

An exploration of the reason organisations adopt information systems strategy

[Business](#), [Strategy](#)



INTRODUCTION

The information systems play a critical role in managing market logistics, especially computer, point-of-sale terminals, uniform product bar codes, satellite tracking, electronic data interchange EDI, and electronic funds transfer EFT, these developments have shortened the order-cycle time, reduced clerical labour, reduced the error rate in documents, and provided improved control of operations. They have enabled companies to make a promise such as “ the product will be at dock 25 at 10: 00 am tomorrow,” and control that promise through information.

Keeping in view of above significance of information system, the report has been designed to explore and outlined the reason of organization adopting information system strategy and what is information system strategy. Also using multiple methodology frameworks that assist in devising IS strategy. At the end of this report the six external drivers are listed in connection with real world example to understand how they influenced on IS strategies.

INFORMATION SYSTEM STRATEGY

The definition of IS strategy is formulation of approaches and planning needed to deploy information systems resources to support organizational strategy.

The definition of development of information systems strategy is usually encompasses the areas of how information systems will be used to support an organization’s strategy. Support means creation of strategic of IS with organization strategy. Impact implies a role for IS in generating opportunities

for an organization to gain competitive advantage. A strategy which covers both these facets is that of Doherty et 999), who describe IS strategy development as

The IS strategy is a process of identifying a portfolio of computer-based to be implemented, which is both highly aligned with corporate strategy and create an advantage over competitors.

An information systems strategy brings together the business aims and understanding of the information needed to support those aims, and the of computer systems to provide that information.

Irrespective, of any definition the main theme of information system is to establish strategy to provide best and timely service to their consumers in order to increase the wealth of shareholders.

The emphasis of information systems strategy is on delivering a portfolio of appropriate software tools and systems that support the future direction of an organization and achieve advantage for the organization (Strategic objectives). Furthermore, the IS strategy also determines the quality of services delivered end-users.

(BODDY, BOONSTRA, KENNEDY, 2002)

REASONS OF INFORMATION SYSTEM STRATEGY

The reasons organization heavily invest to generate its information system is to achieve six important business objectives. These objectives can be outlined as

Operational excellence

New products/services

Business model

Customer and supplier intimacy

Improved decision making

Competitive advantage

And survival

1. Operational excellence

The ultimate objective of every organization is to maximize the wealth of shareholders. The information system provide efficient mean to optimize the production and operations capability for the business. Also some time it needs to change the way organization conducting its business and management attitude. There are many success stories of those who plan strategically to implement information system and bring fundamental results due to this implementation. For example, Wal-Mart being as a largest retailer gains sales more than \$348 billion in sales during 2007, which was 1/10 of total retail sales in US. The Wal-Mart achieved that hallmark by linking digitally its retail store system with the suppliers, so when the customer purchased items, the bar code link identified the suppliers about outflow and demand of certain product and suppliers timely replenish the stock.

2. New products and services

The information system enables organization about the trend of new product or services. The demand can be evaluated of competitors product and then it is matched with the market to assess there is any need of copy cat product.

Such as the music industry is no longer like it was in 2000. The exuberant demand permits the Apple Company to innovate new products with different styles.

3. Customer and supplier Intimacy

The customer's intimacy can be gauged by their frequency of repurchase, the often they come to buy the goods or receive the services the more they generate revenue for the organization. The supplier's relationship can be evaluated in the same way, if there are few suppliers and all are given confirm order or tie them with contract, the more they will deliver quality raw materials.

Take the example of hotels business, they are using computers to keep track of guests preferences, such as their preferred room temperature, check in time, frequently dialled telephone numbers, and television programs, and store these data in a giant data repository, individual rooms in the hotels are networked to a central network server computer so that they can be remotely monitored or controlled. When these guests arrived to the hotel, the system automatically changes the room conditions, such as dimming the lights, setting the room temperature, or selecting appropriate music, based on the customer's digital profile. Through, extensive use of IT, hotel can carry out their customer profitability analysis and can adequately determine those customers that are providing high revenue.

4. Competitive Advantage

When organization outperform its competitors in terms of operation, new product development, services, and establishing business model, customer

intimacy and last but not least in decision making process, then they are well ahead from their competitors.

