practice. Making this information available to various communities of interest over time will allow for the conduct of meta-analysis of a variety of variables. If the community of evaluators contributes by publishing their evaluations, the framework will be created for more rapid and systematic progress in the area of evaluation.

Recommendations for Future Research

Finally, through the continued use of expert review, case studies, and case scenarios, future research should focus on further validating the components of the model and on use of the model in a variety of cases (e.g. internal versus external evaluators, various types of organizations, and evaluators with varied experience levels. A research agenda should also include meta-analysis of evaluation processes, findings, and impacts.

Research Area One: Validation of components of the model

As noted in Chapter 4, I had several concerns as to the degree to which the evaluator actually utilized Draft 4 of the model to conduct his evaluation. Given these concerns, an additional case study should take place in which an evaluator uses Draft 4 of the model to conduct the evaluation. Based on the findings from this case study, suggested modifications should be revisited regarding Draft 5.

One issue related to the iterative nature of model development and validation is that data have only been collected related to use of Drafts 1 through 4. Draft 5 of the model emphasizes separation of evaluation preparation from implementation of the evaluation plan when appropriate (based on the appropriate timeframe to conduct the evaluation). Further data collection is necessary to validate Draft 5 of the model, initially in the areas of effectiveness and usefulness.

Research Area Two: Refinement of the “Process Priority” within the evaluation model

Evaluations are conducted infrequently and when they are conducted, the usual purpose is to determine the impact of an intervention on an organization or unit. Although still allowing for evaluation priorities to include societal impact and the front-end analysis process, the primary focus of Drafts 3 through 5 is on organizational and unit impact of a performance intervention.
Future versions of the model should refine the process priority to help determine the quality and thoroughness of the front-end analysis that led to the implemented solution. This information will be valuable to the HPT community to provide data related to areas of improvement in the analysis process.

**Research Area Three: Use of model in a variety of case types**

A diversity of case studies should be used to provide further validation. The cases used in this study helped to identify differences related to using an internal versus external evaluator. However, both cases took place within the same state government agency. The diversity of case study types should be broadened. Various criteria for case selection should include type of organization (e.g., business, government, and academia), type of evaluator (e.g., internal or external to organization), type of evaluation desired (e.g., focus on society, organization, unit, process, or combinations), and a range of experience levels of the evaluators.

Beside case studies, an additional means of collecting data to further validate the model is via use of a standardized case scenario. Use of a case scenario would allow evaluators with a diversity of experience levels to conduct an evaluation of an identical situation. This would allow for the collection of data related to the impact of experience on the process of evaluation and on use of the model.

**Research Area Four: Meta-analysis of evaluation processes, findings, and impacts**

A final area for future research would require the creation of a standard reporting process for publications on evaluations, and a central location for data collection. With the power of Web and database applications, the creation of an HPT process cases database would create the framework for longitudinal studies and meta-analysis. Such a database would allow for the capture of information related to the entire human performance technology process with sufficient standardization and detail to allow for common research opportunities. The database system should be maintained by a professional organization such as the International Society for Performance Improvement or the Academy of Human Resource Development, and should be open to all members as a research database. Additional benefits of such a system would be collaboration of researchers and increased research opportunities through the identification of HPT-related situations. For example, if a front end analysis was conducted in a prior year, entered in the database, and identified as being open for future research, another researcher could follow up on the status to determine if an evaluation could take place. By taking a broad systems
view, not only would we gain insight into evaluation practices, but also into the entire HPT process.

While the practice of evaluation has taken place since the inception of performance improvement, we have been lax as a community in improving our own procedures based on a systematic and rigorous review of practices. The evaluation model described in this study is an attempt to contribute to the closing of this performance gap by providing a standardized process for the conduct of performance intervention evaluations and the reporting of these processes back to the community for use as a continuous improvement mechanism.
APPENDIX A

Human Performance Intervention Evaluation Model

Draft 1
MODEL OVERVIEW

Human Performance Technology Intervention Evaluation Model

1. Conduct Evaluation Environment Analysis
   - Review Gap/Causes from FEA
   - Review Solution from FEA
   - Conduct Environment Analysis

2. Negotiate Purpose, Audience, and Output of Evaluation

3. Create Evaluation Plan
   - Evaluation Questions
   - Data Collection Plan
   - Data Analysis Plan
   - Budget / Task Timeline

4. Implement Data Collection & Analysis Plan
   - Instrument Development/Leverage & Pilot
   - Data Collection
   - Data Analysis

5. Create Evaluation Reports
   - Answers to Evaluation Questions
   - Process / Outcome Information to HPT Community
Introduction to the HPT Intervention Evaluation Model

Because of the historical and evolutionary ties of the human performance technology practice with instructional design, many evaluation initiatives begin with Kirkpatrick’s four “levels” as the guide for what areas to evaluate related to interventions implemented following an HPT front-end analysis (see Appendix A). However, the Kirkpatrick model was designed to evaluate training solutions. Good HPT analysis may or may not lead to a training solution, depending on the identified causes and deficiencies. If training is a part of the solution, it is often only one part of several solutions that make up an intervention designed to close the performance gap.

The purpose of the HPT Intervention Evaluation Model (see Figure 1.0) is to provide evaluation areas which are driven by the implemented solutions and their related causes and performance gaps. Using the systematic HPT process as the driving force for selecting a solution set provides the evaluator with an outline from which to develop the evaluation areas and specific evaluation questions to be answered.

The HPT Intervention Evaluation Model is a five-step approach to conducting a summative and/or confirmative, and meta-evaluation related to a specified intervention. This model is best used when a systematic approach was used to determine the causes of a performance problem and to determine the solutions that would effectively close the gap. The five steps of the model are:

1. Conduct an evaluation environment analysis
2. Negotiate the purpose, audience, and output of the evaluation
3. Create evaluation plan
4. Implement data collection and analysis
5. Create evaluation reports

Many barriers exist to conducting effective evaluations. The purpose of the first step of the model is to provide the evaluator with the information necessary to make an informed decision about what areas of the intervention can and cannot be effectively evaluated. By reviewing measures taken the front-end analysis, solution implementation, and any changes in the performance environment which have taken place during the lifespan of the front-end analysis and intervention implementation, the evaluator can ascertain:

- What areas can be more rigorously evaluated (e.g. potential exists for triangulation of data sources, valid and reliable instruments exist, comparisons can be made to existing baseline data).
• What areas can only be “recreated” in retrospect (e.g. no baseline data exist; only perception data can be obtained)?
• What areas may need further evaluation beyond simple questions such as the degree to which a performance gap was closed (e.g. “why” questions related to differences between proposed and implemented solutions or causes which were not addressed by a solution component).

This information, when synthesized allows the evaluator to knowledgeably speak to the client about boundaries and expectations for the evaluation. This is invaluable for the second step in the process.

**Step 2: Negotiate Purpose, Audience, and Output of Evaluation**

Armed with information from the analysis conducted in step one, the negotiation process can begin with the client and/or stakeholders about what the evaluation will encompass. In this step, the purposes and intended uses of the evaluation findings by the client are clarified and matched against the known potentiality of what can be evaluated. This will help to further refine the areas that will be included in the evaluation.

Also of importance during this negotiation step is to gain an understanding of who the intended audience will be for the findings from the evaluation. Besides aiding in determining necessary reporting structure and style, this information may also provide insight into organizational strategies, policies, and change initiatives.

Finally, the outputs of the evaluation, both interim and final, should be agreed upon. Using interim outputs allows for participation and buy-in by stakeholders. Agreeing in advance upon the outputs allows their inclusion in the evaluation plan.
Step 3: Create Evaluation Plan

Following the negotiation of purpose, audience and outputs, a detailed evaluation plan can be created which can result in a contracted evaluation. The evaluation plan will outline the specific questions to be answered by the evaluation. A plan will be outlined for what data will be collected to answer each question along with a description of what method(s) and instruments will be used to collect the data.

A data analysis plan will be created for each type of data collected. Depending on the data type, coding categories may need to be prescribed related to the evaluation questions being answered. Attention will also be given to how to assess the reliability and validity of new instruments to be created. Finally, a fidelity plan will be outlined that addresses potential triangulation of data sources, methods, and/or investigators related to each evaluation question.

As a final component of the evaluation plan, a budget and task timeline will be created that will schedule the creation of instruments, data collection, and analysis. This will provide the content for a contractual agreement for the evaluation.

Step 4: Implement Data Collection and Analysis Plan

Once the evaluation contract is official, the evaluation is put into action. The focus of this step is management of the data collection and analysis process. Careful attention must be paid to ensuring that all instruments are piloted and revised as needed and that all data are collected according to the planned methods. When revisions become necessary, the plan must be reviewed for reliability, validity, and fidelity issues.

As is typical of all projects, the potential exists for “scope creep”, extending the agreed upon boundaries of the evaluation. While this potential must be managed, if changes to the evaluation become necessary, the reasons for the changes will be documented within the plan and any changes or amendments will be made to the evaluation contract. An additional option is to propose a follow-up evaluation of the newly identified areas.
When the data collection and analysis are completed, the information must be synthesized into a final report format. The final report will go beyond reporting data collected. Following the suggested format will help to ensure that it provides:

- Answers to the specific evaluation questions or reasons why any were not answered along with any proposed follow-up action.
- A description related to the rigor of data collection and analysis methods for each data type and method.
- A discussion of any problem areas within the evaluation along with reasons and any proposed follow-up action.
- Recommendations related to the decisions to be made that were outlined during the initial negotiation process.

Information can be summarized and shared with the HPT community of practitioners as a means to meta-evaluate the HPT process. Of specific interest to the HPT community are such areas as:

- Why any gaps, causes were not addressed in the front-end analysis.
- Why differences were noted between proposed and implemented solutions.
- What impact environmental issues had on the HPT intervention.
- The implementation process used for introducing the HPT intervention
- The evaluation process used to ascertain the worth of the intervention.
Step 1: Conduct Evaluation Environment Analysis

PURPOSE(S)
- To review the front-end analysis data, organizational environment, and implemented solution in order to determine the potential breadth and depth of the evaluation.

INTENDED OUTCOMES
- Gain understanding of performance problem, identified causes, and solution components recommended.
- Gain understanding of types of measures used during front-end analysis.
- Identify instruments used and their availability/potential for reuse.
- Identify changes in environment that may have impact on intervention success rate.
- Gain understanding of depth and breadth possibilities of evaluation.

TOOLS
(MS Word Documents)
- Gap Analysis Guide
- Cause / Solution Match Matrix
- Environment Analysis Guide
- Synthesis Guide
- Evaluation Potential Report (Format)

OUTPUTS
- An evaluation potential report which can be used as the basis for negotiation of the purpose, audience, and outputs of the evaluation. This document will aid in outlining what can be summatively evaluated and to what degree, as well as what cannot be summatively evaluated due to a lack of baseline data. It then must be determined if further data will be collected related to these areas.
- List of available/useful instruments from front-end analysis
- Initial evaluation areas.

GENERAL INFORMATION

1. Review Performance/Organizational Gap:
It is assumed that a front-end analysis was conducted in order to determine the intervention(s) which were implemented. This front-end analysis provided information regarding what the gap in performance was (e.g. the difference between the desired performance and the actual
performance). Ideally, this was identified at both the job/performer level and the organization level.

It is necessary to determine if this gap information is available. It will be used to provide baseline data against which to measure the current performance after the implementation of the intervention.

Specifically, you will want to
- Outline the client and stakeholders of the performance issues from the front-end analysis.
- Identify the initial performance problem that the client presented to the HPT practitioner.
- Identify what measures were taken to identify the existing performance gaps and the levels (job/performer and organizational) for each identified gap.
- Note any gaps that may have been mentioned but for which no measures were taken.

Use the Gap Analysis Guide to determine the types of information that are available from the original front-end analysis.

2. Review Causes of Performance/Organizational Gap(s):

From the front-end analysis, causes were identified which were believed to be the reason for the deficit in desired performance. Several models exist which are frequently used to help categorize these causes. The HPT Process model is based on Gilbert’s Behavioral Engineering Model. Other models that are frequently used include:
- Harless’ Performance Improvement Process
- Wedman/Graham Performance Pyramid
- Rossett’s Drivers Model
- Mager and Pipe’s Performance Analysis Flow Diagram

Information on each of these models can be found in Appendix XXXX. No matter which model is used, the category into which each cause is placed helps to link the cause to a related solution. Transfer the identified causes onto the Cause/Solution Match Matrix. The matrix will aid you in outlining the deficiency categories for the causes that were identified and their relation to the performance gaps.

Additionally, when reviewing this information, it will be possible to view any gaps for which no causes were documented. Note any gaps for which no cause was identified. This represents a potential problem area related to the success of any proposed or implemented intervention. If this gap was not addressed as part of the solution, there may still be performances that were not impacted by the solution.

3. Review Solution Set:

Due to the complexity of an organization, multiple solutions are usually necessary to positively impact a change in performance. An intervention is often actually a solution set which may incorporate such solutions as training, an incentive program, job aids, revised processes, changes
in equipment, to name a few. In reviewing the solution set, the first step is to break down the solution into its component parts. Attention should be given to any solution may contain multiple interventions and should be further broken down. For example, and electronic performance support system (EPSS) is often made up of such interventions as just-in-time training, calculation tools, process redesign, and knowledge management resources. These should each be listed separately.

Additionally, the solution set that was proposed as part of the front-end analysis may be different from the actual solution that was implemented. This should be noted as a potential problem area related to the success in closing the performance gap. If the implemented solution did not address all the causes, the probability is higher that performance will not impacted as positively as if all causes were addressed. A solution analysis will identify the components of the proposed and implemented solutions as well as any differences that exist between the two.

An additional step in analyzing the solution is to compare the implemented solution with the identified causes to determine if any categories of causes of the performance problem were not addressed by the intervention and may, in fact, still be impacting performance.

Use the **Cause/Solution Match Matrix** to assist in gathering data related to these areas.

### 4. Conduct Environment Analysis:

An organization is a dynamic living environment and in most cases, substantial time has elapsed since the identification of the performance deficit, causes, proposed solution, and implementation of the intervention. A retrospective analysis of the environment over this time will provide information regarding factors that may have affected the degree of success of the implemented intervention. These factors will need to be accounted for within the evaluation.

Specific areas of interest to analyze are
- the introduction of other change management initiatives during the lifespan of the intervention being evaluation (downsizing, departmental reorganizations).
- political issues that have taken place during the front-end analysis and intervention lifespan.
- organizational culture and/or diversity issues during the front-end analysis and intervention lifespan.
- issues external to the organization that have transpired during the front-end analysis and intervention lifespan (e.g. economic downturn, legislation that has effected how a process must be conducted).

If the environment has been highly unstable during the front-end analysis and intervention lifespan, then the likelihood of other factors impacting performance is high. While it would not be possible to factor these out, awareness of the issues will help to determine the potential rigor of the evaluation.

Use the **Environment Analysis Guide** to assist in gathering this data.
5. Synthesize for Evaluation Potential Report:

By collecting this information, a picture is beginning to develop related to the depth and breath possibilities for an evaluation. This information must be synthesized in order to participate in Step 2: Negotiation of Purpose, Audience, and Outputs of the Evaluation.

Specifically, use the information you gather in Step 1 to outline:

- what areas can be evaluated and with what rigor.
- what baseline data is available and for which levels (job/performer and/or organization).
- what is the quantity and quality of data that is available.
- what instruments from the front-end analysis are available for leveraging.
- what changes have taken place within the environment that had the potential to impact the degree of success of the implemented intervention.
- what differences exist between the implemented solution and the identified causes of the performance problem.
- what differences exist between the implemented solution and the proposed solutions.
- what is the potential fidelity of evaluations related to the intervention.

The Synthesis Guide can aid you in reviewing your data. When you have synthesized this data, prepare an Evaluation Potential Report as a communication document in preparation for step two.
Step 2: Negotiate the Purpose, Audience, and Output of the Evaluation

PURPOSES

• To agree upon the areas to be evaluated (e.g. performance gap, solution components, and discrepancy and environment issues).
• To agree upon the purposes of the evaluation including how findings will be used.
• To identify all audiences who will receive the findings.
• To agree upon the outputs of the evaluation, including interim sign-offs and components of the final report.

TOOLS

(MS Word Documents)

• Evaluation Potential Report (Format) – from Step 1

OUTPUTS

• Verbal agreement of evaluation areas.
• Statement of Work (optional)

GENERAL INFORMATION

By using the information gathered and synthesized in step one, the evaluator is in the position of providing informed recommendations to the client as to what areas or levels can be evaluated. The three suggested evaluation areas are
1. Performance/organizational gap evaluation
2. Solution component evaluation
3. Discrepancy and environmental issues evaluation

Based on the known data, the evaluator can educate the client related to the potential rigor of each area. This allows the client and evaluator to agree upon which areas will be evaluated and what the expectations will be for the evaluation. (e.g., A Performance/organizational gap evaluation will be conducted but only three of the four identified gaps have baseline measures. The fourth gap will be measured using retrospective perception data.)

Additionally, the evaluator will want to ascertain the intended use(s) of the findings from the evaluation and who will receive the evaluation information. This will aid in further broadening or filtering the evaluation areas.

Finally, agreement must be reached on the outputs of the evaluation. Examples of potential outputs besides the final evaluation report include interim progress reports and data collection
and/or analysis sign-offs. The format for the final report should be discussed with the client as well to agree upon necessary information from both the client and evaluator’s perspectives.

Specific questions to be answered include:
1. Which areas will be evaluated?
2. What decisions need to be made that require this evaluation be conducted?
3. How will findings be used?
4. If the gap is determined to not be impacted to a desirable degree, what actions will follow?
5. If the gap is determined to be impacted to a desirable degree, what actions will follow?
6. Who will receive the findings from the evaluation?
7. Will a Return-On-Investment study be required? Provide information regarding feasibility of such a study (cost versus benefit, ROI of entire solution set versus components).
8. Is there an organizational performance measurement system into which the measures taken can be incorporated?
9. Will full access to people and data sources be made available?
Step 3: Create Evaluation Plan

PURPOSES
- To outline all evaluation questions to be addressed
- To outline the data collection plan for each question
- To outline how all data will be analyzed
- To develop a budget related to conducting the evaluation
- To develop an evaluation task timeline for conducting the evaluation

TOOLS
- Evaluation Questions Guide
- Data Collection Template (not yet fully developed)
- Data Analysis Guide (not yet fully developed)
- Budget / Task Guide (minimal guidance)
- Evaluation Plan Format

OUTPUTS
- Evaluation Plan
- Contract (optional)

GENERAL INFORMATION
Based on the previous two steps, the areas of evaluation have been identified along with the purpose, audience, and outputs. Additionally, some upfront analysis may have been completed related to what instruments are available from the front-end analysis. This information must now all be synthesized into a detailed evaluation plan that:
- Outlines the specific questions to be answered related to each evaluation area.
- Outlines how data will be collected related to each question. Of particular importance for data collection is:
  - The sampling requirements (size and type)
  - The method to be used (observation, extant data review, interviews, etc.)
  - The data sources
  - The instrumentation requirements (create/leverage, pilot, ascertain validity and reliability)
- Outlines how data will be analyzed
- Relative to each evaluation question
• Relative to emergent themes from all data

Once these tasks are outlined, task timeline can be created to manage the implementation of the data collection and analysis process. A budget can then be created and if it has not already been completed, a contract can be drawn up for the evaluation.
Step 4: Implement Data Collection and Analysis Plan

PURPOSES

- To create/leverage, pilot, and revise instruments as necessary.
- To successfully collect all necessary data to answer the evaluation questions.
- To rigorously analyze all collected data
- To management the data collection and analysis process

TOOLS

- Evaluation Plan

OUTPUTS

- Sufficient data to answer all evaluation questions.

GENERAL INFORMATION

Undertaking the data collection and analysis requires careful attention to management of the outlined processes. Specifically, attention must be paid to the

- Preparation of instruments for the data collection process
- Maintenance of the data collection plan and analysis
  - If deviations from the plan are required, the reason for the deviation should be noted and will become a part of the final report.
- Quality assurance of the data collection and analysis process. Specifically, it is important to determine if enough data has been collected to answer all evaluation questions and whether all possible triangulation methods have been used to increase the rigor of the data collection and analysis processes.
- Deviations from the evaluation plan and/or areas for further evaluation should be noted for inclusion in the final report related to recommendations.
Step 5: Create Evaluation Reports

PURPOSES
- To create evaluation reports which meet the needs of the:
  - Client
  - HPT community

TOOLS
- Final Evaluation Report (format)
- HPT Meta-evaluation Report (format)

OUTPUTS
- Final Evaluation Report to client
- Report to HPT Community

GENERAL INFORMATION
- Synthesize the data collection to answer the “what does this all mean” question related to each evaluation area and evaluation question.
- Create recommendations related to decision to be made that were identified by the client.
- Create report in useable format for audiences
TOOLS
# Gap Analysis Guide

## GENERAL INFORMATION

1. **Statement of Performance Problem:**

2. **Owners/Clients/Stakeholders:**

   - **Owner(s):**
     | Name | Position | Contact Information |
     |------|----------|---------------------|
     |      |          |                     |
     |      |          |                     |

   - **Client(s):**
     | Name | Position | Contact Information |
     |------|----------|---------------------|
     |      |          |                     |
     |      |          |                     |

   - **Stakeholder(s)**
     | Name | Position | Contact Information |
     |------|----------|---------------------|
     |      |          |                     |
     |      |          |                     |
3. IDENTIFIED GAP:
Complete the information below for the gap that was identified during the front-end analysis

**Job / Performer Level:**

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
<th>Actual</th>
<th>Desired</th>
<th>Gap</th>
<th>Name/Description</th>
<th>Available (Y/N)</th>
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**Organizational Level:**

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<thead>
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<th>#</th>
<th>Related Gap #</th>
<th>Description</th>
<th>Actual</th>
<th>Desired</th>
<th>Gap</th>
<th>Name/Description</th>
<th>Available (Y/N)</th>
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**Summarizing Questions:**
1. Which gaps (if any) were not measured at the organizational level?
2. Do any measures exist which could provide information related to this gap?
3. For available instruments, what information can be obtained related to their reliability and validity?

**Additional Comments:**
### CAUSE / SOLUTION MATCH MATRIX

#### Causes
(Categorize the identified causes from the front-end analysis into the following categories.)

<table>
<thead>
<tr>
<th>#</th>
<th>Cause Description</th>
<th>Related Gap #</th>
<th>Data Information Feedback</th>
<th>Resources Tools Equipment</th>
<th>Incentives Rewards Consequences</th>
<th>Skills Knowledge</th>
<th>Capacity</th>
<th>Motivation Expectations</th>
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#### Solutions
(Include the components of the proposed and implemented solution. If the component is a type of performance support system, break this down further into its components. For example, an EPPS may include a just-in-time training component, a process automation component, and various tools.)

<table>
<thead>
<tr>
<th>Solution Component</th>
<th>Related Cause #</th>
<th>Data Information Feedback</th>
<th>Resources Tools Equipment</th>
<th>Incentives Rewards Consequences</th>
<th>Skills Knowledge</th>
<th>Capacity</th>
<th>Motivation Expectations</th>
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</tbody>
</table>

#### Lack Of...
[Proposed Component = +]
[Implemented Component = √]

**Additional Comments:**
ENVIRONMENT ANALYSIS GUIDE

1. When was the front-end analysis begun?
2. When was the solution implemented?
3. What change initiatives took place during this time?

<table>
<thead>
<tr>
<th>Description</th>
<th>Department / Persons Effected</th>
<th>Contact Information</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

4. What political influences have been in play during this time?

<table>
<thead>
<tr>
<th>Description</th>
<th>Department / Persons Effected</th>
<th>Contact Information</th>
<th>Comments</th>
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</thead>
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</table>

Additional Comments:
SYNTHESIS GUIDE

Summarizing Questions:
1. Do any gaps remain without an identified cause? (If yes, why not becomes an evaluation question)
2. Were any causes not addressed by a proposed solution component? (If yes, why not becomes an evaluation question)
3. Were any causes not addressed by an implemented solution component? (If yes, why not becomes an evaluation question)
4. Were any proposed solution components not implemented? (If yes, why not becomes an evaluation question)
5. If there is a difference between the implemented and proposed solution, then the reason for this difference becomes an evaluation question.
6. Was cost information identified in the proposed solution?
7. Is cost information available about the implemented solution?

Overall, how would you rate each of the following:

Quantity of baseline data available

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>Little to no baseline data is available</td>
</tr>
<tr>
<td>0</td>
<td>Some data is available, but only one measure per gap and/or</td>
</tr>
<tr>
<td></td>
<td>Some data is available, but only related to the job/performer level</td>
</tr>
<tr>
<td>1</td>
<td>Data is available for all gaps, from multiple sources and related to both</td>
</tr>
<tr>
<td></td>
<td>the job/performer level and the organizational level.</td>
</tr>
</tbody>
</table>

Quality of baseline data available

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>Available data is highly subjective</td>
</tr>
<tr>
<td>0</td>
<td>Data is a mix of subjective and objective</td>
</tr>
<tr>
<td>1</td>
<td>Data is purely objective</td>
</tr>
</tbody>
</table>

Stability of the environment during the time ranging from the front-end analysis to the implementation of the solution.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No change initiatives were introduced</td>
</tr>
<tr>
<td></td>
<td>Change initiatives were introduced, but have relatively no effect on the areas</td>
</tr>
<tr>
<td></td>
<td>related to the intervention being evaluated</td>
</tr>
<tr>
<td></td>
<td>Change initiatives were introduced and may have an effect on the areas related</td>
</tr>
<tr>
<td></td>
<td>to the intervention being evaluated</td>
</tr>
<tr>
<td></td>
<td>Change initiatives were introduced and/or are currently being introduced and</td>
</tr>
<tr>
<td></td>
<td>are impacting the area being evaluated</td>
</tr>
</tbody>
</table>

Additional Comments:
EVALUATION POTENTIAL REPORT  
(Proposed Format)

I. Problem Statement:
Provide a clear statement of the problem that was addressed by the implemented solution.

II. Gaps Statements:
Provide objective-type statements for the gaps that were identified during the front-end analysis.

III. Causes:
State all causes that were identified and which gaps they addressed. Note any gaps for which a cause was not identified.

IV. Solution Set:
Describe the proposed solution and causes it did and did not address.
Describe the implemented solution and any differences that exist between it and the proposed solution.

V. Environmental Stability:
Describe any change initiatives or political issues that may impact the success rate of the implemented solution.

VI. Fidelity Potential:
Describe the degree to which baseline data is available related to each component of the implemented solution.
Describe the degree to which baseline measures are replicable for each component.
Describe the range of data sources that were collected for each measure. Was data triangulation done?
Describe the known validity and reliability measures of the instruments used. Were the measures valid and reliable? Were they piloted?
Describe the degree to which cost information is available for the proposed and implemented solutions.

VII. Potential Evaluation Question Areas:
1. Any gaps for which no causes were identified. Why not? Can/should causes still be identified?
2. Any causes that were not accounted for by a proposed solution. Why not? Did the implemented solution cover these areas?
3. Any differences between the implemented solution and the proposed solution. Why the differences?
4. How much has performance increased from the baseline measures to now?

VIII. Areas to Negotiate
1. Should a ROI be conducted? If all component of the proposed solutions have not been implemented (or at least all cause areas have not been addressed by the solution), then an ROI would be incomplete.
2. Will all components of the solution be evaluated?
APPENDIX B

Qualifications of Expert Panel,
Protocol, and Feedback from First Expert Panel Review
<table>
<thead>
<tr>
<th>Roles (Primary / Secondary)</th>
<th>Subject Matter Expert 1</th>
<th>Subject Matter Expert 2</th>
<th>Subject Matter Expert 3</th>
<th>Subject Matter Expert 4</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Academician &amp; HPT consultant</td>
<td>HPT Practitioner &amp; Academician</td>
<td>Academician</td>
<td>Academician &amp; HPT/evaluation consultant</td>
</tr>
<tr>
<td>Areas of Expertise</td>
<td>Performance technology, instructional design</td>
<td>Evaluation, performance technology, instructional design</td>
<td>Research methodology, performance technology, instructional design, model development &amp; validation</td>
<td>Evaluation, research methodology, performance technology, instructional design</td>
</tr>
<tr>
<td>Education</td>
<td>• Ph.D. Administration, Supervision &amp; Curriculum</td>
<td>• Ph.D. Instructional Systems, M.Ed. Adult Education</td>
<td>• Ph.D. Instructional Technology, MA. Psychology of Reading</td>
<td>• Ph.D. Instructional Technology</td>
</tr>
<tr>
<td>Academic Experience</td>
<td>• Professor 4 yrs, Adjunct Professor 4 yrs</td>
<td>• Adjunct Professor 2 yrs</td>
<td>• Professor 15 yrs, Associate Professor 10 yrs.</td>
<td>• Professor 19 yrs, Assistant Professor 6 yrs</td>
</tr>
<tr>
<td>Courses Related to HPT &amp; Evaluation</td>
<td>Professional Experience</td>
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<tr>
<td>• Management of Organizational Communication</td>
<td>• 24 yrs consultant (performance technology)</td>
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<tr>
<td>• Learning and Design</td>
<td>• 10 yrs performance technologist with Fortune 500 company, 9 yrs consultant</td>
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<tr>
<td>• Designing Communication Systems and Messages</td>
<td>• 20+ yrs consulting (funded research)</td>
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<tr>
<td>• Training and Communication in Global Organizations</td>
<td>• 22 yrs consultant (testing, evaluation, certification)</td>
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<td>• Integrated Marketing Communication and Training</td>
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<td>Association for Educational Communication and Technology</td>
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<td>Council of Communication Management</td>
<td>Academy of Human Resource Development</td>
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<td>International Television Association</td>
<td>Organizational Development Institute</td>
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Table B.1 – Qualifications of Expert Panel Review- Continued
MODEL DEVELOPMENT PROTOCOL
THE DEVELOPMENT AND VALIDATION OF A
HUMAN PERFORMANCE TECHNOLOGY-SPECIFIC EVALUATION MODEL

BACKGROUND
The Human Performance Technology (HPT) process is a systematic, problem-solving approach to identifying performance problems, causes and solutions, as well as implementing the solutions and evaluating their effectiveness. While evaluation is a primary step in the HPT model and its value is well recognized, there is a wide discrepancy in the regularity in which this step is actually conducted. Additionally, the quality of evaluations conducted varies widely. While many models specific to the HPT process exist related to the performance problem and cause identification steps, no HPT-specific evaluation models currently exist.

PURPOSE
The purpose of this study is to create and validate an HPT-specific evaluation model to guide evaluators in consistently conducting efficient and effective evaluations of the interventions implemented and the decisions which led to their implementation. The model will specifically address currently existing barriers to conducting evaluation.

AUDIENCE
The intended audience for this model is the HPT practitioner. While the output of the evaluation, the evaluation report, will be of interest to the owner of the performance problem, the user of the model will be those versed in the entire human performance technology process. It is intended that the model will be of use to a novice-level practitioner by providing a standard process and method for conducting HPT evaluations. The model will aid the expert by aiding in identifying the potential degree of fidelity of an evaluation. Perhaps of the greatest value of the model will be to provide a standard for the HPT community to allow a means of establishing a framework for meta-evaluation of the HPT process, and identifying areas of strength, weakness and gaps.

SCOPE
The HPT-specific evaluation model will focus on summative, confirmative and meta-evaluation. It is not intended to cover formative evaluation which may take place during the steps of Performance Analysis, Cause Analysis, Intervention Selection and Design, and Intervention Implementation and Change (see Figure 1.0). The model will include a basic framework to describe the steps involved, decisions to be made within each step, tools and instruments to aid in the data collection, and means to categorize or rate the degree of fidelity of the evaluation based on established criteria.
ASSUMPTIONS*
The following assumptions precipitate the use of the model:

- A systematic, problem-solving approach was used to identify the performance problem, causes, and solutions.
- The selected solution set was implemented within the organization.

OPERATIONAL DEFINITIONS*
* Under construction

Evaluation – a review process used to identify the value or worth of an identified solution. By definition, evaluation is responsive in nature and thereby distinguished from front-end analysis.

Human Performance Technology (HPT) – the process of analyzing performance-related data to identify a performance gap, its causes, and solutions to close the gap, implementing the solutions, and evaluating the outcome and process used; all for the purpose of improving human performance within an organization.

Model – a representation and usually simplification of a complex reality.

Method – a set way of accomplishing something, usually in a step-by-step format.

Solution – the identified set of interventions which are intended to close the gap between the desired and actual performance. A solution is rarely a singular entity but is instead a set of interventions which together will impact performance. For example, a solution may include such interventions as a process redesign, training, and an incentive program. These interventions together address the identified causes of the performance problem.

MODEL SYMBOLOGY / TERMINOLOGY*

To be determined
Figure 1.0
www.ispi.org
International Society for Performance Improvement
INITIAL PANEL REVIEW OF MODEL
(JULY 22-28, 2002)

QUESTIONS TO THE PANEL

1. Do you perceive that use of the model provides a sufficient means to identify the degree to which the performance gap was closed? If not, why not?

2. Do you perceive that use of the model provides sufficient information about the thoroughness of each phase of the HPT process? If not, what is lacking?

3. What do you perceive to be barriers to the use of this model?

4. What are the benefits (if any) of using this model?

5. Do you perceive that the sponsors of the evaluation will find the information to be useful? Are there any improvements that could be made to the reporting content/format?

6. Do you perceive the guidance to be sufficient for a novice HPT practitioner? Is the model and supporting guidance intuitive to a novice HPT practitioner?

7. What overall problems do you see?

8. Overall, what do you perceive to be the value (if any) of this step?

9. Are there any other areas that should be covered in this step?

10. Is the support provided sufficient for a novice? If not, what is lacking?

11. How helpful are the tools in guiding the evaluator through this step?

12. Open comments
Feedback from First Expert Panel Review

1. Transposition of Steps Two and Three

- Regarding the step on creation of a proposed evaluation plan, may need to involve the stakeholder at multiple times throughout the creation and refinement of the evaluation plan in order to get agreement and buy-in. (SME 2)

Changes to Model and Rationale

- Included within the detail of the “Create Proposed Evaluation Plan” step.

2. Clarification of Purpose

- Missing any mention of the business impact. Focus of model is on retrospective gaps, but business wants the gaps closed in order to impact results. Business wants to know if the problem has been fixed and how much better off they are for having funded it. Need to clarify for whom we are doing the evaluation. Is it the organization as a whole or is it a department within the organization? They each have different interests. (SME 2)

Changes to Model and Rationale

- Clarified wording related to areas within the model to address the business impact. De-emphasized focus on the HPT process used. If the evaluation sponsor is the business, they may not necessarily care about the process that brought them to the results. However, if the sponsor is the entity who was responsible for identifying the correct solution, they may care about the effectiveness of the process they used.

3. Issues with Rigor of Front-End Analysis Requirement

- Model should address how desired performances might change over time. (SME 1)

- Model seems to assume that evaluator was not a part of the original front-end analysis team. Are there implications if they were part of the original front-end analysis? (SME 4)

- Model seems built on a major assumption that a rigorous front-end analysis was conducted. This is not often the case in business. Can the model still be used? Should it address other scenarios for how a solution was selected? (SMEs 2 and 4)
Changes to Model and Rationale

- Modified “conduct evaluation environment analysis” step to include information about how performances might change over time and to include implications if evaluator was involved in the initial front-end analysis.

- An original assumption of the model was that a front-end analysis led to the selection of intervention. In keeping with the ideal, this is a valid assumption. However, as was pointed out in the feedback, this is not often the case in practice. For this reason, a decision heuristic was added to help determine what kind of front-end analysis was conducted and what the implications of this are on the evaluation.

4. Issues with Novice versus Expert Requirement

- “Faced with competing dilemmas…must provide enough procedural direction that the novice can move through the task. This is well done. On the other hand, there isn’t much room for the expert evaluator religiously following the model to use one’s previous experience to draw conclusions that do not explicitly follow the procedure suggested. Maybe it should be geared towards one or the other, or make two models.” (SME 3)

- Model should accommodate more realistic situations such as determining what areas to cut due to time pressure or cost restraints. How can the evaluator move quickly through the steps? (SME 3)

- Relative to the “create proposed evaluation plan” step, feedback indicated that the model should also “instruct the novice to return the basic questions many times throughout the evaluation to make sure the whole story is being told.” (SME 3)

Changes to Model and Rationale

- Chose to modify the intended audience to that of a novice evaluator. As such, the model provides a standard process for evaluation, direct guidance related to each phase, detailed guidance for potential “trouble areas”, and suggested reading for further information.

- In Draft 2, based on the evaluation analysis, I attempted to address the issue of moving quickly through the steps. By identifying what can and cannot be thoroughly evaluated, the evaluator is able to provide the owner of the evaluation with clear details about what to expect.

- Improved the narrative detail of the “implement data collection and analysis” step to remind the evaluator to continually return to the evaluation questions to reflect on how well they are being answered.

5. Issues with Level of Detail   (Too Much or Too Little Provided)
• Too little detail – “If novice was not familiar with evaluation methodologies, would need to be more material available (or at least cited) about how to choose and implement methodologies.” (SME 1)

**Changes to Model and Rationale**

• Expanded details section for both the “create evaluation plan” and “implement data collection and analysis” steps to provide basic guidance and further resources on data collection and implementation methodologies.

6. **Missing Elements and Rationale for Changes to Model**

- “I maintain that the order of the model should be box 3, then 1, then 2.” (SME 2)
  - Changed order of steps in Draft 3.

- Include prompt for simple reflection early in the data collection process to get general feelings about what is happening. (SME 3)
  - Provided in model narrative in implement step.

- Provide a glossary of terms. Define “organization” (SMEs 2 and 3)
  - Added to model.

- Indicate that many of these steps, while linearly displayed, are iterative in nature. (SME 3)
  - Included in narrative in model overview.

- “On gap analysis tool, add a column to link person with their part in the gap analysis process.” (SME 2)
  - Added column on tools to link person with their role in the intervention.

- Gloss over very complex issue such as ROI study. (SME 4)
  - Removed reference to ROI from model. To include support for conducting an ROI would be beyond the scope of the study.

- “Related to presenting findings, encourage novice to recognize that there can be many different audiences and different outputs should be written.” (SMEs 1 and 2)
  - In Present Evaluation Findings step, added narrative prompt for evaluator to consider various audiences for the final presentation of findings.

- “Related to reliability and validity and the difficulty in ensuring this, perhaps provide some cautionary notes about what NOT to do in data collection.” (SMEs 1 and 3)
  - Added guidance related to types of data collection methods and their advantages and disadvantages.
7. Strengths of Model

- Model is intended for summative evaluation. However, portions could be used in a formative evaluation. Additionally, with some expansion, the model could be used for confirmative evaluation. (SME 3)

- “For a novice evaluator and for novice clients, the model provides a nice visual roadmap of what will happen.” (SME 1)

- “The model would help the novice conceptualize ideal HPT evaluation circumstances and conduct, which is extremely important since action begins with the actor’s concept of what he/she is doing.” (SME 4)

- “(Conduct environment analysis) is a critical step to see what kinds of evaluation are possible right at the beginning.” (SME 1)

- “The tools (in electronic and database form) would be helpful in keeping track of the volumes of data that most evaluations generate.” (SME 4)

- “The negotiate evaluation parameters step limits what you have to do later by acting as a contract that stops the sponsor from suddenly deciding they also want ROI for example, when it wasn’t included in the original plan.” (SME 2)

- “Interesting approach to put the negotiation step as second….Very important and novel contribution here.” (SMEs 1 and 2)

- Including “sharing evaluation findings with overall HPT community is novel.” (SME 1)
APPENDIX C

Human Performance Intervention Evaluation Model
Draft 2
**Human Performance Technology-specific Summative Evaluation Model (HPT-SEM)**

**Phase 1: Evaluation Front-End Analysis**

1. **Conduct Evaluation Analysis**
   - Review Gap & Causes
   - Review Proposed/Implemented Solution
   - Conduct Environment Analysis

2. **Create Proposed Evaluation Plan**
   - Evaluation Questions
   - Data Collection Plan
   - Data Analysis Plan
   - Budget / Task Timeline

3. **Negotiate Evaluation Parameters**
   - Purpose/Audiences/
   - Evaluation Questions
   - Timeline / Costs
   - Methods
   - Access/Involvement
   - Outputs

**Phase 2: Evaluation Implementation**

4. **Implement Data Collection & Analysis Plan**
   - Instrument Development/
   - Leverage & Pilot
   - Data Collection
   - Data Analysis

5. **Present Evaluation Findings**
   - Presentation to Audiences
   - Process / Outcome Information to HPT Community
MODEL OVERVIEW

There are many ways in which a change initiative or intervention is selected in organizations, which may include such approaches as:

- systematically identifying performance problems, their causes, and then linking these causes to a set of solutions. This is referred to as a front-end analysis and is the principle on which the Human Performance Technology process is built.
- purchasing a solution from a vendor due to marketing and perceived need, then feeling compelled to utilize it – the “we bought it, we need to use it” approach.
- being told what the solution will be by an authority within an organization – the “we need training” approach.
- an ad hoc approach – “trial and error” approach.

The approach that was used to determine the correct solution for a performance problem has a direct impact on the complexity, requirements, time, and cost necessary to conduct an evaluation. For example, if a systematic approach was used to determine the best intervention to fix a performance problem and original data are available, then baseline measures have already been identified. This may lessen the data collection requirements, which can decrease both the time and cost of conducting the evaluation. Conversely, if a non-systematic approach was used to select a solution, then it will be necessary to retroactively identify data that can serve as a baseline upon which to contrast current performances. This will add to the data collection requirements as well as the time and cost of the evaluation.

The purpose of the Human Performance Technology-specific Summative Evaluation Model (HPT-SEM) is to provide a systematic process for evaluating the effectiveness of interventions which have been implemented as a result of a front-end analysis. The primary purpose of the model is to answer two major questions:

1. Are the performances in question now reaching the desired levels?
2. If not, why not?

Based on the Human Performance Technology process, the HPT-SEM provides a systematic framework for conducting an evaluation of performance interventions. The model guides the evaluator in identifying the depth and breadth options for the evaluation based on data availability, the time and cost requirements for conducting the evaluation, the plan for collecting and analyzing the data, and the presentation and reporting requirements for the evaluation.

The model provides a high-level process for conducting the evaluation with detailed guidance for each step within the process. Task-specific tools are provided for each step to assist in organizing the required data.
HOW DOES THIS MODEL FIT INTO THE OVERALL EVALUATION PROCESS?
While there are various scenarios as to how the HPT-SEM could be utilized, a common process for an external evaluator would be:

1. An initial request for an evaluation is made to the evaluator along with a preliminary description of what is to be evaluated and who the primary point of contact will be.
2. A contract is drawn up to cover the evaluation front-end analysis (Phase 1: Evaluation Front-End Analysis) specifically:
   - Step 1: Conduct Evaluation Analysis
   - Step 2: Create Proposed Evaluation Plan
   - Step 3: Negotiate Evaluation Parameters
3. Part of the negotiation step of the model will be a determination as to whether or not the evaluation will actually be conducted. If it is conducted, a second contract covering the implementation of the evaluation plan will be created. This contracting process may be modified for an evaluator internal to an organization based on the organization’s structure and procedures.
4. The evaluation plan is then implemented (Phase 2: Evaluation Implementation) which includes instrument development, data collection and analysis, and continuous reflection and monitoring of progress (Step 4: Implement Data Collection and Analysis Plan).
5. Finally, the findings from the evaluation are presented to specified stakeholders of the performance problem. Additionally, the evaluation process and findings are reported to communities of interest (Step 5: Present Evaluation Findings).

WHO SHOULD USE THIS MODEL?
The HPT-SEM is designed to provide support for novice HPT practitioners who are asked to conduct an evaluation of a performance intervention. A novice HPT practitioner is considered to be a person who has foundational knowledge of a systematic problem-solving process to determine appropriate performance improvement solutions. The HPT-SEM is based on a specific systematic approach called the Human Performance Technology process which identifies the organizational environment, the measurable gaps in actual and desired performance, the causes of these gaps, and solutions which will positively impact the desired performances.

Beyond possessing this foundational knowledge of the HPT process, novice HPT practitioners will have been exposed to real world applications of the HPT process in an organization. They will have experience in conducting front-end analysis within an organizational setting. This may include identifying performance deficiencies, identifying causes, and identifying solutions.

Besides experience in using the HPT process, the intended user of this model will have foundational knowledge of evaluation practices. While most academic evaluation coursework is currently related to program evaluation, these basic foundations of evaluation will be beneficial to the evaluator of HPT performance interventions.

WHY IS THIS MODEL NEEDED?
Evaluation of social and governmental programs has a strong history since the early 1940’s (Worthen, Sanders, & Fitzpatrick, 1997). This is often due to the accountability related to use of
public funds for these types of programs. Historically in many organizations however, evaluation of performance improvement interventions is infrequently conducted.

There are many reasons for this lack of evaluation including the fast-paced and forward focus of organizations, the reactive nature of evaluations, and the time and costs related to conducting evaluations. An additional barrier to having evaluations conducted within organizations is the lack of persons with the knowledge or experience to conduct evaluations. Persons may be asked to conduct evaluations who do not have experience or training in this area. Related to a lack of “know-how” for conducting evaluations, evaluation findings have often gone unused due to poorly conducted evaluations.

The HPT-SEM provides a clearly delineated process for how to conduct a performance intervention evaluation. Guidelines are provided for each step, which outline the activities and outcomes of each step. Guidance is given on what data to collect, who should be involved in the evaluation process, and how findings should be presented.

**HOW CAN THIS MODEL BE USED?**
The HPT-SEM is designed as a summative evaluation of the impact and outcomes of a performance intervention. Summative evaluation assumes that an intervention has been implemented and there are questions related to the effectiveness of the solution.

Additional types of evaluation include formative, confirmative, and meta-evaluation. Formative evaluation is conducted during each phase of the HPT process. The purpose of formative evaluation is to identify areas for improvement in the process that is currently being undertaken. This immediate feedback allows revisions to be made to correct identified deficiencies early in the process, while it can still impact the outcome. Confirmative evaluation is similar in process to summative. However, the purpose is different. Whereas summative evaluation occurs immediately following the implementation of a solution, confirmative evaluations are conducted after a predetermined period time has elapsed to determine if a solution is having a desired impact on performance relative to time. Meta-evaluation is evaluation of the evaluation. It is looking at the evaluation process that transpired to identify areas of improvement.

While the model was developed for summative evaluation purposes, there are components of the model that may be helpful in conducting a formative evaluation. Specifically, the questions and processes used in Step 1: Conduct Evaluation Analysis could also serve as a tool for guiding a formative evaluation of the major steps within a systematic front-end analysis.

Additionally, because of the similarity between summative and confirmative evaluation, with minor modifications related to specified time, the model can easily be adapted for conducting a confirmative evaluation.

Meta-evaluation is not addressed within the model. However, the final step of the model includes an emphasis on reporting to the community of practice of Human Performance technologists and other related communities in an effort to continuously improve upon the
process. This final step can relate in portion to meta-evaluation by allowing for the collection of data and knowledge about the evaluation process used to be included in this feedback.

GLOSSARY OF TERMS
The terminology defined below is used within the HPT-SEM model and tools.

Confirmative evaluation –

Evaluation – a review process used to identify the value or worth of an identified solution. By definition, evaluation is responsive in nature and thereby distinguished from front-end analysis.

Formative evaluation -

Human Performance Technology (HPT) – the process of analyzing performance-related data to identify a performance gap, its causes, and solutions to close the gap, implementing the solutions, and evaluating the outcome and process used; all for the purpose of improving human performance within an organization. See the International Society for Performance Improvement website (www.ispi.org) for a more thorough review of HPT.

Model – a representation and usually simplification of a complex reality.

Method – a set way of accomplishing something, usually in a step-by-step format.

Solution – the identified set of interventions which are intended to close the gap between the desired and actual performance. A solution is rarely a singular entity but is instead a set of interventions that together will impact performance. For example, a solution may include such interventions as a process redesign, training, and an incentive program. These interventions together address the identified causes of the performance problem.

Solution component –

Summative evaluation –

Triangulation –
Initial Client Contact – Request for an Evaluation

Whether a performance intervention evaluation is to be conducted by an evaluator external to the organization or by someone within the organization where the intervention was implemented, all evaluations begin with this initial expression of desire to know the impact of an intervention. While the initial contact may be informal in nature, there are several critical preliminary pieces of information that should be secured.

During the initial contact, secure as much information as possible about the following:

1. A description of the solution being evaluated.
2. A description the performance problem that the solution was to resolve.
3. Identify initial points of contact within the organization (and their relationship to the performance problems) including the role of the person making the initial contact.
4. Access to any existing documentation from the front-end analysis (if applicable).
5. Identification of initial stakeholders of the intervention.
6. The required timeframe for the evaluation.
7. An understanding of the importance of the evaluation to the client and to the organization.
8. The intended audience for the evaluation findings.

For your part, provide the client with a description of the contracting process you will follow. A suggested process is outlined below. Additionally, you will need to gain permission to begin the initial evaluation front-end analysis.

Based on this initial contact, a contract should be created which covers the work required to complete Phase 1 of the HPT-SEM. An initial contract should include the following elements:

- Description of the working process to be followed to conduct the evaluation front-end analysis
- Deliverables/products which will be produced
- Timeframes and costs associated with the evaluation front-end analysis
- Expectations from the client (e.g. access, involvement, sign-off)
- Expectation of client meeting to negotiate evaluation parameters

An outline for the initial contract is available in the “Tools” section of this document.
Phase One: Evaluation Front-end Analysis

Overview
Systematically undertaking an evaluation requires considerable “up-front” preparation prior to beginning the data collection, analysis, and reporting process. As is true with any major task, approaching the preparation and conduct of the evaluation as a project is a wise strategy.

Phase One: Evaluation Front-end Analysis outlines the steps in creating and negotiating an evaluation plan (project plan).

