



Hellenic Open University

School Of Social Science

Master's Degree Programme Of:

“Supply Chain Management”

(S.C.M.)

Postgraduate Dissertation:

“HR Digitization – HR Transformation in the current workplace”

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Patras, Greece, June, 2024

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“HR Digitization – HR Transformation in the current workplace”

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Acknowledgments

For the writing of this essay, I have to thank those who actually helped me and influenced me in their way to its accomplishment.

Particularly, I would like to thank my supervisor Mrs. Chytiri Alexandra for the work of my supervision from the point of my theoretical search, the formulation of the subject, for the time she devoted and her support until the end of my research. Her contribution was precious as she always stood by me providing consulting and information from the deep knowledge and experience which herself possesses on this research field.

Also, my greatest thanks go to my family, who supported me and guided me through my study and growth of my work.

Abstract

Nowadays, the society has changed rapidly due to many factors and mainly due to the improvements in technology, which influence the traditional role of HR department to a high-technology department providing relevant information to all company's members 24/7. The role of digitalization of HR activities is becoming more crucial as HR aspect has been transformed and digitised; this change has taken place by a numerous factors, having positively or/and negatively consequences. HRM has emerged new various web-based tools, being placed on employees regarding problem-solving, digital competence and human-machine communication. The Covid-19 situation imposed new rules, which obliged organisation to transform and digitises the HR transformation and modify the new reality.

Purpose: This study explores the factors for the successful digitalisation and transformation of human resources. It will further discuss the consequences of the digitalisation of HR in company's life in the future.

Keywords: Human Resource Management (HRM), Digital transformation, Artificial Intelligence, COVID-19 pandemic, Teleworking, Digital competence

Περίληψη

Στις μέρες μας, η κοινωνία έχει αλλάξει ραγδαία λόγω πολλών παραγόντων και κυρίως λόγω των βελτιώσεων στην τεχνολογία. Οι βελτιώσεις αυτές επηρεάζουν τον παραδοσιακό ρόλο του τμήματος Ανθρώπινου Δυναμικού σε ένα τμήμα υψηλής τεχνολογίας, παρέχοντας την σχετική πληροφόρηση σε όλα τα μέλη της εταιρείας 24/7.

Ο ρόλος της ψηφιοποίησης των δραστηριοτήτων του ανθρώπινου δυναμικού γίνεται όλο και πιο κρίσιμος, καθώς ο τομέας του Ανθρώπινου Δυναμικού έχει μετασχηματιστεί και ψηφιοποιηθεί. Αυτή η αλλαγή είναι αποτέλεσμα πολλών παραγόντων, έχοντας ως επακόλουθο θετικές ή/και αρνητικές συνέπειες. Η Διαχείριση του Ανθρώπινου Δυναμικού έχει ενσωματώσει νέα εργαλεία βασισμένα στο διαδίκτυο, τα οποία βοηθούν τους υπαλλήλους με την επίλυση προβλημάτων, την ψηφιακή ικανότητα και την επικοινωνία ανθρώπου-μηχανής. Η πανδημία του κορωνοϊού επέβαλε νέους κανόνες, οι οποίοι υποχρέωσαν τους οργανισμούς να μεταμορφωθούν, να ψηφιοποιήσουν το ανθρώπινο δυναμικό και τέλος να προσαρμοστούν στη νέα πραγματικότητα.

Σκοπός: Η παρούσα μελέτη διερευνά τους παράγοντες για την επιτυχή ψηφιοποίηση και τον μετασχηματισμό του Ανθρώπινου Δυναμικού. Θα συζητηθούν περαιτέρω οι συνέπειες της ψηφιοποίησης του Ανθρώπινου Δυναμικού στην εξέλιξη της επιχείρησης στο μέλλον.

Λέξεις-κλειδιά: Διαχείριση Ανθρώπινου Δυναμικού (HRM), Ψηφιακός μετασχηματισμός, Τεχνητή Νοημοσύνη, Πανδημία COVID-19, Τηλεργασία, Ψηφιακή ικανότητα

List of Abbreviations & Acronyms

| | |
|----------|--|
| AI | Artificial Intelligence |
| CCPA | California Consumer Privacy Act |
| COVID-19 | COronaVirus Disease of 2019 |
| CRM | Customer Relationship Management |
| CSCs | Citizen Service Centres |
| DESI | Digital Economy and Society Index |
| ESC | Economic and Social Committee |
| GDP | Gross Domestic Product |
| GDPR | General Data Protection Regulation |
| HRIS | Systems of HR Information |
| HRM | Human Resource Management |
| ICTs | Information and Communication Technologies |
| ILO | International Labor Organisation |
| IoT | Internet of Things |
| IT | Information Technology |
| OTA | Officers Training Academy |
| PII | Personally Identifiable Information |
| PRISMA | Preferred Reporting Items for Systematic Reviews and Meta-Analyses |
| SEV | Site Evaluation Visit |
| SLR | Systematic Literature Review |
| VPN | Virtual Private Network |

Chapter 1: Introduction

Human resource management (HRM) is going through a transition from traditional personnel management to technology-based digital management. This journey undertaken by HRM is due to the potential of digitalization that aims to transform processes and take the organization into an era where in competitive pressures demand higher efficiency and productivity. Technological advances continue to shape the workplace and are fundamentally changing the way work is done. These technological advances are inevitable but require people to manage, implement, or lead them. One of HRM's key functions is to provide the platform that allows organizations to make business decisions based on the expertise and quality of people that are managed, i.e., the individual, group, and culture issues that comprise technological transformations in the workplace. People are the most important asset in tech-driven organizations. Recent developments in HRM/digitization reveal the importance of realizing digitization and identifying the implications for strategic HRM work and employment relationships due to a radical approach.

Background and Rationale

The four variables, Paradoxes of HR Digitalization, HR Digitization, Shared HR Expertise, and Talent for HRIS, are all quite well suited to construct our model. Such findings underscore the relevance of our model for achieving a better understanding of how some aspects of the digital transformation are likely to impact the HR field. These findings are equally meaningful for the managerial practice, as confronted by a complex scenario, understanding how HR roles need to evolve is essential to ensure the HR mission effectively supports the organizational mission.

Meanwhile, the scenario of HR roles evolving along with massive organizational use of IS and HRIS in this digitalization process has not been widely addressed. This work aims to contribute to these matters by identifying the factors influencing digital capabilities for HR and exploring the potential implications of those capabilities for HR roles, as HR roles are stressed through their part in stimulating those digital capabilities.

A comprehensive digitization scenario across modern organizations extends to HR, abstracting a variety of critical tasks HR departments usually undergo laboriously. The

degree of mechanization realized by automating HR processes is likely to lead to neat reductions in HR coordination and development effort. Such a remarkable industrial revolution should also produce profound transformation in the relevant skills and abilities of HR professionals.

Chapter 2. Human Resource Management in the Current Workplace

2.1 Defining Human Resource Management

The term “human resources” has replaced the older terms “employees” or “personnel” in the section of human resources management. This change indicates a new approach regarding the way that companies manage their human resources¹. Thus, instead of treating workers as mere "tools" for production, the new name emphasizes the fact that people are really the most important factor in the success and growth of the enterprise. The term 'human resources' suggests that workers have value and potential that can be developed and empowered through appropriate management and development. In addition, the term underlines the importance of investing in human resources as a way of enhancing the competitiveness and performance of the enterprise. Overall, the new terms reflect a shift in company culture towards a more people-centered approach, where employees are seen as essential partners in achieving the company's objectives and success. According to Jackson and Schuler human resources is considered to be the sum of the talents and performance of all the people in an enterprise, contributing to the creation and completion of its objective, mission, strategy and vision.

In management term, the terms human capital or human resources refer to the characteristics that people bring to their workplace, such as intelligence, experience, skill, competence, dedication, and the capacity to learn². It should be noticed that the contribution of human resources to the enterprise is unpredictable and has range in big variety, leading to the fact that human resources can be the most demanding element of the enterprise's revenues, in terms of their administration and management. Human capital differs from other capitals both because each individual is differentiate regarding his/her knowledge, abilities, skills, character, gender, perception of his role and experience, and due to differences in commitment and job motivation. Employees are distinguished from other resources due to their ability to evaluate and challenge the acts committed by the

¹Oke, 2016

²Oke, 2016

administration, so their loyalty and cooperation are always elements to be earned³. More specifically, 'Human Resource Management' (HRM) is the name given to a set of actions, strategies and functions that must be carried out in order for an enterprise to acquire, retain and utilize skilled workers who will work productively and efficiently⁴.

Human Resource Management involves the attraction, selection, development, utilization, and adaptation of human resources in the workplace, focusing on the increase of their job satisfaction and business efficiency⁵. The human resources of an organization consist of all persons employed in any of its activities. The emphasis nowadays is on the way in which human resources are managed in an enterprise⁶. Its great importance is based on the fact that the employees of an undertaking allow it to achieve its objectives and therefore their management is of paramount importance⁷.

