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**DIGITALIZATION  
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**IN**

**BUSINESS**

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# DIGITALIZATION IN BUSINESS MANAGEMENT

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## ABSTRACT

Rapid innovations in the field of technology have become a driving force in ensuring a new management approach and sustainability, especially in companies. Namely, this rapid transformation has made it necessary for managers with technical knowledge and equipment to come to the fore in company management and use technological infrastructure and systems in all companies. While the managers of the classical period were not allowed to make decisions, today, thanks to the specialized communication networks of all units, the ease of information flow has been the most critical factor in developing joint decision-making. In addition, the fact that the managers made technological facilities, tools, and equipment applicable and usable in the companies significantly changed the competitive sustainability face. The use of technology and digitalization in business management and all other units has brought a new digital perspective to business. From the beginning of the industrial revolution to Industry 5.0, the last point reached digital transformation plans are applied as a new road map for the future in units such as marketing, accounting, entrepreneurship, and supply chain in management. In this research, digitalization studies in management marketing, accounting, human resources, entrepreneurship, and supply chain management in 2022 were examined in the literature. This research emphasized that digitalization is indispensable in these areas and has significant and beneficial effects in providing positive performance.

**Keywords:** Digital, Management, Technology, Industry 5.0.

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## 1. INTRODUCTION

How to be best at the beginning of management science? While focusing on a single goal, emphasis was placed on individual needs that push employees to be successful in the workplace (Hussain et al. [1]). With the development of digital technologies, the importance of digital literacy is preferred by companies with technology-oriented business methods. The main target is having a strong education and learning process in institutions and having human resources with technological knowledge, skills, and equipment (Atay et al. [2]). At the same time, companies caused the collapse of business models and companies due to disruptive innovation; on the other hand, the rise of innovative companies with business models revealed their competitive advantages in the last ten years (Caputo et al. [3]).

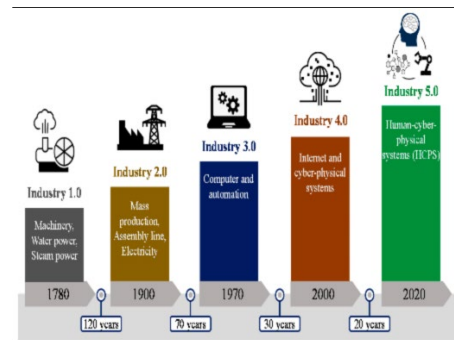
Today, the business world has increased with the increase in global competition. Now, industrial markets have started to create new markets by crossing borders. It develops new digital technologies and models to provide competitive advantage, sustainability, and business development in global markets. In today's competitive business world, production operations have adopted advanced production technologies such as 3D printing and rapid prototyping and benefited from the Internet of Things for information and analysis. The enterprises aim to optimally provide customer demands, quantity, quality, and price in today's competitive and turbulent environment (Agrawal & Narain [4]).

Digitalization allows organizations to collaborate between companies, suppliers, customers, and employees and create various new service and product offerings (Möller et al. [5]). Companies must reconsider strategic business model development components to implement digital transformation and dynamic capabilities. It should integrate these capabilities into the reality of digital platforms (Monge & Soriano [6]). Therefore, digital transformation is an emerging topic, and more research is needed (Imgrund et al. [7]). This research aims to shed light on the future by considering the digital transformation processes carried out in various departments that comprise the whole business management.

This research deals with the issue of digitalization in management. Literature studies carried out in 2022 within the scope of marketing, accounting, human resources, entrepreneurship, and supply chain management which are the most critical units of enterprises, were examined.

## 2. INDUSTRIAL REVOLUTIONS AND DIGITALIZATION

Technological developments have led to a rapid increase in web technologies. In the training of the employees of the institution, besides the web-based training, the technical supports of the modern age have been utilized, very different from the traditional training methods such as distance education and electronic education (Atay et al. [2]). Digital ecosystems are not only interesting for the information technology and software industries, but digital technologies are becoming more and more critical in all industries (Monge & Soriano [6]). Enterprises have been forced to accelerate their digital transformation to compete and ensure the sustainability of many companies during the Covid-19 process (O'Brien [8]).

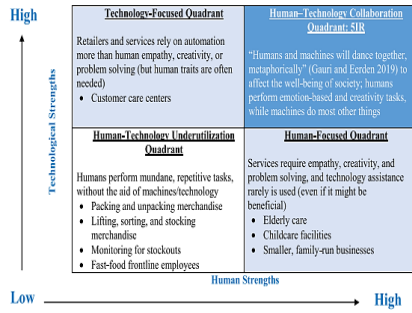


**Figure 1:** Industrial change processes (Chen et al. [9]).

The industrial revolution, the first industrial revolution, had radical effects on the manufacturing industry in the mid-1700s with the development of steam engines and by enabling the production of these machines and factories. The second industrial revolution harnessed the power of electricity. At the end of the 1800s, with the rapid production of mass-production products, people's ideas and production processes began to develop in different dimensions. In the early 1900s, the 3rd Industrial Revolution started the digital age. The establishment of information, distribution, and storage networks with main computers and the gathering of producers and consumers connected to the internet with personal computers were ensured. The fourth industrial revolution began in the 21st century when machines and devices provided unlimited information to people fastest and most effectively (Noble et al. [10]). Technological developments from Industry 4.0 to Industry 5.0, along with the industrial change processes from the past to the present technological innovations such as intelligent materials, drone technology, artificial intelligence technology, internet of things, and quantum computing are moving towards 5.0 at an incredible speed (Chen et al. [9]).

