

# Researching information factors as the key drivers of enterprise development

[Science](#), [Computer Science](#)



## **Abstract**

This research makes a comprehensive review of information systems from their origin to their present state. The research especially focuses on mostly on the changes that have taken place in the recent times and the future trends of the systems. In exploring these trends, there is a possibility to make identifications of the multiple advances in technology and the novel functionalities that are being integrated into the information systems. For instance, a relatively novel functionality or technological advance, that is, the incorporation of the m-commerce functionality into management systems not only influences the information systems to a huge extent but also affects the strategic and management functions of the organizations using information systems.

With the knowledge of the origin of information systems in mind, I plan to make lucid examination into the key driving force of the evolution experienced in the multimedia technology and the evolution in the infrastructure of information systems. The research paper will also explore the technological advances in the information systems since their advent and their impact on the overall way that people work, live and play.

Precisely, this research will explore the innovations, both technical and functional that the information systems have gone through. Besides, the research will look into the trends that could probably be followed in the future for the information systems.

## **Introduction**

Information systems, especially for organizational management systems, have mainly been key driving factors in the enterprise development. In the continued evolution of the information systems in the management of organizations, it has gone from being just a tool of work to a very competitive and strategy-planning element. This is besides the generation of novel models of businesses that are based on the information systems (Gomez, Serna & Badenes, 2009).

The advance in technological capability doubling in even a span of only one year has been experienced before in various fields such as micro-electronics and even speech processing. It is a common occurrence for software that was once regarded as “bottleneck” technology to begin advancing radically and rapidly in major fields of technology such as the field of telecommunications. This seismic shift can all be attributed to the object-oriented programming.

Due to the aforementioned impacts, information systems have been explored from different various vantage points. These points of view include the implementation of the information systems, the critical contributing factors of the change of the information systems, the impacts of the information systems in organizations (Quiescentti & Bruccoleri, 2006), and the comparisons between the various brands of the information systems (Serna, Martin & Fernandez, 2005) besides their evolution over time since their inception (Aberdeen Group Inc, 2004).

## **The Historical Evolution of Information Systems**

Information systems have been used in organizations since their advent.

They are primarily used in optimizing and improving activities of the companies' management. The introduction of the information systems into the management of organizations can be attributed to the evolution of the systems in the specific fields and the availability of technology over time.

The first use of information systems in organizations was in the '60s in the department of managing accounts (Ferran & Salim, 2008).

With accounting, the rules and principles are clearly and precisely outlined for all companies regardless of the industry the company is in. It is because of this that the implementation of information systems for accounting is much easier than other departments of organizations. Immediately the accounting software was incorporated into organizations' management, there rose the need to apply the similarly designed information systems for other areas of management such as the administrative department.

The first Material Requirements Planning (MRP) was used around the end of the '60s and the beginning of 1970. The primary attributes of the MRP systems is the fact that they employ an approach that uses hierarchy for the management of inventories. The Material Requirements Planning systems enable the accomplishment of quite extraordinary advances, such as the reduction in the time taken in the performance of the processes besides increasing the efficacy of the system functions. The most critical issue that arises from the use of the MRP systems is that the system tends to overlook the constraints in capacity in production.

The Manufacturing Resources Planning II is the result of the evolution of the initial MRP. The MRP II systems were first used in the '80s. In the MRP II system, the system takes into account the necessities of the management. The system also takes into consideration the material planning and the requisite resources and the manufacturing capacities. The MRP II systems are majorly focused on the area of production of the organizations. The systems also try to integrate themselves with other systems of information that are responsible for the management of other areas in the organizations.

The Enterprise Resources Planning (ERP) was born as a result of the integration of numerous novel functionalities into the previous MRP II system. These newly integrated functionalities into the MRP II aid in the coverage of other various areas of management such as logistics. It is of utmost importance to observe that there are two concepts of the ERP systems. Firstly, the initial ERP also commonly referred to as the “ traditional ERP” was as a result of evolution of the MRP II systems. Secondly, the ERP II came about as a result of the evolution of the original ERP system.

