The Six Boxes™: A Descendent of Gilbert's Behavior Engineering Model

by Carl Binder

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Thomas F. Gilbert contributed many powerful ideas and models to the practice of improving human performance in organizations. Perhaps the most important of these was his emphasis on the *products* of behavior rather than on behavior itself. By focusing on *valuable accomplishments* produced on the job by behavior, he provided the missing link from individual or group behavior to the economic goals of an enterprise. His definition of human competence (Gilbert, 1978) as a function of worthy performance (expressed as an equation in Figure 1) supports the calculation of return on investment (ROI) in performance improvement.

While his accomplishment-based approach to performance improvement is not always fully understood or practiced by those in the field of human performance technology (HPT), it towers over his other strategic and tactical contributions to our field. Many of his other contributions were useful models or templates for performance analysis or design, tools that served subsidiary roles in relation to his overall accomplishment-based approach.

Among them, the Behavior Engineering Model (Gilbert, 1978) has been the most valuable to me. This article describes some of the applications that I and my associates have developed, adapting the categories from Gilbert's model in a trademarked approach that effectively communicates and applies performance improvement principles with ordinary non-technical people in organizations.

It may be worthwhile to note that Tom Gilbert, brilliant though he was, never quite succeeded in making his work commercially successful. Many of his colleagues and students (e.g., Harless, Zigon) have been able to transform his concepts into commercially viable businesses, thereby allowing the world to benefit from Tom's brilliance. But Tom himself was always more a visionary professor than a successful businessman, and I sincerely hope that my old friend would be pleased to see how we have been able to gain wider acceptance and application for some of his key insights.

Adapting the Model

The original Behavior Engineering Model, as presented in *Human Competence* (Gilbert, 1978) owed its structure to Skinner's three-term contingency (Skinner, 1969), which identified *discriminative stimuli*, *responses*, and *consequences* as the components of behavior-environment interactions. Acknowledging Skinner's contribution to our understanding of behavior and the variables that control it, Gilbert aligned the three columns in his six-cell model with the three terms in Skinner's formula. He distinguished between environmental factors (*data*, *instruments*, and *incentives*) and individual factors (*knowledge*, *capacity*, and *motives*) corresponding to Skinner's three components.

$$\textbf{worthy performance} = \frac{\textit{value of accomplishments}}{\textit{costs of behavior}}$$

Figure 1. Equation for Worthy Performance.

Although as one of B. F. Skinner's last graduate students, I initially tried to relate Gilbert's model to Skinner's when speaking with colleagues and clients, I ultimately found it counterproductive to do so. The conceptual relationships between the three-term contingency of operant conditioning and the factors in Gilbert's cells are certainly obvious. But reference to Skinner's work in discussions with corporate clients often detracted from the purpose of those discussions. And some of the language in Tom's original formulation was not helpful in communicating with many business people. Despite my own intellectual heritage, I discovered that in most cases it would be easier to communicate about the Behavior Engineering Model *without* reference to Skinner or operant conditioning, and with some language adjustments.

A second problem was the name of the model—"Behavior Engineering." On one hand, some listeners tended to substitute the phrase "performance engineering" to acknowledge our focus on performance and away from behavior for its own sake. However, the factors sorted by the six-cell model are those that affect *behavior*, and after trying with mixed success to correct the utterances of clients, we began to use the term Six Boxes™, which we ultimately trademarked as a brand name for our particular model of behavior influence (and the products and services that use the model), with credit to Tom Gilbert.

The categories we now use sort behavior influences into six sets, like Gilbert's model. But the labels we use for each cell are different, as are some of the details we discuss within each category.

	S^D Information	R Instrumentation	S_r Motivation
E Environmental Supports	Data	Instruments	Incentives
P Person's Repertory of Behavior	Knowledge	Capacity	Motives

Figure 2. Gilbert's Behavior Engineering Model.

The following is a summary of how we currently speak about behavior influences with the Six Boxes model:

- Expectations and Feedback: As in Gilbert's model, this category includes information provided to performers about what they are expected to accomplish, under what conditions, and how they are performing in relation to those expectations.
- Tools and Resources: This category covers not only the particular tools used to perform work and the work processes themselves, but also such resources as expert consultants, reference documentation, and user interfaces. Stretching the label of this category a bit, we include environmental variables such as heat, light, and general human factors.
- Consequences and Incentives: Like Gilbert, we include both intended and inadvertent consequences of behavior, both monetary and nonmonetary. This may involve negative consequences built into the work process, such as failure by other departments to fulfill orders, which punish doing the right thing. It may also include informal social consequences, positive or negative.

