

The role of Technology in Business Innovation

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ABSTRACT

Technology plays an important role in the development of innovation in today's emerging industry. This article examines how technological advances, particularly in areas such as Artificial Intelligence (AI), Machine Learning (ML), are driving operational efficiency and product service innovation to shape business models. Through primary and secondary research, surveys further facilitate analysis and explore how technologies are adopted in the development of innovation. The study examines the benefits of technology in improving and accelerating business efficiency and customer experience. However, over-reliance on technology also creates problems. The result of the survey shows that 75% of the technology maintains an advantage over competitors. 25 percent say that new technological solutions are complicated. The study also observed that businesses in industries such as healthcare, retail and manufacturing are using artificial intelligence, cloud computing to drive innovation. Business growth highlights the dependence on technology and the challenges organizations face in effectively integrating it.

Key words: Technology in business innovation, Artificial Intelligence (AI), Machine Learning (ML), technological adoption, business models, competitive advantage, primary research results, innovation challenges.

1. Introduction

In recent years, due to technology, there are changes in business models and customer engagement in the industry. As technology contributes to the evolving digital landscape, they must innovate to stay competitive. Technology is an active catalyst in today's companies' production of products, automated communication with customers, and simplification of communication with them. Companies that used to be driven by research and development (R&D) are now successfully driving business innovation because of technology. The reason for this study is to focus on how important the role of technology is in business innovation and how new technologies can reduce the problems faced by companies.

The survey conducted in this article uses primary research collected from 145 participants to comprehensively examine the relationship between technology and business innovation. Provides context for business growth and the role of technology in secondary research.

2.Literature review

The concept of business innovation has been studied in academic circles, and many scholars have emphasized its importance for the sustainability of growth. According to (Shala, Bytyçi and Dodaj, 2021) [1], business innovation is the process of creating unique business value and new

products, customers, services or processes. In this process, the role of technology is the development of systems and the development of digital tools.

Technology and Innovation

As technology continues to evolve in business, businesses increasingly rely on it to innovate. In the relationship between technology and innovation, systems change and new opportunities are created along with the adoption of tools. Technologies such as artificial intelligence, machine learning, and big data analytics are helping businesses create more experiences, automate processes, and understand customer preferences.

According to a study by (Brynjolfsson and McAfee 2014) [2], the digital revolution has led to an explosion of opportunities in business innovation. Through the ability to efficiently use and analyze data, businesses have been able to innovate in ways that would otherwise have been impossible for the company. An example is how technology can help innovation in sales through a recommendation system, using big data to predict customer demand.

Business Models and Technology

The impact of technology leads to the development of new business models and the development of service innovation. Different companies are using technology to create platform and save cost and time. Platforms like Uber and Airbnb, for example, are leveraging technology by creating new innovations that connect directly with consumers.

Challenges in Technological Adoption

Technology has its advantages as well as its challenges. (Bughin, LaBerge and Mellbye, 2017) [3] report that problems arise in enterprise costs, labor shortages, and integration of new technologies. In addition, technological progress makes it difficult for companies to stay relevant.

3. Research Methodology

In this study, university professors and students were selected in the fields of computer science, marketing, and business management in order to provide a deep understanding of the topic and get a qualitative understanding. 145 students participated in this survey. In the primary study, students were selected based on their academic knowledge of how technology and innovation relate to the business world. Students were invited through an online platform. They were assured that their responses would be anonymous. The survey analyzed statistical data for trends after examining how technology affects business innovation, understanding how important technology is to business innovation, and its impact on future business models. The analysis also looked at the relationship between students' field of study and responses.

Secondary research shows that new product creation is of great importance to companies in developing new business models. Technologies such as AI, Cloud Computing, Blockchain optimize the process and serve customers automatically. However, they face a number of difficulties in using the technology. Integration with legacy systems incurs costs. Several insights derived from secondary research complement the findings of primary research. The basis for

understanding the role of technology in the development of the future of business. Provides a deep understanding of how technology can be used to outperform competitors in the digital landscape.