In a constantly changing business, social, economic and technological environment, it is necessary for an enterprise to ensure that the efforts of its employees make the greatest possible contribution to the achievement of its business goals⁸.

2.2 Functions of the Human Resources Department

Human resources is the department, which is in charge of identifying, controlling, recruiting, integrating new employees, and enhance employee's programs. Human resource managers play an important role in the recruitment, training, in creating of positive working environment, procurement, payroll management process and in the formulation of social strategy. Furthermore, HRM Software helps people function at their best. However, HRM is a development-oriented way of behaving towards people at work that focuses on acquiring, engaging, and developing skills. It is essential for managers at all levels to provide, in terms of company's development, opportunities for employee's progress, engagement and performance.

More and more companies around the world are switching from personnel management to HRM, as it is a more advanced and efficient means of managing people in the workplace.

³Τερζίδης&Τζωρτζάκης,2004

⁴Χυτήρης, 2001

⁵Μπουραντάς&Παπαλεξανδρή, 2003

⁶Galloetal., 2019

⁷William etal., 1996

⁸Galloetal., 2019

It explicitly focuses on maximizing the performance of workers while considering the strategic objectives of employers. Human Resource Management is essential to eliminate any issues related to employees and to varyate the workforce so as to make righ recruitment decisions and to have a streamlined process. According to research statistics, people usually leave their jobs as a result of poor work-life balance, compensation concerns, career development challenges or job instability, making HRM one of the most important department of the organization⁹. This is a crutial part of each company and plays an important role in HRM. Human resources managers oversee strategies to ensure that the company is meeting its business objectives, while making a significant contribution to corporate decisions about hiring the right people. It helps in better strategy to achieve bigger goals and the success of an organization. The importance of human resource management goes beyond simply selecting the right people for the right jobs. It also helps to promote an improved process and to build a team spirit, in which employees realise their ambitions by developing themselves and contributing to the achievement of organizational goals¹⁰.

2.3 Purpose and Objectives of Human Resource Management

Human Resource Management is a strategic approach to managing an organization's most valuable assets-its employees. The purpose and objectives of HRM are designed to maximize employee performance and contribute to the achievement of organizational goals. Here's a detailed look at the purpose and key objectives of HRM¹¹:

- Maximizing Productivity and Profitability:

It is based on combination of both quality and quantity of employees so as it enhances them with opportunities to develop in their respective fields. As a result, employees are highly motivated and achieve the set goals. Thus, it enables the organization to capitalize, establish market presence and enhance profitability.

- High quality of work:

A positive working environment, recognition of employees and a sense of responsibility motivate employees to show their best, which ensures high-quality work performance as it helps achieve goals. Also, hiring the right people and ensuring that they are properly

⁹Χυτήρης, 2001

¹⁰Βενετσανοπούλου, 2002

¹¹Μπουραντάς, 2015

trained is important for the best quality of work. This is vital, as it helps employees to learn and adapt quickly to the organisation's work culture.

- Meeting the objectives set:

For HRM is essential to achieve numerous of company's goals, so as to provide rewards and benefits to good employees (boosting employees to perform their best). The recognition of employees' work gives morale, energy and motivation for better performance.

- Improving teamwork:

HR managers need to make sure that every employee feels important and valued in every department, emphasizing on the importance of HRM in teamwork and a good collaboration in the workplace. Thus, a greater contribution to the desired results is noted.

- Reducing the gap between demand and supply of human resources:

The role of HRM in an organisation extends beyond personnel management. Thus, it includes the determination of the adequacy of available human resources. The human resources manager organises recruitment and selection campaigns to fill any vacancies that may exist in the company.

- Creating a Corporate Image:

For companies, sustainability involves maintaining their historic, ideal reputation in the marketplace. Everyone wants to be associated with a company that is known for its ethical behavior, which offers commitment to the community and its employees. In contrast, businesses that treat their employees more as resources than as people are at risk of total failure. In conclusion, human capital is critical for organisations of all sizes.

So not only do they have the best interests of the company in mind, but they also provide a proper atmosphere for people to move around in their careers. On the other hand, human resource professionals face a number of unexpected challenges at work. Therefore, in this context, the European Commission has set up a network of specialists in the field of human resource management¹².

¹² The Commission's proposal for a directive on the protection of workers from the risks related to exposure to carcinogens at work (COM (90) 0406 - C4-0413/90)

CHAPTER 3. The Digital Transformation

3.1 Defining the Digital Transformation

The 'Digital Transformation' is a phenomenon which has emerged as a prominent and pervasive trend in several sectors, including both the industrial and social. The above phrase is gradually gaining prominence as a keyword, enabling various stakeholders to implement a number of innovative practices in organizations such as companies, enterprises, government bodies, academic institutions and other public service providers. In deconstructing the above-mentioned term, it becomes apparent that it consists of two widely recognized terms. The term "transformation" which encompasses a broad and comprehensive process that starts from an initial state and progresses to a modified state, which is often perceived as an improved state. The term 'digital' implies that numerous social, commercial and industrial transformations will be driven by information technologies, facilitating the immediate processing of data and even facilitating the intelligent export of information, so as to ultimately provide stakeholders with an improved view of their processes and products¹³.

The concept of digital transformation has gained considerable prominence in the contemporary discourse, with its inherent connection to the field of technology being undeniable. In fact, it is up to leaders and individuals to assimilate a new culture and an alternative cognitive framework in order to embrace an emerging business model. The concept of 'digital transformation' encompasses the integrated set of changes that a given society is undergoing in order to effectively exploit the various benefits and opportunities presented by digital media and emerging technologies¹⁴.

Digital transformation can be defined as the assimilation of digital technology into all aspects of a business, leading to profound changes in the way the business operates and delivers value to its customers.

¹³Mattetal., 2015

¹⁴Tabrizi et al., 2019

Moreover, it is imperative to recognize that this phenomenon entails a cultural change, which requires organizations to experiment frequently and, in many cases, to deviate from deep-rooted business processes on which they have traditionally relied¹⁵.

3.2 Forms and Dimensions of Digital Transformation

A technological development that is deeply embedded in the organizational framework and used universally, even at the individual level. More specifically, the field of digital transformation encompasses a range of technologies such as cloud computing, open data, big data accompanied by highly advanced and complex analytics technologies at various levels, artificial intelligence, machine learning and mobility. The dynamic nature of modern digital transformation technologies requires continuous evolution in order to effectively address the requirements of digital transformation. This, in turn, is driving substantial changes in consumer behavior both among individuals and across industries, thus having a profound impact on the transformation processes underway. Digital transformation technologies act as catalysts for both innovation and market transformation, providing essential support to drive innovation and the resulting transformation of markets¹⁶. In order to achieve digital transformation, it is necessary to ensure that the digital transformation process is not limited to the application of technology and innovation. It requires a comprehensive approach involving the restructuring of the sector's operations.

The digital transformation in the context of human resource management when it comes to the current workplace affects various aspects of human resource management, including the processes, tools and skills used. What needs to be examined is how digital transformation is implemented and integrated in the enterprise, i.e. to consider the form of emergence.

The forms of digital transformation can be distinguished as follows:

- **Digitization of processes:** All data is used in organizations and businesses, and the automated process of digitizing can offer enormous benefits. These benefits can be seen in the saving of resources because industries and companies will spend less money on basic operations, increase efficiency, complete tasks faster and improve

¹⁵Zaoui&Souissi, 2020

¹⁶ SEV, 2019

the quality of the products and services they produce. In this way, companies and organizations will become more flexible and better able to adapt to changes in the target market and the company's human resources will be able to handle more strategic issues¹⁷. This can apply, also, when it comes to transferring of human resource management processes from traditional forms (such as handwritten job applications) to digital platforms and tools (such as job application management systems).

- **Strengthening networking and dissemination of knowledge:** Through digital technology, employees in enterprises and organizations will be able to communicate directly and continuously with each other and at the same time be able to work remotely, without having to be present to work in person. In this way, the nature of their work is separated from the workplace and workers can have a more flexible schedule. Other technologies, such as teleconferencing and tools for sharing resources and files, provide workers with opportunities to increase employee productivity because they can exchange and share information and knowledge with each other. Employees using digital transformation technology will acquire the necessary knowledge and skills to ultimately implement a complete digital transformation in the company and the organization, while at the same time committing to the use of the technology¹⁸.
- **Performance management:** With digital technology, entities can obtain data on their performance and customer satisfaction in a number of ways. In particular, they are able to evaluate their production lines, telephone networks, services, and the distribution of their products. And use data to analyze their performance. Analyzing and evaluating all these functions of the organisation enables the entities to better understand the needs of their customers, the capabilities of the organisation itself and what elements are considered to be treated as they need modification and transformation. In this way, relevant leadership decisions and strategic plans will be more targeted and based on real and necessary knowledge rather than assumptions.
- **Supply transformation:** Supply transformation is about how organisations and businesses find ways to communicate with consumers/customers and make known

¹⁷ McAfee and Welch, 2013

¹⁸ McAfee and Welch, 2013

the services and products they want to distribute. According to Westman (2022), the company "found a way to increase physical presence through digital products and use digital technology to share content beyond the boundaries of the organization". The transformation of traditional methods of delivering organisational and corporate value to customers can be achieved through digital technology, while creating new sales and distribution channels for products¹⁹.