   Step 1: Conduct Evaluation Analysis
   Step 2: Create Proposed Evaluation Plan
   Step 3: Negotiate Evaluation Parameters

This phase includes gaining a general understanding of the performance problem, causes, and solution components, and an understanding of the performance environment. In cases where a thorough front-end analysis was conducted, a fairly detailed picture of this environment can be created. This initial data gathering educates the evaluator as to what evaluation questions can be answered, what data exist, and what data will need to be gathered.

Based on this information, an evaluation plan can be created which outlines:

- questions to be answered,
- methodology,
- timeframes and costs.

As a final step of the phase, a negotiation meeting will take place where all parties agree that the evaluation will or will not take place. If it is decided by all parties to continue with the evaluation, they will need to agree on:

- which evaluation questions will be answered,
- the methodologies for gathering data to answer the questions,
- the timeframes and costs,
- the access and involvement of stakeholders,
- the sign-off points for the client, and
- the audiences and formats for presenting the findings from the evaluation.

A second contract will then be created to cover Phase Two: Evaluation Implementation. An outline for this contract is available in the “Tools” section of this document.
Phase 1: Evaluation Front-End Analysis

Step 1: Conduct Evaluation Analysis

Overview
There are two primary areas to address within this step. They are:

1. Review of the Initial Analysis
   - What was the originally identified problem?
   - Who were/are the clients and stakeholders of this problem?
   - What were the originally identified performance and organizational gaps that were to be addressed?
   - What were the identified causes of each gap?
   - What solution components were identified to address each cause/gap?
   - What solution components were implemented to address each cause/gap?

2. Conduct Environment Analysis
   - What change initiatives occurred during the time ranging from the initial identification of the problem to the point of this evaluation?
   - What political influences can be identified that may have been in play during this time?
   - What external factors occurred during this time?

If you have an evaluation team, it is recommended that separate investigators cover areas one and two in order to reduce the potential for bias. Additionally, this allows for the areas to be covered concurrently.

Once this information is gathered, use the Synthesis Worksheet to analyze the information in preparation of Step 2: Create Proposed Evaluation Plan. The overall purpose of this step is to determine the availability of necessary data in order to answer the major questions of

1. Are the desired performances now being met?
2. If “no”, why not?

The process and decisions to be made during Step 1: Conduct Evaluation Analysis are graphically outlined in the flowchart below.
Initial Client Contact

What solution is being evaluated?

What performance problems was this solution to have resolved?

Were measures taken to determine the difference between the desired and actual performances?

Can you retroactively measure / determine the difference between desired and actual performance?

For each gap measured, identify/document actual & desired performances. (Gap Analysis Guide)

Was an FEA conducted to identify/link causes & solutions to gaps?

Map gaps to causes to solution components. (Cause / Solution Matrices)

Has the performance environment changed from the time the original problem was identified until now?

Describe changes and map with potential impact areas (Environment Analysis Guide)

Options:
1. Identify measures which will serve as baseline for a future evaluation.
2. Collect anecdotal measures (decrease in integrity of evaluation)
3. Don't evaluate.

Yes

No

Synthesize data and continue to Step 2 (Synthesis Worksheet)
REVIEW OF THE INITIAL ANALYSIS

In the best case, a thorough, documented human performance analysis was conducted prior to the selection and implementation of the solution being evaluated. A thorough analysis would include:

- an understanding of the performance environment at the time the performance problem was identified
- measurement of the actual performance and identification of the desired performance related to the identified problem. The difference between two was identified as the performance gap.
- identified causes for each performance gap.
- identified solution components to address each gap.

However, this may not always be the case. Front-end analyses vary, ranging from measurable, replicable data to an anecdotal understanding of the initial problems and causes with little to no quantitative data having been collected. Additionally, in many cases, no front-end analysis was conducted at all prior to determining what solution to implement. Other common approaches leading to solutions being implemented include the:

- “we bought it, we need to use it” approach.
- “we need training” approach.
- “trial and error” approach.

This summative evaluation model is best utilized when some type of front-end analysis was conducted. If a thorough analysis was conducted, including documented, measured gaps, causes, and solutions, then the time required to complete this first step and the data collection step will be greatly reduced. If, however, a less systematic analysis was conducted (e.g., based on anecdotal measures, little available documentation), then it will be necessary to identify retrospective baseline measures, requiring more time in both this step and in data collection.

In this step, you will assess the availability and quality of information which serve to answer the two major evaluation questions:

1. Are the desired performances now being met?
2. If “no”, why not?

Following the Human Performance Technology process, you will need to review available information related to:

- Performance gaps
- Causes
- Proposed and implemented solutions
- Organizational environment
Begin the process by answering the following five questions:

1. **What solution is being evaluated?**
   Describe the overall solution, the components of the solution, and the purpose of each component.

2. **What performance problems were to be resolved by this solution?**
   Describe the all identified performance problems, who was impacted, and why it was considered to be a problem.

3. **For each mentioned performance problem, were measures taken to verify that there was truly a gap between the desired and actual performance?**
   If “yes”, then identify the measures, including the actual performance, the desired performance, and determine the gap in each performance (see Gap Analysis Tool).

   If “no”, then identify if data can be collected retroactively to document the gaps. Retroactive data may include existing performance metrics that an organization keeps or recreation of an organizational history (anecdotal data). These data will then serve as the baseline against which you will measure current performance or perceptions.

   If you determine that a clear picture of the actual performance cannot be created, then a decision must be made as to whether perception data alone will provide sufficient, cost-effective information which merits continuance of an evaluation.

   If it is determined that an evaluation will not continue, identify the current performance measures for each gap. These can then serve as baseline measures for a future evaluation.

   Specifically, you will want to
   - Identify the initial performance problem that the client presented to the HPT practitioner.
   - Outline the client and stakeholders from the front-end analysis, their relationship to the performance problem, and any changes in clients and stakeholders in the current environment.
   - Identify what measures were taken to identify the existing performance gaps and the methods used. Additionally, identify if the measures were taken at both the performer level and the related organizational level for each identified gap.
   - Note any gaps that may have been mentioned but for which no measures were taken.
   - Note the availability of any instruments that were used to gather data during the initial analysis. Determine if the instruments were piloted, tested for reliability and validity, and their availability for reuse.

   Use the Gap Analysis Guide to outline the information available from the original front-end analysis.
4. Were causes and solutions linked to each identified performance gap?
   - If “yes”, document all linkages of causes to their appropriate gap. Identify any gaps for which no causes were identified. These may become potential areas for evaluation.

   Link all solution components from the proposed solution to their related causes and gaps. Note any gaps that were not addressed by any solution component.

   Compare the proposed solution components to the implemented solution components. Were any components proposed but not implemented? Were any new solution components added? If so, do they link back to any causes and gaps related to the performance problem?

   - If “no”, can data sources be identified to determine causes? Can the solution be broken down to components and linked back to causes? If this is an option, use the Cause Matrix, Proposed Solution Matrix, and Implemented Solution Matrix to organize this data.

   If no cause or solution component linkage is available, then the ability to answer the major evaluation question of “if not, why not” may be difficult with anything other than assumptions.

Relative to causes, you will want to
   • Identify the causes from the initial analysis.
   • Link each cause back to its related performance gap.
   • Note any models (e.g. Gilbert’s Behavior Engineering Model, Mager and Pipe’s Performance Analysis Flow Diagram, Kaufman’s Organizational Elements Model) that were used in identifying each cause (optional).
   • Identify the Deficit Category (see Cause Matrix) that each cause reveals.
   • Note any gaps for which no causes were identified. These represent a potential problem area related to the success of any proposed or implemented intervention. If this gap was not addressed as part of the solution, there may still be performances that were not impacted by the solution.

You may use the Cause Matrix as an aid in outlining the deficiency categories for each cause and its relation to the performance gap(s).

Regarding the assessment of the solutions, you should review two areas: (1) the proposed solution and (2) the implemented solution.

Note: a solution is defined as the entire package of interventions used to close an identified gap in performance. As such a solution may be made up of many components. For example, a solution may incorporate such solution components as training, an incentive program, job aids, revised processes, changes in equipment, to name a few. In reviewing the solution set, it is important to break it down into its component parts.
EPSS (Electronic Performance Support Systems) are special cases which encompass a collection of solution components. An EPSS is often made up of such interventions as just-in-time training, calculation tools, process redesign, and knowledge management resources. These should each be listed separately as solution components.

**Proposed Solution Analysis**
Based on the identified causes, solution components should have been selected to address each problem area. From the initial analysis, identify the solution components that were selected. Relate each component back to an identified cause/gap combination.

Specifically, you will want to
- List the solution components from the initial analysis. Remember to break components such as an EPSS down into its parts.
- Link each component back to its related cause(s). Each cause should already be related back to a performance gap.
- Note any models (e.g. Gilbert’s Behavior Engineering Model, Mager and Pipe’s Performance Analysis Flow Diagram, Kaufman’s Organizational Elements Model) that were used in identifying each solution (optional).
- Identify the Deficit Category (see Proposed Solution Matrix) that each solution component is proposed to address.
- Note any causes for which no solution components were identified.

You may use the **Proposed Solution Matrix** as an aid in outlining the solution components, the deficiency categories each component was to address, and the related cause(s) for each solution component.

**Implemented Solution Analysis**
The solution set that was proposed as part of the front-end analysis may be different from the actual solution that was implemented. For the solution that was implemented, identify each component, relate it back to an identified cause/gap combination, and identify deficit area for each component.

Specifically, you will want to
- List the solution components that were implemented. Remember to break components such as an EPSS down into its parts.
- Link each component back to a related cause(s).
- Identify the Deficit Category (see Implemented Solution Matrix) that each solution component is proposed to address.
- Note any differences between the proposed solution components and the implemented solution components:
  - Were any causes not addressed?
  - Were any deficit areas not addressed?
  - Were additional deficit areas addressed by the implemented solution?
You may use the **Implemented Solution Matrix** as an aid in outlining the solution components, the deficiency categories each component was to address, the related cause(s) for each solution component, and the differences between the proposed and implemented solution.

5. **Has the performance environment changed from the time the original problem was identified until now?**

An organization is a dynamic living environment and in most cases, substantial time has elapsed since the identification of the performance deficit, causes, proposed solutions, implementation of the interventions, and the conducting of this evaluation. A retrospective analysis of the environment during this time will provide information regarding factors that may have impacted the degree of success of the implemented intervention. These factors will need to be accounted for or at a minimum, identified relative to the evaluation.

Are data or documentation available which can create a picture of what the original performance environment looked like? This would include such information as the original work flow and communication processes, departments/persons involved, the culture of the organization when the performance problem was identified, and who was impacted by the performance problem.

If no data are available from the front-end analysis, can you recreate the picture of the original performance environment with an acceptable degree of fidelity? Such historical data as performance metrics, organizational charts, and organizational artifacts such as newsletters, memorandums, and internet sites can help in this recreation. However, the richness of the original environment can rarely be retrospectively recreated.

What does the environment look like now? (Note: If a thorough front-end analysis was conducted, this is the first time within this step that new information is being sought.) Has it changed from the original picture? If so, how and why? Were any change initiatives introduced? Have any political or cultural changes taken place? Have any changes been forced upon the organization from sources external to the organization (e.g. legislative, economical, etc.)?

Specific areas of interest to analyze are:

- change management initiatives introduced during the lifespan of the intervention being evaluated (e.g., downsizing, departmental reorganizations).
- political issues that have taken place during the original front-end analysis and intervention lifespan
- organizational culture and/or diversity issues during the original front-end analysis and intervention lifespans.
- issues external to the organization that have transpired during the front-end analysis and intervention lifespans (e.g. economic downturn, legislation that has effected how a process must be conducted).
If the environment has been highly unstable during the front-end analysis and intervention lifespans, then the likelihood of other factors impacting performance is high. While it would not be possible to account for the impact of all factors, awareness of these issues will help to determine the potential rigor of the evaluation. Use the Environment Analysis Guide to assist in gathering this data.

Answers to these five questions will form the basis of the proposed evaluation plan you will create in step two.

**SYNTHESIZE DATA FOR PROPOSED EVALUATION PLAN**
(Tools: Synthesis Worksheet)

You now have gathered a broad array of data and information. Hopefully, a picture is now beginning to develop related to the potential depth and breadth possibilities for an evaluation. In order to make informed decisions about what the evaluation can look like, it is necessary to analyze and synthesize this information. You will want to determine:

- What can be evaluated
- The fidelity potential of the evaluation
- The time that will be required to conduct the evaluation
- The cost related to conducting the evaluation.

Synthesizing this information will serve as a starting point for Step 2: Create Proposed Evaluation Plan.

The purpose of gathering and organizing the data in step one is to be able to create a clear picture of how the two main evaluation questions will be answered:

1. Are the desired performances now being met?
2. If “no”, why not?

These questions relate to two types of summative evaluation: (1) outcome evaluation and (2) process evaluation.

Outcome evaluation includes the high-level question of “to what degree did we succeed at closing the performance gap(s)?” as well as questions related to the benefits gained from the solution components, and unanticipated side effects (both positive and negative). Answers to these questions are important to the purchaser of this evaluation, the stakeholders of the problem, and the HPT community of practice.

Process evaluation asks the question “how thorough was the process which led to this implemented solution” and relates to the “if not, why not” question. The answer to this question is valuable to internal or external departments or persons who conducted the initial analysis and those who implemented the introduction of the intervention into the environment in order to determine areas of improvement within their internal analysis/change management process.
Additionally, this information is extremely valuable to the HPT community of practice as feed-forward information for continuous improvement.

Specifically, use the information you gather in Step 1 to outline:

- What is the performance problem that was originally identified?
- Who are the clients, problem owners, and stakeholders of this problem and what is their specific relationship to the problem?
- What performance level and organizational level gaps were identified?
- What measures were taken to verify each gap?
- What is the quantity and quality of data that are available? Were multiple sources used to triangulate data collection?
- What instruments from the front-end analysis are available for leveraging? Were the instruments piloted and tested for reliability and validity?
- What changes have taken place within the environment that had the potential to impact the degree of success of the implemented intervention?
- How much time has elapsed since the original identification of the problem?
- Were causes identified for all performance gaps?
- Were solutions selected to address all causes?
- What differences exist between the proposed and implemented solution?

To begin the synthesis process, use the two major questions as categories to group the data you have collected.

1. Are the desired performances now being met?
2. If “no”, why not?

**How will you determine if the desired performances are now being met?**

To completely answer the question of whether or not desired performance is now being met, it will be necessary to remeasure all performances related to identified performance problems.

If during the evaluation front-end analysis, you determined that performance gaps were measured or if you were able to recreate acceptable measures, then you will measure again using the same data collection methodology during the evaluation implementation. If anecdotal measures were taken, you will need to reassess current perceptions.

If no original performance measures were taken but you were able to determine acceptable measures of the desired performance, these will be taken during the evaluation implementation to become baseline measures for future evaluations.

**If the desired performances are not being met, why?**

The solution was implemented in order to positively impact performance. If in answering the first question, it is determined that the desired performances are not being met, you will need to provide reasons (backed by data) for why this is the case.
While organizing original data, you may have already noted areas of deficiency within the original front-end analysis or environmental initiatives which may have impacted the performances in question. For example, if there are gaps for which no solution component is linked, this is a red flag as a potential problem area.

Some organizing questions for identifying problem areas include:
1. Do any gaps remain without an identified cause
2. Were any causes not addressed by a proposed solution component?
3. Were any causes not addressed by an implemented solution component?
4. Were any proposed solution components not implemented?

If there is a difference between the implemented and proposed solution, then the reason for this difference becomes an evaluation question. Additionally, if any implemented solution components were not linked back to causes, it will be necessary to ascertain why they were included in the solution.

The Synthesis Worksheet can aid you in reviewing your data. When you have synthesized this data, you may wish to begin the rough draft of the Proposed Evaluation Plan as a starting point for step two.

**Suggested Readings**


PHASE 1: EVALUATION FRONT-END ANALYSIS

Step 2: Create Proposed Evaluation Plan

OVERVIEW
From the evaluation front-end analysis, you were able to create a picture of the problem area that was addressed by the implemented solution as well as potential areas of concern related to the integrity of the front-end analysis that led to this solution being chosen. In Step Two you will formulate this information into an evaluation plan which will serve as the basis for the client negotiation meeting (Step Three).

The evaluation plan should outline the breadth of the evaluation, involvement on both the evaluator as well as the client organization’s part, the specific tasks that will be undertaken, the time and costs involved, the intended audiences for the findings, and the expectations related to presenting and reporting the findings.

The evaluation plan is a multipurpose document of extreme importance. Should it be decided (in Step Three) that the evaluation will take place; the evaluation plan will serve as the basis for creation of the contract prior to beginning the evaluation implementation. For the evaluator, it serves as a project management tool. For all parties, the evaluation plan serves as a communication tool, outlining expectations and responsibilities.

In addition to defining the performance problem and solution to be evaluated, the evaluation plan should cover five general areas:

1. Refinement of evaluation questions to be answered
2. Creation of data collection plan to answer the identified questions
3. Determination of how the data will be analyzed
4. Creation of the schedule for conducting the evaluation
5. Creation of the budget for conducting the evaluation

Additional areas that you may wish to include are a:
- Description of the intended audience for the findings
- Determination of contingency plans should changes to the evaluation plan be required
REVIEWING AND NARROWING EVALUATION QUESTIONS

From the synthesis exercise completed in Step One, you now have created an encompassing list of potential questions to be answered by this evaluation. This list will serve as the starting point for identifying the evaluation questions. It will now need to be refined in order to determine the most appropriate evaluation questions given the perceived parameters of time, cost, personnel, stakeholder requirements, and scope. While the overall outcome of Step Two is the creation of a proposed evaluation plan, determining what evaluation questions to include will be both a starting and ending point for this step.

There is no prescriptive formula for determining the most appropriate questions; only guidelines to aid in the refinement process. This refinement is both an iterative and artistic process. To identify which questions to be included in the evaluation, first review all questions identified during the synthesis process.

- Are any questions so similar that they can be combined into one broader question?
- Can any questions be grouped together based on similar themes?
- Can any questions be grouped together based on similarity of the data that will be collected?

The next step will be to prioritize the questions based on specific criteria. Prior to this prioritization, it may be helpful to create the data collection and analysis plan, the budget and the schedule, as this information provides useful prioritization criteria.

CREATE DATA COLLECTION PLAN
(Tools: Evaluation Plan Template)
For each question, upfront planning is necessary related to the:
- source for the data
- sampling strategies
- collection methodologies
- instrumentation
- fidelity (e.g. reliability, validity, integrity)

For each evaluation question, identify potential sources from which the answer can be secured. From step one, some sources for data collection may have been identified. To increase potential integrity of the answers to each evaluation question, it is suggested to triangulate (see Glossary) the data collection sources. Triangulated sources might include performance metrics, supervisor input, and direct employee input. This allows creation of a picture, based on data from multiple perspectives. See the Evaluation Plan Template for an example of triangulation of data sources.

Next, for each source, determine the necessary sample size and strategies. A sample is only needed when it is not possible to collect the data from all sources (population). For example, if the data source in question consists of twenty line managers, is it possible to interview all twenty? The basic premise of sampling strategies is to attempt to collect data from a sample
large enough and with characteristics similar enough to acceptably represent reality (the population). See the Suggested Readings section at the end of this step for further details on sampling strategies.

Necessary sample sizes vary depending on the statistical tests to be used and the size of the effect you desire. Tables are available in most statistics textbooks that aid in this determination. With regards to the representative characteristics of the sample, various techniques can be applied to secure an appropriate sample. These techniques are outlined in the following table and detailed information can be found in the Suggested Readings.

<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th><strong>Random / Nonrandom</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple random sampling</td>
<td>Random</td>
<td>A selection method that assures that all units have an equal chance of being chosen for inclusion in the sample.</td>
</tr>
<tr>
<td>Stratified sampling</td>
<td>Random or nonrandom</td>
<td>Includes predetermined subgroups of the population to include important characteristics.</td>
</tr>
<tr>
<td>Cluster sampling</td>
<td>Random or nonrandom</td>
<td>The unit is a group (cluster) based on a specified characteristic. (e.g. zip code)</td>
</tr>
<tr>
<td>Purposive sampling</td>
<td>Nonrandom</td>
<td>Selection of units based on their perceived ability to provide information related to the focus of the research.</td>
</tr>
<tr>
<td>Quota sampling</td>
<td>Nonrandom</td>
<td>A quota based on specific characteristics of the population is set for the number of units to be included in the sample.</td>
</tr>
<tr>
<td>Snowball or chain sampling</td>
<td>Nonrandom</td>
<td>Selection of units to be included in the sample is based on referrals from previous units already selected.</td>
</tr>
<tr>
<td>Convenience sampling</td>
<td>Nonrandom</td>
<td>Nonrandom in nature, the sample is selected because of such convenience factors as availability, location, or accessibility.</td>
</tr>
</tbody>
</table>

Once the sample size and strategy has been determined, a data collection methodology should be selected. Common collection methods include:

- review of extant (existing) data (e.g. reports, performance metrics)
- observation of process and procedures
- group and individual interviews
- surveys

Triangulation of methods may also be used to help increase the reliability and validity of the evaluation. For each data source identified, when possible, use multiple data collection methods.

There are advantages and disadvantages to each of these methods. Use the table below as a guide in determining which method may be more appropriate.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>Systematic collection of information about actions and patterns.</td>
<td>• View performances in richness of actual environment</td>
<td>• Potential for observer bias</td>
</tr>
<tr>
<td></td>
<td>Types include:</td>
<td>• Low subject demands</td>
<td>• Limitations in complex environments… difficult to “see” it all</td>
</tr>
<tr>
<td></td>
<td>• direct observation</td>
<td>• Opportunity to “see” what may not be “said”</td>
<td>• Subjects may change actions due to knowledge of observer’s presence</td>
</tr>
<tr>
<td></td>
<td>• participant observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interviews</td>
<td>Structured and spontaneous questions designed to gather information about a</td>
<td>• Allows interviewer to clarify or delve into unanticipated areas based on</td>
<td>• Requires logistical coordination to set meeting time and gain access to desired interviewees.</td>
</tr>
<tr>
<td></td>
<td>specific situation.</td>
<td>statements made by interviewee.</td>
<td>• Personal contact may be intimidating</td>
</tr>
<tr>
<td></td>
<td>Types include:</td>
<td>• Often provide rich information due to open-ended nature of questions and</td>
<td>• Can be time consuming to conduct, transcribe, and</td>
</tr>
<tr>
<td></td>
<td>• Individual</td>
<td>conversational</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Focus Groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variations include:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Telephone interviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Face-to-face personal interviews</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
| **Extant Data Review** | Review of existing data (e.g. reports, records, memos) in an effort to gain information about a specified situation. | **Can often** provide long-term history of a situation relatively simply.  
**Inexpensive method of collecting data**  
**Measures often already exist related to a particular question.**  
**Extant data may not exist in a format that is directly related to the question or situation being studied.**  
**May be difficult to gain access to necessary data** |
| **Surveys** | Structured questions designed to gather large amounts of information about a specified situation or construct.  
Variations include:  
• Paper-based  
• Online | **Can gather information from a large sample or population relatively quickly and inexpensively.**  
**Consistent format.**  
Everyone is asked the same questions in the same way.  
**Must often deal with a poor response rate.**  
**Assumes respondent understands the question and intended meaning.** |

(Gordon, D., 2001; Russ-Eft, D. & Preskill, H., 2001; Swanson, R., 1996)
Finally, an instrumentation plan should be completed. For each method selected, determine if:

- An instrument already exists which can be leveraged. Review the Gap Analysis Guide for notes of previously used instruments. Considerations related to leveraging existing instruments are:
  - Is reliability/validity information available on the instrument? If not, is it still acceptable for use?
  - Will the instrument need to be significantly changed? If so, it will need to be piloted and the changes may impact the existing reliability/validity.
  - If no existing instrument is available, it will be necessary to create one. All instruments should be piloted to determine necessary revisions. Additionally, measures of reliability and validity should be taken in order to verify the integrity of the data being collected.

As a final step in creating the data collection portion of the evaluation plan, look back over the entire plan to ascertain an overall integrity of the plan.

- Did you triangulate data sources?
- Did you triangulate data methods?
- Are all leveraged instruments reliable and valid?
- Will you feel comfortable standing behind the data collection plan for each question?

**CREATE DATA ANALYSIS PLAN**

While data analysis is an iterative process, creating a data analysis plan prior to collecting data helps to reduce potential bias and to speed up the interpretive process. Data analysis is a continual refinement process resulting in interpretations of what all the data means. For each data source, identify how the collected data will be analyzed. The data analysis method will depend in part on the type of data collected.

In broad categories, data can be classified as quantitative or qualitative in nature and each classification has different data analysis procedures. For quantitative data, these procedures usually involve conducting statistical tests. Qualitative data analysis is based on various coding strategies. While a thorough discussion of the types of tests to be conducted or of coding strategies is not possible related to this model, refer to the Suggested Readings for detailed guidance in these areas.

**Quantitative Data Analysis**

In general, statistical tests fall into two general categories: descriptive statistics and inferential statistics.

1. Descriptive statistics describe characteristics of the sample such as measures of mean and median.
2. Inferential statistics allow inferences to be made from the sample to population the sample represents.

Inferential statistics can be further categorized as either parametric or nonparametric. Parametric tests are used for interval or ratio data. They require that assumptions of normality, homogeneity
of variances, and linearity be met in the sample data. For such reason as inability to secure a random sample or a large enough sample size in organizations, these assumptions often cannot be met in evaluation studies. However, general practice often includes the use of parametric tests.

Nonparametric methods do not require that these assumptions be met. Most tests are based on ranked data as opposed to interval or ratio data requirements for parametric tests. Common nonparametric tests include sign test, Wilcoxon Rank-Sum test, Wilcoxon Signed-Rank Test, Kruskal-Wallis test, Spearman Rank-Order Correlation Coefficient, and Fisher’s Exact Test (Brewer, J., 1996).

**Qualitative Data Analysis**

Qualitative data is voluminous in nature. For example, a one-hour interview can easily yield over twelve pages of data. Steps should be taken on a regular basis to reduce the collected data by categorizing it into either predetermined or emerging codes. The evaluation questions themselves often outline codes. For example, when reviewing components of a solution, codes such as “perceived acceptance”, “benefits to users”, or “obstacles to use” may be helpful.

Upon review of the data however, often unanticipated themes or trends in responses may become evident. To identify emergent codes, review the data content for such items as:

- Patterns
- Repetitions of words or phrases
- Relationships
- Types, concepts, or groups

For all codes, create a master list which includes the name of the code, the abbreviation which will be used for this code, a description of what is meant by the code, and identification of whether the code was predetermined or emergent. If possible, have multiple evaluation team members “code” the data.

No matter what analysis methods were used, the bottom line is to determine what the data says. It is creating a sense of meaning and understanding from what is seen. The data analysis plan provides an outline for how the data will be reviewed in order to construct meaning.

**CREATE SCHEDULE AND BUDGET**

(Tools: Evaluation Plan Template)

By creating the data collection and analysis plans, you are beginning to break down the evaluation into discreet tasks. Creating a schedule of ordered tasks along with their required completion time provides additional information to aid in refining the inclusion or exclusion of questions for the evaluation.

To determine a task schedule,

1. Create a general outline of the steps to be taken. It may be helpful to create broad categories such as Instrument Development, Data Collection, Data Analysis.
2. Break these steps down into discreet tasks. The data collection and analysis plan both encompass tasks that must be included in the schedule. For example, if an instrument will be developed or revised, then it will also need to be piloted. Common task items in an evaluation include:

- meetings
- scheduling of data collection and meetings
- literature reviews
- instrument development or revision
- piloting of instruments
- data collection
- transcribing field notes
- coding data
- analyzing and interpreting data
- creating reports and journal articles

Time will need to be allocated for these tasks.

3. Note any links between tasks. Is it necessary to complete one task prior to beginning another? Do tasks need to be completed at the same time?

4. Determine the amount of time required in completing each task. Assign a start and completion date to each task remembering to include the noted links. Determining the amount of time required is an estimation process based on knowledge of the task and experience. Sources for this estimation process include consultants and project management literature. While not exhaustive, the “time per task” list (Miles & Huberman, 1994) can serve as a general guide for creating a project plan.

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing field notes (e.g. interviews, focus groups, observations)</td>
<td>2-3 days</td>
</tr>
<tr>
<td>Coding qualitative data</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Analyzing / Interpreting data</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

(Miles & Huberman, 1994)

By creating a task timeline, you have also helped to determine the resources needed for the evaluation. Evaluation costs can be divided into two broad categories, labor costs and purchases.

Labor costs include salaries and benefits for employees and consultants/contractors working on the evaluation. To put labor costs in a usable format for a budget, translate them by identifying a daily rate for each employee or contractor and then multiplying the daily rate by the number of days they will be required to work on a task.

Purchases include discreet payments for a product or service. Examples falling into this category are:

- Travel
- Meals
For the budget, purchases will be translated into a per item per task costs.

For each task or group of tasks identified in the schedule, enter a line item in the budget and calculate associated costs. Use the Evaluation Plan Template as a tool to capture this information. Depending on the client’s requirements, you will only need to include a high-level budget as part of the final proposed evaluation plan that will be negotiated in Step Three.

**REVISIT THE REFINEMENT OF EVALUATION QUESTIONS**

Given the data collection, analysis, schedule, and budget, return to the list of potential questions. Prioritize them based on such criteria as:

- Answer to the question will provide direct link to determining degree to which gap is closed.
- Answer to the question will provide information for more than one question
- Answer to the question is perceived to be of significant interest to the stakeholders.
- Collecting and analyzing data to answer question is feasible based on cost, resources, and time.
- Other criteria as determined by evaluation team/client parameters.

While it is not possible to determine a specific ratio for identifying the number of questions to include in an evaluation, Russ-Eft and Preskill (2001) have suggested that most program evaluations range from three to twelve evaluation questions.

Make your decision of which questions will make the final list for inclusion in the evaluation. Once the prioritized list has been made, conduct a final review of the evaluation questions to make sure that

- When you put all the data together, will it provide enough information for a comprehensive understanding of the big picture?
- the questions as a whole will answer the two major evaluation questions to a sufficient and acceptable degree.
- there are no accidental “holes” in evaluating the solution (e.g., for a solution that includes both a training and an incentive program, the evaluation questions will collect data related to all solution components).
- Leave room in the estimated cost and schedule for the stakeholders to add additional questions during Step Three: Negotiate the Evaluation Parameters.
- Group all questions relative to which of the two major evaluation questions they answer.
  1. Is the performance in question now at an acceptable level?
  2. If no, why not?

Finally, it will be necessary to revisit the evaluation plan and revise it based on which questions will be included in the evaluation. Revise the schedule and budget to reflect the evaluation tasks.

You now have created the foundational document for the client negotiation meeting that will take place in the next step.

**Suggested Readings and References**


Phase 1: Evaluation Front-End Analysis

Step 3: Negotiate Evaluation Parameters

**OVERVIEW**
The purpose of this step is to provide a forum for discussion of the evaluation parameters. Up to this point, the “consultant” has conducted most of the research and planning. During the negotiation step, the stakeholders officially join the discussion to help shape the parameters of the evaluation and to determine degrees of involvement, responsibilities, communication points and reporting formats.

In preparation for the negotiation meeting, the proposed evaluation plan will need to be formatted as a communication tool for the client. Additionally, it will be beneficial to prepare an agenda of items to be discussed and share this with the client contact ahead of time to allow for input and modifications. The communication to set up the meeting should also include an estimation of the time required and a request for desired stakeholders to be in attendance. To thoroughly cover the necessary items, a two to three hour meeting can be expected. An example agenda is included with the tools for this step.

The items to be covered in the negotiation meeting include agreement on:

- purpose of evaluation
- audiences of evaluation
- evaluation questions to be included
- proposed methods for data collection
- proposed methods for data analysis
- proposed schedule
- cost of evaluation
- desired and required involvement of stakeholders
- access to data sources
- reporting procedures and formats
- communication protocols
- contingency plans
- potential for publication
- contracting process for evaluation implementation

Having completed a retrospective analysis of the solution and performances being evaluated and having synthesized the information into a proposed evaluation plan, you are now in a position to discuss what the evaluation will look like.

Prior to the meeting, translate the proposed evaluation plan into a format acceptable for the client. One option is to have each agenda item serve as a heading for this communication
document. For any items which you require an official “sign-off” of agreement, include an area for amendments and client signatures.

Begin the meeting with introductions of the evaluation team and the stakeholders in attendance. Keeping in mind that this is a negotiation meeting, creating a climate of dialogue will be beneficial to the process. For each agenda item, you may want to ask the client to begin the dialogue by presenting their understanding of the item. As they are explaining the item, note any differences from your understanding as a point that will need further clarification.

Following this paradigm, work through all agenda items. To keep an open air of dialogue, you may wish to allow the flow of the conversation to dictate the order in which agenda items are covered. Use your facilitation skills to note which agenda items were covered, any changes to the items, emerging questions, and then bring the focus back to the next item that has not yet been covered.

A good strategy for ending a meeting of this magnitude is to summarize agreed upon items, outline upcoming actions, and list any action items that have been tasked. Be sure to include a responsible party and due date for each action item. Additionally, you may want to have all stakeholders complete a contact information sheet (see Agenda Example).

Upon completion of the meeting, the client should know what products and actions to expect from you. Depending on the decisions from the meeting, these items will include an Official Evaluation Plan and a contract for the Evaluation Implementation Phase.

Follow up the meeting with an email that summarizes the decisions made and the action items to be completed.

**Suggested Readings**


Phase Two: Evaluation Implementation

Overview
Phase Two: Evaluation Implementation involves putting the evaluation plan into action, monitoring the progress, adapting the plan according to the emerging requirements and findings of the evaluation, and bringing closure to the evaluation process by presenting the findings to the selected client audiences and to various professional communities of interest.

There are two main steps in this phase:
   - Step 4: Implementation of the data collection and analysis plan
   - Step 5: Presentation of evaluation findings.

Project management and communication skills play an important role in this phase. Such considerations as emerging questions and findings, accessibility of data and data sources, and the dynamic nature of the organization may necessitate changes to the evaluation plan. The ability to determine when the evaluation plan should be amended and when situations are beyond the current evaluation scope is critical to the success of the evaluation.

Communication during all data collection and analysis as well as the interim and final communication of evaluation findings is integral to the usage of the evaluation findings. Presenting findings in a format and manner that is consistent with the needs of the diverse audiences is crucial to acceptance of the validity of the findings.

A unique communication aspect included in this final phase is the presentation of evaluation findings to various communities of practice in such areas as evaluation and human performance technology. With the infrequency of conduct of evaluations in HPT, this communication offers opportunities for continuous improvement and research.
Phase 2: Evaluation Implementation

**Step 4: Implement Data Collection & Analysis Plan**

**OVERVIEW**
Implementation of the evaluation plan requires constant monitoring, analyzing, interpreting and revising of progress in order to meet internal and external deadlines and to stay within the determined costs.

Review the data collection measures outlined in the evaluation plan. What instruments already exist which can be reused for data collection? What instruments will need to be developed?

Begin data collection according to the evaluation plan. For each evaluation question, attempt to use multiple sources for data collection. Reflect on the data as it is collected to determine meaning. Analyze the data according to the plan, looking for patterns in the data and specific answers to the evaluation questions.

Throughout the implementation phase, continue to refer back to the timeline for the evaluation. Monitor progress of the evaluation plan and inform the client of any necessary changes.

Situations which may require further discussion with the client include changes to environment that threatens successful completion of the evaluation, surprise findings from the evaluation questions, and difficulties in obtaining access to data or data sources.

**SUGGESTED READINGS**
Phase 2: Evaluation Implementation

**Step 5: Present Evaluation Findings**

**OVERVIEW**
Clearly communicating the findings of an evaluation is a critical step in the process. The evaluation was conducted in order to answer specific questions for a group of interested stakeholders.

Presenting findings to the client may happen as a final step or during the data collection and analysis step. In all cases, it is necessary to determine the requirements of the audience. Who all makes up the audience? Why are they interested in this information?

Additionally, it is important to determine how the information will be presented. Common methods include face-to-face presentations and written reports.

Finally, in order to increase the amount and quality of available information to the professional evaluation community, involve the client in the process of informing various communities of practice as to the process used and outcomes of the evaluation. Various formats for informing the community include informal venues such as special interest committee meetings and forums and formal opportunities such as conference presentations and journal articles.

**SUGGESTED READINGS**


Tools
**EVALUATION FRONT-END ANALYSIS CONTRACT TEMPLATE**

**Consulting Business Information**  
*Business name and contact information*

willingly enters into agreement with

**Client Business Information**  
*Business name and contact information*

to conduct the following performance evaluation:

**Statement of Purpose**  
Include a statement of understanding of  
- problem and solution which have lead to the requested evaluation  
- what is being evaluated (scope)  
- the intended audiences for the evaluation  
- the stakeholders of the evaluation

**Evaluation Analysis Process**  
Describe the three steps to be undertaken:  
1. conduct an evaluation analysis  
2. create a proposed evaluation plan  
3. negotiate evaluation parameters

**Involvement and Responsibilities**  
Describe who will be involved in the evaluation from the consulting organization as well as agreed involvement and responsibilities from the client organization.

**Deliverables**  
Interim progress status report(s)  
Negotiation meeting to include discussion of:  
- if evaluation should proceed  
- proposed evaluation questions  
- proposed methodologies  
- schedule and budget

**Schedule and Costs**  
Provide mid to high-level schedule of tasks.  
Provide a high-level breakdown of costs.

**Signatures**
# Gap Analysis Guide

1. **What is the solution being evaluated?** (Name & General Description)

2. **What performance problem was this solution intended to address?** (Describe the problem, reason why it was considered a problem, and who was impacted)

3. **Who are the stakeholders of the performance problem?**

<table>
<thead>
<tr>
<th>Name &amp; Contact Information</th>
<th>Relation to Performance Problem / Solution (What were/are they responsible for related to the solution?)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position:</td>
<td></td>
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<tr>
<td>Address:</td>
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</tr>
<tr>
<td>Name &amp; Contact Information</td>
<td>Relation to Performance Problem / Solution</td>
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</table>
### 4. What Gaps in Performance were identified at the Organizational Level (OL)?
(Note: You may copy this table and replace Organizational Level with levels more appropriate to the evaluation.)

<table>
<thead>
<tr>
<th>Description of Performance</th>
<th>Measures Taken During Front-end Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL # (Example: Falling behind in customer demand for cell phones)</td>
<td>(Ex: 50,000 Monthly Production) Actual</td>
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</tbody>
</table>

### 5. What methods and instruments were used to measure these gaps?

<table>
<thead>
<tr>
<th>Measurement Method (Ex: Monthly Production Metrics)</th>
<th>Name of Instrument</th>
<th>Instrument Information</th>
<th>Available for Reuse (Y/N)</th>
<th>Piloted (Y/N)</th>
<th>Reliability Score</th>
<th>Validity Score</th>
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<td>OL #</td>
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</table>
### Measurement Method

<table>
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<tr>
<th>OL #</th>
<th>Name of Instrument</th>
<th>Available for Reuse (Y/N)</th>
<th>Piloted (Y/N)</th>
<th>Reliability Score</th>
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</tbody>
</table>

#### 6. WHAT GAPS IN PERFORMANCE WERE IDENTIFIED AT THE PERFORMER OR JOB LEVEL (PL)?

<table>
<thead>
<tr>
<th>PL #</th>
<th>Related OL #</th>
<th>Description of Performance</th>
<th>Measures Taken During Front-end Analysis</th>
<th>Performance Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Example: Not meeting hourly cell phone production on line)</td>
<td>(Ex: 150 phones / FTE/hr) Actual</td>
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<tr>
<td>PL1</td>
<td></td>
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<td>(Ex: 225 phones / FTE/hr) Desired</td>
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<td>PL2</td>
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<td></td>
<td>(Ex: 75 phones / FTE/hr) Performance Gap</td>
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<tr>
<td>PL3</td>
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<td>PL4</td>
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</table>
7. **What methods and instruments were used to measure these gaps?**

<table>
<thead>
<tr>
<th>PL #</th>
<th>Measurement Method</th>
<th>Instrument Information</th>
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<tbody>
<tr>
<td></td>
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</table>

**Additional Comments:**
CAUSE MATRIX

If causes of the performance problem were identified during the initial front-end analysis, note them in the table below. For each cause, indicate if the performer lacked:

<table>
<thead>
<tr>
<th>#</th>
<th>Cause Description</th>
<th>*Related Gap # (ex: PL3)</th>
<th>Lack Of ...</th>
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</thead>
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<td>Data</td>
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<td>Feedback</td>
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<td>Resources</td>
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<td>Expectations</td>
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</tbody>
</table>

*from Gap Analysis Guide

Indicate which category(s) best describes the deficiency the performer experienced. See the key below for explanations of each category.
**From Gap Analysis Guide**

Indicate which category(s) best describes the deficiency the performer experienced. See the key below for explanations of each category.

<table>
<thead>
<tr>
<th>Lack Of ...</th>
<th>Data Information Feedback</th>
<th>Resources Tools Equipment</th>
<th>Incentives Rewards Consequences</th>
<th>Skills Knowledge</th>
<th>Capacity</th>
<th>Motivation Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>#</strong></td>
<td><strong>Cause Description</strong></td>
<td><strong>Related Gap #</strong> (ex: PL3)</td>
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</table>

**KEY:**

**Data, Information, or Feedback:** Performer does not have access to the necessary data or information necessary to complete required tasks. Expectations may be unclear due to deficiency.

**Resources, Tools, or Equipment:** Performer does not have required tools, resources, or equipment or existing equipment is not capable of meeting requirements of task.

**Incentives, Rewards, or Consequences:** Performer receives no external incentive or rewards for positive performance or consequences for negative performance.

**Skills or Knowledge:** Performer cannot accomplish a task because they do not have the “know how” to do so.

**Capacity:** Performer cannot accomplish a task because their lack the physical, mental, or social capacity necessary to do so.

**Motivation or Expectations:** Performer cannot accomplish a task because their internal desire to do so is low.

**Additional Comments:**
**PROPOSED SOLUTION MATRIX**

If a front-end analysis was conducted resulting in a proposed solution set, break the solution down into individual components. (See the glossary for definitions.) If the component is a type of performance support system, further break this down into its subcomponents. For example, an EPSS may include a just-in-time training component, a process automation component, and calculation tools. List each of these as a separate component and indicate the purpose of each component.

<table>
<thead>
<tr>
<th>#</th>
<th>Solution Component</th>
<th>*Related Cause #</th>
<th>Data Information</th>
<th>Feedback</th>
<th>Resources</th>
<th>Tools</th>
<th>Equipment</th>
<th>Incentives</th>
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**Additional Comments:**
IMPLEMENTED SOLUTION MATRIX

The solution that was actually implemented may not directly match the proposed solution. Break the implemented solution down into individual components. (See the glossary for definitions.) If the component is a type of performance support system, further break this down into its subcomponents. For example, an EPSS may include a just-in-time training component, a process automation component, and calculation tools. List each of these as a separate component and indicate the purpose of each component.

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<th>Tools</th>
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<th>Consequences</th>
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Additional Comments:
Environment Analysis Guide

1. **When was the front-end analysis begun?**

2. **When was the solution implemented?**

3. **What change initiatives took place during this time?**

<table>
<thead>
<tr>
<th>Description</th>
<th>Department(s) / Persons Impacted</th>
<th>Contact Information for Further Details</th>
<th>Comments</th>
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<td>Relation to Change Initiative:</td>
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</table>
4. **What political influences (including diversity and organizational culture issues) have been in play during this time?**

<table>
<thead>
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<th>Description</th>
<th>Department(s) / Persons Impacted</th>
<th>Contact Information for Further Details</th>
<th>Comments</th>
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|             |                                 | Relation to Change Initiative:          |          |
5. **What external factors have been in play during this time?**

<table>
<thead>
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<th>Description</th>
<th>Department(s) / Persons Impacted</th>
<th>Contact Information for Further Details</th>
<th>Comments</th>
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|             |                                  | Address:                               |          |
|             |                                  | Relation to Change Initiative:         |          |

**Additional Comments:**
Synthesis Worksheet

The purpose of synthesizing the data is to determine what can be evaluated. It is desirable to group the findings from the evaluation front-end analysis based on the two overarching questions:
1. Are the desired performances now reaching an acceptable level?
2. If not, why not?

**Ability to Measure Desired Performance**
Related to the desired performances, review the Gap Analysis Guide and summarize the availability of gap measures:
1. Were all gaps identified and linked at multiple levels within the organization? Use the table below (Gap Linkage Summary) to identify linkages or lack of linkage between various levels within the organization.
2. Were all gaps measured? If they were not, were you able to identify possible measures for these gaps? If yes, what types of measures were taken and what instrumentation was used?
3. Can original instruments be leveraged for reuse?
4. Are there any gaps that cannot currently be measured?
5. Do you feel that you will be able to collect sufficient data to answer the question, “Are the desired performances now reaching an acceptable level”?

**Performance Measures to be Taken**

List all performance measures that will be included in the evaluation plan:

<table>
<thead>
<tr>
<th>#</th>
<th>Performance</th>
<th>Desired Level</th>
<th>Measure Type</th>
<th>Instrument</th>
<th>Comments</th>
</tr>
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<tbody>
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<td>KEY</td>
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<td>R = repeat original measure</td>
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<td>N = new measure identified</td>
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<td>KEY</td>
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<td>L = leverage existing</td>
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<td>N = create new</td>
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<tr>
<td>#</td>
<td>Performance</td>
<td>Desired Level</td>
<td>Measure Type</td>
<td>Instrument</td>
<td>Comments</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>KEY</td>
<td>KEY</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>R = repeat original measure</td>
<td>L = leverage existing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N = new measure identified</td>
<td>N = create new</td>
<td></td>
</tr>
</tbody>
</table>

**Ability to Answer the “If Not, Why Not” Question**

If it is determined that the desired performance is not being met or if the client agrees to review the components of the solution, review the information collected from all tools to identify potential evaluation questions related to gaps, causes, solution components, and changes to the environment.

**Gap Linkage Summary**

For each gap using the four tools:

1. Gap Analysis Guide
2. Cause Matrix
3. Proposed Solution Matrix
4. Implemented Solution Matrix

indicate (by number) all associated links:

<table>
<thead>
<tr>
<th>Gap Level &amp; #</th>
<th>Gaps</th>
<th>Causes</th>
<th>Proposed Solution Components</th>
<th>Implemented Solution Components</th>
<th>Explanations of Missing Links or Extra Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL1</td>
<td>PL1</td>
<td>2,4,5</td>
<td>2,6,7,8</td>
<td>2,6,7</td>
<td>An incentive system was proposed to aid with this organizational gap. It was not implemented. Why not?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Solution Component Intent
Review both the Proposed Solution Matrix and the Implemented Solution Matrix. For each component create a potential evaluation question related to the deficit category this solution is intended to resolve.

<table>
<thead>
<tr>
<th>Proposed or Implemented</th>
<th>Solution Component</th>
<th>Evaluation Questions</th>
</tr>
</thead>
</table>

Summarizing Questions:
1. Do any gaps remain without an identified cause? If yes, “why” may become an evaluation question.
2. Are there any causes identified that cannot be linked back to a gap? If yes, “was this truly a cause related to the performance gap in question?” may be an evaluation question.
3. Were any causes not addressed by a proposed solution component? If yes, “why” may be an evaluation question.
4. Were any causes not addressed by an implemented solution component? If yes, “why” may be an evaluation question.
5. Were any proposed solution components not implemented? If yes, “why” may be an evaluation question.
6. Is there a difference between the implemented and proposed solution? If yes, then the reason for this difference may be an evaluation question.
**Environment Summary**
Review the Environment Analysis Guide to the three main environmental areas of:

- Change Initiatives
- Political Influences
- External Factors

Use the table below to organize the changes to the environment based on functional areas.

<table>
<thead>
<tr>
<th>Department or Functional Unit</th>
<th>Environmental Initiative (Description &amp; Nature)</th>
<th>Potential Impacts</th>
<th>Potential Evaluation Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Department</td>
<td>Change Initiative: Introduction of Line-design Software</td>
<td>Changed workflow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Political Influence: Director of Engineering was released based on high turnover and low production numbers for 3 consecutive quarters.</td>
<td>Required hiring of more professional staff.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>May impact moral related to performance gap PL1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Director was well liked in department.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>May link new software with dislike of director being released.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take measure of departmental moral related to current workflow and leadership.</td>
<td></td>
</tr>
</tbody>
</table>

**Summarizing Questions:**
1. Overall, how stable has the environment been since the initial front-end analysis was conducted or the performance problem first addressed?
2. Will potential sources be unduly influenced by any environmental initiatives so as to influence the results of this evaluation?
**GENERAL SUMMARIZING QUESTIONS**

1. Overall, how would you rate the available baseline data relative to its:
   - **Quality** – objective in nature, comes from multiple sources, reliability and validity not in question.
   - **Quantity** – provides thorough perspective, provides “weight of evidence” support relative to qualitative data
   - **Accessibility** – reasonable expectations (time, access, costs) towards ability to collect data

2. Should this evaluation be conducted?
3. Are there areas of performance or of the solution that should not be evaluated at this time?

**INITIAL LIST OF POTENTIAL EVALUATION QUESTIONS**

Review your thoughts and work from above. Rephrase your performance measures as evaluation questions and list them below. Indicate which general question each evaluation will help to answer. Review the Gap Linkage Summary and the Environment Summary to create potential evaluation questions to be included in this list.

This is a question-generating step. Don’t worry about having too many questions at this point. In Step 2: Create Proposed Evaluation Plan; you will review each question in the list below using a set of criteria to determine if it should be a part of the final evaluation plan.

<table>
<thead>
<tr>
<th>#</th>
<th><strong>Potential Evaluation Question</strong></th>
<th><strong>General Question</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Use the number(s) below to link the evaluation question with the general question it will be helping to answer.

