

# HARNESSING VALUE IN THE DIGITAL ECONOMY THROUGH BUSINESS MODEL INNOVATION PERSPECTIVES

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## Abstract

This study explores the dynamics of leveraging creativity and human capital in the digital economy for sustainable business transformation. In an era marked by rapid digitalization, businesses are faced with the challenge of adapting to evolving technologies while nurturing their human capital's creative potential. The purpose of this research was twofold: first, to shake up the established order of digital transformation research; and second, to analyze the article systematically in order to learn how digital influences business model innovation (BMI). This research shows that academics have gained an upper hand on the subject of digital transformation beginning in around 2014. Research in developing nations and greater participation from academics and experts are among the key outcomes. Disruptive technologies, open platforms and biological systems and emerging technologies that empower individuals are all highlighted in the report.

**Keywords:** *Digital Economy, digitalization, Human Capital, Technologies.*

## 1. INTRODUCTION

The rapid societal growth over the last few decades has been a defining feature. The start of the difference in the economy and society can be ascribed to the shift to the fifth mechanical request in the mid 1960s of the twentieth 100 years, which was joined by the mass reception of data advancements that considered the computerization of business and modern tasks. These changes filled in as the underlying condition for the society's shift to another formative stage. The subsequent essential was the broad utilization of cell phones and the Web in the 1990s, which normally affected further modernization of business and assembling processes. In the contemporary market context, conventional economic processes are altering. One of the prerequisites for these improvements was the ongoing data, digital advances and developments utilized underway, conveyance, trade and utilization becoming critical during the time spent developing intensity.

Advancements and digital innovations are spreading in the actual economy as well as in the social domain, which incorporates the fields of culture, wellbeing and training. Due to the far and wide reception of digital culture peculiarities like the PC, Web, digital method for correspondence, PC games, innovation workmanship and so on, present day culture sees the world from the perspective of "digits." All advanced economies and some developing ones have been shaken to their core by the advent and adoption of new technologies and the worldwide spread of socioeconomic transformation. The increasing significance of data and correspondence innovation has sped up these developments. There is now something called the "digital economy" because of these shifts. The post-modern period and the advent of the "digital economy" have made human capital one of the most pressing concerns in the social and economic development of the district and the country

as a whole. Human capital, a mix of information and abilities, is the most critical and cutthroat part of creation. It affects efficiency development, which thus affects economic development. Many industrialized and arising countries, similar to the Russian League, are attempting to upgrade their socioeconomic frameworks over the long haul and one of their greatest difficulties is raising the nature of their human capital.

### **1.1.Digital Economy**

According to a World Bank report, the "digital economy" is the "arrangement of economic, social and social relations for the use of information and communication technologies." The term "digital economy" is used often throughout this talk. Business in the Twenty-First Century Information and recording are two of the many economic activities that fall under the umbrella of the "digital economy," as stated in the report Trend and Participation Drivers. The generation and utilisation of digital information is essential to the modern world. The efficient development and enhancement of the basic economy relies heavily on the appropriate use of information and communication technology (ICT), with information networks as a large field of circulation. The digital economy is mostly driven by the IT sector. This industry is responsible for supplying the digital technologies that enable the digitalization of other economic sectors.

It is difficult to accurately describe "digitization". According to some creators, digitization refers to the mixing of digital technologies in the business cycle. The importance of "digitization" in Gartner's words is "the use of digital technologies to change direction and generate new revenue and revenue to create valuable open doors; that is most popular way to digitize". Every aspect of society is experiencing a digitalization trend. With the rollout of Industry 4.0 in Germany in 2011, digital manufacturing started happening. By integrating cyber-physical systems (CPS) into manufacturing processes and connecting to the Internet of Things (IoT), the initiative brings together a number of projects aimed at developing "smart manufacturing". in the field of economic production. Artificial intelligence, big data, IoT, distributed ledger systems, energy and oil industries all use these technologies. The service sector uses distributed ledger technology (blockchain) to secure payments, as well as 3D Touch, NFC (near field communication), contactless technology, fingerprint readers and voice recognition. speak in mobile applications.