## 3. DIGITALIZATION IN MANAGEMENT

Management developed more than 100 years ago in the 21st century. The industrial age continues to exist in the industrial age with the new paradigm of specialization, hierarchy, and control. 21st-century organizations face unique challenges thanks to the accelerating pace of technology, digitalization, and modernization (Akmaeva et al., [11]).



**Figure 2: 5.** Industrial Revolution (5.0) maximizing human and technological powers.

Taking a themed fifth industrial revolution to the next level is essential to creating it with the synergy of human and technological powers (Figure 2). (Mende and Noble, [12]). In recent years, companies have created a digital technology portfolio such as artificially intelligent systems, the Internet of Things, the cloud, big data, and intelligent transportation system (Cardinali & Giovanni, [13]).



**Figure 3.** Digital transformation in business <https://www.i-scoop.eu/>.

DT in companies consists of many challenges, interactions, internal and external factors, and processes. Internet access, mobile devices, and the use of social media networks are the starting point of digital transformation for institutions to communicate (Dülek & Aydın, [14]). Digital transformation covers internal and external factors, technological developments, industries, stakeholders (Figure 3). Digitalization has been emphasized in flexible organization design and internet technology logistics and supply channel management to improve knowledge and performance in the organization in management (Monge & Soriano [6]). Digital management combines human judgment and business intelligence with the widespread use of digital data and technologies (Möller et al. [5]).

#### 4. DIGITALIZATION IN MARKETING MARKETING MANAGEMENT

Today, institutions' digital transformation has revealed the necessity of creating the assets of the brands entering the market through the digital platform. Customers can meet products and services in the digital environment, with digital tools and platforms as the front face of brands, the speed and ease of two-way communication and feedback between the brands in the market and the consumer. The most critical issue in digital marketing is digital brand management. It is essential to create the brand's logo, aims, and messages on web pages and to design it online with mobile compatibility. In this way, it is the most effective method in providing customer demands and needs online, fast feedback, personalized brand messages, and brand loyalty. One of the essential purposes of digitalization in marketing should be to bring the communication and position of brand management to a critical level in digital environments and social media tools by making applications that accurately describe the brand identity and make the brand valuable (Dülek & Aydın, [14]).

**Table 1:** Digitalization in Marketing Management Literature Studie

<b>Author Year</b>	<b>Purpose</b>	<b>Method</b>	<b>Results</b>
1. Riofrio et al. [15]	Investigating the durations of market digitalization on firm performance in Latin America	Practical	Many Latin American firms fail to reap the benefits market digitalization and performance drops as a result. The appropriate way to tackle market digitalization is implementing a restructuring strategy
2. Kaur et al. l. [16]	It aims to discuss all technologies that enable Industry 4.0 in marketing to ensure sustainability in terms of social, environmental, and economic goals	Theoretical	The study presented vital recommendations for future development and adoption to create innovative infrastructure in a sustainable environment
3. Hua, [17]	What are the benefits and complications of digitizing online art transactions and art viewing?	Theoretical	To keep up with the rapid market changes, galleries and auctions have allocated more resources to digital platforms and it is seen that cooperation between regions and countries has increased in marketing and exhibition activities in the art industry
4. Kim Man & Yang, [18]	Discussion of incentives, opportunities, threats, and problems brought by digital marketing Malaysia.	Theoretical	Attention of companies to apply digital marketing in their business activities. Development of digital marketing and discussion results in the Malaysian context raises more awareness
5. Mostaghel et al., [19]	Understand how digitization affects changes retail business model innovation dimensions	Based on bibliometric and network analysis and visualization,	Embedded digital technologies power business model retailers with the agility to respond to dynamics and volatile market situations
6. Lanenko et al., [20]	Unique prospects caused by new developments marketing technologies	Literature review	The authors conclude that the pandemic has had a strong impact. The push for digitalization of marketing reveals several previously hidden
7. Masrianto et al., [21]	The research offers a digital marketing usage index (DMUI) to evaluate and improve a company's digital marketing	Theoretical	They can improve their digital marketing skills by increasing the role of managerial innovation, organizational readiness and perceived usefulness. In addition, business must realize digital transformation by managing the transformation and the reinvention of new business model.

