Role & Significance of Information Technology in Enhancement of Business Management

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Abstract—No invention has ever influenced the human beings as computer has. In less than seven decades of its existence it has managed, materializing the Concept of a global village. Technologies like Computational Intelligence, Neural Networks, Genetic Algorithms, Data Communication & Networks, Telecommunication, Databases, and Evolutionary Computing etc. Collectively offer the business community a broad set of tools capable of addressing problems that are much harder or virtually impossible to solve using the more traditional techniques from statistics to operations research. Information Technology – The common term for the entire spectrum of technologies for information processing including software, hardware, communications technologies and related services IT management is the discipline. These resources may include tangible investments like computer hardware, software, data, networks and data centre facilities, as well as the staff who are hired to maintain them. Most of the Information technology management programs are designed to educate and develop managers who can effectively manage the planning, design, selection, implementation, use and administration of emerging and converging information and communication Technology. The growing importance of IT as a critical business resource has compelled executives to examine the knowledge underlying their businesses, giving rise to e-Knowledge Management, e-commerce, e Education, e-Health Technology, e-Learning , e-Administration ,e -business , e-Government, e-Publishing ,e-Payment ,e-society and so on. initiatives. Today's best technology to manage and process data is the Information technology. IT must be seen as an investment and not an expense. IT helps the manager to improve the efficiency and effectiveness of their business processes, managerial decision making, and workgroup collaboration, thus helping the managers to strengthen the positions of their company in a Rapidly changing environment. IT has become a necessary ingredient for Managers to succeed in today's dynamic global environment.

Keywords: IT, Management.

1. INTRODUCTION

Today's best technology to manage and process data is the Information technology. IT must be seen as an investment and not an expense. IT is laying a vital and expanding role in business., IT helps the manager to improve the efficiency and effectiveness of their business processes, managerial decision making, and workgroup collaboration, thus helping the managers to strengthen, the positions of their company in a Rapidly changing environment. IT has become a necessary, ingredient for Managers to succeed in today's dynamic global environment.

1.1 Definition. Information Technology (IT) was described by Chaffey and Wood as "technology resources used for business information management". These resources include software, hardware and telecommunication networks used for managing information. According to Benematietal. ,IT is changing rapidly and considering the increasing strategic impact of IT on business operations, its successful management is of utmost importance Irani and Love suggested that for IT management to be successful, it must be perceived as an iterative business process capable of providing organizational learning throughout the lifecycle of the technology. However, even when IT is managed successfully, the question arises, as to what role IT plays in the achievement of organisational strategic goals and objectives In response to this question,

Venkatraman et al and Franz and Klepper postulated that the proper role of IT in an organisation is usually epitomized as a fit or alignment with the strategic goals of the organisation. Therefore, IT can only be appropriately aligned when infrastructure put in place to implement the IT strategy is adequate; the strategy supports the organization's strategy and business processes.

"IT can build the bike but business has to decide what the bike will be used for, and pedal the bike to deliver the value." Judy McKay - Professor, IT Swinburne University of Technology

2. OBJECTIVE OF THE STUDY

The objective of this paper is to study various role of business information Technology and how they are useful for improving decision making solutions to accept global challenges arising out of emerging issues in business management.

3. RESEARCH HYPOTHESIS

The research tests the following two null hypotheses-1.Information Technologies positively impact on business. 2.Business Information Systems is an instrument for organizational changes.

