Technology-Focused Strategic Planning In Service Businesses

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ABSTRACT

Service technologies have radically altered the strategic environment in ways that offer significant new opportunities and threats for service firms. Service technologies also offer a variety of ways for service providers to add value within their own operations. In many ways, technology as a source of competitive advantage is playing an important role in many service firms. Thus, technology needs to be properly integrated into strategy planning process to provide service firm with a competitive advantage. This paper addresses various issues of technology-focused strategy formulation/development and implementation in services.

INTRODUCTION

In recent years, much has been written about the growth and importance of the service sector. As this area of the economy has grown, the role of technology as a source of building competitive advantage has been critical. Students of the service sector have been exploring the relationship between technology and competitive advantage of service sector [1-4]. For example, FedEx solidified its competitive standing with a system for tracking the status of customers' packages in real time. Citibank dramatically increased its market share in retail banking in part through the introduction of automatic teller machines well before its competition. Over time, it has become increasingly critical for firms in these and other service industries to effectively manage the use and adoption of critical technologies.

Technology as a source of building competitive advantage is playing an important role in many service industries. Service technologies typically are described as "knowledge technologies" [5, 6], and defined by [7] as "the body of ideas which express the goals of the work, its functional importance, and the rationale of methods employed."

Service technology is embodied in every activity performed by organization, so it can have a tremendous impact on the service process, the customer's perception of added value, and company's competitive situation. For example, Pizza Hut's development of a continuous-broiling technique allowed the company to create a personal pan pizza that has given the company a virtual lock on the lunch market for pizza. Self-service gas stations and checkout counters in supermarkets, online financial transactions including banking and stock trading, online purchases of goods formerly bought in traditional brick-and-mortar retail operations, e-tickets for air travel, and speed pass lanes on toll roads and turnpikes are just a few of the many examples of how technology is changing both the way in which services are provided and the way in which customers behave.

The message in Pizza Hut's success with personal pan pizza is not solely that it developed a new technology, however. Whether by design or chance, Pizza Hut's implementation of its new technology was successful because it met the customers' needs for lunch service that could deliver an acceptable product in a known, limited amount of time. Pizza Hut was successful because it gave careful attention to customer needs. Service companies must continually consider and reconsider what their services provide and do for customers. Thus, the selection, use, and application of technology takes shape only when attention is given to the wide range of outcomes that result from customer interactions with the business and its technologies for converting inputs to outputs.

Technology needs to be properly integrated within service firm's strategic planning to support the firm's long-term strategy. This paper addresses issues of technology-focused strategy planning, which emphasizes the strategic role of technology in strategy formulation and implementation in services.

TECHNOLOGY STRATEGY DEVELOPMENT IN SERVICES

Technology as a source of building competitive advantage is playing an important role in many service firms [8]. To use technology for competitive advantage, companies must be explicit about the role of technology in their strategies.

Being explicit requires answers to four basic questions.

1. *What is the basis of competition?* It must be clear whether technology is the critical determinant or just one of several important factors for success.
2. *What technologies must you master to compete?* Critical product, process, applications, and systems technologies must be identified.
3. *How competitive are you in these technologies?* Here's where good competitive intelligence and benchmarking pay dividends.

4. *What is your technology strategy?* A company must choose to be a pioneer, a fast follower, form an alliance or partnership, or a combination of the above [9].

Once technology's role is made explicit, then it is much easier to improve how technology is used, resourced and managed to achieve desired strategic objectives.

Every company or major division of a company has a technology strategy, but it is often implicit—not explicit—and must be deduced from management decisions and resource allocation priorities over time. The chief executive and each business manager must reflect in his or her plan how technology is expected to contribute to competitive advantage, growth and profitability. The technology effort can then be resourced and measured against these goals.

Introducing a new technology means introducing new relationships, and managing technological change means managing a relationship that is changing. This means that decisions regarding technology must be based on a clear idea of the company's fundamental purpose. By grounding technological change in company's corporate strategy, implementation of new strategies will center on common goals.

This technology strategy integrates the technical and human resources of a business into a coherent, direct force to implement or commercialize a continuing flow of technology that fosters delivery of services, process, and related products. The successful creation and execution of a technology strategy depends on the following two main phases with various components. The first phase is technology-focused strategy formulation/development, which includes assessment of core technology; assessment of internal capabilities; and development of balanced technology portfolio.

- Assessment of core technology: *How can the appropriate technology be identified? Should the source of technology be internal or external?*
- Assessment of internal capabilities: *What capabilities are required to obtain,*

develop, use, or commercialize this technology?