8. Qian et al., [22]	Problems hindering the sustainable growth of this industry and it was adopted in this study to analyze text data from experts to explore the reasons behind this shortcoming	Literature review Thematic analysis	The findings are aimed to help solve the education and human resource issues in the hospitality industry
9. Terho, et al., [23]	To address the important knowledge gaps in current research this study is aimed at customer- centered B2B markets. Relevant marketing research flows.	Empirical, Theoretical, Literature review	The results of this study offer concrete managerial guidance for developing and implementing strategic digital content marketing (DCM) activities in a customer centric way
10. Shankar et al., [24]	A review of the literature between 2000 and 2021 for researchers and practitioners	Literature, review	Find it relevant to digital marketing communication mostly at the national level for specific, digital marketing rather than the global level
11. Hagen et al.,[25]	Websites and social media pages, it has been determined to what extent the sources of PMPs affect their adoption and frequency of updating	Theoretical	Collective digital marketing channels, the shopping area is affected by the update frequency of these channels and the organizational resources of the shopping center
12. Setkute & Dibb, [26]	To increase the understanding of digital marketing in B2B SMEs, examine the barriers they face and digital practices	Literature review	How digital marketing is used and benefits by small B2B firms
13. Behera et al., [27]	Cognitive Computing Based Ethical Principles for Improving Organisational Reputation: A B2B Digital Marketing Perspective,	Theoretical & Literature review	Enabled B2B Digital marketing to showcase ethical challenges and ethical practices
14. Barykin et al., [28]	A new Pandemic the transportation industry and the application of technologies related to renovation and modernization transportation system facilities	Literature review	The challenges inherent in digital marketing are modes of transport considering the increasing competition between industries
15. Keke, [29]	Its aims to relationship between brands and consumers in the Turkish digital marketing	Theoretical and Literature review	Digital marketing and social media campaigns contribute to the promotion of different companies and the advantages they bring
16. Lopes, [30]	Content marketing management strategy recommendations for digital marketers are included	Literature review	Content marketing conceptual review of digitalization guiding managerial implication
17. Purwanto, [31]	Marketing purchasing decisions have tested the effective marketing strategy of the digital marketing strategy	Theoretical	Digital marketing is significantly positively correlated with purchasing decisions and brand image

18. Amjad, [32]	Digital Entrepreneurial Marketing developing, and developed countries are used equally	Bibliometric analysis	Digital marketing is an important part of entrepreneurial marketing
19. Kerdpitak, [33]	It's stated that encouraging performance in quality, digital marketing and supply chain management in cultural tourism depends on innovative management and	Theoretical	Innovative management methods digital marketing can bring the potential to increase service quality and supply chain management
20. Kurdi et al.,[34]	Study of digital marketing addressed the role of the costumer purchasing decisions	Theoretical	The role of digital marketing channels on consumers purchasing decisions supports the impact of digital marketing channels on consumers purchasing decisions

## 5. DIGITALIZATION IN ACCOUNTING MANAGEMENT

Along with digitalization, the digitalization of accounting management attracts the attention of practitioners and the scientific environment. Digital transformation is starting a new business with operating model technologies to implement and integrate digital. The purpose of digitalization of management accounting for an organization (Platov et al., [35]):

- Helping to reveal new organizational capabilities, providing flexibility in the business

- Automation and acceleration of the circulation of inventory items
- Ensuring uninterrupted communication between the supply chain and accounting structural units in a holistic manner

The accounting profession, which needs a radical change, must adapt to this digital transformation while maintaining time to ensure sustainability. Otherwise, they will be unable to compete with other professionals who have adapted and may experience severe problems and difficulties maintaining their existence in current conditions (Sabuncu, [36]).

**Table 2:** Digitalization in Accounting Management Literature Studies

Author Year	Purpose	Method	Results
1. Hasibuan et al., [37]	Using the input processing and editing of files in business bodies is part of digitization	Literature review	Good use of the tools of the digital age plays a very important role in ensuring the digitalization of accounting
2. Agostino et al., [38]	Discusses the status and future research directions of research directions of research on digitalization, accountability, and accounting in public services	Literature review	Accounting journals often seem to ignore the digitized public sector and instead focus on the private sector
3. Şen & Terzi, [39]	Units of Artificial Intelligence and Digitalization in Accounting Education are to Evaluate	Literature review	Finance and accounting workplace on artificial intelligence background some parts of it are replaced by intelligent robots

4. Jans et al., [40]	Literature survey of specialized accounting information system in accounting	Literatür review	Internalist view, which may be a possible explanation of accounting information systems research topics have difficulty being accepted as part of accounting research
5. Varaniute et al.,[41]	Accounting in product development understanding how research progresses accordingly digitalization, sustainability and circularity aspects identify the changing role of management accounting in product development understand how research progresses accordingly	Bibliometric analysis and a systematic literature review	Results which can be regarded as the main driver of changes in management accounting in the product revealed that aspects of development are related to innovation
6. Coman et al., [42]	Article theoretically it is a survey-based empirical research applied in economics and includes both decision makers and professional accountants	Theoretical	Suggest that digitalization is more than a conventional change, being equally about technology and people
7. Mutlu et al., [43]	It aims to examine the remote working framework and adaptation to digital transformation due to Covid-19 and the responses of professional accountants on this issue	Empriacelly	Accountants stated that digital transformation and remote working accelerated during the pandemic period
8. Awang et al., [44]	Examined the perception of both opportunity and risk related to digitalization	Theoriticl	The results revealed that the digitalization of the accounting profession is promising
9. Güney, [45]	The importance of digitazliation in accounting and the interaction of digitalization with accounting information systems and accounting education have been revealed	Literature review	A great contribution will be made to the profession with the implementation of the education model in which digitalization and digital literacy can be given in acoounting education
10. Zhang et al., [46]	Includes redesign, reconfiguration and re cooke	Theoretical, Literature review,	Learning and accumulating organizational skills, digitalization, both firm and managerial characteristics, can affect a firm's digital strategy
11. Sabuncu, [36]	Evaluation of accounting practices how is the digital transformation met by accountants?	Theoretical, Literature review	The profession which needs a radical change, must adapt to this digital trnasformation without delay to survive