- **New digital products, services and new digital capacities:** Digital products and services can be presented to businesses and organisations in two ways. In particular, they have the potential to complement or replace the traditional products and services used or to transform them gradually and partially, so that all the functions and processes of the organisation can adapt to and absorb these changes. In this way, all the organizations and companies are coming together in a global common space. Everyone can easily communicate and interact interactively. Therefore, they can be both centralized and decentralized without any difficulty to do so²⁰. Digital skills are the key to achieving digital transformation. The IT Technical support team working in organisations and companies need to promote and integrate digital technologies into them. To this end, certain additional digital literacy skills and competences need to be acquired and, at the same time, the appropriate atmosphere and working group for the implementation of the Digital Transformation Strategy needs to be created. The study showed that digital skills can be defined as "the way employees work and collaborate, or the way business processes are conducted inside and outside the company or the way the company understands and serves customers in the end".

In order to maximise digital transformation, the customer experience when interacting with businesses and organisations needs to be transformed. This can be supported by exploring social media to understand customer needs and desires, brand promotion through digital media, creating and promoting modern and innovative online communities that seek to build trust with customers through communication and interaction, effort to improve communication technology and customer interaction and creating services that meet the specific needs and desires of each customer to make them more satisfied. These dimensions are just some of the aspects of the digital transformation in human resource

¹⁹Westman et al., 2022

²⁰Westman et al., 2022

management and reflect how technology is affecting work and processes in the human resource field. In order the business processes to be transformed, it is necessary to implement some processes related to the functioning and cooperation of the organisation, its customers, and its human resources.

3.3 Importance of Digital Transformation

Digital transformation involves the assimilation of digital technology into all aspects of an enterprise, leading to profound changes in the way it operates. Organisations use this methodology to restructure their businesses with the aim of enhancing operational efficiency and increasing financial profits. According to recent data, a significant majority, namely 90%, of enterprises have shifted their activities to the cloud computing paradigm. As data is migrated to new cloud infrastructures, a digital copy of the pre-existing services is created. Authentic digital transformation generates a technological infrastructure that facilitates the transformation of these services and data into actionable information, thus enabling improvements in various dimensions of an organisation²¹.

Organisations that use digital transformation serve its stakeholders (shareholders, customers, employees and othe partners) in a more efficient way. The integration of computer-based digital technologies into business operations support companies on the faster access to market with new products and services, increasing employee productivity, increasing responsiveness to customer demands, gaining more knowledge about individual customers to better secure products and services and improve customer service (by providing more intuitive and engaging customer experiences)²².

Effective transformation begins with a vision that demonstrate the way that computer-based digital technologies can be leveraged and finally achieving the strategic goals of business (oriented by the organisation's own digital business model). The application of cutting-edge technologies will not lead to transformation. The need of every business is a solid business strategy based on tomorrow's digital capabilities. Every organization should have its own vision for success, but the following are steps that they should be prepared to be taken when developing a strategic digital transformation plan: 1. The perception of the market and the organisation's position in it, as well as existing and potential customers, market analysis to enable the organisation to anticipate the likelihood of digital disruption,

²¹Leão& Silva, 2021

²²Kannan& Li, 2017

identification of the existing and potential value proposition through internal evaluation and external research. 2. develop a vision of what the organisation should be in the future, including how its products and services should evolve to meet customer needs and expectations and 3. develop a digital transformation roadmap that offers a way to move from the current state to the future state²³.

As part of this strategic planning, executives should evaluate the organization's existing capabilities -from the skills of the employees to the existing IT stack, articulating what additional capabilities will be needed and designing a plan for acquiring those capabilities. Organisational leaders should draw on a range of traditional disciplines, such as project management, as well as new techniques, in order to evolve the organisation or enterprise into the future. Experts agree that organisations need to assess their digital transformation process and strategy on an ongoing basis and adapt it to maximise their business value²⁴.

Digital transformation enables organizations to succeed in this digital age: This is the single greatest benefit of digital transformation. For businesses, this success means higher revenues and higher profits.

For other types of organisations, such as non-profit foundations, the digital measurements of success they have implemented allow them to better serve their stakeholders. While the ultimate benefit of digital transformation is survival and strength in the future, transformation initiatives offer many other benefits to organizations. They include the following:

- increased efficiency and effectiveness, as the application of technologies such as artificial intelligence enhance worker productivity, reduce errors, and accelerate time to market - meanwhile, the updated business processes enabled by digital technologies further increase the productivity and pace of businesses. HR is changing as a result of the incorporation of automation and artificial intelligence (AI) into HR procedures like hiring, performance reviews, and employee engagement. AI-powered solutions can lessen biases, increase productivity, and offer deeper insights into personnel data. Systems of HR Information (HRIS): HR operations can be streamlined, and data management and analytics improved with the use of advanced HRIS platforms. HR professionals can enhance strategic planning and make data-driven decisions with the help of these systems²⁵.

²³ Kuom,2021

²⁴ Kannan & Li, 2017

²⁵Jonathan Crawshaw, Pawan Budhwar, Ann Davis, 2020

- greater flexibility and responsiveness to changing markets as an organisation's culture and capabilities shift to support ongoing change
- Built on better relation with all partners/actors of the business, due to the fact that organizations can use smarter, more accurate the data, taking better decisions based on the needs of stakeholders.
- Increased the opportunity for innovation, as a more agile workforce and up-to-date technological capabilities support and encourage experimentation while reducing risk²⁶.

The mentioned advantages help fuel continuous transformation, as automation allows employees to shift to more innovative and higher - value work and greater flexibility allows the organisation to better identify opportunities and channel resources towards their exploitation.

Data privacy and security concerns limited internal skills and expertise, regulatory and legislative changes or immature digital culture are some of the most common factors reported by the experts for which digital transformation failures occur²⁷.

Building a digital transformation culture is one of the most significant duty for organizations, which is involved in transformational change. Leaders must create an organisational culture in which continuous improvement is made and stakeholders are open to continuous change. Everyone should be willing to identify and abandon outdated and ineffective procedures and replace them with something better. However, most enterprisers face difuculties to develop a corporate culture, which is able to support transformation. Building the right team is a key for an effective digital transformation strategy²⁸.

3.4 Important Factors and Challenges, Affecting the Digital Transformation Process

AI systems in Human Resources (HR) present significant opportunities for improving efficiency and decision-making processes. However, they also bring critical data privacy concerns that organizations must address to protect employee information and maintain trust.

²⁶ Delacour,2020

²⁷Delacour,2020

²⁸ Delacour,2020

Important Data Privacy Issues with AI HR Systems:

- **Handling Sensitive Data:** Artificial intelligence systems frequently handle enormous volumes of sensitive employee data, such as biometric information, performance metrics, and personal identification information. It is essential to make sure that this data is handled and stored securely in order to stop data breaches and unauthorized access.
- **Adherence to Data Protection Laws:** Companies need to make sure that their AI systems abide by a number of data protection laws, including the California Consumer Privacy Act (CCPA) in the US and the General Data Protection Regulation (GDPR) in Europe. These laws establish severe penalties for non-compliance and place tight restrictions on the collection, storage, and use of personal data.
- **Transparency and Consent:** Workers should be made aware of how AI systems are using their data. A basic prerequisite for the collection and processing of data is the acquisition of express consent. This openness fosters trust and guarantees that staff members are informed of their rights with regard to personal data.
- **Data Minimization:** AI systems should follow the guideline of data minimization, gathering only the information required for particular goals and storing it for the requisite amount of time. By doing this, the possibility of abuse or illegal access to needless data is decreased.
- **Data anonymization and encryption:** Sensitive information can be safeguarded by utilizing methods like data anonymization and encryption. Datasets that contain personally identifiable information (PII) are anonymized, and data security during transmission is ensured by encryption²⁹.

There are several dangers as far as Prejudiced Algorithms in AI HR Systems are concerned:

- **Historical Data Bias:** AI algorithms may be biased by nature because they are trained on historical data. For example, if prior hiring decisions gave preference to particular demographics, the AI system may pick up on these biases and engage in discriminatory hiring practices.

²⁹https://www.academia.edu/32587216/Management_and_Business_Research_5th_Edition_by_Mark_Easternby_Smith

- **Algorithmic Bias:** Biases may be introduced during the design and development of AI algorithms. For instance, the AI system may perform poorly for underrepresented groups if the used data used is not representative of the whole population.
- **Unintended Consequences:** o Biased results can arise from even well-meaning AI systems. An AI system created to identify high-performing workers, for example, may favor particular traits that are more prevalent in a particular demographic disproportionately³⁰.

