
Sustaining Organization Advantage in Times of Financial Uncertainty: The Context for Research & Development Investments by Academic Libraries

RONALD F. DOW

ABSTRACT

THIS ARTICLE WILL ESTABLISH a managerial context for the expenditure of funds for research and development (R&D) by academic libraries. Ultimately, conclusions are drawn concerning the nature of these investments by libraries as management strategies during times of uncertainty.

INTRODUCTION

This discussion will establish a managerial context for the expenditure of funds for research and development (R&D) by academic libraries. In contrast to the volumes that have appeared sustaining the value of R&D expenditures by the for-profit sector, little has appeared in the literature of librarianship on this topic. What has appeared in this literature speaks to these investments in the broadest possible terms. Typical of this literature are statements that urge library managers to “invest in new technologies and new ways of doing the library’s business...” (De Gennaro, 1987, p. 145) or to “encourage independent entrepreneurial activity” (Downes, 1987, p. 83). Other specimens of this literature are descriptive, maintaining, for example, that “technological innovation will be provided to libraries—primarily by specialty suppliers adapting innovative techniques and devices to the particular needs of the library market—rather than pioneered within libraries” (Drake & Olsen, 1979, p. 100). Each statement clearly urges the expenditure of library resources on development or purchase of innovation, but none provides a reasoned organizational context for understanding these investments.

Ronald F. Dow, The University Libraries, The Pennsylvania State University, University Park, PA 16802

LIBRARY TRENDS, Vol. 42, No. 3, Winter 1994, pp. 460-66

© 1994 The Board of Trustees, University of Illinois

FOR-PROFIT RESEARCH & DEVELOPMENT

For-profit corporations use expenditures on research and development to address marketplace challenges. These expenditures are formally directed through task-oriented research and development departments. The task of such departments is to focus on undirected research in areas of corporate interest. Such research may lead to new products and services that aid the entity in serving new and existing markets or may provide assistance to operating divisions in the effort to overcome current operational problems (Ellis, 1984, pp. 40-41).

Central to the corporate theory on the value of investment in research and development is the organizational need to sustain a competitive edge in a rapidly changing marketplace environment. Economists and management theorists have emphasized the crucial role of R&D in determining the economic well being and business success of for-profit entities in such an environment (Jacobson, 1992, p. 788). Few organizations enjoy permanently stable environments, and, therefore, lack success without the development of new products or services.

SUSTAINING COMPETITIVE ADVANTAGE

The idea of sustaining competitive advantage during times of uncertainty has become a topic of academic investigation. Much of this research emphasizes the need for organizations to develop management strategies for marshaling firm resources. The focus of these strategies is on efforts at adapting organizations to their changing environment for the purpose of sustaining the economic viability of the firm.

At this point, a few terms are worthy of definition. The literature defines "internal environment" as "those relevant physical and social factors outside the boundaries or specific decision unit of an organization" that are taken directly into consideration "during organizational decision-making" (Duncan, 1972, p. 314). In the literature, "the term 'strategy' has a wide range of related meanings." However, the use of the word here focuses on the "relationship between a whole organization and its external environment" (Rumelt, 1979, p. 197). Strategy-making then is the managerial process of determining interactions between an organization and its external environment to secure scarce resources. For the for-profit corporation, this interaction is market driven and seeks to maximize return on investment. For the not-for-profit organization, strategy-making relates both to the actions management takes with funding agencies

when seeking to assure resources in support of the organizational mission and goals, as well as to interactions between the organization and constituent groups through the delivery of products and services.

Miller and Friesen (1983, p. 222) have developed a useful structure for characterizing strategy-making activities undertaken by managers in their efforts to achieve symbiosis between organizational goals and processes and the resource purveying environment. They have labeled the first dimension of activities as analysis and the second as innovation. Strategy-making through analysis is reflected by activities that methodically and systematically take more factors into account when decision-making ensures symbiosis among decisions, plans for future contingencies, and develops new levels of organizational expertise. Strategy-making through innovation encompasses the introduction of new products and services, allows for experimentation with new production-serving technologies, and incorporates the search for novel solutions to problems. Innovation frequently assumes a proactive interaction with operating environments and frequently embodies organization risk taking. Investment by organizations in research and development clearly falls under this second category of strategy-making activities. Research and development expenditures are one of the two dimensions of activities managers use when responding to uncertainty in their external operating environment.

