

# Strategic use of information systems essay sample

[Technology](#), [Computer](#)



The concept of 'strategic information management' conveys manifold images, such as the strategic use of information systems, strategic information systems planning, strategic information systems. Information can now be delivered to the right people at the right time, thus enabling well informed decisions to be made. Previously, due to the limited information-gathering capability of organizations, decision makers could seldom rely on up-to-date information but instead made important decisions based on past results and their own experience. This no longer needs to be the case. With the right technology in place to collect the necessary data automatically, up-to-date information can be accessed whenever the need arises.[1][3]

With the use of IT, as with most things, comes the possibility of abuse. Data integrity and security is of prime importance to ensure validity and privacy of the information being held. Managing the information involves identifying what should be kept, how it should be organized, where it should be held and who should have access to it. The quality of this management will dictate the quality of the decisions being taken and ultimately the organization's survival.[3]

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

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realized that a new competitive thrust is possible when computer methods are applied in a new way.[12]

When talking about the vast field of Information Systems there is not just one pressing issue, there are three: Accuracy, Usability, and Time. Without the combination of these three factors a business would go under in the matter of months.

## 1. INTRODUCTION

An information system, can be defined technically as a set of interrelated components that collect (or retrieve), process, store and distribute information to support decision making and control in an organization. In addition to supporting decision making, coordination and control information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products.

Information systems contain information about significant people, places, and things within the organization or in the environment surrounding it. Three activities in an information system produce the information that organizations need for making decisions, controlling operations, analyzing problems and creating new products or services.[24]

These activities are input, processing, and output. Input captures or collects raw data from within the organization or from its external environment. Processing converts this raw input into a more meaningful form. Output transfers the processed information to the people or activities where it will be used. Information systems also require feedback, which is output that is

returned to appropriate members of the organization to help them evaluate or correct the input stage. It is important to note the differences between data, information, and knowledge.[6][9]

**DATA:** are raw facts or elementary descriptions of things, events, activities, and transactions that are captured, recorded, stored, and classified but not organized to convey any specific meaning. Examples of data would include grade point averages, bank balances, or the number of hours employees worked in a pay period.

**INFORMATION:** is collection of facts (data) organized in some manner so that they are meaningful to recipient, for example, if we include student name with grade point averages, customer names with bank balances, and employees' wages with hours worked, we would have useful information.

**KNOWLEDGE:** consists of information that has been organized and processed to convey understanding experiences, accumulated learning, and expertise as it applies to a current business problem or process. To be useful to managers and the organization, information should exhibit a variety of characters, it should be accurate, complete, flexible, reliable, information that is not of high quality can lead to poor decision, costing the organization a great deal of money.[4][14]

OVER the last 30 years, computing costs have dropped by a factor of 10 each decade and capacity has increased by factor of at least 100 each decade . Today's microprocessors can put a mainframe on a desktop, and

eventually into a briefcase or shirt pocket. The future will see even more intelligence built into everyday devices.[9]

The word “strategy” originates from the Greek word *\_strategos\_*, meaning “general.” In war, a strategy is a plan to gain an advantage over the enemy. Other disciplines, especially business, have borrowed the term. As you know from media coverage, corporate executives often discuss actions in ways that make business competition sound like war. Businesspeople must devise decisive courses of action to win just as generals do. In business, a strategy is a plan designed to help an organization outperform its competitors. Unlike battle plans, however, business strategy often takes the form of creating new opportunities rather than beating rivals.

Strategic systems are information systems that are developed in response to corporate business initiatives. 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.

## STRATEGIC INFORMATION SYSTEM

### General Definition [7][16]

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.

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 to realize profitable results.[8][16]

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 of 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.[16]

OPERATIONAL 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-known 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 if they have a pronounced impact on the profitability of the business .[16]

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 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. [16]

A Strategic Information System (SIS) is a system that helps companies change or otherwise alter their business strategy and/or structure. It is typically utilized to streamline and quicken the reaction time to environmental changes and aid it in achieving a competitive advantage. [16]

KEY FEATURES OF THE STRATEGIC INFORMATION SYSTEMS ARE THE FOLLOWING:[10]

- 1) DECISION SUPPORT SYSTEMS that enable to develop a strategic approach to align Information Systems (IS) or Information Technologies (IT) with an organization's business strategies



2) PRIMARILY ENTERPRISE RESOURCE PLANNING solutions that integrate/link the business processes to meet the enterprise objectives for the optimization of the enterprise resources

3) DATABASE SYSTEMS WITH THE “ DATA MINING” CAPABILITIES to make the best use of available corporate information for marketing, production, promotion and innovation. The SIS systems also facilitate identification of the data collection strategies to help optimize database marketing opportunities.

4) THE REAL-TIME INFORMATION SYSTEMS that intend to maintain a rapid-response and the quality indicators.