12. Murodovich Ziyadullaevna, [47]	&	To identify the problems that arise in the process of digitalization of accounting with the development of digital information technologies	Literature review	It will provide a great advantage to the industry in the application of blockchain technology in accounting
13. Taib et al.,[48]		Technological knowledge and preparation for the links between the digitalization of the accounting profession and future accountants has been explored	Theoretical and literature review	Changes from technology fundamentals to current accounting practices are significant
14. Awyong et al.,[49]		Examines the impact of firm digitization and digital skills on demand for corporate accounts	Theoretical and literature review	For a company to take advantage of its own investment in employee's digital skills and digitalization strategy is required
15. Brabete & Goagara,[50]		Automation, robotics, artificial, intelligence and digitalization in accounting practices has been explored	Literature review	The limitations of accounting and digitalization in this area will also be examined
16. Pham & Vu, [51]		Statistical digitalization of accounting information among small and medium sized enterprises (SMEs) digitalization of accounting information (DOAI)	Qualitative & quantitative data	The impact of digitalization on the business operations of SMEs, the size of the DOAI was found to be a difference in the effectiveness of SMEs
17. Yakut, [52]		The effects of digital literacy on the productivity of accountants are analyzed	Theoretical	Digital literacy increases the productivity of accounting employees
18. Mert et al., [53]		The development of digitalization process and the effects of digitalization on accounting practices were investigated	Theoretical	It has been determined that accountants follow and apply developments and professional practices related to digital technologies
19. Tekelioğlu, [54]		Accounting profession to determine the perceptions of the profession towards the digitalization of the profession	Theoretical and literature review	Accountants who consider digital transformation necessary and determined that they are open to change
20. Yalçın, [55]		Industry to understand accounting and auditing	Literature review	Accounting, finance, and information technologies have now become an inseparable whole

## 6. DIGITALIZATION IN HUMAN RESOURCES MANAGEMENT

Digital technologies have made companies transparent about salary levels and conducting interviews. Information about the company is provided via the Internet. Bad reports about the company soon become public. The feedback

received from company employees in mobile human resources applications has increased ten times more. With digitalization, barriers between work and private life are lifted. Employees are available anytime and anywhere (Fedorova, vd, [56]). Digital technologies from Industry 4.0 are used by all sectors and human

resources management operating in the digital age. Big data and artificial intelligence assist in selecting high profiles in CV selection, which

was previously performed manually (Silva vd, [57]).

**Table 3:** Digitalization in Human Resources Management Literature Studies

Author Year	Purpose	Method	Results
1. Silva et. al., [57]	Contribute to the theoretical development of human resource management	Bibliometric analysis, literature review	Industry 4.0 encourages leading the industry and HRM professionals, organizations, and workforce. They must face the challenges of industry 4.0
2. XingShu et al., [58]	Intelligent management of human resources as well as extensive social governance capability in China, it plays a decisive role in the effectiveness of community management organizations and the effectiveness of external human resources	Literature review	Human resources management organizations, it can effectively improve the government's administrative efficiency and service quality
3. Zavyalova et al., [59]	Compenents of HRM digitalization important characteristic of organizations (size, staff, structure, staff, turnover, performance data analysis	Theoretical and literature review	Shows that compnaies that are more successful in digitalization have more flexibility
4. Zavyalova, et al., [59]	Compenents of HRM digitalization important characteristic of organizations (size, staff, structure, staff, turnover, performance data analysis	Theoretical and literature review	Shows that compnaies that are more successful in digitalization have more flexibility
5. Kodua et al., [60]	Contributes to green human resources by researching and analyzing GHRM implementation barriers	Theoretical and Emprical	To advocate and enforce sustainability globally, GHRM it has received a lot of attention lately GHRM application the developing country like Ghana is facing many problems and challenges. These hurdles need to be overcome to implement GHRM
6. Kambur, [61]	Artificial in the article the effects of intelligence on human resources processes were investigated	Literature review	The use of artificial intelligence in the field of human resources in Turkey little work in the summer and it has been revealed that there is a need for research on this subject
7. Oruçoğlu, [62]	Within the scope of Industry 4.0 new applications and effects in HRM functions were investigated	Qualitative content analysis	Industry the most affected functions in the human resources area of 4.0 have been determined