New kinds of engagement between professors and students have emerged as a result of the trend towards the use of digital technologies in higher education. Remote educational methods, such internet webinars, are taking the place of traditional ones. Particularly prominent educational portals include Open Edu, Coursera, Udacity, etc. Health information systems (MIS), e-health, e-health, informatics healthcare, telemedicine, presentation of the Internet of Things (IoMT) - Internet of Medical Things), big data analysis and rational use of comprehensive health systems all play a role in the digital transformation of the healthcare industry. It is very considered normal practice in the field of culture to utilize present day technologies to communicate with clients (utilizing on the web administrations, ticket deals aggregators), change plans of action utilizing virtual reality (VR) and augmented reality (AR) technologies (leading on the web online classes, web based telecom of theater creations and music shows, celebrations), as well concerning the

motivation behind changing utilitarian cycles (data digitizing, keeping up with online inventories of exhibition halls)

## 2. LITERATURE REVIEW

Bennet, Wells and Rank (2021) claim that young people who are actively engaged in digital culture possess a wide variety of learning tools that are distinct from more traditional approaches. Subsequently, they like to get information exclusively, are keener on making their own unique substance than in consuming it, really like to cooperate to tackle issues as opposed to all alone and share their answers. Since, in the digital age, progress necessitates a high level of education, Nevado Pea, López Ruiz and Alfaro Navarro (2022) have proven in a recent report including 129 locales in Europe (NUTS2), that spending resources to improve human and information capacity is crucial to enhancing improvement. Isman and Gungoren (2022) suggest that the widespread use of digital tools in a digital society necessitates additional requirements on the abilities of persons using these technologies (so-called "digital citizens"). They need to be aware of how their use of technology impacts others, compliant with the law, vigilant about protecting personal information and accountable for their actions. They must also demonstrate a commitment to learning throughout their lives and have a positive, proactive, collaborative and team-oriented outlook on technological change.

According to Noula (2021), the term "cyber citizen" or "digital citizen" is used to describe the type of person who exhibits new manifestations and changes in social lifestyles created by digital technology. Various people have various ideas on what constitutes "digital citizenship," hence this concept has sparked debate in the social sciences and literature. A "digital citizen" is someone who is either a citizen and proficient in the use of technology, since both definitions apply to someone who can connect the physical world to the virtual one through the Internet. The term "digital resident" is generally agreed upon to be defined by Ribble and Bailey's (2023) nine indicators: digital customs, digital access, digital regulation, digital readiness, digital media, digital business, digital expectations and digital security. They argue that the online world was conceptualised before a reliable set of guidelines for navigating it was established. They define "digital resident" as the standard of responsible and authoritative behavior in the context of the technology environment.

Schneider and Ziesemer (2023) start their conversation of the new endogenous hypothesis by zeroing in on three issues: the innovation's substance, the market structure that is suitable for the expanded gets back from innovation and different creation factor details that are less evolved than the others. To feature the impacts of new technologies on the economy, Katz, Koutroumpis and Callorda (2022) led a review utilizing an endogenous development model in which they just incorporated the digitization index worked for 151 nations as an intermediary for mechanical advancement close by the load of capital and work. Indicating that new technologies have a decisive impact on the economy, the model's results confirm the positive commitments of actual capital, work and a strong impact of the digitization index on economic result.

Based on their research, Ribble and Bailey (2023) concluded that the following nine principles best define a "digital resident": digital etiquette, digital access, digital regulation, digital readiness,

digital communication, digital commerce, digital binding and digital security. Notwithstanding, they bring up that the digital world was laid out before a bunch of standards were built to guarantee mindful conduct in the digital climate. They characterize digital residents as standards of reasonable and capable way of behaving encompassing the use of technologies. The capacity to understand the capability of digital innovation will be imparted through the preparation of digital residents, which proposes that instruction is satisfactory to meet the future ability necessities of the work market. After Allen showed that companies opting for rapid technological change had a wider wage difference between the well educated and the lowly educated, there was a greater push to improve the educational attainment of the general population.

