Using the Program Logic Model to Increase the Relevance and Use of Evaluation Findings of Market Transformation Projects

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ABSTRACT

Two primary concerns for both evaluation professionals and their clients are: 1) coming to an in-depth and common understanding of the project to be evaluated and 2) establishing a communication vehicle through which the project understanding can be re-evaluated with the project implementers. Both of these activities will lead to more focused and relevant evaluation plans and ultimately may lead to evaluation findings being used to improve the project. This is especially important for evaluations such as formative, process, and market transformation evaluations where it is expected that evaluation findings will be used to refine the project to better meet its goals. To meet this end, the program logic model was adapted and employed during development of the evaluation plan for an industrial-sector market transformation project. The essential elements of the logic model, how it can be used, and recommendations for future use will be discussed.

Introduction

Have you ever found yourself wondering half way through your evaluation, "Now, what is it that I am supposed to be evaluating and why is the project implementer using language to describe their project that I do not fully understand?" This question is often the result of inadequate communication between evaluators and project implementers. If unanswered, there can be far reaching implications for the usability of the evaluation and overall success of the project.

To establish an in-depth understanding of the project, some type of program/project framework is usually created to describe the project activities, stakeholders, and outcomes. What is most important about the frameworks is that they will drive development of the evaluation plan, including its questions and products, so comprehensiveness and buy-in by essential stakeholders is of the utmost concern during development. This is especially true with market transformation evaluations based on the theory of adaptive management, i.e., the process by which projects are continually refined based on evaluation findings.

It is important to note that most evaluation plans are developed at the beginning of an evaluation by the evaluation consultant with varying degrees of input by the project implementers and little or no mid-stream follow-up to make sure the framework continues to be relevant. Additionally, most projects lack well defined and established links between project activities and overall outcomes, with almost no attention paid to the underlying theory that drives the project or to mid-stream milestones. Each of these issues increases the likelihood that the evaluation will not be relevant and the findings will not be implemented to improve the project (Patton 1986).

As such, two primary challenges are inherent with development of most evaluation plans: 1) lack of clearly defined as well as strong links between project activities and overall outcomes and 2) the absence of on-going check-ins with the project implementers to ensure the understanding of the program is current. Clearly, there is a need for a systematic look at projects before the evaluation plan is development and is underway and in many cases before the project is fully implemented.

This paper will describe one type of project framework, the program logic model, which was employed prior to development of the evaluation plan with an industrial-sector market transformation project sponsored by the Northwest Energy Efficiency Alliance[1]. History of the logic model, its essential elements, how the logic model was used, and recommendations for future development will be discussed.

Background

The Northwest Energy Efficiency Alliance (Alliance) is a non-profit consortium of utilities, governments, public-interest groups and the private sector dedicated to transforming markets for energy-efficiency products and services. To date, the Alliance Board of Directors has adopted 32 projects. Each project has an evaluation, which is implemented by an external evaluation consultant to provide an objective, third-party assessment about how the market is responding to the project, among other areas of inquiry. Project management, implementation, and evaluation involves the following types of individuals, each of which are referenced throughout the remainder of this paper:

Venture Developer: Responsible for "shaping" the project prior to Board approval and throughout the funding period.
Project Coordinator: Responsible for managing the project contract and providing needed resources to the project contractors.
Evaluation Coordinator: Responsible for developing the evaluation plan, hiring and managing external evaluation contractors, and communicating evaluation findings to the project.

Description of the Program Logic Model

Elements of logic models. The program logic model has been widely used in the social service, health, and education sectors as a tool to gain a better understanding of the program under consideration and to design a more effective and useful evaluation plan. Joseph S. Wholey (1983, 1989, 1994) most succinctly introduced the elements of the program logic model first as a way to improve the effectiveness of government-supported programs. As suggested by Wholey,

[1] Although the program logic model was applied to this specific Alliance sponsored project, the Alliance has other similar development activities that follow different steps and use somewhat different labels. Thus, this exercise should be viewed as illustrative and not as Alliance standard practice.

the first hurdle to overcome in programs is consistent communication about what it is the program is intended to achieve:

"Even within a single agency or program there is disagreement over what would constitute 'high performance': disagreement over goals, disagreement over priorities, disagreement over the most important measure of performance." (1989, 1)

An underlying and perhaps more important issue raised by Chen (1989, 1990) is that of understanding the program's theory that drives the program activities and outcomes. An in-depth understanding of the program's theory is crucial in understanding how the program activities ultimately link to the desired and intended outcomes as well as to the unanticipated outcomes created as a result of program activities. While several types of theory exist (e.g., Patton 1986), the most succinct definition of program theory is presented by Rossi, Freeman and Lipsey. For Rossi et al., program theory is "the set of assumptions about the manner in which the program relates to the social benefits it is expected to produce and the strategy and tactics the program has adopted to achieve its goals and objectives." (1998, 154). Program theory is further segmented into impact and process. Impact theory refers to "how the intended intervention for the specified target population brings about the desired social benefits" (1998, 101) and process theory "depicts the program's organizational plan and service utilization plan" (1998, 154), which refer to how the intended population receives the program activity, service, or technology.

Bickman (1989, 387) has identified ten uses of program theory:

1. Contributes to social science knowledge
2. Assists policymakers
3. Discriminates between theory failures and program failures
4. Identified problem and target group
5. Provides program implementation description
6. Uncovers unintended effects
7. Specifies intervening variables
8. Improves formative use of evaluation
9. Clarifies measurement issues
10. Improves consensus information

Despite the benefits of identifying and integrating program theory into the design of the evaluation, theory is most often not investigated and employed in evaluations. Bickman (1987) offers several reasons why theory is neglected:

- Cost associated with in-depth examination (includes costs incurred in planning, data collection, reporting, and storing of data);
- Lack of necessary technical and content knowledge;
- Absence of motivation to develop and integrate theory with evaluation proposals;
- Role confusion over whose job it is to develop and understand program theories (i.e., program implementers and designers versus evaluation consultants).

In recent years, the broader evaluation community has begun to focus more intently on understanding program theory and incorporating this theory into the evaluation design as well as into interpretation of findings. As suggested by Worthen et al.:

"...failing to understand the program theory, or the complex assumptions that link the problem to be resolved with the characteristics and actions of the program and the characteristics and actions with desired outcomes, [evaluations] measure inputs and outputs but, due to lack of understanding of the program theory itself, [they] fail to explain program failures or successes" (1997, 221).

Wholey's primary concern was in first conducting an evaluatability assessment for the program of interest. That is, determining whether the program's objectives were well defined and had a high likelihood of being attained, and whether there is some agreement on how the evaluation information is likely to be used (Worthen et al. 1997). The first two steps in this assessment focus on determining on which theory or model the program is based and an objective examination as to whether the program, as it is implemented, is congruent with said model or theory and has a high likelihood of attaining its outcomes. Once the program has been determined to be evaluatable, the evaluation commences by beginning with clearly defining the program while keeping in mind the program theory to check for consistency in definition and implementation.

The key elements of defining a program include "identifying key resources to be allocated to the program, activities to be undertaken, important intermediate outcomes, long-term program goals, and assumed casual connections among resources, activities, intermediate outcomes, and long-term goals" (Wholey 1989, 5). These elements have been translated into systematic and user-friendly models (e.g., Reisman & Mockler 1994; United Way of America 1996) with which program implementers and evaluators can communicate about the evaluation.

Logic model examples. Perhaps the most widely used model is that developed by the United Way of America (1996). This model, named the program logic model, requires program developers and evaluators (often the same individuals) to focus on the following elements:

Inputs: resources dedicated to or consumed by the program
Activities: what the program does with the inputs to fulfill its mission
Outputs: the direct products of program activities
Outcomes:
Initial: the first benefits or changes participants experience (e.g., knowledge, attitudes, skills)
Intermediate: changes in behaviors as a result of initial outcomes
Longer-term: ultimate changes a program was designed to achieve (1996, 3)

A similar model, created by The Evaluation Forum (Reisman & Mockler 1994), separates the various vantage points of the program into process and outcome evaluation elements. In addition, it focuses long-term evaluation efforts on the ultimate goals of the program:

Process Evaluation
Resources: what the program has that allows it to conduct its activities
Activities: the specific activities planned to achieve program goals
Indicators: the quantifiable indicators for each activity

Outcome Evaluation
Outcomes: the short-term and immediate indicators of success
Goals: the long-term desired program effects (1994, 25)

With both models the development phase begins with a clear delineation of the program's underlying theory and description of the strategies being employed to realize the program outcomes. Additionally, once the logic model has been created, the evaluator begins the process of determining the most appropriate data collection and reporting methods, based on the various activities and stakeholder groups involved with the program. Essentially, the logic model development "cycle" may look something like this:

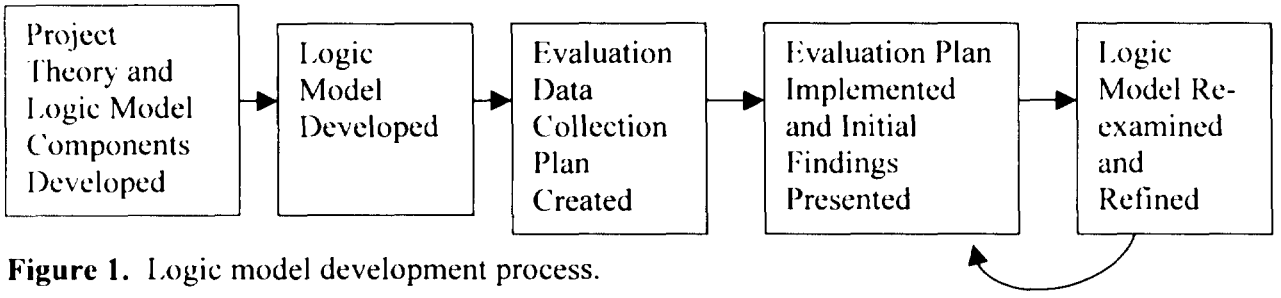


Figure 1. Logic model development process.

Benefits of using the program logic model. Regardless of which model you select, the benefits of developing a logic model for the program being evaluated are many, including:

- "Identifies both process and outcome portions of your program;
- Shows relationship of your program inputs (resources and activities) to the expected results or outcomes;
- Helps you identify the major questions you want the evaluation to answer;
- Provides a graphic summary of how program parts relate to the whole;
- Makes explicit the underlying theory of a program;
- Identifies categories to measure in the program evaluation." (Reisman & Mockler 1994, 24).

Through the course of applying the logic model to the various stages of market transformation projects, the author has identified the following uses and associated benefits of logic models:

Effective Communication. Through its development phase, the logic model is used as a way to check with project development staff and implementers (i.e., project contractors) expectations for the project tasks and goals. This check affords the opportunity to establish a common understanding about crucial project elements and to clarify misconceptions about what the project is intended to accomplish. The end result is a standard approach to communicating, both internally and externally, the goals and elements of the project, which ultimately saves time, money, and energy.

Project Planning. As the logic model development team examines the links between project tasks and final goals, discussions are likely to be had regarding the likelihood of attaining the final goal and the need for intermediate indicators of progress (i.e., near-term, mid-term, and long-term indicators of progress). In addition, the logic model may encourage the project team to assess their current core competencies (e.g., resources, skills) and identify gaps between what they currently possess and will need to possess to achieve success.

Evaluation Data Collection Planning. With clearly identified links between project elements and the final project goals, the ensuing evaluation will be more targeted, appropriate, and, ultimately, more useful to the project implementers. Clear expectations will be set by the project implementers as to what they can and should be held accountable to, which can then be communicated to the evaluator. In addition, the logic model will indicate where the project implementers need more information about the market, including characteristics of various participant groups, and where they are collecting information as part of their project responsibilities that will be useful to the evaluator.

On-Going Check Point. The logic model provides a systematic way to examine progress toward mutually agreed upon milestones and, ultimately, toward the longer-term project goal set by the project implementers and their funder. Through examination of evaluation findings and additional market indicators, the logic model can be continually updated to reflect the current state of the project.

