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The Importance of Isolating the Effects of Programs

The following situation is repeated often. A significant increase in performance is noted after a major program has been conducted, and the improvement appears to be linked to the program. A key manager asks, “How much of this improvement was caused by the program?” When this potentially embarrassing question is asked, it is rarely answered with any degree of accuracy or credibility. While the change in performance may be linked to the program, other factors have usually contributed to the improvement as well.

This book explores the techniques for isolating the effects of programs from other factors. These techniques are used in top organizations as they measure the return on investment of a variety of programs. This first chapter focuses on the importance of isolating the effects of a program and the challenges faced in doing so.

A cause-and-effect relationship between a program and business performance can be difficult to prove, but such a relationship can be established with an acceptable degree of accuracy. The challenge is to decide upon one or more specific techniques to isolate the effects of the program or project early in the process, usually as part of an evaluation plan. Up-front planning is the best way to ensure that appropriate techniques with minimum costs and time commitments are used.

Challenges in Understanding a Program's Impact

In organizations, initiatives unfold in complex systems of people, processes, and events. The only way to learn about the connection between a program or a project and business performance is to isolate the effects of the program on specific business measures. This step ensures that the data analysis allocates to the program only that part of the performance improvement that is actually connected with the program. If this important step is omitted, the study may be invalid because factors other than the program may have affected the outcome of the program. Factors that can affect business performance include job redesign, incentives, rewards, compensation, technology, operational systems, and other internal processes. Factors external to the targeted department, functional area, or even the organization can also influence performance. Taking full credit for performance results without accounting for other factors is unacceptable. Only the results influenced by the program should be reported to stakeholders.

Case Study: What Caused the Improvement?

The following example illustrates why isolating the effects of a program is a critical step in the evaluation process.

First Bank, a large commercial bank, had experienced a significant increase in consumer loan volume for the quarter. In an executive meeting, the chief executive officer asked the executive group why the volume had increased. The responses were interesting.

- The executive responsible for consumer lending began the discussion by pointing out that his loan officers had become more aggressive: "They have adopted an improved sales approach. They all have sales development plans in place. We are being more aggressive."

- The marketing executive added that she thought the increase was related to a new promotional program and an increase in advertising during the period. “We’ve had some very effective ads,” she remarked.
- The chief financial officer thought the increase in loan volume was the result of falling interest rates. He pointed out that interest rates had fallen by an average of 1 percent for the last six months and added, “Each time interest rates fall, consumers borrow more money.”
- The executive responsible for mergers and acquisitions felt that the change was the result of a reduction in competition: “Several competitors closed bank branches during this quarter, which had an impact on our market areas. This has driven those customers to our branches.” She added, “When you have more customers, you will have more loan volume.”
- The human resources vice president spoke up and said that the incentive plan for consumer loan referrals had been slightly altered, with an increase in the referral bonus for all employees who referred legitimate customers for consumer loans. This new bonus plan, in her opinion, had caused the increase in consumer loans. She concluded, “When you reward employees for bringing in customers, they will bring them in . . . in greater numbers.”
- The vice president for human resources development said that a seminar on consumer lending delivered to loan officers had caused the improvement. He indicated that the seminar had been revised in order to present appropriate strategies for increasing customer prospects and was now extremely effective. He concluded, “When

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you have effective training and build skills in sales, you will increase loan volume.”

These responses left the CEO wondering just what had caused the improvement. Was it one or all of the factors? If so, how much of the improvement was influenced by each?

Consider for just a moment: Is this situation unusual? Probably not. As is the case in many settings, the process owners all claim credit for the improvement; yet realistically, each can rightfully claim only a share, if any, of the actual improvement. The challenge is to determine which isolation method would be most appropriate. Unfortunately, because the situation has already occurred, some of the methods for addressing this issue are not feasible. It might be helpful to review some of the data to see whether a time series analysis could determine the various influences and their corresponding impact. It is too late for a control group arrangement because all parts of the bank were subject to the various influences. It is also important to note that the people who understand this issue best—the loan officers who are familiar with the influences—have been omitted from the meeting. Of the many available techniques, asking the participants (the actual performers—that is, the loan officers) to isolate the effects of a particular program or influence may be the most credible and perhaps only way that isolation of program effects can be accomplished in this situation. Unfortunately, in this setting, this option was ignored.