Through establishing IS strategy many organization prominently Toyota successfully eliminate waste, adopt continuous improvement, and optimizing customer value. The IS help to build effective supply and lean management system. Let discuss in detail that crucial aspect of IS strategy,

The models which will help us to how to determine and evaluate of competitive advantage in terms of IS strategy's are Porter's Competitive Forces and Generic theory.

4. 1) Porter's Competitive Forces Model

The most widely used mode for understanding competitive advantage is Michael Porter's Competitive forces model. This model provides a general view of the firm, its competitors, and the firmenvironment. These are

Rivalry among existing firm

New Entrants in market

Substitute product in market

Supplier's Power

Buyer's Power

1. Rivalry among existing firm

All firms share market space with other competitors who are continuously devising new, more efficient ways to produce by introducing new products

and services, and attempting to attract customers by developing their brands and imposing switching costs on their customers.

2. New Entrants in market

The new arrival in market often gets kick start its business using several of IT and IS help. In mature market, when there is already fierce competition going on the tool that new entrants can use to get itself introduce to the customers are gaining economy of scale by spreading its fixed cost to the number of units or/and adopting learning curve. The state of the art designed IS can monitor the movement of learning curve that will help management in their decision making process.

3. Substitute Products and Services

In a competitive market, there are several substitutes product each addressing different customers market need. New technologies create new substitutes all the time. To make the product more distinct and attractable organization need often to change its features and packaging to keep the product up to date.

4. Customer's power

The theory's regarding customers retention has been getting enhanced day by day. The new theory related to customers are customer relationship management, which emphasis on keep the existing customers rather than deploying resources to attract the new one. In that sense, the power of the customer grows if they can easily switch to a competitor's products and services, or if they can force a business and its competitors to compete on

price alone in a transparent marketplace where there is little product differentiation, and all prices are known instantly through internet.

5. Supplier's Powers

The supplier's power has huge impact on organization profitability. If there are few suppliers operating in the market the power of suppliers might be high and they would be in the position to convince the organization with their terms and condition. However, if there are many or diversified suppliers in the market, the greater control organization would have to exercise over suppliers in terms of price, quality, and delivery schedules. For instance, manufacturers of laptop PCs almost always have multiple competing suppliers of key components, such as keyboards, hard drives, and display screens.

4. 2) Porter's Generic theory

There are four generic strategise, each of which often is enabled by using information technology and system: low-cost leadership, product differentiation, focus on market niche, and strengthening customer and supplier intimacy. These are

Cost leadership

Product leadership

Focus

1. Cost Leadership

The use of information system to achieve the lowest operational cost and lowest prices is goal of almost every organization. The classic example is

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Wal-Mart. By keeping prices low and shelves well stocked using a legendary inventory replenishment system, Wal-Mart became the leading retail business in the United States. Wal-Mart's continuous replenishment system sends orders for new merchandise directly to suppliers as soon as consumers pay for their purchases at the cash register. Point-of-sale terminals record the bar code of each item passing the checkout counter and send a purchase transaction directly to a central computer at Wal-Mart headquarters. The computer collects the orders from all Wal-Mart stores and transmits them to suppliers. Suppliers can also access Wal-Mart's sales and inventory data using web technology.

Due to efficient use of IS by Wal-Mart they do not need to maintain large inventories of goods in its own warehouse, which cause greater cost of order and holding the inventories, because the system replenishes inventory with lightning speed.

2. Product Differentiation

Those organizations that are charging high prices for their product need always modify their product to keep the product in the eyes of customers. For instance, Google continuously introduces new and unique search services on its web site, such as Google Maps. By purchasing PayPal, an electronic payment system in 2003, eBay made it much easier for customers to pay sellers and expanded use of its auction marketplace. Apple created iPod, a unique portable digital music player, plus a unique online Web music service where songs can be purchased for 99 cents. Continuing to innovate, Apple

recently introduced a portable iPod video player and music-playing cell phone.

Manufacturers and retailers are starting to use information systems to create products and services that are customized and personalized to fit the precise specification of individual customers. Dell Inc. sells directly to customers using assemble-to-order manufacturing. Individuals, businesses, and government agencies can buy computers directly from Dell's production control receives an order, it directs an assembly plant to assemble the computer using components from an on-site warehouse based on the configuration specified by the customer.

