The Critical Role Of Information Systems Essay, Research Paper

The Critical Role of Information Systems

Today s information systems are both technical and social in nature. Management must understand the importance of information within the organization. It is management s job to understand how information is collected, processed, and distributed. We are all extremely affected by information systems and must be willing to understand and work with them. Our global economy does not allow us to depend on face to face transactions like in the 1980 s. Today, few managers can ignore the importance and impact of how information is handled by their organization. Information systems play a critical role in today s business organization and society (Laudon 5).

Since the emergence of the global economy, the success of firms today and in the future depends on their ability to operate globally. The American economy depends on imports and exports. Foreign trade, both imports and exports accounts for a little over 25 percent of goods and services produced in the United States, and even more in countries like Japan and Germany. This percentage is currently and will continue to grow in the future (5).

Globalization of the world s industrial economies greatly enhances the value of information to the firm and offers new opportunities to businesses. Today, information systems provide the communication and analytic power that firms need to conduct trades and manage businesses on a global scale. Globalization and information technology also brings new threats to domestic business firms. This is brought on by the customer s ability to shop in a worldwide marketplace, obtaining the price and quality information reliably, 24 hours a day. The worldwide market place brings competition to a higher level than ever before, forcing all businesses to play a part in this global economy. In order to become a profitable player in a worldwide market firms, need powerful information and communication systems (5).

Many countries are experiencing the third economic revolution. These countries include the United States, Japan, Germany and other major industrial powers. This revolution, which is now in progress, is transforming itself into a knowledge and information based service economy. This revolution began at the turn of the century and by 1976 the number of white-collar workers employed in offices surpassed the number of farm workers, service workers, and blue-collar workers employed in manufacturing. Today, most people no longer work in farms or factories, but instead are found in sales, education, health care, banks, insurance firms, computer technology, and law firms. In addition, they provide business services like copying, computer software, or deliveries. These jobs primarily involve working with, distributing, or creating new knowledge and information. In fact, knowledge and information fields now account for 75 percent of the American gross national product (GNP), and nearly 70 percent of the labor force (7).

In a knowledge and information based economy, information technology and systems take on great importance. For instance, information technology constitutes for more than 70 percent of the invested capital in service industries like finance, insurance, and real estate. This means that managers decisions about information technology will be the most common investment decision (7).

Productivity of employees depends greatly on the quality of information systems serving them. Management decisions about information technology are critically important to the survival of a firm. Consider also that the growing power of information technology makes possible new services of great economic value. Consider that credit cards, overnight package delivery, and worldwide reservation systems are examples of services that are based on new information technologies. Information systems have many uses. They not only help you track inventory but also help you make decisions on where to open another store and assist in forecasting how much money it will cost to maintain it (7).

There are six major types of information systems. The first is the Executive Support Systems (ESS). This is a strategic level system that allows senior managers to tackle and address five-year trends, operating plans, budget forecasting, profit planing, and manpower planning. The second is Management Information Systems (MIS). This is a management system and is directed at middle managers in assisting them make decisions on sales management, inventory control, annual budgeting, and capital investment analysis. Another management level system is the Decision Support System (DSS) and is also directed at middle managers. This system is directed for the managers that are crippled by their, Paralysis of Analysis . The fourth and fifth, are knowledge level systems called Knowledge Work Systems (KWS) and Office Automation Systems (OAS) directed at knowledge and data workers. The KWS is a system that assists highly educated professional and technical staff. This system is used as engineering, graphics, and managerial workstations. The OAS is used for word processing, image storage, and electronic calendars. This system is directed toward clerical workers. The last system is an operational level system called Transaction Processing Systems (TPS) directed towards operational personnel and supervisors. This system has many uses. The TPS is used for order tracking, order processing, machine control, plant scheduling, material movement control, securities trading, cash management, payroll, accounts payable, accounts receivable, compensation, Training and development, and employee recordkeeping. There are many examples of how information systems not only benefit the investor but also the customer (19).