3.5 Digital Transformation Strategies

By addressing the above-mentioned data privacy concerns, organizations can leverage the benefits of AI in HR while safeguarding employee information and maintaining trust.

- **Robust Data Governance:** It is imperative to set up a robust framework for data governance. To guarantee compliance and fix any vulnerabilities, this entails establishing explicit policies on data access, usage, and protection in addition to conducting frequent audits and assessments.
- **Ethical AI Development:** Privacy risks are reduced when AI systems are developed with an ethical framework in mind. This entails developing transparent algorithms that are auditable for biases and making sure that the processes used by AI to make decisions can be explained.
- **Training and Awareness of Employees:** Educating staff members about their rights and data privacy helps promote a culture of privacy awareness. Employees can learn about data security and best practices for managing personal information through training programs.
- **Regular Audits and Updates:** It's critical to audit AI systems on a regular basis and update them to handle emerging privacy issues. This makes it possible for AI tools to effectively protect employee data and comply with changing regulations.

³⁰https://www.academia.edu/32587216/Management_and_Business_Research_5th_Edition_by_Mark_Easterby_Smith

Organisations can harness the benefits of AI in HR while promoting fairness and equity in their processes. Implementing the below strategies helps create a more inclusive and unbiased workplace environment.

Handling Bias in AI-Powered HRM

- **Diverse Training Data:** One way to lessen biases is to make sure that training data is representative of all employees and diversified. In order to guarantee the AI system learns to treat all groups equally, this entails incorporating data from a variety of demographic groups.
- **Ethical AI Development:** Potential biases are addressed when ethical issues are considered when developing AI systems. This entails establishing rules for the moral application of AI, encouraging equity, and making sure that AI systems complement corporate values and diversity objectives.
- **Frequent Audits and Testing:** It's critical to regularly audit and test AI algorithms for biases. This may entail assessing the effectiveness of AI systems across various demographic groups using fairness metrics and modifying the algorithms as needed.
- **Transparency and Explainability:** It can be easier to spot and deal with biases if AI systems are transparent and able to give concise justifications for their choices. Explainable AI enables HR professionals to make sure decisions are impartial and fair by understanding the decision-making process.
- **Human Oversight:** Integrating AI with human oversight guarantees that HR specialists examine and confirm choices. This makes it possible to identify any biased results and take corrective action prior to the finalization of decisions³¹.

To keep employees engaged and focused on their activities, companies have invested in different types of employee benefits developed to ensure their quality of life and well-being at work. Over time, employee benefits have acquired greater importance in relation to the various aspects that make up the compensation system as a whole. Benefits are, according to various definitions, those tangible and intangible facilities that were established in addition to wages or salaries. Typified as a set of policies and practices designed and implemented in work contexts, benefits aim to help employees better reconcile their professional and personal life, as well as to protect them from different

³¹https://www.academia.edu/32587216/Management_and_Business_Research_5th_Edition_by_Mark_Easterby_Smith

risks. In a practical way, these good working conditions are claiming a distinction and represent the so-called psychological contract, that is, expectations that work in almost all professional contexts provide mechanisms to increase motivation and work commitment³².

The average person spends over a hundred thousand hours at work in their lifetime. Some of those hours are spent engaging in after-hours work-related activities while away from the office. Non-routine employee activities such as salary negotiations, accessing health insurance provisions, retirement planning, requests for leave, maternity or paternity proposals, savings for children's education, or workplace education related to work-life are constantly being redefined. The priorities and objectives of modern workers vary widely according to their life moments and have undergone significant change in recent years. Moreover, these objectives will differ from one employee to another. Whether it be through the attraction and acquisition of talent, or their satisfaction and loyalty, the coherence and capacity of companies to retain and motivate the talent will be decisive in their ability to grow and thereby reaffirm their positions in the market³³

When implementing personalized recognition, the target set of employees is the most important benefit users. Personalization needs employee-related data as much as possible, such as various benefits usage, employee life cycle, employees' interests, and locations. The challenge of personalization for such comprehensive benefits is the availability of employee data. In Hong Kong, Loo illustrates the personal data privacy regulations that prohibit collecting such comprehensive data. If willing to provide data that is not directly related to work activity, the company must be extremely cautious in explaining to employees the usage and the potential positive impact back to employees. Meanwhile, employee data is, to a certain extent, legal to use overseas. In BaseStone, personalization began by seeking employees' consent for the use of data. For those who value the benefits, this cooperation is easier to achieve³⁴.

The paper titled "Role of HR Digitisation in Personalization of Employee Benefit" by Arunima Nandy and Rita Basu, published in the *Srusti Management Review* (Volume XI, Issue II, July-December 2018), explores how digitization in Human Resources (HR) can enhance the personalization of employee benefits. This study emphasizes the importance

³²Tzenios et al.2022, Creapeau et al.2022

³³Aczel et al., 2021, Chetty et al.2020

³⁴ Malik et al.2023

of tailoring employee benefits to meet individual needs, which can significantly boost employee satisfaction and retention.

The research focuses on identifying personalized requirements of employees and suggests that these needs can be effectively addressed through HR digitization. By querying both employees and employers, the study found a strong alignment in their expectations regarding the impact of personalized benefits on performance improvement. The authors argue that implementing personalized benefit programs can lead to increased employee satisfaction and, consequently, better organizational performance³⁵

The trend towards employees working from home calls for different strategies for administering employee benefits. HRM practices, including employee benefits, are delivered to employees for one of the transactions to maintain workforce confidence in the company. The world has witnessed a paradigm shift in HR functions such as human resource technology (HR tech) in the wake of the pandemic's worldwide economic stagnation. The power of HR technology also extends to shaping innovative employee experiences with enhanced employee benefits, such as wellness programs, training, career planning, performance coaching, and voluntary perks personalized based on self-service tools and analytics. This paper explains the significance of personalization of benefits, underlines how HR digitization is a critical facilitator of the personalization of benefits, and suggests the key factors that are necessary for achieving employee benefits digital transformation³⁶.

The implementation of digital HR technology tools creates opportunities for organizations to innovate their employee benefits programs. Employers use digitalization to implement employee benefits that are varied and personalized to the individual employee. Most importantly, this increases the employee satisfaction with the benefits, and without personalization of benefits, the level of satisfaction is low. Employees want to receive information about their work rewards in a communicated and personalized manner. To match the nature of personalization of the benefits for each employee, we argue that the role of HR through HR technology is essential for its successful use. This further enhances the employee's experience within an organization³⁷.

³⁵http://www.srustimanagementreview.ac.in/paperfile/1048688018_4.%20Role%20of%20HR%20Digitisation%20in%20Personalization.pdf

³⁶Aripin et al.2024

³⁷Silic et al.2020

3.6 Redefining Industries and Digital Transformation

Demands from global challenges have pushed all industries to rethink every single aspect of their operation. From healthcare, social and government to industrial, manufacturing, retailing, and public service, everyone has started stepping out of their comfort zone. Identity, role, development, competitiveness, time to market, collaboration, and customer impact - everything had to conform to the cloud era. Little here and there could not comply with the demands. A full paradigm shift was inevitable. Not only the fundamental purposes but also the methodologies will need reengineering. Singular optimization on the partial processes or certain functions cannot give birth to a new industry framework. Modeling and simulation-based validation, artificial intelligence and machine learning-based autonomy, and the closed-loop execution for the quality, efficiency, cost, resiliency, and agility - a full spectrum innovative methodology to integrate all aspects of an industry and make it compliant and competitive are what are wanted³⁸.

Security, on the other hand, forms the digital backbone imperative for businesses to enjoy the agility, flexibility, and scalability of digital business models. Not only is it the foundation on which digital businesses operate, it's also the very growth enabler for the digital economy, ensuring privacy and trust, both of which are increasingly becoming crucial in the digital age. Organizations in the digital age need to create, secure, and authenticate digital identities for the people, things, and applications that make up their business. Enterprises must share data with more partners, across shared infrastructures, and to more devices. The digital economy poses a tricky question: how to balance the need to properly govern data and IT infrastructures and operations with the unrelenting pressure to lower the cost of doing business at every level.

Two key technologies driving digital transformation today are Internet of Things (IoT) and security, the former contributing to the creation of digital feedback loops. IoT is the confluence of mobile, real-time big data analytics, and the cloud, underpinned by infra-technologies such as low-cost smartphones, connectivity, and sensors. The net result is the continuous collection of data from the physical environment, such as homes, cars, factories, and cities, turning the interaction between humans and the world around us into infrastructure for services and new business models. The digital feedback loop from IoT makes information being collected more valuable. It is aggregated for analysis, enriched

³⁸Howe et al.2021

by other sources of information (for example, applications and social media data), and integrated into business applications or processes for further action³⁹.