### 2.1.OBJECTIVES

- To examine the field of digital transformation's evolution.
- To review the literature with a focus on business model innovation (BMI) and digital transformation.
- To Find Studies That Are Relevant for the Review.
- To offer information on how the digital transformation has affected business model innovation (BMI).

### 2.2.HYPOTHESIS

**Hypothesis 1:** The concept of digital transformation has evolved significantly over time, reflecting changes in technology, business practices and societal trends.

**Hypothesis 2:** The early literature on digital transformation primarily focused on technological aspects, while more recent literature encompasses broader organizational and strategic considerations.

**Hypothesis 3:** The body of knowledge on BMI's digital transformation has grown recently, demonstrating a rising understanding of its significance for firms in the digital economy.

**Hypothesis 4:** Recent years have seen an increase in the amount of literature on BMI's digital transformation, reflecting a rising understanding of its significance for firms in the digital economy.

## 3. RESEARCH METHODOLOGY

The paper utilizes a calculated survey of the writing. A systematic writing survey is "a strategy for concentrating on a corpus of academic writing, to foster bits of knowledge, basic reflections, future examination ways and exploration questions." The organized writing survey was picked on the grounds that Writing is analyzed using a positivist, quantitative, structure-based content analysis. The objective of the writing survey is to propel hypothesis and this technique utilizes a 10-step system to help the specialist "possibly foster more educated and pertinent exploration ways and questions".

A framework for choosing, analyzing and rating articles is provided by the protocol-driven approach, which aims to ensure reliable and repeatable outcomes that can be defended. The next step is to promote probing questions that will be used to make new decisions based on the audit text. In the congress archive, we have recorded the accompanying research questions:

**RQ1.** What changes have been made to the field of digital transformation throughout time?

**RQ2.** What key themes emerge from the literature on BMI's digital transformation?

The following stage was to pick the classes of papers that would be remembered for the review. We chose the measures for choosing articles as well as the pursuit terms to be utilized. We decided to direct our pursuit utilizing the expressions "digital transformation," "digital disturbance," "mechanical change," "natural change," "disturbance," and "business model," which were additionally utilized in before research in the literature. We have deliberately focused on an accurate academic review to provide insight into how digital transformation affects BM innovation, as the essential goal of this study is to provide a picture IMC's overall digital transformation. In view of prior systematic literature review (SLR) research, hubs for coding were chosen. These examinations guarantee that hubs see data about creators, the planning of distributions, the nation of study, the paper's concentration and procedure. We added hubs relating to industry areas, concentrate on fields, speculations utilized and likely impacts on the course of significant worth age, conveyance and catching. These hubs were added to give a more thorough comprehension of the field's development and to give ideas for future headings. These hubs were remembered for a structure that was utilized to code the papers and dissect the discoveries.

We started the multi-stage cycle of gathering and choosing papers in the wake of picking the review's watchwords and structure. In the first place, we directed a hunt utilizing the convention characterized catchphrases in the Scopus data set. In the underlying hunt, 215 distributions were found. To further address the quality of the papers, we narrowed our search to peer-reviewed publications in the Business and The executives category that received a 3, 4, or 4 ABS rating. We prohibited book parts, book reviews and meeting papers because of this extra imperative. Our subsequent pursuit turned up works that had been distributed in peer-reviewed diaries somewhere in the range of 1996 and 2020, bringing the complete number of distributions down to 126. Subsequent to social affair every one of the papers, each paper was analyzed to ensure it met the review's examination goals by searching for catchphrases in the title, conceptual and watchwords. The presence of string words connected with both digital transformation and business models was a necessity for article consideration. These words were joined utilizing the Boolean administrator AND. For the analysis of the last rundown of papers, we utilized the NVivo12 programming program. The product got the organizer containing the picked papers. To accomplish the objective of the SLR and forestall specialist predisposition, each article was customized involving similar hubs as those recorded in the structure. We grouped the bibliographical details of distributions, strategies, fields, papers and speculative viewpoints into centralized hubs. The initial two exploration targets of our review were tended to utilizing these hubs. To code every one of the impacts of new empowering technologies on BMI, we developed an extra hub for the third exploration question.