1. Are the desired performances now reaching an acceptable level?
2. If not, why not?

**Additional Comments:**

187
### Evaluation Plan Template

**1. DATA COLLECTION & ANALYSIS PLAN (Example)**

<table>
<thead>
<tr>
<th><strong>EVALUATION QUESTION 1:</strong></th>
<th><strong>Did the process guidance support tool provide sufficient information, data, and/or feedback to the performer?</strong></th>
</tr>
</thead>
</table>

**Data Source 1: Actuary Department Employees who use EPSS.**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster non-random sample</td>
<td>Survey (Likert &amp; open-ended questions)</td>
<td>Leverage survey from front-end analysis -- will be a major revision -- must be piloted and tested for reliability/validity</td>
<td>Non-parametric for Likert results, Pre-code categories, Multiple coders</td>
<td>1-2 days revisions, 2-3 days piloting/testing, 4 days implementation period, 3 days analysis, Printing</td>
<td>$1700</td>
</tr>
</tbody>
</table>

**Data Source 2: Actuary Department Managers who supervise AD employees**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-random convenience sample</td>
<td>F-2-F Interviews</td>
<td>Must create. Will be based on survey (#1 above)</td>
<td>Pre-code categories &amp; emergent, Multiple coders</td>
<td>2 days creating interview questions, 2 days piloting/testing, 2 days training interviewers, 1 day scheduling, 2 days to conduct, 3 days to analyze</td>
<td>$2400</td>
</tr>
</tbody>
</table>
### Data Source 3: Review of Actuary Department Monthly, Quarterly, and Annual Reports

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Individual Performance Metrics</td>
<td>• Extant data review</td>
<td>• n/a</td>
<td>• Correlation tests</td>
<td>• 4-7 days securing all reports</td>
<td>• $1600</td>
</tr>
<tr>
<td>• Hourly production Metrics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Monthly Trends Reports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Quarterly Performance Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Annual Report</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Total Gross (Non-Normalized) Resources & Costs:** 33-40 days $5700

### Evaluation Question 2:

**Data Source 1:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>•</td>
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</tbody>
</table>

**Data Source 2:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
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<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>•</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Data Source 3:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Gross (Non-Normalized) Resources & Costs:** $
### Evaluation Question 3:

**Data Source 1:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

**Data Source 2:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
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<th>Analysis Plan</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

**Data Source 3:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

**Total Gross (Non-normalized) Resources & Costs:** $\$\$

### Master Code List

<table>
<thead>
<tr>
<th>Name of Code</th>
<th>Abbreviation</th>
<th>Description</th>
<th>Type</th>
</tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>KEY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E = Emergent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PD = Predetermined</td>
</tr>
<tr>
<td>Name of Code</td>
<td>Abbreviation</td>
<td>Description</td>
<td>Type</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>KEY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E = Emergent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PD = Predetermined</td>
</tr>
</tbody>
</table>

3. **CREATE SCHEDULE**

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
<th>Resources</th>
</tr>
</thead>
</table>
3. CREATE BUDGET

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Duration</th>
<th>Resources</th>
<th>Itemized Costs</th>
<th>Total Costs</th>
</tr>
</thead>
</table>

192
AGENDA
[Title for Meeting]
[Date – Time]
[Location]

FOCUS: [Overall Purpose of Meeting]

AGENDA ITEMS

1. Introductions
2. Evaluation Scope and Audiences
3. Selection of evaluation questions to be included
4. Presentation of Evaluation Plan
5. Negotiation of cost of evaluation [may take place outside of the meeting]
6. Request for stakeholder involvement
7. Identification of data source access requirements
8. Identification of procedures and formats for presentations and reports
9. Identification of communication protocols
10. Request for publication potential
11. Identification of contracting process for evaluation implementation
12. Summary of Decisions and Action Items
<table>
<thead>
<tr>
<th>Name:</th>
<th>Preferred communication medium:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position:</td>
<td>□ phone □ email</td>
</tr>
<tr>
<td>Department/Unit:</td>
<td></td>
</tr>
<tr>
<td>Email:</td>
<td>Describe your relationship to performance problem/solution being evaluated:</td>
</tr>
<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
</tbody>
</table>

Name: Preferred communication medium: □ phone □ email
Position: 
Department/Unit: 
Email: Describe your relationship to performance problem/solution being evaluated: 
Phone: 
Fax: 
Address: 

Name: Preferred communication medium: □ phone □ email
Position: 
Department/Unit: 
Email: Describe your relationship to performance problem/solution being evaluated: 
Phone: 
Fax: 
Address: 

Name: Preferred communication medium: □ phone □ email
Position: 
Department/Unit: 
Email: Describe your relationship to performance problem/solution being evaluated: 
Phone: 
Fax: 
Address: 

194
Consulting Business Information
Business name and contact information

willingly enters into agreement with

Client Business Information
Business name and contact information

to conduct the following performance evaluation:

Statement of Purpose
Include a statement of understanding of
- problem and solution which have lead to the requested evaluation
- what is being evaluated (scope)
- the intended audiences for the evaluation
- the stakeholders of the evaluation

Evaluation Methodology
Describe the process to be undertaken to complete the evaluation. Include the data collection and analysis methods to be used.

Involvement and Responsibilities
Describe who will be involved in the evaluation from the consulting organization as well as agreed involvement and responsibilities from the client organization.

Deliverables
Describe all interim and final products the client will receive for the evaluation. Include a description of the presentation format for each product.

Schedule and Costs
Provide mid to high-level schedule of tasks.
Provide a high-level breakdown of costs.

Agreements
State any agreed processes for changes to the evaluation.
State agreed publication potential permission.

Signatures
APPENDIX D

Protocol and Feedback from Second Expert Panel Review
MODEL DEVELOPMENT PROTOCOL
THE DEVELOPMENT AND VALIDATION OF A
HUMAN PERFORMANCE TECHNOLOGY-SPECIFIC EVALUATION MODEL

Panel Review Process

1. Review the attached document and the questions below.

2. Provide feedback to panel questions via email by using the "reply to all" feature of your email program.
   • Final feedback to list by November 11th.
   • If possible logistically, I would like to code the panel’s feedback and the present any questions to the panel in an email listserv discussion format for discussion during the period of November 13-18th.
   • Should you need to create the email list for any reason, the names and addresses are: [Panel’s Email Addresses Here]

Areas to be Completed

The model is not yet completed in the following areas:
• Glossary terms
• Suggested readings
• References
• Report Templates (Tools)
• Delivery Format Decision Guide (Tools)

Questions to the Panel

(OCTOBER 28 – NOVEMBER 11, 2002)

For the overall model, please respond to the following questions:

8. Do you perceive that use of the model provides a sufficient means to identify the degree to which the performance gap was closed? If no, why not?

9. Do you perceive that use of the model provides sufficient information about the thoroughness of each phase of the HPT process? If no, what is lacking?

10. What do you perceive to be barriers to the use of this model?

11. What are the benefits (if any) of using this model?

12. Do you perceive that the sponsors of the evaluation will find the information to be useful? Are there any improvements that could be made to the reporting content/format?

13. Do you perceive the guidance to be sufficient for a novice HPT practitioner? Is the model and supporting guidance intuitive to a novice HPT practitioner?

14. What overall problems do you see?

For each of the five steps and if not covered in your overall comments above, please respond to the following questions:
1. Overall what do you perceive to be the value (if any) of this step?
2. Are there any other areas that should be covered in this step?
3. Is the support provided sufficient for a novice? If no, what is lacking?
4. How helpful are the tools in guiding the evaluator through this step?
5. Open comments:

STUDY OVERVIEW

PURPOSE
The purpose of this study is to create and validate an HPT-specific evaluation model to guide evaluators in consistently conducting efficient and effective evaluations of the interventions implemented and the decisions which led to their implementation. The model will specifically address currently existing barriers to conducting evaluation.

AUDIENCE
The intended audience for this model is the HPT practitioner. While the output of the evaluation, the evaluation report, will be of interest to the owner of the performance problem, the user of the model will be those versed in the entire human performance technology process. It is intended that the model will be of use to a novice-level practitioner by providing a standard process and method for conducting HPT evaluations. Perhaps of the greatest value of the model will be to provide a standard for the HPT community to allow a means of establishing a framework for continuous improvement of the HPT process, and identifying areas of strength, weakness and gaps.

METHODOLOGY
The methodology for completion of the study includes the following process:
1. Creation of initial model
2. Initial Review and Feedback from Panel of Experts
3. Revision of Model
4. Second Review and Feedback From Panel of Experts
5. Revision of Model
6. Use of Model by Researcher in Organization (Case Study 1)
7. Revision of Model
8. Use of Model by Evaluator In Organization (Case Study 2)
9. Interviews and Document review with Case Study 2 Evaluator
10. Revision of Model

MODEL OVERVIEW

BACKGROUND
The Human Performance Technology (HPT) process is a systematic, problem-solving approach to identifying performance problems, causes and solutions, as well as implementing the solutions and evaluating their effectiveness. While evaluation is a primary step in the HPT model and its value is well recognized, there is a wide discrepancy in the regularity in which this step is actually conducted. Additionally, the quality of evaluations conducted varies widely. While many models specific to the HPT process exist related to the performance problem and cause identification steps, no HPT-specific evaluation models currently exist.
SCOPE
The HPT-specific evaluation model will focus on summative evaluation. The model will include a basic framework to describe the steps involved, decisions to be made within each step, tools and instruments to aid in the data collection, and reporting templates for various delivery methods.

ASSUMPTIONS*
The following assumptions precipitate the use of the model:
- A systematic, problem-solving approach was used to identify the performance problem, causes, and solutions.
- The selected solution set was implemented within the organization.
- The selected solution encompasses more than one component (e.g. solution may be made up of training and process redesign).
Feedback from Second Expert Panel Review

1. Issues with Rigor of Front-End Analysis Requirement
   - “The pre-contract work is unrealistic. You get a very short timeframe and access to a handful of people at best to determine what the parameters are going to be, about how long it will take, and the approximate cost.” (SME 2)

   - “The first two phases are very thorough, but in the real world, I find that I have to do a guesstimate analysis of these factors to quickly come up with a proposal, contract, budget, and timeline for the client.” (SME 1)

   - Requires that too much is done before negotiating the evaluation parameters. From a consultant’s standpoint, one must VERY QUICKLY come to the contract phase, because anything done before the client signs off is not billable to the client. (SME 1)

   - “The assumption that documentation on gaps and so on exists or is accessible is unreasonable. I find that you don’t have that sort of documentation most of the time. I things are documented, there are lots of missing bits and pieces in terms of what you are asking for to support this process. It can be all over the place if it does exist.” (SME 2)

1. Rationale and Changes to the Model
   - Draft 3 of model transfers the initial information gathering responsibility to the client. It also uses a funneling approach to ask the highest priority questions first. Depending on the answer to these priority questions, further evaluation questions may be necessary.
   - Draft 3 of the model provides guidance on how to proceed if documentation is not available and must clearly state impact on the evaluation.

2. Issues with Level of Detail (Too Much or Too Little Provided)
   - “At best, your model is evaluating the process, as well as the effects of the intervention. You have set up task boundaries wider than what you imply in your purpose statement. You are documenting the entire process of selecting the intervention, implementing it, and then evaluating it. Once could questions whether this is a practical approach.” (SME 3)

   - Too much detail – “The required levels of documentation…in the corporate environment, these forms would be used as reference tools and rarely completed. The number of meetings and reports that have to be generated and signed off is a throw back to a time when we were not empowered to act like specialists but had to get everything approved.” (SME 2)

   - Too much detail – It seems too much for the novice, but I doubt if a true novice would be given such an assignment. Far too much data for a lot of organizations. Barriers to use include its detail. I think I would figure out layers in the model. What are the essential steps? What are the next most important things to do? Then the next
group? The trick will be to include just the “need to do’s”, as opposed to the “nice to do’s”. (SME 3)

- Do you really need this level of detail in this document? Advise the reader to get hold of good project management software package. (SME 2)

2. Rationale and Changes to the Model
- In response to feedback on the first draft of the model related to adding more support in various areas, I felt I had then erred on the side of providing too much information. The main way I address this entire issue is by transferring initial information gathering responsibility to the client addresses the detail issue.

- The model intentionally elicits stakeholder involvement throughout the process to aid in securing and maintaining buy-in on the process and the findings. While this is important, it requires more time. Since time is expensive, I try to use the information collection tools in the prepare phase as communication tools to maintain stakeholder involvement.

- The model overview defines a novice as someone with knowledge of basic evaluation practices and with experience in the HPT process. The narrative support is built from this perspective. As such, I felt it better to err on the side of too much information. However, the panel’s feedback indicates that it was overwhelming. I have used a layered approach (in electronic format) to allow the evaluator to get more detailed information at the point of need using hyperlinks.

3. Clarification of Purpose
- “Is it a model evaluating the intervention or the effects of the intervention? These are close, but not exactly the same thing. This has a profound implication for data collection.” (SME 3)

- “In my experience, the corporate world is more interested in the impact on the business rather than the closing of the gap.” (SME 2)

- “Does anyone care about the results in the organization? If so, who? If it’s the training department, then the data collected may well be different than if you were reporting this to senior management.” (SME 3)

3. Rationale and Changes to the Model
- Further revise guidance and wording to ensure that primary question of “are the performances in question now reaching the desired levels” is truly being assessed.

4. Simplify Title of Model
- “Title of model will not be generally understood. Why not entitle it Performance Intervention Evaluation Model?” (SME 3)
4. Rationale and Changes to the Model
   ▪ Changed title to “Performance Intervention Evaluation Model” to better reflect general nature of model.

5. Strengths of Model
   ▪ “If an organization implemented this consistently, it would give credibility to the process and to the professionals because clients/sponsors would see this as a benchmark for the way that things should be done.” (SME 1)
   ▪ “Extremely thorough model. If an HP Technologist worked through this they would end up doing a very in-depth evaluation.” (SME 2)
   ▪ “Points out a lot of small details that novice evaluators might otherwise ignore.” (SME 1)
   ▪ “Provides an ideal view of how things could be done. Does not provide direction for accomplishing the task in all situations. Given this understanding, it is a very useful place for a team to start.” (SME 3)
   ▪ “There is certainly plenty of guidance there for someone who is working their way through it and doesn’t have a lot of prior experience.” (SME 2)

Areas for Future Improvement
   ▪ How can some of this same information and process be re-used? (SME 3)
   ▪ The tools would be more useful if they were electronic templates at least. (SME 3)
APPENDIX E

Performance Intervention Evaluation Model
Draft 3
Phase 1: PREPARATION
- Initial Client Contact*
- Develop Evaluation Plan*
- Develop Contract*

Phase 2: NEGOTIATION
- Negotiate Contract
- Finalize Contract

Phase 3: IMPLEMENTATION
- Prepare Instruments
- Work with Data
- Manage Evaluation

Phase 4: PRESENTATION
- Present Findings to Stakeholder
- Present Findings to Professional Community

Performance Intervention Evaluation Model
INITIAL CLIENT CONTACT

STEP 1: DISTRIBUTE “INITIAL ANALYSIS QUESTIONNAIRE (IAQ)” [Tools]
Upon request for evaluation, ask the client to complete the “Initial Analysis Questionnaire”. It may be helpful to have the client answer as many questions as possible during the initial contact. If more detail is needed and available, forward the questionnaire to the client (electronic format) and ask the client to complete it in as much detail as possible.

STEP 2: CLARIFY DETAILS
Upon receipt of the completed questionnaire, review the form for completeness and detail. Upon review, there may be areas which lack detail and will require additional follow-up prior to creating the initial contract.

Contact the client or appropriate contact person indicated and gather this information. The more detailed the information, the easier it will be to create the evaluation plan. However, the time you spend clarifying details prior to a signed contract (Phase 2) is not billable, so be parsimonious.

DEVELOP EVALUATION PLAN

STEP 3: SYNTHESIZE INFORMATION
Identify the client’s desired Evaluation Zones (Question 9 of IAQ). These priorities can help to set boundaries around how comprehensive the evaluation should be and what answers are important to the client.

At a minimum, the evaluation plan must cover priority one. Ideally, both one and two will be covered. Guidelines for determining which Evaluation Zones should be included are:

1. Don’t go beyond priorities 1 and 2 if:
   - You are the sole evaluator.
   - The intervention impacted less than half of the organization (question 5 of IAQ).
   - The deadline is extremely short (question 10 of IAQ).

2. Include more priorities if:
   - A team is available to conduct the evaluation
   - The intervention impacted half or more of the organization.
   - The deadline is lengthy.

STEP 4: CREATE INITIAL EVALUATION PLAN [Tools]
Create general evaluation questions for each Evaluation Zone to be included.

A. Focus Evaluation Questions
   1. Society Zone:
Evaluation Question: “What is the impact of [Intervention Name] on [Societal Measure]?"

2. Organization Zone:
   Evaluation Question: “What is the impact of [Intervention Name] on [Objective One Organizational-level Performance Measure]?”
   ▪ Use as many measurements as possible at this level to increase validity and reliability.
   ▪ Use the measurement heuristic to determine what types of measurements to include.
   ▪ If original desired performances are unrealistic, use revised (question 4).

3. Unit Zone:
   Evaluation Questions (for categories checked in question 9): “What is the impact of [Intervention Component] on [Related BEM Category for Unit – see IAQ]?”

4. Performance Improvement Process Zone:
   Evaluation Questions (Questions 6 & 7):
   ▪ “Was the problem correctly identified?”
   ▪ “How thorough was the gap analysis?”
   ▪ “How thorough was the cause analysis?”
   ▪ “How thorough was the solution selection process?”
   ▪ “How well does the implemented solution match the proposed solution?”
   ▪ “How well was the implementation managed?”

5. General Evaluation Questions:
   If any other interventions or change initiatives were introduced:
   ▪ “What is the impact of [Change Initiative] on [Organization, Unit, Individual’s Performance]?”
   ▪ “What is the impact of [Restructuring] on [Organization, Unit, Individual’s Performance]?”
   ▪ “What is the impact of [Cultural Change] on [Organization, Unit, Individual’s Performance]?”
   ▪ “What is the impact of [External Factors] on [Organization, Unit, Individual’s Performance]?”
   ▪ Include any other questions requested by the client (Question 11) that are not already covered in previous questions.

B. Document Collection Plan [Details]
For each evaluation question, identify the
▪ measure to be taken
▪ sample
   ▪ source
   ▪ strategy
   ▪ size
▪ methodology
### C. Document Analysis Plan [Details]
For each measure to be taken, identify the type of analysis that will be conducted. In general, for hard data measures, quantitative and descriptive analyses are appropriate. For soft data measures, qualitative data analysis methods are most appropriate.

### D. Create Schedule and Budget [Details]
1. Identify the tasks required to answer all evaluation questions. This includes gaining access to data sources, creating and piloting instruments, collecting and analyzing data, and reporting findings. In addition, such tasks as client meetings and transcription of field notes should be included in the schedule.
2. For each task, determine the necessary amount of time needed to complete the task.
3. Note any relationships or links between tasks.
4. Assign a start and completion date to each task.
5. Using the identified tasks and times, create a list of resources required to complete the project.
6. Estimate costs for all resources.

### E. Review Evaluation Plan [Details]
Conduct a final review of all evaluation questions and data collection and analysis plans. Make any necessary revisions based on the following focus questions:
1. When you put all of the data together, will it provide enough information for a comprehensive understanding of the big picture? Do they allow you to determine the impact of the intervention on performance at all relevant levels?
2. Are there any accidental “holes” in answering the questions? Any weak areas where you could collect more data to raise the fidelity of the evaluation?
3. Have you left room in the estimated costs and task schedule for the client to add additional questions during Phase 2: Negotiation?

### DEVELOP CONTRACT

#### STEP 5: CREATE CONTRACT [Tools]
While the evaluation plan will serve as a project management tool for the evaluator, it will be too detailed for the client negotiation. The information from the plan will serve as a basis for creation of the client contract.

The contract should include the following information:
- Business & Contact Information of Evaluator
- Business & Contact Information of Client
- Statement of Purpose of Evaluation Including:
  - Problem Statement
  - Intervention Description
  - Zones of Evaluation
Identified Stakeholders in the Evaluation
Audience for Findings

- Evaluation Questions
- General Methodologies for Data Collection and Analysis
- Reporting Schedules
- Participation Requirements (e.g. Access, Stakeholder Involvement)
- Deliverables
- General Timeframes
- General Cost Categories and Overall Cost
- Contingency Agreement
- Publication Consent Agreement
- Signature Lines

**STEP 6: SCHEDULE CLIENT NEGOTIATION MEETING**
Schedule a negotiation meeting with the client for the purpose of agreeing upon the scope of the evaluation. Specific items to be addressed in the meeting include:

- Purpose of evaluation
- Audiences of evaluation
- Specific questions to be answered
- Methods for data collection and analyses
- Completion date
- Cost
- Stakeholder involvement
- Access to data sources
- Communication and reporting protocols, schedules, and formats
- Contingency agreements
- Publication consent
**PERFORMANCE INTERVENTION EVALUATION MODEL**

**PHASE TWO: NEGOTIATION**

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**NEGOTIATE CONTRACT**

**STEP 1: PREPARE AGENDA** [Tools]

Prior to the meeting, forward an agenda and any materials you would like the client to review in advance. If any specific stakeholders have been identified (question 12 of IAQ) who should be in attendance at the negotiation, include this request.

**STEP 2: CONDUCT NEGOTIATION MEETING**

Begin the meeting with introductions of the evaluation team and the stakeholders in attendance. Keeping in mind that this is a negotiation meeting, creating a climate of dialogue will be beneficial to the process. For each agenda item, you may want to ask the client to begin the dialogue by presenting their understanding of the item. As they are explaining the item, note any differences from your understanding as a point that will need further clarification.

Following this paradigm, work through all agenda items. To keep an open air of dialogue, you may wish to allow the flow of the conversation to dictate the order in which agenda items are covered. Use your facilitation skills to note which agenda items were covered, any changes to the items, emerging questions, and then bring the focus back to the next item that has not yet been covered.

A good strategy for ending a meeting of this magnitude is to summarize agreed upon items, outline upcoming actions, and list any action items that have been tasked. Be sure to include a responsible party and due date for each action item. Additionally, you may want to have all stakeholders complete a contact information sheet to allow for ease of contact during the evaluation.

Upon completion of the meeting, the client should know what products and actions to expect from you. Depending on the decisions from the meeting, these items will include an Official Evaluation Plan and a contract for the Evaluation Implementation Phase.

Follow up the meeting with an email that summarizes the decisions made and the action items to be completed.

**STEP 3: REVISE EVALUATION PLAN AND CONTRACT**

Based on the results of the meeting, revise the evaluation plan and contract to reflect decisions made. The contract should then be forwarded for signature.
PERFORMANCE INTERVENTION EVALUATION MODEL
PHASE THREE: IMPLEMENTATION

PREPARE INSTRUMENTS

STEP 1: INVENTORY INSTRUMENTS
Preparing for data collection requires an inventory of available instruments. There are several reasons why using existing instruments is preferable to creating new ones. Using an existing instrument is faster than creating a new one. If the original instrument was tested and had acceptable validity and reliability, then it makes sense to reuse it for the evaluation. This saves on the need to pilot the instrument.

STEP 2: PILOT INSTRUMENTS
Whether you will be creating an instrument or revising an existing one, it will be necessary to pilot the instrument and if possible, determine the reliability and validity of the instrument. Depending on the types of reliability and validity being reviewed, this may require some degree of knowledge of statistics. See the Suggested Readings for further details on types of reliability and validity and means of measurement.

WORK WITH DATA

STEP 3: DATA COLLECTION
Putting the evaluation plan into action requires that the sample be identified and that you gain access to the sources. This often requires a letter of introduction from your point of contact. Once this is done, the instruments can be used to begin collecting the data. Careful attention should be paid to ensure that data is collected in a non-biased manner.

STEP 4: DATA ANALYSIS
Once actual collection of the data is underway, the analysis process must begin. Waiting until all planned data collections are completed prior to beginning analysis is often both overwhelming and inefficient.

The purpose of data analysis is to extract or create meaning from what is “seen”. This requires reflection on the data to pull out ideas, messages, trends, and patterns. Refer to the data analysis plan for each data collection method identified.

Summarizing data is a helpful step to aid in data reduction. Such summarizing tools as tables and charts are a helpful way to make the data more manageable. However, summarization is not equivalent to interpretation. Constructing meaning from the data, whether in summarized or detailed form, requires that you answer the question, “what does it all mean”? 

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This is a constant process that is conducted for each data collection method, for each evaluation question, for categories of questions, and for the entire “picture” from the evaluation data.

Throughout all of the Evaluation Plan implementation, project management is key to successfully collecting and analyzing all data. As data is collected and analyzed, you may notice that there are areas where you were not able to adequately answer an evaluation question. It will then be necessary to determine the impact of this gap on the evaluation outcome and make necessary revisions to the evaluation plan.

Obstacles that often occur during the implementation step are:
- inability to gain access to data sources per the evaluation plan schedule
- changes to the organizational environment that threaten the ability to conduct the evaluation
- necessity to collect additional data which may change the scheduling and budget requirements

In all cases, it is necessary for the evaluation manager to make determinations of when a change is so significant as to impact the evaluation plan or require that a renegotiation of the evaluation plan takes place with the client.

An additional component to the implementation step is consistent communication with the client. During the creation of the evaluation plan, interim reporting may have been established. Even if this was not the case, informal progress status communications to “keep the client in the loop” will only help in maintaining client involvement in the evaluation.

**MANAGE EVALUATION**

**STEP 5: PROJECT MANAGEMENT**

Implementation of the evaluation plan requires constant monitoring, analyzing, interpreting and revising of progress in order to meet internal and external deadlines and to stay within the determined costs.

The approved Evaluation Plan serves as a management document for data collection and analysis as well as task deadlines. To implement and monitor this plan requires excellent project management skills, clear and constant communication with the client, and constant reflection on the data collection to determine meaning.

The two major steps of data collection and analysis are iterative in nature. As data is collected, the analysis process begins. High-level analysis includes such tasks as looking for holes in data.

**PERFORMANCE INTERVENTION EVALUATION MODEL**

**PHASE FOUR: PRESENTATION**
Present Findings

Overview
The final step in the model is presenting the findings from the completed data collection and analysis to the client and to the interested professional communities. The purpose of this step is to answer the client’s questions as well as to provide insight gained from the evaluation conduct.

The importance of successfully completing this step cannot be overstated. Even if a thorough evaluation has been conducted, unless the findings are communicated clearly and completely to the right audiences in a useable format, the client will have spent their time and money in for naught.

Several formats are available to deliver the message, which include face-to-face or self-guided presentations, facilitated discussions, and written narrative reports of findings. No matter what delivery format is preferred, all require that an audience analysis be conducted to determine the characteristics of the audience, their motivation for knowing the information to be presented, the detail they will need, the areas of specific interest, and the potential uses of the findings.

Providing information and dialogue opportunities to professional communities of interest requires that such communities be identified along with their specific areas of interest. Additionally, each community offers various communication platforms that can be used to present evaluation findings and methodologies.

Step 1: Interim or Final to Client
The first step in presenting findings is to determine the requirements of the audiences who will be receiving the information. During the negotiation meeting (Step Three), you identified several audiences for receipt of evaluation findings. It is now necessary to conduct an audience analysis in order to tailor the communication to fit each audience’s needs.

Begin with a description of the audience to include
• where they fit in the organization,
• their relationship to the performance problem, the solution, and the evaluation
• any political factors
• areas of specific interest (e.g. answers to specific questions)
• how this audience may use the findings from the evaluation

Once the characteristics of the audience have been identified, determine the most appropriate delivery method(s) for the audience. This decision will be based on such factors as:
• available time
• level of detail required
• uses of findings
• expectations of audience
One or more of the following delivery formats are suggested for use:

- **Face-to-face presentation** – evaluator (or team) presents the findings to the audience in a meeting-type setting. Include use of visual aids to summarize key findings.

- **Self-guided presentation** – a summarization of key findings from the evaluation tailored to the audience with narrative explanations to provide clarification and further details. Must be packaged in such a way as to allow easy navigation through the presentation by the audience member. Include use of visual aids to summarize key points. Such presentation software as Microsoft PowerPoint can be easily used to create self-guided presentations.

- **Written Report** – the written report is the most commonly used means of communicating evaluation findings. It is a summarized and or detailed narrative of the findings and conduct of the evaluation. The writing style, length, and format of the written report must be tailored to the requirements of the audience.

See the Delivery Format Selection Guide for suggested components, strengths and weaknesses of each format.

**STEP 2: PUBLISH**

Besides the client audience for the evaluation, much can be gained by sharing information related to the evaluation process and findings within the broader communities of practice associated with evaluation and the Human Performance Technology process.

To present information to communities of interest, first identify the community and their areas of interest related to the evaluation. Next research all possible communication formats which exist within the community. This often includes such formal and informal platforms as:

- Refereed journals
- Conferences
- Discussion boards
- Listservs
- Case Study Databases
- Newsletters

Each of these platforms will require different preparation for communication.

**SUGGESTED READINGS**


DETAILS
DATA COLLECTION PLAN
For each evaluation question, upfront planning is necessary related to the:

- source for the data
- sampling strategies
- collection methodologies
- instrumentation
- fidelity (e.g. reliability, validity, integrity)

Identify potential sources from which the answer can be secured. To increase potential integrity of the answers to each evaluation question, it is suggested to triangulate (see Glossary) the data collection sources. Triangulated sources might include performance metrics, supervisor input, and direct employee input. This allows creation of a picture, based on data from multiple perspectives. See the Evaluation Plan Template for an example of triangulation of data sources.

Next, for each source, determine the necessary sample size and strategies. A sample is only needed when it is not possible to collect the data from all sources (population). For example, if the data source in question consists of twenty line managers, is it possible to interview all twenty? The basic premise of sampling strategies is to attempt to collect data from a sample large enough and with characteristics similar enough to acceptably represent reality (the population). See the Suggested Readings section at the end of this step for further details on sampling strategies.

Necessary sample sizes vary depending on the statistical tests to be used and the size of the effect you desire. Tables are available in most statistics textbooks that aid in this determination. With regards to the representative characteristics of the sample, various techniques can be applied to secure an appropriate sample. These techniques are outlined in the following table and detailed information can be found in the Suggested Readings.

<table>
<thead>
<tr>
<th>Name</th>
<th>Random / Nonrandom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple random sampling</td>
<td>Random</td>
<td>A selection method that assures that all units have an equal chance of being chosen for inclusion in the sample.</td>
</tr>
<tr>
<td>Stratified sampling</td>
<td>Random or nonrandom</td>
<td>Includes predetermined subgroups of the population to include important characteristics.</td>
</tr>
<tr>
<td>Cluster sampling</td>
<td>Random or nonrandom</td>
<td>The unit is a group (cluster) based on a specified characteristic. (e.g. zip code)</td>
</tr>
<tr>
<td>Purposive sampling</td>
<td>Nonrandom</td>
<td>Selection of units based on their perceived ability to provide information related to the focus of the research.</td>
</tr>
<tr>
<td>Quota sampling</td>
<td>Nonrandom</td>
<td>A quota based on specific characteristics of the population is set for the number of units to be included in the sample.</td>
</tr>
</tbody>
</table>
Snowball or chain sampling  | Nonrandom  | Selection of units to be included in the sample is based on referrals from previous units already selected.

Convenience sampling  | Nonrandom  | Nonrandom in nature, the sample is selected because of such convenience factors as availability, location, or accessibility.


Once the sample size and strategy has been determined, a data collection methodology should be selected. Common collection methods include:

- review of extant (existing) data (e.g. reports, performance metrics)
- observation of process and procedures
- group and individual interviews
- surveys

Triangulation of methods may also be used to help increase the reliability and validity of the evaluation. For each data source identified, when possible, use multiple data collection methods.

There are advantages and disadvantages to each of these methods. Use the table below as a guide in determining which method may be more appropriate.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| Observation | Systematic collection of information about actions and patterns.  
Types include:  
• direct observation  
• participant observation | • View performances in richness of actual environment  
• Low subject demands  
• Opportunity to “see” what may not be “said” | • Potential for observer bias  
• Limitations in complex environments...difficult to “see” it all  
• Subjects may change actions due to knowledge of observer’s presence |
| Interviews | Structured and spontaneous questions designed to gather information about a specific situation.  
Types include:  
• Individual  
• Focus Groups  
Variations include:  
• Telephone interviews  
• Face-to-face personal interviews | • Allows interviewer to clarify or delve into unanticipated areas based on statements made by interviewee.  
• Often provide rich information due to open-ended nature of questions and conversational style.  
• Group dynamics of focus groups can enhance (or distract | • Requires logistical coordination to set meeting time and gain access to desired interviewees.  
• Personal contact may be intimidating  
• Can be time consuming to conduct, transcribe, and analyze  
• When using multiple interviewers, |
<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extant Data Review</strong></td>
<td>Review of existing data (e.g. reports, records, memos) in an effort to gain information about a specified situation.</td>
<td>• Can often provide long-term history of a situation relatively simply.</td>
<td>• Extant data may not exist in a format that is directly related to the question or situation being studied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inexpensive method of collecting data</td>
<td>• May be difficult to gain access to necessary data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Measures often already exist related to a particular question.</td>
<td></td>
</tr>
<tr>
<td><strong>Surveys</strong></td>
<td>Structured questions designed to gather large amounts of information about a specified situation or construct. Variations include: • Paper-based • Online</td>
<td>• Can gather information from a large sample or population relatively quickly and inexpensively. • Consistent format. Everyone is asked the same questions in the same way. • May be less intimidating than personal contact.</td>
<td>• Must often deal with a poor response rate. • Assumes respondent understands the question and intended meaning.</td>
</tr>
</tbody>
</table>

(Gordon, D., 2001; Russ-Eft, D. & Preskill, H., 2001; Swanson, R., 1996)

Finally, an instrumentation plan should be completed. For each method selected, determine if:

- an instrument already exists which can be leveraged. Review the Gap Analysis Guide for notes of previously used instruments. Considerations related to leveraging existing instruments are:
  - Is reliability/validity information available on the instrument? If not, is it still acceptable for use?
  - Will the instrument need to be significantly changed? If so, it will need to be piloted and the changes may impact the existing reliability/validity.
  - If no existing instrument is available, it will be necessary to create one. All instruments should be piloted to determine necessary revisions. Additionally, measures of reliability and validity should be taken in order to verify the integrity of the data being collected.

As a final step in creating the data collection portion of the evaluation plan, look back over the entire plan to ascertain the overall fidelity of the plan.

- Did you triangulate data sources?
- Did you triangulate data methods?
- Are all leveraged instruments reliable and valid?
- Will you feel comfortable standing behind the data collection plan for each question?
DATA ANALYSIS PLAN
While data analysis is an iterative process, creating a data analysis plan prior to collecting data helps to reduce potential bias and to speed up the interpretive process. Data analysis is a continual refinement process resulting in interpretations of what all the data means. For each data source, identify how the collected data will be analyzed. The data analysis method will depend in part on the type of data collected.

In broad categories, data can be classified as quantitative or qualitative in nature and each classification has different data analysis procedures. For quantitative data, these procedures usually involve conducting statistical tests. Qualitative data analysis is based on various coding strategies. While a thorough discussion of the types of tests to be conducted or of coding strategies is not possible related to this model, refer to the Suggested Readings for detailed guidance in these areas.

Quantitative Data Analysis
In general, statistical tests fall into two general categories: descriptive statistics and inferential statistics.
1. Descriptive statistics describe characteristics of the sample such as measures of mean and median.
2. Inferential statistics allow inferences to be made from the sample to population the sample represents.

Inferential statistics can be further categorized as either parametric or nonparametric. Parametric tests are used for interval or ratio data. They require that assumptions of normality, homogeneity of variances, and linearity be met in the sample data. For such reason as inability to secure a random sample or a large enough sample size in organizations, these assumptions often cannot be met in evaluation studies. However, general practice often includes the use of parametric tests.

Nonparametric methods do not require that these assumptions be met. Most tests are based on ranked data as opposed to interval or ratio data requirements for parametric tests. Common nonparametric tests include sign test, Wilcoxon Rank-Sum test, Wilcoxon Signed-Rank Test, Kruskal-Wallis test, Spearman Rank-Order Correlation Coefficient, and Fisher’s Exact Test (Brewer, J., 1996).

Qualitative Data Analysis
Qualitative data is voluminous in nature. For example, a one-hour interview can easily yield over twelve pages of data. Steps should be taken on a regular basis to reduce the collected data by categorizing it into either predetermined or emerging codes. The evaluation questions themselves often outline codes. For example, when reviewing components of a solution, codes such as “perceived acceptance”, “benefits to users”, or “obstacles to use” may be helpful.

Upon review of the data however, often unanticipated themes or trends in responses may become evident. To identify emergent codes, review the data content for such items as:
For all codes, create a master list which includes the name of the code, the abbreviation which will be used for this code, a description of what is meant by the code, and identification of whether the code was predetermined or emergent. If possible, have multiple evaluation team members “code” the data.

No matter what analysis methods were used, the bottom line is to determine what the data says. It is creating a sense of meaning and understanding from what is seen. The data analysis plan provides an outline for how the data will be reviewed in order to construct meaning.

**CREATE SCHEDULE AND BUDGET**

By creating the data collection and analysis plans, you are beginning to break down the evaluation into discreet tasks. Creating a schedule of ordered tasks along with their required completion time provides additional information to aid in refining the inclusion or exclusion of questions for the evaluation.

To determine a task schedule,

1. Create a general outline of the steps to be taken. It may be helpful to create broad categories such as Instrument Development, Data Collection, and Data Analysis.
2. Break these steps down into discreet tasks. The data collection and analysis plan both encompass tasks that must be included in the schedule. For example, if an instrument will be developed or revised, then it will also need to be piloted. Common task items in an evaluation include:
   - meetings
   - scheduling of data collection and meetings
   - literature reviews
   - instrument development or revision
   - piloting of instruments
   - data collection
   - transcribing field notes
   - coding data
   - analyzing and interpreting data
   - creating reports and journal articles
   Time will need to be allocated for these tasks.
3. Note any links between tasks. Is it necessary to complete one task prior to beginning another? Do tasks need to be completed at the same time?
4. Determine the amount of time required in completing each task. Assign a start and completion date to each task remembering to include the noted links. Determining the amount of time required is an estimation process based on knowledge of the task and experience. Sources for this estimation process include consultants and project management
literature. While not exhaustive, the “time per task” list (Miles & Huberman, 1994) can serve as a general guide for creating a project plan.

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing field notes (e.g. interviews, focus groups, observations)</td>
<td>2-3 days</td>
</tr>
<tr>
<td>Coding qualitative data</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Analyzing / Interpreting data</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

(Miles & Huberman, 1994)

By creating a task timeline, you have also helped to determine the resources needed for the evaluation. Evaluation costs can be divided into two broad categories, labor costs and purchases.

Labor costs include salaries and benefits for employees and consultants/contractors working on the evaluation. To put labor costs in a usable format for a budget, translate them by identifying a daily rate for each employee or contractor and then multiplying the daily rate by the number of days they will be required to work on a task.

Purchases include discreet payments for a product or service. Examples falling into this category are:

- Travel
- Meals
- Communication
  - Telephone
  - Postage
  - Internet Usage
- Printing & Copying
- Equipment
  - Purchase
  - Maintenance
- Supplies
- Facilities Overhead
  - Rent
  - Utilities
  - Maintenance

For the budget, purchases will be translated into a per item per task costs.

For each task or group of tasks identified in the schedule, enter a line item in the budget and calculate associated costs. Depending on the client’s requirements, you will only need to include a high-level budget as part of the final proposed evaluation plan and contract.

**REFINING THE EVALUATION QUESTIONS**

Given the data collection, analysis, schedule, and budget, return to the list of potential questions. Prioritize them based on such criteria as:
Answer to the question will provide direct link to determining degree to which gap is closed.
Answer to the question will provide information for more than one question
Answer to the question is perceived to be of significant interest to the stakeholders.
Collecting and analyzing data to answer question is feasible based on cost, resources, and time.
Other criteria as determined by evaluation team/client parameters.

While it is not possible to determine a specific ratio for identifying the number of questions to include in an evaluation, Russ-Eft and Preskill (2001) have suggested that most program evaluations range from three to twelve evaluation questions.

Make your decision of which questions will make the final list for inclusion in the evaluation. Once the prioritized list has been made, conduct a final review of the evaluation questions to make sure that

- When you put all the data together, will it provide enough information for a comprehensive understanding of the big picture?
- the questions as a whole will answer the two major evaluation questions to a sufficient and acceptable degree.
- there are no accidental “holes” in evaluating the solution (e.g., for a solution that includes both a training and an incentive program, the evaluation questions will collect data related to all solution components).
- Leave room in the estimated cost and schedule for the stakeholders to add additional questions during Step Three: Negotiate the Evaluation Parameters.
- Group all questions relative to which of the two major evaluation questions they answer.
  1. Is the performance in question now at an acceptable level?
  2. If no, why not?

Finally, it will be necessary to revisit the evaluation plan and revise it based on which questions will be included in the evaluation. Revise the schedule and budget to reflect the evaluation tasks.

You now have created the foundational document for the client negotiation meeting that will take place in the next step.

SUGGESTED READINGS AND REFERENCES


TOOLS
## INITIAL ANALYSIS QUESTIONNAIRE

**Instructions**
1. Complete the 12 questions below with as much detail as possible.
2. If you do not know the answer, don’t leave it blank. Forward the question to the person(s) who does.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ANSWER</th>
<th>CONTACT (Who Can We Contact If We Require Further Information?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Name of the intervention to be evaluated.</strong></td>
<td>Name:</td>
<td>Who is the Key Contact for this intervention?</td>
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<tr>
<td>How do you refer to this intervention within your organization?</td>
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<td>Name:</td>
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<td>Email:</td>
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<td>Phone:</td>
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<tr>
<td>2. <strong>Describe the intervention.</strong></td>
<td>Characteristics of Intervention:</td>
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<tr>
<td>▪ What is this intervention? What are its features and characteristics? How would you describe what this intervention is and what it does to someone outside of the organization?</td>
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<td>Name:</td>
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<td>3. <strong>When was the problem or opportunity identified that led to this intervention?</strong></td>
<td>Date:</td>
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<tr>
<td>4. <strong>What was the intervention intended to do?</strong></td>
<td>a. Objectives:</td>
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<td>Name:</td>
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<td>QUESTION</td>
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</tr>
<tr>
<td>a. If you had to say what the objectives or intended outcomes of the intervention were, what would you say? Be as detailed as you can. (Attach any appropriate documentation.)</td>
<td>b. Realistic Today:</td>
<td>Phone:</td>
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<tr>
<td>Example 1 (Detailed): “We expect that using the new process will increase production of cell phones from 11,000 per day to 14,000 per day. Given that each phones sells on average for $10.00, this will result in an increase in potential sales of $30,000 per day.”</td>
<td></td>
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<tr>
<td>Example 2 (General): “We expect that absenteeism will decrease on the production line.”</td>
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<tr>
<td>b. Are these still realistic expectations or has the desired outcome changed?</td>
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<td>5. Who was impacted by the intervention?</td>
<td>a. Organizational Structure (Now):</td>
<td>Name:</td>
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<td></td>
<td>Name:</td>
<td>Position:</td>
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<td>Email:</td>
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<tr>
<td>QUESTION</td>
<td>ANSWER</td>
<td>CONTACT</td>
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</tr>
<tr>
<td>a. Describe the organization structure. (Attach any appropriate documentation)</td>
<td>b. Organizational Structure (Then):</td>
<td>Phone:</td>
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<tr>
<td>b. Was this what the organization looked like when the performance problem or opportunity was identified?</td>
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</tbody>
</table>

**What Units, Departments, Groups, and Individuals were impacted by the intervention?** (Add additional rows as required)

<table>
<thead>
<tr>
<th>DEPARTMENTS / UNITS / GROUPS:</th>
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<tbody>
<tr>
<td>Department / Unit:</td>
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<tr>
<td>Key Contact:</td>
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<tr>
<td>Email:</td>
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<tr>
<td>Phone:</td>
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<tr>
<td>Department / Unit:</td>
</tr>
<tr>
<td>Key Contact:</td>
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<tr>
<td>Email:</td>
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<td>Phone:</td>
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</tbody>
</table>

**What Units, Departments, Groups, and Individuals were impacted by the intervention?** (Add additional rows as required)

<table>
<thead>
<tr>
<th>INDIVIDUALS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
</tr>
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</table>

**Describe this Unit’s relationship to the performance problem or solution:**

**Describe this Unit’s relationship to the performance problem or solution:**

**Describe this person’s relationship to the performance problem or solution:**

226
<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ANSWER</th>
<th>CONTACT</th>
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</thead>
<tbody>
<tr>
<td><strong>INDIVIDUALS:</strong></td>
<td></td>
<td>(Who Can We Contact If We Require Further Information?)</td>
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<td>Name:</td>
<td></td>
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<td>Position:</td>
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<tr>
<td>Department/Unit:</td>
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<td>Phone:</td>
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<tr>
<td>Describe this person’s relationship to the performance problem or solution:</td>
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<tr>
<td>6. What problem or opportunity led to this intervention?</td>
<td>Problem/Opportunity Statement:</td>
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<tr>
<td>Describe what was going on related to the organization that led to a problem or opportunity being identified.</td>
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<tr>
<td>7. What process led to selection of this particular intervention?</td>
<td>a. Data Collected?</td>
<td>Name:</td>
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<tr>
<td>If “yes”:</td>
<td>If “yes”:</td>
<td></td>
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<tr>
<td>• What was collected:</td>
<td></td>
<td>Position:</td>
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<td></td>
<td></td>
<td>Email:</td>
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<tr>
<td>QUESTION</td>
<td>ANSWER</td>
<td>CONTACT</td>
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<tr>
<td>a. Did you collect any data to verify this problem? If so, is it available?</td>
<td>- Available?</td>
<td>Phone:</td>
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<tr>
<td>b. How did you identify the causes of the problem?</td>
<td>b. How were causes identified?</td>
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<tr>
<td>c. How did you select this particular intervention?</td>
<td>c. How was intervention selected?</td>
<td></td>
</tr>
<tr>
<td>d. Is the intervention that was implemented identical to the one that was suggested? If no, explain differences and why these exist.</td>
<td>d. Is the intervention in place identical to one proposed?</td>
<td></td>
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<tr>
<td></td>
<td>If “no”:</td>
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<tr>
<td></td>
<td>▪ Why were there differences?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ What are the differences?</td>
<td></td>
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</tbody>
</table>

8. What other interventions or change initiatives were introduced during the time outlined in question 3 until now?

a. Change initiatives:

b. Restructuring:

c. Cultural Changes:

d. External Factors:

a. Were any other activities, program, processes, tools, etc. put in place?

b. Has the organization gone through any reorganizations or
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<tr>
<td>restructuring (e.g. process redesign, downsizing, mergers)?</td>
<td></td>
<td>(Who Can We Contact If We Require Further Information?)</td>
</tr>
<tr>
<td>c. Has the culture of the organization changed?</td>
<td></td>
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<tr>
<td>d. What external factors have impacted the organization during this time (e.g. legislation, regulations)?</td>
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</table>

9. What is most important to know for your organization? Rate each area (A – D) by order of importance (1 = most important to answer, 4 = least important).