#### INTERNET COMPETITIVE INTELLIGENCE

Internet can be used to help a company conduct competitive intelligence easily, quickly, and relatively inexpensively in the following ways. [2]

1. REVIEW COMPETITOR’S WEB SITES. Such visits can reveal information about new products or projects, trends in budgeting, advertising strategies, financial strength, and much more. Potential customers and business partners can be found by use of the Link: URL command in search engines to reveal what companies link to competitors’ Web sites.

2. ANALYZE RELATED ELECTRONIC DISCUSSION GROUPS. Internet newsgroups and Web site discussion boards can help you find out what people think about a company and its products. For example, newsgroup participants state what they like or dislike about products provided by you and your competitors. (For example, seeobo. co. nz for a discussion board

about field hockey equipment.) You can also examine potential customers' reactions to a new idea by posting a question.

3. EXAMINE PUBLICLY AVAILABLE FINANCIAL DOCUMENTS. This can be accomplished by entering a number of databases. Most charge nominal fees. The most notable database of financial documents is the Securities and Exchange Commission EDGAR database. ([sec.gov/edgar.shtml](http://sec.gov/edgar.shtml)).

4. DO MARKET RESEARCH AT YOUR OWN WEB SITE. You can conduct surveys or pose questions to visitors at your site. You can even give prizes to those visitors who best describe the strengths and weaknesses of competitors' products.

5. USE AN INFORMATION DELIVERY SERVICE TO GATHER NEWS ON COMPETITORS INFORMATION DELIVERY SERVICES (such as Info Wizard, My Yahoo) find what is published in the Internet, including newsgroup correspondence about your competitors and their products, and send it to you. Known as push technologies, these services provide any desired information including news, some in real time, for free or for a nominal fee.

6. USE CORPORATE RESEARCH COMPANIES. Corporate research and ratings companies such as Dun & Bradstreet ([dnb.com](http://dnb.com)) and Standard & Poor's ([standardandpoors.com](http://standardandpoors.com)) provide, for a fee, information ranging from risk analysis to stock market analysts' reports about your competitors.

7. DIG UP THE DIRT ON YOUR COMPETITORS. Individual and business background checks are available from [knowx.com](http://knowx.com). Credit report services such as the Red Book Credit Service ([thepacker.com](http://thepacker.com)) can provide a credit

history of competitors. “ Actionable intelligence” on competitors is available fromrivalwatch. com.

8. FIND OUT WHAT ARE THE “ GOING RATES” FOR EMPLOYEE PAY.

Trywageweb. com for a free analysis of compensation rates.

9. FIND CORPORATION CREDIT HISTORY. Dun & Bradstreet (dnb. com) offers credit histories for some companies. Other places to look would be court records, banks, annual reports, and credit bureaus.

## PORTER’S COMPETITIVE FORCES MODEL AND STRATEGIES

The most well-known framework for analyzing competitiveness is Michael Porter’s competitive forces model (Porter, 1985). It has been used to develop strategies for companies to increase their competitive edge. It also demonstrates how IT can enhance the competitiveness of corporations. [3]  
[5]

The model recognizes five major forces that could endanger a company’s position in a given industry. Although the details of the model differ from one industry to another, its general structure is universal. The five major forces can be generalized as follows.

1. The threat of entry of new competitors
2. The bargaining power of suppliers
3. The bargaining power of customers (buyers)

4. The threat of substitute products or services

5. The rivalry among existing firms in the industry

## BASIC WAYS TO GAIN COMPETITIVE ADVANTAGE [3][5]

### 1-REDUCE COSTS

A company can gain advantage if it can sell more units at a lower price while providing quality and maintaining or increasing its profit margin.

### 2-RAISE BARRIERS TO MARKET ENTRANTS

A company can gain advantage if it deters potential entrants into the market, enjoying less competition and more market potential.

### 3-ESTABLISH HIGH SWITCHING COSTS

A company can gain advantage if it creates high switching costs, making it economically infeasible for customers to buy from competitors.

### 4-CREATE NEW PRODUCTS OR SERVICES

A company can gain advantage if it offers a unique product or service.

### 5-DIFFERENTIATE PRODUCTS OR SERVICES

A company can gain advantage if it can attract customers by convincing them its product differs from the competition's.

### 6-ENHANCE PRODUCTS OR SERVICES

A company can gain advantage if its product or service is better than anyone else's.

#### 7-ESTABLISH ALLIANCES

Companies from different industries can help each other gain advantage by offering combined packages of goods or services at special prices.

#### 8-LOCK IN SUPPLIERS OR BUYERS

A company can gain advantage if it can lock in either suppliers or buyers, making it economically impractical for suppliers or buyers to deal with competitors.