4. RESEARCH METHODOLOGY

Due to the exploratory nature of this research we decided to use focus group methodology. While focus group methodology can be used for both exploratory and confirmatory research [9], it is particularly well suited for exploratory research. The methodology is widely employed in various disciplines as a qualitative research technique [7]. It entails a process of obtaining possible ideas or solutions to a problem from a group of participants by discussing [9]. What constitutes focus group methodology is still debated in the literature but "most researchers seem to agree on at least a few characteristics: they should consist of a relatively small group of people (usually 7-12), led by a moderator, discussing a particular topic for 90-120 min" [4,p.719]. The main advantage of the methodology is based on the kind of data it generates. Krippendork [4] differentiates between emic data that which arises in a natural or indigenous form and emic data that which represents the researcher's imposed view of the situation. While pure forms of data are rarely obtained in practice, focus group data is much more emic. As a result, focus groups are extremely useful in obtaining general background information about a topic, generating research hypotheses for further research, stimulating new ideas, learning what and why individuals think about the phenomenon of interest, and interpreting previously obtained quantitative results. Senior IT managers from 15 different organizations were invited to attend a full-day focus group. represented Focus group participants consulting, manufacturing, insurance, banking and financial, government, retail, and telecommunication, automotive and pharmaceutical institutions. The managers were asked to describe the processes their organization uses to develop their IT. In addition, they were asked to assess the relative importance of the strategic use of IT in their firm, how IT is associated with business and how well senior business managers include IT in the development of their business. The participants were also asked to bring any corporate documents which they considered relevant to the topic. The discussion was moderated by one of the authors while the others recorded the discussion independently. The authors actively pushed for clarification of discussion and prompted participants to share actual experiences of specific events within their organizations in order to make arguments and concepts as concrete as possible. The participants were forthcoming with examples to support their observations of organizational phenomena. There search also relied on data collected from the participating organizations' Web sites. Further, while analyzing the data, email and telephone communications were also conducted with a few participants in order to get more details and clarification on some of their responses. Our findings are based on an analysis of the focus group discussion in just a position against the published literature on the topic. Our goal was to let practice inform theory and vice versa

5. SIGNIFICANCE OF THE STUDY

This study is important considering the scarcity of studies concerned with Information Technology in business thought perspective; whereas there are many research studies that addressed the IT issues from the contemporary perspective of management. However, the significance of this study stems from the vantage position of Information Technology because it forms a valuable repertoire of values, principles, and ethical models on which various disciplines were based. The study also is important because it will contribute to enrich the subject of contemporary thoughts in management and IT in business particular, and because bring such a topic in the field of management in terms of IT will give an indication of all the people that this issue is the word of Business

6. REVIEW OF LITERATURE

Developing information technology (IT) strategy that supports and is supported by business strategy is critical for generating business value in today's organizations. In the face of rapidly changing business conditions and continuously evolving IT, however, organizations have yet to learn how to develop an effective IT strategy. To explore and understand the issue, we conducted a research using focus group methodology. Weiss and Anderson in their research found that increasingly CIOs and IT professionals are assuming change and risk management roles. They are facing both internal and external pressures to solve both business and technical problems. Gottshalk found similar results too that IT leaders are assuming significant organizational roles including the role of a change leader and having the responsibility for strategic alignment of IT and business.

7. BMIT

BMIT means Business Management of IT Return on investment is a well-understood concept. Referring to return on IT investment in isolation, however, can result in 'IT project' mentality that segregates IT expenditure. As a result, we often find IT managers trying to justify return on investment rather than business managers. The reality is that most IT projects comprise change to several asset classes in concert - process, people and organisation being the most likely. Hence, it is the business that should take accountability for all areas of return on investment including the IT component. In many organisations, IT management strives to implement better processes methods and practices to minimise failure and deliver value, often with low rates of success. Why? Simply, the issues cannot be dealt with by IT alone. BMIT is about business managers accepting accountability for making decisions about how IT will be used to achieve business goals. It encourages business managers to take an active role in:

- Aligning IT with business strategy and objectives
- Scoping, estimating and prioritizing IT-enabled business Programs
- Setting IT budget parameters and balancing the supply / demand equation
- Program and project delivery
- Benefits realisation
- Ongoing operations
- Business process automation
- Delivering to estimates

7.1 Why is BMIT so important?

Despite the falling unit cost of technology, business statistics generally show that the proportion of expenditure on information technology continues to rise. In many organizations, the IT capital spend is well over 50 per cent of the average annual total capital investment. As IT becomes more important and pervasive, business managers are increasingly challenged to get more value out of their IT investment. Unfortunately, failure of IT-enabled change is still a common problem and increasingly associated with lost revenue, lost opportunity, lost customers and, in some cases, lost companies. There are three key root causes that continually arise when assessing why IT-enabled business programs fail or why IT is not delivering to business service levels:

- Lack of business planning for IT
- Lack of accountability and clarity as to who makes decisions about what .
- Focus is on IT projects rather than business change programs

7.2. Lack of business planning for IT

Means that any planning around the development and use of the company's technology assets is done by IT and relies entirely on the planning capability and experience of the IT management and its view of what the business requires. Small companies with limited resources may rely on technologists with little business planning experience or capability. Or they may rely on business professionals such as accountants who are being expected to take responsibility with little expertise or knowledge of how to make sound plans and decisions with respect to IT.