  _____ A. Impact of this intervention on society.
  _____ B. Impact of this intervention on our organization.
  _____ C. Impact of this intervention related to performance or performers. To what degree did the intervention increase performance related to providing our employees with:
    (Within C, check all that apply to this intervention)
    _____ - information they lacked
    _____ - resources they lacked
    _____ - incentives
    _____ - knowledge or skills they lacked
    _____ - more capability

Name: 
Position: 
Email: 
Phone:
<table>
<thead>
<tr>
<th>QUESTION</th>
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<tr>
<td>____ - more motivation.</td>
<td></td>
<td></td>
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<tr>
<td>____ D. How complete was the process that led to this intervention being selected and implemented.</td>
<td></td>
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</tbody>
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<tr>
<th>QUESTION</th>
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<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. What is the deadline (if any) for completion of this evaluation?</td>
<td>Expected Completion Date:</td>
<td></td>
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<tr>
<td>11. What specific questions should this evaluation answer?</td>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td></td>
<td>4.</td>
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<td></td>
<td>5.</td>
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</table>

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ANSWER</th>
<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Who will be interested in the results of the evaluation? (Add additional rows as needed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td>Name:</td>
<td></td>
</tr>
<tr>
<td>Position:</td>
<td>Position:</td>
<td></td>
</tr>
</tbody>
</table>

230
<table>
<thead>
<tr>
<th>QUESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department/Unit:</td>
</tr>
<tr>
<td>Email:</td>
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<tr>
<td>Phone:</td>
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<tr>
<td>Why:</td>
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<td>Name:</td>
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<tr>
<td>Position:</td>
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<tr>
<td>Department/Unit:</td>
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<tr>
<td>Email:</td>
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<tr>
<td>Phone:</td>
</tr>
<tr>
<td>Why:</td>
</tr>
</tbody>
</table>
## Evaluation Zones

<table>
<thead>
<tr>
<th>Zone</th>
<th>Purpose &amp; What Is Measured</th>
<th>Important To:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Society</strong></td>
<td>Determine impact of the intervention outside of the organization into which it was implemented (e.g. decrease in unemployment, increase in lifespan).</td>
<td>▪ Various agencies within society related to impacts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Community of HPT Practitioners</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>Determine impact of the intervention on the current measures of the business (e.g. productivity, satisfaction, sales, attitudes).</td>
<td>▪ Organization</td>
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<tr>
<td></td>
<td></td>
<td>▪ Unit(s) involved in the performance intervention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Community of HPT Practitioners</td>
</tr>
<tr>
<td><strong>Unit</strong></td>
<td>Determine impact of the components of the intervention related to their intended outcome.</td>
<td>▪ Unit(s) involved in the performance intervention</td>
</tr>
<tr>
<td>(Department, Group,</td>
<td>(Based on six categories of Gilbert’s BEM)</td>
<td>▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution</td>
</tr>
<tr>
<td>Individual)</td>
<td>For example, we know that a training component is intended to provide required/desired skills or knowledge.</td>
<td>▪ Community of HPT Practitioners</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>Determine if any areas of the process which led to selection and implementation of the intervention could be improved (e.g. cause analysis, solution selection, implementation, change management)</td>
<td>▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution</td>
</tr>
<tr>
<td><strong>Improvement</strong></td>
<td></td>
<td>▪ Sponsors of the original performance improvement FEA</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td></td>
<td>▪ Community of HPT Practitioners</td>
</tr>
</tbody>
</table>
## Evaluation Plan Template

### 1. Data Collection & Analysis Plan

**(Example)**

<table>
<thead>
<tr>
<th>Evaluation Question 1:</th>
<th>Did the process guidance support tool provide sufficient information, data, and/or feedback to the performer?</th>
</tr>
</thead>
</table>

**Data Source 1:** Actuary Department Employees who use EPSS.

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster non-random sample</td>
<td>Survey (Likert &amp; open-ended questions)</td>
<td>Leverage survey from front-end analysis -- will be a major revision -- must be piloted and tested for reliability/validity</td>
<td>Non-parametric for Likert results</td>
<td>1-2 days revisions</td>
<td>$1700</td>
</tr>
<tr>
<td>800 employees total (Four shifts: day FT, day PT, night FT, night PT)</td>
<td></td>
<td></td>
<td>Pre-code categories</td>
<td>2-3 days piloting/testing</td>
<td></td>
</tr>
<tr>
<td>Provide survey opportunity to all employees.</td>
<td></td>
<td></td>
<td>Multiple coders</td>
<td>4 day implementation period</td>
<td></td>
</tr>
<tr>
<td>Seek return rate of 75%</td>
<td></td>
<td></td>
<td></td>
<td>3 days analysis</td>
<td></td>
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<td></td>
<td>Printing</td>
<td></td>
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</tbody>
</table>

**Data Source 2:** Actuary Department Managers who supervise AD employees

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
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<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
</table>


- Non-random convenience sample
- 12 Managers (3 per shift)
- Will attempt 100% population

- F-2-F Interviews
- Must create. Will be based on survey (#1 above)
- Pre-code categories & emergent
- Multiple coders
- 2 day creating interview questions
- 2 days piloting/testing
- 2 days training interviewers
- 1 day scheduling
- 2 days to conduct
- 3 days to analyze
- $2400

**Data Source 3: Review of Actuary Department Monthly, Quarterly, and Annual Reports**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
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<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Performance Metrics</td>
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<td>Hourly production Metrics</td>
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<td>Monthly Trends Reports</td>
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<tr>
<td>Quarterly Performance Report</td>
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<tr>
<td>Annual Report</td>
<td>Extant data review</td>
<td>n/a</td>
<td>Correlation tests</td>
<td>4-7 days securing all reports</td>
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<td>4-5 reviewing</td>
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<td>3-4 analyzing</td>
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**Total Gross (Non-Normalized) Resources & Costs:**

| 33-40 days | $5700 |
Evaluation Plan Template

1. **EVALUATION QUESTION 1:**

   **DATA COLLECTION & ANALYSIS PLAN**

   **Data Source 1:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
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<th>Estimated Costs</th>
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   **Data Source 2:**

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   **Data Source 3:**

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   **TOTAL GROSS (NON-NORMALIZED) RESOURCES & COSTS:** $  

2. **EVALUATION QUESTION 2:**

   **Data Source 1:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
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</thead>
</table>
### Data Source 2:

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### Data Source 3:

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</table>

**TOTAL GROSS (NON-NORMALIZED) RESOURCES & COSTS:** $2

### 2. MASTER CODE LIST

<table>
<thead>
<tr>
<th>Name of Code</th>
<th>Abbreviation</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Type**
- KEY
- E = Emergent
- PD = Predetermined
<table>
<thead>
<tr>
<th>Task</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
<th>Resources</th>
<th>Resources</th>
<th>Itemized Costs</th>
<th>Total Costs</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
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<th>Start Date</th>
<th>End Date</th>
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<td>Total Costs</td>
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EVALUATION CONTRACT TEMPLATE

CONSULTING BUSINESS
Business Name
Contact information

willingly enters into agreement with

CLIENT BUSINESS
Business Name
Contact information

to conduct the following performance evaluation:

STATEMENT OF PURPOSE
Include a statement of understanding of
- problem and solution which have lead to the requested evaluation
- what is being evaluated (scope)
- the intended audiences for the evaluation
- the stakeholders of the evaluation

EVALUATION METHODOLOGY
Describe the process to be undertaken to complete the evaluation. Include the data collection and analysis methods to be used.

INVOLEMENT AND RESPONSIBILITIES
Describe who will be involved in the evaluation from the consulting organization as well as agreed involvement and responsibilities from the client organization.

DELIBERABLES
Describe all interim and final products the client will receive for the evaluation. Include a description of the presentation format for each product.

SCHEDULE AND COSTS
Provide mid to high-level schedule of tasks.
Provide a high-level breakdown of costs.

AGREEMENTS
State any agreed processes for changes to the evaluation.
State agreed publication potential permission.

SIGNATURES
FOCUS: [Overall Purpose of Meeting]

AGENDA ITEMS

1. Introductions

2. Evaluation Scope and Audiences

3. Selection of evaluation questions to be include

4. Presentation of Evaluation Plan

5. Negotiation of cost of evaluation [may take place outside of the meeting]

6. Request for stakeholder involvement

7. Identification of data source access requirements

8. Identification of procedures and formats for presentations and reports

9. Identification of communication protocols

10. Request for publication potential

11. Contingencies agreement

12. Summary of Decisions and Action Items
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<th>Name:</th>
<th>Preferred communication medium:</th>
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<tr>
<th>Department/Unit:</th>
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<td>Describe your relationship to performance problem/solution being evaluated:</td>
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<th>Name:</th>
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<td>Describe your relationship to performance problem/solution being evaluated:</td>
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APPENDIX F

Research Instruments and Evaluation Documentation from Case Study One
## Case Log

### Case Study 1: Oculus Document Management System

<table>
<thead>
<tr>
<th>Step</th>
<th>Date</th>
<th>Time (hrs)</th>
<th>Products/Activities</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1: Prepare</strong></td>
<td></td>
<td><strong>27</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Distribute IAQ</td>
<td>2/3/03</td>
<td>N/a</td>
<td>IAQ</td>
<td>Distributed IAQ in preparation for Tuesday meeting.</td>
</tr>
<tr>
<td>2. Clarify Details</td>
<td>2/4/03</td>
<td>4</td>
<td>Completed IAQ</td>
<td>Met with client to go over questions one-by-one.</td>
</tr>
<tr>
<td>3. Synthesize Information</td>
<td>2/4/03</td>
<td>12</td>
<td>List of Evaluation Questions</td>
<td>Had some initial difficulty in determining what the “unit” meant in the evaluation zones. Also struggled with direct versus indirect measures. Have some question as to how completely Oculus has been implemented. Unsure about the pilot group (CSE). BS didn’t know how much they were using it. Also the Finance &amp; Accounting Sub-process may still be in the “scanning documents in” phase.</td>
</tr>
<tr>
<td>4. Create Evaluation Plan</td>
<td>2/4 – 2/7</td>
<td>4</td>
<td>Evaluation Plan</td>
<td>Could have spent more time with client to get details of intervention.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Probably will use emerging codes if any (re: Master Code List).</td>
</tr>
<tr>
<td>5. Create Contract</td>
<td>2/7 – 2/9</td>
<td>7</td>
<td>Contract</td>
<td>First time doing this for me. Could have had more complete details on the intervention.</td>
</tr>
<tr>
<td><strong>Phase 2: Negotiate</strong></td>
<td></td>
<td><strong>4</strong></td>
<td></td>
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</tr>
<tr>
<td>1. Prepare Agenda</td>
<td>2/9/03</td>
<td>0.5</td>
<td>Agenda</td>
<td>Emailed to BS along with Contract for her review prior to the meeting. (Not much time…she most likely will not have had time to review it.)</td>
</tr>
<tr>
<td>2. Conduct Meeting</td>
<td>2/10/03</td>
<td>2</td>
<td>Agreed upon contract and plan</td>
<td>9am meeting – BS and BN in attendance</td>
</tr>
<tr>
<td>Step</td>
<td>Date</td>
<td>Time (hrs)</td>
<td>Products/Activities</td>
<td>Comments</td>
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<tr>
<td>3. Revise Contract / Plan</td>
<td>2/10/03</td>
<td>1.5</td>
<td>Finalized Contract and Evaluation Plan</td>
<td>Noted changes regarding DOR-specific required wording.</td>
</tr>
<tr>
<td><strong>Phase 3: Implement</strong></td>
<td></td>
<td><strong>118</strong></td>
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</tr>
<tr>
<td>1. Inventory Instruments</td>
<td>2/12/03</td>
<td>4</td>
<td>Review of Oculus / Creation of interview protocol</td>
<td></td>
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<tr>
<td>2. Pilot Instruments</td>
<td>2/12/03</td>
<td>.5</td>
<td>Interview protocol for Agents</td>
<td>Ran by CA re: wording of questions. – Chose not to pilot with user. Wanted to use information from total population (only 11 Agents).</td>
</tr>
</tbody>
</table>
| 3. Collect Data | 2/12-25/03 | 68 | FW Observation  
BN Interview on Oculus implementation process  
9 Agent Interviews  
CSE (3 Interviews)  
CJ Observation  
RH Interview  
KV Interview  
Tech (2 Interviews)  
PAMS (2 Interviews)  
Oculus Reporting Data Review  
SPURS Reporting Data Review | Difficulty in identifying a solid measure for the impact of Oculus in terms of time & cost. No direct measures available. The reporting function of Oculus has not been fully implemented. Plenty of anecdotal evidence available, but little to no hard data. No PAMS available for last 3 years! |
<p>| 4. Analyze Data | 2/13-3/7/03 | 50 | Returned to 2 Agents to clarify information. | Finance is definitely not far enough along in implementation to conduct evaluation…and CSE uses Finance’s info more than Purchasing’s info. Vote to drop Finance &amp; CSE questions from evaluation. |
| 5. Manage Project | 2/14/03 – 4/24/03 | N/a | | * Eval Plan worked well as high-level project mgmt tool. Referred back to it often as a checklist. |</p>
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<tr>
<th>Step</th>
<th>Date</th>
<th>Time (hrs)</th>
<th>Products/ Activities</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1.</td>
<td>2/24-6/03</td>
<td>9</td>
<td>PPT Presentation Interim</td>
<td>Met w/BS, BS2, BN, &amp; KV (9am) regarding incomplete implementation of Oculus. KV verified status in Finance. Proposed narrowing of scope. Agreed to only focus on Purchasing Sub-process and to propose future steps for further evaluation.</td>
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<td>2.</td>
<td>3/8-14 4/24-25/03</td>
<td>18</td>
<td>PPT and Written Report</td>
<td>Didn't know in advance who all would be attending. No word on this from BS. Assuming will be BS, BS2, BN and BS's Director. Formatting the report took longer than I'd expected.</td>
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<td>3.</td>
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<td>BS agreed to participate in write-up of process &amp; lessons learned later this summer.</td>
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<td>4.</td>
<td>TBD</td>
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Case Journal

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<th>Journal</th>
<th>Research Notes</th>
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| **IAQ Meeting (2/4/03)**  
**Attendees:** BS, BN, KV  
- Asked BS to overview intervention. She gave history and “rollout” of Oculus. Verified events/dates with BN. I had to clarify often re: DOR language and processes and to distinguish between DOR processes and Oculus features & processes.  
- KV discussed current status of Oculus in finance sub-process. I’m a bit concerned that it’s not fully implemented there and may be difficult to evaluate. Perhaps too early? Will need to get a little better feel for how information is used in DOR before making this decision.  
- Note: helpful for future to audio tape IAQ mtg. Lots of rich info, but hard to fit into my table. Perhaps just numbered questions would be a better format if hand-writing notes on the IAQ. To restrictive as a table.  
- Could improve the logical flow of the questions also. |  
- Would have been good to have some background info prior to the IAQ mtg. Could have come to mtg with language and info on Oculus contract already read.  
- Wondering if guidance is clear enough about how to identify availability of data sources and perhaps emerging sources. May want to add something in the model about this.  
- Also, could give guidance on direct and indirect measures and on objective versus subjective measures. |

| **Preparation of Evaluation Plan & Contract (2/4 – 2/9/03)**  
- Using model narrative to guide “brainstorming” of evaluation questions. Am having some difficulty in determining available data sources. It appears there are little to no objective measures of Oculus. The QA reports haven’t been put in place yet. The PAMs are being revised and haven’t been collected for over 2 years! How am I going to measure this? |  
- Contracting template seems thorough. Reviewed some similar DOR contracts from agencies like Accenture, Bearing Point, and Mgt of America. The template covers most everything in those contracts.  
- I’m thinking that I won’t really use the scheduling and budget template to truly monitor the project. Would rather use MS Project since it has built in formulas that will update |

| **Synthesizing / Clarifying Details & Creating Eval Plan (2/6)**  
- Looks like will have to start with anecdotal information about usage of Oculus and impact. Still struggling with how to measure the impact on time and cost. The original process hadn’t been mapped out and so is difficult to do a before/after comparison. Also, hard to attribute any improvement/decrease to Oculus |  
- Contracting template seems thorough. Reviewed some similar DOR contracts from agencies like Accenture, Bearing Point, and Mgt of America. The template covers most everything in those contracts.  
- I’m thinking that I won’t really use the scheduling and budget template to truly monitor the project. Would rather use MS Project since it has built in formulas that will update |
because no direct measure available. May be able to find a report on outputs of the Purchasing Agents. Will talk to BS tomorrow about this.

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<td>• BS said that SPURS has a monthly report. It may be possible (but time intensive!) to look at number of Pos created prior to and after Oculus and compare this to usage of Oculus…perhaps a correlation??</td>
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<th>2/10 Negotiation Meeting</th>
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<td><strong>Attendees:</strong> BS and BN</td>
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<tr>
<td>• I led meeting following the contract.</td>
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<td>• BS mentioned that there is some standard DOR-type verbiage that would have to be included if this were a real contract.</td>
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<td>• Also mentioned that I would have to sign a confidentiality statement and perhaps this should be added to the contract verbiage.</td>
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<tr>
<th>2/12 Prepared PA Interview protocol.</th>
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<td>• Created the interview protocol for the 9 Pas. Also prepared the initial questions for the CSE group and for Robin of the Finance group.</td>
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<td>• Schedule interviews to begin 2/13.</td>
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<th>2/13 Observation of Oculus Input Process</th>
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<td>• Observed FW and asked her to talk me through the process she used to prepare the PO information for Agents and as to how she scanned and filed the PO information in Oculus. FW is very methodical and systematic. Has a good system and is very efficient in how she makes use of “down –time” while documents are scanning. Also has a very thorough QA process.</td>
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<tr>
<td>• Need to change the agenda flow to match the flow of information in the contract.</td>
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<td>• Add confidentiality statement to contract verbiage.</td>
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<td>• Minor revisions to contract…clearing up dates and history of Oculus. No major impact on contract itself.</td>
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<td>• There are only nine agents and I’m going to want to use all of their info. I’m going to use a semi-structured interview technique where if I add any new questions, I make sure that I go back and ask those questions of all interviewees.</td>
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<td>• Had JR review my instrument to see if my questions were clear. May want to add verbiage to model to this nature.</td>
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<th>2/14</th>
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<tr>
<td>• Had FW review my interpretation (2/14) of her process and make any changes. She changed one piece of info. Should this be added to the model or is it intutitive?</td>
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</table>
(2/17) Met with BN to clarify what features of Oculus are in place (especially related to reporting features)

(2/18) Began PA interviews – scheduled back-to-back all day.

• The information is so soft (feelings, perceptions). I’ve got to find more objective measures of Oculus. Meeting with BS tomorrow about SPURS report.

(2/19) CSE Interviews
• Interviews today with VG, DN, and JR. VG seems to be an excellent “early adopter”. Saw benefits to using Oculus and developed and provided training to her people already even though Oculus isn’t fully implemented.
• Problem here. DN and JR both stated that they use the financial information in Oculus and rarely use the PO info. They said the warrants and vouchers aren’t yet scanned in and so it’s really hit-or-miss as to whether or not they would find a document in Oculus…so they are really using it yet… but they certainly both sang praises of the system and are chomping at the bit for it to be ready. They anticipate it will save them lots of time.
• Have interview in Finance tomorrow. Will double check this info. If it true, then may need to renegotiate scope of evaluation. May be too early for finance & CSE groups

• Could I have asked better questions during that initial meeting that would have led me to understand that Oculus wasn’t implemented enough to evaluate?
• I’ve already spent nearly 30 hours in data collection and analysis that will most likely be wasted if the scope gets narrowed. Could I have avoided this?

(2/20) Finance Interview & Observation
• Met with CK, KY, and RH in finance for interview and observation of their process.
• One interesting note… CK’s scanning process is much less systematic than FW’s over in Purchasing. CK get’s interrupted more often and also seeks interruptions more often.
• RH is new to finance. Disussed

• Will need to contact evaluation client (BS) and discuss narrowing of scope. Need to have KV from finance in this meeting.
• BS can’t meet until 2/24 so will prepare argument for narrowing scope and continue collecting data in Purchasing unit.
with KY the status of scanning in finance. They are not yet half way through last year’s warrants and vouchers and they worked from both ends, so there’s a big gap in the middle.

(2/21) Finished PA Interviews (am) and am beginning to pull up random sample from Oculus during six month period. Will compare production of Pos (time required to produce) prior to Oculus and since Oculus (based on SPURS report).

(2/24) Interim Findings & Narrowing of Scope Mtg
Attendees: BS, BS, BN, KV
- Used PPT to present the problem and give evidence of why evaluation of impact in CSE and Finance groups not possible. Since KV was there, she verified my information.
- BS agreed that it was too early and was OK with narrowing the scope.

(2/25) Interviews with SB and WBB on PAMS and organizational impact
- WBB verified that PAMS haven’t been developed or used in purchasing for over three years. Stated that the purchasing agents processes have so many variables that it’s hard to come up with fair measures.
- SB stated that Strategic Planning Group has initiative underway to create a balanced scorecard for DOR. They aren’t creating new PAMs until after the training has been completed (October) for the scorecard. Then, they will attempt to create a scorecard for purchasing.

(2/25 – pm) Interviews with MM and WS (Tech Impact)
- Again no hard data, but anecdotal stuff regarding impact on Technical Support.

(2/26) Analyzing SPURS Data
- Having to pull random samples one

- Not the best measure, because even if there is a decrease in time, how sure can I be that it can be attributed to Oculus. What else happened during the same time period? This is a question for BS.
- No data available to link to organizational impact! Can only speculate. Does the model’s guidance cover this? At a minimum, the findings in the report have to address this.
- Must be sure to include limitations of findings in report. i.e., findings
at a time from Oculus.
• Created Access database to analyze data.
• Can’t do correlations. MM can’t give me frequency of use data on Oculus.

(3/3 and 3/5) Went back to BB, DB, EJ, and JK to clarify some of my findings.

(3/8) Beginning Report & Presentation
• BS said that although they won’t be attending the presentation, she wants all the Purchasing Agents to review the final report. Will have to make sure all salary info used for calculations is aggregated or grouped in some way.
• Selected a face-to-face presentation format and a executive summary plus full written report format for final findings.

(4/23) Practice presentation

(4/24) Presentation of Final Findings Attendees (BS & JB)
• BS’s director was at the meeting. Provided information in PPT with dialogue on each of the findings slides. Answered questions during presentation.

(4/28) Mtg w/BS about quality of evaluation and value of findings
Evaluation Documentation:

- Initial Analysis Questionnaire
- Evaluation Plan
- Contract
- Agenda
- Final Report
- Final Presentation

Initial Analysis Questionnaire

Instructions: Complete the questions below with as much detail as possible. If you do not know the answer, don’t leave it blank. Forward the question to the person(s) who does.

Performance Intervention Information

1. Name of the intervention to be evaluated. How do you refer to this intervention within your organization?
   
   Oculus – Document Management System

2. Describe the intervention. What is this intervention? What are its features and characteristics? How would you describe what this intervention is and what it does to someone outside of the organization?
   
   Oculus is the name of the imaging system recently installed in the Administrative Services Program. The Purchasing & Facilities Sub-Process has been scanning
   - Requisitions for Purchase
   - Purchase Orders
   - All applicable backup materials into this database since January 2002.

   The entire 2001-2002 fiscal year has been scanned into this system and is available for viewing. On August 19, 2002, Operational Accounting Sub-Process will begin scanning vouchers, invoices and related payment backup materials. The Purchasing & Facilities Sub-Process will begin scanning P-Card transactions starting with Purchasing Agent generated transactions through the Monthly Reconciliation Reports.

   Employees in the Department of Revenue, once granted access, can:
   - locate complete images of these documents through various searching methodologies,
   - find the needed purchase order(s) and
   - print any of the associated documents at their remote site.

   Currently outside of the Operational & Financial Services Process, only a subgroup of the Resource Management Process (CSE Program) and the Inspector General Process (Executive Support) have access to Oculus.

   This system allows our end users to enter the Oculus System, type in a requisition number and see all of the related documents, from the issuance of a purchase order, to the final payment and the associated related payment information on a single screen.
Future enhancements may include the remote scanning of field-generated P-Card transactions, thereby eliminating the need for onsite storage of these records and mailing/faxing the documentation to Tallahassee.

Oculus training is available on the DOR web and can be located by going to:
• Program Areas >> Administrative Services >> Purchasing >> Oculus Training. The training site also explains how to obtain access to the system.

Technical Specifications: Oculus 3.4 with 20 simultaneous seats licenses. Allows 75,000 doc scans per month * 2 scanners. Runs on a SQL database. Currently use no management reports, no training from contractor was included outside of initial technical training. Training for en-users of Oculus developed in-house.

Total Costs:

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Cost</th>
<th>Cumulative Total</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/06/01</td>
<td>Purchase of Server for hosting Oculus Scanning System (Req # 510893)</td>
<td>$10,732.31</td>
<td>$10,732.31</td>
<td>PO Issued on 6/12/01</td>
</tr>
<tr>
<td>06/19/01</td>
<td>Requisition for Purchase of Scanning System, installation, and yearly software maintenance. (Req # 511131C)</td>
<td>$47,980.00</td>
<td>$58712.31</td>
<td>PO Issued on 11/26/01. Installation initially scheduled for December 2001.</td>
</tr>
<tr>
<td>5/16/02</td>
<td>Requisition for Additional License and Maintenance</td>
<td>$36,505.00</td>
<td>$95,217.31</td>
<td></td>
</tr>
<tr>
<td>5/23/02</td>
<td>Requisition for programming to add Accounting Forms. (Req # 516133)</td>
<td>$14,940.00</td>
<td>$110,157.31</td>
<td>PO issued?? 7/30??</td>
</tr>
<tr>
<td>Total Cost:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$110,157.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. **What problem or opportunity led to this intervention?** Describe what was going on related to the organization that led to a problem or opportunity being identified.

The Requisition-PO-Invoice-Voucher-Warrant process is time-intensive and requires a large amount of paper and physical space. Related to time requirements, the process requires four copies: vendor, purchasing, accounting, end-user. For any of these “customers”, the paper must be filed allowing for potential mis-filings and time requirements in pulling and copying for any reason. Copies must be mailed or faxed, further incurring costs in the process. Additionally, the annual audit of the process requires random manual pulling and copying of files.

Besides the time involved, storing the paper requires much space within the DOR. PO’s alone take up 4 file cabinets per year and must be retained for 5 years. Space is prime real estate at DOR.
4. When was the problem or opportunity identified that led to this intervention?

Intervention was first researched for Accounting process in February 2000. Implemented on January 17, 2001 in Purchasing.

5. What was the intervention intended to do? If you had to say what the objectives or intended outcomes of the intervention were, what would you say? Be as detailed as you can. (Attach any appropriate documentation.)

Example 1 (Detailed): “We expect that using the new process will increase production of cell phones from 11,000 per day to 14,000 per day. Given that each phones sells on average for $10.00, this will result in an increase in potential sales of $30,000 per day.”

Example 2 (General): “We expect that absenteeism will decrease on the production line.”

General expected outcomes from introduction and use of Oculus include:
- Decrease in time spent in requisition/purchase order process due to less time spent filing and retrieving physical documents.
- Decrease in required cabinet/floor space
- Increase in productivity due to fewer physical files lost or misplaced
- Decrease in incidental costs of paper, postage, fax usage.

Direct Impact

UNITS:
PURCHASING & FACILITIES SUB-PROCESS: (anticipated – currently maintaining old and new processes)
- Decrease in time required to process Requisition and Purchase Orders
- Decrease in misfiled or list documents
- Increase in physical space
- Decrease in mailing and paper costs

FINANCIAL SYSTEMS & ANALYSIS SUB-PROCESS:
- Decrease in time required to process Requisition and Purchase Orders
- Decrease in misfiled or list documents
- Increase in physical space
- Decrease in mailing and paper costs

RESOURCE MANAGEMENT PROCESS:
- Decrease in time required to process Requisition and Purchase Orders
- Decrease in misfiled or list documents
- Increase in physical space
- Decrease in mailing and paper costs

INDIVIDUALS:
- Increase in capability
- Increase in motivation

Indirect Impact

UNITS:
TECHNICAL SUPPORT SERVICES
• Increase in maintenance requirements
INSPECTOR GENERAL
• Decrease in time required to conduct audit due to immediate access to files and auto randomization
ADMINISTRATIVE SERVICES PROGRAM DIRECTOR
• Increase in productivity for Operational & Financial Services
INFORMATION SERVICES PROGRAM
• Increase in time requirements due to incurring additional system maintenance
CHILD SUPPORT ENFORCEMENT PROGRAM
• Increase in productivity due to less time spent acquiring necessary documentation related to requisitions, purchase orders, invoices, vouchers, and warrants.
EXECUTIVE DIRECTOR
• Increase in productivity of Administrative Services Program, Executive Support, and Child Support Enforcement Program
• Additional time/cost requirements in Information Services Program

SOCIETY
• Decrease in use of natural resources due to decrease reliance on paper products.

6. Who was impacted by the intervention? Describe the organization structure and identify the units, departments, groups and individuals that were impacted. Was this what the organization looked like when the performance problem or opportunity was identified? If not, what has changed? (Attach any appropriate organizational charts)

Department of Revenue is divided into Programs, Processes and Sub-processes. Relevant organizational charts are attached. The organizational structure has remained the same from the time the intervention was conceived until the evaluation date.

Directly impacted by the intervention are:
• Purchasing & Facilities sub-process (specifically related to Requisitions and Purchase Orders)
• Financial Systems & Analysis sub-process (specifically related to Invoices, Vouchers, and Warrants)
• Resource Management process within the Child Support Enforcement Program

Indirectly impacted by the intervention are:
• Technical Support Services
• Inspector General
• Administrative Services Program Director
• Executive Director

7. What process led to selection of this particular intervention? Did you collect any data to verify this problem? If so, is it available? How did you identify the causes of the problem? How did you select this particular intervention? Is the intervention that was implemented identical to the one that was suggested? If no, explain differences and why these exist.

Knew that DEP and DJJ were using this system. Called them to get feedback about satisfaction. Observed their system. Original advocate for the intervention within DOR left about 1.5 years ago, but funds had already been encumbered and so had to be used for this purpose.
8. **What other interventions or change initiatives were introduced during the time outlined in question 4 until now?** Were any other activities, program, processes, tools, etc. put in place? Has the organization gone through any reorganizations or restructuring (e.g. process redesign, downsizing, mergers)? Has the culture of the organization changed? What external factors have impacted the organization during this time (e.g. legislation, regulations)?

Change Initiative: eProcurement just introduced as of October 2002. A 5yr, 98Million dollar contract with Accenture to digitize all purchases. Purchases of 2,500 or less go straight to Accenture. DOT and DMS will begin piloting the system as of 5/1/03. Rumored that up to 80% of purchasing’s current processes/ responsibilities will be gone with implementation of eProcurement.

Cultural Changes: Purchases of less than $2500 are being aggressively rejected if not on Pcard. Also space changes, moving people around to different cubes with bigger cubes for supervisors and a new break area.

---

**Evaluation Requirements**

1. **What is most important for your organization to know?** Rate each area (A – D) by order of importance (1 = most important to answer, 4 = least important). Each evaluation zone is defined on the last page.

   ___ 4 ___ A. Impact of this intervention on society.

   ___ 1 ___ B. Impact of this intervention on our organization.

   ___ 2 ___ C. Impact of this intervention related to performance or performers. To what degree did the intervention increase performance related to providing our employees with: (within C, mark all that apply to this intervention)

      ___ X ___ - information they lacked
      ___ X ___ - resources they lacked
      ___   ___ - incentives
      ___ X ___ - knowledge or skills they lacked
      ___ X ___ - more capability
      ___ X ___ - more motivation.

   ___ 3 ___ D. How complete was the process that led to this intervention being selected and implemented.

2. **What is the deadline (if known) for completion of this evaluation?** February 26, 2003.

3. **What specific questions should this evaluation answer?**

   1. How can we get word out about using Oculus?
2. Is it an effective system for what we paid?

3. How do I get management to buy-in on emailing PO and ?? to end user?

4. **Who all will be interested in the results of the evaluation?** Include name, position, department/unit, email, phone, and why they are interested.

   Name: Beth Sparkman,
   Position: Purchasing/Facilities Director,
   Unit: Administrative Services Program – Operational & Financial Services Process – Purchasing/Facilities Sub-Process
   Email: sparkmanb@dor.state.fl.us
   Phone: 850-921-1388
   Why Interested: Sponsor of evaluation, owner of intervention, advocate for process improvement.

   Name: Bob Notman
   Position: 
   Unit: Administrative Services Program – Operational & Financial Services Process – Purchasing/Facilities Sub-Process
   Email: Notmanr@dor.state.fl.us
   Phone: 850-921-1386
   Why Interested: 

   Name:
   Position:
   Unit:
   Email:
   Phone:
   Why Interested:

   Name:
   Position:
   Unit:
   Email:
   Phone:
   Why Interested:
# Evaluation Zones

<table>
<thead>
<tr>
<th>Zone</th>
<th>Purpose &amp; What Is Measured</th>
<th>Important To:</th>
</tr>
</thead>
</table>
| Society                           | Determine impact of the intervention outside of the organization into which it was implemented (e.g. decrease in unemployment, increase in lifespan, impact on the environment). | ▪ Various agencies within society related to impacts.  
▪ Socially conscious organizations  
▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution.  
▪ Professional evaluators and performance technologists. |
| Organization                      | Determine impact of the intervention on the current measures of the business (e.g. productivity, satisfaction, sales, attitudes).                                                                                           | ▪ Organization  
▪ Unit/Department/Group(s) involved in the performance intervention  
▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution.  
▪ Professional evaluators and performance technologists. |
| Unit (Department, Group, Individual) | Determine impact of the components of the intervention related to their intended outcome. (Based on six categories of Gilbert’s BEM)  
For example, we know that a training component is intended to provide required/desired skills or knowledge. | ▪ Unit/Department/Group(s) involved in the performance intervention  
▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution.  
▪ Professional evaluators and performance technologists. |
| Performance Improvement Process    | Determine if any areas of the process which led to selection and implementation of the intervention could be improved (e.g. cause analysis, solution selection, implementation, change management) | ▪ Individual(s) who conducted all or portions of the original analysis, design, development and implementation of the solution.  
▪ Sponsors of the original performance improvement front-end analysis.  
▪ Professional evaluators and performance technologists. |
## 1. **Data Collection & Analysis Plan** (Revised to reflect narrowed scope of evaluation)

**Evaluation Question 1:** What is the nature of the use of Oculus within the Purchasing & Facilities Sub-process?

### Data Source 1: Purchasing Agents

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Purchasing Agents (population)</td>
<td>Interview / Extant Data Review</td>
<td>Create</td>
<td>Descriptive statistics</td>
<td>4 hours creation of instrument 4 hours pilot/revise 18 hours data collection 18 hours data analysis 8 hours formatting/reporting</td>
<td>$52 \text{ hrs} @ $85/hr = $4420</td>
</tr>
</tbody>
</table>

### Data Source 2: Purchasing Clerk

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Purchasing Clerk</td>
<td>Observation / Interview</td>
<td>N/A - Unstructured interview</td>
<td>Descriptive</td>
<td>4 hours observation 8 hours data analysis 4 hours transcription/formatting 4 hours review/reporting</td>
<td>$20 \text{ hrs} @ $85/hr = $1700</td>
</tr>
</tbody>
</table>

**Total Cost – Question 1:** 72 hours $6120
## EVALUATION

**QUESTIONS 2&3:**

What is the impact of the use of Oculus on process time & cost within the Purchasing & Facilities Sub-process?

### Data Source 1: Purchasing Agents

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Purchasing Agents (population)</td>
<td>Interview / Extant Data Review</td>
<td>Create</td>
<td>Descriptive statistics</td>
<td>4 hours creation of instrument 4 hours pilot/revise 18 hours data collection 18 hours data analysis 8 hours formatting/reporting</td>
<td>Included in Question 1</td>
</tr>
</tbody>
</table>

### Data Source 2: Extant Data (Purchase Order Reports – SPURS)

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 month period prior to Oculus and after introduction of Oculus</td>
<td>Extant Data Review</td>
<td>SPURS reports</td>
<td>Time &amp; Cost calculations based on average Purchasing Agent salary.</td>
<td>Access to SPURS report system MS Access database software MS Excel software 32 hours data collection / entry 12 hours analysis 8 hours reporting / formatting</td>
<td>52 hours @ $85/hr = $4420</td>
</tr>
</tbody>
</table>

### Total Cost – Questions 2&3:

| 52 hours | $4420 |
**EVALUATION**  
**QUESTION 4:** What is the impact of the use of Oculus on the Technical Support group within the Administrative Services Program?

<table>
<thead>
<tr>
<th>Data Source 1: Manager of Technical Support Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sampling Requirements</strong></td>
</tr>
<tr>
<td>1 Manager (population)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Source 2: Programmer for Oculus Technical Support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sampling Requirements</strong></td>
</tr>
<tr>
<td>1 Programmer (population)</td>
</tr>
</tbody>
</table>

| **Total Cost – Question 4:** | 16 hours | $1360 |
**EVALUATION**

**QUESTION 5:** What is the impact of the use of Oculus on the Department, specifically on the Administrative Services Program?

---

**Data Source 1: Strategic Planning Manager - ASP**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Manager (population)</td>
<td>Interview / Extant Data Review</td>
<td>Semi-structured</td>
<td>Descriptive statistics</td>
<td>1 hour data collection 2 hours analysis / reporting 1 hour extant data review</td>
<td>4 hours @ $85/hr = $340</td>
</tr>
</tbody>
</table>

---

**Data Source 2: Performance Measure Agent – ASP**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Programmer (population)</td>
<td>Interview</td>
<td>Unstructured</td>
<td>Descriptive</td>
<td>1 hour data collection 2 hours analysis / reporting 1 hour extant data review</td>
<td>4 hours @ $85/hr = $340</td>
</tr>
</tbody>
</table>

---

**TOTAL GROSS – QUESTION 5:** 8 hours $680

**TOTAL EVALUATION COSTS:** 148 hours $12580

**INDIRECT COSTS (20%):** 28 hours $2380

**GRAND TOTAL COST – EVALUATION:** 176 hours $14960
2. **MASTER CODE LIST** - (N/A FOR EVALUATION DATA ANALYSIS)

<table>
<thead>
<tr>
<th>Name of Code</th>
<th>Abbreviation</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
</table>

**KEY**
- E = Emergent
- PD = Predetermined

3. **CREATE SCHEDULE**

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IAQ with Client</td>
<td>2/4/03</td>
<td>2/4/03</td>
<td>1d</td>
<td>• 2 hours initial meeting</td>
</tr>
<tr>
<td>2</td>
<td>Review IAQ – Create evaluation plan</td>
<td>2/4/03</td>
<td>2/9/03</td>
<td>5d</td>
<td>• 10 hours evaluation plan preparation</td>
</tr>
<tr>
<td>3</td>
<td>Conduct Negotiation of Evaluation Plan</td>
<td>2/10/03</td>
<td>2/10/03</td>
<td>1d</td>
<td>• 2 hours negotiation • 2 hours revisions</td>
</tr>
<tr>
<td></td>
<td>Not Billable (Indirect Costs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Begin Data Collection</td>
<td>2/11/03</td>
<td>2/11/03</td>
<td>1d</td>
<td>• 4 hours creation of instrument • 4 hours pilot/revise</td>
</tr>
<tr>
<td>5</td>
<td>Data Collection (Question 1)</td>
<td>2/18/03</td>
<td>2/21/03</td>
<td>4d</td>
<td>• 22 hours data collection</td>
</tr>
<tr>
<td>6</td>
<td>Data Collection (Question 4)</td>
<td>2/24/03</td>
<td>2/25/03</td>
<td>2d</td>
<td>• 10 hours data collection</td>
</tr>
<tr>
<td>7</td>
<td>Data Collection (Question 5)</td>
<td>2/25/03</td>
<td>2/25/03</td>
<td>1d</td>
<td>• 4 hour data collection</td>
</tr>
<tr>
<td>8</td>
<td>Data Collection (Question 2/3)</td>
<td>2/12/03</td>
<td>2/24/03</td>
<td>6d</td>
<td>• 32 hours data collection / entry</td>
</tr>
<tr>
<td>9</td>
<td>Data Analysis</td>
<td>2/13/03</td>
<td>3/7/03</td>
<td>8d</td>
<td>• 48 hours analysis</td>
</tr>
<tr>
<td>10</td>
<td>Report Preparation</td>
<td>3/8/03</td>
<td>3/14/03</td>
<td>4d</td>
<td>• 21 hours reporting / formatting</td>
</tr>
<tr>
<td>11</td>
<td>Presentation</td>
<td>4/24/03</td>
<td>4/25/03</td>
<td>2d</td>
<td>• 3 hours presentation</td>
</tr>
</tbody>
</table>

3. **CREATE BUDGET**

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Resources</th>
<th>Itemized Costs</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data Collection</td>
<td>76 hours</td>
<td>$6460</td>
<td>$ 6460</td>
</tr>
<tr>
<td>#</td>
<td>Task</td>
<td>Resources</td>
<td>Itemized Costs</td>
<td>Total Costs</td>
</tr>
<tr>
<td>----</td>
<td>---------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>2</td>
<td>Data Analysis</td>
<td>48 hours</td>
<td>$4080</td>
<td>$10540</td>
</tr>
<tr>
<td>3</td>
<td>Preparation</td>
<td>21 hours</td>
<td>$1785</td>
<td>$12325</td>
</tr>
<tr>
<td>4</td>
<td>Presentation</td>
<td>3 hours</td>
<td>$255</td>
<td>$12580</td>
</tr>
<tr>
<td>5</td>
<td>Indirect Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Transcription / Data Entry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Copying / Printing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Facilities / Overhead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pre-Contract Preparation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>28 hours</td>
<td>$2380</td>
<td>$14960</td>
</tr>
</tbody>
</table>
EVALUATION OF OCULUS DATA MANAGEMENT SYSTEM
WITHIN THE FLORIDA DEPARTMENT OF REVENUE
CONTRACT

Doretta E. Gordon
Performance Improvement Consulting Group
1330 Burgess Drive
Tallahassee, FL 32304

to conduct the evaluation of the Oculus data management system (hereafter referred to as intervention) within the Florida Department of Revenue.

**Evaluation Details**

**Purpose of Evaluation:**
Determine the measurable impact of the Oculus data management system on the Administrative Services Program and various sub-processes within the Department of Revenue.

General expected outcomes from introduction and use of Oculus include:
- Decrease in time spent in requisition/purchase order process due to less time spent filing and retrieving physical documents.
- Decrease in required cabinet/floor space
- Increase in productivity due to fewer physical files lost or misplaced
- Decrease in incidental costs of paper, postage, and fax usage.

**Audience for Evaluation Findings:**
Findings from the evaluation will be presented by way of a face-to-face presentation to the:
- Operations and Facilities Process Manager
- Financial Services and Analysis Process Manager
- Administrative Services Program Manager

Additionally, an executive summary and a self-guided PowerPoint presentation will be provided for dissemination to various audiences within the Department.
Schedule for Evaluation Conduct:
The evaluation of the intervention will commence on the signing of this contract and will be completed by the 11th day of March 2003.

<table>
<thead>
<tr>
<th>Task</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Development</td>
<td>February 11, 2003</td>
</tr>
<tr>
<td>Data Collection</td>
<td>February 11 – 25, 2003</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>February 13 – March 7, 2003</td>
</tr>
<tr>
<td>Synthesis &amp; Report Preparation</td>
<td>March 8 - 14, 2003</td>
</tr>
<tr>
<td>Presentation of Findings</td>
<td>April 24 – 25, 2003</td>
</tr>
</tbody>
</table>

Cost of Evaluation:
Total cost of the conduct of the evaluation is $14,960. The cost includes the services of one principal evaluator and a 20% indirect cost itemization.

Hourly Billing Rates

<table>
<thead>
<tr>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Evaluator</td>
</tr>
</tbody>
</table>

*Travel and incidental costs are included in standard billing rate.

Evaluation Methodology
The evaluation will involve the collection of data by means of interviews, review of extant data, surveys, and observations. Programs, Processes, and Sub-processes involved include:

Programs:
- Information Services Program
- Child Support Enforcement Program
- Administrative Services Program

Processes:
- Resource Management Process
- Technical Support Services Process
- Inspector General Process

Sub-processes:
- Purchasing and Facilities Sub-process
- Financial Systems and Analysis Sub-process
Involvement and Responsibilities:

Performance Improvement Consulting Group

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Position</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doretta E. Gordon</td>
<td>Principal Evaluator</td>
<td>Responsible for overall conduct of evaluation including:</td>
</tr>
<tr>
<td></td>
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<td>- Plan, organize, direct, and manage tasks related to conduct of evaluation</td>
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<td></td>
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<td>including budgeting, project management, logistics, scheduling of data collection,</td>
</tr>
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<td></td>
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<td>and meeting with client.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Develop and present findings from evaluation conduct.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Create and pilot instruments for data collection.</td>
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<tr>
<td></td>
<td></td>
<td>- Gather and analyze data from identified and emerging sources.</td>
</tr>
<tr>
<td></td>
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<td>- Negotiate contract terms.</td>
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<td>- Apply evaluation methodologies and performance improvement knowledge</td>
</tr>
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<td>to conduct of evaluation.</td>
</tr>
</tbody>
</table>

Florida Department of Revenue

Beth Sparkman  Operations & Facilities Manager and Evaluation Sponsor/Key Contact

Responsible for:

- Meeting with contracting agency on as-needed basis.
- Informing evaluation participants within the Department of the undertaking of the evaluation process.
- Allowing access to personnel and documentation as required for the evaluation process.

Known Stakeholders for Evaluation

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Position</th>
<th>Relation to Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beth Sparkman</td>
<td>Operations &amp; Facilities Manager</td>
<td>Sponsor of intervention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manager of Sub-process where intervention was initially</td>
</tr>
<tr>
<td>Name</td>
<td>Sub-process/Role</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kim Veldink</td>
<td>Accounting Manager</td>
<td>Manager of Sub-process where second phase of intervention was implemented.</td>
</tr>
<tr>
<td>Bob Notman</td>
<td>Purchasing Sub-process</td>
<td>Worked with intervention implementation team to determine technical and procedural specifications.</td>
</tr>
<tr>
<td>Felicia Wyche</td>
<td>Purchasing Sub-process</td>
<td>Responsible for scanning of all requisition and purchase orders into the Oculus system.</td>
</tr>
<tr>
<td>Purchasing Agents</td>
<td>Operations &amp; Facilities Sub-process</td>
<td>Process change due to ability to retrieve requisitions and purchase orders digitally.</td>
</tr>
<tr>
<td>Accountants</td>
<td>Accounting Sub-process</td>
<td>Process change due to ability to retrieve invoices, vouchers, and warrants digitally.</td>
</tr>
<tr>
<td>Robin Rollins</td>
<td>Accounting Sub-process</td>
<td>Responsible for scanning of all invoices, vouchers, and warrants into the Oculus system.</td>
</tr>
<tr>
<td>Resource Management</td>
<td>Resource Management Process</td>
<td>Process change due to ability to retrieve all requisitions, purchase orders, invoices, vouchers, and warrants digitally.</td>
</tr>
<tr>
<td>Inspector General</td>
<td>Inspector General Process</td>
<td>Process change due to ability to retrieve all requisitions, purchase orders, invoices, vouchers, and warrants digitally for annual audit.</td>
</tr>
<tr>
<td>Information Services</td>
<td>Information Services Program</td>
<td>Process change due to addition of technical system to supported infrastructure.</td>
</tr>
<tr>
<td>Program Directors</td>
<td>Administrative Services Program</td>
<td>Directors of Programs impacted by process changes due to introduction of Oculus within the Department of Revenue.</td>
</tr>
</tbody>
</table>

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Support
- Child Support
- Enforcement Program

Executive Director
- Florida Department of Revenue
- Director of all Programs impacted by introduction of Oculus.

Deliverables:
Products resulting from the evaluation process include:
- Face-to-face presentation of final findings
- Executive Summary of final findings
- Self-guided PowerPoint presentation of final findings
- Interim reports of analyzed data
- Aggregated data, upon request

Intervention Details:

Description of Intervention:
Oculus is the name of the imaging system recently installed in the Administrative Services Program. The Purchasing & Facilities Sub-Process has been scanning
- Requisitions for Purchase
- Purchase Order
- All applicable backup materials into this database since January 2002.

The entire 2001-2002 fiscal year has been scanned into this system and is available for viewing. On August 19, 2002, Operational Accounting Sub-Process began scanning vouchers, invoices and related payment backup materials. The Purchasing & Facilities Sub-Process began scanning P-Card transactions starting with Purchasing Agent generated transactions through the Monthly Reconciliation Reports.

Employees in the Department of Revenue, once granted access, can:
- locate complete images of these documents through various searching methodologies,
- find the needed purchase order(s) and
- print any of the associated documents at their remote site.
Currently outside of the Operational & Financial Services Process, only a subgroup of the Resource Management Process (CSE Program) and the Inspector General Process (Executive Support) have access to Oculus.

This system allows our end users to enter the Oculus System, type in a requisition number and see all of the related documents, from the issuance of a purchase order, to the final payment and the associated related payment information on a single screen.
Future enhancements may include the remote scanning of field-generated P-Card transactions, thereby eliminating the need for onsite storage of these records and mailing/faxing the documentation to Tallahassee.

Oculus training is available on the DOR web and can be located by going to:
- Program Areas >> Administrative Services >> Purchasing >> Oculus Training. The training site also explains how to obtain access to the system.

Technical Specifications: Oculus 3.4 with 20 simultaneous seats licenses. Allows 75,000 doc scans per month times 2 scanners. Runs on a SQL database. Currently use no management reports, no training from contractor was included outside of initial technical training. Training for en-users of Oculus developed in-house.

The intervention was first researched for the Accounting process in February 2000. Implementation was completed on January 17, 2001 in Purchasing with the Accounting process being implemented in August 2002.

Purpose of Intervention:
The Requisition-Purchase Order-Invoice-Voucher-Warrant process is time-intensive and requires a large amount of paper and physical space. Related to time requirements, the process requires four copies: vendor, purchasing, accounting, end-user. For any of these “customers”, the paper must be filed allowing for potential mis-filings and time requirements in pulling and copying for any reason. Copies must be mailed or faxed, further incurring costs in the process. Additionally, the annual audit of the process requires random manual pulling and copying of files.

Besides the time involved, storing the paper requires much space within the DOR. PO’s alone fill four file cabinets per year and must be retained for five years. Space is prime real estate at DOR.

Agreements
Changes to Contract:
It remains the discretion of both parties to renegotiate the terms of this contract when deemed that changes related to interim data collection and analysis result in significant changes to the scope of the evaluation. Significant changes are defined as changes that would result in more than two days of additional data collection or analysis.

Publication:
Both parties agree that the process used in this evaluation and findings from the evaluation may be used for publication in professional journals. All findings will be presented in such a way that the department, programs, processes, sub-processes, and individuals involved cannot be recognized unless otherwise agreed by the Department. The Department has the option of participating in the publication process in conjunction with the contracted agency.
Signatures

Contractor:

____________________________  ___________________
Doretta E. Gordon         Date
Performance Improvement Consulting Group

Evaluation Sponsor:

____________________________  ___________________
Beth Sparkman         Date
Operations and Facilities Manager
Florida Department of Revenue
AGENDA ITEMS

1. Introductions

2. Evaluation scope and audiences

3. Selection of evaluation questions to be included

4. Presentation of evaluation plan

5. Review of cost of evaluation

6. Request for stakeholder involvement

7. Identification of data source access requirements

8. Identification of procedures and formats for presentations and reports

9. Identification of communication protocols

10. Request for publication potential

11. Contingency agreements

12. Summary of Decisions and Action Items
<table>
<thead>
<tr>
<th>Name:</th>
<th>Preferred communication medium:</th>
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<tbody>
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<td></td>
<td>☐ phone ☐ email</td>
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<tr>
<th>Position:</th>
<th>Department/Unit:</th>
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<table>
<thead>
<tr>
<th>Email:</th>
<th>Describe your relationship to performance problem/solution being evaluated:</th>
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</thead>
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| Phone: | |
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| Fax: | |
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| Address: | |
Oculus Document Management System
Within the Purchasing & Facilities Sub-Process

An Impact Evaluation Report
April 2003

Developed for
The Department of Revenue
Administrative Services Program
Purchasing & Facilities Sub-Process

Evaluation conducted by
Doretta E. Gordon
Performance Improvement Consulting
Tallahassee, FL
EXECUTIVE SUMMARY

INTRODUCTION
Oculus is a document management system available to all Department of Revenue employees via the DORWeb Intranet. It provides for immediate access to current and archived documentation of all purchase orders and related backup documentation. Additionally, the scanning of all financial documentation related to warrants and vouchers is in process.