### **The “ traditional” ERP**

ERP systems are considered to be the result of the evolution of the management systems of the inventories that were in use in the last fifty years. According to Munoz et al (2004), the ERP systems are systems of information management that apply the concepts of business engineering and the information technology for the general design that is integrated for performing business processes in organizations. Essentially, the ‘ traditional’

ERP is an information system primarily for the management of the integrated multiple modules that make up an organization.

The appropriate implementation of ERP systems is very crucial for achieving the results that are desired. The contributing factors to the implementation of ERP systems include great project management, alteration of the processes of conducting business for the better, effective communication, and not to mention the requisite leadership skills and commitment.

### **The ERP II information systems**

The “ traditional” ERP evolved into the ERP II information system. The major characteristic traits of the ERP II information system that differentiates the ERP II system from the “ traditional” system is the variation in the processes that the two systems apply and the nature of the processes. For the “ traditional” ERP the processes are regarded as the internal operations of an organization while for the ERP II information system, the processes involve the interaction of the organization with the environment. This interaction with the environment of an organization is generated by “ virtually integration.”

Most organizations have undergone seismic transformations from the previously widely adopted vertically integrated organizations, oriented to the optimized internal processes into the horizontally structured arrangements of the organizations.

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## **The Functional Advances**

Closely related to the functional advances are multiple other functionalities that include;

1. Customer relationship management (CRM)
2. Human resource management (HRM)
3. Business Intelligence (BI)
4. Electronic commerce (e-commerce)

## **The Technical Advances**

1. Open programming
2. System architecture
3. Layers programming structure
4. Objected-oriented information

Among the aforementioned technical advances, the most important technical advancement in the evolution history of the information systems is the architecture of the systems. The information systems for most organizations are usually distributed throughout the whole organization. The servers, however, are centralized.

In analyzing the existence of information systems, it is crucial to also discuss the three key elements that are distributed among the organizations' clients and servers. These elements are;

Firstly is the information system's data base. This is essentially the primary warehouse of data that is obtained from the customers and the data that is directed towards the customers.

The customers are the second element to which the data from the warehouse is introduced and they are the element that makes the requisition of the data.

Finally, the element of the system application runs the processes and acts as the intermediary between the organization's clients and the central data ware house.

## **The Future Trends of Information Systems**

Enterprise resource planning systems have always been oriented to huge organizations; nonetheless, the most recent ERPs have been designed with the intent of penetrating even the small and medium sized companies. The strategies that are planned to be used for penetrating into the small and medium sized companies include;

1. The reduction of the costs for licensing the system
2. The lowering of all the costs required for the implementation of the systems
3. Ensuring compatibility of all the systems.
4. Developing system software that has an open code

The future trends of the information systems can be further categorized into two classes, namely; the technical and functional trends.

### **The functional trends of the information systems**

The functional trends of the information systems show the novel functionalities that are most definitely meant to cover the information systems organizational management. In the functional trends of information



systems, there are two other trends that are important in the incorporation of the newly designed functionalities of systems. The first trend is the opening of the systems of information for the management of the organizations, to the integration with other systems of the organization that are meant to perform specified needs. The other trend is the tendency of the systems to attempt the inclusion of all the functionalities.

### **The technical trends of information systems**

Of recent, there has been a hugely adopted use of the freeware. This trend of using the open software is begun to take huge influence in the information systems for the management of organizations (Ferran & Salim, 2008). This trend, nevertheless, is still quite weak. The other technical trend is the Hosting of Applications Service Providers. This trend is commonly used by many organizations due to the fact that most organizations are more dedicated to implement systems of management that can be used via the internet or other connections (McGaughey & Gunasekaran, 2009).

The m-commerce is the best case of the technical trends. The integration of the m-commerce can greatly modify the way businesses are known to be done currently. This technological advance is arguably one of the most significant advances in technology of the world of businesses. Another technological advance is the use of mobile computing in connecting individuals widely and enabling easy and instant access of the internet regardless of the location of the user or the time of access.

## **Conclusion**

The information systems and their application in the management of organizations have gone through massive evolution. These evolutions have been incorporated into the market and the new emergent computer technologies. These software applications have transformed from very small programs to massively big software programs over a very short time period.