3. Focus

Using information systems to enable a specific market focus, and serve this narrow target market better than competitors. Information systems support this strategy by producing and analyzing data for finely tuned sales and marketing techniques. Information system enable companies to analyze customer buying patterns, tastes and preferences closely so that they efficiently pitch advertising and marketing campaigns to smaller and smaller target markets.

The data come from a range of sources-credit card transaction, demographic data purchase data from checkout counter scanners at supermarkets and retail stores, and data collected when people access and interact with Web sites. Sophisticated software tools find patterns in these large pools of data and infer rules from them that can be used to guide decision making.

Analysis of such data drives one-to-one marketing where personal messages

can be created based on individualized preference. For example, Hilton Hotels OnQ system analyzes detailed data collected on active guests in all of its properties determine the preferences of each guest and each guest's profitability.

(LAUDON, LAUDON, 2009)

Multiple Methodology Frameworks

Earl methodology has been regarded as most influential methodologies for developing information systems strategies. According to this work, IT offers major new business opportunities by improving productivity and performance, developing new businesses and enabling companies to gain competitive advantage. The key ideological stance taken by Earl is based not on internal but external or outward looking activities so that business objectives can be met fully. Earl pioneered a multiple methodology with three approaches (top-down, bottom-up and inside-out)

Top-down

Top down is concerned with identifying and agreeing business objectives and the drivers of business value through interviews, debates, existing business strategy and policies. Critical success factors (CSFs) are then developed for areas where success is necessary for survival, and subsequently information systems that support/enable/deliver these CSFs need to found.

Bottom-up

Bottom-up is about exploring what currently exist in terms of hardware, software, IT and IS applications and determining their functions, and how

they work and add value. This activity concerns itself with understanding what systems currently exist and in establishing what needs to exist in the light of company strategic needs. This activity also requires and understanding of any capacity limits or constraints of current systems, which might act as a barrier to future needs.

Inside-Out

Inside-out is about being innovative and finding novel ways of giving the business an advantage. Usually, this needs strategic thinking into state of the art knowledge of other sectors/companies and spotting potential technologies or application of technologies, which will be ground-breaking in the near future. Benchmarking techniques are sometimes useful to highlight where an organization is falling short or has the opportunity to outperform its competitors.

Earl suggests that both top-down and bottom-up methods should be used for IT/IS strategic planning and alignment since this gives a comprehensive overview of the situation from all angles. Accordingly, the top-down methods should be used to clarify business strategies and needs as well as the potential contribution of IT application. This should result in the alignment of IT and IS investment with business needs. Bottom-up methods should be used to discover gaps and map where an enterprise is in IS terms of its IT applications and where it needs to develop to meet the business strategy. The result should be improved specialist-user relationships and knowledge of where IT is important for competitive functioning. The third part of the methodology is termed 'inside-out' and implies designing an organizational

and technological environment, which enables innovations to happen, thus making it possible to gain competitive advantages from IT/IS.

Flaws in Earl's Methodologies

While Earl's model is still relevant it does have a number of flaws:

There is an assumption that because senior management are thinking about the strategic use of IT and IS and their alignment that this view and stance is good for everyone (throughout the enterprise), which may or may not be the case.

The model lacks the ability to chart or predict future technologies and their potential impact on the business.

The model is based on a rational and economic-based manager (Whittington, 1993), who traditionally make decisions by analysing all the facts rather than taking into account more social, cultural, politically charged agendas, which can be entitled 'social' reasons and 'gut feeling' to decisions-making.

Finally, Earl's model does not take into account group and individual interactions and how this social networking is important in determining how things happen in business life.

Since the development of Earl's methodology other frameworks have evolved. A number of them have integrated principles and issues highlighted by Earl but have been modified to address some of the weakness of the Earl's model. (GRANT, HACKNEY, EDGAR, 2010)

External Drivers that Influence IS Strategy

The following are the external drivers that have potential impact while formulating Information strategy and need to be adequately take into accounts.