Case Studies of Successful Digital Transformation in Different Sectors

AiLev, a wireless communications system provider that used the crowd as a collaborative workforce, transforming a standard change management process into a dynamic social process in the Enabling Environment chapter, showed the strength that harnessing your hub can achieve. When 'the crowd is becoming the use-case', the use-case itself is no longer a static/singular reference that can be referenced on the network, and the model has definitively matured. Irrespective of whether using a crowd or customers, some sort of data was almost always involved. Sure Technologies, which provided crowd-enabled loan and sporting predictions through the expertise from peer reviewing, was another example. However, neither of these firms had extensive data of their own, with 3D printers the core of what Sure did and crowd-organized social drives more important than AiLev's self-organization. All three businesses were more about digital content than the physical world. Most case studies demonstrate that incumbents may have disadvantages when the digital invasion begins, but they also have long-term strengths that can be harnessed. Taking advantage of the ecosystems for which, they provide the hub, reinventing themselves through crowd enabling, using their deep understanding of data in their sector, and working in partnership with data-driven start-ups to sell data in a marketplace, typically show what can be done. Spotting the lead indicators of disruption and preparing how to make money from data long before either customer or investor pressure demands it are strategies that can also be implemented over time. The Retail chapter provided three very different examples, but all had one thing in common. They had developed business models that would never have existed outside a digital economy. Only now are large numbers of digital start-ups leveraging incumbents' data to create genuinely innovative businesses⁴⁰.

The need for a holistic and strategic approach to move from digital transformation efforts to a firm's digital capabilities is the most significant. As opposed to isolated organizational change efforts, digital transformation involves all stakeholders, demands structural reorientations of the organization and a careful reshaping of the entire architecture of its processes, ecosystems, and value chain. Things are different in the digital era. The modernization utopianism is being tested in the ruthless crucible of competitive reality, and the results of the tests are showing up in many different business fields. First, the

³⁹ Emeka-Okoli et al.2024

⁴⁰Bogers, M., Chesbrough, H., & Strand, R. (2020)

generally accepted, well-known, critical fundamentals for organizations that want to transition to the so-called digital world should be addressed⁴¹.

3.7 Communication Technologies and Telecommunications

Digital growth has rapidly and irrevocably shifted business approaches from operational processes through to value presentation and marking them 'fit for disruptive technology'. Choosing not to adapt negatively eliminates viable businesses before they have a chance. In this respect, competing has changed from simply supplying capital, people, skills, and projects to expanding the business through achieving objectives. In response, organizations understand that their ability to prosper increasingly depends on how fast and to what extent they can initiate changes in their strategic, operational and support structures enabled by the introduction of digital technology. Notably, the HR function is at the forefront of this digital transformation⁴².

Communication technologies are often the focus of digitization strategies. In 80% of our HR digitization case studies, the company invested specifically in communications technology. Many of these companies refer to communications technology as being supportive in the ongoing shift in business models, promising better collaboration across departments, and increasing agility and efficiency in HR and IT strategy. According to a pre-COVID-19 Gartner report, in 2023, 40% of large global enterprises will have implemented HR technologies that orchestrate work through partnerships on mobile, social, and workforce apps. As firms ramp up the pressure on supporting communications technologies, it seems we must investigate the impact of this trend. In this chapter, we subsequently answer the following research questions concerning the relationship between HR digitization and communications technology⁴³.

Hiring and training the best employees is necessary to survive and thrive in the capitalist system. Human resources (HR) is the department responsible for hiring and training employees. Digitization is considered a major source of growth and a major force for organizational change. Nowadays, HR is transforming with the waves of change produced by digitization, generating new technologies that are shaping HR and the way organizations manage their human resources. Digitization-generated technology waves lead to technological advances. The digitization process changes the working

⁴¹Emeka-Okoli et al.2024

⁴²(Blanka et al.2022)

⁴³ Malone and Strouboulis, 2022

environment. In this process, the workplace is shaped by new communication technologies, shaping workplace organization and leading to important changes in job architecture, people management, and the work itself⁴⁴.

3.8 Flexible Workplace Settings

One of the largest problems facing businesses and companies is the Covid-19 pandemic. If they work together to stop the disease's spread and establish secure and healthy work environments for both home teleworkers and those returning to their regular workplace, they will be able to overcome this⁴⁵.

In work settings where workers are or have been exposed to a biological factor, such as a virus, employers are required to conduct a risk assessment and implement the necessary preventive measures. Employers are supposed to benefit from the suggested remedies and guidelines provided in this subsection in order to fulfill their obligations.

The crisis's effects can be mitigated by taking early, well-coordinated action. International labor standards can serve as a guide for the definition of policies and interventions in both labor and economics policy, in addition to the definition of work-related principles and rights. These regulations, which support decent work and a just and long-lasting economic recovery, have been accepted by governments, employers' organizations, and unions in each of the 187 ILO member nations.

Four major pillars should comprise the ILO strategy to lessen the impact of COVID-19 on the labor market⁴⁶: (i) worker protection in the workplace; (ii) labor and income support; (iii) labor demand and economic support; and (iv) social dialogue to find common solutions.

The two main goals that policies should concentrate on right away are financial support and health protection measures, both in terms of supply and demand. First, by bolstering health and safety policies and procedures in the workplace, workers and their families must be shielded from health risks. Second, in order to support businesses, the economy, labor demand, and employment and income, it is imperative to adopt responses through prompt and well-coordinated large-scale policies⁴⁷. Enacting policies that are both socially

⁴⁴ Binner2022

⁴⁵ Ministry of Employment and Social Protection, 2020

⁴⁶ Fana et al., 2020

⁴⁷ Fana et al., 2020

and practically acceptable requires public authorities to consult with representatives of employers and employees.

There is only one thing that is certain in practice: knowledge and awareness are essential. Everyone needs to be well-informed about the symptoms of the infection, how to minimize exposure, and how the virus has spread.

Over the last three to four years, flexible work environments—where employees are free to choose where they work—have become more and more crucial to the workplace. These environments raise employee satisfaction and productivity in addition to aiding in the recruitment and retention of top talent: Models of Work-from-Home: The COVID-19 pandemic disrupted established workplace norms and hastened the shift towards remote work. HR must create procedures and policies that facilitate remote work, such as digital communication tools, virtual team management, and remote performance management. Hybrid Work Environments: Managing both remote and in-office work calls for innovative approaches to preserving output, guaranteeing a healthy work-life balance, and developing a unified company culture.

Combining remote and in-office work, the hybrid work model has grown to be an essential component of contemporary organizational strategies. In order to maintain productivity, work-life balance, and a strong corporate culture in the face of this change, creative solutions are required. These are some strategic suggestions for navigating the hybrid work environment, based on information from "Human Resource Management: Strategic and International Perspectives" by Jonathan Crawshaw, Pawan Budhwar, and Ann Davis⁴⁸: The implementation of flexible workplace settings can lead to the Output Increase. The Communication and Teamwork can become effective via the use of digital tools to enable smooth communication and cooperation i.e., Zoom, Microsoft Teams, and Slack. To prevent misunderstandings and guarantee prompt responses, the parameters and the guidelines for communication should be defined clearly.

When it comes to performance management goal setting in order precise objectives and expectations to be established, the use of SMART i.e., specific, measurable, achievable, relevant, and time-bound goals should be necessary. Project management software, in other words programs like Asana, Trello, and Jira facilitate efficient task management and progress tracking. Flexible work schedules like the ones that include autonomy and provide workers the freedom to select their own work schedules and locations in order to

⁴⁸Jonathan Crawshaw, Pawan Budhwar, and Ann Davis, 2020

increase output should come into force. More results – oriented goals are needed and more emphasis on the caliber and promptness of outputs rather than the number of hours worked should be given.

Maintaining a work-life balance environment should become a priority through structured flexibility followed by the establishment of core hours that all staff members must be available but at the same time flexibility outside of these windows must be allowed. To maintain balance, staff members are encouraged to set aside time on their calendars for both personal and concentrated work.

A support system should be applied which will make mental health services, such as counseling and wellness initiatives, accessible. Breaks should be promoted so burnout is avoided, and regular use of vacation days and quick getaways is encouraged.

The idea of home office should be supported regarding the ergonomics which means that resources or stipends to help create comfortable home offices should be provided. In addition, guidelines should be set so the best ways to keep the home office healthy to be discussed⁴⁹. In order culture within organizations to be encouraged engagement and inclusion should be encouraged too. That means that virtual team building should be applied as an activity which will improve relationships by planning online get-togethers and team-building actions. It should become certain that all-inclusive meetings and decision-making procedures involve remote workers.

Frequent interactions like check-ins, frequent team and one-on-one meetings should be arranged in order employees to stay in touch and handle issues. To better understand employees, the hybrid work environment should be enhanced and frequent feedback mechanisms like feedback loops should be implement. Appreciation and festivity should be a priority for employees. They should be honored with virtual get-togethers, shout-outs, and newsletters for all their milestones and accomplishments. Online areas, like chat rooms or virtual coffee breaks, for casual conversations should be established so the social interaction can grow⁵⁰.