Primary research

Based on the topic of this article, the study asked 145 students about the role of technology in business innovation. There are 9 sets of questions and 3-5 options for each. In this primary study, the results were obtained on how important and necessary technology is in business innovation. The topic "The role of Technology in Business Innovation" was the reason for actual discussions and students left their opinions.

Purpose: Collect data from students on how important Technology is in Business Innovation and its role.

Survey questions

1. What is your field of study?
2. How familiar are you with the term "business innovation"?
3. How important do you think technology is for innovation in businesses today?
4. Which of these technologies do you think are most important for business innovation?
5. Do you think businesses today use technology to create new products or services?
6. How often do you think businesses need to adopt new technology to stay innovative?
7. In your opinion, which industries benefit the most from using technology to drive innovation?
8. What are the benefits of using technology for innovation in business?
9. How ready do you think businesses are to adopt new technologies for innovation?

In addition, primary research confirms the importance of the role of technology in business innovation. Participants emphasize the increased demand for enterprises to adopt and adopt technological solutions in order to remain competitive in a rapidly evolving landscape. More than 75% of survey respondents state that they always and every few years adopt technologies to create innovation. This means that students regularly need new tools for technological advancement. How the speed of technology development affects the business model and requires the application of technologies in order to stay ahead of the competition.

Secondary research

Technology has become a business innovation that has a powerful impact on customer relationships through operations and strategic ways across organizations and industries. As industry evolves and so does competition, companies rely on technology to improve their products, services, and maintain a competitive edge to grow.

1. Technological Advancements and Business Innovation

Through technology, businesses can create models of new products or services. Digital transformation is at the forefront, with companies using emerging technologies such as artificial intelligence (AI), machine learning (ML), Blockchain, and cloud computing. Innovation is not limited to scientific research. Technology contributes to and enables business to innovate in all industries.

According to a McKinsey & Company report (2022), advanced technologies such as Artificial Intelligence (AI) and Machine Learning (ML) have brought great results to business. The report shows that the efficiency of companies increased by 10-12%. These innovations attract customers, automate processes and transform business models. The use of such technologies is increasing and represents an advantage over competitors. (McKinsey & Company, 2022) [4]

2. AI in Business Strategy and Process Improvement

Other technologies, such as AI, are reshaping business innovation by facilitating strategic planning of decision-making processes. AI's ability to analyze large amounts of data and generate insights will enable businesses to grow. Leovigildo Lito Mallillin and D Mallillin (2024) argue that the role of AI in business is to help manage complex data systems and improve customer experience. It also offers AI to optimize business models to de-risk the market and predict customer needs. This technological change allows for faster market response and innovative product creation. (Leovigildo Lito Mallillin and D Mallillin, 2024) [5]

3. Challenges of AI Integration in Business Innovation

The benefits of artificial intelligence are not without challenges in business practice. Problems such as algorithm inaccuracies remain. (Bankins and Formosa, 2023) point out that AI technologies have financial implications. Small businesses may struggle to afford advanced AI tools, and business-to-business issues may arise. . (Bankins and Formosa, 2023) [6]

