

# **Planning Program Evaluations: Toward a Systems Approach**

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## ABSTRACT

Most professionals agree that effective evaluations of any program must follow a logical and prescriptive format in order to be successful and useful. In reality, approaches are often random if not haphazard. Such situations are not always the fault of the evaluator, but rather the way professionals have been prepared with an emphasis on research methods and strategies (including a strong emphasis on inferential statistics) as contrasted with approaches to planning and design.

Purposeful activities associated with planning and design require skills and strategies that may be quite different from the traditional paradigms of research and scientific methods (i.e., those methods that may develop knowledge and verify or establish theories or laws). To this end, one return to the purpose of activities and approaches to planning: The creation and development of form and structure. Succinctly stated, research and scientific investigations generally are directed toward the analysis of an existing system. Design activities are focused toward the creation of a system (e.g., a program evaluation plan) that does not presently exist. A systems strategy that addresses these important but different purposeful activities (planning vs. research) is essential to successful evaluation.

An important purpose of program evaluation is to assess the extent to which the goals of the program are being met. In addition, evaluations may provide confirmation of worth and value, evidence of need for improvement, and, when necessary, basis for program termination (Stufflebeam & Shinkfield, 2007). Certainly, formative program evaluations can and should lead to change and improvement. Evaluations can also provide cost data yielding insight into cost effectiveness and efficiencies of programs as well as cost-benefit ratios (Rossi, Lipsey, & Freeman, 2004). Evaluations can, therefore, serve many worthwhile *purposes*. All too often however, *purpose* is not given sufficient attention in the evaluation design. The program evaluation design discussed in this paper addresses the importance of purpose and embodies four principles:

- a. A prescriptive definition of “systems”
- b. Involvement of individuals in the organization who have an interest in the program
- c. Careful consideration of both qualitative and quantitative methods using both subjective and quantifiable measures
- d. A focus toward continuing change and improvement.

The program evaluation planning strategy to be discussed is guided, in part, by a process termed *Breakthrough Thinking* (Bozeman & Addair, 2009; Nadler & Chandon, 2004; Nadler & Hibino, 1998; Nadler, Hibino, & Farrell, 1995). *Breakthrough Thinking* is a systems planning process developed by Dr. Gerald Nadler, Professor Emeritus of Systems Engineering at the University of Southern California. The strategies employed in *Breakthrough Thinking* recognize that, all too long, leaders and managers have been instructed in processes derived from classical scientific methods for applications to planning, problem solving, change, and improvement.

While such processes can be invaluable for certain activities, notably research and investigation, their very nature (that emphasizes examination of parts or components) hinders seeing the complete and true picture. *Breakthrough Thinking* is an alternative to the classical problem-solving method, offering a systematic approach through five intuitive phases (Nadler, 1970).

1. **Purpose determination.** What specific functions will the solution system (evaluation plan) achieve based on beliefs and values of the stakeholders?
2. **Possible solution generation.** How can the function and purpose of the evaluation be achieved if no constraints with regard to resources, time, feasibility, etc. are forced upon the design?
3. **Target plan selection.** This phase shapes the ideas from Phase 2 into a somewhat idealized evaluation plan or solution system.
4. **Details specification.** The purpose of this phase is to develop details of the target system and to accommodate exceptions to the rule.
5. **Implementation and evaluation.** Action plans may include development of operational components, specification of timelines and performance criteria, and consideration of political forces.

A set of general principles guide the planning process and strategy:

- Ascertain the *purpose* of what is being done--continually ask "Why. . .?"
- Direct efforts toward the development of the "ideal solution" or "solution after next" rather than toward repairing what exists.
- Devise a target plan at which to aim.
- Try to include in the process as many people as possible who will be affected by the plan.
- Do not worry about everything at once. Different activities have different purposes and may be treated separately.

These principles, whether considered individually or collectively, are generally accepted by successful leaders and professionals in all fields without question or argument. In actual, real-world rational planning, they are generally not followed because of: (a) an absence of a well-defined, purpose-oriented strategy, and (b) belief in "business-as-usual" problem solving. Again, the emphasis is toward the *purpose* of the evaluation plan.