Stakeholder involvement. Lastly, it is important to incorporate in the development process as well as the on-going check points the various information needs and issues of each key stakeholder group involved in the project (Patton, 1986). Stakeholder groups will vary by project but there are a few key groups to keep in mind with all projects: funder; project implementers; project participants; and key decision-makers, other than the funder. Every group does not need to be involved with the development of the logic model; rather, their interests and concerns should be represented in the logic model and should be checked on an on-going basis.

What follows is a description of how the logic model was employed at the Alliance. In this case study, the logic model was developed prior to project implementation, with the evaluation coordinator facilitating the development process with key internal staff members (i.e., project coordinator, venture developer) and the project contractors. The project for which the model was developed and the process used will be discussed. The final section of this paper will present the overall results of developing the logic model and recommendations for future use.

Case Study Application

Introduction

The Alliance recently adopted a project aimed at transforming a specific area of the secondary wood products market in the Pacific Northwest. The project team is comprised of three separate companies, two of which serve as sub-contractors to the primary contractor. The primary project tasks will focus on educating secondary wood product facility decision-makers on the extent to which their pneumatic conveying systems have been over-designed and how simple adjustments to these systems can save energy. This practice will become sustainable through providing consulting engineers and utilities with the tools and training necessary to make needed adjustments to these systems.

Development Process

Step 1: Understanding the project theory. Step one for the "development team[2]" (i.e., project and evaluation coordinator) was to come to an in-depth understanding of the project theory by revisiting the market intelligence data provided by the project contractors. It was found that missing were key pieces of data such as the attitudes and awareness of key decision-makers within each firm and physical characteristics of firms, as well as information on the likelihood of adoption of this project from the target audience perspective.

The only data available to develop a project theory were quantitative SIC data and information based on the project contractor's experience regarding the likelihood of adoption of the new technology by firms in their target audience. From this information, a partial project "story" was created that told why the project was developed and what may be the result of introduction of this project into the market. From this step, a list was created of data (e.g., current practice, attitudes toward the specific technology) that needed to be collected to develop a full project theory and, as an extension, a full understanding of the potential for success.

Step 2: Determining appropriate labels. The second step in developing the logic model is to come to agreement on the labels to be used to describe the components of the project. With this particular project, it was deemed important by the project coordinator to use labels consistent with marketing and business plan terminology, language that had recently been introduced to the project contractors and was central to the project's implementation. Table 1 presents a comparison of the labels used in this model and the labels used in the Reisman & Mockler project logic model.

Table 1. Comparison of project logic model labels.

Reisman & Mockler	Case Study #1
Resources	Core Competencies
Activities	Tasks
Outputs	Near-Term Indicators of Progress
Outcomes	Mid-Term Indicators of Progress Project Outcomes
Goals	Market Transformation Outcomes

In this case study, core competencies pertained to the overall skills (e.g., project management) and other resources (e.g., Alliance funding) the project had in-house and a listing of those skills that would be required to complete each project task. Tasks referred to the specific activities and sub-activities of the project. To fully understand the project's near, mid, and long-term milestones four kinds of outcomes were developed. Near-term indicators refer to those accomplishments that would occur during the first six months of funding and mid-term indicators are those outcomes expected to occur between six and eighteen months of funding. Project outcomes are the outcomes that the Alliance expected to occur by the end of the three-year contractual period. With market transformation projects, there is also a longer-term market

[2] Here "development team" refers only to development of the logic model and not of the project itself.

transformation outcome, that is, what the market is expected to "look" like ten years after funding begins.

Step 3:Creation of draft logic model. The major task in step 3 is to create a visual representation of the project, with information provided for each label presented in Table 1. This step was completed by the development team and resulted in a number of clarification questions being raised regarding how the project was to attain its project contract period and market transformation goals. In addition, questions pertaining to how the activities linked to the project and market transformation outcomes were also raised. The logic model shell used for this project is presented in the Appendix.