Transformation of the business enterprise

Emergence of the global economy

Transformation of industrial economies

Competition

De-regulation

Emerging technologies

Changing nature of the customer

Environmental and conservation issues

The value of intellectual assets

1. Competition

Adopting Information System brings fundamental improvement inside and outside operation of organization. The organization added value in its activities by involving the IS across its department. The IS allow firms to understand and make better their supply chain, lean management, and value chain and eliminate all those wastes that do not give any margin to the company. Some of example of adopting Information system is given below.

1. 1) YANSHA Leans on IS to Stay Competitive

YANSHA is one of China's biggest retailers. It sells upscale designer clothes from around the world along with other line merchandise. One of its largest

retail stores occupies 215, 000 square feet in Beijing's famous YOUYI Shopping City.

YANSHA has long experienced market leadership in china, but in recent years has felt increasing completion from international companies.

YANSHA'S management team was aware that its methods of communication with suppliers-the placing and receiving of orders-were less than efficient. It was also aware of other inefficiencies in communication throughout the organization. For YANSHA TO maintain its leadership role in the market, it would need to cut the waste and become lean and mean in its application of information systems technology.

YANSHA turned to IBM China Research Lab to evaluate its information systems and recommend the latest technologies to bring it up to date. IBM implemented a massive system upgrade across the entire enterprise: an enterprise resource planning (ERP) system. The ERP allows YANSHA executives and managers to view real-time performance data, such as sales across all location, in certain regions, or in one particular store. Using this system, managers could, for example, determine the success of a particular marketing approach. The new ERP interfaces with a new supply chain management (SCM) system that provides close communication between YANSHA and its suppliers. These two systems working together, the ERP system and SCM system, allow organization.

The new systems required a substantial investment of time and money for YANSHA, but the benefits have vastly overshadowed the costs. The new

systems reduced the time it takes for suppliers to ship merchandise to YANSHA (order lead time) from 2.5 days to 4.5 hours. The order acknowledgment rate has increased from 80 percent to 99 percent. Order errors have been reduced from 9 percent to 1 percent. The money saved by YANSHA receiving the right merchandise at the right time has saved the company enough money to pay for its expensive new information systems within nine months of rolling them out. Achieving a return on investment (ROI) in such a short time is something any chief information officer (CIO) would be proud of.

2. Deregulation

Deregulation can be defined as when Government cease to act as a controller over the industries and permit maximum liberty of the operation in market is called Deregulation.

The use of IS in case of deregulation become vital because the connection with suppliers crossing the boundaries and new frontier develop which bring competitive edge to the firms. One of example in such situation is

2. 1) 7-Eleven Japan Company

In 1996 the Japanese Industries witnessed major deregulation in sales of stamps, postcards and revenue stamps and it is become possible at convenience stores. 7-Eleven Japan recorded sales figures equivalent to 9 billion yen in this area in 1996. Stamps and other products that customers frequently request contribute to increased storeloyaltyfrom customers even through the products themselves have low profit margins. In 1997

deregulation occurred in the travel industry. In 1998, the medical supplies and finance industries were deregulated and many other areas will also be affected.

7-Eleven Japan invested approximately 4 billion yen in the construction of large-sized refrigeration boxes for ice cream in 1994 and installed them in all of its chain stores. It is quite natural that ice cream sells well in summer time. However, 7-Eleven Japan recorded more than a two-fold increase in ice cream sales in comparison with the previous year. The refrigeration box was placed in the centre of the store where five gondolas used to be stationed. This was a drastic and innovative use of space as convenience stores have a limited space.

Morinaga Milk industry Co. Ltd, Morinaga and Company Ltd, SnowBrand Milk Products Co, Ltd AKAGI NYUGYO, and HAGEN DAAS were the main suppliers. Until then, ice cream was mainly produced in the winter season and prepared for the concentration of sales in summer. However, manufacturers were unable to respond quickly to the change in the market. It was not possible to increase the production of popular ice cream because it would only build up inventory volume. Therefore, 7-Eleven Japan established a system to sell ice cream within 10 days after placing orders. The features of the system are as follows;

On-line transmission of order information and inventory volume of the store directly to producers

Manufacturers produce based on this information and store them in a

storage facility especially prepared for 7-Eleven Japan

The exact quantity required is delivered to the joint delivery centre for frozen products