- Development of balanced technology portfolio: *What should be the balance between major and incremental, long- and short-term projects?*

The second phase is strategy implementation, which includes technology-centered organizational changes and technology investment decision.

- Technology-based organizational changes: *How should the company be best organized or structured for technological advancement?*
- Technology investment decision: *What level of continuing investment is required to maintain strong value-added components and a strong competitive position?*

Phase I: Technology-focused Strategy Formulation

Assessment and Finding Source of Core Technology

Development of a technology strategy begins with a continuing assessment of which technology to use. The first step in this assessment is to identify the traditional core technology on which the company depends and then to determine whether the company leads or follows competitors in this technology. In the case of fast food, for instance, marketing and production strategies are integrated at the level of service delivery. Most fast-food companies differentiate themselves from competitors through choice of service technology, and restaurant layout and design. Burger King's investment in a continuous chain broiler is a point of differentiation from competitors. Wendy's Super Bar, while not available chain wide, is a self-service approach unusual for fast-food shops.

A thorough technology assessment should identify any emerging technology that could significantly alter the service environment [10]. Forward-looking companies adapt and test new technology. Carl Karcher Enterprises, for instance, has experimented with ATMs and bank debit cards for check settlement. This fast-food, fast-finance linkup

allows customers to pay for the meal without cash, but it also puts cash in their hands if they desire it by allowing bank-account withdrawals. To keep up with the restaurant's pace, the ATM's response time had to be upgraded to eight seconds. The debit cards open up the possibility of serving a new market—namely, people who don't carry cash. Payment by ATM represents an innovation in the process that can enhance CKE's service-delivery systems.

Large companies with research and development departments are beginning to take a broader view of technology. In addition to trying to develop technology, these departments are looking to identify and apply existing new technologies from other sources. Japanese corporations frequently use their network of foreign customers, suppliers, and competitors as sources of technology. These corporations have generally improved on their newfound technology and sometimes have exported it back to the places where they acquired it. Hotel and restaurant companies, for example, can adapt technology from other industries, rather than trying to invent it. Recently yield management has been imported from the airline industry.

Reliance on external technology sources should not be regarded as a satisfactory substitute for internal innovation, however. Every company can make an effort to identify and make technological breakthroughs. Quality circles and other efforts to harness employee ideas are examples of ways to foster internal innovation. On a more formal basis, research and development departments can conduct market studies to assess opportunities for new products and services.

An increasingly important role for R&D departments is to create a corporate technical network coin-posed of suppliers, consultants, customers, competitors, government laboratories, and any other potential source of ideas. To date, prevailing attitudes have precluded close cooperation among different organizations. One technological source that stands ready to conduct research is academic community [11].

Assessment of Internal Capabilities

Once technologies have been identified and sources located, service managers must assess the internal capabilities and assign responsibilities for developing the technology. While it is possible to conceive of service firms in which there is no role for a classic, invention-based research and development function, it is clear that more and more organizations will need to move more heavily into research [12]. Service research and development is sometimes criticized for failing to take advantage of technology that already exists elsewhere, for failing to establish links with other units or functional areas of a business, and for failing to commercialize or implement its developments.

To the extent that these criticisms are accurate, these "failures" in many companies simply stem from a lack of effective technology strategy. Reinventing existing technologies, for instance, results from a lack of appreciation of the "gatekeeper" role that the research and development function can play. On the other hand, corporate top managements who have a burning desire to make their companies competitive understand the need for constant innovation and technology enhancement. As a result, they are constantly making improvements.

Development of Balanced Technology Portfolio

A major concern in developing technology strategy is the balance between different types of technology (e.g., long- versus short-term; acquisitions and internal development). If there is too much long-term work, for instance, an R&D department might be in danger of losing its link to operations and of being perceived as irrelevant. If there is too little long-term work, on the other hand, the corporate importance of the R&D function might be diminished. Likewise, the balance between focusing on initial development and final implementation must be maintained so that the resources for the important later stages of innovation are not diluted.

Maintaining a balance in the portfolio will require occasional pruning of large projects that will be entering the testing and implementation phase. Since these projects can be disruptive, it's best to choose just one or two at a time. This pruning, though difficult, contributes to a greater rate of rapid and successful implementation of the chosen projects that can only enhance the credibility of the technology development system.

Many executives advocate starting small and gradually increasing the size of programs and projects. When top management can rely on a technology staff to deliver consistently on small projects, future projects will be larger and the department's scope of operations should expand.

