Data Analytics for Strategic Management:
Getting the Right Data

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INTRODUCTION

Effective management has evolved from a top-down standardized process of control to a dynamic complex system that needs to involve all stakeholders actively (Macfadyen et al., 2014). Not only do manager need to maintain smooth operations in coordination with other internal and external organizational sectors, but they also need to collect and analyze data about these stakeholders so they can improve current management practices and determine new management direction.

In today's data-driven society, numbers and other evidence abound. However, data by itself is not very useful or even informative. Managers need to strategically conduct data analytics, that is the process of knowing the right questions to ask, determining the relevant data to collect, choosing the appropriate instruments to collect those data, analyzing that data, recommending appropriate actions, implementing them, and evaluating the implementation.

As such, data analysis is only as good that the data collected. However, the details of this process can be daunting; the main reason that managers do not implement data-driven practice is that they lack the relevant knowledge and skill (Rousseau, 2005). Therefore, this chapter focuses on best practices in identifying and collecting data so that data analysis will yield optimum recommendations and actions. Library operations constitute the concrete context of these processes.

THEORETICAL FRAMEWORK

Management

Every organization requires effective management in order to optimize the production and operation of resources and services. Using a systems perspective, an organization may be considered as a managed system of interdependent parts (Kühl, 2013). As the system receives inputs, such as students and resources, it acts upon those inputs and transforms them into outputs, such as winning teams and prepared graduates. Organizations are configured to optimize their systems to achieve their goals. Their structures define how resources will be allocated and how tasks will be performed on those resources. The organizational structure involves division of labor, rules of authority and responsibility, integration of resources and efforts, monitoring and regulation, and norms of behavior. Within this system, managers are responsible for functions that advance the organization.

Collins (1993) identified ten key managerial roles that fit into three clusters.

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- **Interpersonal Roles:** Figurehead who carries out symbolic duties, leader of people, liaison with external information networks
- **Informational Roles:** Information monitor, information disseminator, spokesperson who transmits information to outsiders
- **Decisional Roles:** Entrepreneurial change agent, disturbance handler, resources allocator, and negotiator.

These roles are performed at three levels:

- **Operational:** Supervising non-management personnel, and producing products and services
- **Tactical:** Translating organizational goals into specific program objectives and activities, and coordinating resources
- **Strategic:** Managing interactions with the external environment.

Collins also noted that these roles are only as effective as the manager self-reflects and improves his or her own behavior.

Data touches each of these roles. Norris and Baer (2013) assert that "data expands the capacity and ability of organizations to make sense of complex environments" (p. 13). Even though managers consider data analytics as a priority, "data access and management are proving to be significant hurdles for many institutions" (Macfadyen et al., 2014, p. 22). Data issues of quality, ownership, access, and standardization are barriers to implementing data analysis. While some of these factors may be beyond the manager's control, some effort can be made to gather and standardize available relevant data.

Research and Evidence-Based Practice

Managers should use research to optimize their decision-making and strategic planning. At the personal level, research adds variety and depth to the job, helps one become more reflective, and satisfies one's own curiosity. At the organizational level, research supports strategic planning, increases staff engagement, demonstrates program impact, and enhances the organization's reputation. Research can:

- Establish and measure organizational missions and plans.
- Measure the quality and impact of current practices.
- Measure the effectiveness and efficiency of efforts.
- Measure environmental change.
- Add value to the organization's operations as a whole (Briggs & Coleman, 2012).

Increasingly, today's managers are expected to base their decisions and guide their practice on evidence. External demands by stakeholders and heightened accountability also drive such reliance on data. In her 2005 address as the Academy of Management president, Denise Rousseau defined evidence-based management as "translating principles based on best evidence into organizational practice…away from personal preference and unsystematic experiences toward those based on the best available scientific evidence" (p. 256).

The underlying concept of evidence-based practice asserts that staff should integrate expert opinion, external scientific evidence, and client needs and values in delivering their services (Straus & Glasziou,