8. Murugesan, [63]	The contributions of artificial intelligence to HR digitilazation and its applications in the industry have been reserached	Theoretical and literature review	Possible areas of Human resource management of Artificial Intelligence concepts can be applied in various fields
9. Athira, [64]	The role of the HR departmanet	Literature review	Organization HR departmant are the best players within the company in keeping employees productivite, motivating and loyal
10. Al Haziazi, [65]	Challenges in digitizing human resource management in the Middle East	Literature review	There must be HR management to manage change throughout the organziation where talent development and skill development are important
11. Lanenko et al., [20]	Claiming that Covid-19 has become a seriouspheonemenon changing consumer behaviour our and significantly accelerated	Literature review	The pandemic is a strong the drive to digitize marketing reveals several previously hidden issues
12. Padhy, et al.,[66]	The necessity of digitalization in human resources and benefits for employers	Literature review	Digization recruitment of HR managers and outstanding staff help evaluate employees
13. Alanlı,[67]	The impact of digitalization on HRM in the public sector managers to demonstrate to identify their experiences	Theoretical	Towards digitization of HRM in the public sector the benefit of the application
14. Fenech, [68]	To investigate how human resource management undergraduate students perceive human resource management in the digital age	Theoretical and literature review	HR is a result of technology literacy
15. Cooke et al., [69]	If we adopt a human-centered approach to human resources management (HRM) it will, contribute to creating sustainable workforce, organizations, and societies in an environment of chaos and uncertainty	Literature review	Conceptualizing HRM models and practices and expanding HRM theories can contribute
16. Şaşmaz, [70]	An overview of human resource management in digital transformation	Literature review	With the pandemic processes, all business processes have started to take place on the digital platform
17. Durmaz ve Burçak, [71]	The structuringrequired for the application of artificial intelligence in human resources has been covered	Literature review	For the effective implementation of artificial intelligence, it is necessary to develop resources and prepare the business for this, providing training and development to employees

18. Kaçık & Aykan, [72]	Its purpose is to connect society 5.0 and HRM to explain	Literature review	HRM when faced with some of the challenges of society 5.0 it may be appropriate to implement strategies
19. Sönmez & Kalaycı, [73]	The transformation of human resource management has been covered	Literature review	After the field of finance digitalization is mostly applied in the field of human resources
20. Demirci et al., [74]	The impact of digitalization on HRM practices examined Largely Positive effects observed	Literature review	Positive and negative aspects of digitalization there are effects, but the positive effects are significant

### 7. DIGITALIZATION IN ENTREPRENEURSHIP MANAGEMENT

Digital entrepreneurs aim to make sales by turning companies into giant players. Digital technology entrepreneurship combines technology elements as a concept (Giones & Brem, [75]). The meeting of new digital technologies such as mobile and cloud computing, social media 3D printing, and data analytics with innovation and entrepreneurship has shaped the search for entrepreneurship. The questions asked for academic entrepreneurship in Figure 4; the reasons for the adoption of technologies to achieve academic goals (who), the processes in which digital technologies are activated, entrepreneurship (how), and new digital academic entrepreneurship (what) questions and the impact of digital technologies on academic entrepreneurship are discussed

(Rippa and Secundo, [76]). Although digital transformation brings benefits, how to do it and the potential effects of business development, old and new, should be considered (Zhang & Chen, [77]).

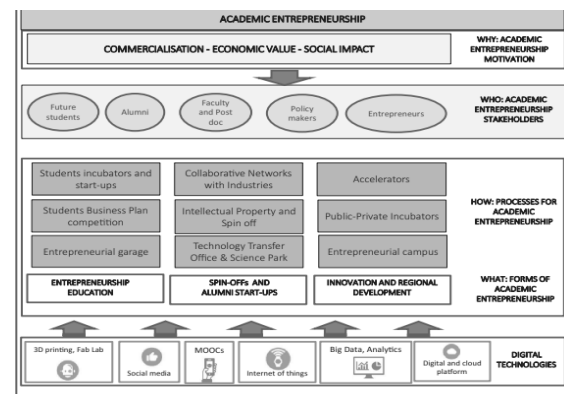


Figure 4. Academic entrepreneurship. (Rippa & Secundo, [76])

Table 4: Digitalization in Entrepreneurship Management Literature Studies

Author Year	Purpose	Method	Results
1. Orrensalo et al., [78]	Inclusion and digitization between 1990 and 2020, critical literacy of entrepreneurs and information search domains and histories.	bibliometric and literature review	Digitalization has affected critical literacy and information-seeking behaviors and processes
2. Chatterjee et al., [79]	Exploring the contemporary demographics of SME entrepreneurship and to identify the regulatory roles and potentials of entrepreneurs' demographics and education in digital adoption.	Literature review Theoretical and practical	Entrepreneurs who are already successful and use digital platforms efficiently will be role models for start up entrepreneurs