4. Research findings

Figure 1

1. What is your field of study?

145 ОТВЕТОВ

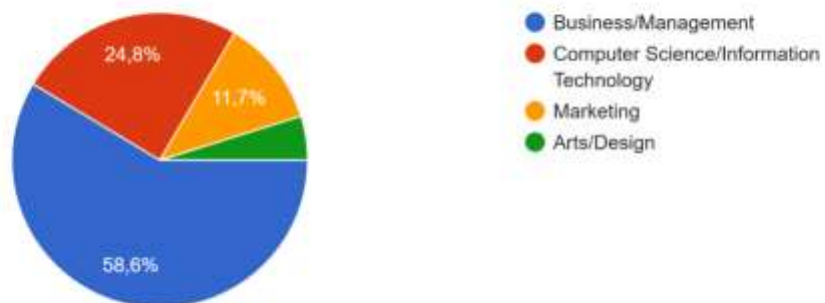


Figure 2

2. How familiar are you with the term "business innovation"?

145 ответов

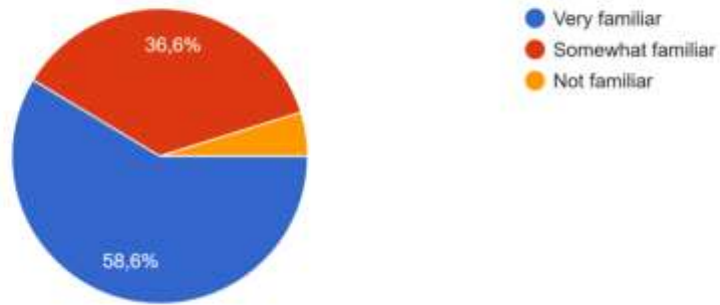


Figure 3

3. How important do you think technology is for innovation in businesses today?

145 ответов

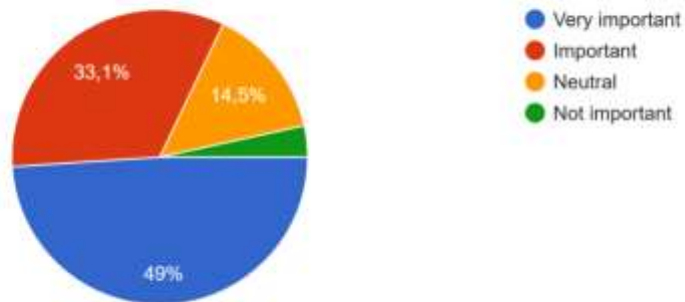


Figure 4

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4. Which of these technologies do you think are most important for business innovation?

