

# INFORMATION SYSTEMS

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## ABSTRACT

Information is derived from data and useful in solving problems. In addition to support decision making, coordination, and control, information systems may also help managers and workers analyze problems, visualize, complex subjects, and create new products. Information systems play an important role in the success or failure of any organization. Information system can be categorized into two, which is manually and automatically or also known as computer based information system. Information systems support operations, knowledge work and management, in organizations. Information system is used to take a better decision in any organization. A system is simply a group of activities and elements, which have been arranged to achieve a certain objective. An information system is a combination of hardware, software and telecommunication systems, which can support business operations to increase productivity, and help managers make decisions.

**Keywords:** *Components of information system, Fundamental roles of information systems applications in business, Capabilities of information systems*

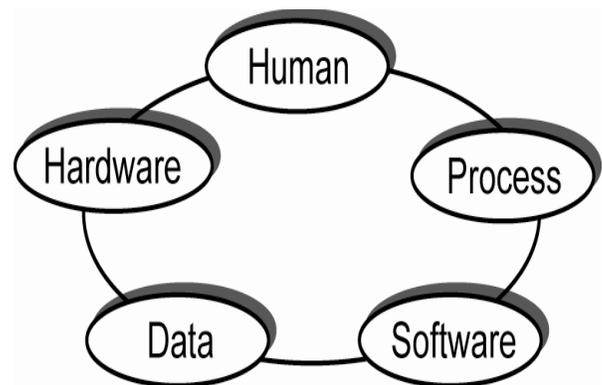
## 1. INTRODUCTION

Information system can be defined as a set of organized procedures that when executed, provide information for decision making and control of the organization. Information is some tangible or intangible entity that reduces uncertainty about a state or event. Information systems is an essential part of any business. Information is the meaning that a human assign to data by means of the known conventions used in their representation. Data becomes information when evaluated in specific situation or applied to solving a particular problem. Information systems inter-relate with data systems on the one hand and activity systems on the other. An information system is a form of communication system in which data represent and are processed as a form of social memory. An information system is a combination of hardware, software, which can support business

operations to increase productivity, and help managers to take better decisions.

## 2. COMPONENTS OF INFORMATION SYSTEM

An information system contains FIVE main components - the hardware, software, data, process and human, as shown in Figure below:



**1. Hardware:** The term hardware refers to machinery. This category includes the computer itself, which is often referred to as the central processing unit (CPU), and all of its support equipments. Information system's hardware refers to all types of hardware and the media used for input, processing, managing, distributing and saving information that are being used in an organization. Examples of the hardware are the physical computers, networks, communication equipment, scanners, digital drives, and so on.

**2. Software:** Software resources include all sets of information processing instructions. System Software controls the computer and contains the operating system and device drivers, which can communicate with the hardware. Application Software contains programs which can help users and enable companies to perform business functions. Users can increase productivity with the presence of application software such as spreadsheets, word processing, ordering systems, and accounts receivable.

**3. Data:** Data are more than the raw material of information systems. The concept of data resources has been broadened by managers and information systems professionals. Data can take many forms, including traditional alphanumeric data, composed of numbers and alphabetical and other character that describe business transactions and other events and entities.

**4. Process:** Process or procedure explains the activities carried out by users, managers and staff. Process is important for supporting a certain business model available as written documents or as reference materials on-line. The procedure for using a certain matter is very wide and very important to ensure that it can be implemented with success. All the information system components contain management and implementation procedures on their own, and they are different from each other.

**5. Human:** Every system needs people if it is to be useful. Often the most over-looked element of the system are the people, probably the component that most influence the success or failure of information systems. A successful system requires integrated efforts from information technology experts such as the system analysts, programmers and the information technology managers so as to fulfill business needs and to support company's objectives.

### **3. FUNDAMENTAL ROLES OF INFORMATION SYSTEMS APPLICATIONS IN BUSINESS**

#### **a) Support Business Processes and Operations**

As a consumer, you have to deal regularly with the information systems that support the business processes and operations at many retail stores where you shop. For example, most retail stores now use computer- based information systems to help them record customer purchases, keep track of inventory, pay employees, buy new merchandise, and evaluate sales trends. These information are used for the purpose of increasing the sales volume. [8]

#### **b) Support Business Decision - Making**

Information systems also help store managers and other business professionals make better decisions and attempt to gain a competitive advantage, for example, decisions on what lines of merchandise need to be added or discontinued, or on what kind of investment

business require for benefit, are typically made after an analysis provided by computer - based information systems. This not only support the decision- making of store managers, buyers, and others, but also keeps them lock for ways to gain an advantage over other retailers in the competition for customers. [8]

#### **c) Support Strategies for competitive Advantage**

Gaining a strategic advantage over competitors requires innovative use of information technology. For example, store management might make a decision to install touch- screen kiosks in all their stores, with links to their e-commerce website for online shopping. This might attract new customers and build customers loyalty because of the ease of shopping and buying merchandise provided by such information systems. Thus, strategic information systems can help provide products and services that give a business a comparative advantage over its competitors. [8]

### **4. CAPABILITIES OF INFORMATION SYSTEMS**

#### **a) Provide fast and Accurate Transaction Processing**

Transactions include the sale of a unit of goods, a paycheck issued, a bank deposit, a course grade registered and so on. Each transaction generates data. These data must be captured accurately and quickly. This process is called transaction processing unit, and information systems that capture, record, store, and update, these data are called transaction processing systems.

#### **b) Provide Large- Capacity, Fast- Access Storage**

Information systems must provide both enormous storage for corporate data, and also fast access to those data.

#### **c) Provide Fast Communications**

Networks enable organizational employees and computers to communicate almost instantly around the world. High- transmission- capacity networks make fast communications possible. In addition, they allow data, voice, image, documents, and full motion video to be transmitted simultaneously. Networks also provide nearly instantaneous access to

information for decision – makers, thereby reducing information float.

**d) Span Boundaries**

Information systems span boundaries inside organizations as well as between organizations along the entire supply chain. Inside the organization, such boundary spanning facilitates decision making across functional areas, business process reengineering, and communications.

**e) Provide a competitive weapon**

In the past, information systems were viewed primarily as an expense. Today, information systems are being viewed as a profit center and are expected to give the organization an advantage over its competitors.

## 5. CONCLUSION

To compete in business, the management needs to provide the necessary infrastructure so that the information technology environment can be developed. This includes the provision of the information system components. To realize information systems in business, an information system expert needs to model a business process, i.e. to determine what are the business activities for an organization, and what are the processes involved in the implementation activity. With this kind of specification, a new information system can be developed. Information systems are implemented within an organization for the purpose of improving the effectiveness and efficiency of that organization.

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