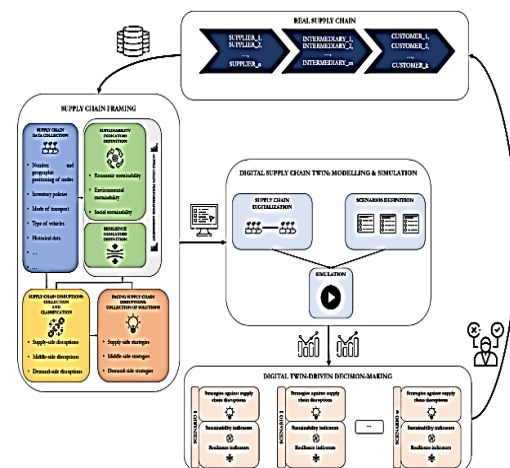
3. Bertoni et al., [80]	Developing understanding of the impact of digitalization on the market for entrepreneurial finance	Literature Review	review	The digital revolution raises interesting policy issues. The extent to which regulators need to intervene to stop or encourage it
4. Gallego et al., [81]	Sustainability context and Green Supply Chain Management (GSCM) literature digital technologies (DTs) and green human resource management on economic and environmental issues	Theoretical and empirical	and	Research findings demonstrate that both green human resources and digital technologies adaption are relevant enablers. GSCM will then pursue better environmental and economic performance
5. Ghazy et al., [82]	The determine the relationship between entrepreneurship and productivity for 27 EU member states using panel data	Empirical analysis and Literature review		A positive relationship was found between entrepreneurship and productivity and a positive relationship was found between digitalization and entrepreneurship
6. Fernandes et al., [83]	The literature on digital entrepreneurship platforms that creates a holistic picture of the different aspects of the field and trends were studied with bibliometric approaches	Content and Thematic analysis		In the field of digital entrepreneurship at the methodological level, the bibliometric approach understands the relationships between authors and research flows and shows how the research area is structured
7. Ratten, [84]	As a way for rural farmers to connect with the urban environment presents the results of a study initiated with consumers on its digital platform	Theoretical literature review	and	Demonstrates how digital platforms can be used to generate transformational entrepreneurial outcomes in times of crisis
8. Panagaria, [85]	It presents examples of entrepreneurship through the impact of digital financialisation the creation of new web-based services directly in the fintech space and the rise of the internet	Theoretical		Native of India and the need for foreign investors to take part in the digital field is absolute
9. Dana et al., [86]	Determined the effects of digital technology factors and urban entrepreneurship in smart cities on sustainable businesses	Quantitative and qualitative analysis	and	Digital technologies are important in the smart city business environment as a solution to ensure sustainability
10. Modgil, [87]	Diffusion theory of innovations research has been conducted on the opportunities for digital entrepreneurship Covid-19	Thematic analysis		It uses the theory of diffusion of innovation with the opportunities of digital entrepreneurship stemming from Covid-19 as its basis

11. Al-Mamary, S. H. Y. et al. [88]	The most famous intent theory TPB model has been tested	Theoretical and review	In the field of Entrepreneurial intent of the TPB model applicable in Saudi Arabia, the model was applied to help develop the field
12. Himki, et al., [89]	Digital studies which have a significant impact on entrepreneurship have turned into an accessible model and format for all sectors	Theoretical	Business that applies the concept of e business management in their operations tend to be longer-lasting and more competitive in the market however organizations that do not want to implement the concept of e business cannot achieve sustainability
13. Xu et al., [90]	Explored what kind of digital capability could be built to drive an increase in digital sustainability	Theoretical	Digital sustainable entrepreneurship (DSE), in providing sustainability, there is a significant relationship between digital capability (DC) and digital innovation orientation (DIO)
14. Baig et al., [91]	The research identified six streams of digital entrepreneurship. for example the entrepreneurship procedure	Literature review	Review of recent digital entrepreneurship in different fields created a framework for in-depth understanding
15. Baranauskas & Raisiene, [92]	An overview of the impact of digital entrepreneurship. Studies were conducted on sustainability and digital business ecosystem areas	Theoretical and Literature review	Short-term transition from traditional entrepreneurship to digital entrepreneurship archived significant growth but the number of digital businesses has revealed new challenges and needs
16. Sadigov, [93]	Current digitalization trends in terms of business innovation the level of impact during the covid-19 outbreak has been studied	Theoretical literature review	According to the results the business sector has become heavily depend on the proliferation of digital technologies
17. Schiuma & Carlucci, [94]	There are six critical competencies for the transformative leadership profile that supports the digital transformation development of businesses	Literature review	Defines the theoretical foundations for developing research and empirical methods on leadership traits that hinder and enable companies' digital transformation

18. Sedera et al., [95]	Digital scientific studies that illuminate the subject of business transformation in the fields of innovation and entrepreneurship	Literature review	Dijital business transformation can be considered the single most important force to thrive in an extraordinary time
19. Tao et al., [96]	Digital business transformation in innovation and entrepreneurship is explored with is entire nomological network	Theoretical	Promoting public entrepreneurship, the digital economy is an important mechanism for developing high-quality
20. Steininger et al., [97]	Whether there are established assumptions that support the emergence of digital technology entrepreneurship theories, and their effects are explored	Theoretical and literature review	Measures on digital entrepreneurship policy its impact on fostering creativity and growth of digital startups in particular there is no micro-economic evidence