Oculus was initially installed within the Purchasing & Facilities Sub-Process on January 17, 2002. Scanning of all purchase order-related documentation and supporting back-up material was undertaken from February through April, 2002. Training on the system was provided to all users within the Sub-Process during this time.

The technical structure was installed within the Operational Accounting Sub-Process on July 2002. Scanning of all current and archived voucher and warrant related documentation began in August 2002 and continues to present.

The identified benefits of use of Oculus include:
- Ability for any user within the DOR to immediately locate complete records of purchase orders and supporting back-up materials and warrants and supporting back-up materials at the time of need.
- Elimination of the problems of misfiled documents or multiple versions.
- Significant reduction of space needed to store paper-based documentation in multiple locations.

EVALUATION METHODOLOGY
This evaluation focused on the impact of the Oculus document management system within the Purchasing & Facilities Sub-Process in terms of space and time saved and reduced costs. Additionally, the impact of Oculus on the Technical Support group is explored. It is recommended that a future evaluation be undertaken approximately six months after the completion of the scanning of all financial materials into Oculus. The follow-on evaluation should include the Operational Accounting Sub-process and the pilot group within Child Support Enforcement.

The specific questions to be answered by this evaluation are:
1. What is the nature of the use of Oculus within the Purchasing & Facilities Sub-process?
2. What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-process?
3. What is the cost impact of the use of Oculus within the Purchasing & Facilities Sub-process?
4. What is the impact of Oculus on the Technical Support group within the Administrative Services Program?
5. What is the impact of Oculus on the Department of Revenue, specifically the Administrative Services Program?
6. What “next steps” should be taken in terms of expanding the use of Oculus within the Department of Revenue?
Methods for collecting data to answer these questions included a combination of interviews, direct observations, and review of existing reports and data.

Limitations to this evaluation include the inability to triangulate measures for questions one through four due to lack of existing measures and the inability to link impact of Oculus at the Purchasing & Facilities Sub-process level to the next higher organizational level, the Administrative Services Program.

**FINDINGS**

1. **What is the nature of the use of Oculus within the Purchasing & Facilities Sub-process?**
   - Eight of nine Purchase Agents are currently using Oculus with the average frequency of use being five times per week.
   - All nine reported having received sufficient training to use Oculus.
   - All nine Agents expressed a strong desire to use Oculus with difficulty in breaking old habits being named as the highest inhibitor to its use.
   - Identified benefits of Oculus use from Purchasing Agents perspectives include:
     - Ease of getting accurate and complete information at the point of need.
     - Elimination of the problem with misfiled hard-copy documentation.
     - Self-improvement due to learning a new technology.
     - Perceived decrease of time needed to answer “customer” questions when they are able to access Oculus themselves.
     - Creation and easy access to the entire history of a transaction.
     - Ability to review past year’s work in making decisions on current cases.
   - Identified disadvantages of Oculus use include:
     - Social impact of spending more time at desk due to computer-based access of documentation.
     - Perceived potential for data loss due to documentation being stored electronically. (Note that an off-site backup system is in place to store copies of all documentation).
     - Constraints of a computer system including inability to access Oculus if Intranet is down, slow access of Oculus if system processor is slow, and number of “clicks” required to view a document within Oculus.
   - Several Agents were strong proponents of the use of Oculus and had been instrumental in “selling” their coworkers on the merits of the system.
   - Several Agents reported frequently finding additional uses for Oculus in their daily work processes.

2. **What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-process?**
   Although Purchase Agents perform many other functions for which Oculus may be used relative to processing of requisitions, Oculus was determined to impact the purchase order generation process. While no direct measures tying use of Oculus to reduction in process time were available, a comparison of process times before and after Oculus use was reviewed.
The purchase order generation process includes three general steps. Differences in the before and after Oculus comparison revealed:

<table>
<thead>
<tr>
<th>Step</th>
<th>Before Oculus (Time to process 1 PO)</th>
<th>After Oculus (Time to process 1 PO)</th>
<th>Time Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution of requisitions to Agents for processing</td>
<td>Not impacted by introduction of Oculus.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generation of purchase orders.</td>
<td>10.4 days</td>
<td>7.03 days</td>
<td>Decrease of 3.37 days</td>
</tr>
<tr>
<td>Distribution and filing of purchase order documentation</td>
<td>2 minutes</td>
<td>4.8 minutes</td>
<td>Increase of 2.8 minutes</td>
</tr>
</tbody>
</table>

Additionally, use of Oculus resulted in an 88% reduction in time required to produce the quarterly Governor’s report. Prior to Oculus use, the report required four hours. With the use of Oculus, it was completed in 30 minutes.

3. **What is the cost impact of the use of Oculus within the Purchasing & Facilities Sub-process?**

The cost impacts of Oculus were measured relative to time saved in generation of purchase orders, time saved relative to the quarterly Governor’s report, and space saved due to elimination of hard copies.

**Generation of purchase orders:**

By calculating the savings based on a total of 1,973 purchase orders that were generated for the 2002 calendar year; the savings translates to $796,402. (See Appendix B for the formulas used.)

<table>
<thead>
<tr>
<th>Total Cost / 1 PO</th>
<th>No. POs Processed in 2002</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Oculus Use</td>
<td>$1236.35</td>
<td>$2,439,319</td>
</tr>
<tr>
<td>After Oculus Use</td>
<td>$ 832.70</td>
<td>$1,642,917</td>
</tr>
<tr>
<td>Total Savings</td>
<td>$ 403.65</td>
<td>$ 796,402</td>
</tr>
</tbody>
</table>

(Note: Due to the inability to directly measure the impact of use of Oculus on process time, there is no direct link between the use of Oculus and the savings noted.)

**Generation of quarterly Governor’s report:**

The cost of generation of four quarterly Governor’s reports prior to using Oculus was $237.76 annually. With the use of Oculus, the cost of the four reports is cut to $29.72; a savings of $208.04 annually.
Space reclamation:
In the Purchasing & Facilities Sub-process, 10 file cabinets were moved out of the workspace once the 2001-2002 fiscal years’ data was scanned into Oculus. With the additional square footage, this translates to $769 annually in space savings.

4. What is the impact of Oculus on the Technical Support group within the Administrative Services Program?
The Technical Support group reported no significant strain on their support structure with the addition of Oculus. Additionally, the group is now trained in SQL Server 2000 as a result of adding Oculus to the technical infrastructure.

5. What is the impact of Oculus on the Department of Revenue, specifically the Administrative Services Program?
Due to the transition of Performance Assessment Measures (PAMs) based on critical success factors to the Balanced Scorecard approach to organizational measurement, it was not possible to tie performance increased noted within the Purchasing & Facilities Sub-Process to the Administrative Support Program.

RECOMMENDATIONS
Based on the initial findings within the Purchasing & Facilities Sub-Process, Oculus has been well accepted by users and its benefits clearly embraced. The savings in terms of dollars within this Sub-Process alone is substantial.

It is important to point out that the full potential of Oculus is not yet fully realized. With the additional installation within the Operational Accounting Sub-Process and with the use of such features as workflow and electronic signature, the potential savings can be expected to grow significantly.

Additionally, word has not yet been fully disseminated throughout the Department regarding the availability and benefits of Oculus. Potential users of Oculus are located throughout the entire state of Florida as well as nine out-of-state offices. Their ability to immediately locate all necessary documentation related to purchase orders, warrants and vouchers, and soon P-card transactions will significantly reduce the amount of time they traditionally spend in locating this information via travel to Tallahassee, phone calls requesting information, and time and monies spent in retrieving a faxed or mailed version.

Based on the findings from this evaluation, the following steps are recommended:

1. All financial documentation be scanned into Oculus immediately and information be disseminated related to its availability. (See item seven below.)
2. P-card Transaction documentation be scanned into Oculus as soon as possible and information be disseminated related to its availability. (See item seven below.)
3. Quality assurance reporting be put in place related to each of the documentation areas contained within Oculus.
4. Incorporation of Oculus’ workflow feature to reduce or eliminate the need for the initial creation of paper documentation.
5. Incorporation of Oculus’ electronic signature feature to reduce or eliminate the need to mail or fax paper documentation, allowing for savings in postage and postage supplies and in faxing costs.
6. Use of Oculus be tied to performance measures where appropriate (e.g., Purchasing Agents, reconciliation functions)
7. An information dissemination campaign be created and commenced prior to the upcoming fiscal year. This plan can include the following venues for dissemination of information:
   - An executable MS PowerPoint® slide show devoted specifically to the benefits of Oculus, training on Oculus, and where and how to gain access to Oculus.
   - A feature article in both the Annual Purchasing and Facilities Guide and the Revenue Venue.
   - A featured “blurb” on the announcement section of the DORWeb Intranet. This should occur at regular intervals (e.g., bi-weekly, monthly).
   - A series of “success stories” on time saved reported in the Revenue Venue.

One additional issue of discussion pertains to the impact of eProcurement on the future use of Oculus within the Department. Since the implementation of eProcurement is in the early stages, it is recommended that a discussion take place related to the overlap of features of both systems. The identification of any areas which are contained in Oculus, but are not supported in eProcurement should be undertaken. These areas should be then translated into an implementation plan.
In early 2000, research was undertaken to identify the opportunity for the use of a document management system as a means of providing immediate access to current and archived paper records created by the Department of Revenue and used by internal and external customers of the Department. To review the potential of the system, an informal benchmarking study was undertaken at the Department of Environmental Protection. Based on the success of the use of the document management system in the Department of Environmental Protection, monies were encumbered for purchase of the Oculus Document Management System from ROH Incorporated in mid-year 2001 for installation in the Department of Revenue.

The identified benefits of use of Oculus include:
- Ability for any user to immediately locate complete records of purchase orders and supporting back-up materials and warrants and supporting back-up materials at the time of need.
- Elimination of the problems of misfiled documents or multiple versions.
- Significant reduction of space needed to store paper-based documentation in multiple locations.

The implementation plan for Oculus was comprised of:
- Initial installation of the technical structure within the Purchasing & Facilities Sub-Process on January 17, 2002.
- Scanning of all purchase order-related documentation and supporting back-up material, February through April, 2002.
- Installation of the technical structure within the Operational Accounting Sub-Process on July 2002.
- Commencement of scanning of all current and archived voucher and warrant related documentation, August 2002 through present.

Information on the purpose and use of Oculus as well as instructions on gaining access to the system was disseminated via the DORWeb Intranet site. An online training component is constantly available. Additionally, initial small group training was provided to all Purchasing Agents.

Besides the immediate users of the Purchasing & Facilities Sub-Process and the Operational Accounting Sub-Process, key members of the financial reconciliation function within Child Support Services were envisioned to serve as a pilot for “customer usage” of Oculus.

Planned additional uses for Oculus include the storage of all related documents for P-Card transactions starting with Purchasing Agent generated transactions through the Monthly Reconciliation Reports. This process is currently being piloted within the Purchasing & Facilities Sub-Process.

Future enhancements may include the use of Oculus’ workflow feature, electronic signature feature, and the remote scanning of field-generated P-Card transactions. The incorporation of these functionalities can enhance performance by eliminating the need for the generation of
paper documentation and onsite storage requirement of these records. Additionally, costs associated with the copying, mailing, and faxing of these documents will be eliminated.

**EVALUATION METHODOLOGY**

The original purpose of this evaluation was to determine the impact of the Oculus document management system on the Administrative Services Program. This review was to include the Purchasing & Facilities Sub-Process, the Operational Accounting Sub-Process, the Technical Support group within the Administrative Services Program, and an identified pilot group within the Child Support Enforcement Process. Impact was to be measured in terms of nature of usage, space saved, time saved, and reduced costs.

During the initial analysis to determine the possible scope of the evaluation, it was found that the necessary financial documentation used by the reconciliation function within the Child Support Process was not yet available within Oculus. For this reason, the evaluation of both the Operational Accounting Sub-Process and the Child Support Enforcement Process were removed from the evaluation scope.

Therefore, this evaluation will focus on the impact of the Oculus document management system on the Purchasing & Facilities Sub-Process in terms of space and time saved and reduced costs. Additionally, the impact of Oculus on the Technical Support group is explored. It is recommended that a future evaluation be undertaken approximately six months after the completion of the scanning of all financial materials into Oculus. The follow-on evaluation should include the Operational Accounting Sub-process and the pilot group within Child Support Enforcement.

The specific questions to be answered by this evaluation are:
1. What is the nature of the use of Oculus within the Purchasing & Facilities Sub-process?
2. What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-process?
3. What is the cost impact of the use of Oculus within the Purchasing & Facilities Sub-process?
4. What is the impact of Oculus on the Technical Support group within the Administrative Services Program?
5. What is the impact of Oculus on the Department of Revenue, specifically the Administrative Services Program?

The data collection methodologies to answer these questions included group and individual interviews, direct observation of various processes, and the review of existing documentation, reports, and data. Specific to the nature of the use of Oculus, the entire population of Purchase Agents (N = 9) was interviewed related to current practices, training, and motivation. In an attempt to triangulate this data, the Agents’ supervisor was interviewed regarding usage practices among Agents.

Related to the time and cost impact of Oculus on the Purchasing & Facilities Sub-process, a post-hoc before intervention (n = 357) / after intervention (n = 349) comparison study was conducted.
reviewing process time and related costs. Attempts were made to triangulate the process data with correlated data on the usage of Oculus. However, the reporting function of Oculus was not implemented at the time of the evaluation. Space saved due to use of Oculus was calculated based on removal of storage units for archived documentation.

Interviews were conducted with the Technical Support group related to preparation for the implementation, maintenance and support of the Oculus system and the impact of Oculus on their work processes. No additional data sources were located to allow triangulation of these measures.

Limitations of this evaluation include the inability to triangulate measures for questions one through four and the inability to link impact of Oculus at the Purchasing & Facilities Sub-process level to the next higher organizational level, the Administrative Services Program. This deficit is due to the lack of currently existing organizational measures and Oculus-specific standard measures. The organization is currently undergoing a strategic planning exercise which is intended to result in the equivalent of a balanced scorecard. These measures will link organizational performance to supporting processes and sub-processes. Additionally, a plan is underway to outline the quality assurance component of Oculus. These additional data sources will aid in future evaluation of the impact of Oculus at both the Sub-Process and the organizational level.

**FINDINGS**

1. **What is the nature of the use of Oculus within the Purchasing & Facilities Sub-process?**

Nine Purchasing Agents were interviewed relative to preparation in terms of training and at-the-point-of-need support, motivation to use Oculus, and actual usage. The median number of years within the Purchasing & Facilities Sub-process for the group is 7.0. The median number of years at the Department of Revenue is 9.5, revealing a stable work group within the sub-process.

Training on Oculus is constantly available via the DORWeb Intranet. Of the nine Agents interviewed, four had completed the online training. Four persons indicated that they were trained via the initial group demonstration. Two Agents received training upon request from a coworker. Two reported that they taught themselves how to use the Oculus system. All nine felt that the training they received sufficiently prepared them for using Oculus.

Results of the interviews show that eight of the nine Agents (89%) currently use Oculus. Average frequency of use is five times per week (median = 5). The range of usage varied from once per week to daily.

Relative to motivation, all Agents expressed a strong desire to use Oculus. The most common reason for non-use was the difficulty in breaking old habits. Access to Purchase orders within Oculus has only been available for approximately nine months. Prior to this, purchase order information had been accessed either using the SPURS database system or via the pulling of manual files.
When asked to identify the benefits and drawbacks they perceived from using Oculus, Agents identified the advantages to include:
- Ease of getting accurate and complete information at the point of need.
- Elimination of the problem with misfiled hard-copy documentation.
- Self-improvement due to learning a new technology.
- Perceived decrease of time needed to answer “customer” questions when they are able to access Oculus themselves. (Note that in the pilot phase, Oculus has not been fully disseminated within the Department).
- Creation and easy access to the entire history of a transaction.
- Ability to review past year’s work in making decisions on current cases.

Reported disadvantages included:
- Social impact of spending more time at desk due to computer-based access of documentation.
- Perceived potential for data loss due to documentation being stored electronically. (Note that an off-site backup system is in place to store copies of all documentation).
- Constraints of a computer system including inability to access Oculus if Intranet is down, slow access of Oculus if system processor is slow, and number of “clicks” required to view a document within Oculus.

An additional finding of interest from the interviews was that several of the Agents were strong proponents of the use of Oculus and had been instrumental in “selling” their coworkers on the merits of the system. Additionally, these immediate adopters of the system mentioned that they were often finding additional uses for Oculus in their daily work processes.

2. What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-process?

Purchase Agents perform a multitude of functions within the Purchasing & Facilities Sub-Process. A main function is the processing of requisitions resulting in purchase orders.

Traditionally, when a requisition entered the Purchasing & Facilities Sub-process, a three-step process occurred which resulted in a newly generated purchase order or a revision to an existing purchase order. These steps were:
1. **Distribute Requisitions:** The requisition was date stamped and assigned to a Purchasing Agent based on the type of request.
2. **Generate Purchase Orders:** The Agent would then determine that the request met all contractual stipulations and would ascertain that all required documentation was included along with the requisition. This was generally done by means of researching past files of similar contracts or by contacting the requisition owner for more information. The Agent would then generate four copies of a Purchase Order for each of the following recipients: (1) vendor of goods or services, (2) receiver of goods or services, (3) accounting, (4) a file copy for Purchasing.
3. **Distribute & File Purchase Orders**: The purchase order packet complete with all necessary backup would then be given to a clerk for distribution and filing.

The use of Oculus impacted only steps two and three in this process. Within step two, Agents would traditionally have to search for a physical file, review all documentation, make any necessary copies, and return the file. Potential problem areas in this process included inability to find a file due to misfiled documentation and missing history within a file. These problems would then lead to further necessary research in order to complete the backup documentation required for a purchase order. By using Oculus, the process now includes immediate access to past purchase orders from the Agent’s desk with a near 100% hit rate and a complete history based on validation of scanning. Additionally, the necessary documents can be printed at the desk and no refiling is required.

Related to step three, the use of Oculus added to the time required in distributing and “filing” the documentation. The distribution process is currently the same as before. (Note: Full use of the Workflow and Electronic Signature features of Oculus could eliminate the current distribution requirements. See the Recommendations sections for a discussion of this potential.) The filing process is significantly impacted. Because Oculus is still in a pilot phase, all documentation is currently both scanned into Oculus and physically filed. Once the quality assurance measures are in place, the physical files will no longer be needed.

The impact of Oculus on the time required to generate a purchase order was measured based on review of existing data sources and direct observation (time / motion studies) of current processes. The results are as follows:

1. **Distribute Requisitions**: no change in time requirements.

2. **Generate Purchase Orders**: Review of process times for six months (August 2001 – January 2002) of data (n=357) prior to use of Oculus with six months (August 2002 – January 2003) after the use of Oculus (n=349) revealed that average time required to generate a purchase order decreased from 10.40 days to 7.03 days. This is a saving of 3.37 days per purchase order. Note that there is no direct link between use of Oculus and the decrease in purchase order process time. (Note: An attempt was made to report correlation between use of Oculus and purchase order process time. However, the necessary detail on Oculus usage was not available at the time of this evaluation.)

3. **Distribute & File Purchase Orders**: Based on time motions studies of the old and new process, the Clerk was able to distribute and file one purchase order (and supporting documentation) in two minutes. With the addition of the scanning process for Oculus, the distribution, scanning, and filing process takes 4.8 minutes. This represents an increase of 240%. (Note: When the quality assurance function is fully functioning, the filing component can be eliminated).

An additional finding directly related to the impact of Oculus on time relates to a required quarterly report to the Governor. Traditionally, the report required the manual pulling of fifty to sixty files, review of their contents, and refiling. The average time required to create the report
following this process was four hours. By using Oculus, the preparer was able to complete the report in 30 minutes, representing an 88% reduction in preparation time per report.

3. What is the cost impact of the use of Oculus within the Purchasing & Facilities Sub-process?

Translating the above mentioned times to costs relative to average salary per Agent per day; the cost impact is as follows:

1. **Distribute Requisitions:** no change in costs relative to Oculus.

2. **Generate Purchase Orders:** Prior to use of Oculus, the cost of generating a purchase order was $1,236.04. After the use of Oculus, generation costs are $831.95, representing a savings of $404.09. (The cost savings are based on an average of Purchase Agent salaries translated into a daily rate. See Appendix A for the formulas used.)

3. **Distribute & File Purchase Orders:**
   - The cost of the old distribution and filing process was $0.31 per purchase order. The cost of the new distribution, scanning, and filing process is $0.75 per purchase order. This represents an increase of $0.44 per purchase order. (The cost savings are based on Purchasing Clerk salary translated into a daily rate. See Appendix A for the formulas used.)

**Overall Costs of the Requisition to Purchase Order Process**

By calculating the savings based on a total of 1,973 purchase orders that were generated for the 2002 calendar year; the savings translates to $796,402.

<table>
<thead>
<tr>
<th>Total Cost / 1 PO</th>
<th>No. POs Processed in 2002</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Oculus Use</td>
<td>$1236.35</td>
<td>* 1,973 =</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$2,439,319</td>
</tr>
<tr>
<td>After Oculus Use</td>
<td>$ 832.70</td>
<td>* 1,973 =</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1,642,917</td>
</tr>
<tr>
<td>Total Savings</td>
<td>$ 403.65</td>
<td>* 1,973 =</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$ 796,402</td>
</tr>
</tbody>
</table>

(See Appendix A for the formulas used.)

(Note: Due to the inability to directly measure the impact of use of Oculus on process time, there is no direct link between the use of Oculus and the savings noted.)

The cost of generation of four quarterly Governor’s reports prior to using Oculus was $237.76. With the use of Oculus, the cost of the four reports is cut to $29.72; a savings of $208.04 annually.
A final cost impact based on use of Oculus relates to potential for space savings. The Department produces nearly 2,000 purchase orders alone each year. Each purchase order must have all supporting documentation saved with it. Additionally, warrant and vouchers and their related documentation are all stored in hard copy. When Oculus is fully implemented, the need to store hard copies will be eliminated. In the Purchasing & Facilities Sub-Process, ten file cabinets were moved out of the workspace once the 2001-2002 fiscal years’ data was scanned into Oculus. With space being at a premium within the offices of the Department, this amounts to $769 in space savings alone. (See Appendix A for the formula used.)

Additional potential savings associated with full implementation of Oculus relate to the cost of generating and distributing hard copies to vendors and receivers for each purchase order. With the utilization of the workforce and electronic signature features, the cost of copies, postage and postage supplies, and fax dissemination can be fully eliminated.

It should be noted that the above mentioned processes are not exhaustive of all the ways Oculus can impact time and cost related to the Purchasing & Facilities Sub-process. However, at the point of evaluation, they were the only available measures.

4. What is the impact of Oculus on the Technical Support group within the Administrative Services Program?

A group interview was conducted to determine the impact of Oculus on the Technical Support group. The group consisted of one database administrator and one Oculus dedicated support person. Specific questions related to training and skills that were required in supporting Oculus and additional demands placed on the staff based on support requirements for Oculus.

The database administrator had been involved in the project since its inception and installation within the Department. The dedicated support person was new to the Department as of one month prior to the evaluation.

Related to requirements for supporting Oculus, three persons from the Department, two on the hardware side and the database administrator, all attended one week of training on Microsoft SQL Server 2000. Use of Oculus required the addition of SQL Server 2000 within the Department. Additionally, when ROH Incorporated installed Oculus, two days of training were provided to the database administrator.

The bulk of the time demands on the Technical Support group occurred during the installation of the software applications and initial fine-tuning of the product. Since Oculus has been up and running, the only additional time demand occurred when a training was scheduled which required the addition of fifteen to twenty user names and passwords into the system within a short period of time.

As future components are added, additional time demands will result based on need. Additionally, reporting functionalities will be required from Oculus and the web-based...
component. However, the database administrator indicated that they were sufficiently staffed and trained to handle the demands that they foresee.

5. What is the impact of Oculus on the Department of Revenue, specifically the Administrative Services Program?

An initial attempt was made to link the impact of Oculus to the next highest organizational level within the Department; the Administrative Services Program. An informal interview was held to determine what measures are currently in place which could link the performances within the Purchasing & Facilities Sub-process to the Administrative Services Program.

The Department has traditionally used Performance Assessment Measures (PAMs) for each Process and Sub-process within the Department as a means of reporting monthly performance to the Program. The creation of performance measures for the Purchasing & Facilities Sub-process has been a consistent challenge due to the variety of work that is required by each Purchasing Agent in order to generate Purchase Orders. As a result, no official PAMs have been created to date. Several meetings had been held in an attempt to identify critical success factors for each Program. Discussion had centered on accuracy of Purchase Orders as evidenced by auditing of a random sample, the number of requisitions processed, the number of change orders processed, and timeframes for the processing of each.

Within the past year, a strategic planning initiative has been undertaken to identify appropriate measure for the Department to create a Balanced Scorecard. Team members of the initiative are currently in the training phases. As such, no specific measures are in place.

**RECOMMENDATIONS**

Based on the initial findings within the Purchasing & Facilities Sub-Process, Oculus has been well accepted by users and its benefits clearly embraced. The savings in terms of dollars within this Sub-Process alone is substantial.

It is important to point out that the full potential of Oculus is not yet fully realized. With the additional installation within the Operational Accounting Sub-Process and with the use of such features as workflow and electronic signature, the potential savings can be expected to grow significantly.

Additionally, word has not yet been fully disseminated throughout the Department regarding the availability and benefits of Oculus. Potential users of Oculus are located throughout the entire state of Florida. Their ability to immediately locate all necessary documentation related to purchase orders, warrants and vouchers, and soon P-card transactions will significantly reduce the amount of time they traditionally spend in locating this information via travel to Tallahassee, phone calls requesting information, and time and monies spent in retrieving a faxed or mailed version.
Based on the findings from this evaluation, the following steps are recommended:

1. All financial documentation be scanned into Oculus immediately and information be disseminated related to its availability. (See item seven below.)
2. P-card Transaction documentation be scanned into Oculus as soon as possible and information be disseminated related to its availability. (See item seven below.)
3. Quality assurance reporting be put in place related to each of the documentation areas contained within Oculus.
4. Incorporation of Oculus’ workflow feature to reduce or eliminate the need for the initial creation of paper documentation.
5. Incorporation of Oculus’ electronic signature feature to reduce or eliminate the need to mail or fax paper documentation, allowing for savings in postage and postage supplies and in faxing costs.
6. Use of Oculus be tied to performance measures where appropriate (e.g., Purchasing Agents, reconciliation functions)
7. An information dissemination campaign be created and commenced prior to the upcoming fiscal year. This plan can include the following venues for dissemination of information:
   - An executable MS PowerPoint® slide show devoted specifically to the benefits of Oculus, training on Oculus, and where and how to gain access to Oculus.
   - A feature article in both the Annual Purchasing and Facilities Guide and the Revenue Venue.
   - A featured “blurb” on the announcement section of the DORWeb Intranet. This should occur at regular intervals (e.g., bi-weekly, monthly).
   - A series of “success stories” on time saved reported in the Revenue Venue.

One additional issue of discussion pertains to the impact of eProcurement on the future use of Oculus within the Department. Since the implementation of eProcurement is in the early stages, it is recommended that a discussion take place related to the overlap of features of both systems. The identification of any areas which are contained in Oculus, but are not supported in eProcurement should be undertaken. These areas should be then translated into an implementation plan.
Calculations related to cost savings on processing time for generation of purchase orders are based on the following variables:

<table>
<thead>
<tr>
<th>Position</th>
<th>Monthly Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent 1</td>
<td>$1,628.02</td>
</tr>
<tr>
<td>Agent 2</td>
<td>$1,925.66</td>
</tr>
<tr>
<td>Agent 3</td>
<td>$2,305.80</td>
</tr>
<tr>
<td>Agent 4</td>
<td>$2,466.26</td>
</tr>
<tr>
<td>Agent 5</td>
<td>$2,435.26</td>
</tr>
<tr>
<td>Agent 6</td>
<td>$2,964.55</td>
</tr>
<tr>
<td>Agent 7</td>
<td>$2,748.31</td>
</tr>
<tr>
<td>Agent 8</td>
<td>$2,685.49</td>
</tr>
<tr>
<td>Agent 9</td>
<td>$2,433.44</td>
</tr>
<tr>
<td>Agent 10</td>
<td>$3,210.84</td>
</tr>
</tbody>
</table>

Average salary breakdowns for all Purchasing Agents are:

<table>
<thead>
<tr>
<th>Average Salary</th>
<th>Amt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly</td>
<td>$2,575.10</td>
</tr>
<tr>
<td>Daily</td>
<td>$118.85</td>
</tr>
<tr>
<td>Hourly</td>
<td>$14.86</td>
</tr>
</tbody>
</table>

Formulas for calculation of before and after Oculus cost comparison:

Before Oculus: 10.40 days * $118.85 per day = $1,236.04
After Oculus: 7.03 days * $118.85 per day = $831.95
Total Savings: 3.37 days * $118.85 per day = $404.09

Formulas for calculation of old and new distribution, scanning and filing process:

Before Oculus: 2 minutes * $14.86 per hour = $0.31
After Oculus: 4.8 minutes * $14.86 per hour = $0.75
Total Increase: 2.8 minutes * $14.86 per hour = $0.44

Formulas for calculation of quarterly Governor’s report:

Before Oculus: 240 min * $14.86/hr * 4/yr = $237.76
After Oculus: 30 min * $14.86/hr * 4/yr = $29.72
Total Savings: 210 min * $14.86/hr * 4/yr = $208.04

Formula for calculation of space saved:
10 file cabinets x 5 sq. ft x $15.38 per sq. ft. = $769.00
Appendix B
Supporting Data

Interviews with Purchasing Agents

Purchase Order Generation Comparison Charts

Detailed Process for Purchase Order Scanning
# PURCHASING AGENT INTERVIEWS
## SUMMARY OF DATA

### Demographic Information
- **Number Interviewed:** 9
- **Number Years at Department:** Average = 10.4, Median = 9.5
- **Number of Years in Sub-Process:** Average = 6.5, Median = 7

### Use of Oculus Data Imaging System
- **Number of Agents Using Oculus:** 8 of 9 interviewed
- **Frequency of Use:** Average = 5 times per week, Median = 5 times per week
  - More than 5 x per week = 2
  - 5 x per week = 3
  - 2 x per week = 1
  - 0 x per week = 3

#### Common Reasons for Non-Use:
- Old habits hard to break
- Used to the SPURS system, already adapted to it.

#### Common Uses for Oculus:
- “Researching prior Purchase Order numbers and information.”
- “Most of my work is related to prior year’s information, so I if a requisition comes in with any blanks, I use Oculus to look up the prior year’s information to fill the new PO in.”
- “Researching a change order or an inquiry….but I still pull a hard copy. It’s a habit. I’m trying to break it. Even with Oculus, I still print it out instead of just viewing it on the screen.”
- “PO information, research old specifications.”
- “I currently am learning the application. I haven’t really had any reason to use it yet. Many Purchase Orders are renewals or similar to previous year. I look them up in Oculus to find appropriate class, groups, or object codes. It’s faster than looking them up in manuals or in the files.”
- “I’m figuring out new uses for it daily.”
- “For my quarterly report, I had to manually pull 50-60 Purchase Orders from the files to locate necessary information for the report. Would take about 4 hours to do this manually. With Oculus, I had it done in 30 minutes!”

### Training Information
- **How were you trained on data imaging system?**
  - Official Demonstration = 4
  - Coworker Demonstration = 2
  - Self-Taught = 2

- **Did you know about the online training?** (Yes = 5, No = 2)
- **Did you complete the online training?** (Yes = 4, No = 3)

### Perceived Advantages and Disadvantages of Using Oculus
#### Benefits:
- Ease of getting needed information.
- Sure to find the Purchase Order. Not always the case with the manual files.
- It’s good to learn about new technologies. Keeps you current.
- If the end-user were to look up Purchase Orders in Oculus before calling, it could cut down on about 50% of the calls I handle.
- You can see all the notes for history.
- You can scan details in to create a trail of actions.
- Nice for “CYA”.
- Very simple system. It’s user friendly and easy to understand.

**Drawbacks:**
- I’m nervous about when we destroy documents. Machines break down. It’s nice to have the paper in an emergency situation.
- I spend more time in front of computer, so don’t get to know your coworkers as well due to working in isolation. I like to get up from desk every now and then and walk around.
- Have to “click” too many times to view. Would be nice if each item were a hyperlink like a web search engine returns. Also, have to scroll too much to get to search button on Purchasing side.
- My computer system is slow. The Internet connection seems sluggish. Also seems slower in the afternoons.
Requisition to Purchase Order Process Comparison

![Bar Chart]

**PC Codes**

<table>
<thead>
<tr>
<th>PC CODE KEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = Sole Contracts</td>
</tr>
<tr>
<td>E = PR/EN/SR/SC/C Government</td>
</tr>
<tr>
<td>P = Internal Pol</td>
</tr>
<tr>
<td>C = Discretionary</td>
</tr>
</tbody>
</table>

* (n) = Number of purchase orders processed per code

Total POs Processed:
- Aug 01 - Jan 02 = 557
- Aug 02 - Jan 03 = 549
Eight-phase Process for

Handling Requisitions and Purchase Orders

1. **Requisition Intake**
   a) Clock requisition in with date/time stamp
   b) If FIDM requisition, manually log into FIDM logbook.
   c) Determine which agent receives requisition based on:
      - Purchase category
      - Number of open requisitions for agent
   d) Add to Purchasing Front Desk application
   e) Add to Excel Status Report
   f) Give to Agent to create PO. Agent has 5 working days to create PO.

2. **Document Scanning Preparation**
   The agent will return a Purchase Order and backup documentation which will be either an original PO, a Change Order, or a Void.
   a) Count number of pages and write this number in upper left-hand corner of top sheet.
   b) Remove any paper clips and staples
   c) If sticky notes are attached, tape to original or a blank sheet of paper (add one to count).
   d) Put green Oculus separator sheet between each “set”
   e) Order all sets in chronological order by PO Number (for ease in filing at end of process).
   f) If PO is a change order, set aside the original paperwork that has already been scanned into Oculus. These documents will be marked with a Red Star at the bottom right of the cover page.
   g) Open Batch Manager on desktop.
   h) Click “Create a Batch” … both Purchasing and Accounting use the category called “Finance & Accounting”. To identify that Purchasing is working on this batch, type initials in front of session.
   i) Click Save which will refresh the screen with a “ready” status.

3. **Scanning**
   a) Click SCAN >> Properties >> Size and choose “maximum” to allow for any papers that are longer than 8.5 x 11.
   b) Place sets face down in scanner tray and click 2nd (middle) button which allows for scanning multiple documents.
   c) If scanner jams during process, replace documents still in the scanner tray and continue. Any missing documents will be reconciled in a later step.
   d) If any documents are two-sided, the 2nd side will be scanned in a later step.

4. **Reconciliation**
   a) Click green button to begin Reconcile process
   b) Match the number of pages scanned (listed on left side of screen) with the number written on the cover of each set. If there are fewer pages scanned than listed, identify missing document, scan into set by right clicking the page before the missing document and selecting Insert.
   c) Rotate all pages to the proper orientation for viewing.
d) View scanned image (right side of screen) to determine if any “dirt” on the scanned image is from the original. If not, rescan for a cleaner image.

e) Identify any double-sided documents in set that need to be added to set using Insert feature (see step c above)
f) Staple all scanned and reconciled documents back together and join any additional documentation for change orders back together.

5. Validation
   a) Click yellow button to begin validation process. Brings up a form with seven fields for each document set.
   b) Fill in all fields except “Requisition Scan Date”.
   c) If document has more than one Org Code or Requisition Number, set aside to do a supplemental index (Step 8) once batch has been release to Oculus.

6. Release to Oculus
   a) Close Batch which will release newly scanned documents to Oculus.

7. Supplemental Indexing
   For any document sets with more than one Org Code or Requisition Number, must create a supplemental index in Oculus.
   a) Open Web Browser >> Navigate to Oculus >> Default opens to Search screen
   b) Make sure Catalog = Purchasing and Index = Purchase Order.
   c) Search for document by PO, click “Add Supplemental Index”.
   d) Fill in additional Org Code or Requisition Number.
   e) Search for PO to double-check that it now shows up under by PO and/or Requisition numbers (as relevant)

8. Filing
   a) File all document sets in file cabinets.
Final Presentation

Oculus Document Management System

Impact Evaluation Presentation

Outline

- Oculus
  - Definition & Benefits
  - Features
  - History within DOR
- Evaluation Methodology
  - Questions
  - Data Collection Methods
- Findings
- Recommendations
- Questions & Discussion
**Oculus**

**Definition & Benefits**

- A searchable Intranet-based database of DOR records
- Benefits
  - Allows multiple users to immediately locate records at the point of need.
  - Eliminates problems due to misfiled documents.
  - Eliminates problems related to version control of documents.

**Oculus**

**Definition & Benefits**

- Benefits (continued)
  - Reduces paper costs.
  - Reduces space required to store hard copies.
  - Reduces postage and postal supply costs.
  - Reduces faxing costs.
# Oculus

## Features

- Searchable Intranet-based library of documents
- Electronic Signatures
- Quality Assurance Reports
- Workflow

### Used in DOR

- ✔
- ✗
- ✖

## Oculus

### History within DOR

- January 17, 2002
- February – April 2002
- July 2002
- August 2002 - present

- Installed in Purchasing & Facilities Sub-Process
- Purchase Order documentation for FY01-02 scanned.
- Installation in Operational Accounting Sub-Process
- Warrant/Voucher documentation scanning in progress
Evaluation Methodology

Questions

Within the Purchasing & Facilities Sub-Process:
1. What is the nature of the use of Oculus?
2. What is the impact of the use of Oculus on process time?
3. What is the impact of the use of Oculus on cost?

Related to the Administrative Services Program:
4. What is the impact of Oculus on the Technical Support group?
5. What is the impact on the Administrative Services Program?

Evaluation Methodology

Participants

Within the Purchasing & Facilities Sub-Process:
- Purchasing Agents
- Clerk Specialist

Technical Support Group within the Administrative Services Program

Operational Accounting Sub-Process

Child Support Enforcement
Evaluation Methodology

Data Collection Methods

- Interviews
  - Group
  - Individual
- Direct observation
- Pre / post Oculus comparison study
- Review of existing documentation, reports, and data

Findings - Use

1. What is the nature of the use of Oculus within the Purchasing & Facilities Sub-Process?

- 89% (N=9) currently use Oculus
- Average frequency of use = 5 times / week
- 100% believed they were well trained
- Primary reason given for non-use:
  - Hard to break old habits!
Findings - Use

1. What is the nature of the use of Oculus within the Purchasing & Facilities Sub-Process?

Perceived Benefits

- Ease of retrieving accurate and complete information at the point of need.
- Elimination of problem with misplaced hard-copy documentation.
- Self-improvement due to learning a new technology.
- Perceived decrease in time needed to answer “customer” questions.
- Creation & easy access to entire history of transaction.
- Ability to review past year’s work in decision making for current cases.

Perceived Drawbacks

- Social impact of spending more time at desk due to computer-based access to documentation.
- Perceived potential for data loss due to documentation being stored electronically.
- Constraints of a computer system including
  - Inability to access Oculus if Intranet is “down”.
  - Slow access if system processor is slow or high volume.
  - Requires too many “clicks” to view document.
Findings

Two Caveats Related to Time & Cost Findings

- No increases or decreases in time or costs are directly related to use of Oculus.
- The process times and costs presented are representative of only a portion of the work completed in the Purchasing & Facilities Sub-Process.

Findings

2. What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-Process?

3-Step Requisition to Purchase Order Process

1. Distribution of Requisitions
2. Generation of Purchase Orders
3. Distribution & Filing of Purchase Orders
Findings - Time

2. What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-Process?

**Generation of Purchase Orders**
6 months Pre / Post Oculus Comparison  
(Average number of days to generate one PO)

<table>
<thead>
<tr>
<th>Pre</th>
<th>Post</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.40</td>
<td>7.03</td>
<td>3.37</td>
</tr>
</tbody>
</table>

**Generation of Quarterly Governor's Report**
Pre / Post Oculus Comparison  
(Average number of minutes to each report)

<table>
<thead>
<tr>
<th>Pre</th>
<th>Post</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>240</td>
<td>30</td>
<td>210</td>
</tr>
</tbody>
</table>

**Findings - Time**

2. What is the impact of the use of Oculus on process time within the Purchasing & Facilities Sub-Process?

**Distributing, Scanning, & Filing**
Pre / Post Oculus Comparison  
(Average number of minutes per PO)

<table>
<thead>
<tr>
<th>Pre</th>
<th>Post</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>4.8</td>
<td>2.8</td>
</tr>
</tbody>
</table>
Findings - Costs
3. What is the impact of the use of Oculus on costs within the Purchasing & Facilities Sub-Process?

**Generation of Purchase Orders**
6 months Pre / Post Oculus Comparison (Average cost to generate one PO)

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1,236.04</td>
<td>$831.95</td>
<td>$404.09</td>
</tr>
</tbody>
</table>

**Generation of Quarterly Governor's Report**
Pre / Post Oculus Comparison (Average annual cost)

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$237.76</td>
<td>$29.72</td>
<td>$208.04</td>
</tr>
</tbody>
</table>

Findings - Costs
3. What is the impact of the use of Oculus on costs within the Purchasing & Facilities Sub-Process?

**Distributing, Scanning, & Filing**
Pre / Post Oculus Comparison (Average cost per PO)

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$0.31</td>
<td>$0.75</td>
<td>$0.44</td>
</tr>
</tbody>
</table>
Findings - Costs

3. What is the impact of the use of Oculus on costs within the Purchasing & Facilities Sub-Process?

**Overall Cost Impact**

**Generation of Purchase Orders**

Application of savings to 1,973 POs produced in 2002

<table>
<thead>
<tr>
<th></th>
<th>Cost / 1 PO</th>
<th># POs in 2002</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>$1,236.35</td>
<td>1,973</td>
<td>$2,439,319</td>
</tr>
<tr>
<td>Post</td>
<td>$832.70</td>
<td>1,973</td>
<td>$1,642,917</td>
</tr>
<tr>
<td>Savings</td>
<td>$403.65</td>
<td>1,973</td>
<td>$ 796,402</td>
</tr>
</tbody>
</table>

Findings

4. What is the impact of the use of Oculus on the Technical Support group?

Results

- Three support persons now trained in SQL Server 2000.
- Bulk of time demands on Tech Support occurred during installation.
- Foresee sufficient staff and resources to support current and intended usage.
Findings

5. What is the impact of the use of Oculus on the Administrative Services Program?

Results

- Currently no existing PAMs at Program-level to link to Purchasing & Facilities Sub-process.

- Strategic initiative underway to create a Balanced Scorecard as a measurement tool for the DOR.

Recommendations

1. Place high priority on scanning in financial documentation and inform customers when available.
2. Continue with scanning P-Card transaction information and inform customers when available.
3. Create quality assurance reports related to documentation in Oculus. Link usage report to user ID.
4. Incorporate Oculus’ Workflow feature into both Purchasing & Facilities and Operational Accounting Sub-Process.
5. Incorporate Oculus’ Electronic Signature features into workflow process.
6. Tie use of Oculus to performance measurements.
7. **Recommendations**

   Create an Oculus Information Dissemination Campaign to inform the entire DOR of:
   - Availability
   - Potential Uses
   - Training
   - Gaining Access

   Potential venues for dissemination include:
   - Email a **.PPS** (MS PowerPoint®) viewable-only slide show to all DOR accounts.
   - Feature Oculus in the *Annual Purchasing & Facilities Guide* and in the *Revenue Venue*.
   - Feature a "blurb" on the announcement section of the DORWeb Intranet at repeated intervals.
   - Run a series of "success stories from the field" on time saved using Oculus.

8. **Recommendations**

   Discuss the relationship of Oculus and eProcurement.
   - Will all the functionalities of Oculus be subsumed within eProcurement?
   - What functionalities overlap?
   - Translate any gaps into a future implementation plan for Oculus.
APPENDIX G

Performance Intervention Evaluation Model
Draft 4
Phase 1: PREPARATION

- Initial Client Contact*
  - Distribute Initial Analysis Questionnaire (IAQ)
  - Clarify Information

- Develop Evaluation Plan*
  - Synthesize
  - Create Initial Plan

- Develop Contract*
  - Create initial contract

Phase 2: NEGOTIATION

- Negotiate Contract
  - Prepare agenda
  - Schedule meeting
  - In negotiation meeting, agree upon:
    - evaluation question
    - data collection/analysis plan
    - budget/timeline
    - access/involvement
    - deliverables
    - contingencies

- Finalize Contract
  - Revise evaluation plan
  - Revise contract
  - Obtain sign-off

Phase 3: IMPLEMENTATION

- Prepare Instruments
  - Leverage/Develop
  - Pilot/Revise

- Work with Data*
  - Collect
  - Analyze
  - Reflect

- Manage Evaluation
  - Monitor

Phase 4: PRESENTATION

- Present Findings*
  - To Client(s)
    - Interim (if necessary)
    - Final
  - To Community of Practice
    - Journal Articles
    - Conference Presentations
    - Discussion

Performance Intervention Evaluation Model

Doretta E. Gordon
Florida State University
Draft 4.0 – March 2003

* Template Available
INITIAL CLIENT CONTACT

STEP 1: DISTRIBUTE “INITIAL ANALYSIS QUESTIONNAIRE” [Tools]
Upon request for evaluation, it is important to gather as much information as possible beginning with the initial contact. Use the “Initial Analysis Questionnaire” (IAQ) to guide your questioning.

A combination of the following methods will allow you to gather fairly complete information without requiring a major time commitment on your part prior to securing a signed contract:

1. Use the IAQ to guide the conversation during the initial contact.
2. Disseminate the IAQ to the client in electronic format and request that they complete it in as much detail as possible.
3. Conduct a face-to-face meeting with the client for the purpose of completing the IAQ.

STEP 2: CLARIFY DETAILS
Upon receipt of the completed IAQ, review the form for completeness and detail. After reviewing the information, you may determine that there are areas which lack detail. If so, make arrangements for additional follow-up by contacting the client or appropriate contact person.

The more detailed the information, the easier it will be to create the evaluation plan. However, the time you spend clarifying details prior to a signed contract (Phase 2: Negotiate) is not billable, so be parsimonious.

DEVELOP EVALUATION PLAN

STEP 3: SYNTHESIZE INFORMATION
The purpose of Steps 1 and 2 is to gather enough information in a facile manner in order to create an initial evaluation plan and to draft the evaluation contract.

One of the most critical decisions to be made is whether or not the evaluation can and should occur at this time. In the process of creating the evaluation plan, you will be able to make this decision.

Using the information from the IAQ, begin by identifying the client’s evaluation priorities. These priorities can help to set boundaries around how comprehensive the evaluation should be and what answers are important to the client. The evaluation priorities are ranked in question 1 of the “Evaluation Requirements” section of the IAQ.

The evaluation priorities must be balanced against the evaluation deadline if one is given in question 4 of the “Evaluation Requirements” section of the IAQ. At a minimum, the evaluation plan must cover priority one. Ideally, both one and two will be covered. Guidelines for determining the evaluation priorities to be included are:

1. Don’t go beyond priorities 1 and 2 if:
   ▪ You are the sole evaluator and the deadline is extremely short.

2. Consider including more priorities if:
   ▪ A team is available to conduct the evaluation
   ▪ The deadline is not prohibitive.
   ▪ The intervention objectives are stated in great detail (measurable – see question 5 of the “Performance Intervention Information” section).
The process which led to this intervention being selected included a detailed analysis of the problem/opportunity, causes, solution selection process, and implementation plan (see question 8 of the “Performance Intervention Information” section).

**STEP 4: CREATE INITIAL EVALUATION PLAN [Tools]**

**A. Generate Evaluation Questions [Details]**

There is no prescriptive formula for determining the most appropriate questions; only guidelines to aid in the refinement process. This refinement is both an iterative and artistic process. While it is not possible to determine a specific ratio for identifying the number of questions to include in an evaluation, Russ-Eft and Preskill (2001) have suggested that most program evaluations range from three to twelve evaluation questions.

In general, to identify the evaluation questions, follow a four-step process of:

1. Brainstorming a list of all evaluation questions for each evaluation zone
2. Refining the questions based on similarities, themes, or common data.
3. Prioritizing the questions based on such criteria as availability of appropriate sample size, access to data sources, and required time and costs.
4. Limiting the questions from the prioritized list.

For each evaluation zone, generate a list of all potential questions to be answered.

Next, review all questions in an attempt to narrow the list:

- Are any questions so similar that they can be combined into one broader question?
- Can any questions be grouped together based on similar themes?
- Can any questions be grouped together based on similarity of the data that will be collected?

Prioritize the list of questions. Begin by rank ordering the list from the most important to the least important to be answered (based on the client’s prioritized evaluation zones). Review the prioritized list:

- Are there any questions for which the data will be inaccessible?
- Are there any questions for which an adequate sample size will not be possible?
- Are there any questions which will require more time than the evaluation deadline will allow?

Can you narrow the list without leaving important evaluation questions unanswered? If “yes”, cut these from the list of questions. If “no”, this may mean that you will need to extend the evaluation beyond the desired deadline.

