

Role of ICT innovations in Business Efficiency and Effectiveness: An Empirical Investigation

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Abstract

Presently, information and communication technology (ICT) is an essential component of management of the company. It is unavoidable for the proper functioning of any firm, regardless of extent or expertise, across the globe. Because of the fast growth of ICT and its widespread application in all aspects businesses it has an impact on people's lives and enterprises. Businesses are now regulating their operations by utilizing ICT assistance, which allows them to do activities more efficiently and precisely than ever. Services or products that give profits are mainly developed by the businesses. As far as Information Technology is concerned it is used to develop, produce, process, acquire, disseminate and transfer of the information. Information technology is vital to the corporate sector as a managed service for optimizing information processing in order to profitably provide goods and services. In today's technology era, ICT is not simply a field of study; it is a type of creativity and a novel business model that is significant for an organization's management performance. It is critical that senior executives successfully integrate the concept of information and communication technology. Whether the company is small, medium, or huge, information technology is critical to its success.

Keywords: Information & Communication Technology, ICT Innovations, Role of ICT in Business, Impact of ICT on Business, Digitization in Business

Introduction

Establishing a reliable communication network is essential. In today's modern age, this network may be built through a digital channel. It can aid in creating the right framework for ICT as organizations move towards digitalization. Two fundamental principles correct information coding and creating a productive communication network are used to gauge the efficacy of information and communication technology when it is integrated with management functions inside an organisation. The implementation of many operations required for the operation of the business depends in large part on the communication network. Artificial intelligence, information management, data mining, data storage, and the development of a solid decision-making system can all be used to establish an effective ICT framework. All these systems have a contemporary, technical approach. Because the financial sector is subject to frequent changes in rules, regulations, and processes, ICT and its efficient administration are crucial. Hence, a deeper comprehension and awareness of this information are required. Moreover, a good communication system is required to transmit all of these changes across all divisions of a business. Here, information collecting and transmission are both crucially aided by ICT. Technology has also compelled firms to be adaptable, changing their processes to more advanced and innovative advanced technologies. (Agrawal, Agrawal, Singh, Tripathi, 2012 and Islam, 2016).

Operating a company can be exceptionally challenging task. The increase in workplace solutions to complex problems is the cause of it. The process of management and its effectiveness greatly influenced by the instruments they employ. If the work requires a lot of labour, management cannot use communication technologies. Yet, the management can use information and communication technology (ICT) to operate its operations more effectively if it costs a lot of money. Information and communication technology encompasses all types of software and software-related activities and solutions, such as ICT infrastructure, ICT applications, software products, and embedded software (ICT). ICT solutions

include the development of complex software, the creation of mobile applications, the design and development of websites, and the production of visualizations and films. While improving modern firm performance is the goal of every information technology business unit, doing so requires improving the quality of managerial decisions. However, without appropriate synchronization between information technology and corporate strategy, the firm's ability to achieve its agility status is at risk, which lowers the likelihood that it will be able to gain an IT-business comparative benefit (Veigas, Naik, Chandrasekaran, 2012 and Jamali, 2022).

Literature Review

In a research it was established that each business's growth depends heavily on innovation. Innovation entails not only the production of new goods or services for the business, but also the execution of different business plans and organizational techniques. The inventive approach also entails re-purposing existing assets and knowledge in novel ways. Companies are increasingly focused on knowledge-based innovation to think in unorthodox ways. Companies use a variety of information sources to expand their understanding. It is vital to highlight that information sources are primarily external and rely on other sources, which might be difficult to get at times. To make these sources easier to access the management of the company must find a reliable source that can lessen the workload of other employees and ensure that they receive the proper information. The fundamental issue with having several sources of information is that only the relevant and important information gets shared. The management or senior executives must gather the necessary data in one location. The managers may use information technology to gather and compile the precise data required for the business through this unique technique of compilation (Chairoel, Widyarto, Pujani, 2015).

In a study it was observed that after the various revolutions in different fields and sectors, the quality of services and products offered by the companies is called as third wave of revolution particularly highlighting technology is every field. Companies are using the Internet more and more for business purposes. Internet communication between organizations and customers is incredibly successful due to its nature and widespread worldwide availability. As it lowers the cost of delivering products and services and enlarges geographical borders by linking buyers and sellers, the growth of Internet technology holds out a great deal of potential. The buying and selling of products and services through a computer network or other electronic system is known as electronic commerce, sometimes referred to as electronic, digital, or e-Commerce. The goal of ecommerce technology is to make it simpler and more affordable to connect with businesses and people in order to conduct regular commercial transactions. The use of ICT has been the deciding factor between thriving and failing firms; between those that provide services and high-quality goods and those that fall short of producing customer and user satisfaction. Due to the new competitive circumstances and expectations that result, it is necessary to review and update the procedures in place in order to better meet these demands (Khanam, Siddiqui, & Talib, 2013).