Although we describe the bottom half of the model (like Gilbert) as related more to the individual performer than to the environment, we include in the bottom cells factors that reflect influence of the environment as well.

- Skills and Knowledge: This fourth box includes training and nontraining interventions designed to produce skills and knowledge in the individual. (Notice that job aids might be thought of as an intervention in the Tools and Resources category intended to support Skills and Knowledge.) Like Gilbert, we emphasize that investing in this category can be relatively unproductive if done without ensuring that influences in the top three boxes are aligned.
- Capacity (Selection and Assignment): This category is about the things

Environment	(1) Expectations and Feedback	(2) Tools and Resources	(3) Consequences and Incentives
Individual	(4) Skills and Knowledge	(5) Selection and Assignment (Capacity)	(6) Motives and Preferences (Attitude)

Figure 3. The Six Boxes™ Model of Behavior Influences.

the individual brings to the job that the organization cannot be expected to provide (e.g., personal qualities, social skills, etc.) and that the organization manages through optimal selection of people and assignment to jobs, based on their capacity. Like Gilbert, we notice that when the first four cells have been handled effectively, this one might be less critical than often imagined.

- Motives and Preferences: This box encompasses attitude toward one's job and factors that comprise employee satisfaction. It includes personal preferences for type of work, available incentives, the working environment, and so on. We notice that investing directly in this box with attempts to "pump up" motivation, without managing the previous five boxes, generally does not produce the desired outcome. We also suggest that when organizations adequately address the first five boxes, the sixth one often takes care of itself.

Applications

Anyone who has studied the literature of human performance improvement knows that there are many models that classify behavior influences. Mager and Pipe (1984) offer multiple categories of behavior influence in the context of their flow diagram used for performance problem-solving. Harless (1992) divides behavior influences into three general categories (environment, skills/knowledge, motivation), and multiple sub-categories. Tosti and Jackson (Vanguard Consulting Group, 1995) use a framework containing four categories at three levels in an organization. Many other such classifications exist in the literature, and each is useful for those who apply it in a systematic fashion.

Our Six Boxes model is simply another way of sorting the same variables—one that we have found to be especially easy to understand for most managers and non-technical people. The remainder of this article describes some of the different ways in which we use this framework to work and communicate with clients, including applications in the following:

- gaining alignment for performance improvement efforts,
- analyzing performance problems and designing solutions,
- planning for effective implementation,
- supporting management practices, and
- communicating for organizational change.

Gaining Alignment

Agreement on goals is a major element of the Alignment phase in any performance improvement project. When we work with clients, we attempt to gain consensus among the various influencers and decisionmakers (often from different departments or functions within the organization) about the specific business goals and job outputs (accomplishments) we are trying to produce or improve. Beyond that, however, we find that participants in alignment meetings often see only "parts of the elephant" when it comes to variables that can influence attainment of goals. Some may be aware of compensation issues; others know about the environmental factors that affect performance, while others may be focused on training. In such a context, we often draw our six-cell model on the white board, begin jotting down each person's interests or concerns in the appropriate cells, and drive the discussion toward an understanding of how it all fits together to influence behavior and its products.

If any specific performance intervention is to be successful, it must be in alignment with other variables affecting the desired performance. By using the model to explain how they all fit together, talking through examples of misalignment (e.g., expectations and incentives being in conflict), and expanding all participants' views to include the entire six cells, we are often able to gain greater agreement on both objectives and how to proceed. When we explain that the same six categories of influence will be used as part of our Analysis and Implementation Planning phases, it begins to become clear how the various parties will need to work together to ensure success.

Analysis and Design

During the Analysis phase, all our information-gathering tools are built around the six categories. Interviews and focus groups, as well as observation tools, use these categories as a way of organizing and prompting discussions and notes. Surveys generally include questions in all six categories, and our reports usually contain sections

on findings and recommendations sorted accordingly.

When a client asks for a training intervention, we have found that one of the most powerful applications of the model is to explain that investments in the "fourth box" (Skills and Knowledge) will not pay off if the other categories are in conflict. Frankly, we use this discussion to manage the risk that an organization may implement our training programs without changing other important variables (e.g., job design or incentives), and then complain when they do not see the expected results. Introducing the model at this point in an engagement can sometimes provide a transition from discussions about "training" to a broader consideration of "performance technology"—which is where we'd like to go with all of our clients.