IN REVIEW

Research has found that organizations, in order to remain vital and economically viable, must adapt to their external environment. The environment consists of factors that are outside the control of the organization but that are taken into consideration when decisions are made. Research has shown that, during times of uncertainty, managers turn to strategy-making activity as they seek to maximize organizational fit with the external environment. Strategy-making activity can be described as being either analysis oriented or innovative, with research and development expenditures being incorporated as innovative activity.

TRADITIONAL LIBRARY FUNDING STRATEGIES

Libraries can be viewed as culturally based social constructs—that is, their meanings are a sum of uniquely held personal beliefs. Employees, librarians, managers, users, nonusers, funding agencies, and broader institutional administrators all can and do maintain differing and personal opinions, if not heartfelt beliefs, as to what

a library is or should be. When seeking resources from institutional sponsors, librarians and library managers have relied on the goodwill of this socially constructed view of the library to justify claims on institutional resources. In effect, this shared perspective is that the mission of the library is central to the meaning of academia and warrants the full resources due that position. This perspective has, in the past, carried some weight in assuring ongoing institutional support.

A frequent aspect of this construct also maintains a central role for libraries in the process of the ongoing exchange of scholarly output. Events of the past few years, including the escalating cost of library materials, the growing power of information suppliers, and the maturing of competitive markets for networked information are challenging shrinking library budgets and the central role of libraries in the scholarly exchange process. On campus, as access to information outside the walls of the library is becoming more commonplace, some have begun to doubt the value of libraries in an electronic environment. Campus administrators, with greater frequency, speculate on the nature of an electronic library and question the need to expand or maintain the physical edifice that is the library. More and more, librarians and friends of the traditionally defined library fear for the further erosion of institutional support for library programs, while some have even come to fear for the future of libraries in academia and for librarianship as a profession.

Questions as to how libraries will respond to the escalating pace of change, how library managers will fund the acquisition of multiple information formats, how they will meet the expanding service needs of their constituents, and questions as to how they will compete on campus for a piece of a shrinking institutional resource base, have served to magnify the uncertainty that is threatening the most heartfelt beliefs about libraries.

ORGANIZATIONAL ENVIRONMENT

More now than ever, uncertainty in the library's environment is affecting operations and managerial decision-making. Can libraries continue to count on the strength of this culturally constructed perspective of the library to obtain resources into the future?

Barney (1986) maintains that there are conditions that must be met for organizations to continue to exploit the strengths of the culture advantage their organizations enjoy (p. 658). To maintain this advantage, an organization must be viewed by the environment as valuable based on superior performance measured by positive outcomes. The culture of the organization must be seen as possessing rare and

unique qualities that account for these outcomes. And the organization must be viewed as imperfectly imitable—in other words, competitors must be unable to easily replicate or replace that which is unique to the organization.

It is the latter point that represents the greatest uncertainty for libraries. The challenge of these times exists because the resources and services that are unique to libraries may be replaced by technologies that represent new ways of processing, storing, and distributing information, and because the creation of new mass markets for information may bypass libraries and directly engage the library's traditional user base. Barney (1986) concludes that organizations "without valuable, rare, and imperfectly imitable cultures cannot expect their cultures to be the source of sustained competitive advantages" (p. 663). The result of his research points to the need by organizations such as libraries—organizations that have tended to secure resources based upon the strength of a culturally based identity—to adopt strategies that will serve to justify the ongoing investment of institutional resources in the entity once the unique aspect of the organization begins to erode.

LIBRARY STRATEGIES FOR FACING AN UNCERTAIN ENVIRONMENT

Organization research has offered that managers turn to strategy-making activity to address environmental uncertainty. Given the uncertainty that now exists in the funding environment on campus, library managers are also identifying strategies to move their organizations more in line with this changing environment. One such manager, Richard De Gennaro (1987), has observed that: "Determining the right goals and the best strategies and timing for achieving them is the central issue in directing libraries" (p. 146).

Miller and Friesen's (1983, p. 222) two-dimensional framework for characterizing strategy-making activities can provide a tool for assessing the degree to which library managers are exploring strategy options. Miller and Friesen characterized strategy-making activities as either analysis or innovation. When reviewing the literature of librarianship in reference to organizational strategies, we find most of what is written falls into the analysis category. For example, when writing on innovation and libraries, the authors conclude that, "it will be essential for librarians to understand the internal economics of the library, the relationship between input and output..." and that "the retrenchment of the economic base of higher education will constrain library program growth but accelerate innovation for efficiency" (Drake & Olsen, 1979, pp. 95-96, 100). Downes (1987) is even more distinct: "The cycle of innovation which begins with the

installation of new information technology...encourages independent entrepreneurial activity...[and meets the] need for a high level of analytical management...." (p. 83). Although these authors write of innovation, their perspective is not of the same innovation discussed in Miller and Friesen's terms. These writings are characteristic of the analysis perspective of the Miller and Friesen framework rather than of the innovative dimension.