#### **4. DATA ANALYSIS**

**RQ1: What changes have been made to the field of digital transformation throughout time?**

The section provides a comprehensive review of digital transformation-related Business Model Innovation (BMI) advances. The section discusses research findings that define this developing

discipline. This summary describes BMI's digital transformation. It highlights the unique characteristics of this developing field of study through research results. The research findings show how digital revolution is changing business model innovation. Section highlights BMI's digital transformation's essential aspects in a methodical and organized manner. It synthesizes discoveries that capture this dynamic field's evolving perspectives, technological advancements and strategic issues. A complete and synthesized picture of Business Model Innovation and digital transformation development is the goal of this section. Research results and distinguishing factors help readers comprehend how digital transformation reshapes business models and drives innovation in many industries.

#### 4.1. Industry Sectors

We organized the content into modern categories, aligning them to improve our comprehension of how Business Model Innovation (BMI) is impacted by digital transformation. Figure 1 shows how these categories transcend 18 different industry sectors. Some cover several areas at once, while others provide a more comprehensive analysis without identifying a single main focus. This method assists in understanding the financial effects of digital transformation in the context of BMI.

Table 1: Key Changes in Digital Transformation

<b>Time Period</b>	<b>Key Changes in Digital Transformation</b>
1990s	Basic Digital Technologies Are Starting To Appear In Enterprises. Initial Emphasis On Process Automation And Digitization.
Early 2000s	Shift In Favor Of Online Presence And E-Commerce. Basic Customer Engagement Tactics And Data Analytics.
Mid 2000s	Growth Of Social Media Sites. Increased Importance Placed On Customer Engagement And Online Marketing.
Late 2000s	Arrival Of Mobile Apps And Smartphone's. Personalized Experiences And Mobile-First Strategy.
2010s	SaaS Solutions And Cloud Computing Are Expanding Quickly. AI-Driven Insights And Big Data Analytics.
2020s	A Quickening Brought On By The Pandemic. Expansion Of Digital Services, E-Commerce and Remote Employment. Pay Attention To Privacy And Cyber security.

Table 1 presents the key changes in digital transformation over the years, starting from the 1990s when basic digital technologies began to appear in enterprises, with a focus on process automation and digitization. The early 2000s saw a shift towards online presence and e-commerce, emphasizing basic customer engagement and data analytics. In the mid-2000s, the growth of social media sites highlighted the importance of customer engagement and online marketing. The late

2000s brought the arrival of mobile apps and smartphones, leading to personalized experiences and a mobile-first strategy. The 2010s witnessed the rapid expansion of SaaS solutions and cloud computing, along with AI-driven insights and big data analytics. Finally, the 2020s have been characterized by a quickening brought on by the pandemic, with an expansion of digital services, e-commerce and remote employment, while also paying attention to privacy and cybersecurity.

Table 2: Evolution of Digital Transformation Strategies

<b>Time Period</b>	<b>Dominant Digital Transformation Strategy</b>	<b>Key Focus Areas</b>
2000-2005	Basic Automation and Digitization	Streamlining Processes
2006-2010	E-commerce and Online Presence	Customer Engagement
2011-2015	Social Media Integration	Online Marketing
2016-2020	Mobile-First and Personalization	Mobile Apps, User Experience
2021-2023	Cloud Computing and AI Analytics	Big Data Insights, AI-driven Decisions

Table 2 shows the evolution of digital transformation initiatives throughout time. The early 2000s (2000–2005) focused on basic automation and digitization to streamline internal procedures. The 2006–2010 timeframe saw a transition towards e-commerce platforms and online customer engagement. As technology advanced, businesses began using social media for online marketing, brand promotion and customer contact (2011–2015). Mobile app development and digital platform user experiences were prioritized from 2016 to 2020. In 2021–2023, cloud computing and AI analytics strategies have matured. Big data insights and AI-driven choices are helping companies improve operations and innovate. The table shows how digital transformation strategies have progressed from foundational automation to more advanced ones that use AI and cloud computing to boost business growth, improve user experiences and use data-driven insights to make decisions. The discoveries likewise show that there is no fixation in few industry areas and that article is conveyed all through industries generally similarly. Notwithstanding, the modern and inventive industries are the two groupings of industries that are covered by a more prominent number of articles.