When we design interventions—even the simplest ones—we usually take care to assess relevant information in each of the categories and to design or suggest interventions in more than one. When composing a set of recommendations for clients, these categories provide a useful way to present proposed features of an overall performance improvement *system* or program.

Implementation Planning

Implementation Planning is an area in which the model is also helpful. We often develop knowledge systems for sales organizations that include reference materials (hard copy or on-line), self-study and practice in the field, classroom application training, and coached follow-up on the job. We use the model to develop elements in an overall implementation plan that will support the desired behavior of the target audience and their managers, both during initial implementation of the program and after the "intervention" when they are on the job.

For example, if managers expect sales people to study and practice before coming to a classroom program, they must set clear expectations, provide feedback (e.g., field-based coaching sessions), arrange consequences (positive and/or negative), and provide those involved in supporting such activity in the field with tools for doing so (e.g., coaching guides, time for coaching meetings, etc.). If we cannot secure these program elements, it is far less likely that sales people will arrive at the classroom program prepared to participate.

We have created checklists to identify and select program elements for supporting participation in the learning process itself as well as the desired on-the-job performance. Again, the six categories are helpful in creating such implementation planning tools, to ensure that we don't miss anything that ought to be considered when preparing to roll out a given type of intervention.

Supporting Day-to-Day Management

Front-line managers like the simplicity and practical language of our model. It takes about five minutes to introduce in a minimal way. In a few hours it's possible to provide a systematic introduction to how line managers can use these categories for assessing the factors that affect the individuals or groups they manage and to suggest changes that might help make a difference. Dun and Bradstreet is one of the organizations where the Six Boxes model has been used most extensively. Sales performance consultants adapted our model to take the weight off training as the sole intervention for helping sales people and to broaden discussions to include all variables that might account for performance gaps, or that could be arranged to improve deficits.

Performance-appraisal discussions between managers and their employees can benefit from this, or a similar framework, that encompasses all the factors that might make a difference. Once managers agree with their people on goals or self-improvement targets, they can use these categories to collaborate on achieving them.

Organizational Change

An important function of a model is to establish a common language for discussing a given topic. Our Six Boxes model seems to serve that purpose well and provides a starting place for discussions about fundamental change in how organizations support performance. A vehicle for speaking about behavior and its influences in a common way can be a huge advantage, especially when one must generate consensus in organizations with multiple levels and departments, where achieving goals involves cross-functional processes.

At one company, we worked for several years to guide the transition from a centralized sales-training approach to a performance improvement effort that involved both central-office design professionals and field-based performance consultants. In that environment, we used the Six Boxes model as a framework or "language" for communicating and planning interventions at multiple levels, including:

- presentations to senior executives about problems and solutions, linking features of how the company conducted its business to specific performance gaps in the sales force,
- front-end analyses conducted by field-based performance consultants in collaboration with central-office training professionals,
- design of interventions involving executive and senior vice presidents participating in the Expectations and Feedback category and communication with staff using those terms,
- training of field managers and regional vice presidents that enabled them to identify non-training behavior influences and align their efforts with those of the sales training department, and
- identification of the most cost-effective ways of improving performance by enabling regional managers and their staff to compare the effects of

training with the effects of changing environmental variables on use of a sales-force automation program.

Because the Six Boxes model enabled those discussing these issues at all organizational levels to communicate in the same language, it facilitated both the consistency and the common sense understanding that came to be shared by growing numbers of people in the company. In that way, it contributed to organizational change in a fundamental way.

Thanks to Two Toms

As practitioners of a discipline, many of us struggle with the puzzle of technical precision versus broad acceptance and understanding. Some of us whose backgrounds include academic degrees and professorships may not always use the best language for communicating with the broadest possible audience. While Tom Gilbert's concepts and language have been major influences on my thinking since the 1970s, I was not always able to communicate about them as effectively as I would have liked.

One of those whose influence enabled me to communicate Tom's concepts more broadly was the late Thomas P. Hogan, vice president of sales training at Dun and Bradstreet. A wily sales manager by experience and a great raconteur, in 1994 he suggested that, in discussions with people in his company, we simply use the phrase "Six Boxes" to refer to our model, as we spoke about each "box"—first through sixth. I must thank the combined inspiration of these two Toms for what has become a handy and powerful model for communicating about performance with a broad variety of my clients, associates, and friends.

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