**HISTORY AND EVOLUTION OF MIS (2000s- Present)**

**BBA-5TH SEMESTER**

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**Fifth Period (2000s- Present).**

Organizations continue to increase spending on information technology and their budgets continue to rise, even in the face of potential economic downturns (knaracus, 2008).However, fears about economic conditions and increasing competition create pressures to cut costs, which require organizations to measure and examine the benefits and costs of technology. Naturally, organizations are interested in knowing the return on these investments. The impacts of information technology are often indirect and influenced by human, organizational, and environment factors; therefore, measurement of information systems success is both complex and illusive. Information system developed to aid an individual in performing a task. Given the relatively short span of the information system field, it is quite remarkable the number and variety of applications and systems that have been deployed. In this period, organizations focus on developing, using, and evaluating utilitarian information systems. There is a plethora of Utilitarian information system used in organizations, such as decision support systems, computer-mediated communications, e-commerce, knowledge management systems, as well as many others.

Trends and systems found in today’s business environment include the use of outsourcing, re-engineering, management information systems, transaction processing systems, relational database management systems, and non-relational database management systems. Policies that have been developed in business and industry address areas that are a direct result of the technological advances found in today’s workforce.

MIS systems are becoming more intelligent. The trends continue to shape how management information systems function in the future. The changes that have been made include: Automation and cross functional integration, Big Data analytics, Artificial Intelligence and Cyber Security.

* **Automation and Cross Functional Integration.** Automation can be used for repetitive tasks and to cross-populate data with other systems. This frees up employee’s time to focus on higher-value tasks.

For example: automation can track inventory and alert you when stocks are low or automatically reorder stocks when needed without human invention.

* **Big Data Analytics.**

Worldwide, around 2.5 quintillion bytes of data are being generated daily. From customer’s buying habits to social media interactions, data is rolling in from everywhere. MIS not only have to cope with the influx of data, but also analyze it. The information gleaned can be used to make operations more efficient, improved customer service, and create personalized marketing campaigns.

* **Artificial intelligence (AI).**

Artificial intelligence is making waves across almost every sector. AI has been the biggest disruptor in business in recent years. From chatbots to self-driving cars, AI is already a part of our lives and will continue to become more entrenched. AI technology is capable of learning patterns and identifying anomalies when processing big data. It can detect fraud and determine the risk profile of applicants applying for credit.

* **Cyber Security.**

Cybercrime is a threat every business faces. Most cyber-attacks are financially motivated.

* A cyber-attack can be a fatal blow to a business. Research by [Fundera](https://www.fundera.com/resources/small-business-cyber-security-statistics) shows that 60% of small businesses that experience a cyber-attack go out of business within six months. Companies now invest heavily in protecting their data. As cybercriminals become more sophisticated, cyber security software will have to stay one step ahead.
* MIS can enhance productivity and improve customer service, and that ultimately leads to higher profits.
* Web services architecture with the virtual operating system.
* IT shifted from accounting departments to all corners of the enterprise.
* World Wide Web took IT to all corners of the globe.
* WWW led to proliferation of new application which digitalized almost every activity in people’s lives.
* It facilitated the creation and sharing of information by anyone with access to the internet.
* The amount of data created, stored, moved, and consumed.
* Applications data and services are distributed processing is shared and utilized intelligently within grid-computing or P2P apps. Apps are shared between clients, suppliers, and external partners.
* Mobile and cloud computing is responsible for running the infrastructure. Cloud computing enables on demand and convenient network access to a shared pool of computing devices such as applications, networks, servers, storage and services etc.
* Big data and its analysis are becoming an organization’s competitive edge. Big data is a collection of data from traditional and digital sources inside and outside of an organization that represents a source for ongoing discovery and analysis.

**Business Process Management**

Business Process Management includes features that manage person-to-person process steps, system-to-system process steps, and those processes that include a combination of both.

* Include process modeling, simulation, code generation, process execution, monitoring, and integration capabilities for both company-based and web-based systems.
* The tools allow an organization to actively manage and improve its processes from beginning to end.
* BPM systems are a way to build, execute, and monitor automated processes that span organizational boundaries.

The goal of BPM is to reduce human error and miscommunication and focus stakeholders on the requirements of their roles. BPM is a subset of infrastructure management, an administrative area concerned with maintaining and optimizing an organization’s equipment and core operations.

There are three different kinds of BPM frameworks available in the market today. Horizontal frameworks deal with design and development of business processes and are generally focused on technology and reuse. Vertical BPM frameworks focus on a specific set of coordinated tasks and have pre-built templates that can be readily configured and deployed. BPM software suites and other technology help to accelerate and standardize faster, more accurate methods for such daily operations as invoicing and shipping.

Business process management is significantly different from ERP. Usually, BPM is used in the daily operations that you need to run your business. ERP is a culmination of providing the system components of consolidating business processes under one umbrella. ERP consists of financials, possibly customer relationship management, inventory control, human resources, or human capital management and payroll, to name a few.

**The IS function can help to provide the right support**

The IS Function can introduce the facilities and processes of Knowledge Asset Management (KAM) to aid decision support and collaboration. CIO’s job is to provide the technology to support online communities and collaboration

The use of technology to support decision making covers a variety of functions including:

* Alert, recommendation or decision making itself
* IS managers must comprehend the opportunities and constraints of these technologies
* Real-time data and real-time performance metrics
  + Focus on high value-added data & Identify key activities and performance indicators that are needed in real time
  + Technology readiness -Substantial computing resources Integrated and seamless system that is capable of selecting, filtering and compiling data to send them in real time to designated users on demand.

