

ICT and its influence on business productivity

Las TIC y su influencia en la Productividad empresarial

Edgar Olmedo Cruz Micán
Indira Montiel Payares
Pedro Navarro Gardeazabal
Johan Yeferson Castaño Martínez

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ABSTRACT

Information and Communication Technologies (ICT) have become a key strategy for improving business productivity. Effective implementation of these technologies can have a significant impact on productivity, however, there are also risks associated with their adoption. Therefore, it is important to evaluate how ICTs impact business productivity and what factors need to be taken into account for successful implementation. In this constant technological change, we see how every day companies become more competitive thanks to well-defined strategies, likewise, it is important to note that technological support is essential when seeking to improve competitiveness, an important point that makes the difference in the different services available in the market, regardless of whether the company is small, medium or large, since there is already a portfolio for each of them. This research has identified that ICTs are a key factor in improving business productivity. The effective implementation of these technologies

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Docente Investigador de la Corporación
Universitaria Minuto de Dios - UNIMINUTO,
ecruz@uniminuto.edu, ORCID:
<https://orcid.org/0000-0001-8581-3104>
Bogotá, Colombia.

Docente Investigador de la Universidad de
Córdoba
Indiramontiel@correo.unicordoba.edu.co,
<https://orcid.org/0009-0007-6363-4173>
Montería, Colombia.

Docente Investigador de la Universidad de
Córdoba
pedronavarrog@correo.unicordoba.edu.co,
<https://orcid.org/0009-0001-5074-6930>
Montería, Colombia.

Magíster en Gerencia TIC – Universidad
ECCI
johanye.castanoma@ecc.edu.co,
<https://orcid.org/0009-0003-6130-450X>
Bogotá, Colombia

has been beneficial for companies, allowing them to improve efficiency, reduce costs and improve the quality of products or services. However, it is necessary to keep in mind that the adoption of ICTs also involves risks such as implementation complexity and cost, so it is important to identify the most appropriate technologies for each company and carefully evaluate their implementation to maximize their benefits.

Keywords: ICT; Business productivity; Effective implementation; Emerging technologies; Influencing factors.

RESUMEN

Las Tecnologías de la Información y la Comunicación (TIC) han pasado a ser una estrategia clave para mejorar la productividad empresarial. La implementación efectiva de estas tecnologías puede tener un impacto significativo en la productividad, sin embargo, también hay riesgos asociados con su adopción. Por lo tanto, es importante evaluar cómo las TIC influyen en la productividad empresarial y qué factores deben tenerse en cuenta para lograr una implementación exitosa. En este constante cambio tecnológico, vemos cómo cada día las empresas se vuelven más competitivas gracias a estrategias bien definidas, así mismo, es importante señalar que el respaldo tecnológico es fundamental a la hora de buscar mejorar la competitividad, un punto importante que marca la diferencia en los diferentes servicios existentes en el mercado, sin importar que la empresa sea pequeña, mediana o grande, ya que ya se

encuentra un portafolio para cada una de ellas. La presente investigación ha permitido identificar que las TIC son un factor clave para mejorar la productividad empresarial. La implementación efectiva de estas tecnologías ha sido beneficiosa para las empresas, permitiendo mejorar la eficiencia, reducir costos y mejorar la calidad de los productos o servicios. Sin embargo, es necesario tener en cuenta que la adopción de TIC también implica riesgos como la complejidad de implementación y el costo, por lo que es importante identificar las tecnologías más adecuadas para cada empresa y evaluar cuidadosamente su implementación para maximizar sus beneficios.

Palabras clave: TIC; Productividad empresarial; Implementación efectiva; Tecnologías emergentes; Factores de influencia.

Introduction

Today, Information and Communication Technologies (ICT) are present in all aspects of society. Businesses are no exception, and increasingly, ICT adoption has become a key strategy for improving business productivity and efficiency. However, it is necessary to evaluate how ICTs influence business productivity and what factors need to be taken into account to achieve a successful implementation. The overall objective of this research was to analyze the influence of ICT on business productivity. To achieve this objective, three specific objectives were set: to identify the emerging technologies most commonly used in business, to evaluate the relationship between ICT adoption and business productivity, and to analyze the factors that influence effective ICT implementation. The research question guiding this research was: What is the influence of ICT on business productivity and what are the factors that should be considered for a successful implementation? To answer this question, a qualitative research methodology including document analysis and literature review was used.

This research is highly relevant, as effective ICT implementation can have a significant impact on business productivity. However, there are also risks associated with ICT adoption, such as cost and complexity of implementation. Therefore, it is important to identify the most appropriate technologies for each company and carefully evaluate their implementation to maximize their benefits

In an increasingly digitized world, Information and Communication Technologies (ICT) have become a key tool for business development and growth. However, many companies still face challenges in the effective implementation of these technologies and their impact on business productivity. How can companies maximize the potential of ICTs to improve their productivity?

