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Strategic Information System and Contingency Planning is Necessary for The Rapid Growth of Any Organization

Adaobi Udoka Okeke

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ABSTRACT: *Strategic information system planning (SISP) has been identified as a critical management issue. It is considered by many as the best mechanism for assuring that IT activities are congruent with those of the rest of the organization and its evolving needs. Our research investigated the success of SISP as a function of its key success factors (KSFs) in different contexts and SISP approaches, in a framework that integrated all of the SISP components and provided a new perspective on how the constructs are instrumental to produce SISP success. Based on responses from 172 American CIOs, our study's findings empirically supported our research model: the combination of SISP context and approach was found to have a moderating influence on the basic relationship between SISP KSFs and its success, the best predictor for the long-term success of the SISP process was apparently based on the three-way interactions between SISP's KSFs, its approach and its context. In addition, specific combinations of SISP approach and SISP context were found to decrease or increase the size of the ''planning paradox'' (the inconsistency in the behavior of the ''basic relationship'' between the three).*

KEYWORDS: Strategic Information System, contingency planning, rapid growth, organization

INTRODUCTION

Strategic information system

A collection of instances of information systems used for strategic purposes showed at least theoretically, that there is the existence of a new variety of computer application. The conventional view at the time recognized only management information systems, and management support systems, the former used to automate basic business processes and the latter to satisfy the information needs of decision makers. (Cf. articles by Richard Nolan, Jack Rockart, Michael Scott Morton, et al. at that time) ...But as file of cases grew, it was realized that the conventional perspective on information systems was incomplete, unable to account for SIS. The examples belied the theory, and the theory in general blinded believers from seeing SIS. Indeed, some conventional information systems planning methodologies, which act like theories in guiding the

systematic search for computer application opportunities, exclude certain SIS possibilities from what might be found.

"This growing awareness of the inadequacy of the dominant dogma of the day led to the investigation of the conceptual foundations, so to speak, of information systems. At first, it was believed that the conventional gospel could be enlarged to accommodate SIS. But as the research progressed, this position was abandoned and concluded that to explain SIS and facilitate their discovery, one needed to view uses of computer (information) technology from a radically different perspective."

"This was called the strategic perspective on information systems (technology). This discussion is for top executives and line managers, and shows how computers (information technology) can be used to support or shape competitive strategy."

Strategic systems are information systems that are developed in response to corporate business initiative. They are intended to give competitive advantage to the organization. They may deliver a product or service that is at a lower cost, that is differentiated, that focuses on a particular market segment, or is innovative.

Some of the key ideas of storefront writers are summarized. These include Michael Porter's Competitive Advantage and the Value Chain, Charles Wiseman's Strategic Perspective View and the Strategic Planning Process, F. Warren McFarlan's Competitive Strategy with examples of Information Service's Roles, and Gregory Parson's Information Technology Management at the industry level, at the firm level, and at the strategy level.

Strategic information systems are those computer systems that implement business strategies; they are those systems where information services resources are applied to strategic business opportunities in such a way that the computer systems have an impact on the organization's products and business operations. Strategic information systems are always systems that are developed in response to corporate business initiative. The ideas in several well-known cases came from information Services people, but they were directed at specific corporate business thrusts. In other cases, the ideas came from business operational people, and Information Services supplied the technological capabilities to realize profitable results.

Most information systems are looked on as support activities to the business. They mechanize operations for better efficiency, control, and effectiveness, but they do not, in themselves, increase corporate profitability. They are simply used to provide management with sufficient dependable

information to keep the business running smoothly, and they are used for analysis to plan new directions. Strategic information systems, on the other hand, become an integral and necessary part of the business, and directly influence market share, earnings, and all other aspects of marketplace profitability. They may even bring in new products, new markets, and new ways of doing business. They directly affect the competitive stance of the organization, giving it an advantage against the competitors.

Most literature on strategic information systems emphasizes the dramatic breakthroughs in computer systems, such as American Airlines' Sabre System and American Hospital Supply's terminals in customer offices. These, and many other highly successful approaches are most attractive to think about, and it is always possible that an equivalent success may be attained in your organization. There are many possibilities for strategic information systems, however, which may not be dramatic breakthroughs, but which will certainly become a part of corporate decision making and will, increase corporate profitability. The development of any strategic information systems always enhances the image of information Services in the organization, and leads to information management having a more participatory role in the operation of the organization.

The three general types of information systems that are developed and in general use are **financial systems, operational systems, and strategic systems**. These categories are not mutually exclusive and, in fact, they always overlap to some. Well-directed financial systems and operational systems may well become the strategic systems for a particular organization.