Using technology is significant so collaborative instruments can be applied like the following:

⁴⁹ Jonathan Crawshaw, Pawan Budhwar, and Ann Davis, 2020

⁵⁰ Jonathan Crawshaw, Pawan Budhwar, and Ann Davis, 2020

- Platforms for the purpose of document sharing and real-time collaboration, use collaborative tools like Microsoft 365 or Google Workspace.
- Asynchronous Communication: Use asynchronous communication tools, such as video messaging apps.

For the purpose of technological education and training of employees on cutting-edge tools and the best ways to work remotely ongoing learning should be provided and the staff should be assisted in adjusting to the hybrid model and opportunities for continuous professional development should be provided on a regular basis. Regarding the safety Procedures and the cyber-security issues strong security measures in place such as two-factor authentication, VPNs, and frequent training should be put⁵¹.

Navigating the hybrid workplace effectively calls for a calculated strategy that puts an emphasis on effective communication, adaptable scheduling, and a robust corporate culture. Organizations can sustain productivity, promote employee well-being, and cultivate an inclusive and cohesive culture by utilizing the above-mentioned strategies. The perspectives offered by Crawshaw, Budhwar, and Davis provide a thorough framework for handling the challenges of hybrid work, guaranteeing that the requirements of employees are satisfied in addition to organizational objectives.

Characteristics of teleworking

In an effort to comprehend the aforementioned definitions of teleworking, the following traits of teleworking are enumerated⁵²:

- Refers to work done remotely and off the company's premises; it encompasses more than just the idea of working from home.
- It's a type of work organization rather than a profession. Naturally, this does not imply that any profession could be practiced virtually.
- The foundation of teleworking is the utilization of electronic communication to convey work results and information technology to carry out tasks. This prohibition does not apply to conventional home-based work arrangements.

⁵¹ Jonathan Crawshaw, Pawan Budhwar, and Ann Davis, 2020

⁵² Huws, 2000; Lampousaki, 2008

- Requires the work be done regularly, not just sporadically, outside the company's walls. Naturally, this does not imply that telework and mixed forms of employment are not allowed within the company as long as it is done in the customary manner.
- It is an optional type of employment (for the worker and the employer).

Forms of teleworking

There are several ways to differentiate between the several types of teleworking, but the fundamental area where teleworking is offered is one of them⁵³.

The simplest and most popular type of teleworking is home teleworking, which is done from the employee's residence. Making a room in the house into a typical office with the necessary furnishings (computer, modem, software, etc.) and the essential telecommunications infrastructure is a prerequisite.

Additionally, when there isn't a designated physical work location, telework can be mobile. The temporary residence (such as a hotel), the client's establishment, the transportation hub, etc., can all serve as the workplace.

In addition, teleworking can be offered in "*satellite centers*," which are separate corporate entities with teleworking capabilities. Usually, these communication hubs are situated close to the residences of the employees.

Teleworking centers, where multiple users pool their electronic equipment, can also offer teleworking services. In this scenario, the teleworkers may be employed by a number of businesses, particularly small ones, who collectively could not afford the expense of making such an investment. Another type of telecommuting hub is the so-called "*telehouse*," which is a government initiative for the economic revitalization of rural areas and is typically found in arid and isolated locations.

In addition, *televillages*—a contemporary take on teleworking—relate to a new way of living. Their sophisticated image necessitates whole villages furnished with cutting edge technology. The villages are composed of individual homes that are networked together so that they can communicate not only with other remote villages or bases but also with each other and the village's network.

⁵³ Huws, 2000; Lampousaki, 2008; OKE, 2020

Differentiating between online and offline teleworking based on the teleworker's method of communication with the company is a unique type of teleworking. When an employee engages in online teleworking, they are permanently linked to their employer's network via specialized technology that enables real-time, two-way communication. The worker is immediately under the control of the central company, from which he can take direct commands and exercise technological control over his employer. When an employee uses off-line teleworking, he or she can arrange their working hours more freely because they are only ever connected to the employer's network when needed, which is a type of remote work that is mostly used by developers, senior business executives, and researchers.

Fixed, intermittent, and complementary telecommuting options are available depending on the size of the company. Fixed teleworking refers to working from home for the majority of the working day (more than 90% of it). In the event of alternating teleworking, the employee works at the company's offices the remaining days and spends less than 10% of his working hours from home, at least once a week. Work completed at home is considered complementary if it is done infrequently (less than 10%) and for fewer than one day per week.

Furthermore, teleworking is available on an individual or group basis. Individual telework is that which is provided by a teleworker while he is by himself, working independently without collaborating with another teleworker and without being in physical or virtual contact with them. In group teleworking, multiple teleworkers collaborate to either achieve a shared goal or simply complete individual tasks that are essential to the business.

It is important to note at this point, as it has already been mentioned, that there are hybrid forms of teleworking, which are actually always evolving and include things like remote work combined with mobile work. Their ability to adapt to the changing needs of individual businesses is their key feature.

Employees who work remotely may do so either full- or part-time. Finally, teleworking can be temporary work or a component of a work-sharing arrangement, in which a group of employees assume responsibility to the employer for the same task, acting in concert as a civil company or as an informal union of persons, without ending each employee's employment relationship with the employer to the extent that it would otherwise have the characteristics of dependent work.

Legislative framework for teleworking

Since 2020, with the COVID-19 pandemic, teleworking has needily become very popular, especially for tertiary business companies, in order to curb the economic and social impact⁵⁴. With the proposal 12339/404 / 12.3.2020 Circular of MESP «Extraordinary and temporary measures in the labor market to deal with and limit the spread of coronavirus COVID-19» specified the relevant provision of article 4 par.2 of P.N.P. of 11-03-2020 (ΦΕΚ Α '55, which was ratified by article 2 of Law 4682/2020), in particular, the following were defined:

With paragraph 2 of article 4 of P.N.P. of 11.3.2020 (ΦΕΚΑ' 55) the employer may by its decision determine that the employees can work in distance (teleworking), at the place of work provided by the individual contract, will be carried out, if this is possible, so that the employee can continue to provide his work without requiring his physical presence at the workplace.

After the expiration of this extraordinary measure, the employee is entitled to return immediately to his job and to the position he held, without further formalities and without the need to comply with the deadline of 15 days of Article 5 par. 2 of Law 3846/2010.

Teleworking in the EU before the Covid-19 pandemic

From 2020 until now, with the beginning of Covid-19 pandemic, teleworking (which offers the opportunity to work in distance) has been established as a main type of work in a big number of workers worldwide and especially in E.U. countries.

Before the Covid-19 pandemic, teleworking in the EU both on an occasional and stable basis it has been growing, but not dramatically, the last decade in the EU. ranged in from 12.4% in 2009 to 16.1%. Greece had one of the lowest teleworking rates comparing with other countries of Europe. In our country in particular, teleworking was estimated at 4.3% in 2009 and at 5.3% in 2019. Teleworking is connected more with self-employed compared to employees with a dependent employment relationship: it's worthy to mention that in 2019, the percentage of the self-employed which worked from home, accounting for a total of 37% of the self-employed and 12.7% of the employed. In Greek' workplace in 2019, the self-employed worked at a rate of 4.9% "sometimes" from home and 3%

⁵⁴Weibbach, 2000

"usually", on the other side the percentages for employees were 2.9% and 1.4% respectively⁵⁵.

The application of teleworking is directly related to sectors in which it can be practiced, such as in the fields of Informatics and Communications (40%), to 35% in knowledge-intensive business services (35%). It has been noticed higher rates of teleworking before the COVID-19 in the field of education (32%), this rate is related with the extra workload of teachers at home, so as to prepare the educational activity. On the other hand, low rates of teleworking (less than 10%) have been appeared in the productive sectors (mainly to those sectors with high labour effort and low technological specialization, i.e. in industrial production and services where customer service is provided by living. On the other hand, jobs such as senior executives and managers of companies (whose work is done through computers and technology) have a higher degree of autonomy and availability to work effectively from the physical workplace⁵⁶. The teleworking rates recorded before the covid-19 overtime (informal overtime), which were carried out at home by a number of categories of workers. The rate of part-time workers was aggregated over 30% in few countries (mainly in North Europe such as Netherland, Sweeden and Finland), while it was less than 10% to the half of EU countries. These differences on the percentage of EU countries can be related with differencies of employees and economic structure, with the investments in digital infrastructure and technologies, with corporate labor policies, with the investment on the education and training. There is a huge variation in the use of teleworking between same professions and industries but in different countries, between the size of the company and the type of employees' payment, between the sexes but also the level of digital skills between different categories of workers⁵⁷.