**2000 – Present: E-Business**

The Internet and related technologies and applications changed the way businesses operate and people work. Information systems functions in this period and it is used to support business process, decision making and competitive advantage. The rapid growth of the internet, intranets, extranets and other interconnected global networks in the 1990s dramatically changed the capabilities of IS in business. Internet-based and web-enabled enterprise and global electronic business and commerce systems are becoming commonplace in the operations and management of today’s business enterprises. Today’s information systems are still doing the same basic things just like 50 years ago from transactions processing, records keeping, reporting management and support management to the accounting system as well as processes of the organization. What has changed today is greater connectivity across similar and dissimilar system components, much higher level of integration of system functions across applications, great network infrastructure and powerful machines with higher storage capacity. The Internet and related technologies and applications have changed the way businesses operate and people work, and how information systems support business process, decision making and competitive advantage. Today, many businesses are making full use of Internet technologies

**The Role of Information Systems in Running the 21st Century Organization**

Management Information Systems (MIS) focus on the use of Information and Communication Technologies (ICT) in managing organizations. In the 21st century almost all organizations use Information and Communication Technologies to efficiently manage their operations, to help managers make better decisions and achieve competitive advantage, and to facilitate seamless internal and external communications with their employees, customers, partners, and other stakeholders.

**Businesses Pre-Information Systems**

Until the 1990s, before the widespread adoption of personal computers and the Internet, companies were using information systems to manage data processing and record-keeping activities associated with business transactions like maintaining the general ledger (book keeping), payroll, billing, inventory management, etc. The focus was mainly on maintaining files and databases related to day-to-day operations. Communications, both internal and external, relied on paper, telephone, faxes, and other analog media. Information systems have evolved over the last 40 years, including the move from the mainframe computer of the 1970s to personal computers becoming an integral part of the tracking and organizational process in the 1980s. The arrival of the mainstream internet in the 1990s expanded business capabilities and the role of information systems to a global system of interaction.

Today, the main focus of companies is to stay globally competitive by leveraging the capabilities of modern information and communication technologies (ICT). Companies can use ICT to provide products & services of the highest quality at affordable prices and top-rated customer service, and help the companies to enter new markets through e-commerce. Globalization, collaboration, and integration have become the new drivers in this competitive arena. To remain competitive, companies are investing in modern information systems like [Enterprise Resource Planning](http://elearning.scranton.edu/mba/enterprise-resource-planning-specialization) (ERP) software, which integrate the different functional areas of the business, and provide consistent real-time data for fast decision making. ERP systems help companies [manage their operations](http://elearning.scranton.edu/mba/operations-management-specialization) seamlessly across the globe.

**Modern Day Use of Information Systems**

In the past when a company received a customer order, whether it was for a service requested or for a product purchased, the order needed to go through a process of paper-based workflow that was passed along to different departments, inbox-to-inbox. Throughout this process, the order often had to be re-typed as it passed through various departments, increasing the potential for human error. There was no accurate account order status because there was no official tracking device to alert each department. In order to retrieve order status information, customers were frequently directed to contact the company’s warehouse for manual research!

Today, companies have eliminated the inaccuracy of paper-based tracking by implementing [ERP systems](http://elearning.scranton.edu/mba/enterprise-resource-planning-specialization). In a recent study conducted by Panorama Consulting Solutions, 63 percent of companies used their [ERP software](http://elearning.scranton.edu/mba/enterprise-resource-planning-specialization) to eliminate inefficiencies in processes such as order tracking. Instead of standalone computer systems, ERP uses a unified program that links various functional departments such as finance, HR, manufacturing, warehouse, planning, purchasing, inventory, sales, and marketing. While each department may have its own set of software modules, the software is interconnected so that information can be shared throughout the organization. Once one department is finished updating and processing the order, it is automatically routed to the next department so that everyone is alerted to changes made.

**Adopting the Global Market**

Many businesses have begun to participate in the global market, as it presents a chance for greater revenue and larger business prospects.

Already, the [global information systems](http://elearning.scranton.edu/mba/enterprise-resource-planning-specialization) market has seen consistent demands from several businesses. The challenges vary depending on the size of businesses. For smaller businesses, controlling operations and storing information are less complicated. As businesses grow, especially those intersecting with global relations, information systems are used to manage operations accurately without growing the number of employees. The growing supply chains require that software solutions be used in the following sectors:

* Web-based ordering
* Customer relationship management
* Product configuration

**The Future of Information Systems**

As companies try to reduce costs, improve productivity, employers are looking to [ERP systems](http://elearning.scranton.edu/mba/enterprise-resource-planning-specialization) to help them grow and remain competitive globally. Information systems have enhanced productivity for businesses. A [career in managing information systems](http://elearning.scranton.edu/mba/enterprise-resource-planning-specialization) is ideal for those looking to advance in a Fortune 500 company. As businesses and organizations today require more and more technical skills, companies are looking for employees who will help manage and operate the various information-based tools.

Towards the Development of a Big Data Capability The era of big data, which refers to unstructured, diverse, and fast moving data, has begun where organizations in all industries are increasingly collecting enormous volumes of data. In this sense, investments represent one such resource that is needed by the firm to create a big data capability, which this study defines as a firm’s ability to assemble, integrate, and deploy its big data-specific resources. In addition to data-driven culture, the success of big data projects is also dependent on the wisdom and business acumen of managers and big data-specific skills of employees.