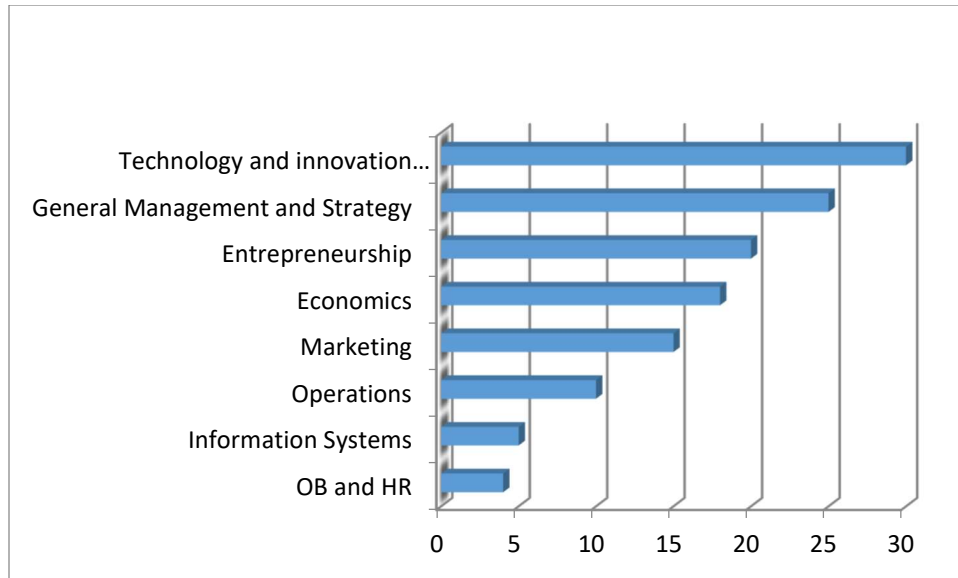


Figure 1: Specialization of the selected article

The majority of research on BMI's digital transition to date has taken an exploratory approach (Figure 2).