Financial systems are the basic computerization of the accounting, budgeting, and finance operations of an organization. These are similar and ubiquitous in all organizations because the computer has proven to be ideal for the mechanization and control or financial systems; these include the personnel systems because the headcount control and payroll of a company is of prime financial concern. Financial systems should be one of the bases of all other systems because they give a common, controlled measurement of all operations and projects, and can supply trusted numbers for indicating departmental or project success. Organizational planning must be tied to financial analysis. There is always a greater opportunity to develop strategic systems when the financial systems are in place, and required figures can be readily retrieved from them.

Operational systems, or services systems, help control the details of the business. Such systems will vary with each type of enterprise. They are the computer systems that operational managers need to help run the business on a routing basis. They may be useful but mundane systems that simply keep track of inventory, for example, and print out reorder points and cost allocations. On the other hand, they may have a strategic perspective built into them, and may handle inventory in

a way that dramatically impacts profitability. A prime example of this is the American Hospital Supply inventory control system installed on customer premises. Where the great majority of inventory control systems simply smooth the operations and give adequate cost control, this well-know hospital system broke through with a new version of the use of an operational system for competitive advantage. The great majority of operational systems for which many large and small computer systems have been purchased, however, simply help to manage and automate the business. They are important and necessary, but can only be put into the "strategic" category it they have a pronounced impact on the profitability of the business.

All businesses should have both long-range and short-range planning of operational systems to ensure that the possibilities of computer usefulness will be seized in a reasonable time. Such planning will project analysis and costing, system development life cycle considerations, and specific technology planning, such as for computers, databases, and communications. There must be computer capacity planning, technology forecasting, and personnel performance planning. It is more likely that those in the organization with entrepreneurial vision will conceive of strategic plans when such basic operational capabilities are in place and are well managed.

Operational systems, then, are those that keep the organization operating under control and most cost effectively. Any of them may be changed to strategic systems if they are viewed with strategic vision. They are fertile grounds for new business opportunities.

Strategic systems are those that link business and computer strategies. They may be systems where a new business thrust has been envisioned and its advantages can be best realized through the use of information technology. They may be systems where new computer technology has been made available on the market, and planners with an entrepreneurial spirit perceive how the new capabilities can quickly gain competitive advantage. They may be systems where operational management people and Information Services people have brainstormed together over business problems, and have realized that a new competitive thrust is possible when computer methods are applied in a new way.

There is a tendency to think that strategic systems are only those that have been conceived at what popular, scientific writing sometimes calls the "achtpunckt." This is simply synthetic German for "the point where you say ‘acht!’ or ‘that’s it!’" The classical story of Archimedes discovering the principle of the density of matter by getting into a full bathtub, seeing it overflow, then shouting "Eureka!" or "I have found it!" is a perfect example of an achtpuncht. It is most pleasant and profitable if someone is brilliant enough, or lucky enough, to have such an experience. The great majority of people must be content, however, to work step-by-step at the process of trying to get

strategic vision, trying to integrate information services thinking with corporate operational thinking, and trying to conceive of new directions to take in systems development. This is not an impossible task, but it is a slow task that requires a great deal of communication and cooperation. If the possibilities of strategic systems are clearly understood by all managers in an enterprise, and they approach the development of ideas and the planning systematically, the chances are good that strategic systems will be result. These may not be as dramatic as American Airline's Sabre, but they can certainly be highly profitable.

There is general agreement that strategic systems are those information systems that may be used gaining competitive advantage. How is competitive advantage gained?. At this point, different writers list different possibilities, but none of them claim that there may not be other openings to move through.

Some of the more common ways of thinking about gaining competitive advantage are:

-Deliver a product or a service at a lower cost. This does not necessarily mean the lowest cost, but simply a cost related to the quality of the product or service that will be both attractive in the marketplace and will yield sufficient return on investment. The cost considered is not simply the data processing cost, but is the overall cost of all corporate activities for the delivery of that product or service. There are many operational computer systems that have given internal cost saving and other internal advantages, but they cannot be thought of as strategic until those savings can be translated to a better competitive position in the market.

-Deliver a product or service that is differentiated. Differentiation means the addition of unique features to a product or service that are competitive attractive in the market. Generally such features will cost something to produce, and so they will be the setting point, rather than the cost itself. Seldom does a lowest cost product also have the best differentiation. A strategic system helps customers to perceive that they are getting some extras for which they will willingly pat.