The CEO concluded the meeting with a request for additional details from each of the participants. Unfortunately, only one person, the chief financial officer, provided data. In his response, he said that data from the American Bankers Association indicated that when consumer loan interest rates fall, the volume of consumer loans goes up. He applied this information to the bank’s situation to account for a large portion of the increase in loan volume. The other owners of the processes did not respond.

We can draw some important conclusions from this case:

- Isolation of program effects must be addressed in order for any of the functions or processes designed to improve consumer loan volume to gain credibility as a source of performance improvement.
- Sometimes, the most important people in the analysis of program effects are the performers who are actually involved in the process being measured. In this case, the loan officers were most directly involved in the process of increasing loan volume and thus were in the best position to analyze which factors were influencing business performance.
- Failure to address isolation of program effects leaves a concern or even a cloud over the contribution of a particular program; doing nothing is not an option.
- The issue of isolating program effects must be addressed early in the evaluation process so that many options can be considered.

A variety of techniques are available to isolate the effects of a program. Exhibit 1.1 lists the techniques explored in this book.

The techniques can be categorized into three basic approaches: control groups, trends and forecasts, and expert estimates. These approaches can be explained in greater technical detail. A chapter is devoted to each technique, describing the approach and providing examples of its application. The methods for isolation and guidance described here are sufficiently comprehensive and accurate for practical application. They have been proven over many years, clients, and contexts.

Preliminary Issues in Isolating Program Effects

A few preliminary issues should be considered before presenting specific techniques for isolating the effects of programs. These issues

Exhibit 1.1. Techniques for Isolating the Effects of Programs and Projects

- Control group arrangement
 - Trend line analysis of performance data
 - Forecasting performance data
 - Participant's estimate of impact
 - Supervisor's estimate of impact
 - Management's estimate of impact
 - Estimates based on expert opinion or previous studies
 - Calculation or estimation of the impact of factors other than the program
 - Customer estimate of impact
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further underscore the need to isolate program effects and to address the reasons for some objections to the process. This section also explores some initial steps that must be taken to make isolation of program effects an easy-to-accomplish piece of the evaluation process.

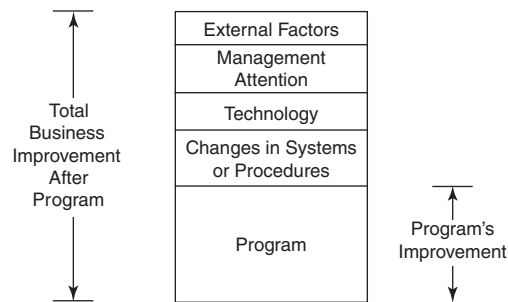
The Need to Isolate Program Effects

To many practitioners, isolating the effects of programs and projects seems logical, practical, and necessary; among others, however, it is still much debated. Some professionals argue that isolating the effects of a process (for example, training) goes against everything taught in systems thinking and team performance improvement (Brinkerhoff and Dressler, 2002). Others argue that the only way to link a program to actual business results is to isolate its effect on those business measures (Russ-Eft and Preskill, 2001).

Much of the debate centers on misunderstandings about the isolation of program effects and on the challenge of the isolation process. The first point of debate is the issue of complementary processes. It is true that many changes in processes are implemented as part of a total performance improvement initiative; as a result,

Figure 1.1. Finding a Program's Contribution

Several factors contribute to an improvement after a program is conducted



many influences work in harmony to improve business results. Often, the issue is not whether a particular process is part of the mix but how much it is needed, what specific content is appropriate, and what is the most effective method of implementation to drive its share of improvement.

The principle of isolating the effects of a program is not meant to suggest that any program should stand alone as the single variable influencing or driving significant business performance. The isolation issue comes into play, however, when different processes are influencing business results, as shown in Figure 1.1, and the different owners of the processes need information about their relative contributions. In many situations, they need to address the question “How much of the improvement was caused by the process that I am responsible for?” If they do not have a specific method for answering this question, they lose tremendous credibility, especially with the senior management team.