## 8. DIGITALIZATION SUPPLY CHAIN MANAGEMENT

Technological developments in recent years have forced supply chain managers who want to digitize their existing businesses to identify the opportunities and threats they face. Therefore, the business model needs to be digitized. Various paradigms have been proposed to ensure sustainability due to the devastating effects on production systems, warehouses, and distribution networks experienced by Covid-19. For supply chain managers, it represents deep knowledge and steps to make the supply chain happen cyclically for continuous improvement over time. The advantage of using digital supply chain twin simulation software in the digitization phase of the supply chain (Longo et al., [98]). The supply chain reacts more than once to unexpected events. In this approach, since no intervention strategy is required to be implemented, it is economically efficient, and errors and wastes are minimized. Figure 5



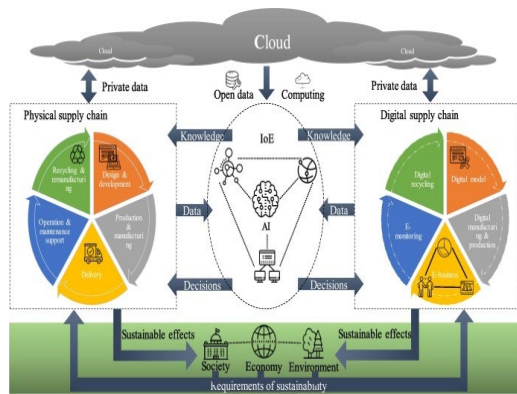
**Figure 5.** Simulation- Digital supply chain twin paradigm (Longo et al., [98]).

Benefits of the digital supply chain (Agrawal & Narain [4]):

- ✓ Better decision-making tool transparency
- ✓ Inventory levels are also less as just-in-time supply is used more
- ✓ Clear visibility of inventory levels as it is fully integrated into the chain
- ✓ Less decentralized storage in reducing delivery times
- ✓ Shortening of the delivery time as the number of stages in the sales chain will decrease

- ✓ A better understanding of demand and a better understanding of customer requirements through up-to-date sales
- ✓ Provides higher sales, higher profits, and better customer relations
- ✓ Reducing risks and costs thanks to the flexibility of the chain with the development of the supply chain
- ✓ Better results in supply chain decisions with more alternative options in decision-making processes
- ✓ Sustaining competitive advantage

Cloud service, Artificial Intelligence, IT, and IoT framework to CAB<sup>2</sup>IN aims to ensure sustainability throughout the life of the supply chain by classifying management activities as data collection and information. It is aimed to meet the requirements of production and sharing, and sustainability Figure 6 (Liu et al., [99]). According to (Ali, [100]), the most important trends identified in research on supply chain management are the widespread use of industry 4.0 elements and blockchain in the traditional supply chain: But there is also a need to explore community industry 5.0 to improve the human-machine relationship that has been hit hard by Covid-19.



**Figure 6:** CAB<sup>2</sup>IN model for Sustainable Supply Chain Management, Liu et al.,[99]

**Table 5:** Digitalization of Supply Chain Management Literature Studie

Author Year	Purpose	Method	Results
1. Bigliardi et al. [101]	It aims to explore the main discussion themes related to supply chain digitization using a keyword-based arrangement	Literature Theoretical review	Distribution heavily applied and sustainability and circular economy concepts digitalization it is used in the industry sector where digitalization is experienced as well as the basic concepts of industry 4.0
2. Selivanova, et al., [102]	Global digitalization is to develop proposals for the improvement of accounting and accounting. In the contexxt of global digitalization.	Literature review Theoretical	According to the analysis of the enterprise’s activities, accounting for settlements with foreign suppliers can be improved in two aspects ‘‘Settlements with suppliers and contractors



3. AlNasrallah & Saleem, [103]	In the economy moving towards rapid transformation in Saudi Arabia determinants of A-adaption	Theoretical	A sustainable workplace is an outcome of the process and procedures
4. Burgess et al., [104]	It aims to offer a blockchain-based quality management developed for short food supply chains	Theoretical and literature review	Blockchain provides a unique ability to store quality and relevant data for short food supply
5. Murodovich & Ziyadullaevna, [47]	Justification of the need for digitalization in the field of accounting, identification of the main digital technologies in accounting and their advantages and disadvantages	Literature review	The digital economy expands the capabilities of a modern accountant improves the quality and efficiency of accounting, creates modern innovative approaches to the integration of various types of accounting
6. Taib et al., [48]	Theoretical and empirical research	Technological knowledge and preparation for future accountants' digitization of the accounting profession	More skilled accountants will use technology better
7. Ye et al., [105]	Theoretical and literature review	The Covid-19 pandemic, therefore long-term impact of Digital Technology asset allocation on supply chains	Deploying DT assets to varying degrees reveals both breadth and depth of DT asset distribution shows positive associations with supply chain visibility
8. Badakhshan et al., [106]	Exploring the potential of the supply chain digital twin framework to assist decision makers in managing inventory and cash flow through SCS	Empirical and Literature review	Result show that an upstream member of a Supply Chain plays a crucial role in mitigating the bullwhip effect and thus minimizing the cash conversion cycle of the SC
9. Shukla & Tiwari, [107]	IT security management methods optimal management and timely allocation of resources go beyond the traditional. As such, It is an essential component of depending on defending against cybersecurity disruptions in the industry. 4.0 is the definition	Empirical and Literature review	Input parameters for workflow optimization skilled manpower, production time and capital allocation for hardware recovery