The analysis dimension of this framework is also useful for characterizing another form of strategy writing in the library literature. Typical of this form of thinking is the following, which declares that "Budgeting—resource management—and creativity—fostering environments which encourage questioning, divergent thinking and new ways of looking at things—are our most powerful tools as we move toward the 21st century" (Stoffle, 1991, p. 23). Here again the emphasis is on internal organization activity and analysis in response to change and environmental uncertainty.

Few examples of writing exist in the library literature that describe innovation in the context of the second dimension of the Miller and Friesen framework. In one example, the author describes how one research library supports a separate R&D department. Here group members perform activities that bring an outside perspective and expertise to the libraries' online public access catalog (OPAC) and automation development efforts. They also support line operations with technically oriented training and work with operating departments to solve local automation needs and desktop computing problems (Dow, 1992, p. 38). This organizational use of an R&D department is in accordance with the earlier definition by Ellis of research and development departments in the for-profit sector.

In summary, although library managers refer to strategy-making activity to address environmental change and uncertainty, the majority of the literature addresses enhanced internal analysis of operations, organizational efficiencies, and improved worker productivity. Few examples of traditional innovation strategies, in the for-profit sense, are developed in the library literature.

A CONTEXT FOR R & D EXPENDITURES BY ACADEMIC LIBRARIES

The value of the Miller and Friesen framework is that it reminds management that there are two dimensions to strategizing to meet an uncertain environment. From a review of the literature of librarianship, it is clear that strategies are developing for managing in an uncertain environment. However, much of this literature focuses upon what Miller and Friesen have described as the analysis form of strategy aimed at improving upon internal decision-making and

operations to support organizational goals in response to the decline in external resources.

The second dimension of the Miller and Friesen framework, which relates to innovation in the for-profit R&D context, is less frequently found in the library literature. Is this significant? March and Simon (1958) have hypothesized that most innovations in an organization are a result of borrowing rather than invention (p. 188).

This discussion has not been to answer this question but rather to provide a context for academic library managers to consider R&D expenditures as part of overall strategy-making when managing in what is fast becoming an uncertain environment. To return to a time on campus when library services are unique to their environment may well call for library managers to fully exploit all available strategies and not just those that better maximize existing products and services.

REFERENCES

- Barney, J. B. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review*, 11(3), 656-665.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- De Gennaro, R. (1987). Managing the library in transition: Shifting gears: Information technology and the academic library. In R. De Gennaro (Ed.), *Libraries, technology, and the information marketplace: Selected papers* (pp. 139-154). Boston, MA: G. K. Hall & Co.
- Dow, R. F. (1992). Investing in R&D and the future of libraries. *The Bottom Line*, 6(1), 37-38.
- Downes, R. N. (1987). Managing for innovation in the age of information technology. *Journal of Library Administration*, 8(1), 77-84.
- Drake, M. A., & Olsen, H. (1979). The economics of library innovation. *Library Trends*, 28(1), 89-105.
- Duncan, R. B. (1972). Characteristics of organizational environments and perceived environmental uncertainty. *Administrative Science Quarterly*, 17(3), 313-327.
- Ellis, L. W. (1984). *The financial side of industrial research management*. New York: John Wiley & Sons, Inc.
- Gupta, Y. P., & Chin, D. C. W. (1993). Strategy making and environment: An organizational life cycle perspective. *Technovation*, 13(1), 27-44.
- Jacobson, R. (1992). The "Austrian" school of strategy. *Academy of Management Review*, 17(4), 782-807.
- March, J. G., & Simon, H. A. (1958). *Organizations*. New York: John Wiley & Sons, Inc.
- Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: The third link. *Strategic Management Journal*, 4(3), 221-235.
- Rumelt, R. P. (1979). Evaluation of strategy: Theory and models. In D. E. Schendel, & C. W. Hofer (Eds.), *Strategic management: A new view of business policy and planning* (pp. 196-212). Boston, MA: Little, Brown and Company.
- Stoffle, C. (1991). Libraries, funding and creativity, part II: Creativity. *Bulletin of the American Society for Information Science*, 17(3), 21-23.