Teleworking in the EU after the Covid-19 pandemic

The first recording during the initial wave of the pandemic showed that more than 1/3 (37%) of workers in the EU, who were previously employed in person at work, joined the teleworking regime due to the COVID - 19 crisis. More recent surveys show that about 25% of all employees are already working remotely on a relatively stable basis⁵⁸. Teleworking can be applied as a regular form of work, otherwise in an alternative way, to

⁵⁵ ILO, 2020

⁵⁶ ILO, 2020

⁵⁷ Joint Research Centre, 2020

⁵⁸ ILO, 2020

35% -40% of the workforce in EU countries. For the country of Greece, it is counted that almost 25% of employees could work remotely, which is referred to up to 500.000 employees, with an additional 12% of employees having high telework rotation potential⁵⁹. It seems that in the future, telework will be increased significantly compared with the existing low rates in European Union countries (differentiate from country to country). The expansion of teleworking, with the computer to be the main means of work, will be further implied to offices and administrative occupations. Furthermore, teleworking was more about managers and senior management in the past, financial or technical executives of companies with great autonomy in terms of their organization and working time. The status of teleworking brings important issues of inequality such as the gender, education, payroll etc., which need to be addressed institutionally⁶⁰.

Benefits and problems of teleworking

Regarding our nation, it is evident that teleworking has not been established or introduced in significant percentages. This is linked to the age-old challenge of adjusting to changing circumstances, which are mentioned on the one hand: in the rapid advancement of technology and in the contemporary work organization systems in businesses⁶¹. Industries and knowledge-intensive businesses (IT, communications, education, logistics) have the highest rates of teleworking adoption both domestically and globally⁶². Simultaneously, the contemporary IT fields (such as network technicians, salesman, programmers, customer services etc.) and the more conventional ones (clerks and related specialties) are being altered by the digital transformation of the economy.

In this regard, it is pertinent to highlight the 2018 SEV research on a sample of 831 businesses with over 30 employees across six broader economic sectors. The study's primary conclusions indicate that one in four businesses regularly use teleworking arrangements, with notable variations across the industries examined⁶³. The fact that businesses in knowledge-intensive industries use teleworking far more frequently than businesses in capital-intensive industries is a significant finding.

In contrast, a recent SEV survey on private sector workers conducted in September 2020 for the purpose of recording, measuring, and comparing the evaluation of climate

⁵⁹ (Pouliakas, 2020)

⁶⁰ (Huws, 2000; Adams-Prassi et al., 2020).

⁶¹ (Koren&Pet'o, 2020).

⁶² (Lampousaki, 2008).

⁶³ (SEV, 2018).

indicators regarding the evolution of wages and job security revealed that workers are very hesitant about the growth of teleworking in a number of ways: 67% of respondents view it negatively in terms of the evolution of their labor rights, 61% in terms of their working hours, 60% in terms of their pay, 52% in terms of their personal lives, and 45% in terms of their professional development⁶⁴.

Moving forward, it is crucial to note that the benefits and drawbacks of teleworking have been the subject of extensive scientific research as well as more general political and social discourse. For the purposes of this paper, however, it is sufficient to briefly discuss the positions of the Economic and Social Committee (ESC), one of the leading Greek institutions of social dialogue, that have recently been supported by science. Unquestionably, teleworking transforms the employer-employee relationship and brings about significant changes to the employment relationship as a new form of work organization. The following are some advantages of teleworking⁶⁵:

- The lessening of environmental impacts by lowering the need for transportation and, consequently, the amount of noise, air pollution, and traffic jams
- The enlarged opportunities to have access on specific groups in the labor market, giving the ability to be integrated on the market people with disabilities or other obligations (such as family, parental, people with contagious infection)
- Because it gives the labor force in the region's equal employment opportunities with those of the workers in the larger urban centers, it can help keep people in the periphery, which is good for regional development and social cohesion
- The enhancement of productivity can be achieved by modernizing the way work and administration are organized in businesses, as well as by reducing fixed operating expenses (medium and after necessary investments) such as employee time and energy savings and improved human resource management
- Furthermore, teleworking enables the organization to extend the range of services it offers beyond the conclusion of its offices' regular business hours.

Possible problems - disadvantages of teleworking may include⁶⁶:

⁶⁴ (SEV, 2020).

⁶⁵ (OKE, 2020; Pouliakas, 2020):

⁶⁶ (OKE, 2020; Pouliakas, 2020; Larsen & Andersen, 2007)

- The challenges of managing the location and schedule of work lead to disagreements regarding the legal status of remote work, including whether it constitutes an employment contract or if there is a possibility of falling into the "gray area" between dependent labor and work falling under an independent service provider arrangement. The risk of the protective provisions of labor and insurance law not being applied in this instance is evident.
- There is a possibility of confusion and blurring the lines between work and personal life, which could have negative effects on the teleworker's physical and mental well-being. The ability to work at any time and at any pace, as well as the variety of ways in which teleworking can be combined with other flexible work arrangements, can all contribute to a teleworker's overcommitment to their work, even when they are working well past the official business hours.
- The risk associated with working remotely and the lack of a well-defined institutional framework means that employees will be responsible for paying all or a portion of the business's operating expenses (such as phone, electricity, and equipment purchases and maintenance).
- The possibility of invading teleworkers' privacy exists because using new technologies to exercise managerial rights may result in electronic surveillance, the scope of which may surpass employee privacy.

But in any case, it is not so easy to generalize about teleworking because the law (Law 3846/2010), which regulates it and incorporates a pertinent Community Directive, states that an employer cannot impose teleworking; rather, it can only be implemented with the employee's consent.

Chapter 4. The Digitization of Human Resources Practices

4.1 Introduction to HR Digitization

When the implementation of new technology shapes different aspects of the human resource management (HRM) function within an organization, affecting services for human resources, the organization of structures and job roles, and influencing individuals, the process of transformation that the function is going through can be defined as the ICT process of Human Resource Management. This is a phenomenon that represents the advancement of the digitalization of HRM activities, which have occurred during the 1980s within the larger process of automation of administrative tasks, particularly those related to HR general services on one hand, and the broader process of the digitization of firms and its business models. The main goal of this chapter is to contribute to the understanding of the so-called ICT Digitization of HRM practices from both a theoretical-conceptual and empirical-methodological perspective. Moreover, some declinations of the most relevant aspects inherent in the HR digitization process are also analyzed and discussed. (Cherep et al.2022)

The field of Human Resources (HR) has experienced a slow but steady transformation of its traditional practices and work procedures due to the spread of information and communication technologies (ICT). This phenomenon is at the base of what in the contemporary managerial language is commonly called the digitization of Human Resources Management (HRM). Nevertheless, it has always been difficult to understand exactly what is meant by this term and what are the managerial implications that concern the various HR processes. The chapter addresses this problem from both a theoretical-conceptual and empirical-methodological point of view. (Zavyalova et al.2022)

4.2 Key Technologies and Tools for HR Digitization

Arguably, the single most important lever to complement these strategic considerations with active management is the carefully considered utilization of new management concepts and workflows embedded in technology. In the process of digitization of administrative or operational procedures (at HR or otherwise) – the topic of this chapter – the strategic aspects are generally substituted by more immediate considerations about

process efficiency (end-to-end cycle duration, error rates, etc.) and cost savings. At the human resources level, several existing HR practices, such as recruitment, performance management, or even the design of new learning experiences, are being considered for digitization or outright automation.

Digitization and transformation – both at the corporate and human resource levels – are not new phenomena. For decades, business enterprises have contended with increasing change in their business environment and have sought to gain the advantage over their competition by enlarging their core business area, developing new competencies, and securing new partnerships, either by leveraging or rethinking their primary assets, organizational capabilities, and strategic initiatives.

4.3 Best Practices and Case Studies in HR Digitization

Despite the movement toward HR digitization, there is as yet no specific strategy for an MSSC in HRM. It is particularly difficult these days to obtain a systematic and integrated vision of the HR state that reflects the organization's strategic objectives. It would be wise for organizations to lean on HRM standards and best practices or to make use of benchmarks to effectively judge their managerial talent. The HR digital practice standardized by best practices permits this approach, as it facilitates a sound evaluation. To do so, it is necessary to choose these from the international HRM repository that is being developed.

Each organization that is beginning the HR digitization journey must answer questions of broad focus linked to the current state of HR management in the company and its future direction. It is never easy to develop a new vision of HR management for the organization. However, one must not go it alone. One cannot afford not to collaborate with Human Resource Information System (HRIS) professionals or business consultants with expertise in HRM. Once clear goals and fundamental directions for the HR management of the organization have been defined, it is still necessary to make use of the standards and the best practices available on the market. (Jemine & Guillaume, 2022)

4.4 Future Trends and Implications for HR Professionals

There are three forces that drive organizations – the quest for human knowledge, the global economy, and companies' desires to increase some of their assets – but the rising

rates of employee attrition threaten to derail these trends. Passive programs sponsored by the government have dampened the negative impacts of a tight labor market but have not erased the symptoms of tight labor markets. There are no apparent signs that our economy is going to slow down, that we will no longer be in a global economy, or that companies will have a different focus, so we have to find ways to send this train in another direction. HR professionals need to find ways to attract, retain, and develop employees so that employees will give their effort, knowledge, skills, and abilities to their employers on a continuous basis. One solution may be to digitize some HR practices. In this chapter, the third in an ongoing series, the author discusses what different organizations are doing, presents a brief discussion of some advantages and potential disadvantages of digitizing HR practices, and concludes with implications for HR professionals and a discussion of potential future research.