10. Grassi et al. [108]	The privacy plan for sensitive data is integrated into a blockchain-based broker. Special performance models are being developed for buyers and sellers	Emprical and literature review	Recent advances in Industry 4.0 production control archhitectures and blockchain technology mediation mechanism developed
11. Liu et al. [99]		A bibliometric analysis and theoretical	Bridging the gaps between the previous conceptual framework of sustainable supply chain management and the recently rapidly growing digital is an important issue
12. Chauhan et al., [109]	Examining Industry 4.0 technologies and sustainable SCM applications	Theoretical and Literature review	Limited emprical studies have been conducted for developing countries. A few studies focused on operational espects, economies and automation in SCM
13. Brinker & Haasis, [110]	The aim is to reveal the research gap regarding the effects of power asymmetrices in the supply chain in addition to the digitalization trend	Literature review	Digitalization can cause highlighted power asymmetries as it can change the competitive landscape and channel structures
14. Ali, [100]	Industry 4.0 and supply chain digitazation trends examined	Literature review	Digitalization industry 4.0 applications are used in supply chain management
15. Kankaanpaa, [111]	The abiliy of digital platforms to impact the supply chain the mediation effect of performance and supply chain capability was tested	Theoretical	Demonstrated that digital platforms have a positive and significant impact on supply chain performance
16. Zoric et al., [112]	Operation of the tradional food supply chain (FSC) in the wholesale and retail segment It aims to identify a set of measures and incentives for the digitalization of business processes and thier negative impact on sustainablity	Theoretical and Literature	SC management should be committed to digitizing business processes as a priority for sustainability segment
17. Oubrahim et al.,[113]	Digitalization, supply chain suatinability and practices Supply chain integration on overall supply chain performance examined	Literature review	Decisions makers supply chains accurately, quickly and should make it more efficient

18. Deepu & Ravi, [114]	Digitalization SC and Communication technology tools are most important topic recent times	Literature review	Supply chain digitalization (SCD) in business processes and intercompany information systems (EIS) have become important in the modern industrial world
19. Tseng, et al., [115]	Sustainable supply chain management practices (SCPs), social environmental and economic perspectives are explored in the Indonesian coffee industry and Industry 4.0 technology	Theoretical and literature review	Digitalization integration has a positive interaction with working conditions supply chain finance
20. Kilay et al., [116]	Demonstrating that both e-payments and e-commerce have positive and impact service variables on the performance of micro, small and medium enterprises (MSME) supply chains in Indonesia	Literature review	Services variables related to the performance of MSME supply chains in Indonesia showing that both e-payments and e-commerce have positive and impact

## 9. DISCUSSION

The research emphasized in the literature studies conducted in 2022 that digitalization in human resources, accounting, entrepreneurship, and supply chain management increased even more with the covid 19 epidemic, and opportunities in entrepreneurship came to the fore. However, the problems and solution proposals brought by digitalization or non-digitalization should have been mentioned.

For example, despite the opportunities and advantages offered by technological revolutions to the business world, its impact on the service sector has yet to be discussed much (Navarrete et al., [117]).

At this point, the need for more studies on digital requirements and the lack of infrastructure of companies is remarkable. Another issue is that studies generally include literature reviews and theoretical studies. Analyzing digitalization processes during and after Covid-19 can provide significant benefits.

## 10. CONCLUSIONS

With the advancement and use of information technologies, which replaced traditional management structures, decision support systems that were renewed with these

technologies came to the fore (İraz, [118]). With the digitalization age, efficiency has increased in the management of world companies (Akmaeva et al. [11]). Companies that cannot compete in the digital age will undoubtedly fall victim to “Digital Darwinism” (Bansal et al., [119]). With digital technologies, companies use green process innovations, enabling them to increase their level of responsible digitalization when they use green packaging and recycled materials in their search for energy-efficient solutions (Cardinali & Giovanni, [13]). Therefore, digitalization supports green management and sustainable green goals. Digital technologies strongly influence the company’s business model. For many, digitization was perceived as a significant threat to employees’ jobs (Fedorova et al., [56]). In addition, the idea is that Industry 4.0 will reduce manual labor and that robots will work, or machines will make workers' work more accessible by reducing the workload. (Kanbur, [120])’s HRM, AI, and components of artificial intelligence Industry 4.0, which creates a systematic approach to digitalization, uses artificial intelligence in human resources. These subjects need to be researched more in Türkiye. According to (Alanlı, [67]), digitalization accelerates processes in public services and HRM processes and reduces costs. It has been

determined that it saves time and facilitates access to information. For this reason, it is essential to follow the digital developments in public institutions and provide the necessary equipment and specialization to use these tools.

The use of artificial because of the development of digitalization processes in all management areas provides less damage to the natural environment, and artificial intelligence and advanced technology will contribute to the workforce. There are few holistic studies on the digitalization of management in the literature. Conducting a qualitative and quantitative analysis of the digitalization trends of management units will make a significant contribution.

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