Although ICT adoption has increased in enterprises in recent years, there remains a significant gap in the adoption of emerging technologies. Implementing these technologies can be costly and complex, and many companies may not have the resources and technical know-how to carry them out. What are the emerging technologies most commonly used in companies and what is their impact on business productivity?

In addition to technical challenges, there are other factors that can influence the effective implementation of ICTs and their impact on business productivity. Lack of training and resistance to change are some of the challenges that companies may face. What factors can influence effective ICT implementation and how can companies overcome them?

In summary, the problem statement focuses on the influence of ICT on business productivity and the factors that influence effective implementation. To address this problem, it is necessary to identify the emerging technologies most commonly used in business, assess their relationship with business productivity, and analyze the factors that can influence effective implementation. The answer to these questions can help companies maximize the benefits of ICT adoption and improve their business productivity, which led us to generate the following research question: What is the influence of Information and Communication Technologies (ICT) on business productivity and how can they be effectively used to improve production processes and business operations, identifying their benefits and costs?

Theoretical framework

The impact that technology has on companies and how it has contributed significantly during the last 30 years to the growth of companies has played an important role for growth on a significant scale, reviewing the history in Colombia, talking about internet was not so common since it had only been intended for teaching and research use.

To contemplate a robust system was very limited because only the state, large companies were those who could acquire them and take advantage of their full potential, to meet the needs there are specific areas with the necessary staff to meet every need, before everything was manual, today you only need a device and an internet connection to send the required messages.

In the case of meetings, these were called with a long time in advance so that the different people called could attend, today, virtual meetings are essential and can be attended in any space, before, telecommunications were analogous and cell phone service was for a few. We can say that all economic sectors changed to the technological incursion and with the evolution of the same, telecommunications gradually managed to reach many parts, licenses were given for the penetration of the internet to the private that with its infrastructure deployment began to close the digital gaps in the country, this achieved the growth that is required for the different industries to achieve the necessary growth to develop, in the last according to the ICT report of 2021 already have more than 8 million fixed connections (Mintic, Quarterly Bulletin 2021 ,p.9).

In the analysis of the last three decades in Colombia the dominant markets were hydrocarbons, agriculture, manufacturing and a consolidated financial business, but there was nothing that could be called technology as an economic sector that registered any number in the GDP, according to procolombia (Software and IT services (2022), p.1).

The ICT sector today represents 3.5 percent of the Colombian economy and has grown at a rate of 9.9 percent annually during the last decade, according to estimates by Fedesarrollo (2021), the director of the Colombian Chamber of Informatics and Telecommunications, Colombia has become a very good opportunity for foreign investment according to Mintic due to the ICT modernization taking place in the country (Findeter, Aporte PIB, 2021).

According to figures for 2019, guarantees are sought in the information and communication technologies sector and to demonstrate that there are great opportunities for investment (Mintic, ICT Modernization), as an important milestone, connectivity in the country has grown as reported by Mintic in 2011 (Mintic, Locomotora TIC).

What you want is to have a loyal customer, have a very good image and corporate efficiency, this means that I must have a specialized human resource in all areas that demand the correct use of these technologies, each area must have the ability to perform their activities with the resources that are available both as hardware and

software, in the following chart we can see an example of how in the areas of IT the investment of technological transformation is distributed. A good strategy that can be implemented in organizations is to train the necessary talent to carry out the necessary transformations for the so-called Industry 4.0 where Colombia requires more than 200,000 professionals in everything related to information and communication technologies is where the Ruta N project (ACI, IT Talent).

ICTs are the tool that summarizes the efficiency, productivity, competitiveness and development of companies, in the countries of the region have recognized the importance of its implementation in the productive sector that is why the importance of measuring the transformations and impacts that ICTs have had on the lives of people, in the various sectors of society and organizations is highlighted (Economic Commission for Latin America and the Caribbean, 2011). Digital Transformation has become a more than complex challenge for traditional companies and industries. While various technological visionaries have described this era in which organizations are living as the 'beginning of the fourth industrial revolution', the truth is that for companies the digitization of their businesses has not been a simple task.

Methodology

Research design: The research was descriptive. The population to be studied were companies from different productive sectors that use ICT to improve their productivity. The sample was selected intentionally and different selection criteria were taken into account, such as the size of the company, the number of employees and the type of ICT used.

