Understanding the Role and the Impact of Information Systems in today’s Business Environment

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Over the last couple of decades information systems (IS) have led to dramatic increases in the productivity of companies both large and small. They have helped organisations to innovate, thereby gaining an advantage over others in their marketplace. They have contributed to changes in industry structure, in some cases even transforming the competitive environment in a sector.

Information technology (IT) and IS have also contributed to significant changes in the public sector, particularly in relation to service delivery and accountability. Equally in the non-profit sector, organisations are using IT to enhance mission-related outcomes and boost organisational performance.

A 2008 study by the IT Governance Institute (ITGI)¹ found that the top 10 most important IT-related business goals, consolidated over a number of industry sectors, were as follows (starting with the most important): to improve customer orientation and service; to ensure compliance with external laws and regulations; to establish service continuity and availability; to manage (IT-related) business risks; to offer competitive products and services; to improve and maintain business process functionality; to provide a good return on (IT-enabled) business investments; to acquire, develop and maintain skilled and motivated people; to create agility in responding to changing business requirements; and to obtain reliable and useful information for strategic decision making.

What was most interesting about these is that customer and financial goals appear highest in the ranked list, while internal, learning and growth related goals received lower scores overall.

The ITGI, which is a non-profit, independent research entity that provides guidance for the global business community on issues related to the governance of IT assets, also looked at the IT goals of organisations. It found that the highest ranked goal here was to align IT strategy to business strategy, followed by maintaining the security (confidentiality, integrity and availability) of information and processing infrastructure, and making sure that IT services are reliable and secure.

As companies invest more and more heavily in information and information systems there is a growing awareness that IT strategy cannot be bolted onto the business as an afterthought. Instead it must form “the corporate skeleton and central nervous system of the organisation”². Technology and information systems need to be integrated throughout the organisation. Consequently end users are now taking on greater responsibility for the success of the information systems, and are even doing a lot of the work that in the past belonged to the IT department. Even at executive level, technology can no longer be ignored, as senior management rely increasingly on it to manage their intellectual, human and organisational capital.

Information systems have now extended well beyond the traditional role of serving the employees in a company. For today’s organisations, they play an important role in meeting challenges such as developing new business models and processes, changing management behaviour and organisational culture, and creating new partnerships with suppliers, customers and even competitors. In this context, the organisational and management dimensions of the information systems deployed in today’s business environment are equally if not more important than the technological dimensions of these systems. This must be borne in mind when developing an understanding of the role and application of IS and IT in the management and control of organisations, which is the aim of the Formation 2 Information Systems syllabus.

Information Systems in Today's Business Environment

In attempting to address their business and IT goals, many organisations today still find that no one vendor can respond to all their information needs. As a result they often end up purchasing multiple applications from multiple vendors. These applications must be integrated in order to gain an enterprise-wide view of the information, since as Baltzan and Phillips point out in their book “Business Driven Information Systems”³, functional areas are anything but independent in a business. For example sales must rely on information from operations to understand inventory, place orders, calculate transportation costs, and gain insight into product availability based on production schedules. For an organisation to succeed, departments or functional areas must therefore work together, sharing common information.

Indeed for organisations to be effective it is not only necessary for them to share information, they must also share the knowledge gained from individuals’ on-the-job experience. There are three main reasons why this is important; these are to facilitate decision-making, to enable organisational learning, and to stimulate innovation. All three of these are linked to the need for organisations to constantly adapt to their competitive environment. In doing so, they should seek to gain competitive advantage from their IT/IS investment. Baltzan and Phillips highlight Porters competitive (5 forces) model and value chain analysis as useful ways to analyse and develop this competitive advantage, as do Laudon and Laudon (the recommended textbook for the IS syllabus).

Nowadays an organisation’s performance depends on the capabilities and quality of networks, particularly the Internet. To compete successfully in the online environment managers need to understand and respond to changing customer behavior, and to the changing needs of business customers and partners. In the area of e-business, lessons are still being learned about business-to-consumer (B2C) and business-to-business (B2B) commerce as companies experiment with new features to gain even a slight or temporary competitive advantage⁴. Indeed new Web and wireless technologies and applications continue to create new opportunities and capabilities – one example of which is the emerging area of mobile commerce.

Another area in which the Web is opening up new opportunities is in the area of cloud computing. The cloud idea, which is to store applications and information in a vendor’s data centres rather than on local company-owned servers, is becoming increasingly prevalent in today’s business world. Optimising IT infrastructure has become increasingly important during tough economic times, when cost cutting becomes a priority. During challenging times making the most of IT assets becomes even more important for competitive advantage, and ultimately survival. The cloud typically offers a significant drop in IT costs, as applications hosted by vendors are provided on demand rather than physical installations or seat licenses.

In many organisations cloud computing is now being used to deliver critical applications like customer relationship management (CRM), supply chain management (SCM), accounting, human resource management and so on. Even in the area of enterprise resource planning (ERP), many analysts see cloud applications as the way of the future. However there are risks associated with

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⁴ The fundamental capabilities and challenges of e-commerce are discussed by Efraim Turban and Linda Volonino in their student textbook entitled Information Technology for Managers (2012).
having a company’s ERP or CRM in the cloud. The company needs to be assured of the reliability and security of the service for example, and that the solution is scalable to their business needs. They also need to ensure they own their own data and have the option to move between a private, public or hybrid cloud if this becomes necessary to support their business processes.

Finally, it is important to note that the use of information and information systems by companies to gain more and more advantage raises ethical issues which they and their employees must be aware of. These range from monitor employee email to invading the privacy of customers whose data the company retains. Such issues create obligations and constraints on business operations – for example companies have a legal as well as an ethical duty to protect data about employees, customers or anyone else. It is important to be aware of this, and to act in accordance with those duties at all times.