Form this centre, products are delivered to the stores

In this way, 7-Eleven Japan has constructed a consistent production, distribution, and sales system for ice cream products. Thus, it became possible for the store to sell very fresh ice cream throughout the year. In addition, 7-Eleven Japan tied up with Morinaga Milk industry Co. Ltd Morinaga Company, Ltd and AKAGI NYUGYOU for the development of new products and has developed new types of ice cream that satisfied customers' needs. This is an excellent reflection of 7-Eleven Japan's attitude towards " taste" and " freshness", 7-Eleven Japan Attaches importance to the " un-learning effect", something that breaks away from the existing concept. This is why it could carry out a very drastic innovation in order to sell " summer products during the winter season". (ISHIKAWA, NEJO, 1998)

3. Changing nature of Customer

The information system has been rigorously used to understand need and demand of customers in order to build stable relationship with them. A satisfied customer tends to remain a customer, and it is less costly to retain existing customers than to attract new ones. Therefore, the Information System helps to track down profiles of profitable customers to exceed revenue by continuously temping them. The process include compile the data of customers like

Where the customers are located

What items are in demand

What is the revenue by customer and item in terms of an ABC ANALYSIS

What are the sales patterns and the sizes of orders

A sound database will enable organizations to manage costs, increase profits and make informed decisions about what to put on shelves. No manager ever has all the information needed to make a perfect decision, but having an adequate source of accurate information will improve the quality of decision.

3. 1) KROGER COMPANY

3. 2) BARNEYS NEW YORK

Barneys New York, the upscale clothing store chain, reports a 10 percent increase in online revenue by using data mining software that finds links between online behaviour and greater propensity to buy. Barneys uses a system from proclivity systems to analyze data about when a customer visits its site and other demographic information to determine on whom it should focus its e-mail messages. For example, an email message announcing a sale might be send to those who had purchased certain products in the past but only when the items were on sale. This has not only increased sales but has increased customer goodwill by showing that Barneys understands its clientele's interest.

(GELINAS, DULL, 2010)

4. Emerging technologies

The large supermarkets are extensively using information system to reduce their cost. They are acquiring sophisticated and state of the art technologies to evaluate the customer demand. The sensor machine on doors protect the shop to be stolen the goods. Also bar code or tag on the cloth helps organization to evaluate the demand of the product and link that technology with the Information system, which later send information to the supplier to replenish the particular stock in store.

4. 1) Sainsbury

Since 1989, Sainsbury has implemented a high-tech information system that has halved the average time it takes to get a product from the supplier to the consumer. The impact has not only been on the Sainsbury organization, but also on other organizations within the retailfoodsupply chain. According to Angus Clark, the Sainsbury director responsible for systems and distribution, bar-code scanning at the checkout counters has changed the whole supply-chain operation from a “ push” system to a “ pull” system. Historically, forecasts dictated what was pushed down the supply chain to each retail outlet. But scanning has allowed Sainsbury to capture demand data the instant a sale in made. Now, production and distribution can be calibrated to levels of real demand.

(STAHL, GRIGSBY, 1997)

5. Transformation of Business Enterprise

Organization structure refers to organizational subunits and the way they relate to the overall organization. An organization's structure depends on its goals and approach to management, and can affect how it views and uses information systems. The types of organizational structures typically include traditional, project, team and virtual. Organizational structure can have a direct impact on the organization's information system.

5. 1) World Bank

World Bank is two financial institutions owned by 185 member countries. In recent years, the World Bank has suffered from front page scandal's regarding suspected improprieties with its senior-level officials. In 2007, World Bank president Paul WOLLOWITZ was pressured to resign, and in 2005, vice president and CIO Mohammad Muhsin retired under a cloud of suspicion. However, while the press and the world were focused on corruption in the World Bank, some very positive developments were taking place with World Bank infrastructure and information systems that went relatively unnoticed.

The World Bank has traditionally been run as a top-down hierarchy, which is a traditional organizational structure. In recent years, through the use of global information systems, the World Bank has transformed into a decentralized, front-line, matrix organization," observes a recent article in Baseline magazine. Rather than controlling information systems from the top, the World Bank has been investing to empower its clients with the information systems they need locally to participate in the global economy.

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