8. E-COMMERCE

Electronic commerce, commonly known as E-commerce or e-Commerce, is trading in products or services using computer networks, such as the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as email.



Fig. 1: Ecommerce

9. E-EDUCATION

The term "e-education" refers to the application of Internet technology to the delivery of learning experiences. Eeducation takes place in formal electronic classrooms, on corporate intranets used for just-in-time training, audio and video teleconferencing and in a variety of other technology mediated learning spaces. The primary tools of e-education are e-mail, e-meetings, e-expeditions, and the methodologies of a pedagogy known as e-learning.

9.1. E-mail

makes it possible for individual learners to communicate with each other and with an instructor, when appropriate.

9.2. E-meetings

That take place in real-time are known as chats and those that take place independentof time are called discussion forums or conferences. Both of these types of meetings make it possible to carry on facilitated explorations of learning topics. These electronic meetings can be supplemented with other tools such as electronic whiteboards, slide shows, video and audioclips, and so forth.

9.3. E-expeditions

Take participants on adventures into cyberspace or local space to more deeply explore specific topics. These journeys can include virtual visits to information rich Web sites or face-toface visits to companies, laboratories, or other environments that best illustrate a particular learning subject. As with emeetings, the participants can get together in real-time chats, telephone, or video teleconferences, and time-independent, text-based discussion forums but all accessed from a central Web site or "portal" created especially for the expedition.

10. E-LEARNING

It is what happens when participants learn together in an environment that is enriched by technology. E-learning usually involves interaction between learners and materials, between learners and an instructor, and among the learners themselves. In depth exchanges of information facilitated by email, "chat" and "discussion" software are commonly used to create the elearning environment. In e-learning, learners are often responsible themselves for the nature, direction, and timing of the learning so that they are able to integrate personal, work team, and organizational needs into a comprehensive learning program

10.1. What is e-learning?

Quite simply, e-learning is electronic learning, and typically this means using a computer to deliver part, or all of a course whether it's in a school, part of your mandatory business training or a full distance learning course. In the early days it received a bad press, as many people thought bringing computers into the classroom would remove that human element that some learners need, but as time has progressed technology has developed, and now we embrace smart phones and tablets in th classroom and office, as well as using a wealth of interactive designs that makes distance learning not only engaging for the users, but valuable as a lesson delivery medium. Building partnerships with quality training providers, and combining this with a dedicated experienced technical team and support staff, Virtual College provides the perfect blended learning environment, offering anyone the chance to take their online training to the next level.

11. E-ADMINISTRATION

The term e-administration refers to the method of automating key administrative functions using electronic and computerbased technologies. The main objective of e-administration is to cut down on wasted paper and space by converting important documents and files to electronic files. This strategy has become popular with many industries where heavy paperwork is a major part of conducting business, such as health care, legal, scientific, and government agencies. Private companies have also adopted e-administration in an effort to save time and resources.

E-administration is also becoming a common practice in the business world as more professionals use email, word processing, and social media networking. These electronic methods of communication allow people to share information, documents, and records seamlessly via the Internet instead of waiting for traditional mail and courier services. With automated office practices in place, messages are conveyed at lightning speed, which makes processes much more efficient. E-administration eliminates the hassles of printing, mailing, filing, and delivering paper documents.

12. E-BUSINESS

There is a no universally accepted definition of e-business. Consequently the term e-business is used interchangeably (Fillis, 2003) and/or is mistaken (Lawson et al, 2003) with the term e-commerce and other related phrases. E-business means different things to different people (Searle, 2001), and the term has been variously defined. To make the term e-business clearly understood, in this book we adopted the definition from Kalakota & Robinson (2001). E-business is the combination of strategies, technologies and processes to electronically coordinate both internal and external business processes, and manage enterprise-wide resources (Kalakota & Robinson, 2001). Chiu et al (2007) presented a common gateway service model for electronic business supply chain based on RosettaNet Standards. A prototyping system compliant with the model presented is built and installed as a gateway interface of digital firms and seamlessly integrate to the firm's backend information system to conduct the message exchange with its business trading partners. The result of experimental implementation in a firm's supply chain system shows that the service model can really assist the firm to streamline its flow of business data and create a higher value of supply chain with its suppliers in this digital era. Pavic et al (2006) examine what is needed for the transition of SMEs from an "old" traditional business strategy to a new "e" business strategy. The findings indicate that it may be possible for SMEs to integrate the Internet technology into an overall strategy and that this new technology could become a force for creating a competitive advantage. However, owners' attitudes towards new technology, the knowledge and skills of management and the workforce are recognized as potential problematic issue