A study on information technology was conducted, and it was discovered that IT refers to the technology associated with telecommunications, broadcast media, and other similar media. The term "IT" encompasses a broad range of fields and is not just used in relation to broadcasting and telecommunications. It refers to any technology that shares, develops, transmits, saves, or otherwise makes use of information. The management has been able to link several persons in a single frame and at a single moment thanks to recent advances in ICT. When it comes to communication, it requires using a variety of channels in addition to the traditional concepts of information flow from one person to another or from one level to another. There is a need to create an efficient communication system for companies with several branches or departments. At every level of an organization, communication within that level is crucial for the flow of ideas and information. Quick adaptation to changes is vital for the growth of any company and is made possible through effective communication. Internal and external corporate communications are the two categories of organizational communications. An organization's internal communication is essential to its effective operation, and its outward communication is essential to maintaining positive relationships with its external environment (Waghulde, Katdare, 2021 and Nikoloski 2014).

In a study it was discovered that the idea of business management is currently included and comprehended in the domain of business administration and leadership that handles businesses, their way of working, and their functioning as linked totality that work systemically with dependency among various aspects. There has been a shift in business thought from the traditional viewpoint, where the corporation was seen as an entity whose goal was the realization of a

profit through the fulfillment of a consumer requirement. It describes making items available in exchange for payment or consideration of their economic value. As a consequence of developments in the patterns of organizations, companies are commonly believed to be the interplay of several factors and variable features that interact in a complex way with one another and the environment in which they evolve. Information technology is employed in the strategic function of information systems to develop products, operations, and capabilities that provide a company an edge over rivals on the global market. This produces strategic information systems, or information systems that influence or support an organization's competitive position and plans. So, any kind of computerized system that aids an organization might be a critical business system that helps in acquiring competitive edge, eliminate a significant disadvantage, and accomplish other strategic business goals (Reinoso, Castillo, 2018 and Birchall & Giambona 2008).

In a research it was found that the Information and communication technology have been instrumental in fostering significant alterations to social norms in the modern world, in the fast and globalised society. A society whose routines and priorities change despite new understandings and codes may be seen in the rapid growth of these technologies. Languages and practices convey other ways of structuring dynamics, both individually and collectively. So ICT integration becomes essential for those who need to remain connected to the outside world. It is crucial to keep in mind that ICTs were developed as a result of technological developments in the fields of telecommunications and information technology, which are the group of technologies that allow for the production, processing, and transmission of information that is presented in a variety of coded formats. The acquisition of knowledge should be the first step in an ICT deployment that is successful. This phase requires the company's management to research numerous internal and external sources and transform them into an original concept. If the new ideas are not effectively shared with the other organization personnel, they are useless. The staff should have access to transparent data and information. Moreover, a framework is established in this stage to provide a foundation for choosing reliable information and processing it. Information dissemination is a part of the second stage. It implies that the manager should be fully knowledgeable about ICT-based technologies and how to apply them (Khan, Lal, 2018 and Babu, Sridevi, 2018).

Objective of the Study

- To determine the role of ICT innovations in business efficiency and effectiveness
- To check the significance of the factor that affect the role of ICT innovations in business efficiency and effectiveness

Methodology

The present study is based on a survey conducted with a structured questionnaire. In the analysis, there were 200 participants who took part. To identify the results, statistical techniques such as mean and t-test were employed. The research employed a convenience sampling method, where participants were selected based on their availability and accessibility.

Table 1 Role of ICT In Enhancing The Effectiveness Of Education

Serial No.	Statement of Survey	Mean Value	t-Value	Sig.
1.	ICTs are potential powerful enabling tools for business effectiveness and learning.	4.48	12.614	0.000
2.	ICT promotes higher-order thinking skills by explaining and justifying the solutions to problems.	4.32	9.927	0.000
3.	The use of ICT in business lends itself to more employee-centered learning settings.	4.20	8.264	0.000

4.	ICT use develops ICT literacy and ICT Capability by providing meaningful activities, embedded in purposeful business-related contexts.	4.11	6.151	0.000
5.	Cloud computing has made it possible for businesses to store their data and applications on the internet.	4.12	6.561	0.000
6.	ICT innovations such as email, instant messaging, and video conferencing have made communication faster and more efficient.	4.43	11.099	0.000
7.	Automation software and tools have made it possible to automate many repetitive tasks such as data entry, invoicing, and inventory management.	4.30	10.971	0.000
8.	ICT innovations like Customer Relationship Management (CRM) software has helped companies to manage their interactions with customers more effectively.	4.22	9.457	0.000

