

5 Analytic Planning

There is an often told story illustrating the importance of expertise (it's probably entirely fabricated, but nonetheless it illustrates the point quite well). It goes like this: A homeowner had a problem with a squeaky floor—specifically, there was one, relatively small spot that seemed to defy any repair attempts. The owner of the house retained a long succession of craftsmen, but in spite of what seemed like a simple and a very contained problem coupled with multiple repair efforts, the floor kept on squeaking. Undeterred by repeated failures, the homeowner persisted in his efforts to fix the squeaking floor. And surely enough, eventually yet another craftsman came along and following a careful examination of the potential causes, hammered a handful of carefully placed nails and the floor stopped squeaking! The initial elation of the owner of the house to finally get the squeak fixed turned into dismay upon the receipt of the craftsman's bill of \$1,020. He demanded an explanation and the breakdown of the total charge, following which he received an itemized bill which read as follows:

\$20:	Nailing squeaky floor boards
\$1,000:	<i>Knowing</i> where to nail

This is the essence of the *analytic know-how*, which is the knowledge of the most appropriate (to the task at hand) data management, amalgamation and engineering, modeling and interpretation skills. The goal of this chapter is to outline a conceptual analytic planning framework, which is an extremely critical step to the degree to which the fulfillment of future analytic needs is contingent on specific steps being taken earlier in the data analytical process.

Analytic Planning

Planning is one of the essential building blocks of rational, intelligent behavior. There are two key aspect of planning: The first is the psychological process of thinking about future states or outcomes, as well as the means and impediments of getting there. The second is the creation of a structured action map, or a plan, aimed at achieving stated goals.

The process of planning has several benefits. Thinking that is focused on future states or outcomes of interest spurs the identification of numerous considerations that might not have otherwise been noticed. Structuring of an action plan, on the other hand, brings about procedural clarity through the delineation of process steps, dependencies and the timeline.

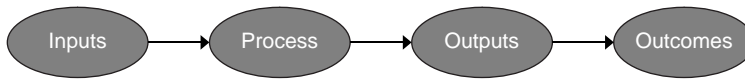


Figure 5.1 A General System Model

Probably the most productive way of looking at analytic planning is through a system approach. A *system*, defined here as an organized set of interrelated elements, is comprised of inputs, processes, outputs and outcomes, all linearly organized as shown above.

Inputs include both resources (human, capital, etc.) as well as the stated organizational objectives, discussed in earlier chapters. *Process* is a collection of means of transforming inputs into something else, namely, outputs. *Outputs* are tangible results produced by the processes embodied by the system. And lastly, *outcomes* are the benefits derived by end users.

The marketing database analytics approach detailed in this book is ideally suited to the systems-based analytic planning because of the implicit determinism embedded in that process, as evidenced by a priori delineation of informational needs, which are derived from organizational goals. The marketing management actions or activities are themselves limited in scope, as they entail evaluation of past activities, identification of the most pronounced drivers of the observed outcomes and using those insights to shape future promotional decisions. In that context, the goal of an analytic system is to generate maximally effective, decision-aiding knowledge.

Planning vs. Plan

Sometimes we confuse the “how” something is produced with “what” is being produced. Naturally, the process of planning should produce a plan—that much is obvious. What gets overlooked, however, is the implicit temporal distinction between the two, namely, that the process of planning should be viewed as being antecedent to the outcome, which is a plan. This is not just a semantic distinction, particularly when placed within the realm of the ongoing nature of the marketing database analytics process detailed here, which demands both flexibility as well as longitudinal consistency. Stated differently, to be effective, an analytic plan has to stem from a robust planning framework, capable of supporting the ongoing marketing mix changes and corrections in a manner that will retain the requisite measurement consistency across time.

Planning Framework

Consider the general systems model depicted in Figure 5.1 above—it is composed of several, serially arranged elements: Inputs, Process, Outputs and Outcomes. Now, consider the marketing database analytics framework (MDA), first depicted in Figure 1.4. As shown in Figure 5.2 below, the two conceptualizations are closely related.

Let’s dig deeper into the above graphically depicted conceptualization. Considering the tenets of the general systems model in the context of the MDA process, we can establish the following interdependencies:

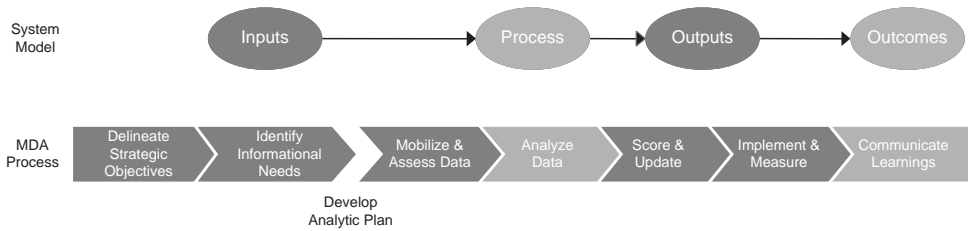


Figure 5.2 System Model vs. MDA Framework

Inputs → Informational Objectives and Data

The creation of decision-aiding knowledge is, to a large degree, shaped by two mutually independent forces: 1. Stated information objectives, which essentially represent questions in need of answers, and 2. The available data, which effectively constrains the validity and the reliability of the resultant insights.

Process → Methods

In many regards, this is the most straightforward part of the analytical plan development—it entails the identification of the most appropriate data analytical methodology or methodologies, given the stated informational objectives and constraints imposed by the available data.

Outputs → Analytic Results

The purpose of this stage is the delineation of expected analytical (statistical) outputs and the assessment of the validity and reliability of those outputs. In particular, it is to “spell out” specific means or tests for establishing non-spuriousness of inferences drawn from data.