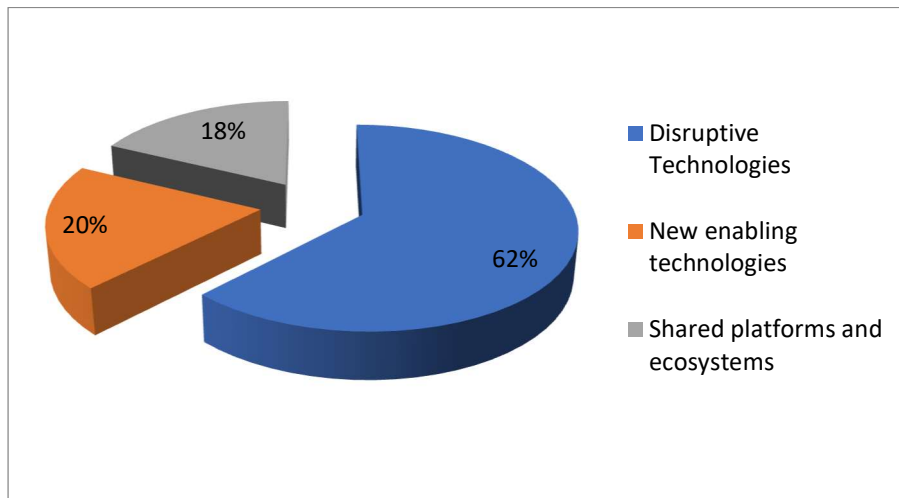


Figure 2: Main focus of the study

#### 4.2. Creative Human Capital for Digital Economy Business Transformation

The distribution of a particular topic matter's research concentration among distinct academic fields. Three main topics have received a large amount of study attention: general and strategic management, entrepreneurship and technology and innovation management. This shows that academics and researchers have acknowledged the value of these domains in comprehending and navigating the field of study. The focus in general and strategic management is probably on examining how companies modify their overarching business strategies to take advantage of digital transformation and business model innovation. Research in entrepreneurship might examine how start-ups use technological breakthroughs to support their novel business models. The role of emerging technologies in altering business models may also be explored through

technology and innovation management. On the other hand, the lack of focus on topics like operations, marketing, information systems and economics may point to a research gap or to a lessened perception of the influence of these fields on the topic of interest at hand. It's crucial to keep in mind that, as each discipline's environment and trends change, research goals frequently vary as well.

## **RQ2: What Is the Focus of the Literature on the Digital Transformation of BMI?**

### **4.3. Concepts and Technologies in Digital Transformation**

Disruptive innovations, normal stages and biological systems and new empowering technologies like Enormous Information, the Internet of Things (IoT), Industry 4.0, Cloud computing and digital fabrication (DF) are undeniably talked about in the literature on digital transformation. A stage is portrayed as "any blend of equipment and software that gives principles, connection points and decides that empower and permit suppliers of supplements to add esteem and communicate with one another as well as different clients" while disruptive technologies will be technologies that can possibly present new item credits that could act as a wellspring of upper hand. A biological system is made when the creator(s) of the stage and complementary are consolidated.

Table 3: Trends in Dominant Themes

<b>Time Period</b>	<b>Dominant Theme</b>	<b>Key Topics</b>
2010-2015	Business Model Innovation	Value Propositions, Revenue Streams
2016-2020	Technological Advancements	AI Implementation, IoT Integration
2021-2023	Customer-Centric Transformation	User Experience, Personalization

Table 3 highlights the evolving dominant themes in business over different time periods. From 2010 to 2015, the focus was on business model innovation, with companies exploring new value propositions and revenue streams to adapt to market changes. Between 2016 and 2020, technological advancements took center stage, with the implementation of Artificial Intelligence (AI) and the integration of the Internet of Things (IoT) driving business strategies. In the most recent period, 2021 to 2023, the trend shifted towards customer-centric transformation, emphasizing the importance of user experience and personalization in business operations to meet the growing expectations of consumers for tailored products and services. It employs a variety of disciplines and theories to try to figure out how the transformation interaction works. Based on a review of the literature on disruptive technologies, the focus should have been on the opportunities and challenges these innovations presented to occupant BMs in the preceding two years (2009-2010). A portion of the articles feature the troubles experienced by laid out organizations while adapting to sensational innovative change.

## **5. CONCLUSION**

To comprehend how the field of digital transformation of BMI has developed, what it has meant for BMI and how it very well may be additionally explored, this work takes on an organized

literature review. As per a review of the literature, scholastics have become progressively intrigued by the digital transformation of BMI beginning around 2014. We anticipate more publications in the topic as scholars' interest in the area grows. Our findings suggest that few authors are still devoted to investigating other facets of BMI influenced by digital revolution because this field of study lacks any dominant authors. As a result, the process of accumulating knowledge in the discipline is hampered because few authors incorporate earlier findings. Over time, we have observed a shift in focus from incumbents in office to digital upstarts and from disruptive technology to new forms of empowerment. This illustrates the practitioner-driven character of research in this area, despite the wide gulf that exists between academics and practitioners. Along these lines, we advocate for expanded scholarly practice cooperation, which will help the discipline in advancing from a beginning phase of improvement to a developed stage. Joint forums, think tanks, academic researchers' interventionist study into businesses, the publication of the key research findings in professional outlets like magazines, financial journals, or online blogs can all help to encourage collaborations.

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