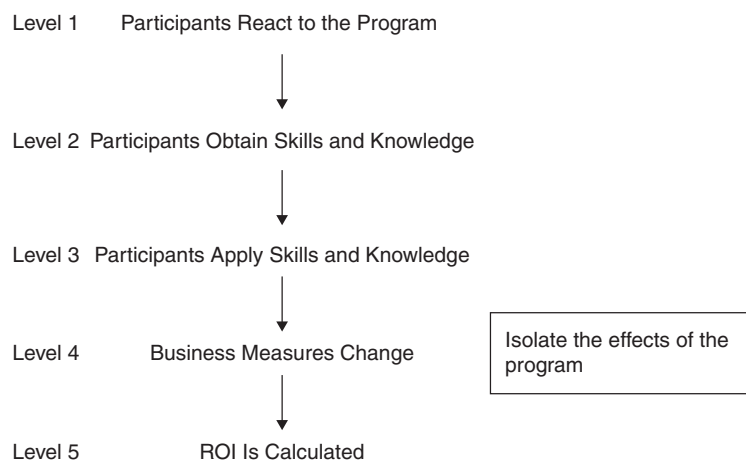
The second point of debate is the difficulty of isolating program effects. The classic approach—and the most credible one—is to use control group arrangements, in which one group participates in the program and another does not. However, in the majority of studies, control groups are not feasible or appropriate, so other methods

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must be used. Researchers sometimes use time series analysis, or forecasting. Beyond that, many researchers either give up, suggesting that isolation of program effects cannot be addressed credibly, or choose to ignore the issue, hoping that it will not be noticed by the sponsor. Neither of these responses is acceptable to a senior management team that needs to understand the link between a specific program and business success. The important point is that this issue should *always* be addressed, even if an expert estimation with an adjustment for error must be used. In this way, isolating the effects of a program becomes an essential, required step in the analysis. This requirement is the basis of Guiding Principle 5 of the ROI Methodology: Use at least one method to isolate the effects of a project.

Chain of Impact: Initial Evidence of Program Effects

Before presenting the techniques for isolating program effects, it is helpful to examine the chain of impact implied in the different levels of evaluation. As illustrated in Figure 1.2, the chain of impact must be unbroken for the program to drive business results.

Figure 1.2. The Chain of Impact

Measurable business impact achieved from a program should be derived from on-the-job application of skills and knowledge over a specified period of time after program completion. On-the-job application occurs at Level 3 of program evaluation (see Figure P.1 in “Principles of the ROI Methodology” in the front of this book; in addition, *ROI Fundamentals*, book one of this series, provides more detail on evaluation levels). Continuing with this logic, successful application of program material on the job should stem from participants learning new skills or acquiring new knowledge through the program, which is measured at Level 2. Therefore, for business results to improve (Level 4), the chain of impact implies that measurable on-the-job applications must be realized (Level 3) after new knowledge and skills are learned (Level 2). Without preliminary evidence based on the chain of impact, it would be difficult to isolate the effects of a program. If there is no learning or on-the-job application of the program material, it would be virtually impossible to conclude that the program caused any performance improvements.

This requirement for different levels of evaluation based on the chain of impact is supported in the literature (Alliger and Janak, 1989). From a practical standpoint, it means that data collection at four levels is required for an ROI evaluation. If data are collected on business results, data should also be collected at the other levels of evaluation to ensure that the program helped to produce the business results. This issue is so critical that it became the first Guiding Principle for the ROI Methodology: When a higher-level evaluation is conducted, collect data at lower levels.

This is consistent with the practices of leading organizations participating in benchmarking projects. Organizations that collect Level 4 data on business results usually report that they also collect data at the lower three levels. It is important to note, however, that the chain of impact does not prove a direct connection between a program and business results; the chain of impact is necessary but not sufficient. Taking the step to isolating the program’s effects is

necessary to make this connection and to pinpoint the amount of improvement caused by the program.