13. E-GOVERNMENT

e-Government is the use of information and communication technologies (ICTs) to improve the activities of public sector organisations. Some definitions restrict e-government to Internet-enabled applications only, or only to interactions between government and outside groups. Here, we do not - all digital ICTs are included; all public sector activities are included.

In our definition, then, governments have been practicing egovernment for more than 50 years: using that first mainframe in the Statistics Office was "e-government". We just didn't give it that name 50 years ago.



Fig. 2: Stages of e-Government

14. E-MARKETING

E-marketing refers to the use of the Internet and digital media capabilities to help sell your products or services. These digital technologies are a valuable addition to traditional marketing approaches regardless of the size and type of your business. Emarketing is also referred to as Internet marketing (imarketing), online marketing or web-marketing. As with conventional marketing, e-marketing is creating a strategy that helps businesses deliver the right messages and product/services to the right audience. It consists of all activities and processes with the purpose of finding, attracting, winning and retaining customers. What has changed is its wider scope and options compared to conventional marketing methods. E-marketing is deemed to be broad in scope, because it not only refers to marketing and promotions over the Internet, but also includes marketing done via e-mail and wireless mediaThe digital technologies used as delivery and communication mediums within the scope of e-marketing include: 1.Internet media such as websites and e-mail.2.Digital media such as wireless, mobile, cable and satellite.

15. E-PAYMENT SYSTEM

EPSs enable a customer to pay for the goods and services online by using integrated hardware and software systems. \online buyers may use one of the following EPSs to pay for products/services purchased online:

- Electronic funds transfer (EFT): EFT involves electronic transfer of money by financial institutions.
- Payment cards : They contain stored financial value that can be transferred from the customer's computer to the businessman's computer.
- Credit cards : They are the most popular method used in EPSs and are used by charging against the customer credit.
- Smart cards: They include stored financial value and other important personal and financial information used for online payments.

- Electronic money (e-money/e-cash): This is standard money converted into an electronic format to pay for online purchases.
- Online payment: This can be used for monthly payment for Internet, phone bills, etc.
- Electronic wallets (e-wallets) : They are similar to smart cards as they include stored financial value for online payments.
- Micro-payment systems : They are similar to e-wallets in that they include stored financial value for online payments; on the other hand, they are used for small payments, such as kurus in Turkey .
- Electronic gifts : They are one way of sending electronic currency or gift certificates from one individual to another. The receiver can spend these gifts in their favorite online stores provided they accept this type of currency.

16. E-SERVICE

Our online services provide employers and payroll agents with a fast, easy, and secure way to manage their payroll tax account(s) online. Check out the information provided to help you enroll and get started using e-Services for Business today. E-services, a business concept developed by Hewlett Packard(HP), is the idea that the World Wide Web is moving beyond e-business and, e-commerce (that is, completing sales on the Web) into a new phase where many business services can be provided for a business or consumer using the Web. Some e-services, such as remote bulk printing, may be done at a Web site; other e-services, such as news updates to subscribers, may be sent to your computer. Other e-services will be done in the background without the customer's immediate knowledge. HP defines e-services as "modular, nimble, electronic services that perform work, achieve tasks, or complete transactions." Using HP's e-services concept, any application program or information resource is a potential eservice and Internet service providers (ISPs) and other companies are logical distributors or access points for such services.

17. E-TECHNOLOGY

Electronic-technology (E-technology) covers a diverse range of IT, IS, IT/IS and ICT used with the network architecture support of the Internet, Intranet and/or Extranet to assist personal, business, organizational and institutional activities. This ranges from the basic e-technology such as e-mail, to the intermediate one, such as an integrated payroll system (e.g. ERP), to the advanced e-technology, such as e-commerce or ebusiness. It is out of the scope of this chapter to discuss the basic e-technology. The intermediate e-technology has been discussed in the previous chapter. This chapter will focus on the advanced e-technology.