For example, UPS competes globally with information technology. UPS delivers over three billion packages a day to more than 185 countries. All this would not be possible without an accurate information system. UPS has invested 1 to 1.8 billion dollars on information technology alone from 1992 to 1996. This technology has helped UPS boost customer service while keeping costs low and streamlining its overall operations. UPS does this by using a hand-held computer called a Delivery Information Acquisition Device (DIAD). UPS drivers automatically capture customers signatures along with pickup, delivery, and timecard information on these computers. These computers are then placed into an adapter attached to each UPS truck. The adapters then transmit to the main UPS computer network through cellular access. From the main computer network any information can be accessed (Wilson).

Through TotalTrack, its automated package tracking system, UPS can monitor packages throughout the delivery process. Throughout the process, packages are scanned at each stop using bar codes. The information is then fed into a central computer. This allows the customers to search for any package using a package tracking software supplied by UPS. Presently anyone can find out the status of his or her package by accessing the UPS website. It is easy to see how information systems have helped UPS succeed (Wilson).

Another example on the critical role of information systems is Baxter International s stockless inventory and ordering system. This is an information system that locks in customers and satisfaction. Participating hospitals become unwilling to switch to another supplier because of the system s convenience and low cost. Baxter Healthcare International Inc. supplies nearly two-thirds of all products used by United States hospitals. It uses an information system originally developed by American Hospital Supply Corporation. Buying this system has made Baxter a full line supplier for all hospital needs ( Removing the Warehouse ).

Baxter has gone one step further by giving all the buyers a computer to connect directly to their main network. Customers no longer have to call to place an order, all that is required is to use the on-site computer to view and order from the catalog. The system generates shipping, billing, invoicing, and inventory information. In addition, the on site computers provide customers with an estimated time of delivery. Because Baxter has over 80 distribution centers in the U.S., customers often receive orders within hours of placing the order ( Removing the Warehouse ).

The system used by Baxter is similar to the just-in-time delivery systems developed in Japan and now being used in the American automobile industry. Baxter has even gone one step further by eliminating the need for delivery personnel to drop off their carts at the loading dock, which is then placed in a hospital storeroom. Instead, they deliver orders directly to the hospital corridors, dropping them at nursing stations, operating rooms, and stock closets. This essentially has created a stockless inventory since Baxter serves as the hospitals warehouse. A stockless inventory greatly reduces the hospitals need for storage space and personnel. It also lowers holding and handling costs significantly. This is a better system than the just-in-time inventory method because under the other systems, storage is required, but under the stockless inventory system, it eliminates inventories entirely. The most important part of the stockless inventory is the information system that allows all transactions to happen at the touch of a key ( Removing the Warehouse ).

A final example on how information systems benefit large firms by lower costs and allowing them to deliver products and services at lower cost is Wal-Mart . By keeping prices low and shelves well stocked, Wal-Mart uses an outstanding inventory replenishment system triggered by point-of-sale purchases. This is considered the best system in the industry. This continuous replenishment system sends orders to suppliers as soon as the product is purchased by the customer at the register. Point-of-sale terminals record the bar code of each item passing the checkout counter and sends a purchase transaction directly to a central computer at Wal-Mart Headquarters. The computer collects orders from all of the Wal-Mart stores and transmits them to suppliers. Because this system allows them to replenish inventory very fast, Wal-Mart does not spend as much money on stock pilling inventory as its competitors. Wal-Mart only spends 15 percent of sales in overhead while Sears spends 30 percent and Kmart spends 21 percent. Again, this is only possible because of the use of information systems.

As you can see information systems are far more than just input, process, and output machines. Managers and society must understand that these systems provide solutions to business challenges and must be willing to change with the new technology. Information systems can help in the day to day task at work and at home. We no longer have to depend on only one firm or corporation to buy material we need. We can shop the global market 24 hours a day to find the best price and quality. With the increased global competition, companies will have to use information systems in order to survive in today s market place.

Work Cited

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