Outcomes → Decision Inputs

From the standpoint of end user value, this is a particularly important aspect of the analytic planning process: What steps should be taken to “translate” the often highly abstract, esoteric data analytical outcomes into unambiguous decision-aiding knowledge? It is often both the most overlooked and challenging aspect of the overall data analytical endeavor.

The value in expressly describing the conceptual linkages or interdependencies connecting the MDA process and the systems model is in it laying the objective foundation for a generalizable planning template, discussed next.

Generalizable Planning Template

Although the specifics of any initially developed analytic plan will more than likely change over time, a considerable amount of objectivity and consistency can be instilled by setting up a general planning template. An example of an analytic planning template is shown below—it is worth noting that the essence of that template is to bring about a reasonable amount of standardization, which is particularly important in view of a potential analytical team discontinuity (i.e., a change in the composition of the project team).

Table 5.1 Sample Analytic Planning Template

<i>Input</i>	<i>Analysis</i>	<i>Outcomes</i>
Information Needed: – Exploratory – Predictive	Most appropriate analytical methods	Anticipated analytical/statistical outcomes
Available Data – Limitations		Reliability & validity checks
<i>Business Insights</i>		
Anticipated decision aiding knowledge		

Additional Considerations

A helpful way of thinking about analytic planning is to consider the resultant plan to be a “contract” between the analysts and the end user community. Hence in addition to the above delineated system consideration, a well-crafted analytic plan might also contain the following:

- An explicit delineation of the individual analytic initiatives with a clear linkage to specific informational needs and ultimately, the organization’s strategic objectives.
- An overall completion timeline showing the starting and completion dates for each analytic project.
- An explicit description of how each initiative will improve the decision-making process.
- Analytic and business owners of each initiative, along with their respective roles and responsibilities.

It is worthwhile to remember that the purpose of an analytic plan or a roadmap is twofold: On the one hand, it sets clear expectations among the ultimate business users of the to-be-derived insights, both in terms of the specific upcoming deliverables as well as the approximate completion time. In that sense, it serves to minimize disruptive “clarification” demands, thus allowing analysts to concentrate on the task at hand.

The second key purpose of preparing an explicit analytic roadmap is efficiency. Clear directions go a long way toward streamlining the actual conduct of analyses and reducing potential re-work. Perhaps even more importantly, clarity enhances the quality of data analyst–business user communication, which is the key to timely and cost effective analytics.

Mini-Case 5.1: Analytic Planning and Customer Loyalty Programs

A local, independently owned clothing outlet is considering putting in place a customer loyalty program, both as a defense mechanism against what it sees as an onslaught of national chains, but also as a mean of thanking its repeat patrons. The management likes the idea, but it is concerned that it might be too taxing to administer and thus would like to get a better understanding of what's involved in getting such a program up-and-running. With that in mind, they hired an experienced consultant who outlined the following scenario for them:

Timely and robust information is at the core of any loyalty program, because the essence of those initiatives is captured by the *quid pro quo* (meaning, “this or that” or “give and take”) idea: Those consumers showing repeated willingness to repurchase the product or service are rewarded for their patronage with price discounts and other offerings. This entails—on the part of the brand—being able to identify its loyal buyers as well as knowing those buyers' purchase characteristics, such as average spend, repurchase frequency and lifetime value. Typically, those insights are not available, or not fully available at the onset of the program, thus one of the key aspects of loyalty program development is the anticipation of future informational needs and creation of appropriate data capture mechanisms. It all boils down to three simple questions: What do we need to know to be able to assess the efficacy of the program? What data do we currently have and what additional data do we need to capture? How should we structure the data that is to be captured (i.e., specific metrics) and what mechanism will we use to capture and store the additional data? Let's take a closer look at each question.

The first question—the identification of key informational needs—draws attention to the definition of “success” for a loyalty program. By and large, a loyalty program's success is defined in the context of customer retention and value maximization. For a retail outlet, the former may be a bit fuzzy (attrition and long re-visit cycles may be hard to tell apart), but the latter of the two considerations is quite operationally meaningful, as it captures the amount of spending per unit of time. Hence it follows that the management should be focused on being able to quantify cross-customer value.

The second of the three questions—what data are currently available and what additional data need to be captured—is fairly straightforward to answer. The store already makes use of an electronic transaction processing system (UPC scanners), which means that individual purchases are being captured—of course, what is being captured is the “what,” rather than the “who,” unless the payment is in the form of a credit card. It is important to point out that the once-pervasive “reverse credit card appending” (matching of credit card numbers to a database containing person-identifying information) is no longer legal, but using the card holder's name in conjunction with his/her ZIP code offers a legal and a fairly accurate workaround. Of course, “fairly accurate” might be adequate for the purposes of a direct marketing campaign, but not for the purposes of loyalty tracking; furthermore, not all customers will pay for all their purchases with credit cards. In short, the retailer will need a reliable and consistent method of identifying individual purchasers, which can typically be accomplished with a store-issued loyalty card.

The third and final question—how should the newly captured data be structured and captured—points toward more technically esoteric considerations dealing with measurement properties of new data and specific means of capturing, storing and properly attributing the newly defined metrics. For example, if the management is interested in amassing customer demographics (in addition to purchase details), individual metrics need to be operationally defined (e.g., if “customer age” is one of those measures, should it be captured as a continuous-measured, exact value, or a categorical range?) and their capture mechanism identified (e.g., a “required” field on card application; a point-of-sale query, etc.). An important consideration here is to think in terms of informational outcomes that are expected in the future—for example, if “customer age” is captured as a categorical range (e.g., < 18 years of age, 18–25, 26–35, etc.), future comparisons of “average customer age” might become unexpectedly tricky, as simple arithmetic average (i.e., mean) cannot be computed for categorically coded variables.