18. E-PUBLISHING

Electronic publishing has become common in scientific publishing where it has been argued that peer-reviewed scientific journals are in the process of being replaced by electronic publishing. It is also becoming common to distribute books, magazines, and newspapers to consumers through tablet reading devices, a market that is growing by millions each year,^[1] generated by online vendors such as Apple's iTunes bookstore, Amazon's bookstore for Kindle, and books in the Google Play Bookstore. Market research suggests that half of all magazine and newspaper circulation will be via digital delivery by the end of 2015[[] and that half of all reading in the United States will be done without paper by 2015. Although distribution via the Internet (also known as online publishing or web publishing when in the form of a website) is nowadays strongly associated with electronic publishing, there are many non network electronic publications such as Encyclopedias on CD and DVD, as well as technical and reference publications relied on by mobile users and others without reliable and high speed access to a network.

19. E-KNOWLEDGE MANAGEMENT

We begin with a definition of knowledge. In simple terms, knowledge is information and insight understood in a particular context. Its dynamic and contextual nature has led Peter Drucker, the creator of the term "knowledge worker," to assert that " the nature of knowledge is that it makes itself obsolete" (Ruggles and Holtshouse, 1999). Because the combination of knowledge and its context are continuously changing, common sense suggests it must be linked with processes of perpetual learning. The context of knowledge is especially critical in today's global marketplace. Individuals and organizations must deal with multiple contextual meanings to an extent that would have seemed obsessive only ten years ago. Our approach to knowledge and learning draws from contexts and settings from across the globe. For example, consider the Chinese context where the term guanxi focuses on the importance of relationships or networks between people rather than organizations. Knowledge management and learning in such a setting expresses different dynamics than mainstream Western approaches.

20. E-SOCIETY

E-society is a society that consists of one or more e-Communities involved in the areas from e-Government, e-Democracy, and e-Business to e-Learning and e-Health, that use information and communication technologies (ICT) in order to achieve a common interests and goals. The first areas of e-society that emerged were e-Learning and e-Business. The development of e-Society is relying and depending on the development of virtual reality (VR) technologies that insure interaction between participants of an e-Society in a more acceptable and tangible way. The development of (VR) and consequently the e-Society is based on improvement and balancing of participants' interaction methods, hardware necessary for such interaction, content presentation and effort required for development and maintenance.

21. RESULTS AND DISCUSSIONS

Focus group members explained they usually face five types of IT investment opportunities to further business .The five investment opportunities (i.e., business improvement, business-enabling, business opportunities, opportunity leverage, and infrastructure) are described below-

21.1-Business Improvement: These are the reengineering initiatives to help organizations to streamline their processes and save substantial amounts of money by eliminating unnecessary or duplicate activities or empowering customers/suppliers to self-manage transactions with a company. Weil and Aral [10] refer to such investments as transactional investments.

21.2- Business-Enabling: The investment in business enabling initiatives can be considered informational investments [10]. The business enabling IT initiatives extend or transform how a company does business. As a result, they are more focused on the top-line or revenue-growing aspects of an enterprise.

21.3-Business Opportunities: These are small scale, experimental initiatives designed to test the viability of new and emerging IT to support business. Given the rate at which IT evolves, it often makes currently available IT outdated, thus experimenting with new IT is extremely critical [2]. In the past, these types of investments have not received funding by traditional methods because of their high risk nature.

21.4-Opportunity Leverage: A neglected, but important type of IT investment is one that operationalizes scales up, or leverages successful strategic experiments or prototypes. "We are having a great deal of success taking advantage of what we have learned earlier," said one focus group manager. Coming up with a new strategic or technological idea needs a different set of skills than is required to take full advantage of it in the marketplace [3].

21.5- Infrastructure: This final type of IT investment is one that often falls between the cracks when IT and business strategies are developed. However, it is clear that the hardware, software, middleware, communications and data available will affect an organization's capacity to build new capabilities and respond to change. A recent study found that most companies feel their legacy infrastructure can be an impediment to what they want to do [8].

22. CONCLUSION

IT to business information systems play very important role in the strategic planning process by providing accurate information and analytics on demand. Logical management of these information systems provides necessary competitive advantage to the organizations. As the impact of IT has grown in organizations.

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