Besides the questions related to each evaluation zone, the evaluation should also include questions relative to changes in the environment from the time the problem or opportunity was identified until the evaluation takes place. In general, these questions are:

- What is the impact of [change initiative] on [organization, unit, or individual’s performance]?
- What is the impact of [restructuring initiative] on [organization, unit, or individual’s performance]?
- What is the impact of [cultural change] on [organization, unit, or individual’s performance]?
- What is the impact of [external initiative] on [organization, unit, or individual’s performance]?
- Include any other questions requested by the client that are not already covered in previous questions (see question 5 of the “Evaluation Requirements” section of the IAQ).

Based on your answers to all of the above questions, can and should the evaluation take place at this time? If not, can you determine a more appropriate time and what data collection measures should be in place prior to the evaluation? Include this information in the evaluation plan.

**B. Document Collection Plan [Details]**

The list of questions should now be detailed into a data collection plan. What will you measure to provide data to answer each question?
As a rule of thumb, try to take use measures that are objective in nature as opposed to subjective. Examples of objective measures are number of widgets produced per hour before the intervention versus after the intervention or comparisons of number of purchase orders completed prior to the intervention being put in place as opposed to after the intervention was implemented. Examples of subjective measures are perceptions, feelings, or opinions.

For each question to be answered, you should strive to identify objective, direct measures. Use multiple measures for each evaluation question to increase the confidence in answering the question, especially if subjective measures are used.

For each evaluation question generated, identify the
- measure to be taken (data to be collected)
- sample
  - source
  - strategy (e.g. simple random, stratified)
  - size
- methodology (e.g. interview, extant data, observation)
- instrumentation (e.g. leverage existing, create new)

C. Document Analysis Plan [Details]
   For each measure to be taken, identify the type of analysis that will be conducted. In general, for hard data measures, quantitative and descriptive analyses are appropriate. For soft data measures, qualitative data analysis methods are most appropriate.

D. Create Schedule and Budget [Details]
   1. Identify the tasks required to answer all evaluation questions. This includes gaining access to data sources, creating and piloting instruments, collecting and analyzing data, and reporting findings. In addition, such tasks as client meetings and transcription of field notes should be included in the schedule.
   2. For each task, determine the necessary amount of time needed to complete the task.
   3. Note any relationships or links between tasks (e.g. task 3 cannot begin until task 4 is completed)
   4. Assign a start and completion date to each task.
   5. Using the identified tasks and times, create a list of resources required to complete the project.
   6. Estimate costs for all resources.

E. Review Evaluation Plan [Details]
   Conduct a final review of all evaluation questions and data collection and analysis plans. Make any necessary revisions based on the following focus questions:
   1. When you put all of the data together, will it provide enough information for a comprehensive understanding of the big picture? Do the questions allow you to determine the impact of the intervention on performance at all relevant levels?
   2. Are there any weak areas where you could collect more data to raise confidence in determining that the evaluation question is sufficiently answered?
   3. Have you left room in the estimated costs and task schedule for the client to add additional questions during Phase 2: Negotiation?

**DEVELOP CONTRACT**

**STEP 5: CREATE CONTRACT [Tools]**
While the evaluation plan will serve as a project management tool for the evaluator, it will be too detailed for the client negotiation. The information from the plan will serve as a basis for creation of the client contract.
The contract should include the following information:

- Business & Contact Information of Evaluator
- Business & Contact Information of Client
- Statement of Purpose of Evaluation Including:
  - Problem Statement
  - Intervention Description
  - Zones of Evaluation
  - Identified Stakeholders in the Evaluation
  - Audience for Findings
- Evaluation Questions
- General Methodologies for Data Collection and Analysis
- Reporting Schedules
- Participation Requirements (e.g. Access, Stakeholder Involvement)
- Deliverables
- General Timeframes
- General Cost Categories and Overall Cost
- Contingency Agreement
- Publication Consent Agreement
- Signature Lines
Performance Intervention Evaluation Model

**PHASE TWO: NEGOTIATION**

### NEGOTIATE CONTRACT

**STEP 1: PREPARE AGENDA [Tools]**
Prior to the meeting, forward an agenda and any materials you would like the client to review in advance. If any specific stakeholders have been identified (see IAQ) who should be in attendance at the negotiation, include this request.

**STEP 2: SCHEDULE CLIENT NEGOTIATION MEETING**
Schedule a negotiation meeting with the client for the purpose of agreeing upon the scope of the evaluation. Specific items to be addressed in the meeting include:

- Purpose of evaluation
- Audiences of evaluation
- Specific questions to be answered
- Methods for data collection and analyses
- Completion date
- Cost
- Stakeholder involvement
- Access to data sources
- Communication and reporting protocols, schedules, and formats
- Contingency agreements
- Publication consent

**STEP 3: CONDUCT NEGOTIATION MEETING**
Begin the meeting with introductions of the evaluation team and the stakeholders in attendance. Keeping in mind that this is a negotiation meeting, creating a climate of dialogue will be beneficial to the process. For each agenda item, you may want to ask the client to begin the dialogue by presenting their understanding of the item. As they are explaining the item, note any differences from your understanding as a point that will need further clarification.

Following this paradigm, work through all agenda items. To keep an open air of dialogue, you may wish to allow the flow of the conversation to dictate the order in which agenda items are covered. Use your facilitation skills to note which agenda items were covered, any changes to the items, emerging questions, and then bring the focus back to the next item that has not yet been covered.

A good strategy for ending a meeting of this magnitude is to summarize agreed upon items, outline upcoming actions, and list any action items that have been tasked. Be sure to include a responsible party and due date for each action item. Additionally, you may want to have all stakeholders complete a contact information sheet to allow for ease of contact during the evaluation.

Upon completion of the meeting, the client should know what products and actions to expect from you. Depending on the decisions from the meeting, these items will include an Official Evaluation Plan and a contract for the Evaluation Implementation Phase.

Follow up the meeting with an email that summarizes the decisions made and the action items to be completed.

**STEP 4: REVISE EVALUATION PLAN AND CONTRACT**
Based on the results of the meeting, revise the evaluation plan and contract to reflect decisions made. The contract should then be forwarded for signature.
PERFORMANCE INTERVENTION EVALUATION MODEL

PHASE THREE: IMPLEMENTATION

PREPARE INSTRUMENTS

STEP 1: INVENTORY INSTRUMENTS
Preparing for data collection requires an inventory of available instruments. There are several reasons why using existing instruments is preferable to creating new ones. Using an existing instrument is faster than creating a new one. If the original instrument was tested and had acceptable validity and reliability, then it makes sense to reuse it for the evaluation. This saves on the need to pilot the instrument.

STEP 2: PILOT AND REVISE INSTRUMENTS
Whether you will be creating an instrument or revising an existing one, it will be necessary to pilot the instrument and if possible, determine the reliability and validity of the instrument. Depending on the types of reliability and validity being reviewed, this may require some degree of knowledge of statistics. See the Suggested Readings for further details on types of reliability and validity and means of measurement.

WORK WITH DATA

STEP 3: DATA COLLECTION
Putting the evaluation plan into action requires that the sample be identified and that you gain access to the sources. This often requires a letter of introduction from your point of contact. Once this is done, the instruments can be used to begin collecting the data. Careful attention should be paid to ensure that data is collected in a non-biased manner.

STEP 4: DATA ANALYSIS
Once actual collection of the data is underway, the analysis process must begin. Waiting until all planned data collections are completed prior to beginning analysis is often both overwhelming and inefficient.

The purpose of data analysis is to extract or create meaning from what is “seen”. This requires reflection on the data to pull out ideas, messages, trends, and patterns. Refer to the data analysis plan for each data collection method identified.

Summarizing data is a helpful step to aid in data reduction. Such summarizing tools as tables and charts are a helpful way to make the data more manageable. However, summarization is not equivalent to interpretation. Constructing meaning from the data, whether in summarized or detailed form, requires that you answer the question, “what does it all mean”?

STEP 5: REFLECT
The data collection and analysis cycle is a constant process that is conducted for each data collection method, for each evaluation question, for categories of questions, and for the entire “picture” from the evaluation data.

Throughout the data collection and analysis process, time should be taken to reflect on:
- The overall picture that is developing from the data.
- Subtleties that may be developing and may merit further investigation
- New questions which may arise
- Areas where answers to the evaluation questions may be weak or the picture may be unclear
- Areas where other factors may be influencing the picture.
Based on your understanding, it may be necessary to adjust the evaluation questions, identify more appropriate data sources, samples, or data collection methodologies. If it is not possible to correct these limitations, make sure to note the weak areas and to report them to the client in the next phase.

MANAGE THE EVALUATION

STEP 6: MONITOR EVALUATION PROGRESS
Throughout all of the Evaluation Plan implementation, project management is key to successfully collecting and analyzing all data. As data is collected and analyzed, you may notice that there are areas where you were not able to adequately answer an evaluation question. It will then be necessary to determine the impact of this gap on the evaluation outcome and make necessary revisions to the evaluation plan.

Obstacles that often occur during the implementation step are:
• inability to gain access to data sources per the evaluation plan schedule
• changes to the organizational environment that threaten the ability to conduct the evaluation
• necessity to collect additional data which may change the scheduling and budget requirements

In all cases, it is necessary for the evaluation manager to make determinations of when a change is so significant as to impact the evaluation plan or require that a renegotiation of the evaluation plan takes place with the client.

An additional component to the implementation step is consistent communication with the client. During the creation of the evaluation plan, interim reporting may have been established. Even if this was not the case, informal progress status communications to “keep the client in the loop” will only help in maintaining client involvement in the evaluation.

Implementation of the evaluation plan requires constant monitoring, analyzing, interpreting and revising of progress in order to meet internal and external deadlines and to stay within the determined costs.

SUGGESTED READINGS AND REFERENCES


PRESENT FINDINGS

OVERVIEW
The final step in the model is presenting the findings from the completed data collection and analysis to the client and to the interested professional communities. The purpose of this step is to answer the client’s questions as well as to provide insight gained from the evaluation conduct.

The importance of successfully completing this step cannot be overstated. Even if a thorough evaluation has been conducted, unless the findings are communicated clearly and completely to the right audiences in a useable format, the client will have spent their time and money in for naught.

Several formats are available to deliver the message, which include face-to-face or self-guided presentations, facilitated discussions, and written narrative reports of findings. No matter what delivery format is preferred, all require that an audience analysis be conducted to determine the characteristics of the audience, their motivation for knowing the information to be presented, the detail they will need, the areas of specific interest, and the potential uses of the findings.

Providing information and dialogue opportunities to professional communities of interest requires that such communities be identified along with their specific areas of interest. Additionally, each community offers various communication platforms that can be used to present evaluation findings and methodologies.

STEP 1: PRESENT TO THE CLIENT (INTERIM AND/OR FINAL)
The first step in presenting findings is to determine the requirements of the audiences who will be receiving the information. During the negotiation meeting (Step Three), you identified several audiences for receipt of evaluation findings. It is now necessary to conduct an audience analysis in order to tailor the communication to fit each audience’s needs.

Begin with a description of the audience to include
- where they fit in the organization,
- their relationship to the performance problem, the solution, and the evaluation
- any political factors
- areas of specific interest (e.g. answers to specific questions)
- how this audience may use the findings from the evaluation

Once the characteristics of the audience have been identified, determine the most appropriate delivery method(s) for the audience. This decision will be based on such factors as:
- available time
- level of detail required
- uses of findings
- expectations of audience

One or more of the following delivery formats are suggested for use:
- **Face-to-face presentation** – evaluator (or team) presents the findings to the audience in a meeting-type setting. Include use of visual aids to summarize key findings

- **Self-guided presentation** – a summarization of key findings from the evaluation tailored to the audience with narrative explanations to provide clarification and further details. Must be packaged in such a way as to allow easy navigation through the presentation by the audience member. Include
use of visual aids to summarize key points. Such presentation software as Microsoft PowerPoint can be easily used to create self-guided presentations.

- **Written Report** – the written report is the most commonly used means of communicating evaluation findings. It is a summarized and or detailed narrative of the findings and conduct of the evaluation. The writing style, length, and format of the written report must be tailored to the requirements of the audience.

See the Delivery Format Selection Guide for suggested components, strengths and weaknesses of each format.

A general format for a written report includes the following sections:
- Executive Summary
  - Brief overview of purpose of evaluation
  - Brief overview of methodology for evaluation
  - Evaluation questions
  - Concise findings for each question
  - Recommendations
- Introduction
  - Problem statement which led to evaluation
  - Purpose of evaluation
  - Background information on intervention
- Evaluation Methodology
  - Evaluation questions
  - Data collection and analysis methods
  - Limitations to evaluation
- Findings
  - For each evaluation question, present the answer to the question along with the supportive data which led to the answer
- Recommendations
  - Summary
  - Recommended actions and decisions

**STEP 2: PRESENT TO THE COMMUNITY OF PRACTICE**
Besides the client audience for the evaluation much can be gained by sharing information related to the evaluation process and findings within the broader communities of practice associated with evaluation and the Human Performance Technology process.

To present information to communities of interest, first identify the community and their areas of interest related to the evaluation. Next research all possible communication formats which exist within the community. This often includes such formal and informal platforms as:
- Refereed journals
- Conferences
- Discussion boards
- Listservs
- Case Study Databases
- Newsletters

Each of these communication platforms will require different preparation for presentation.

**SUGGESTED READINGS**

DETAILS
GENERATE EVALUATION QUESTIONS

At the highest level, the evaluation questions for each Zone are:

1. **Society Zone**: What is the impact of [intervention] on [relevant societal measure]? (e.g., what is the impact of the document imaging system on the environment?)

2. **Organization Zone**: What is the impact of [intervention] on [organizational-level objectives]? (e.g., what is the impact of the document imaging system on customer satisfaction?)

3. **Unit Zone**: What is the impact of [components of the intervention] on [relevant areas of information, resources, incentives, knowledge, capability, or motivation]? (e.g., what is the impact of the document imaging system on the purchasing agents’ ability to locate necessary information?)

4. **Performance Improvement Process Zone**:
   - Was the problem/opportunity correctly identified?
   - How thorough was the gap analysis?
   - How thorough was the cause analysis?
   - How thorough was the solution selection process?
   - How well does the implemented solution match the proposed solution?
   - How well was the implementation managed?

DATA COLLECTION PLAN

For each evaluation question, upfront planning is necessary related to the:

- source for the data
- sampling strategies
- collection methodologies
- instrumentation
- fidelity (e.g. reliability, validity, integrity)

Identify potential sources from which the answer can be secured. To increase potential integrity of the answers to each evaluation question, it is suggested to triangulate (see Glossary) the data collection sources. Triangulated sources might include performance metrics, supervisor input, and direct employee input. This allows creation of a picture, based on data from multiple perspectives. See the Evaluation Plan Template for an example of triangulation of data sources.

Next, for each source, determine the necessary sample size and strategies. A sample is only needed when it is not possible to collect the data from all sources (population). For example, if the data source in question consists of twenty line managers, is it possible to interview all twenty? The basic premise of sampling strategies is to attempt to collect data from a sample large enough and with characteristics similar enough to acceptably represent reality (the population). See the Suggested Readings section at the end of this step for further details on sampling strategies.

Necessary sample sizes vary depending on the statistical tests to be used and the size of the effect you desire. Tables are available in most statistics textbooks that aid in this determination. With regards to the representative characteristics of the sample, various techniques can be applied to secure an appropriate sample. These techniques are outlined in the following table and detailed information can be found in the Suggested Readings.

<table>
<thead>
<tr>
<th>Name</th>
<th>Random / Nonrandom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple random sampling</td>
<td>Random</td>
<td>A selection method that assures that all units have an equal chance of being chosen for inclusion in the sample.</td>
</tr>
<tr>
<td>Stratified sampling</td>
<td>Random or nonrandom</td>
<td>Includes predetermined subgroups of the population to include important characteristics.</td>
</tr>
</tbody>
</table>
Cluster sampling  |  Random or nonrandom  |  The unit is a group (cluster) based on a specified characteristic. (e.g. zip code)
---|---|---
Purposive sampling  |  Nonrandom  |  Selection of units based on their perceived ability to provide information related to the focus of the research.
Quota sampling  |  Nonrandom  |  A quota based on specific characteristics of the population is set for the number of units to be included in the sample.
Snowball or chain sampling  |  Nonrandom  |  Selection of units to be included in the sample is based on referrals from previous units already selected.
Convenience sampling  |  Nonrandom  |  Nonrandom in nature, the sample is selected because of such convenience factors as availability, location, or accessibility.


Once the sample size and strategy has been determined, a data collection methodology should be selected. Common collection methods include:
- review of extant (existing) data (e.g. reports, performance metrics)
- observation of process and procedures
- group and individual interviews
- surveys

Triangulation of methods may also be used to help increase the reliability and validity of the evaluation. For each data source identified, when possible, use multiple data collection methods.

There are advantages and disadvantages to each of these methods. Use the table below as a guide in determining which method may be more appropriate.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| Observation  | Systematic collection of information about actions and patterns. Types include:  
  • direct observation  
  • participant observation | • View performances in richness of actual environment  
  • Low subject demands  
  • Opportunity to "see" what may not be "said" | • Potential for observer bias  
  • Limitations in complex environments...difficult to "see" it all  
  • Subjects may change actions due to knowledge of observer's presence |
| Interviews   | Structured and spontaneous questions designed to gather information about a specific situation. Types include:  
  • Individual | • Allows interviewer to clarify or delve into unanticipated areas based on statements made by interviewee.  
  • Often provide rich data | • Requires logistical coordination to set meeting time and gain access to desired interviewees.  
  • Personal contact |
<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Groups</td>
<td>• Focus Groups</td>
<td>information due to open-ended nature of questions and conversational style.</td>
<td>may be intimidating</td>
</tr>
<tr>
<td></td>
<td>Variations include:</td>
<td>• Group dynamics of focus groups can enhance (or distract from) the sharing environment.</td>
<td>• Can be time consuming to conduct, transcribe, and analyze</td>
</tr>
<tr>
<td></td>
<td>• Telephone interviews</td>
<td></td>
<td>• When using multiple interviewers, requires interviewer training to maintain consistency.</td>
</tr>
<tr>
<td></td>
<td>• Face-to-face personal interviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extant Data Review</td>
<td>Review of existing data (e.g. reports, records, memos) in an effort to gain information about a specified situation.</td>
<td>• Can often provide long-term history of a situation relatively simply.</td>
<td>• Extant data may not exist in a format that is directly related to the question or situation being studied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inexpensive method of collecting data</td>
<td>• May be difficult to gain access to necessary data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Measures often already exist related to a particular question.</td>
<td></td>
</tr>
<tr>
<td>Surveys</td>
<td>Structured questions designed to gather large amounts of information about a specified situation or construct.</td>
<td>• Can gather information from a large sample or population relatively quickly and inexpensively.</td>
<td>• Must often deal with a poor response rate.</td>
</tr>
<tr>
<td></td>
<td>Variations include:</td>
<td>• Consistent format. Everyone is asked the same questions in the same way.</td>
<td>• Assumes respondent understands the question and intended meaning.</td>
</tr>
<tr>
<td></td>
<td>• Paper-based</td>
<td>• May be less intimidating than personal contact.</td>
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</tr>
<tr>
<td></td>
<td>• Online</td>
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</tbody>
</table>

(Gordon, D., 2001; Russ-Eft, D. & Preskill, H., 2001; Swanson, R., 1996)

Finally, an instrumentation plan should be completed. For each method selected, determine if:
- an instrument already exists which can be leveraged. Review the Gap Analysis Guide for notes of previously used instruments. Considerations related to leveraging existing instruments are:
  - Is reliability/validity information available on the instrument? If not, is it still acceptable for use?
  - Will the instrument need to be significantly changed? If so, it will need to be piloted and the changes may impact the existing reliability/validity.
If no existing instrument is available, it will be necessary to create one. All instruments should be piloted to determine necessary revisions. Additionally, measures of reliability and validity should be taken in order to verify the integrity of the data being collected.

As a final step in creating the data collection portion of the evaluation plan, look back over the entire plan to ascertain the overall fidelity of the plan.

- Did you triangulate data sources?
- Did you triangulate data methods?
- Are all leveraged instruments reliable and valid?
- Will you feel comfortable standing behind the data collection plan for each question?

**DATA ANALYSIS PLAN**

While data analysis is an iterative process, creating a data analysis plan prior to collecting data helps to reduce potential bias and to speed up the interpretive process. Data analysis is a continual refinement process resulting in interpretations of what all the data means. For each data source, identify how the collected data will be analyzed. The data analysis method will depend in part on the type of data collected.

In broad categories, data can be classified as quantitative or qualitative in nature and each classification has different data analysis procedures. For quantitative data, these procedures usually involve conducting statistical tests. Qualitative data analysis is based on various coding strategies. While a thorough discussion of the types of tests to be conducted or of coding strategies is not possible related to this model, refer to the Suggested Readings for detailed guidance in these areas.

**Quantitative Data Analysis**

In general, statistical tests fall into two general categories: descriptive statistics and inferential statistics.

1. Descriptive statistics describe characteristics of the sample such as measures of mean and median.
2. Inferential statistics allow inferences to be made from the sample to population the sample represents.

Inferential statistics can be further categorized as either parametric or nonparametric. Parametric tests are used for interval or ratio data. They require that assumptions of normality, homogeneity of variances, and linearity be met in the sample data. For such reason as inability to secure a random sample or a large enough sample size in organizations, these assumptions often cannot be met in evaluation studies. However, general practice often includes the use of parametric tests.

Nonparametric methods do not require that these assumptions be met. Most tests are based on ranked data as opposed to interval or ratio data requirements for parametric tests. Common nonparametric tests include sign test, Wilcoxon Rank-Sum test, Wilcoxon Signed-Rank Test, Kruskal-Wallis test, Spearman Rank-Order Correlation Coefficient, and Fisher’s Exact Test (Brewer, J., 1996).

**Qualitative Data Analysis**

Qualitative data is voluminous in nature. For example, a one-hour interview can easily yield over twelve pages of data. Steps should be taken on a regular basis to reduce the collected data by categorizing it into either predetermined or emerging codes. The evaluation questions themselves often outline codes. For example, when reviewing components of a solution, codes such as “perceived acceptance”, “benefits to users”, or “obstacles to use” may be helpful.

Upon review of the data however, often unanticipated themes or trends in responses may become evident. To identify emergent codes, review the data content for such items as:

- Patterns
- Repetitions of words or phrases
- Relationships
- Types, concepts, or groups
For all codes, create a master list which includes the name of the code, the abbreviation which will be used for this code, a description of what is meant by the code, and identification of whether the code was predetermined or emergent. If possible, have multiple evaluation team members “code” the data.

No matter what analysis methods were used, the bottom line is to determine what the data says. It is creating a sense of meaning and understanding from what is seen. The data analysis plan provides an outline for how the data will be reviewed in order to construct meaning.

CREATE SCHEDULE AND BUDGET

By creating the data collection and analysis plans, you are beginning to break down the evaluation into discreet tasks. Creating a schedule of ordered tasks along with their required completion time provides additional information to aid in refining the inclusion or exclusion of questions for the evaluation.

To determine a task schedule,

1. Create a general outline of the steps to be taken. It may be helpful to create broad categories such as Instrument Development, Data Collection, and Data Analysis.
2. Break these steps down into discreet tasks. The data collection and analysis plan both encompass tasks that must be included in the schedule. For example, if an instrument will be developed or revised, then it will also need to be piloted. Common task items in an evaluation include:
   - meetings
   - scheduling of data collection and meetings
   - literature reviews
   - instrument development or revision
   - piloting of instruments
   - data collection
   - transcribing field notes
   - coding data
   - analyzing and interpreting data
   - creating reports and journal articles
   Time will need to be allocated for these tasks.
3. Note any links between tasks. Is it necessary to complete one task prior to beginning another? Do tasks need to be completed at the same time?
4. Determine the amount of time required in completing each task. Assign a start and completion date to each task remembering to include the noted links. Determining the amount of time required is an estimation process based on knowledge of the task and experience. Sources for this estimation process include consultants and project management literature. While not exhaustive, the “time per task” list (Miles & Huberman, 1994) can serve as a general guide for creating a project plan.

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing field notes (e.g. interviews, focus groups, observations)</td>
<td>2-3 days</td>
</tr>
<tr>
<td>Coding qualitative data</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Analyzing / Interpreting data</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

(Miles & Huberman, 1994)

By creating a task timeline, you have also helped to determine the resources needed for the evaluation. Evaluation costs can be divided into two broad categories, labor costs and purchases.

Labor costs include salaries and benefits for employees and consultants/contractors working on the evaluation. To put labor costs in a usable format for a budget, translate them by identifying a daily rate for each employee or contractor and then multiplying the daily rate by the number of days they will be required to work on a task.
Purchases include discreet payments for a product or service. Examples falling into this category are:

- Travel
- Meals
- Communication
  - Telephone
  - Postage
  - Internet Usage
- Printing & Copying
- Equipment
- Purchase
- Maintenance
- Supplies
- Facilities Overhead
  - Rent
  - Utilities
  - Maintenance

For the budget, purchases will be translated into a per item per task costs.

For each task or group of tasks identified in the schedule, enter a line item in the budget and calculate associated costs. Depending on the client’s requirements, you will only need to include a high-level budget as part of the final proposed evaluation plan and contract.

**Refine the Evaluation Questions**

Given the data collection, analysis, schedule, and budget, return to the list of potential questions. Prioritize them based on such criteria as:

- Answer to the question will provide direct link to determining degree to which gap is closed.
- Answer to the question will provide information for more than one question
- Answer to the question is perceived to be of significant interest to the stakeholders.
- Collecting and analyzing data to answer question is feasible based on cost, resources, and time.
- Other criteria as determined by evaluation team/client parameters.

While it is not possible to determine a specific ratio for identifying the number of questions to include in an evaluation, Russ-Eft and Preskill (2001) have suggested that most program evaluations range from three to twelve evaluation questions.

Make your decision of which questions will make the final list for inclusion in the evaluation. Once the prioritized list has been made, conduct a final review of the evaluation questions to make sure that

- when you put all the data together, will it provide enough information for a comprehensive understanding of the big picture?
- the questions as a whole will answer the two major evaluation questions to a sufficient and acceptable degree.
- there are no accidental “holes” in evaluating the solution (e.g., for a solution that includes both a training and an incentive program, the evaluation questions will collect data related to all solution components).
- you leave room in the estimated cost and schedule for the stakeholders to add additional questions during Step Two: Negotiate.

Finally, it will be necessary to revisit the evaluation plan and revise it based on which questions will be included in the evaluation. Revise the schedule and budget to reflect the evaluation tasks.

You now have created the foundational document for the client negotiation meeting that will take place in the next step.
**SUGGESTED READINGS AND REFERENCES**


Tools
**INITIAL ANALYSIS QUESTIONNAIRE**

**Instructions:** Complete the questions below with as much detail as possible. If you do not know the answer, forward the question to the person(s) who does.

**Performance Intervention Information**

1. **What is the name of the intervention to be evaluation?** How do you refer to this intervention within your organization?

2. **Describe the purpose and features of the intervention.** How would you describe the intervention and its purpose to someone outside of the organization? What are the features and characteristics of this intervention?

3. **What problem or opportunity led to this intervention?** Describe what was going on in the organization that led to a problem or opportunity being identified.

4. **When was the problem or opportunity identified that led to this intervention?** Give specific dates for when the problem or opportunity was first identified and when this intervention was selected.

5. **What was the intervention intended to do?** What did you expect this intervention to do for the organization? If you had to say what the objectives or intended outcomes of the intervention were, what would you say? Be as detailed as you can. (Review the two examples below)

   **Example 1 - Preferred (Detailed):**
   "We expect that using the new process will increase production of cell phones from 11,000 per day to 14,000 per day. Given that each phone sells on average for $10.00, this will result in an increase in potential sales of $30,000 per day."

   **Example 2 (General):**
   "We expect that absenteeism will decrease on the production line."

6. **Who was impacted by the intervention?** Describe the organizational structure and identify the units (e.g., departments, groups, processes) and individuals that were impacted.
7. How has the organization changed from the time the performance problem or opportunity was identified until now? What did the organization look like when the problem/opportunity was first identified? What does it look like now? (Attach any relevant organizational charts).

8. What process led to selection of this particular intervention? Did you collect any data to verify the problem or opportunity? If so, is it available? How did you identify the causes of the problem or opportunity? How did you select this particular intervention? Is the intervention implemented identical to the one that was suggested? If “no”, explain any differences and why they exist.

9. What other interventions or change initiatives were introduced during the time the problem or opportunity was identified until now? Were any other activities, programs, processes, tools, etc. put in place? Has the organization gone through any restructurings (e.g., process redesign, downsizing, mergers)? Has the culture of the organization changed? Have any external factors (e.g., legislation, regulations) impacted the organization?

Evaluation Requirements

1. What is most important for you and your organization to know? Review the four evaluation zones and rate each zone by order of importance. 
   (1 = most important, 4 = least important)

<table>
<thead>
<tr>
<th>Priority Rank</th>
<th>Zone</th>
<th>Purpose</th>
<th>Examples of Common Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A. Society</td>
<td>To determine the impact of the intervention on the community outside of the organization into which it was implemented.</td>
<td>Employment impacts, Environmental impacts, Quality of life impacts</td>
</tr>
<tr>
<td></td>
<td>B. Organization</td>
<td>To determine the impact of the intervention on the current measures of the organization.</td>
<td>Productivity, Satisfaction, Organizational learning, Sales</td>
</tr>
<tr>
<td></td>
<td>C. Unit (e.g., department, groups, or individuals)</td>
<td>Define the unit to be evaluated: (e.g. Purchasing Sub-process)</td>
<td>To determine the impact of the intervention (or components of the intervention) on the units or individuals that are direct “users” of the intervention.</td>
</tr>
<tr>
<td></td>
<td>D. Intervention Selection Process</td>
<td></td>
<td>To determine if any areas of the process which led to the selection and implementation of this</td>
</tr>
</tbody>
</table>
2. For each of your priorities in question 1, what is the most important question you would like answered by this evaluation? Use the examples of common measures to help you determine an appropriate question for each Zone.

**Society:**

---

**Organization:**

---

**Unit:**

---

**Process:**

---

3. Which of the areas described below apply to this intervention? Check all that apply.

**This intervention...**

- Provides accurate, timely, and accessible information (data) that was lacking before.

- Provides feedback to help employees identify when they achieve a desired standard.

- Serves as a tool to aid the employee in doing their job.

- Puts a new procedure in place to perform a job function.

- Provides availability to adequate materials, supplies, assistance, etc. to do the job well.

- Provides the employee with knowledge or skills they were previously lacking.

**Which of the following are true for this intervention?**

- Incentives (e.g., recognition, bonuses) are in place to reward the employee for using this procedure.

- New capability requirements (e.g., strength, dexterity, social skills, and emotional...
- Demands) are associated with using this intervention.
- Employees are motivated to use this intervention.

4. What is the deadline for completion of this evaluation?

5. What specific questions should this evaluation answer?

6. Who all will be interested in the results of the evaluation? Include name, position, department/unit, email, phone, and why they are interested (e.g., their relationship to the intervention).

Additional Comments / Information
# Evaluation Plan Template

## 1. Data Collection & Analysis Plan (Example)

**Evaluation Question 1:** Did the process guidance support tool provide sufficient information, data, and/or feedback to the performer?

### Data Source 1: Actuary Department Employees who use EPSS.

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cluster non-random sample</td>
<td>• Survey (Likert &amp; open-ended questions)</td>
<td>• Leverage survey from front-end analysis -- will be a major revision -- must be piloted and tested for reliability/validity</td>
<td>• Non-parametric for Likert results</td>
<td>• 1-2 days revisions</td>
<td>• $1700</td>
</tr>
<tr>
<td>• 800 employees total (Four shifts: day FT, day PT, night FT, night PT)</td>
<td></td>
<td></td>
<td>• Pre-code categories</td>
<td>• 2-3 days piloting/testing</td>
<td></td>
</tr>
<tr>
<td>• Provide survey opportunity to all employees.</td>
<td></td>
<td></td>
<td>• Multiple coders</td>
<td>• 4 day implementation period</td>
<td></td>
</tr>
<tr>
<td>• Seek return rate of 75%</td>
<td></td>
<td></td>
<td></td>
<td>• 3 days analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Printing</td>
<td></td>
</tr>
</tbody>
</table>

### Data Source 2: Actuary Department Managers who supervise AD employees

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Non-random convenience sample</td>
<td>• F-2-F Interviews</td>
<td>• Must create. Will be based on survey (#1 above)</td>
<td>• Pre-code categories &amp; emergent</td>
<td>• 2 day creating interview questions</td>
<td>• $2400</td>
</tr>
<tr>
<td>• 12 Managers (3 per shift)</td>
<td></td>
<td></td>
<td>• Multiple coders</td>
<td>• 2 days piloting/testing</td>
<td></td>
</tr>
<tr>
<td>• Will attempt 100% population</td>
<td></td>
<td></td>
<td></td>
<td>• 2 days training interviewers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 day scheduling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 days to conduct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 3 days to analyze</td>
<td></td>
</tr>
</tbody>
</table>
**Data Source 3: Review of Actuary Department Monthly, Quarterly, and Annual Reports**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Performance Metrics</td>
<td>Extant data review</td>
<td>n/a</td>
<td>Correlation tests</td>
<td>4-7 days securing all reports</td>
<td>$1600</td>
</tr>
<tr>
<td>Hourly production Metrics</td>
<td></td>
<td></td>
<td></td>
<td>4-5 reviewing</td>
<td></td>
</tr>
<tr>
<td>Monthly Trends Reports</td>
<td></td>
<td></td>
<td></td>
<td>3-4 analyzing</td>
<td></td>
</tr>
<tr>
<td>Quarterly Performance Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Report</td>
<td></td>
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</tr>
</tbody>
</table>

**Total Gross (non-normalized) Resources & Costs:** 33-40 days $5700
## Evaluation Plan Template

### 1. DATA COLLECTION & ANALYSIS PLAN

#### EVALUATION QUESTION 1:

Data Source 1:

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
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Data Source 2:

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<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
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Data Source 3:

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<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
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</table>

**TOTAL GROSS (NON-NORMALIZED) RESOURCES & COSTS:** $\text{\$} \text{\textdollar}$

#### EVALUATION QUESTION 2:

Data Source 1:

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
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</thead>
<tbody>
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</tbody>
</table>
### Data Source 2:

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
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### Data Source 3:

<table>
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<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
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**TOTAL GROSS (NON-NORMALIZED) RESOURCES & COSTS:**

$\text{TOTAL GROSS (NON-NORMALIZED) RESOURCES & COSTS:}$

### 2. Master Code List

<table>
<thead>
<tr>
<th>Name of Code</th>
<th>Abbreviation</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>KEY</td>
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<td></td>
<td></td>
<td></td>
<td>E =</td>
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<td></td>
<td></td>
<td></td>
<td>Emergent</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>PD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Predetermined</td>
</tr>
</tbody>
</table>

### 3. Create Schedule

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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335
<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
<th>Resources</th>
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</table>

3. CREATE BUDGET

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Duration</th>
<th>Resources</th>
<th>Itemized Costs</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
EVALUATION CONTRACT TEMPLATE

CONSULTING BUSINESS

Business Name
Contact information

willingly enters into agreement with

CLIENT BUSINESS

Business Name
Contact information

to conduct the following performance evaluation:

STATEMENT OF PURPOSE
Include a statement of understanding of
▪ problem and solution which have lead to the requested evaluation
▪ what is being evaluated (scope)
▪ the intended audiences for the evaluation
▪ the stakeholders of the evaluation

EVALUATION METHODOLOGY
Describe the process to be undertaken to complete the evaluation. Include the data collection and analysis methods to be used.

IN卷VOLVEMENT AND RESPONSIBILITIES
Describe who will be involved in the evaluation from the consulting organization as well as agreed involvement and responsibilities from the client organization.

DELIVERABLES
Describe all interim and final products the client will receive for the evaluation. Include a description of the presentation format for each product.

SCHEDULE AND COSTS
Provide mid to high-level schedule of tasks.
Provide a high-level breakdown of costs.

AGREEMENTS
State any agreed processes for changes to the evaluation.
State agreed publication potential permission.

SIGNATURES
AGENDA
[Title for Meeting]
[Date – Time]
[Location]

FOCUS: [Overall Purpose of Meeting]

AGENDA ITEMS

1. Introductions

2. Statement of Purpose
   • Evaluation Scope and Audiences
   • Selection of evaluation questions to be include

3. Evaluation Methodology
   • Presentation of Evaluation Plan
   • Identification of data source access requirements

4. Involvement and Responsibilities
   • Request for stakeholder involvement
   • Identification of communication protocols

5. Deliverables
   • Identification of procedures and formats for presentations and reports

6. Schedule and Costs
   • Negotiation of cost of evaluation may take place outside of the meeting

7. Agreements
   • Contingencies agreement
   • Request for publication potential

8. Summary of Decisions and Action Items
<table>
<thead>
<tr>
<th>Name:</th>
<th>Preferred communication medium: □ phone □ email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position:</td>
<td>Describe your relationship to performance problem/ solution being evaluated:</td>
</tr>
<tr>
<td>Department/Unit:</td>
<td></td>
</tr>
<tr>
<td>Email:</td>
<td></td>
</tr>
<tr>
<td>Phone:</td>
<td></td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
</tbody>
</table>

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# Delivery Format Selection Guide

## Written Reports

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## Presentations

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APPENDIX H

Evaluation Documentation from Case Study Two
INSTRUCTIONAL SESSION ONE:

Areas for improvement
- Clumsy to flip through the model, tools, and details in paper format.
- Might want to add “Figuring Things Out” to suggested reading list for Preparation and Implementation phases.
- Discuss both direct and indirect related to question 6 of IAQ. Give an example of what this means.
- Provide a better synthesis guide
- Tell me why each question is asked. Give me the rationale.
- Typo on page 4 of IAQ, #6

INSTRUCTIONAL SESSION TWO:

Areas for improvement
- Take out the “PhD” words like parsimonious and facile
- On page 3, make it clear that we’re talking about the priority = zones
- Put in the caveat related to piloting the instruments to at minimum spell and grammar check them. Have professional review them.
- Details on page 8, under equipment, add rental, outsourcing of services
- May want to use a business case approach as a report presentation idea
- Typo in agenda item 3
- Add in confidentiality agreement to contract/agenda
- Page 9, add to the “non-biased” point – perhaps refer to references
- Page 10, step 5 “iterative process”, also last paragraph add “adjust evaluation plan or create new evaluation”
- Bring stakeholders back to help make sense of findings
- Page 10, step 6, evaluation outcome --- change to results?
- Page 10 step 6 paragraph 3, put in purpose of contingencies agreement
- Page 12, remove reference to HPT SEM
- Provide help on how to graphically represent data
- Typo in paragraph 2 “in for naught”
- Refer to Patton’s Utilization Model
FINAL DEBRIEFING WITH JIM JOLLEY – CASE TWO

How long have you been doing training work: Almost 30 yrs, ISD 15yrs, HPT work, 15 yrs. Evaluation 15 yrs

How long at DOR: 11 yrs.

How many evaluations have you conducted? Court Ordered Needs Assessment, probably 12 give or take. One per year is about right...defines needs.

What models guide your thinking? I honestly use a lot more qualitative than quantitative and Patton’s Utilization-focused evaluation is probably one of my favorites. Allison Rossett’s training needs assessment combined with others is what I did for the court ordered. Gilbert’s and now Peter Dean has kind of updated that with umm... [fades off]. And I did one time with Kaufman’s model for the local...for the Dick Howser center.

What courses or certification related to evaluation?
“Well I have a lot of courses, program evaluation. I have two qualitative evaluation courses. One from Foster...his evaluation of Red Carpet Schools program at Florida High. And then Linda Hovich. Her program evaluation. It was more of an overview course. Although we looked at all of the models, we didn’t really implement any. And then for Papagiannis, Qualitative Evaluation. I did an evaluation of the implementation of Service First at DOR which is the governor’s “privatize everything” approach to government.

How about courses on Performance Technology?
Well, I haven’t ever taken the Walt Dick course on performance System Analysis. I’ve taken Kaufman on needs analysis. I’ve done a lot of stuff with Change Management, mostly with Schumaker’s Innovation to

Any solution type courses?
Designed some total quality management solutions, EPSS course, Rossett’s Job Aid course. Of course Instructional Design.

How often during the evaluation did you refer back to the model?
15- 20 instances.

Can you relate your use of the model to each phase?
Well, we didn’t really have a “negotiate contract” per se, so less often in that Phase. The initial step, moreso than any of it. What you’re calling the “Prepare”. Umm...and I presented the findings last Thursday. And I have some more I’m going to use the model for. I got a real interesting one that I hope to use the model for. It’s not going to go nearly as quickly because it’s a big unknown right now. They’re wanting us to look at umm field tech support system and the way that we’ve deployed our technician staff that keeps the network and the computers going. They recently, like in the last year or two, they used to report to the director of Info Services. Now they’ve got them reporting to the local program directors. So like regional managers... officer director types, and its causing some very interesting difficulties because those people know absolutely nothing about IT support and yet the reason they did it is that they want to own the resource. So they feel like they get better service. That was the allegation. But I think I’ll be able to use the model again and it may help you to.

Let’s talk about strengths and weaknesses of the support of the model.

Did the model help you to identify whether or not an evaluation should take place? I don’t have a lot of comparables to answer that with, but I would say “yes”, it is a strength of the model in the sense that it does make you, way up front in the prep stage, identify your investment to complete that. Because there is a budget page and the costs of evaluating that would help you decide whether or not to go forth with the client. Probably Beth and my perspective is a little different than others out in private industry because rarely do we get into negotiating a contract, but you do get into negotiating whether you are going to do it or not and obviously you have to get a sponsor and so on, so I think it was very helpful from that perspective. Umm, what was so interesting about the one I was telling you with the ISP was that they were getting ready to send 3 surveys out and that was going to be it and L..... in our research and analysis office said, “wait a minute” yeah you might get survey data but it may not answer
the questions that you have and try to get them to see that, no we probably need to do a research study at this point
an analyze how things are working and what’s not working.

The ability to describe the FEA that led to the solution?
I think it did a very good job of that. Let me look here. In trying to umm, I just think it was very thorough in terms of
“what are the questions you should be asking”, what should you be looking for”, umm and a nice way of sort of
consolidating your brainstormed set of responses, um like the grouping the questions around themes and that sort of
stuff was useful. Umm, I don’t’ know if a novice, not that I’m not a novice, because I really am, never having
completed the PSA class, I think what may be difficult in terms of a weakness is when I was trying to figure out
…fill the sheet out (evaluation plan template), you had the example with non-parametric here, simple random,
purposeful…Umm, I think people may need more there, more information to make those decisions and not so
much.. Like I know the difference between them, but what instrument or vehicle are you going to use…I guess it
would be called the method. I wasn’t real comfortable with …method would be focus group, survey. I didn’t
necessarily know what non-parametric was…it was a little too technical, so maybe even a matrix where, maybe you
have it in there and I don’t remember it. It’s like when you’re doing media selection and you related the events of
instruction to a particular kind of learning and media strategies…just a one pager- that arrays from perhaps least
expensive to most expensive or easiest to more complex, so that you’re almost giving them choices rather than them
cooking them up. But I think it would help the user of the model and you in terms of the community of sharing also,
to identify at the meta-analysis level, what are the tools and techniques most frequently used for this kind of
problem. You know so that people code it consistently. But the evaluation plan was really useful.

Did you refer back to it during the evaluation? Yes, just to make sure that we had done all the things that were on
our plan. I used it like a checklist. I had some difficulty with the format of the document. I think I figured it out.

One of the things I kept struggling with was how clumsy the tools were in a paper form.
I just have one data source per each, which is probably not the standard way. We did a cost comparison with what’s
available locally.

You didn’t do a contract is that right?  Right. In our environment, we would negotiate for the project, but there’s
not really a contract because it’s sort of a free resource for the department.

As far as the collection of the data itself, what kind of guidance did you get from the model in that area?
Well, I think it makes you think about potentially other sources or methodologies. Umm, I think once again that’s
where the little cheat sheet would be helpful, “if you’re trying to find out X, then these methods would be good”.
There may be some other methods out there to consider that I wouldn’t know to use unless you told me about them.
And it was fairly sophisticated languaging. May want one for people like me that need the translation and then one
for the Reiser types who do a lot of research.

How about analyzing the data?  Umm, something that we do that’s not a very good practice, but it kind of made
me think about it again was the notion of piloting the instruments. Research and analysis does a good job with that,
I don’t think we do such a good job, both from a time perspective umm you know sometimes you get in these
crunches and you slam it out there because you need to have it done yesterday. At a minimum you can pilot with a
one-on-one.

How about coding of data? We umm, had some qualitative just comment kind of stuff and ended up using Nudist.
What else can I say about that. One of the things, like the F2F, it took me a while to figure out that was face-to-face.
Sometimes I just needed more …it’s almost like there was an assumption about the reader’s level of understanding.
To get some people like me to say, “I’ve got no clue when you say “parametric”. It’s been years since I played with
those kinds of words, so either a glossary or just spelling it out for acronyms or shortened versions.

The case scenario was real helpful in terms of helping me understand. The example was good. I think worked out
examples should be a part of the model…for the job supports…the cheat sheets. Add in some strategies for access
to data sources. WE often have these confidentiality laws. When you press people on it, no it’s public. Well the
consensus of the group was that it’s confidential. But the keeper actually said, no it’s public information. So maybe
some common strategies for getting access to the data.
How about related to interpreting the data? I don’t recall any guidance on that. I think there are some good heuristics in here, rules of thumb for evaluating the data. I think examples are really helpful in this area.

It was interesting when I did the presentation cause the report was umpteen million pages and they ain’t got time…bottom line…the high level execs are busy. So we shoved the results on one piece of 11x17 paper and that was sufficient for that particular audience. For our purposes…it’s sort of the notion that there’s more than one user of the results. For the high levels, it was a “do we want to buy this” or no. And they weren’t particularly interested in all of the details of our results. For the CBT team that has to implement the selected solution, they have a different set of needs and maybe that’s one of the secrets of evaluation and its kind of what Patton talks about. You know well so if we collect this data, then what are you going to do with it? Yeah, there’s probably a model out there that says that’s what you should do, but start with what are you trying to figure out…I think that the utilization focus is an important point.

The other interesting thing that kind of came up in this process one of our sort of assumptions when we were trying to decide whether this had been a successful intervention was …really the only way this intervention counts is if people complete the courses. As we looked at the data, there was an assumption, well, people didn’t complete them, but they were going out there to do research…maybe they just needed to learn how to do a mail merge letter and they learned how to do that and got out. Less than ½ percent who touched it but never completed it said they used it for research purposes, but it made us think about those assumptions that we take for granted, and to go out an validate what is really going on and not just what we think is going on, so that was sort of one of those surprising things from conducting the evaluation. Umm, it did make us think…well maybe course completion isn’t the measure of success…maybe it should just be the number of hours you spent learning rather than you completed all the objectives. So that as we look at the next cycle of doing this, we really need to nail down with the decision makers, “what is success to you” “What would you consider to be a successful intervention?”

Now, we’re looking at it not just from a software support perspective, but there is this whole new individual development planning process that’s being implemented. They’re supposed to identify at the beginning of their rating cycle what kinds of professional development they want to do over the course of the next year to improve on their evaluation…on their performance. And one of the broad areas that’s a big focus of the top right now is leadership training, so this new skill port has a lot of that. One of our big concerns after having looked at two or three of them is, gee, they say it’s leadership training but when you look at it, I don’t necessarily agree with that approach to managing people. And then, how do you take a course list of 7-800 courses, and evaluate the content? My strategy now is to assign one to each individual on the leadership team.

Sufficient guidance for publishing findings for Community of Practice? In this area, the Southeast Evaluation Association might be a venue. I do think the model is clear about the purpose. I would give specific avenues, links where that could be done or shared.

Maybe that’s one of the reluctances of those of us who are practicing is “I don’t know how” and “nobody’s going to care about this”. But they would care about the methodology.

How did the model impact your ability to identify the degree to which the intervention was a success? We were definitely able to answer the evaluation questions.

What is the value of each phase?
Prepare is the very valuable. I found it very useful.
Negotiate is “neutral” because it’s not very applicable. Maybe it could be negotiate the evaluation…not just the contract. More open language for those of us who don’t contract.
And then “Implement”, also was extremely valuable.
And then “Present” findings, I’d give it an “extremely valuable” with the caveat to add in linkages to make that usable to people like me. I think it would provide support and a resource for people trying to struggle through the process, especially early on.

**General Comments**
Give me more references so I can go read in detail what you describe.
Tell me about the client’s response to the findings? Based on the presentation, they agreed for us to go negotiate a one year contract, so it resulted in what we were after which was ….they’re actually buying all the courses. We’re also going on the extranet, which the data helped support because people wanted to be able to access the courses from home on their time.

Did any questions arise that you didn’t feel that you had data to support or back up? Yes, I did have a few of those. Mainly, they wanted some more detail on specific number of users by Program and I didn’t know that. The revenue management council were the audience. Generally they had the data they needed to make the decisions.

How long did the evaluation take? 2 months

Did using the model add to or subtract from the “normal” time for the evaluation? I don’t think it took any more or less time. It was probably a more thorough approach just because you ask good questions in the model that maybe we don’t think about. I had to go to the dictionary more often!

Did you add anything based on the model that wouldn’t have thought of?
Yes, comparative costs.

Did you calculate cost of the evaluation? We estimated. We didn’t count the time of the people filling out the surveys. We also didn’t include survey development time. Really just the data collection, analysis, and reporting times. I don’t feel like it really added any cost by using the model.

Was this model useful? Why or why not? Yes, the main strength is the thoroughness of the approach, taking you through four distinct steps with details in each phase. The most helpful aspect was the good questions in the model. They would trigger my thinking about various tasks or considerations. It’s helpful, too as a refresher, because in my case, I’m not doing this every day.

It provide a set of cues to refresh…sort of a quick reference guide. It’s good also to instigate thorough front-end thinking. The templates were useful.