Table and Figure 1 displays the Mean values for statement for the studying “the role of ICT innovations in business efficiency and effectiveness”, looking at the mean scores, the highest mean score is gained by the statement “ICTs are potential powerful enabling tools for business effectiveness and learning”, the mean score of 4.48,” next statement is “ICT innovations such as email, instant messaging, and video conferencing have made communication faster and more efficient” has the mean score of 4.43. ICT tools are also found to be responsible solving business problems as shown in statement “ICT promotes higher-order thinking skills by explaining and justifying the solutions to problems” having the mean value of 4.32. Another advantage of ICT innovations, “Automation software and tools have made it possible to automate many repetitive tasks such as data entry, invoicing, and inventory management” for which the mean score is 4.30, statement “ICT innovations like Customer Relationship Management (CRM) software has helped companies to manage their interactions with customers more effectively” shows the mean value of 4.22, mean value of 4.20 is scored by statement “The use of ICT in business lends itself to more employee-centered learning settings”. “Cloud computing has made it possible for businesses to store their data and applications on the internet” mean score is 4.12. The statement “ICT use develops ICT literacy and ICT Capability by providing meaningful activities, embedded in purposeful business-related contexts” shows the mean value of 4.11. Statement “T-value of every statement in context of the role of ICT innovations in business efficiency and effectiveness is significant, because t-value statements are found to be significance & positive and p value also less than 0.05.

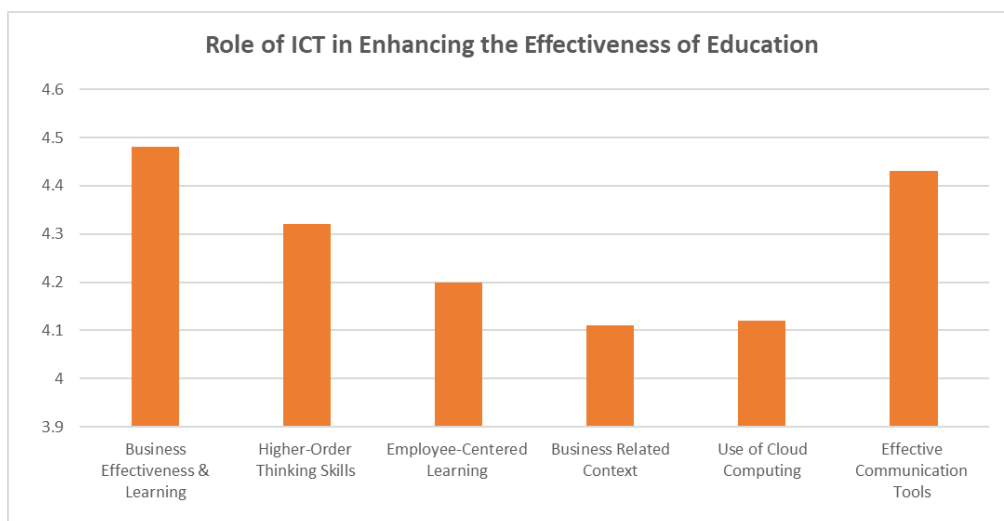


Figure 1 Role of ICT In Enhancing The Effectiveness Of Education

Conclusion

The use of ICTs is expanding as a result of the immeasurable advantages that result from automating processes in any organization, such as improved internal procedures and operations, media attention of far more customers, consumers, or beneficiaries, opening doors to new audiences, dynamic information exchange about internal and external aspects of the organization, and increased efficiency through quicker response times. Both the knowledge required encouraging decision-making and a more comprehensive understanding of processes in all their complexity are ensured. It is crucial to employ the proper technologies, which are updated and consider application areas and automation technologies that truly cover the intricacies of the methods and processes developed in each organizational unit and that also disseminate information so that the right decisions are taken at each hierarchical level in accordance with the plan and under constant observation. The digital platform must be reliable, democratic, secure, and stable for this to transpire. ICT services should be provided as democratically as possible, with education and training campaigns about how to use them and their many advantages. It is crucial that the information reaches users at every security level since every automation process must have several levels of protection. ICT functions as a platform that ensures the timely and regular flow of information and that the specific piece of information is shared with the appropriate person for an organization's effective operation. ICT management done well is beneficial in a variety of ways. It is crucial to the efficient exchange of information that fosters the company's favorable reputation and the confidence of both employees and clients. As ICT is based on technology, artificial intelligence, which lessens the workload and makes work simple and realistic for the manager, management can make right and precise decisions with the aid of ICT.

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