Step 4: Check understanding of project. Step 4 involves presenting the draft logic model to two groups of individuals: 1) key internal stakeholders and 2) project contractors. The purpose of presenting the model to key internal stakeholders is to take into account the funders overall goals and expectations for the project and to achieve a consistent language with which the project is described. By presenting the model to the project contractors, you are provided the opportunity to check your understanding and expectations with the individuals who are carrying out the project. Without this final check you may have expectations for the project that are not realistic or are not consistent with the project contractors vision of success.

Through presenting the logic model to key internal staff (i.e., venture developer and lead evaluation coordinator), questions were answered regarding the overall goals of the project and intentions of the funders. In addition, an open discussion was also had about the data that needed to be collected by the project and evaluation contractors to complete the project theory. This allowed the evaluation data collection plan to be created at a very early stage in project implementation and to coincide with real-time data needs.

In presenting the model to the project contractors, it is important to share with them the purpose of a logic model and the process by which one is created. In addition, rather than presenting the contractors with the internally client-developed logic model, it is may be more informative to have them develop their own logic model using the same process by which the internal logic model was developed. By doing so, the contractors will share their perspective of the project, rather than simply reflect their client's perspective. It is important after completion of the contractor's logic model to probe in areas showing differences between the two logic models.

What occurred through this process was quite interesting. Not only did the contractors have a slightly different understanding of what was to be accomplished within one of the primary tasks they also had a different interpretation of the ten-year market transformation outcomes. The open discussion that ensued from this comparison allowed the project coordinator to set mutually agreeable and realistic expectations about the project tasks and overall goals of the project.

Step 5: Create final logic model. With feedback from the various groups[3], a final logic model is to be created that will be used to communicate to the evaluation contractors the overall goals of the project and the links between project tasks, near and mid-term indicators of progress and the project and market transformation outcomes. To date, this step has not yet been completed but it is anticipated that a final logic model will be developed in the near future. In addition, as the evaluation begins to provide feedback to the project, the logic model will be revisited to update our project theory and expectations.

Results

Through the process of developing the project logic model, several things occurred. Perhaps the most important result was the identification of additional market information that needed to be collected to fully develop a project theory on which the success of the project could be tested. Additionally, the development team was able to come to agreement on the goals of each project task and on the near and mid-term indicators of progress. The teams also revisited the project and market transformation outcomes that were agreed to by the Alliance Board to determine where in the project refinements might need to be made to increase the likelihood of attaining those outcomes.

Moreover, the development team was able to set realistic expectations with the project contractors and come to agreement on common language for the project tasks and outcomes. Lastly, essential elements of the evaluation work plan were identified by the development team that would provide the project additional information about the market and the impact of its presence in that market. Thus, relevant, timely and, potentially, useful evaluation work plans were developed.

Recommendations

As with any communication effort, it is important for those wishing to engage project staff in developing a project logic model to understand that its development takes a fair amount of time to complete. This certainly is not an activity to be completed by one person in an afternoon; rather, it will take the efforts of all key individuals involved with the project over multiple sessions. In this case study seven people were involved in the development process at one time or another and approximately 20 hours of time (across all individuals) were required.

Despite the resources required for development, creation of a project logic model, from Step 1 to Step 5, provides a wealth of information about the likely success of attaining near and long-term outcomes. It also affords the opportunity to revisit the goals of the project and to refine the project tasks, where needed. This is perhaps not the only way to identify this