Phase II: Technology-centered Strategy Implementation

Technology-based Organizational Changes

The organizational and geographic separation often inhibits innovation and the transfer and use of technology. Face-to-face contact is blocked and shared goals, discouraged. Moreover, R&D departments that are isolated from operations are usually ineffective [13].

Formal structures alone are incapable of dealing with the uncertain nature and varying needs of new technology. A flexible organizational response is needed. The "skunk works" concept promoted by Thomas Peters shows the importance of non-traditional behavior to innovation [14]. As one way of dealing with this difficulty, many technology-based companies are starting to use technical networks extensively. Technical and business personnel located throughout these corporations are integrated through a variety of formal and informal channels. Such networks can be temporary when they are supporting a specific project, or they can be permanent for managing technology strategy.

A company must also develop procedures for ensuring the internal transfer of technology among departments, units, or properties. Paradoxically, internal transfer may be more difficult to set up when everything seems to be going well and nobody is looking for change. Task forces or other internal structures may be required to develop innovation. Among other things, these task forces should be charged with blending technology with the fulfillment of workers' needs.

Technology Investment Decision

One of the most contentious issues surrounding technology in many companies is how much funding is required. Spending on research and development is just part of the picture, however, since much innovation takes place outside the company [12]. Moreover, the cost of research and development can be small when compared with such later stages of innovation as testing, retraining, and organizational restructuring. To be innovative, service companies must fund all stages of development.

Unfortunately, there is no specific formula to guide spending on innovation. Service firms should at least determine a base level of funding for continuous assessment and technical activities. The key to spending on innovation is to maintain spending levels even during times of depressed earnings.

Over and above this base level, executives must consider specific program and project funding. A company should have a system that supplies funding for major strategic innovations on a case-by-case basis at any rate that ensures rapid implementation. Senior managers should be included in the system so that their support can be garnered for a project, thereby increasing the likelihood of its implementation. Evaluating the value of a continuing investment in technology is difficult, even when implementation has clearly been successful. Senior executives in successful, technology-driven corporations say that assessing the direct return on investment is virtually impossible.

Instead, they suggest that the contribution be measured by the number of significant innovations introduced.

SUMMARY AND DISCUSSION

Technologies have radically altered the strategic environment in ways that offer significant new opportunities and threats for service firms. In addition, technologies offer a variety of ways for service providers to add value within their own operations. Thus, the strategic planning of innovative technology in services can have widespread impact on the value-added activities for a service firm or industry.

Service firms that develop a strategic plan for managing technological change will be better equipped to face the changes that will undoubtedly occur in the coming years. What is required is an approach to strategy formulation and implementation that is based on analysis and development of a company's technological core.

REFERENCES

[1] Kellogg, D. L., & Nie, W. (1995). A framework for strategic service management. *Journal of Operations Management, 13,* 323-337.

[2] Morone, J., & Berg, D. (1993). Management of technology in the service sector: Practices in the banking industry. *Journal of High Technology Management Research, 4(1),* 123-137.

[3] Hayes, R. M., & Thies, E. A. (1991). Management of technology in service firms. *Journal of Operations Management, 10(3),* 388-397.

[4] Quinn, J. B., Baruch, J. J., & Paquette, P. C. (1988). Exploiting the manufacturing-service interface, *Sloan Management Review. 257(6),* 45-56.

[5] Perrow, C. (1967). A framework for the comparative analysis of organizations. *American Sociological Review, 32,* 196-208.

[6] Thompson, J.D. (1967). *Organizations in Action.* New York: Basic.

[7] Dubin, R. (1968). *Human Relations and Administration* (3rd edition). New Jersey: Prentice Hall.

[8] Lewis, M.A. (2002). Selecting and implanting service technology: Control, uncertainty and competitive advantage. *The Service Industries Journal, 22(2),* 17-42.

[9] Fleming, S. C. (1991). Using technology for competitive advantage. *Research Technology Management, 34(5),* 38-41.

[10] Kandampully, J. (2002). Innovation as the core competency of a service organization: The role of technology, knowledge and networks. *European Journal of Innovation Management, 5(1),* 18-26.

[11] Haywood, K. M. (1987). Developing an industrial interaction strategy. *Hospitality Education and Research Journal, 10-11,* 21-35.

[12] Sirilli, G., & Evangelista, R. (1998). Technological innovation in services and manufacturing: Results from Italian surveys. *Research Policy*, *27*, 881-899.

[13] Morton, J. A. (1971). *Organizing for Innovation.* New York: McGraw-Hill.

[14] Peters, T. & Austin, N. (1985). *A Passion for Excellence: The Leadership Difference*. New York: Random House.

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