Who would benefit most from use of this model? Newbies just out of school. But really any practitioner will benefit as a refresher or reference tool.
Evaluation Documents

1. IAQ
2. Evaluation Plan
3. Final Report
4. Final Presentation

INITIAL ANALYSIS QUESTIONNAIRE

Instructions: Complete the questions below with as much detail as possible. If you do not know the answer, forward the question to the person(s) who does.

Performance Intervention Information

10. What is the name of the intervention to be evaluation? How do you refer to this intervention within your organization?
   Smartforce CBT Campus

11. Describe the purpose and features of the intervention. How would you describe the intervention and its purpose to someone outside of the organization? What are the features and characteristics of this intervention?
   Three years ago a cross-functional evaluation team researched Computer Based Training (CBT) offered by various companies to provide a cost-effective, timely training solution for all Department of Revenue staff. The evaluation team identified the following advantages of CBT versus Instructor-led Training:

   - The right course is available at the right time to any DOR employee who has access to a PC.
   - Travel costs are reduced because learners can take courses at their workplace.
   - Training costs are less than vendor or in house instructor-led training.
   - Consistency of learning is increased over instructor-led training because all students receive the same material delivered in the same manner.
   - Content retention is higher because the student can learn at their own pace.
   - Training delivery time is reduced because the learner can skim known material and spend extra time on material that is more difficult.
   - CBT can be used as a reference resource.

An evaluation team followed a structured process to evaluate and select from three companies. SmartForce CBT Systems was selected as the most cost effective, user-friendly product.

12. What problem or opportunity led to this intervention? Describe what was going on in the organization that led to a problem or opportunity being identified.
   Technology integration in the Department of Revenue required large numbers of employees to use software and technology tools for which they had received no formal training. Information services program employees training was particularly expensive and difficult to schedule with outside vendors. There were inadequate resources to develop the training in-house.
13. When was the problem or opportunity identified that led to this intervention? Give specific dates for when the problem or opportunity was first identified and when this intervention was selected. March 19, 1999 the problem was identified and January, 2000 the Smartforce CBT Campus was launched departmentwide.

14. What was the intervention intended to do? What did you expect this intervention to do for the organization? If you had to say what the objectives or intended outcomes of the intervention were, what would you say? Be as detailed as you can. (Review the two examples below)

We expect that using the new process will increase the availability of training to support use of technology and software and reduce training delivery costs by one half.

15. Who was impacted by the intervention? Describe the organizational structure and identify the units (e.g., departments, groups, processes) and individuals that were impacted. All DOR employees (approximately 5400 people)

16. How has the organization changed from the time the performance problem or opportunity was identified until now? What did the organization look like when the problem/opportunity was first identified? What does it look like now? (Attach any relevant organizational charts).

Attached

17. What process led to selection of this particular intervention? Did you collect any data to verify the problem or opportunity? If so, is it available? How did you identify the causes of the problem or opportunity? How did you select this particular intervention? Is the intervention implemented identical to the one that was suggested? If “no”, explain any differences and why they exist. Formal evaluation, attached.

18. What other interventions or change initiatives were introduced during the time the problem or opportunity was identified until now? Were any other activities, programs, processes, tools, etc. put in place? Has the organization gone through any restructurings (e.g., process redesign, downsizing, mergers)? Has the culture of the organization changed? Have any external factors (e.g., legislation, regulations) impacted the organization?

6 strategic initiatives resulting in radical reengineering of several processes, a new Executive Director, a new culture of strategic planning and process reengineering, a formal change management methodology, a newly elected Governor and legislature, a downturn in the Florida economy and tax revenues.

Evaluation Requirements

7. What is most important for you and your organization to know? Review the four evaluation zones and rate each zone by order of importance.

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<th>Examples of Common Measures</th>
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<td>Employment impacts</td>
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<th>Priority Rank</th>
<th>Zone</th>
<th>Purpose</th>
<th>Examples of Common Measures</th>
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| 1             | B. Organization | To determine the impact of the intervention on the current measures of the organization. | - Environmental impacts  
- Quality of life impacts  
- Productivity  
- Satisfaction  
- Organizational learning  
- Sales |
| 2             | D. Intervention Selection Process | To determine if any areas of the process which led to the selection and implementation of this intervention could be improved. | - Problem/opportunity identification  
- Cause identification  
- Solution identification and selection  
- Implementation process |
| 3             | C. Unit (e.g., department, groups, or individuals) | To determine the impact of the intervention (or components of the intervention) on the units or individuals that are direct “users” of the intervention. | - Process workflow  
- Information availability  
- Incentives and rewards  
- Knowledge and skills  
- Capability  
- Motivation |

8. For each of your priorities in question 1, what is the most important question you would like answered by this evaluation? Use the examples of common measures to help you determine an appropriate question for each Zone.

   **Society:**

   Organization: Should we discontinue the current contract, continue the contract as is, or modify the contract to address the performance support requirements for users of software and technology.

   **Unit:**

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Process:

9. Which of the areas described below apply to this intervention? Check all that apply.

This intervention...
✓  provides accurate, timely, and accessible information (data) that was lacking before.
✓  provides feedback to help employees identify when they achieve a desired standard.
✓  serves as a tool to aid the employee in doing their job.
✓  puts a new procedure in place to perform a job function.
✓  provides availability to adequate materials, supplies, assistance, etc. to do the job well.
✓  provides the employee with knowledge or skills they were previously lacking.

Which of the following are true for this intervention?
✓  Incentives (e.g. recognition, bonuses) are in place to reward the employee for using this procedure.
✓  New capability requirements (e.g. strength, dexterity, social skills, and emotional demands) are associated with using this intervention.
✓  Employees are motivated to use this intervention.

10. What is the deadline for completion of this evaluation?
   April 3, 2003

11. What specific questions should this evaluation answer?
   What has been the result of three year contract to provide performance support for employees learning new software and technology?

12. Who all will be interested in the results of the evaluation
   Lilli Bogan and staff of the Child Support Enforcement Program
   Jim Evers and staff of the GTA Program
   Nancy Wittenberg & staff of ASP Program
   Gerald Johnson ISP
   Dave Beggs PTA
   Jim Zingale, Bebe Blount and Lisa Escheveri EXE office

Additional Comments / Information
### Office of Strategic Planning and Performance Development

**Evaluation Plan**

**Data Collection & Analysis Plan**

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<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
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</tbody>
</table>

**TOTAL COSTS:** $480
## QUESTION 2:

What were the reasons, if any, for employees registering for courses, but not completing them?

### Data Source 1:

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The samples in this study are from the course usage database maintained by the Office for Strategic Planning and Performance Development (OSPPD). Population sampled was employees that accessed but did not finish them.</td>
<td>• Survey (Likert &amp; open-ended questions)</td>
<td>• Formsite e-survey</td>
<td>• Non-parametric for Likert results</td>
<td>• 1-2 days revisions, 2-3 days piloting/testing, 14 days implementation period, 1 days analysis, Printing</td>
<td>• $480</td>
</tr>
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</table>

### Data Source 2:

<table>
<thead>
<tr>
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<th>Method</th>
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### Data Source 3:

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<th>Analysis Plan</th>
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<th>Estimated Costs</th>
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</table>

**Total Costs:** $480
### EVALUATION QUESTION 3:

Which were the courses the employees registered for the most, completed most?

### Data Source 1: Actuary Department Employees who use EPSS.

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The samples in this study are from the course usage database maintained by the Office for Strategic Planning and Performance Development (OSPPD).</td>
<td>• Extant data</td>
<td>• N/A</td>
<td>• Basic statistical analysis</td>
<td>• Computer systems programmer analyst for one day. • Access to Pathlore training administration report writer.</td>
<td>• $96</td>
</tr>
</tbody>
</table>

### Data Source 2:

<table>
<thead>
<tr>
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<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
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### Data Source 3:

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<th>Estimated Costs</th>
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**TOTAL COSTS:** $96
**EVALUATION QUESTION 4:** What evaluation feedback did we receive from employees who completed CBT courses?

**Data Source 1:**

<table>
<thead>
<tr>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
<th>Necessary Resources</th>
<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The samples in this study are from the course usage database maintained by the Office for Strategic Planning and Performance Development (OSPPD). Population sampled were employees who completed courses. The samples received an e-mail message explaining the purpose of the study and the link for the appropriate web-based survey.</td>
<td>Survey (Likert &amp; open-ended questions)</td>
<td>Formsite e-survey</td>
<td>Non-parametric for Likert results</td>
<td>1-2 days revisions, 2-3 days piloting/testing, 14 days implementation period, 1 day analysis, Printing</td>
<td>$480</td>
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**Data Source 2:**

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<th>Analysis Plan</th>
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**Data Source 3:**

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**TOTAL COSTS:** $480
**Evaluation Question 5:** Were there technical issues which prevented employees from completing CBT courses?

<table>
<thead>
<tr>
<th>Data Source 1:</th>
<th>Sampling Requirements</th>
<th>Method</th>
<th>Instrument</th>
<th>Analysis Plan</th>
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<th>Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help Desk Technical support logs for three year contract period</td>
<td>• Extant data review</td>
<td>• HEAT System</td>
<td>• Review logs</td>
<td>• evaluator</td>
<td>• $480</td>
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<table>
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**Total Costs:** $480
## 2. Master Code List

<table>
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<th>Name of Code</th>
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<th>Description</th>
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<td></td>
<td></td>
<td>KEY</td>
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<td></td>
<td></td>
<td></td>
<td>E = Emergent</td>
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<td>PD = Predetermined</td>
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## 3. Create Schedule

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<th>End Date</th>
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<th>Resources</th>
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## 3. Create Budget

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<th>Resources</th>
<th>Itemized Costs</th>
<th>Total Costs</th>
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</thead>
<tbody>
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<td></td>
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<tr>
<td>#</td>
<td>Task</td>
<td>Duration</td>
<td>Resources</td>
<td>Itemized Costs</td>
<td>Total Costs</td>
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Program Evaluation Report of the SmartForce CBT Contract at Florida’s Department of Revenue
Executive Summary

Three years ago a cross-functional evaluation team researched Computer Based Training (CBT) offered by various companies to provide a cost-effective, timely training solution for all Department of Revenue staff. An evaluation team followed a structured process to evaluate and select from three companies. SmartForce CBT Systems was selected as the most cost effective, user-friendly product.

The purpose of this program evaluation study was to investigate whether DOR should renew, terminate, or modify its current contract with SmartForce CBT Systems. Four questions were examined to assess the feasibility of the three options:

1. What were the reasons, if any, for employees not registering for CBT courses?
2. What were the reasons, if any, for employees registering for courses, but not completing them?
3. Which were the courses the employees registered for the most?
4. What evaluation feedback did we receive from employees who completed CBT courses?

The samples in this study came from the course usage database maintained by the Office for Strategic Planning and Performance Development (OSPPD). Populations sampled were: (1) employees who accessed a course but did not finish them; (2) employees that never accessed a course; and (3) employees who completed courses. The three samples received an e-mail message explaining the purpose of the study and the link for the appropriate web-based survey.

Results indicate that workload (i.e., lack of time) is the primary reason why employees did not register or complete their SmartForce CBT course(s). In addition, Microsoft Office 97 – Beginning Excel 97 was identified as the course accessed and completed the most. In the ISP area, Web Authoring and Publishing: HTML Documents was the course accessed the most; whereas, UNIX: Overview was the number one completed course in the ISP area. Further, an ROI analysis identified that DOR would have an annual total saving of $1,682,876 and a grand total saving of $5,048,628 (over three years) if CBT is chosen over locally-available instructor-led training for the ten courses accessed the most.

It is therefore our recommendation that Department of Revenue renew the contract with only the courses identified in high demand. A caveat could be included in the contract that more courses could be added throughout the duration of the contract based on demand and/or special requests from supervisors.

The CBT team should further explore the “lack of time” issue to find ways to motivate employees to arrive to work early or stay longer after work to further their careers via CBT courses and to better plan their training purpose as they implement their individual development plans. Perhaps allowing employees to access SmartForce CBT campus from home may increase registration and completion rate by deploying this performance intervention as an Extranet application on the Internet rather than as an Intranet application.

Introduction

Three years ago a cross-functional evaluation team researched Computer Based Training (CBT) offered by various companies to provide a cost-effective, timely training solution for all Department of Revenue staff. The evaluation team identified the following advantages of CBT versus Instructor-led Training:

- The right course is available at the right time to any DOR employee who has access to a PC.
- Travel costs are reduced because learners can take courses at their workplace.
- Training costs are less than vendor or in house instructor-led training.
- Consistency of learning is increased over instructor-led training because all students receive the same material delivered in the same manner.
- Content retention is higher because the student can learn at his/her own pace.
- Training delivery time is reduced because the learner can skim known material and spend extra time on material that is more difficult.
- CBT can be used as a reference resource.

An evaluation team followed a structured process to evaluate and select from three companies. SmartForce CBT Systems was selected as the most cost effective, user-friendly product.

**Purpose**

The purpose of this program evaluation study was to investigate whether DOR should renew, terminate, or modify its current contract with SmartForce CBT Systems.

Several questions were examined to assess the feasibility of the four options:

1. What were the reasons, if any, for employees not registering for CBT courses?
2. What were the reasons, if any, for employees registering for courses, but not completing them?
3. Which were the courses the employees registered for the most?
4. What evaluation feedback did we receive from employees who completed CBT courses?

**Review of Research Methods Used**

The samples in this study came from the course usage database maintained by the Office for Strategic Planning and Performance Development (OSPPD). Populations sampled were: (1) employees who accessed a course but did not finish them; (2) employees that never accessed a course; and (3) employees who completed courses. The three samples received an e-mail message explaining the purpose of the study and the link for the appropriate web-based survey.

A single method approach involving a qualitative component (surveys) was employed in this evaluation study. Three web-based surveys – (1) “Never Accessed” (See Appendix A, p. 29); (2) “Accessed but not Completed” (See Appendix B, p. 32); and (3) “Completed one or more courses” (See Appendix C, p. 36) – were designed and used to yield their opinions about their SmartForce CBT campus experience. To analyze the data for this study, the researcher employed SPSS (Statistical Package for the Social Sciences).

The remaining parts of this chapter include the answers to the research questions and a summary of research findings.

Question #1 – What were the reasons, if any, for employees not registering for CBT courses?

The aim of question one was to identify possible reasons for DOR employees not registering for CBT courses. Several hypotheses were suggested:

H1: Employees did not register because they were not aware of the availability of CBT campus courses.

H2: Employees did not register because they thought CBT campus courses were not worth their time.
H3: Employees did not register because they thought CBT campus courses were not relevant to their job duties.

H4: Employees did not register because of their workload.

H5: Employees did not register because they lacked adequate opportunities to participate.

H6: Employees did not register because they lacked adequate access to a computer.
Question #1 – Analysis

H₁: Employees did not register because they were not aware of the availability of CBT campus courses.

Results from Table 1 indicate that 93 percent (N=353) of the sample surveyed was aware of the availability of CBT campus courses. Therefore, H₁ is rejected.

Table 1 – I’m aware of the availability of SmartForce CBT campus courses.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Yes</td>
<td>330</td>
<td>93.0</td>
<td>93.5</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>23</td>
<td>6.5</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>353</td>
<td>99.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>System</td>
<td>2</td>
<td>.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>355</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 – I’m aware of the availability of SmartForce CBT campus courses
H2: Employees did not register because they thought CBT campus courses were not worth their time.

Results from Table 2 indicate that 52.7 percent (N=355) of the sample surveyed thought the courses were worth their time. Therefore, H2 is rejected. Curiously, 41 percent didn’t know or the question did not apply to them. This makes sense since these employees never accessed the CBT campus, so they didn’t know whether these courses were worth their time.

Table 2 – I feel the SmartForce CBT campus courses are not worth my time.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>True</td>
<td>21</td>
<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>False</td>
<td>187</td>
<td>52.7</td>
<td>58.6</td>
</tr>
<tr>
<td></td>
<td>Don't know or does not apply</td>
<td>147</td>
<td>41.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>355</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 2 – I feel the SmartForce CBT campus courses are not worth my time.
H$_3$: Employees did not register because they thought CBT campus courses were not relevant to their job duties.

Results from Table 3 indicate that 54.4 percent (N=355) of the sample surveyed disagreed with the statement that SmartForce CBT campus courses are not relevant to their job duties. Therefore, H$_3$ is rejected.

Table 3 – The SmartForce CBT campus courses are not relevant to my job duties.

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>20</td>
<td>5.6</td>
<td>5.6</td>
<td>5.6</td>
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<tr>
<td>False</td>
<td>193</td>
<td>54.4</td>
<td>54.4</td>
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<tr>
<td>Don't know or does not apply</td>
<td>142</td>
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<tr>
<td>Total</td>
<td>355</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3 – The SmartForce CBT campus courses are not relevant to my job duties.
H₄: Employees did not register because of their workload.

Results from Table 4 indicate that 63 percent (N=355) of the sample surveyed thought it would be either difficult or very difficult to complete a SmartForce CBT campus course.

Table 4 – Based on your workload how easy or difficult would it be for you to complete a SmartForce CBT campus course?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very easy + Easy</td>
<td>32</td>
<td>9.0</td>
<td>9.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>98</td>
<td>27.6</td>
<td>27.6</td>
<td>36.6</td>
</tr>
<tr>
<td>Very Difficult + Difficult</td>
<td>225</td>
<td>63.4</td>
<td>63.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4 – Based on your workload how easy or difficult would it be for you to complete a SmartForce CBT campus course?
Also, results from Table 5 indicate that 59.4 percent (N=353) of the sample surveyed did not access SmartForce CBTCampus due to their workload.

Table 5 – Have you not accessed SmartForce CBT Campus due to your workload?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>211</td>
<td>59.4%</td>
<td>59.8%</td>
<td>59.8%</td>
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<tr>
<td>No</td>
<td>91</td>
<td>25.6%</td>
<td>25.8%</td>
<td>85.6%</td>
</tr>
<tr>
<td>Don’t know or does not apply</td>
<td>51</td>
<td>14.4%</td>
<td>14.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>353</td>
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</tr>
<tr>
<td>Missing</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>2</td>
<td>0.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>100.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5 – Have you not accessed SmartForce CBT Campus due to your workload?

For exploratory analysis, open-ended responses where also reviewed. Following is a sample of some of these responses:

- “Simply no time to complete.”
- “I fully intend to use it again as time in my schedule permits.”
- “Mainly it is a time issue for me and most of the people I supervise.”
- The CBT courses are a wonderful tool. My job is working with the taxpayers from 8-5. Yes I could use my lunch hour or stay after work. It is free education, my only cost is time.
- “I am in CSU, it is hard for me to complete...tool is useful but finding the time is hard.”
“lack of time is my major stumbling block...”
“The only reason I haven’t used CBT is lack of time to do so.”
“I feel the SmartForce CBT is a very good way to allow employees to improve upon their knowledge and skill. However in the CSE program there is just no time to do these courses due to the workload issues.”
“I would very much like to participate and complete the Smart-Force CBT campus courses. However due to my work responsibilities I have not had the time to participate.”
“One of those things I m always going to do when I have time but never seem to have the time!”
“When there was sufficient time for me to access CBT there was a problem with the program & I was unable to access. Currently my job task leaves me with very little time to use CBT.”
“Current work assignments have taken a priority.”
“DO NOT HAVE THE TIME.”
“Trying to find a block of time to devote to just taking a course is difficult with my work load and schedule.”
“I have not used SmartForce CBT because of my work load. I just do not have the time at this time. Maybe I will be able to sometime in the future.”
“Based on my current workload time is not provided to use SmartForce CBT. Workload need to be equally distributed as fair as possible to afford all employees the opportunities provided to them. May the information be fairly given to all employees so that they will know what is available.”
“Mainly due to my workload; however I plan to look at CBT for a Microsoft Project class this spring.”
“Too busy working.”
“I am in a part-time position and the four hours I am at work I have always had plenty of work to fill my time.”
“Have not have the time.”
“I personally feel that the time I spend at the office is better spent working on my case load.”
“WHO HAS THE TIME????????”
“I just have trouble finding time. This is the comment I hear from others also.”
“Not enough time to get to them.”
“IN MY DAILY WORK SCHEDULE I SIMPLY DO NOT HAVE THE TIME.......”
“Time constraints. This is also true for most of my staff...there simply isn’t enough time in the workday due to job responsibilities. And due to more cutbacks on the horizon this will only intensify.”
“At first I was unable due to work load. For a brief period I had opportunity to try CBT but experienced difficulty getting in or instructions for using were not clear. As of late workload has again become an issue for extra curricular activities. I am looking forward to taking advantage of the training. I hope it is still available when I am able to work with it.”
“workload did not permit.”
“I have not had time to access anything other than my work load. Too much to do with SAP and other issues.”
• “Due to my heavy workload I barely have time to check my e-mail on a regular basis. I would like to participate in this program but I don’t want to start something I can’t finish.”
• “Due to workload constraints I do not have the time.”
• “I DO NOT THINK THAT I HAVE THE TIME TO DO THE SMARTFORCE CBT.”
• “No time with work schedule”

Based on data from Table 4, Table 5, and the open-ended responses listed above, H₄ is accepted.
H₅: Employees did not register because they lacked adequate opportunities.

Results from Table 6 indicate that 39 percent (N=355) of the sample surveyed thought employees in their area of work had adequate opportunities to participate in the SmartForce CBT campus course(s). Therefore, H₅ is rejected.

Table 6 – I feel employees in my area have adequate opportunities to participate in the SmartForce CBT campus course(s).

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree + Agree</td>
<td>137</td>
<td>38.6</td>
<td>38.6</td>
<td>38.6</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>144</td>
<td>40.6</td>
<td>40.6</td>
<td>79.2</td>
</tr>
<tr>
<td>Strongly Disagree + Disagree</td>
<td>74</td>
<td>20.8</td>
<td>20.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6 – I feel employees in my area have adequate opportunities to participate in the SmartForce CBT campus course(s).
**H₆:** Employees did not register because they lacked adequate access to a computer.

Results from Table 7 indicate that 81 percent (N=355) of the sample surveyed thought employees in their area of work had adequate access to a computer to complete the SmartForce CBT campus course(s). Hence, H₆ is rejected.

**Table 7 – I feel employees in my area have adequate access to a computer to complete the SmartForce CBT campus course(s).**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree + Agree</td>
<td>288</td>
<td>81.1</td>
<td>81.1</td>
<td>81.1</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>63</td>
<td>17.7</td>
<td>17.7</td>
<td>98.9</td>
</tr>
<tr>
<td>Strongly Disagree + Disagree</td>
<td>4</td>
<td>1.1</td>
<td>1.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 7 – I feel employees in my area have adequate access to a computer to complete the SmartForce CBT campus course(s).**
Question #2 – What were the reasons, if any, for employees registering for courses, but not completing them?

The aim of question two was to identify possible reasons for why DOR employees registered for CBT courses, but did not complete them. Course completion is defined as not reviewing every page in the course and taking the course final exam. Several hypotheses were suggested:

   H7: Employees did not complete the course(s) because their supervisor did not give them the necessary time or tools.

   H8: Employees did not complete the course(s) because of their workload.

   H9: Employees did not complete the course(s) because they lacked adequate access to a computer.

   H10: Employees did not complete the course(s) because they used the course as a reference tool.

   H11: Employees did not complete the course(s) because they were dissatisfied with the variety of SmartForce CBT courses available to them.
H7: Employees did not complete the course(s) because their supervisor did not give them the necessary time or tools.

Results from Table 8 indicate that 65 percent (N=193) of the sample surveyed strongly agreed or agreed that their supervisor gave them the time and tools necessary to complete the course(s). Therefore, H7 is rejected.

Table 8 – My supervisor gives me the time and tools necessary to complete the course(s).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>125</td>
<td>64.8</td>
<td>64.8</td>
</tr>
<tr>
<td>2</td>
<td>49</td>
<td>25.4</td>
<td>90.2</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>9.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 8 – My supervisor gives me the time and tools necessary to complete the course(s).
H₈: Employees did not complete the course(s) because of their workload.

Results from Table 9 indicate that 58 percent (N=193) of the sample of the sample surveyed thought it would be either difficult or very difficult to complete a SmartForce CBT campus course. Therefore, H₈ is accepted.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very easy + easy</td>
<td>27</td>
<td>14.0</td>
<td>14.0</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>54</td>
<td>28.0</td>
<td>28.0</td>
</tr>
<tr>
<td>Very difficult + difficult</td>
<td>112</td>
<td>58.0</td>
<td>58.0</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 9 – Based on your workload how easy or difficult is it for you to complete the SmartForce CBT campus course(s)?

H₉: Employees did not complete the course(s) because they lacked adequate access to a computer.

Results from Table 10 indicate that 82 percent (N=193) of the sample surveyed thought that employees in their area had adequate access to a computer to complete the SmartForce CBT campus course(s) relevant to their jobs. Therefore, H₉ is rejected.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10 – I feel employees in my area have adequate access to a computer to complete the SmartForce CBT campus course(s) relevant to their jobs.
<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree + agree</td>
<td>158</td>
<td>81.9</td>
<td>81.9</td>
<td>81.9</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>24</td>
<td>12.4</td>
<td>12.4</td>
<td>94.3</td>
</tr>
<tr>
<td>Strongly disagree + disagree</td>
<td>11</td>
<td>5.7</td>
<td>5.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 10 – I feel employees in my area have adequate access to a computer to complete the SmartForce CBT campus course(s) relevant to their jobs.
**H10:** Employees did not complete the course(s) because they used the course as a reference tool.

Results from Table 11 indicate that 86.5 percent (N=193) of the sample surveyed either rarely or never used the SmartForce CBT campus course(s) as a reference tool. Therefore, H8 is rejected.

| Table 11 – How often do you use SmartForce CBT campus courses as a reference tool? |
|-------------------------------|-----------|--------|---------|--------|
|                              | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid                        |           |         |              |                    |
| Often                        | 1         | .5      | .5           | .5                |
| Sometimes                    | 25        | 13.0    | 13.0         | 13.5              |
| Rarely + Never               | 167       | 86.5    | 86.5         | 100.0             |
| Total                        | 193       | 100.0   | 100.0        |                    |

**Figure 11 – How often do you use SmartForce CBT campus courses as a reference tool?**

**H11:** Employees did not complete the course(s) because they were dissatisfied with the variety of SmartForce CBT courses available to them.

Results from Table 12 indicate that only 14 percent (N=193) of the sample surveyed were either very dissatisfied or dissatisfied with the variety of SmartForce CBT campus course(s) available to them. Therefore, H11 is rejected.

| Table 12 – How satisfied are you with the variety of SmartForce CBT courses available to you? |
|-------------------------------|-----------|--------|---------|--------|
|                              | Frequency | Percent | Valid Percent | Cumulative Percent |
|                              |           |         |              |                    |

375
<table>
<thead>
<tr>
<th>Valid</th>
<th>Very Satisfied + Satisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>Very dissatisfied + dissatisfied</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>98</td>
<td>81</td>
<td>14</td>
<td>193</td>
</tr>
<tr>
<td></td>
<td>50.8</td>
<td>42.0</td>
<td>7.3</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50.8</td>
<td>92.7</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50.8</td>
<td>92.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 12 – How satisfied are you with the variety of SmartForce CBT courses available to you?
Question #3 – Which were the courses the employees registered for the most?

The aim of question three was to identify the SmartForce CBT campus course(s) with the highest demand by DOR employees during the period of 01/01/2000 to 1/23/2003.

Question #3 – Analysis

Appendix D (p. 41) provides a summary table and Appendix E (p. 53) provide a course category summary table of all courses accessed and completed by DOR employees during the period of 01/01/2000 to 1/23/2003.

The following tables display average prices for live training in each of the subjects listed. Local training prices (i.e., live cost) were used when available. Levels of training information and titles were as close to SmartForce courses as possible. The formulas used are as follow:

Counter * live cost = live price
Counter * our cost = our price
Live price – our price = saving
Saving + Saving + Saving + Saving = Total Saving
Total saving * 3 (years) = Grand Total Saving

Table 13 – Top Ten Courses Started

| Course Code | Course Name                        | Counter | Live Cost | Live Price | Our Cost | Our Price | Saving
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MSOBE</td>
<td>Microsoft Office 97: Beginning Excel 97</td>
<td>908</td>
<td>$150</td>
<td>$136,200</td>
<td>$44</td>
<td>$39,952</td>
<td>$96,248</td>
</tr>
<tr>
<td>MSOBW</td>
<td>Microsoft Office 97: Beginning Word 97</td>
<td>801</td>
<td>$150</td>
<td>$120,150</td>
<td>$44</td>
<td>$35,244</td>
<td>$84,906</td>
</tr>
<tr>
<td>MOBA</td>
<td>Microsoft Office 97: Beginning Access 97</td>
<td>605</td>
<td>$150</td>
<td>$90,750</td>
<td>$44</td>
<td>$26,620</td>
<td>$64,130</td>
</tr>
<tr>
<td>MW212SE</td>
<td>Microsoft Windows 2000 Professional: Getting Started</td>
<td>601</td>
<td>$1,025</td>
<td>$616,025</td>
<td>$44</td>
<td>$26,444</td>
<td>$589,581</td>
</tr>
<tr>
<td>MSOIE</td>
<td>Microsoft Office 97: Intermediate Excel 97</td>
<td>489</td>
<td>$180</td>
<td>$88,020</td>
<td>$44</td>
<td>$21,516</td>
<td>$66,504</td>
</tr>
<tr>
<td>MP9801E</td>
<td>Microsoft Project 98: Getting Started</td>
<td>356</td>
<td>$295</td>
<td>$105,020</td>
<td>$44</td>
<td>$15,664</td>
<td>$89,356</td>
</tr>
<tr>
<td>MSOIW</td>
<td>Microsoft Office 97: Intermediate Word 97</td>
<td>343</td>
<td>$150</td>
<td>$51,450</td>
<td>$44</td>
<td>$15,092</td>
<td>$36,358</td>
</tr>
<tr>
<td>654201E</td>
<td>Web Authoring and Publishing: HTML Documents</td>
<td>332</td>
<td>$495</td>
<td>$164,340</td>
<td>$44</td>
<td>$14,608</td>
<td>$149,732</td>
</tr>
<tr>
<td>MO97A02</td>
<td>Microsoft Office 97: Intermediate Access 97</td>
<td>316</td>
<td>$150</td>
<td>$47,400</td>
<td>$44</td>
<td>$13,904</td>
<td>$33,496</td>
</tr>
</tbody>
</table>

Total Saving: $1,210,311

Table 14 – Top Ten Courses Completed

| Course Code | Course Name                        | Counter | Live Cost | Live Price | Our Cost | Our Price | Saving
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MSOBE</td>
<td>Microsoft Office 97: Beginning Excel 97</td>
<td>192</td>
<td>$150</td>
<td>$28,800</td>
<td>$44</td>
<td>$8,448</td>
<td>$20,352</td>
</tr>
<tr>
<td>MW212SE</td>
<td>Microsoft Windows 2000 Professional: Getting Started</td>
<td>162</td>
<td>$180</td>
<td>$29,160</td>
<td>$44</td>
<td>$7,128</td>
<td>$22,032</td>
</tr>
<tr>
<td>MSOBW</td>
<td>Microsoft Office 97:</td>
<td>137</td>
<td>$150</td>
<td>$20,550</td>
<td>$44</td>
<td>$6,028</td>
<td>$14,522</td>
</tr>
</tbody>
</table>

377
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Counter</th>
<th>Live Cost</th>
<th>Live Price</th>
<th>Our Cost</th>
<th>Our Price</th>
<th>Saving†</th>
</tr>
</thead>
<tbody>
<tr>
<td>654201E</td>
<td>Web Authoring and Publishing: HTML Documents</td>
<td>38</td>
<td>$495</td>
<td>$18,810</td>
<td>$44</td>
<td>$1,672</td>
<td>$17,138</td>
</tr>
<tr>
<td>UNGN01E</td>
<td>UNIX: Overview</td>
<td>35</td>
<td>$1295</td>
<td>$45,325</td>
<td>$44</td>
<td>$1,540</td>
<td>$43,785</td>
</tr>
<tr>
<td>JAVA01</td>
<td>An Overview of Java</td>
<td>33</td>
<td>$1195</td>
<td>$39,435</td>
<td>$44</td>
<td>$1,452</td>
<td>$37,983</td>
</tr>
<tr>
<td>MW212SE</td>
<td>Microsoft Windows 2000 Professional: Getting Started</td>
<td>33</td>
<td>$1025</td>
<td>$33,825</td>
<td>$44</td>
<td>$1,452</td>
<td>$32,373</td>
</tr>
<tr>
<td>MSOBE</td>
<td>Microsoft Office 97: Beginning Excel 97</td>
<td>32</td>
<td>$150</td>
<td>$4,800</td>
<td>$44</td>
<td>$1,408</td>
<td>$3,392</td>
</tr>
<tr>
<td>MP9801E</td>
<td>Microsoft Project 98: Getting Started</td>
<td>31</td>
<td>$295</td>
<td>$9,145</td>
<td>$44</td>
<td>$1,364</td>
<td>$7,781</td>
</tr>
<tr>
<td>MW213SE</td>
<td>Microsoft Windows 2000 Professional: Up and Running</td>
<td>29</td>
<td>$1025</td>
<td>$29,725</td>
<td>$44</td>
<td>$1,276</td>
<td>$28,449</td>
</tr>
<tr>
<td>MSOBW</td>
<td>Microsoft Office 97: Beginning Word 97</td>
<td>28</td>
<td>$150</td>
<td>$4,200</td>
<td>$44</td>
<td>$1,232</td>
<td>$2,968</td>
</tr>
<tr>
<td>MSOBA</td>
<td>Microsoft Office 97: Beginning Access 97</td>
<td>28</td>
<td>$150</td>
<td>$4,200</td>
<td>$44</td>
<td>$1,232</td>
<td>$2,968</td>
</tr>
</tbody>
</table>

**Saving†** $172,362

---

**Table 16 – Top Ten Started ISP**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Counter</th>
<th>Live Cost</th>
<th>Live Price</th>
<th>Our Cost</th>
<th>Our Price</th>
<th>Saving†</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNGN01E</td>
<td>UNIX: Overview</td>
<td>15</td>
<td>$1295</td>
<td>$19,425</td>
<td>$44</td>
<td>$660</td>
<td>$18,765</td>
</tr>
<tr>
<td>654201E</td>
<td>Web Authoring and Publishing: HTML Documents</td>
<td>12</td>
<td>$495</td>
<td>$6,940</td>
<td>$44</td>
<td>$328</td>
<td>$5,612</td>
</tr>
<tr>
<td>UNGN02E</td>
<td>UNIX: Exploring the file system</td>
<td>11</td>
<td>$1575</td>
<td>$17,325</td>
<td>$44</td>
<td>$484</td>
<td>$16,841</td>
</tr>
<tr>
<td>JAVA01</td>
<td>An Overview of Java</td>
<td>11</td>
<td>$1195</td>
<td>$13,145</td>
<td>$44</td>
<td>$484</td>
<td>$12,661</td>
</tr>
<tr>
<td>MW212SE</td>
<td>Microsoft Windows 2000 Professional: Getting Started</td>
<td>10</td>
<td>$1025</td>
<td>$10,250</td>
<td>$44</td>
<td>$440</td>
<td>$9,810</td>
</tr>
</tbody>
</table>

**Saving†** $176,837

---

378
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Counter</th>
<th>Live Cost</th>
<th>Live Price</th>
<th>Our Cost</th>
<th>Our Price</th>
<th>Savinga</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQPL01E</td>
<td>Oracle Introduction: SQL</td>
<td>10</td>
<td>$1700</td>
<td>$17,000</td>
<td>$44</td>
<td>$440</td>
<td>$16,560</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and SQL*Plus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNGN08E</td>
<td>UNIX: Using the Shell</td>
<td>9</td>
<td>$1795</td>
<td>$16,155</td>
<td>$44</td>
<td>$396</td>
<td>$15,759</td>
<td></td>
</tr>
<tr>
<td>UNGN03E</td>
<td>UNIX: Working with Files</td>
<td>9</td>
<td>$1575</td>
<td>$14,175</td>
<td>$44</td>
<td>$396</td>
<td>$13,779</td>
<td></td>
</tr>
<tr>
<td>UNGN07E</td>
<td>UNIX: Using Editors</td>
<td>9</td>
<td>$1575</td>
<td>$14,175</td>
<td>$44</td>
<td>$396</td>
<td>$13,779</td>
<td></td>
</tr>
</tbody>
</table>

**Total Saving** $1,682,876

**Grand Total Saving** $5,048,628

Question #4: What evaluation feedback did we receive from employees who completed CBT courses?

The aim of question four was to identify employees’ perception of SmartForce CBT campus courses and to triangulate resulting data with the other two surveys.

**Question #4 – Analysis**

The “Completed” survey yielded similar positive results as the other two surveys:

- SmartForce CBT prepared employees for their job (75%);
- SmartForce CBT was worthwhile use of employees’ training time (89%);
- SmartForce CBT courses are relevant to employees’ job duties (89%);
- Completion is permitted and reinforced by employees’ supervisors (89%);
- Supervisors gave the necessary time and tools to complete the course(s) (86%);
- Available courses serve as motivator to register for more courses (86%);
- Employees feel they had adequate opportunities to participate in the SmartForce CBT campus courses (69%);
- Employees feel they have adequate access to a computer (97%); and
- Employees feel they are satisfied with the variety of courses (81%) and with SmartForce CBT courses (83%).

Also consistent with the other two surveys is the mentioning that it is difficult to complete the SmartForce CBT campus courses(s) because of their current workload (44%). For tables and tabulations please see Appendix H (p. 95).

**Summary**

Again, the purpose of this program evaluation study was to investigate whether DOR should renew, terminate, or modify its current contract with SmartForce CBT Systems. Four questions were examined to assess the feasibility of the three options:

1. What were the reasons, if any, for employees not registering for CBT courses?
2. What were the reasons, if any, for employees registering for courses, but not completing them?
3. Which were the courses the employees registered for a
4. the most?
5. What evaluation feedback did we receive from employees who completed CBT courses?
Results indicate that workload (i.e., lack of time) is the primary reason why employees did not register or complete their SmartForce CBT course(s). In addition, *Microsoft Office 97 – Beginning Excel 97* was identified as the course accessed and completed the most. In the ISP area, *Web Authoring and Publishing: HTML Documents* was the course accessed the most; whereas, *UNIX: Overview* was the number one completed course in the ISP area. Further, an ROI analysis identified that DOR would have an annual total saving of $1,682,876 and a grand total saving of $5,048,628 (over three years) if CBT is chosen over locally-available instructor-led training for the ten courses accessed the most.

**Recommendation**

It is therefore our recommendation that Department of Revenue renew the contract with only the courses identified in high demand. A caveat could be included in the contract that more courses could be added throughout the duration of the contract based on demand and/or special requests from supervisors. The CBT team should further explore the “lack of time” issue to find ways to motivate employees to arrive to work early or stay longer after work to further their careers via CBT courses and to better plan their training purpose as they implement their individual development plans. Perhaps allowing employees to access SmartForce CBT campus from home may increase registration and completion rate by deploying this performance intervention as an Extranet application on the Internet rather than as an Intranet application.
Program Evaluation Report
SmartForce CBT Contract
Florida Department of Revenue

Purpose of the Study

To investigate whether DOR should renew, terminate, or modify its current contract with SmartForce CBT Systems.
Research Questions

1. What were the reasons, if any, for employees not registering for CBT courses?
2. What were the reasons, if any, for employees registering for courses, but not completing them?
3. Which were the courses the employees registered the most?
4. What evaluation feedback did we receive from employees who completed CBT courses?

Subjects

- Employees who accessed a course but did not finish them;
- Employees that never accessed a course; and
- Employees who completed courses.
Research Design

- Single method approach with qualitative component
- Three web-based surveys
  - “Never Accessed” (See Appendix A, p. 29)
  - “Accessed but not Completed” (See Appendix B, p. 32)
  - “Completed one or more courses” (See Appendix C, p. 36)

Results (cont.)

- Workload (i.e., lack of time) is the primary reason why employees did not register or complete their SmartForce CBT course(s).
- Microsoft Office 97 - Beginning Excel 97 was identified as the course accessed and completed the most.
- In the ISP area, Web Authoring and Publishing: HTML Documents was the course accessed the most; whereas, UNIX: Overview was the number one completed course in the ISP area.
Results (cont.)

- An ROI analysis identified that DOR would have an annual total saving of $1,682,876 and a grand total saving of $5,048,828 (over three years) if CBT is chosen over locally-available instructor-led training for the ten courses accessed the most.
Results (cont.)

Accessed; Never Completed Survey

- Worthwhile: 70%
- Relevant: 75%
- Tools: 65%
- Difficulty: 14%
- Opportunities: 46%
- Access: 34%
- Often: 0.50%
- Reference: 51%

Results (cont.)

Completed Survey

- Prepared: 95%
- Worthwhile: 85%
- Relevant: 65%
- Permitted: 56%
- Time effective: 42%
- Motivated: 30%
- Awareness: 97%
- Opportunities: 59%
- Access: 81%
- Information: 85%
- Safety: 89%
- Satisfaction: 89%
Recommendation

- Renew the contract with only the courses identified in high demand.
- The CBT team should further explore the "lack of time" issue.
- Allowing employees to access SmartForce CBT campus from home.
APPENDIX I

Performance Intervention Evaluation Model
Draft 5
Model Overview

The Performance Intervention Evaluation Model is intended to serve as a procedural guide in conducting a summative evaluation of an identified and implemented performance intervention within an organization. The support provided by the model is divided into three areas:

1. Model Representation and Guidance including
   a. Model Representation
   b. Progress Monitor Checklist
   c. Model Narrative
   d. Model Detail
   e. Phase Completion Checklist

2. Tools

3. Glossary

The model is intended to serve as a guide to the process of summative evaluation. As such, it can be used in various ways:

**Step-by-Step Procedures:** As a procedural model, a layered approach is used providing step-by-step guidance within each phase. For each step, related tools and details are outlined, along with a completion checklist. For persons new to evaluation, this approach allows control of the amount of assistance required to complete a rigorous evaluation. The user can go as deep as needed in specific areas within the evaluation.

**Refresher and General Guidance:** For persons who are experienced evaluators or those who conduct evaluations on an infrequent basis, the model can be used as a refresher, providing cues to important considerations within each phase. The various questions and checklists can serve as prompts to monitor the rigor of the evaluation.

The model is divided into two general areas. If contracting for services is required as part of the evaluation, it is suggested that each area be addressed as a separate contract.

**Part One: Preparing the Evaluation:** The purpose of this phase is to determine the appropriate timeframe for the conduct of the evaluation and the degree of rigor which can be expected from the evaluation. These are important aspects in allowing the evaluation client to determine if an evaluation should be conducted and to anticipate realistic expectations from the evaluation findings.
Work conducted in this area includes understanding the purpose of the evaluation, identifying stakeholders and the decisions they will be making based on the findings from the evaluation. Additionally, the appropriate data collection measures are identified as well as their availability.

The result of this area is an approved evaluation plan which includes an appropriate timeframe for the evaluation to occur as well as identified data collection measures and analysis methods to be used. Stakeholder involvement and access to data are also determined as part of the evaluation potential. Finally, clear expectations are made known related to the degree of fidelity for the evaluation.

**Part Two: Implementing the Evaluation:** Once the evaluation plan has been constructed and approved, the evaluation can be conducted according to the timeframe and tasks outlined. The plan now serves as a project management tool to allow for the monitoring of the rigor of the evaluation.

Presentation of the findings is provided to the appropriate evaluation stakeholders. And presentation to various communities of professional practice related to evaluation, human performance technology, and human resource management are made to contribute to the professional practice of evaluation. Methods for presentation may include articles submitted to various journals, presentations at professional conferences, and informal discussions within the communities. It is suggested that participation in this presentation process include various stakeholders of the evaluation process.
Part One: Preparing the Evaluation

Gather Intervention Information & Evaluation Requirements*

Clarify Details → Synthesize Information

Create Evaluation Plan* & Contract**
- Evaluation timing
- Evaluation priorities & questions
- Data collection & analysis plan
- Budget
- Schedule
- Data Coding Plan**

Prepare Stakeholder Negotiation Agenda*

Schedule Stakeholder Negotiation Meeting

Negotiate Contract** & Evaluation Plan

Formalize Approved Evaluation Plan
Part Two: IMPLEMENTING THE EVALUATION

IMPELEMENTATION PHASE

- Review / Revise * Evaluation Plan
  - Verify evaluation timing
  - Verify priorities & questions
  - Verify data source access
  - Review budget & schedule

- Prepare Instruments
  - Leverage / Create
  - Pilot
  - Revise

Collect Data

Monitor Evaluation Progress

- Reflect/ Synthesize/ Interpret Data
- Analyze Data

PRESENTATION PHASE

- Present Interim Findings
- Present Final Findings

Present Findings from Preparation Phase, Implementation Phase, and Presentation Phase to Communities of Practice
1. **Distribute the “Initial Analysis Questionnaire” (IAQ)**
   - Use the IAQ as a communication tool to gather information about the intervention and the client’s intent for the evaluation.

2. **Clarify Details**
   - Review the client’s responses.
     - Are all questions answered?
     - Do you understand the answers?
     - Are there any areas where you would like more details or clarification?

3. **Synthesize Information**
   - Should this evaluation be done at this time?
     - Is enough data available?
     - Are the data sources accessible?
     - Has enough time lapsed since the intervention was implemented to realistically see a change in performance?
     - Will there be an adequate sample size?
   - Determine how many evaluation priorities will be included in this evaluation.
     - What are the evaluation priorities the client has identified?
       - society
       - organization
       - unit/department/group/individuals within the organization
       - process
     - How encompassing is the intervention? Does it impact the
       - entire organization?
       - a unit or department within the organization?
       - a small group?
       - an individual?
   - Will you be conducting the evaluation alone or as a team?
   - What is the deadline for conducting the evaluation?

4. **Create Initial Evaluation Plan**
   - If the evaluation should not be completed at this time, then
     - provide the client with an explanation of the impact of the limitations on the rigor of the evaluation and
   - Create an evaluation plan for the current (or future evaluation):
     - Generate evaluation questions for all priorities to be covered.
     - Add questions relative to changes in the environment from the time the problem or opportunity was identified until the evaluation takes place.
     - Include specific questions requested by the client.
     - Create a data collection and analysis plan for each question.
     - Create a schedule and budget.
     - Review the evaluation plan for completeness.
PERFORMANCE INTERVENTION EVALUATION MODEL

PHASE ONE: PREPARATION

5. CREATE CONTRACT

If a contract is required for the evaluation, includes the following information:
- Business & Contact Information of Evaluator
- Business & Contact Information of Client
- Statement of Purpose of Evaluation
- Evaluation Questions
- General Methodologies for Data Collection and Analysis
- Reporting Schedules
- Participation Requirements (e.g. Access, Stakeholder Involvement)
- Deliverables
- General Timeframes
- General Cost Categories and Overall Cost
- Contingency Agreement
- Confidentiality Agreement
- Publication Consent Agreement
- Signature Lines

6. PREPARE AGENDA

Create agenda to cover:
- Statement of Purpose including the
  - problem and solution which have lead to the requested evaluation
  - what is being evaluated (scope)
  - the intended audiences for the evaluation
  - the stakeholders of the evaluation
- Evaluation Methodology
- Involvement & Responsibilities
- Deliverables
- Schedule & Costs
- Agreements
  - contingencies
  - publication opportunities

7. SCHEDULE CLIENT NEGOTIATION MEETING

Contact client with
- Date & Time
- Purpose
- Expected outcomes
- Copy of the Agenda & Contact Information Sheet

8. CONDUCT NEGOTIATION MEETING

9. REVISE EVALUATION PLAN AND CONTRACT
**STEP 1: GATHER INTERVENTION INFORMATION & EVALUATION REQUIREMENTS**

Upon request for evaluation, it is important to gather as much information as possible beginning with the initial contact. Use the “Initial Analysis Questionnaire” (IAQ) to guide your questioning.

Use the IAQ to guide the conversation during the initial contact. Let the client provide you with as much information up front in order to minimize the time commitment on your part prior to a signed contract.

Potential ways to do this include:
- Disseminating the IAQ to the client in electronic format and request that they complete it in as much detail as possible.
- Conducting a face-to-face meeting with the client for the purpose of completing the IAQ.

**STEP 2: CLARIFY DETAILS**

Upon receipt of the completed IAQ, review the form for completeness and detail. After reviewing the information, you may determine that there are areas which lack detail. If so, make arrangements for additional follow-up by contacting the client or appropriate contact person.

The more detailed the information, the easier it will be to create the evaluation plan. However, the time you spend clarifying details prior to a signed contract (Phase 2: Negotiate) is not billable, so be frugal with your time.

**STEP 3: SYNTHESIZE INFORMATION**

The purpose of Steps 1 and 2 is to gather enough information quickly in order to determine when the evaluation can occur, create an initial evaluation plan, and draft the evaluation contract (if necessary).

One of the first decisions to be made is whether or not this evaluation should take place at this time. Reasons why it might be inappropriate include:
- Lack of available baseline measures
- Inability to access data sources
- Inadequate timeframe – not enough time has elapsed since the intervention was introduced to truly see a change in performance.

If any of these limitations are factors, it may be appropriate to meet with the client to discuss alternatives. In each case, as the evaluator, you should help the client determine how to address the limitations for future evaluations:

<table>
<thead>
<tr>
<th>Limitation</th>
<th>How to Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of baseline measures</td>
<td>If no baseline measures were put in place and captured prior to the intervention being implemented, it will only be possible to gather retrospective data. This is an indirect measure. It would be important to provide triangulated data sources or methods to increase the validity and reliability of the measure.</td>
</tr>
<tr>
<td>Inability to access data sources</td>
<td>Identify necessary data sources. Allow client to address the accessibility issue.</td>
</tr>
<tr>
<td>Inadequate intervention timeframe – not enough time has elapsed since the</td>
<td>Provide the client with an appropriate timeframe and necessary baseline measures to gather if this is still possible.</td>
</tr>
</tbody>
</table>
intervention was introduced to truly see a change in performance.