145 ответов

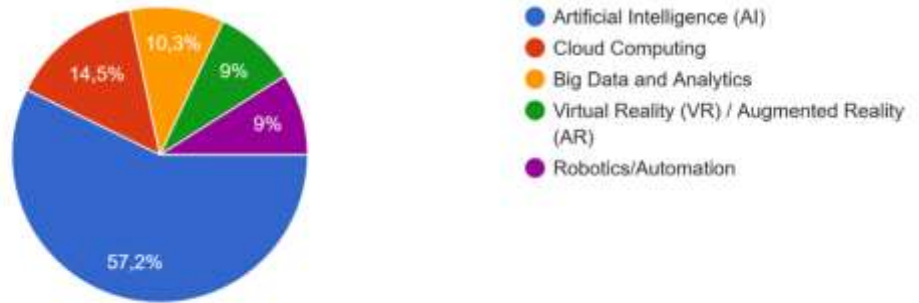


Figure 5

5. Do you think businesses today use technology to create new products or services?

145 ответов



Figure 6

6. How often do you think businesses need to adopt new technology to stay innovative?

145 ответов

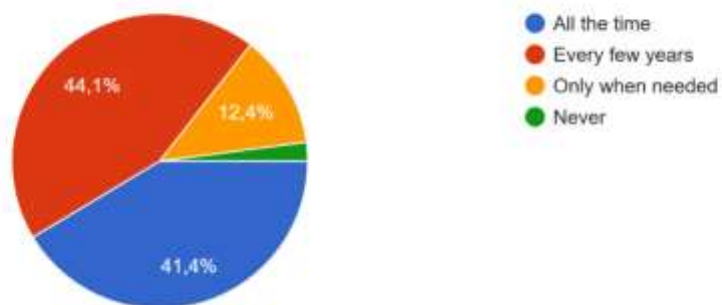


Figure 7

7. In your opinion, which industries benefit the most from using technology to drive innovation?

145 ответов

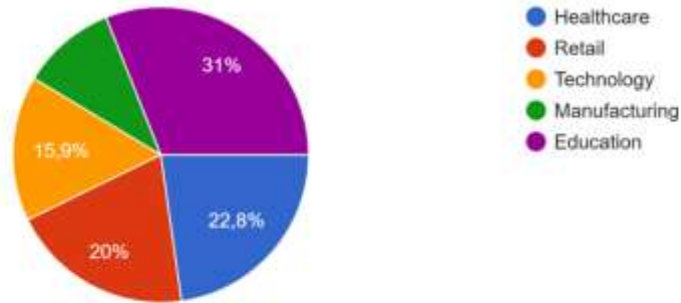


Figure 8

8. What are the benefits of using technology for innovation in business?

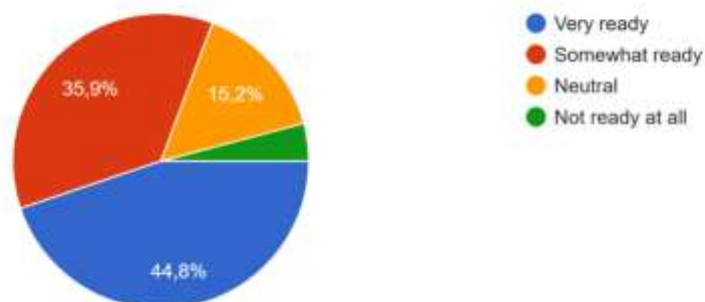
145 ответов



Figure 9

9. How ready do you think businesses are to adopt new technologies for innovation?

145 ответов



5.Data analysis

1. Importance of Technology for Business Innovation

It can be seen from the results of the survey that artificial intelligence occupies an important place in the development of AI business innovations. 57.2 percent of participants believe that technology is important. Of that, Cloud Computing, which is necessary for business expansion, is at 14.5%. Robotics, Big Data and Virtual Augmentation and Reality make up 9%. It confirms that AI is number 1 in growing niches, and this is a very exciting context in business.

2. Familiarity with the Term "Business Innovation"

In the survey, 58.6% are familiar with the term business innovation and understand its importance. 36.6% indicate that technology has some influence. However, 4.8 percent indicate the need for business education.

3. Use of Technology by Businesses

60.3% of participants believe in the active use of technology in product creation. 38.6% indicate that there is a gap in usage. The smallest percentage, 1.1%, doubts the technology and highlights the lack of trust.

4. Adoption Frequency of New Technologies

When asked how much technology is needed to help businesses innovate, 41.4 percent say it's constantly important. 44.1% believe that sometimes, that is, when necessary. These results show support for a needs approach to technological adaptation.

5. Industry Benefiting the Most from Technology

The healthcare industry was found to be the largest user of the technology. It makes breakthroughs in AI-based diagnostics and health analytics. The second place was occupied by the technology sector (22.8%), education (20%), manufacturing (15.9%) and retail trade (10.3%). These results have broad implications for industries and highlight a changing field.

6. Impact on Performance

The results of the survey show that 52.7% indicate that technology will improve the impact on business performance. 26.4% believe that it is average, 19.1% think that it will not have a significant impact and will not bring benefits.

7. Impact on Problem-Solving and Innovation

47.7% of participants believe that technology is important in solving all problems, while 22.5% clearly agree with it. It believes that technology plays an important role in solving and stimulating new solutions in development. The rest of the participants expressed a neutral opinion and indicated the need to maximize opportunities.

From this analysis, it can be seen that AI is important in business and has a great role to play in solving human problems. These tools are handy at a time when healthcare networks are benefiting significantly improves on the networks in the arrival and strategic implementation.

6.Discussion

•Primary research methodology

Based on the results of primary research, technology plays an important role in the development of business innovations in various fields. Leveraging technologies such as Artificial

Intelligence (AI), Machine Learning (ML) and product development have become the focus of strategies to improve customer experience. Today, technological tools are actively used to simplify enterprise operations and maintain competitiveness.

Primary research has shown that some 70% of business professionals believe that technology is important in creating innovation. Technologies such as cloud computing, automation, and AI are seen as tools capable of analyzing time patterns. These tools are the technology needed to create innovative solutions and customer experiences.