If the chain of impact is strong, we expect data between evaluation levels to be correlated. Several research efforts have investigated correlations between the different levels (Bledsoe, 1999; Aaron, 2005). If a significant correlation does not exist, then barriers have caused the process to break down—a logical conclusion in light of the chain of impact. However, most research in this area adds very little to the understanding of evaluation.

In different studies, correlations between two levels show varying levels of connection (or disconnection) between the two. The variation in levels of correlation doesn't mean that the concept of the levels of evaluation is flawed. Instead, as we just stated, it implies that in some cases, one or more barriers prevented a process or program from adding value. For example, most of the breakdowns occur between Level 2 and Level 3. Research has shown that as much as 90 percent of what is learned in a program is not applied and implemented (Kaufman, 2002). Even so, it is important to collect data at both levels to understand how the process of learning is working and how the system in which performers work supports the transfer of learning. A correlation analysis between levels of evaluation adds very little understanding to what must occur in practice for programs to add business value. And correlation analysis does not show a cause-and-effect relationship. Even if there is a strong correlation, the critical step of isolating the effects of a program must still be undertaken to establish a causal relationship between the program and the business improvement.

Identification of Factors Other Than the Program: A First Step

As a first step in isolating a program's impact on performance, all the key factors that may have contributed to the performance improvement should be identified. This step reveals factors other than the program that may have influenced the results, underscoring that the program is not the sole source of improvement. As

a result, credit for improvement is shared among several possible variables and factors, an approach that is likely to gain the respect of management.

Several sources can potentially be used to identify major influencing variables. Sponsors, if they requested the program, may be able to identify factors that should influence the output measure. Sponsors will usually be aware of other initiatives or programs that may affect the output. Even if the program focuses on operational processes, the program sponsor or client may have insight into the other influences that may have driven performance improvement.

Direct clients as well as sponsors may also be able to provide input. The direct clients of a program are the persons who funded the initiative or provided key support for the program. These individuals are keenly interested in the issue that gave rise to the program and may be able to provide insight into other factors that may be influencing the relevant business measures. They are concerned about those measures and often understand their dynamics.

Program participants are often aware of other influences that may have caused performance improvement. After all, it is the impact of their collective efforts that is being monitored and measured. In many situations, they have witnessed previous movements in the performance measures and can pinpoint the reasons for changes. They are normally the experts on this issue.

Analysts and program developers are another potential source of information about variables that might have had an impact on results. Their needs analysis for the program would routinely have uncovered these influencing variables. In addition, program designers typically analyze such variables in addressing the issue of transfer of the skills and knowledge learned during the program.

In some situations, the participants' immediate manager may be able to identify variables that have influenced performance improvement. This is particularly useful when program participants are entry-level or low-skill employees who may not be fully aware of the variables that can influence performance.

Subject matter experts who represent different functions and processes are available. These experts have often provided input and advice needed for the program or project through all the stages of the process. They understand the dynamics of the workplace and the setting in which the program is implemented. They may be able to identify factors that are influencing the business results.

Finally, members of middle and top management may be able to identify factors other than a program that may be influencing performance, based on their experience and knowledge of the situation. Perhaps they have monitored, examined, and analyzed the other influences. Their authority within the organization often increases the credibility and acceptance of the data they provide.

Taking time to focus attention on all the variables that may have influenced performance brings additional accuracy and credibility to the program evaluation process. This step moves the process beyond the scenario in which results are presented with no mention of other influences, an omission that often destroys the credibility of an impact report. This initial step also provides a foundation for some of the techniques described in this book by identifying the variables that must be isolated in order to show the effects of a particular program.

A word of caution is appropriate here. Halting the process at this step would leave many unknowns about the actual impact of a program and might leave the client or senior management with a negative impression of the program because the analysis might have identified variables that management did not previously consider. Therefore, it is recommended that program staff members go beyond this initial step and use one or more of the techniques for isolating the impact of a program that are the focus of this book.

Final Thoughts

This brief introductory chapter has outlined the reasons why it is necessary to tackle this critical issue, isolating the effects of

programs. Without it, credibility is lost, and with it, credibility is gained. That is the key issue. The next chapter focuses on the most credible method for isolating the effects of programs: using control groups.

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