Data collection is common to almost any evaluation. Yet, valuable and important program details and their interaction are often overlooked. Details, data, and information about the program being evaluated are organized using a systems matrix as a foundation for describing the various components as presented in Figure 1. The framework which includes 8 elements (purpose, inputs, outputs, sequence, environment, humans agents, physical catalysts, and information aids) described in 6 dimensions (fundamental, values, measures, control, interface, and future) serves as a model for describing the program under review. Analysis of the program using the systems matrix can provide a complete and thorough understanding of complex details, relationships among components, and nuances.

<b>Elements / Dimensions</b>	Fundamental (basic characteristics)	Values / Goals (beliefs, ethics)	Rates & Measures (criteria, performance)	Control & Evaluation (review of element)	Future (planned changes)
Purpose: Mission, aim, need					
Inputs: People, things, data, etc to be processed					
Outputs: Outcomes from the process or sequence					
Sequence: Steps in the processing of inputs					
Environment: Physical, psychological, sociological setting					
People: Persons involved in the sequence					
Physical: Components: Equipment, facilities					
Information: Books, software					

Figure 1: Systems Matrix  
Source: Nadler (1981)

Data analysis is also guided by a systems framework (Figure 2) containing 3 levels (actual, perceptual and attitudinal) in 3 dimensions (functional, usage, and effects). Building upon the elements found in the previous systems matrix, it is possible to identify the key components associated with program success and challenges. It is posited that such an approach can significantly impact the quality and quantity of design elements and generate evaluation results that can guide decision and policy makers.

Levels / Dimensions	Functional	Use	Effects
Actual			
Perceptual			
Attitudinal			

Figure 2: Evaluation Framework  
 Source: Spuck & Bozeman (1981)

For the purposes of this approach to data and information collection, the following definitions are offered.

LEVELS (of data analysis)

**Actual:** Objective and/or quantifiable data and information from a primary source

**Perceptual:** User descriptions and awareness of program operations and effects

**Attitudinal:** User conclusions and judgments regarding program value or benefits

## DIMENSIONS (of data analysis)

**Functional:** Extent to which the sub-systems of the program (human and physical) are capable of operating in accordance with design expectations

**Use:** Purposes or processes for which the program being employed and the extent to which usage is consistent with design specifications

**Effects:** Results achieved from the program and extent to which goals and objectives are being met

## Discussion

This paper has presented a model for evaluation planning using a systems approach. The overall planning for the evaluation was guided by a method derived from the approach termed *Breakthrough Thinking*. This approach embodies principles that maximize involvement of stakeholders while minimizing the interferences often associated with conventional strategies. A thick description of the program or subject of evaluation interest is guided by an 8x6 systems matrix. Data collection is also facilitated by the systems matrix that addresses not only the important program components but also their interactions. Data analysis is shaped and facilitated by a 3x3 evaluation framework. The three dimensions of the evaluation framework are seen as hierarchical (for example, use is dependent on functionality and effects are dependent upon program usage). The actual entries into the nine cells of the evaluation framework are application-specific and are driven by the evaluation purpose and plan.

Classification or categorization of both data elements and data analysis is not the function of the systems matrix or the evaluation framework. Rather, they can remind the evaluator of the types of information that may be useful. Furthermore, interpretations may differ among stakeholders (actual vs. perceptual) due to user understandings or user predispositions and



experiences (attitudes). The evaluation framework may reveal these variances. Finally, the analysis can indicate the extent to which the program users are satisfied or dissatisfied and the extent to which the program is at variance with user needs and expectations.

In summary, it is posited that the approach described in this paper can be useful throughout the life-cycle of the program including needs assessment, planning, implementation, and utilization. It provides valuable information to all stakeholders and will support program modifications, as needed, to better serve clients. Finally, it can provide necessary information to shape decisions regarding program continuation or termination.

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