The main conclusion of the study is that 75% of the participants stated that the technology has significantly increased their ability to develop creative solutions and create new products.

In addition, university professors and students noted that technology is a decisive factor in business practices. Almost 60% of respondents say that technology has increased the speed at which processes are simplified. For example, artificial intelligence is automating tasks in many businesses, allowing employees to focus on more creative work.

However, the majority of respondents reported several challenges in adopting the technology. About 30 percent of participants cited data security risks and a lack of technical expertise. Despite these challenges, the general consensus is that remaining competitive in the global marketplace will embrace technological advancements. In conclusion, primary research confirms that technology improves business productivity and customer satisfaction. However, overcoming barriers to adoption can serve as a catalyst for innovation.

•Negative Impacts of Technology in Business Innovation

While technology has many benefits for business innovation, it also has its downsides. Technologies such as Artificial Intelligence (AI), Machine Learning (ML) and automation can have negative consequences if not handled carefully. His biggest problem is over-reliance on technology. Businesses use AI to improve efficiency and simplify, but dependence on it leads to a loss of decision-making ability. As companies rely on AI analytics, they lose their ability to solve problems independently. . Artificial intelligence may be able to analyze data, but the human mind cannot perceive reasoning to its subtle point. It all depends on the innon's ability to understand complex emotions. A decrease in the ability of employees to make decisions without technological support can even be detrimental in critical situations.

In addition, job losses are caused by the automation of manual labor in manufacturing, or AI in the logistics industry. Employees are losing their jobs as machines and algorithms take over tasks, leading to further unemployment. In addition, it may be more difficult to find experts to understand the application of such technologies.

Another negative effect is security risks in the use of technology. As businesses embrace AI, they also open themselves up to cyberattacks. The more digital the business, the greater the risks. Hackers and cybercriminals exploit system vulnerabilities to put sensitive company data and company assets at risk. Security breaches lead to many losses and loss of customer trust. Training employees for the most advanced technologies can reduce cost resources.

In conclusion, just because technology is important in business innovation does not mean it is without its challenges. Ethical concerns are one of the negative effects of technology integration. It is important for business to know how to strike a balance when adopting innovation and ensuring that innovation serves, not replaces, technology.

• **Secondary research methodology**

Usage of Technology in Business Innovation

Many sources have documented the role of technology in business innovation, leading to the improvement of industries. As a result of the study, technology became a key factor. For example, AI is being used for optimization and simplification in business. Artificial intelligence has been shown to reduce customer service time by up to 30% and increase loyalty. Businesses using AI for market analysis have been able to save time and improve product accuracy with analytics. Technology has shown an important role in business strategies to improve operations with positive results.

Impact on Organizational Culture and Employee Innovation

In addition to improving technology processes, it also plays an important role in improving the culture of innovation. According to research, innovation in digital media is at a high level. These platforms lead to rapid exchange of ideas and development of innovative solutions.

Business Model Innovation

Digital transformation drives economy-based models. This innovative business uses it to deliver products and services in efficient ways. For example, companies like Uber and Airbnb have built a platform-based model through mobile apps. Similarly, the models used by companies such as Netflix and Spotify have revolutionized the way consumers access content.

7. Conclusion

In this article, the analysis is presented based on the results of the study. The article begins with an introduction that highlights the role of technology in business innovation. The next section, a literature review, presents a study of how enterprises use technology to develop innovation based on sources. In the research methodology section, surveys are conducted with professors and students and are used in detail to gather information. The secondary research section provides information from existing reports, articles, and analyzes a broader topic. Data analysis provides evidence of the impact, importance, challenges and opportunities faced by technology in business innovation through a survey. The discussion section synthesizes in-depth information and rationale on how technology is influencing business innovation. This unit explores the role of technology such as digital tools, AI, automation in transforming business models, customer experience. Discusses the benefits and challenges of technology. Finally, the paper concludes with an overview of how technology is shaping business innovation. The research aims to gain a deeper understanding of the role of technology in enabling today's emerging business innovation and maintaining competitive advantage.

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