-Focus on a specific market segment. The idea is to identify and create market niches that have not been adequately filled. Information technology is frequently able to provide the capabilities of defining, expanding, and filling a particular niche or segment. The application would be quite specific to the industry.

-Innovation. Develop products or services through the use of computers that are new and appreciably from other available offerings. Examples of this are automatic credit card handing at service stations, and automatic teller machines at banks. Such innovative approaches not only give

new opportunities to attract customers, but also open up entirely new fields of business so that their use has very elastic demand.

Almost any data processing system may be called "strategic" if it aligns the computer strategies with the business strategies of the organization, and there is close cooperation in its development between the information Services people and operational business managers. There should be an explicit connection between the organization's business plan and its systems plan to provide better support of the organization's goals and objectives, and closer management control of the critical information systems.

Many organizations that have done substantial work with computers since the 1950s have long used the term "strategic planning" for any computer developments that are going to directly affect the conduct of their business. Not included are budget, or annual planning and the planning of developing Information Services facilities and the many "housekeeping" tasks that are required in any corporation. Definitely included in strategic planning are any information systems that will be used by operational management to conduct the business more profitably. A simple test would be to ask whether the president of the corporation, or some senior vice presidents, would be interested in the immediate outcome of the systems development because they felt it would affect their profitability. If the answer is affirmative, then the system is strategic.

Strategic system, thus, attempt to match Information Services resources to strategic business opportunities where the computer systems will have an impact on the products and the business operations. Planning for strategic systems is not defined by calendar cycles or routine reporting. It is defined by the effort required to impact the competitive environment and the strategy of a firm at the point in time that management wants to move on the idea.

Effective strategic systems can only be accomplished, of course, if the capabilities are in place for the routine basic work of gathering data, evaluating possible equipment and software, and managing the routine reporting of project status. The calendarized planning and operational work is absolutely necessary as a base from which a strategic system can be planned and developed when a priority situation arises. When a new strategic need becomes apparent, Information Services should have laid the groundwork to be able to accept the task of meeting that need.

Strategic systems that are dramatic innovations will always be the ones that are written about in the literature. Consultants in strategic systems must have clearly innovative and successful examples to attract the attention of senior management. It should be clear, however, that most Information Services personnel will have to leverage the advertised successes to again funding for

their own systems. These systems may not have an Olympic effect on an organization, but they will have a good chance of being clearly profitable. That will be sufficient for most operational management, and will draw out the necessary funding and support. It helps to talk about the possibilities of great breakthroughs, if it is always kept in mind that there are many strategic systems developed and installed that are successful enough to be highly praised within the organization and offer a competitive advantage, but will not be written up in the Harvard Business Review.

CONCLUSION

As it moves from a strictly supporting role in the back office, computer-based technology offers new competitive opportunities. A company can use this technology, for example, to build a barrier to entry, to build in switching costs, and even, sometimes, to completely change the basis of competition. Understanding where a company fits on this spectrum can help the CEO determine both the proper level of expenditures and the proper management structure for IS.

To solve customer service problems, a major distributor installs an on-line network to its key customers so that they can directly enter orders into its computer. The computer's main purpose is to cut order-entry costs and to provide more flexibility to customers in the time and process of order submission. The system yields a larger competitive advantage, adding value for customers and a substantial rise in their sales. The resulting sharp increase in the company's market share forces a primary competitor into a corporate reorganization and a massive systems development effort to contain the damage, but these corrective actions have gained only partial success.

A regional airline testifies before the U.S. Congress that it has been badly hurt by the reservation system of a national carrier. It claims that the larger airline, through access to the reservation levels on every one of the smaller line's flights, can pinpoint all mutually competitive routes where the regional is performing well and take competitive pricing and service action. Since the regional airline lacks access to the bigger carrier's data, it allegedly is at decided competitive disadvantage.

A large aerospace company has required major suppliers to acquire CAD (computer-aided design) equipment to link directly to its CAD installation. It claims this has dramatically reduced total cost and time of design changes, parts acquisition, and inventory, making it more competitive.

These examples are not unusual. With great speed, the sharp reduction in the cost of information systems (IS) technology (i.e., computers, remote devices, and telecommunications1) has allowed computer systems to move from applications for back-office support to those offering significant

competitive advantage. Particularly outstanding are systems that link customer and supplier. Though such links offer an opportunity for a competitive edge, they also bring a risk of strategic vulnerability. In the case of the aerospace manufacturer, operating procedures have shown much improvement, but this has been at the cost of vastly greater dependence, since it is now much harder for the manufacturer to change suppliers.

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