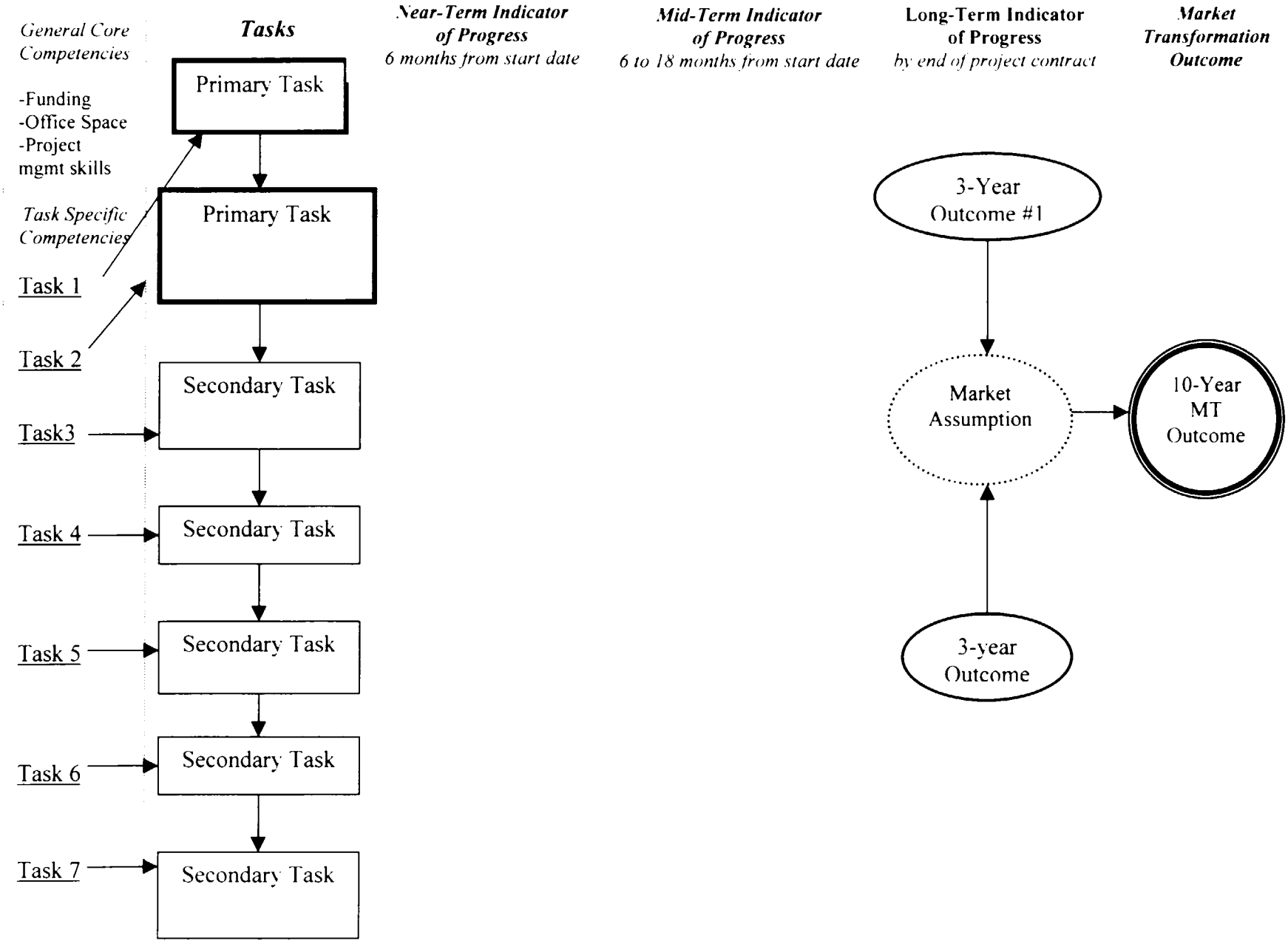
[3] While no mention has yet been made regarding the external evaluation contractor's role in development of the logic model, the evaluation contractor is viewed as an essential participant in the development and review process. Where possible, they should be a part of the development process or, as is the case with this example, the logic model should not be considered final until the evaluation contractor has reviewed the model.

likelihood but it is an easily implemented and systematic way to approach projects, at any stage of development.

To be fully effective, logic models should be developed as soon as possible in the life of the project and preferably prior to adoption by a funder. Considering earlier stages of the project, logic models, or other similar exercises should be completed during program design to afford the contractor a systematic way to assess their level of understanding of the market in which the program is to be implemented and its likelihood for success. In addition, the model can become a vehicle with which contractors can communicate to their potential funder.

If it is not possible to engage in development earlier in the life of the project, the logic model should be developed early in the implementation stage and be revisited during major project milestones (e.g., receipt of evaluation findings, shift in project management, consideration of renewal of funding). Only by fully understanding the links between project tasks and goals can relevant evaluation work plans be developed, ultimately increasing the likelihood of use of its findings.

PROJECT LOGIC MODEL SHELL



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