#### CHALLENGES OF INFORMATION SYSTEMS

When talking about the vast field of Information Systems there is not just one pressing issue, there are three: Accuracy, Usability, and Time. Without the combination of these three factors a business would go under in the matter of months. [15][17][18]

The first of these three and probably the most important of these is the ACCURACY of the information. The information that you provide someone with in order to make vital decisions must be precisely accurate. If one piece of data is incorrect it could mean the difference between life and death, literally. For example, if a doctor receives false information about a patient's allergies he may give that patient medicine that could eventually kill them. Accuracy is a must when it comes to information that is provided to make decisions of any kind.

Another major issue involving information systems is the information's USABILITY. If the business uses software to access the information it has to be easy to use and understand for the end-user as well as the executives. The information needs to be easily accessible from the hardware where it is stored. Also, if the information is generated into a report form of some kind, the report must be made so that it can be interpreted effortlessly in order to make precise decisions. The information provided should have value to the decisions at hand.

The final of the three most significant challenges of the field of Information Systems is the TIME factor. As time progresses everything is built bigger and faster and people seem to be always operating at a faster pace, therefore information needs to be received at a faster rate. If a person or business does not get the information in time to make a prompt decision they could lose out on many opportunities. This concept all started when the phone was introduced and people could be connected to each other in an instant, instead of waiting a week for a letter in the mail. Now as the internet has evolved, people and businesses can send documents and other information to one another in matter of seconds, causing decision-making times to decrease dramatically. A good example of this high information transfer rate is a cash register. At Inventory Systems, within one minute the computer can check on the member's status, scan the items decreasing the inventory, calculate the total, send the transaction to the database, verify the member's credit card, check, or debit card, and even connect to a bank and pre-approve them for another credit card. As people remain to progressively

become more frantically fast paced the challenge of information getting to them will need also to become faster.

These three aspects of Information Systems must be used in conjunction with one another. Information may be received quickly and easy to use, but if it is inaccurate it is worthless. Just the same if the information is either too slow or incomprehensible it is useless as well.

#### BENEFITS OF USING INFORMATION SYSTEMS IN BUSINESS[6]

REDUCING THE LEVEL OF REDUNDANCY equates to cost-savings. When redundancy is reduced and/or eliminated, this saves on man hours worked and frees up employees to take on other tasks. In addition, processes can be streamlined through information systems which further reduce redundancy.

EFFICIENCY is another tangible benefit of assimilating information systems. When computers can take over some of the tedious, detailed and mundane tasks, this makes processes move more quickly with a higher degree of accuracy. While it's true employees still play an importance role in ensuring data is entered correctly, once entered in the program, the management information system can effectively increase efficiency and data integrity.

WITH PROPER PLANNING a company can maximize profit while decreasing overhead costs. Implementing a new system typically comes with a large price tag, but if business requirements and processes are properly and accurately identified, the payoffs can be big.

INVESTING IN INFORMATION SYSTEMS keeps a business competitive and helps an organization carry the ability to maintain visible status in the global economy. Without IS, a business will more than likely fall rapidly behind.

THE BENEFITS OF INTEGRATING TECHNOLOGY within an organization can truly be limitless depending on the level of creativity, strategic planning and innovation in the decision making processes.

#### CHALLENGES OF USING INFORMATION SYSTEMS IN BUSINESS

While the benefits typically outweigh the drawbacks, it is important that organizations recognize the challenges and responsibility that do come with integrating information systems.[15][19]

ORGANIZATIONAL CHANGE is typically one of the largest hurdles a business has to contend with when updating their business environment to include new technology. Change is hard and management may find that many employees do not welcome this change.

DEVELOPMENT AND COST is another challenge. A project such as this can be extremely costly, so it is critical to do proper analysis, design and testing prior to adding new systems. A business will want to be sure the technology will provide long term benefits and the costs do not outweigh the return on the investment.

While the benefits are numerous and payoff can be excellent, the initial costs of incorporating information systems are very pricey. Many businesses find



themselves either delaying or avoiding new technology because of the initial investment involved.

RELIABILITY AND ACCURACY should be determined so that the maximum benefits will be derived. This means time will need to be invested in careful system analysis before development to insure that the information system will meet the requirements of the business processes.

PRIVACY AND SECURITY is another huge challenge for organizations that use technology. Information is a valuable commodity and there is a large responsibility that comes with maintaining data. A lot of sensitive information is collected through the course of business and this responsibility is one that should be taken seriously.

PRIVACY should be considered when making decisions, and any laws abided to. In addition ongoing security is essential, and this is an expensive maintenance that bears no incoming revenue.

Unfortunately many organizations put security on the backburner in favor of other processes such as marketing, accounting or sales because these are what impact incoming revenue; however even one data breach can destroy a business, so these days security is just as important as other business processes. Security cannot and should not be ignored, and is a significant challenge in using information systems.

The global environment that businesses are a part of really has changed the traditional business model and modern businesses understand that in order to evolve, newer models may either need to be developed or the old updated

to include information systems. When taking on this project, however, an organization's decision makers should and do need to be aware of both the benefits and challenges of using information systems in business.

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