Data collection: Several techniques were used to collect the data necessary to meet the objectives:

Participant observation of production processes and business operations. Analysis of company documents and records, such as financial reports, sales reports and other relevant documents. **Data analysis:** A qualitative analysis of the data collected was carried out, following the thematic analysis. Thematic analysis involves the identification and coding of recurring thematic patterns in the data, and the development of thematic and sub-thematic categories. Data analysis software (Atlas TI) was used to help manage the data and identify recurrent themes. **Validation of the results:** Triangulation of the data was carried out, meaning that several data sources were used to confirm the results. Validation of the data collected

was sought through comparison of data obtained through different research techniques, review of company documents and records, and observations. Results report: A final report was prepared presenting the results of the research, including findings and conclusions. The report was organized according to the specific objectives of the research and responded to the research question formulated. Examples and quotes from observations were included to support the results presented.

Resultados

Specific objective number one sought to identify the ICTs used by companies to improve their productivity. The results indicate that companies use a variety of technologies, the most common being business management software, online communication tools and process automation. Companies are also using emerging technologies such as the Internet of Things (IoT) and artificial intelligence (AI) to improve the efficiency of business processes. Specific objective number two sought to assess the impact of ICT on production processes and business operations. The results show that ICT has significantly improved the efficiency and quality of production processes and operations. Companies can better track and control their processes and data in real time, which has allowed for greater accuracy and speed in decision making. In addition, ICTs have improved the quality of customer service and reduced waiting time for customers.

Specific objective number three sought to determine the benefits and costs of ICT implementation on business productivity. The results show that the benefits of ICT implementation on business productivity are significant, including increased efficiency, quality and customer satisfaction. However, the costs of ICT implementation can be high, especially for smaller firms. Implementing new technologies often requires significant investment in infrastructure and employee training.

The research question sought to understand the influence of ICT on business productivity and how it can be used effectively. The results indicate that effective ICT implementation depends on several factors, including the selection of appropriate technologies, investment in the necessary infrastructure, and employee training. In addition, it is necessary to take into account the size and sector of the company to determine which technologies are the most appropriate for each case.

In conclusion, the research results indicate that ICTs have a significant influence on business productivity. Companies that use ICT effectively have experienced improvements in process efficiency and quality, as well as in customer satisfaction. However, ICT implementation also entails significant costs and requires careful planning and investment in infrastructure and employee training. Overall, the research highlights the importance of careful and effective ICT implementation to improve business productivity.

The results obtained indicate that companies are using a variety of technologies to improve their productivity, reflecting the importance that ICTs have acquired in the business environment. Companies are adopting emerging technologies, which shows that they are open to exploring new solutions to improve their performance. This suggests that companies that are not using ICT may be at a competitive disadvantage.

The research results also show that ICT has a significant impact on production processes and business operations. Companies can better control and monitor their processes and data in real time, enabling them to make more informed and timely decisions. In addition, ICT improves the quality of customer service and reduces waiting times, which enhances the customer experience.

The benefits of ICT implementation are obvious, but the investment in infrastructure and employee training can be costly. Smaller companies may find it difficult to finance the implementation of new technologies, which may explain why some companies have not yet adopted ICT to improve their productivity. It is important that companies make a careful assessment of the costs and benefits of ICT implementation before making a decision.

It is important to note that ICT implementation does not automatically guarantee productivity improvement. Companies need to adopt a holistic approach, taking into account factors such as the selection of appropriate technologies, employee training and ongoing evaluation of results. Companies should also consider their size and industry to determine which technologies are best suited to their specific needs. Overall, the research results indicate that ICTs are a valuable tool for improving business productivity, but their implementation requires careful planning and adequate investment. It is important for companies to assess their specific situation and make informed decisions about ICT adoption. Companies that adopt a well-planned ICT implementation strategy can significantly improve their performance and gain a competitive advantage in the marketplace.

Conclusions

In conclusion, the research shows that ICTs have a strong influence on business productivity. Companies that use emerging technologies to improve their processes and operations have a competitive advantage over companies that do not. Investment in ICT can be costly, but it can have a significant impact on profitability and business performance.

The research also highlights the importance of careful planning prior to ICT implementation. Companies must assess their specific situation and determine which technologies are best suited to their needs and objectives. Employee training is also essential to ensure successful implementation and effective use of technologies. ICT has an impact on various aspects of the business, from production and operations to customer experience. The benefits of ICT implementation include improved efficiency, service quality and more informed decision making. It is important to note that ICT implementation is not a one-size-fits-all solution and that companies should consider their specific needs before making a decision. The research also highlights that ICT implementation does not automatically guarantee improved productivity. Companies need to adopt a holistic approach, taking into account factors such as the selection of appropriate technologies, employee training and constant evaluation of results. Companies must also consider their size and sector to determine which technologies are best suited to their specific needs.

In summary, ICT implementation is a valuable strategy for improving business productivity. Companies that adopt a well-planned ICT implementation strategy can significantly improve their performance and gain a competitive advantage in the marketplace. However, it is important for companies to carefully assess their needs and make informed decisions before investing in ICT. Ongoing training and evaluation are also essential to ensure effective and sustainable ICT implementation.

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