If the client decides that they would like the evaluation to proceed given these limitations, be sure to include the limitations and their impact on the rigor of the evaluation in all presentations and reports given to the client.

Use the information gathered from the Initial Analysis Questionnaire to create the evaluation plan.

<table>
<thead>
<tr>
<th>IAQ Question</th>
<th>Topic</th>
<th>Relation to Evaluation Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance Intervention Information Section</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Name of Intervention</td>
<td>How organization refers to intervention. Use similar terminology in evaluation plan.</td>
</tr>
<tr>
<td>2</td>
<td>Description of Intervention</td>
<td>Background information for intervention. May not be needed in evaluation plan, but if contract is used, can be beneficial to ensure understanding of intervention.</td>
</tr>
<tr>
<td>3</td>
<td>Problem Statement</td>
<td>Problem which led to intervention. May not be needed in evaluation plan, but if contract is used, can be beneficial to ensure understanding of intervention.</td>
</tr>
<tr>
<td>4</td>
<td>Date Problem Identified</td>
<td>May be important related to if and when evaluation should take place.</td>
</tr>
<tr>
<td>5</td>
<td>Goals / Objectives of Intervention</td>
<td>Directly related to question 2 and 5 is Evaluation Requirements Section. Will serve as foundation for evaluation questions and potential data collection sources.</td>
</tr>
<tr>
<td>6</td>
<td>Who Was Impacted by Intervention</td>
<td>Potential data collection sources. Especially important related to Organization, Unit, and Process evaluation priorities.</td>
</tr>
<tr>
<td>7</td>
<td>Changes in Organization</td>
<td>May require additional question in evaluation plan depending on perceived impact to intervention’s success or failure.</td>
</tr>
<tr>
<td>8</td>
<td>Process that Led to Intervention</td>
<td>Especially important if Process evaluation priority is selected.</td>
</tr>
<tr>
<td>9</td>
<td>Change Initiatives</td>
<td>May require additional question in evaluation plan depending on perceived impact to intervention’s success or failure.</td>
</tr>
</tbody>
</table>

| **Evaluation Requirements Section** |
| 1 | Rank of Evaluation Priorities | The client’s indication of importance of evaluation priorities. |
| 2 | Questions for each Priority | Client’s specific questions to be answered related to each identified priority. |
3 Decisions to be Made Based on Evaluation
What action the client will take based on the findings from this evaluation. Evaluation questions must help the client to adequately make this decision.

4 Deadline for Evaluation
May impact if and when this evaluation should occur. Also may impact the number of evaluation priorities that can be included in the evaluation.

5 Specific Questions to be Answered
Any additional questions the client wants answered in the evaluation. Add these to the evaluation plan.

6 Stakeholders in Evaluation
Potential data sources. Important in presenting the findings as well.

To create the evaluation plan, begin by identifying the client’s evaluation priorities (evaluation priorities). These priorities can help to set boundaries around how comprehensive the evaluation should be and what answers are important to the client. The evaluation priorities are ranked in question 1 of the “Evaluation Requirements” section of the IAQ.

The evaluation priorities must be balanced against the evaluation deadline if one is given in question 4 of the “Evaluation Requirements” section of the IAQ. At a minimum, the evaluation plan must cover priority one. Ideally, both one and two will be covered. Guidelines for determining the evaluation priorities to be included are:

1. Don’t go beyond priorities 1 and 2 if:
   - You are the sole evaluator and the deadline is extremely short.

2. Consider including more priorities if:
   - A team is available to conduct the evaluation
   - The deadline is not prohibitive.
   - The intervention objectives are stated in great detail (measurable – see question 5 of the “Performance Intervention Information” section).
   - The process which led to this intervention being selected included a detailed analysis of the problem/opportunity, causes, solution selection process, and implementation plan (see question 8 of the “Performance Intervention Information” section).

**STEP 4: CREATE INITIAL EVALUATION PLAN & CONTRACT [Tools]**

**A. Generate Evaluation Questions**
There is no prescriptive formula for determining the most appropriate questions; only guidelines to aid in the refinement process. This refinement is both an iterative and artistic process. While it is not possible to determine a specific ratio for identifying the number of questions to include in an evaluation, Russ-Eft and Preskill (2001) have suggested that most program evaluations range from three to twelve evaluation questions.

In general, to identify the evaluation questions, follow a four-step process of:
1. Brainstorming a list of all evaluation questions for each evaluation priority
2. Refining the questions based on similarities, themes, or common data.
3. Prioritizing the questions based on such criteria as availability of appropriate sample size, access to data sources, and required time and costs.
4. Limiting the questions from the prioritized list.
For each evaluation priorities, generate a list of all potential questions to be answered.

Next, review all questions in an attempt to narrow the list:
- Are any questions so similar that they can be combined into one broader question?
- Can any questions be grouped together based on similar themes?
- Can any questions be grouped together based on similarity of the data that will be collected?

Prioritize the list of questions. Begin by rank ordering the list from the most important to the least important to be answered (based on the client’s prioritized evaluation priorities). Review the prioritized list:
- Are there any questions for which the data will be inaccessible?
- Are there any questions for which an adequate sample size will not be possible?
- Are there any questions which will require more time than the evaluation deadline will allow?

Can you narrow the list without leaving important evaluation questions unanswered? If “yes”, cut these from the list of questions. If “no”, this may mean that you will need to extend the evaluation beyond the desired deadline.

Besides the questions related to each evaluation priority, the evaluation should also include questions relative to changes in the environment from the time the problem or opportunity was identified until the evaluation takes place. In general, these questions are:
- What is the impact of [change initiative] on [organization, unit, or individual’s performance]?
- What is the impact of [restructuring initiative] on [organization, unit, or individual’s performance]?
- What is the impact of [cultural change] on [organization, unit, or individual’s performance]?
- What is the impact of [external initiative] on [organization, unit, or individual’s performance]?
- Include any other questions requested by the client that are not already covered in previous questions (see question 5 of the “Evaluation Requirements” section of the IAQ).

B. Document Collection Plan [Details]
The list of questions should now be detailed into a data collection plan. What will you measure to provide data to answer each question?

As a rule of thumb, try to take use measures that are objective in nature as opposed to subjective. Examples of objective measures are number of widgets produced per hour before the intervention versus after the intervention or comparisons of number of purchase orders completed prior to the intervention being put in place as opposed to after the intervention was implemented. Examples of subjective measures are perceptions, feelings, or opinions.

For each question to be answered, you should strive to identify objective, direct measures. Use multiple measures for each evaluation question to increase the confidence in answering the question, especially if subjective measures are used.

For each evaluation question generated, identify the
- measure to be taken (data to be collected)
- sample
  - source
  - strategy (e.g. simple random, stratified)
  - size
- methodology (e.g. interview, extant data, observation)
- instrumentation (e.g. leverage existing, create new)

C. Document Analysis Plan [Details]
For each measure to be taken, identify the type of analysis that will be conducted. In general, for hard data measures, quantitative and descriptive analyses are appropriate. For soft data measures, qualitative data analysis methods are most appropriate.
D. Create Schedule and Budget [Details]
1. Identify the tasks required to answer all evaluation questions. This includes gaining access to data sources, creating and piloting instruments, collecting and analyzing data, and reporting findings. In addition, such tasks as client meetings and transcription of field notes should be included in the schedule.
2. For each task, determine the necessary amount of time needed to complete the task.
3. Note any relationships or links between tasks (e.g. task 3 cannot begin until task 4 is completed)
4. Assign a start and completion date to each task.
5. Using the identified tasks and times, create a list of resources required to complete the project.
6. Estimate costs for all resources.

E. Review Evaluation Plan [Details]
Conduct a final review of all evaluation questions and data collection and analysis plans. Make any necessary revisions based on the following focus questions:
1. When you put all of the data together, will it provide enough information for a comprehensive understanding of the big picture? Do the questions allow you to determine the impact of the intervention on performance at all relevant levels?
2. Are there any weak areas where you could collect more data to raise confidence in determining that the evaluation question is sufficiently answered?
3. Have you left room in the estimated costs and task schedule for the client to add additional questions during Phase 2: Negotiation?

F. Create Contract [Tools]
While the evaluation plan will serve as a project management tool for the evaluator, it will be too detailed for the client negotiation. The information from the plan will serve as a basis for creation of the client contract.

The contract should include the following information:
- Business & Contact Information of Evaluator
- Business & Contact Information of Client
- Statement of Purpose of Evaluation
  - Problem Statement
  - Intervention Description
  - Priorities of Evaluation
  - Identified Stakeholders in the Evaluation
  - Audience for Findings
- Evaluation Questions
- General Methodologies for Data Collection and Analysis
- Reporting Schedules
- Participation Requirements (e.g. Access, Stakeholder Involvement)
- Deliverables
- General Timeframes
- General Cost Categories and Overall Cost
- Contingency Agreement
- Publication Consent Agreement
- Signature Lines

STEP 5: PREPARE STAKEHOLDER NEGOTIATION AGENDA [Tools]
Prior to the meeting, forward an agenda and any materials you would like the client to review in advance. If any specific stakeholders have been identified (see IAQ) who should be in attendance at the negotiation, include this request.

STEP 6: SCHEDULE CLIENT NEGOTIATION MEETING
Schedule a negotiation meeting with the client for the purpose of agreeing upon the scope of the evaluation. Specific items to be addressed in the meeting include:
- Purpose of evaluation
- Audiences of evaluation
- Specific questions to be answered
- Methods for data collection and analyses
- Completion date
- Cost
- Stakeholder involvement
- Access to data sources
- Communication and reporting protocols, schedules, and formats
- Contingency agreements
- Publication consent
STEP 7: NEGOTIATE EVALUATION PLAN AND CONTRACT

Begin the meeting with introductions of the evaluation team and the stakeholders in attendance. Keeping in mind that this is a negotiation meeting, creating a climate of dialogue will be beneficial to the process. For each agenda item, you may want to ask the client to begin the dialogue by presenting their understanding of the item. As they are explaining the item, note any differences from your understanding as a point that will need further clarification.

Following this paradigm, work through all agenda items. To keep an open air of dialogue, you may wish to allow the flow of the conversation to dictate the order in which agenda items are covered. Use your facilitation skills to note which agenda items were covered, any changes to the items, emerging questions, and then bring the focus back to the next item that has not yet been covered.

A good strategy for ending a meeting of this magnitude is to summarize agreed upon items, outline upcoming actions, and list any action items that have been tasked. Be sure to include a responsible party and due date for each action item. Additionally, you may want to have all stakeholders complete a contact information sheet to allow for ease of contact during the evaluation.

Upon completion of the meeting, the client should know what products and actions to expect from you. Depending on the decisions from the meeting, these items will include an Official Evaluation Plan and a contract for the Evaluation Implementation Phase.

Follow up the meeting with an email that summarizes the decisions made and the action items to be completed.

STEP 8: FORMALIZE APPROVED EVALUATION PLAN

Based on the results of the meeting, revise the evaluation plan and contract to reflect decisions made. The contract should then be forwarded for signature.
PREPARE PHASE
FINAL CHECKLIST

Stakeholder Information

Have you identified:

1. all groups / persons who are interested in the findings from this evaluation?

2. what decisions each group / person will be making based on the findings from this evaluation?

3. if the evaluation will begin immediately, have you secured commitments for involvement from all relevant stakeholders?

Intervention Purposes

Have you identified:

1. the problem or opportunity which led to this intervention being put in place?

2. what desired / acceptable performance is (from the stakeholders’ perspective) in terms of this intervention?

3. what units, groups, departments, teams, and/or individuals were impacted by this intervention?

4. the process which led to this intervention being selected?

Organizational Structure

Have you identified:

1. what units, groups, departments, teams, and/or individuals were impacted by this intervention?

2. how the structure of the organization has changed from the time the problem or opportunity was identified until now?

3. the process which led to this intervention being selected?
Available Measures and Data Sources

Have you identified:

☐ 1. what performance measures were in place prior to the intervention being introduced?

☐ 2. what measures (if any) were put in place when the intervention was introduced?

☐ 3. If necessary personnel will be accessible in order to collect data (via interviews, focus groups, observations, etc)?

Environmental Factors

Have you identified:

☐ 1. any other interventions or change initiatives which were introduced or in place from the time the problem or opportunity were identified until now?

☐ 2. any political or cultural dynamics which were introduced or in place from the time the problem or opportunity was identified until now?

Evaluation Requirements

Have you identified:

☐ 1. the clients' required and preferred evaluation priorities?

☐ 2. any time and cost constraints on the evaluation?

☐ 3. any threats to successful completion of the evaluation within the given time and cost constraints?
DECISIONS TO BE MADE

When should this evaluation be conducted?

- Has the intervention been in place long enough that results can be expected to be observed? □ Yes □ No

- Are the necessary data sources available in the required timeframe? □ Yes □ No

- Is necessary stakeholder involvement available in the required timeframe? □ Yes □ No

Based on these criteria, this evaluation can be conducted:

□ Now or □ ____________________________

How rigorous of an evaluation is possible?

- Do sufficient baseline measures exist to allow a comparison of the impact of the intervention? □ Yes □ No

- Will there be enough direct measures to allow a rigorous evaluation? □ Yes □ No

  o If “no”, will there be sufficient indirect measures to allow data method or source triangulation? □ Yes □ No

  o Will the “weight of the evidence” be acceptable to allow the stakeholders to make the necessary decisions? □ Yes □ No
1. **Review / Revise Evaluation Plan**
   Depending on the time that has elapsed since the original evaluation plan was generated it may be necessary to:
   - verify the appropriateness of the timing of the evaluation
   - verify the priorities and questions
   - verify the availability and access to the data sources
   - review the budget and schedule

2. **Prepare Instruments**
   Identify any available instruments and:
   - pilot for reliability & validity
   - revise as needed.

3. **Collect Data for All Questions**
   Triangulate by
   - method
   - source

4. **Analyze Data for All Questions and as a Whole**
   Use appropriate analysis method for data type

5. **Reflect, Synthesize & Interpret**
   Throughout the data collection and analysis process, reflect on:
   - The overall picture that is developing from the data.
   - Subtleties that may be developing and may merit further investigation
   - New questions which may arise
   - Areas where answers to the evaluation questions may be weak or the picture may be unclear
   - Areas where other factors may be influencing the picture.

6. **Monitor Evaluation Progress**
   Use the evaluation plan as a project management tool to monitor progress in
   - data collection,
   - analysis,
   - scheduling, and
   - costs.
   Manage access to data sources by:
   - contacting evaluation client
   - utilizing stakeholder authority
STEP 1: PREPARE INSTRUMENTS
Because time may have elapsed since the Preparation Phase was completed for this evaluation, it is wise to begin the Implementation Phase with a review of the evaluation timing and plan.

First review the decisions made in the Preparation Phase regarding:

- Should this evaluation be done at this time?
  - ☐ Is enough data available?
  - ☐ Are the data sources accessible?
  - ☐ Has enough time lapsed since the intervention was implemented to realistically see a change in performance?
  - ☐ Will there be an adequate sample size?

- Determine how many evaluation priorities will be included in this evaluation.
  - ☐ What are the evaluation priorities the client has identified?
    - ☐ society
    - ☐ organization
    - ☐ unit/department/group/individuals within the organization
    - ☐ process
  - ☐ How encompassing is the intervention? Does it impact the
    - ☐ entire organization?
    - ☐ a unit or department within the organization?
    - ☐ a small group?
    - ☐ an individual?
  - ☐ Will you be conducting the evaluation alone or as a team?
  - ☐ What is the deadline for conducting the evaluation?

Make any necessary revisions to the evaluation plan in conjunction with the evaluation client.

STEP 2: PREPARE INSTRUMENTS
Preparing for data collection requires an inventory of available instruments. There are several reasons why using existing instruments is preferable to creating new ones. Using an existing instrument is faster than creating a new one. If the original instrument was tested and had acceptable validity and reliability, then it makes sense to reuse it for the evaluation. This saves on the need to pilot the instrument.

Whether you will be creating an instrument or revising an existing one, it will be necessary to pilot the instrument and if possible, determine the reliability and validity of the instrument. Depending on the types of reliability and validity being reviewed, this may require some degree of knowledge of statistics. See the Suggested Readings for further details on types of reliability and validity and means of measurement.

STEP 3: COLLECT DATA
Putting the evaluation plan into action requires that the sample be identified and that you gain access to the sources. This often requires a letter of introduction from your point of contact. Once this is done, the instruments can be used to begin collecting the data. Careful attention should be paid to ensure that data is collected in a non-biased manner.
**STEP 4: ANALYSIS DATA**
Once actual collection of the data is underway, the analysis process must begin. Waiting until all planned data collections are completed prior to beginning analysis is often both overwhelming and inefficient.

The purpose of data analysis is to extract or create meaning from what is “seen”. This requires reflection on the data to pull out ideas, messages, trends, and patterns. Refer to the data analysis plan for each data collection method identified.

Summarizing data is a helpful step to aid in data reduction. Such summarizing tools as tables and charts are a helpful way to make the data more manageable. However, summarization is not equivalent to interpretation. Constructing meaning from the data, whether in summarized or detailed form, requires that you answer the question, “what does it all mean”?

**STEP 5: REFLECT, SYNTHESIZE, AND INTERPRET DATA**
The data collection and analysis cycle is a constant process that is conducted for each data collection method, for each evaluation question, for categories of questions, and for the entire “picture” from the evaluation data.

Throughout the data collection and analysis process, time should be taken to reflect on:
- The overall picture that is developing from the data.
- Subtleties that may be developing and may merit further investigation
- New questions which may arise
- Areas where answers to the evaluation questions may be weak or the picture may be unclear
- Areas where other factors may be influencing the picture.

Based on your understanding, it may be necessary to adjust the evaluation questions, identify more appropriate data sources, samples, or data collection methodologies.

**STEP 6: MONITOR EVALUATION PROGRESS**
Throughout all of the Evaluation Plan implementation, project management is key to successfully collecting and analyzing all data. As data is collected and analyzed, you may notice that there are areas where you were not able to adequately answer an evaluation question. It will then be necessary to determine the impact of this gap on the evaluation outcome and make necessary revisions to the evaluation plan.

Obstacles that often occur during the implementation step are:
- inability to gain access to data sources per the evaluation plan schedule
- changes to the organizational environment that threaten the ability to conduct the evaluation
- necessity to collect additional data which may change the scheduling and budget requirements

In all cases, it is necessary for the evaluation manager to make determinations of when a change is so significant as to impact the evaluation plan or require that a renegotiation of the evaluation plan takes place with the client.

An additional component to the implementation step is consistent communication with the client. During the creation of the evaluation plan, interim reporting may have been established. Even if this was not the case, informal progress status communications to “keep the client in the loop” will only help in maintaining client involvement in the evaluation.

Implementation of the evaluation plan requires constant monitoring, analyzing, interpreting and revising of progress in order to meet internal and external deadlines and to stay within the determined costs.
1. **Present Findings to Client**
   - Interim – if developments occur during the Implement phase which merit discussion with the client.
   - Final – select appropriate style(s) that may include face-to-face presentations, self-directed presentations, and written reports.

2. **Present Findings to Communities of Practice**
   - Select appropriate formats (e.g., discussion forums, conference presentations, journal articles)
   - Prepare presentation (with client, if possible)
   - Present or submit for publication
OVERVIEW

The final step in the model is presenting the findings from the completed data collection and analysis to the client and to the interested professional communities. The purpose of this step is to answer the client’s questions as well as to provide insight gained from the evaluation conduct.

The importance of successfully completing this step cannot be overstated. Even if a thorough evaluation has been conducted, unless the findings are communicated clearly and completely to the right audiences in a useable format, the client will have spent their time and money in for naught.

Several formats are available to deliver the message, which include face-to-face or self-guided presentations, facilitated discussions, and written narrative reports of findings. No matter what delivery format is preferred, all require that an audience analysis be conducted to determine the characteristics of the audience, their motivation for knowing the information to be presented, the detail they will need, the areas of specific interest, and the potential uses of the findings.

Providing information and dialogue opportunities to professional communities of interest requires that such communities be identified along with their specific areas of interest. Additionally, each community offers various communication platforms that can be used to present evaluation findings and methodologies.

STEP 1: PRESENTATION TO THE CLIENT (INTERIM AND/OR FINAL)

The first step in presenting findings is to determine the requirements of the audiences who will be receiving the information. During the negotiation meeting (Step Three), you identified several audiences for receipt of evaluation findings. It is now necessary to conduct an audience analysis in order to tailor the communication to fit each audience’s needs.

Begin with a description of the audience to include
- where they fit in the organization,
- their relationship to the performance problem, the solution, and the evaluation
- any political factors
- areas of specific interest (e.g. answers to specific questions)
- how this audience may use the findings from the evaluation

Once the characteristics of the audience have been identified, determine the most appropriate delivery method(s) for the audience. This decision will be based on such factors as:
- available time
- level of detail required
- uses of findings
- expectations of audience

One or more of the following delivery formats are suggested for use:
- **Face-to-face presentation** – evaluator (or team) presents the findings to the audience in a meeting-type setting. Include use of visual aids to summarize key findings

- **Self-guided presentation** – a summarization of key findings from the evaluation tailored to the audience with narrative explanations to provide clarification and further details. Must be packaged in such a way as to allow easy navigation through the presentation by the audience member. Include
use of visual aids to summarize key points. Such presentation software as Microsoft PowerPoint can be easily used to create self-guided presentations.

- **Written Report** – the written report is the most commonly used means of communicating evaluation findings. It is a summarized and or detailed narrative of the findings and conduct of the evaluation. The writing style, length, and format of the written report must be tailored to the requirements of the audience.

See the [Delivery Format Selection Guide](#) for suggested components, strengths and weaknesses of each format.

A general format for a written report includes the following sections:

- **Executive Summary**
  - Brief overview of purpose of evaluation
  - Brief overview of methodology for evaluation
  - Evaluation questions
  - Concise findings for each question
  - Recommendations

- **Introduction**
  - Problem statement which led to evaluation
  - Purpose of evaluation
  - Background information on intervention

- **Evaluation Methodology**
  - Evaluation questions
  - Data collection and analysis methods
  - Limitations to evaluation

- **Findings**
  - For each evaluation question, present the answer to the question along with the supportive data which led to the answer

- **Recommendations**
  - Summary
  - Recommended actions and decisions

**STEP 2: PRESENT TO THE COMMUNITY OF PRACTICE**

Besides the client audience for the evaluation much can be gained by sharing information related to the evaluation process and findings within the broader communities of practice associated with evaluation and the Human Performance Technology process.

To present information to communities of interest, first identify the community and their areas of interest related to the evaluation. Next research all possible communication formats which exist within the community. This often includes such formal and informal platforms as:

- Refereed journals
- Conferences
- Discussion boards
- Listservs
- Case Study Databases
- Newsletters

While the details of the findings from the evaluation will most likely not be of interest to the professional evaluation and human performance technology community, your presentation can focus on such areas as:

- Evaluation process
• Theories and models which guided the evaluation
• Barriers to the evaluation
• Use of the findings from the evaluation
• Time and cost of conducting the evaluation
• Impact of a thorough front-end analysis (or lack of) on the evaluation process
• Specific requirements in the evaluation relative to the intervention or organization.
• General lessons learned from the evaluation process.

Various potential communities of interest include:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast Evaluation Association (SEA)</td>
<td><a href="http://www.bitbrothers.com/sea">www.bitbrothers.com/sea</a></td>
</tr>
<tr>
<td>American Evaluation Association (AEA)</td>
<td><a href="http://www.eval.org">www.eval.org</a></td>
</tr>
<tr>
<td>International Society for Performance Improvement (ISPI)</td>
<td><a href="http://www.ispi.org">www.ispi.org</a></td>
</tr>
<tr>
<td>Academy of Human Resource Development (AHRD)</td>
<td><a href="http://www.ahrd.org">www.ahrd.org</a></td>
</tr>
<tr>
<td>Society for Human Resource Management (SHRM)</td>
<td><a href="http://www.shrm.org">www.shrm.org</a></td>
</tr>
<tr>
<td>Association for Educational Communication and Technology (AECT)</td>
<td><a href="http://www.aect.org">www.aect.org</a></td>
</tr>
</tbody>
</table>

SUGGESTED READINGS


DETAILS
DATA COLLECTION PLAN
For each evaluation question, upfront planning is necessary related to the:
- source for the data
- sampling strategies
- collection methodologies
- instrumentation
- fidelity (e.g. reliability, validity, integrity)

Identify appropriate data sources for each question. Two basic types of data are available related to performance: (1) direct measures, and (2) indirect measures. A direct measure is a measure of an observable change in performance. For example, a direct measure of the impact of a document imaging system on the purchase agents who use it would be amount of time spent using the system or number of documents imaged. An indirect measure of the impact would be purchase agent’s attitudes towards use of the system. When possible, seek out direct measures. When they are not available and indirect measures must be used, it is especially important to gather multiple sources and types of indirect measures to increase the “weight of the evidence”. This is known as triangulation.

Two types of triangulation include data method and data source. Triangulated methods and sources might include performance metrics, supervisor input via interviews, and direct employee input via focus groups and questionnaires. This allows creation of a picture, based on data from multiple perspectives. See the Evaluation Plan Template for an example of triangulation of data sources.

Next, for each source, determine the necessary sample size and strategies. A sample is only needed when it is not possible to collect the data from all sources (population). For example, if the data source in question consists of twenty line managers, is it possible to interview all twenty? The basic premise of sampling strategies is to attempt to collect data from a sample large enough and with characteristics similar enough to acceptably represent reality (the population). See the Suggested Readings section at the end of this step for further details on sampling strategies.

Necessary sample sizes vary depending on the statistical tests to be used and the size of the effect you desire. Tables are available in most statistics textbooks that aid in this determination. With regards to the representative characteristics of the sample, various techniques can be applied to secure an appropriate sample. These techniques are outlined in the following table and detailed information can be found in the Suggested Readings.

<table>
<thead>
<tr>
<th>Name</th>
<th>Random / Nonrandom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple random sampling</td>
<td>Random</td>
<td>A selection method that assures that all units have an equal chance of being chosen for inclusion in the sample.</td>
</tr>
</tbody>
</table>
Stratified sampling  Random or nonrandom  Includes predetermined subgroups of the population to include important characteristics.

Cluster sampling  Random or nonrandom  The unit is a group (cluster) based on a specified characteristic. (e.g. zip code)

Purposive sampling  Nonrandom  Selection of units based on their perceived ability to provide information related to the focus of the research.

Quota sampling  Nonrandom  A quota based on specific characteristics of the population is set for the number of units to be included in the sample.

Snowball or chain sampling  Nonrandom  Selection of units to be included in the sample is based on referrals from previous units already selected.

Convenience sampling  Nonrandom  Nonrandom in nature, the sample is selected because of such convenience factors as availability, location, or accessibility.


Once the sample size and strategy has been determined, a data collection methodology should be selected. Common collection methods include:
- review of extant (existing) data (e.g. reports, performance metrics)
- observation of process and procedures
- group and individual interviews
- surveys

Triangulation of methods can help to increase the reliability and validity of the evaluation. For each data source identified, when possible, use multiple data collection methods.

There are advantages and disadvantages to each of these methods. Use the table below as a guide in determining which method may be more appropriate.
<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation</strong></td>
<td>Systematic collection of information about actions and patterns.</td>
<td>• View performances in richness of actual environment</td>
<td>• Potential for observer bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Low subject demands</td>
<td>• Limitations in complex environments... difficult to “see” it all</td>
</tr>
<tr>
<td></td>
<td>Types include:</td>
<td>• Opportunity to “see” what may not be “said”</td>
<td>• Subjects may change actions due to knowledge of observer’s presence</td>
</tr>
<tr>
<td></td>
<td>• direct observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• participant observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interviews</strong></td>
<td>Structured and spontaneous questions designed to gather information about a</td>
<td>• Allows interviewer to clarify or delve into unanticipated areas based on</td>
<td>• Requires logistical coordination to set meeting time and gain access to desired interviewees.</td>
</tr>
<tr>
<td></td>
<td>specific situation.</td>
<td>statements made by interviewee.</td>
<td>• Personal contact may be intimidating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Often provide rich information due to open-ended nature of questions and</td>
<td>• Can be time consuming to conduct, transcribe, and analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>conversational style.</td>
<td>• When using multiple interviewers, requires interviewer training to maintain consistency.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Group dynamics of focus groups can enhance (or distract from) the sharing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>environment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Types include:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Individual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Focus Groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variations include:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Telephone interviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Face-to-face personal interviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Extant Data</strong></td>
<td>Review of existing data (e.g. reports, records, memos) in an effort to gain</td>
<td>• Can often provide long-term history of a situation relatively simply.</td>
<td>• Extant data may not exist in a format that is directly related to the question or situation being studied.</td>
</tr>
<tr>
<td>Review**</td>
<td>information about a specified situation.</td>
<td>• Inexpensive method of collecting data</td>
<td>• May be difficult to gain access</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Measures often</td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>Description</td>
<td>Advantages</td>
<td>Challenges</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>Surveys</td>
<td>Structured questions designed to gather large amounts of information about a specified situation or construct. Variations include: • Paper-based • Online</td>
<td>• Can gather information from a large sample or population relatively quickly and inexpensively. • Consistent format. Everyone is asked the same questions in the same way. • May be less intimidating than personal contact.</td>
<td>• Must often deal with a poor response rate. • Assumes respondent understands the question and intended meaning.</td>
</tr>
</tbody>
</table>

Finally, an instrumentation plan should be completed. For each method selected, determine if an instrument already exists which can be leveraged. Considerations related to leveraging existing instruments are:

- Is reliability/validity information available on the instrument? If not, is it still acceptable for use?
- Will the instrument need to be significantly changed? If so, it will need to be piloted and the changes may impact the existing reliability/validity.

If no existing instrument is available, it will be necessary to create one. All instruments should be piloted to determine necessary revisions. When the sample size is small, at a minimum, conduct a one-to-one review of the instrument. Use a subject from the sample or an individual with similar characteristics to the sample. Additionally, measures of reliability and validity should be taken when possible, in order to verify the integrity of the data being collected.

As a final step in creating the data collection portion of the evaluation plan, look back over the entire plan to ascertain the overall fidelity of the plan.

- Did you triangulate data sources?
- Did you triangulate data methods?
- Are all leveraged instruments reliable and valid?
- Will you feel comfortable standing behind the data collection plan for each question?
DATA ANALYSIS PLAN
While data analysis is an iterative process, creating a data analysis plan prior to collecting data helps to reduce potential bias and to speed up the interpretive process. Data analysis is a continual refinement process resulting in interpretations of what all the data means. For each data source, identify how the collected data will be analyzed. The data analysis method will depend in part on the type of data collected.

In broad categories, data can be classified as quantitative or qualitative in nature and each classification has different data analysis procedures. For quantitative data, these procedures usually involve conducting statistical tests. Qualitative data analysis is often based on various coding strategies. While a thorough discussion of the types of tests to be conducted or of coding strategies is not possible related to this model, refer to the Suggested Readings for detailed guidance in these areas.

Quantitative Data Analysis
In general, statistical tests fall into two general categories: descriptive statistics and inferential statistics.

1. Descriptive statistics describe characteristics of the sample such as measures of mean and median.
2. Inferential statistics allow inferences to be made from the sample to population the sample represents.

Inferential statistics can be further categorized as either parametric or nonparametric. Parametric tests are used for interval or ratio data. They require that assumptions of normality, homogeneity of variances, and linearity be met in the sample data. For such reason as inability to secure a random sample or a large enough sample size in organizations, these assumptions often cannot be met in evaluation studies. However, general practice often includes the use of parametric tests.

Nonparametric methods, while having their own set of assumptions, are often more appropriate with smaller samples or when random sampling was not used. Most nonparametric tests are based on ranked data as opposed to interval or ratio data requirements for parametric tests. See the Suggested Readings for more details.

Qualitative Data Analysis
Qualitative data is voluminous in nature. For example, a one-hour interview can easily yield over twelve pages of data. Steps should be taken on a regular basis to reduce the collected data by categorizing it into either predetermined or emerging codes. The evaluation questions themselves often outline codes. For example, when reviewing components of a solution, codes such as “perceived acceptance”, “benefits to users”, or “obstacles to use” may be helpful.

Upon review of the data however, often unanticipated themes or trends in responses may become evident. To identify emergent codes, review the data content for such items as:

- Patterns
- Repetitions of words or phrases
- Relationships
- Types, concepts, or groups

For all codes, create a master list which includes the name of the code, the abbreviation which will be used for this code, a description of what is meant by the code, and identification of whether the code was predetermined or emergent. If possible, have multiple evaluation team members “code” the data.

No matter what analysis methods were used, the bottom line is to determine what the data says. Analysis of the data should allow the creation of meaning and understanding from what is seen. The data analysis plan provides an outline for how the data will be reviewed in order to construct meaning.

**CREATE SCHEDULE AND BUDGET**

By creating the data collection and analysis plans, you are beginning to break down the evaluation into discreet tasks. Creating a schedule of ordered tasks along with their required completion time provides additional information to aid in refining the inclusion or exclusion of questions for the evaluation.

To determine a task schedule,

1. Create a general outline of the steps to be taken. It may be helpful to create broad categories such as Instrument Development, Data Collection, and Data Analysis.
2. Break these steps down into discreet tasks. The data collection and analysis plan both encompass tasks that must be included in the schedule. For example, if an instrument will be developed or revised, then it will also need to be piloted. Common task items in an evaluation include:
   - meetings
   - scheduling of data collection and meetings
   - literature reviews
   - instrument development or revision
   - piloting of instruments
   - data collection
   - transcribing field notes
   - coding data
   - analyzing and interpreting data
   - creating reports and journal articles
   Time will need to be allocated for these tasks.
3. Note any links between tasks. Is it necessary to complete one task prior to beginning another? Do tasks need to be completed at the same time?
4. Determine the amount of time required in completing each task. Assign a start and completion date to each task remembering to include the noted links. Determining the amount of time required is an estimation process based on knowledge of the task and experience. Sources for this estimation process include consultants and project
management literature. While not exhaustive, the “time per task” list (Miles & Huberman, 1994) can serve as a general guide for creating a project plan.

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing field notes (e.g. interviews, focus groups, observations)</td>
<td>2-3 days</td>
</tr>
<tr>
<td>Coding qualitative data</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Analyzing / Interpreting data</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

(Miles & Huberman, 1994)

By creating a task timeline, you have also helped to determine the resources needed for the evaluation. Evaluation costs can be divided into two broad categories, labor costs and purchases.

Labor costs include salaries and benefits for employees and consultants/contractors working on the evaluation. To put labor costs in a usable format for a budget, translate them by identifying a daily rate for each employee or contractor and then multiplying the daily rate by the number of days they will be required to work on a task.

Purchases include discreet payments for a product or service. Examples falling into this category are:

- Travel
- Meals
- Communication
  - Telephone
  - Postage
  - Internet Usage
- Printing & Copying
- Equipment
  - Purchase
  - Maintenance
- Supplies
- Facilities Overhead
  - Rent
  - Utilities
  - Maintenance

For the budget, purchases will be translated into a per item per task costs.

For each task or group of tasks identified in the schedule, enter a line item in the budget and calculate associated costs. Depending on the client’s requirements, you will only need to include a high-level budget as part of the final proposed evaluation plan and contract.
REFINE THE EVALUATION QUESTIONS
Given the data collection, analysis, schedule, and budget, return to the list of potential questions. Prioritize them based on such criteria as:

- Answer to the question will provide direct link to determining degree to which gap is closed.
- Answer to the question will provide information for more than one question
- Answer to the question is perceived to be of significant interest to the stakeholders.
- Collecting and analyzing data to answer question is feasible based on cost, resources, and time.
- Other criteria as determined by evaluation team/client parameters.

While it is not possible to determine a specific ratio for identifying the number of questions to include in an evaluation, Russ-Eft and Preskill (2001) have suggested that most program evaluations range from three to twelve evaluation questions.

Make your decision of which questions will make the final list for inclusion in the evaluation. Once the prioritized list has been made, conduct a final review of the evaluation questions to make sure that

- when you put all the data together, will it provide enough information for a comprehensive understanding of the big picture?
- the questions as a whole will answer the two major evaluation questions to a sufficient and acceptable degree.
- there are no accidental “holes” in evaluating the solution (e.g., for a solution that includes both a training and an incentive program, the evaluation questions will collect data related to all solution components).
- you leave room in the estimated cost and schedule for the stakeholders to add additional questions during Step Two: Negotiate.

Finally, it will be necessary to revisit the evaluation plan and revise it based on which questions will be included in the evaluation. Revise the schedule and budget to reflect the evaluation tasks.

You now have created the foundational document for the client negotiation meeting that will take place in the next step.

SUGGESTED READINGS


TOOLS
**Initial Analysis Questionnaire**

**Instructions:** Complete the questions below with as much detail as possible. If you do not know the answer, forward the question to the person(s) who does.

**Performance Intervention Information**

1. **What is the name of the intervention to be evaluated?** How do you refer to this intervention within your organization?

2. **Describe the purpose and features of the intervention.** How would you describe the intervention and its purpose to someone outside of the organization? What are the features and characteristics of this intervention?

3. **What problem or opportunity led to this intervention?** Describe what was going on in the organization that led to a problem or opportunity being identified.

4. **When was the problem or opportunity identified that led to this intervention?** Give specific dates for when the problem or opportunity was first identified and when this intervention was selected.

5. **What was the intervention intended to do?** What did you expect this intervention to do for the organization? If you had to say what the objectives or intended outcomes of the intervention were, what would you say? Be as detailed as you can. (Review the two examples below)
   
   a. **Example 1 - Preferred (Detailed):**
   b. “We expect that using the new process will increase production of cell phones from 11,000 per day to 14,000 per day. Given that each phone sells on average for $10.00, this will result in an increase in potential sales of $30,000 per day.”

c. **Example 2 (General):**
d. “We expect that absenteeism will decrease on the production line.”

6. **Who was impacted by the intervention?** Describe the organizational structure and identify the units (e.g., departments, groups, processes) and individuals that were impacted.
7. How has the organization changed from the time the performance problem or opportunity was identified until now? What did the organization look like when the problem/opportunity was first identified? What does it look like now? (Attach any relevant organizational charts).

8. What process led to selection of this particular intervention? Did you collect any data to verify the problem or opportunity? If so, is it available? How did you identify the causes of the problem or opportunity? How did you select this particular intervention? Is the intervention implemented identical to the one that was suggested? If “no”, explain any differences and why they exist.

9. What other interventions or change initiatives were introduced during the time the problem or opportunity was identified until now? Were any other activities, programs, processes, tools, etc. put in place? Has the organization gone through any restructurings (e.g., process redesign, downsizing, mergers)? Has the culture of the organization changed? Have any external factors (e.g., legislation, regulations) impacted the organization?

### Evaluation Requirements

1. What is most important for you and your organization to know? Review the four evaluation zones and rate each zone by order of importance.

<table>
<thead>
<tr>
<th>Priority Rank</th>
<th>Zone</th>
<th>Purpose</th>
<th>Examples of Common Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Society</strong></td>
<td>To determine the impact of the intervention on the community outside of the organization into which it was implemented.</td>
<td>Employment impacts, Environmental impacts, Quality of life impacts</td>
<td></td>
</tr>
<tr>
<td><strong>B. Organization</strong></td>
<td>To determine the impact of the intervention on the current measures of the organization.</td>
<td>Productivity, Satisfaction, Organizational learning, Sales</td>
<td></td>
</tr>
<tr>
<td><strong>C. Unit</strong> (e.g., department, groups, or individuals)</td>
<td>Define the unit to be evaluated: (e.g. Purchasing Sub-process)</td>
<td>Process workflow, Number of documents produced per hour, Information availability, Incentives and rewards, Knowledge and skills, Capability, Motivation</td>
<td></td>
</tr>
</tbody>
</table>
2. For each of your priorities in question 1, what is the most important question you would like answered by this evaluation? Use the examples of common measures to help you determine an appropriate question for each Zone.

Society:

Organization:

Unit:

Process:

3. What decisions will be made based on the findings from this evaluation?

4. What is the deadline for completion of this evaluation?

5. What specific questions should this evaluation answer?

6. Who all will be interested in the results of the evaluation? Include name, position, department/unit, email, phone, and why they are interested (e.g., their relationship to the intervention).
EVALUATION CONTRACT TEMPLATE

CONSULTING BUSINESS
Business Name
Contact information

willingly enters into agreement with

CLIENT BUSINESS
Business Name
Contact information

to conduct the following performance evaluation:

STATEMENT OF PURPOSE
Include a statement of understanding of
• problem and solution which have lead to the requested evaluation
• what is being evaluated (scope)
• the intended audiences for the evaluation
• the stakeholders of the evaluation

EVALUATION METHODOLOGY
Describe the process to be undertaken to complete the evaluation. Include the data collection and analysis methods to be used.

INVolVEMENT AND RESPONSIBILITIES
Describe who will be involved in the evaluation from the consulting organization as well as agreed involvement and responsibilities from the client organization.

DELIVERABLES
Describe all interim and final products the client will receive for the evaluation. Include a description of the presentation format for each product.

SCHEDULE AND COSTS
Provide mid to high-level schedule of tasks.
Provide a high-level breakdown of costs.

AGREEMENTS
State any agreed processes for changes to the evaluation.
State any agreements related to confidentiality of subjects and information.
State agreed publication potential permission.

SIGNATURES
AGENDA
[Title for Meeting]
[Date – Time]
[Location]

FOCUS: [Overall Purpose of Meeting]

AGENDA ITEMS

1. Introductions

2. Statement of Purpose
   ▪ Evaluation Scope and Audiences
   ▪ Selection of evaluation questions to be include

3. Evaluation Methodology
   ▪ Presentation of Evaluation Plan
   ▪ Identification of data source access requirements

4. Involvement and Responsibilities
   ▪ Request for stakeholder involvement
   ▪ Identification of communication protocols

5. Deliverables
   ▪ Identification of procedures and formats for presentations and reports

6. Schedule and Costs
   ▪ Negotiation of cost of evaluation [may take place outside of the meeting]

7. Agreements
   ▪ Contingencies agreement
   ▪ Request for publication potential

8. Summary of Decisions and Action Items
<table>
<thead>
<tr>
<th>Name:</th>
<th>Preferred communication medium: □ phone □ email</th>
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<td>Department/Unit:</td>
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## DELIVERY FORMAT SELECTION GUIDE

### WRITTEN REPORTS

<table>
<thead>
<tr>
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<th>Short</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td>High Desired Level of Detail</td>
<td>Low</td>
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</tbody>
</table>

### PRESENTATIONS

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<tr>
<th>Face-to-Face</th>
<th>Self-Guided</th>
</tr>
</thead>
<tbody>
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<td>Ample Available Time</td>
<td>Short</td>
</tr>
<tr>
<td>Few Number of Groups</td>
<td>Many</td>
</tr>
<tr>
<td>Low Comfort with Technology</td>
<td>High</td>
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</table>

### Presentation / Report Type

<table>
<thead>
<tr>
<th>Presentation / Report Type</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>• Provides concise summary&lt;br&gt;• Better chance of being read than a full report</td>
<td>• Can only highlight findings due to brevity requirements.</td>
</tr>
<tr>
<td>Full Written Report</td>
<td>• Can provide details in all areas of report.&lt;br&gt;• If needed or desired, can include actual data in appendices.</td>
<td>• Depending on needs of audience, usually more information than is required.&lt;br&gt;• Often not read thoroughly.</td>
</tr>
<tr>
<td>Face-to-Face Presentation</td>
<td>• Can clarify identified misconceptions.&lt;br&gt;• Allows for on-the-spot dialogue in specific areas.&lt;br&gt;• Can tailor presentation to needs of audience.</td>
<td>• All interested parties must be able to attend at the specified time.</td>
</tr>
<tr>
<td>Self-Guided Presentation</td>
<td>• Can be viewed many times and at the user’s preference.&lt;br&gt;• Can create executive or full presentation.</td>
<td>• Cannot clarify any misconceptions or answer immediate questions.</td>
</tr>
</tbody>
</table>
**GLOSSARY**

**Baseline Measures** – data collected to measure a performance goal prior to the introduction of a solution or intervention. Used as a comparison in a before-after situation.

**Change Initiative** – a program or intervention introduced into the processes of an organization for the purpose of bringing about a specific change in performance. Examples of change initiatives include restructuring, external impacts on the organization (e.g. legislation, changes in the economy), and changes in the culture of the organization.

**Descriptive Statistics** – (see also: inferential statistics and nonparametric statistics) a description of what the collected data are showing, usually in terms such as mean, median, mode, central tendency, standard deviation, variance, and frequency.

**Direct Measure** – (opposite of indirect measure) a measure of performance which is due to use of the intervention being evaluated. For example, in measuring the impact of a document imaging system, a direct measure performance would be number of documents scanned into the system or number of documents retrieved from the system.

**Evaluation** – a review process used to identify the value or worth of an identified solution. By definition, evaluation is responsive in nature and thereby distinguished from front-end analysis.

**Evaluation Client/Owner** – the person who has primary responsibility for the evaluation. This person serves as the initial contact for the evaluation. Typically this person has a stake in the success or failure of the intervention being evaluated.

**Evaluation Priorities** – (see also: society, organization, unit, and process) the ranked concerns of the client related to what areas should be evaluated. The model presents four evaluation priorities: Society, Organization, Unit, and Process.

**Formative Evaluation** – determination of the value or worth of an entity en route to its completion. The purpose of formative evaluation is to provide immediate information about something while it is still possible to make changes prior to its implementation.

**Human Performance Technology (HPT)** – the process of analyzing performance-related data to identify a performance gap, its causes, and solutions to close the gap, implementing the solutions, and evaluating the outcome and process used; all for the purpose of improving human performance within an organization.

**Indirect Measure** – (opposite of direct measure) a measure which is attributed to a specific entity, but is not the direct result of that entity. An example of an indirect measure related to the impact of a document management system, would be

**Inferential Statistics** – summarizing of data in order to gain an understanding beyond what the collected data shows. Inferring from the sample to the population. Common tests used in inferential statistics include the t-test, Analysis of Variance (ANOVA), Analysis of Covariance (ANCOVA), and regression analysis.

**Intervention Timeframe** – A range of time beginning with the identification of a performance problem through the point at which the evaluation is being conducted.
Method – a set way of accomplishing something, usually in a step-by-step format.

Model – a representation and usually simplification of a complex reality.

Nonparametric Statistics - statistical procedures that allow us to process data of "low quality," from small samples, on variables about which nothing is known (concerning their distribution). Specifically, nonparametric methods were developed to be used in cases when the researcher knows nothing about the parameters of the variable of interest in the population. (Reference: http://www.statsoftinc.com/textbook/stnonpar.html)

Organization – the primary entity into which the intervention was placed; the company, institution, or association.

Process – the course of action in the front-end analysis which led to the solution being implemented. Specific areas of interest include the original problem statement, the performance gaps, the causes of the gaps, the selected solution, the implemented solution, and the changes related to the organization.

Solution (a.k.a. intervention) – the identified set of interventions which are intended to close the gap between the desired and actual performance. A solution is rarely a singular entity but is instead a set of interventions which together will impact performance. For example, a solution may include such interventions as a process redesign, training, and an incentive program. These interventions together address the identified causes of the performance problem.

Society – all influences from outside of an organization. Examples include legislation, the economy, and market value.

Stakeholder – any person with a vested interest in the intervention or the outcome of the evaluation.

Summative Evaluation – the process of determining of the value or worth of an intervention following the implementation of the intervention within an organization.

Triangulation – use of several and various methods of data collection, sources of data, and/or researchers for the purpose of decreasing any biases or suspected weakness in a research study.

Unit – a department, group, or function as defined by the evaluator or evaluation client. A unit is often the entity within an organization where the impact of the intervention is most directly felt.
APPENDIX J

Human Subjects Approval
INFORMED CONSENT FORM
Case Study Sites

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled "The Development and Validation of a Human Performance Technology Specific Evaluation Model."

This research is being conducted by Doretta E. Gordon, who is a doctoral student at Florida State University. I understand the purpose of her research project is to identify and test an evaluation model that is specific to the Human Performance Technology (HPT) process. I understand that if I participate in the project I will be asked questions about my experiences and perceptions related to the evaluation of an organizational change initiative.

I understand I will be asked to fill out paper and pencil surveys and to work through a case study scenario using the model. I may also be asked to participate in an interview or focus group related to my perceptions and understanding of the organizational change initiative. The total time commitment would be about 90 minutes.

I understand my participation is totally voluntary and I may stop participation at anytime. All my answers to the questions will be kept confidential to the extent allowed by law and identified by a subject code number. My name will not appear on any of the results. No individual responses will be reported and no identifying references to my organization will be made.

I understand there are benefits for participating in this research project. First, by participating in the study, I will receive information about conducting a HPT evaluation within an organization. Additionally, a copy of the final model will be provided to me upon request upon completion of the study.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Doretta Gordon, Florida State University, Department of Educational Psychology and Learning Systems, (850) 644-1158, or Dr. Robert A. Reiser, Major Professor, (850) 644-4592, or Human Subjects Committee at Mail Code 2763 or 2035 E. Paul Dirac Drive, Box 15, 100 Stilger Bldg., Innovation Park, Tallahassee, FL 32310 for answers to questions about this research or my rights.

I have read and understand this consent form.

(Subject)

(Witness)

(Date)

Attachment C
REFERENCES


Kaufman, R. (1992). Organizational Elements Model, Florida State University


Doretta Gordon is a section manager for the Training, Simulation, and Performance Improvement Division of the Southwest Research Institute based in San Antonio, Texas. She holds a masters degree in Instructional Systems from Florida State University and a bachelors in psychology from the University of Maryland. Doretta has provided instructional design and performance improvement service for the military, state government and private industry.