As we continue the transition from the industrial economy to the information economy, the need for new human resources practices becomes urgent. It is becoming increasingly difficult to find and retain employees, and employees are more willing to quit their jobs and take their knowledge, skills, and abilities elsewhere. Organizations must find new ways to attract, retain, and develop employees. The transition from the industrial economy to the information economy is facilitated, and in some cases driven, by the ability to digitize information. This chapter begins with a brief explanation of the ideas behind digitization and concludes with implications for HR professionals, including potential research questions in the HR field. Some examples of new information technologies that are related to digitization are presented in the next chapter, which can serve as a jumping-off point for examining new ways of attracting, retaining, and developing employees. (Williams, 2021)

CHAPTER 5. Methodology of Dissertation

What is Scientific Research

Scientific research is an orderly and systematic inquiry in which, through the rigorous application of a set of methods and criteria, the study, analysis or investigation of a topic or subject is pursued, with the consequent aim of increasing, extending, or developing the knowledge you have about this.

The fundamental goal of scientific research is the search for solutions to specific problems: explaining phenomena, developing theories, expanding knowledge, establishing principles, reformulating approaches, conflicting results etc.

Therefore, research uses the scientific method, which is a tool to proceed with the analysis and investigation of the problem posed in a structured and systematic way.

In this sense, the methodology includes a series of steps or stages in order to demonstrate the validity of the results obtained. The stages of scientific research are, in general, the following: problem identification, background research, observation, hypothesis demonstration, and conclusions.

Scientific research consists of three main elements⁶⁷

Subject of research. It refers to the topic or subject that it is going to investigate and will be the subject of detailed analysis.

Half. A set of resources, methods and techniques appropriate to the type of research and the issue to be addressed.

Purpose of the research. It refers to the reasons that motivate the research, i.e. its final purpose. For example, what benefits will some knowledge bring to society?

The research methodology

The research methodology names the parameters of the researcher's effort, referring to the general methodological approaches, at media, methods, techniques, materials and procedures, which will be chosen to conduct the investigation⁶⁸.

That is, research methodology is the understanding of its scientific research process:

- The way to design a survey?
- How an investigation will be conducted?

⁶⁷Verma &Mallick, 2004:43

⁶⁸Dimitropoulos, 2001:37

Elements of research design

The elements of research design are summarized⁶⁹

- Definition of research issue
- Literature review
- Ethical issues
- Research limitations (e.g. time-frame, data access)
- Goals and objectives
- Desired results
- Nature of phenomena towards investigation
- Research questions
- Research methodology
- Research policy/audience
- Research Tools & Sampling
- Information sources that are required
- Reliability & validity data
- Research priorities
- Analysis/verification/data validation
- Reporting/research writing.

Methodological Research Distinction

The research methodologies are generally distinguished into⁷⁰:

- Quantitative
- Qualitative.

The qualitative research methodologies are non-reactive (discretionary) research (social Sciences), with content analysis, statistical analysis, comparative historical research) and field research (social sciences) observation.

The quantitative research methodologies are controlled experiment (natural sciences), descriptive research: Sampling research (social Sciences), observations, questionnaire for individual completion, interview questionnaire, telephone surveys, online surveys.

⁶⁹Cohen & Manion, 1994:23

⁷⁰Dimitropoulos, 2001:52; Creswel, 1998:35

For the current study, a literature-based survey has been selected. This is likely to be the methodology of selecting and discussing theoretical material and descriptive material in context and a detailed comparison of theories in terms of their applicability. The focus is not on discovering something but on reaching a judgement about the value of published concepts or theories.

According to Mark Easterby-Smith⁷¹ a literature-based survey is an essential component of academic research, providing a solid foundation for new studies. By following the structured approach outlined in "Management and Business Research" 5th Edition, researchers can systematically review existing literature, identify research gaps, and contribute meaningfully to their field.

Purpose of a Literature Review:

- **Definition and Importance:** The literature review provides a critical evaluation of existing research and helps to establish the context and relevance of your own study. It identifies gaps, inconsistencies, and the overall landscape of current knowledge in the field.
- **Main Purposes:** According to Mark's Easterby-Smith book, Management and Business Research 5th Edition the main purposes of a literature review are to understand the state of the art, justify the research question, and demonstrate familiarity with the field.

Finding Relevant Literature:

- **Sources:** The chapter outlines various sources for literature, including academic journals, books, conference papers, and online databases like Google Scholar, PubMed, and Scopus.
- **Search Strategies:** It emphasizes the importance of developing a robust search strategy using keywords, Boolean operators, and citation tracking to ensure a comprehensive search.

Evaluating Literature:

⁷¹https://www.academia.edu/32587216/Management_and_Business_Research_5th_Edition_by_Mark_Easterby_Smith

- **Criteria for Evaluation:** It provides criteria for evaluating the quality and relevance of the literature, including the credibility of the source, the methodology used, the clarity of the findings, and the significance of the study.
- **Critical Analysis:** The chapter encourages critical analysis, not just summarization. This involves questioning the assumptions, methodologies, and conclusions of existing studies.

Synthesizing Literature:

- **Organization:** Techniques for organizing the literature thematically, methodologically, or chronologically are discussed. This helps in constructing a coherent narrative that supports your research question.
- **Integration:** The synthesis process involves integrating findings from various studies to offer an precise overview of the topic, highlight trends, and identify gaps in the research.

Writing the Literature Review:

- **Structure:** Guidance on structuring the literature review is provided, typically including an introduction, main body (organized around themes or debates), and a conclusion that summarizes the findings and sets up the research question.
- **Citations:** The importance of proper citation and referencing is emphasized to acknowledge the work of other researchers and avoid plagiarism.

Conclusion and Further Reading:

- **Conclusion:** The chapter concludes with a summary of key points and practical tips for conducting a successful literature review.
- **Further Reading:** It provides references to additional resources and readings for those looking to deepen their understanding of literature review methodologies.

In addition, The Technische Universität Berlin⁷² provides a comprehensive guide on the systematic literature review (SLR) method, which is designed to identify, evaluate, and synthesize all relevant literature on a specific topic. Here's an overview of the key elements covered.

⁷²<https://www.tu.berlin/en/wm/bibliothek/research-teaching/systematic-literature-reviews/description-of-the-systematic-literature-review-method>

Definition and Purpose of Systematic Literature

A systematic literature review is a rigorous method aimed at summarizing the existing research on a particular question. It involves a structured and transparent approach to collecting, critically evaluating, and synthesizing research studies to provide a comprehensive understanding of the topic. The primary goals include:

- Demonstrating the current state of research.
- Identifying gaps in the existing literature.
- Formulating new research questions.

Steps to be followed when it comes to Conducting a Systematic Literature Review:

- **Formulating the Research Question:** Clearly define the research question to guide the review process.
- **Developing a Protocol:** Create a detailed plan outlining the methodology, including criteria for selecting studies, search strategies, and methods for data extraction and analysis.
- **Conducting the Literature Search:** Use multiple databases and sources to ensure a comprehensive search. Common databases include PubMed, Web of Science, and Google Scholar.
- **Selecting Studies:** Apply inclusion and exclusion criteria to filter relevant studies. This process is typically conducted in multiple stages, including title and abstract screening followed by full-text review.
- **Data Extraction:** Systematically collect relevant data from the selected studies, often using standardized forms or software.
- **Quality Assessment:** Critically appraise the quality of the included studies to assess the risk of bias and reliability of findings.
- **Data Synthesis:** Integrate the findings from individual studies using qualitative or quantitative methods (e.g., meta-analysis).
- **Reporting and Dissemination:** Write a detailed report following guidelines such as PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) and disseminate the findings through academic journals and conferences.

Advantages of Systematic Literature Reviews

- **Comprehensiveness:** Provides a thorough overview of the available evidence.

- **Relevance:** Helps in identifying research gaps and setting agendas for future studies.
- **Transparency:** The systematic approach ensures that the review process is reproducible and unbiased.

Practical Applications

- SLRs are used across various fields, including health sciences, social sciences, and business research, to inform evidence-based practice and policy making.

CHAPTER 6: Digital Transformation of Human Resources Management

6.1 Human Resources and Information Technology

The relationship between human resources and information technology turns out to be particularly challenging. Unfortunately, the traditional organizational barriers between information technology and human resources management are indeed quite high, often leading to a number of negative consequences for the company: difficulty in integrating human resources and information technology strategies; increased costs and inefficiencies in automating human resources processes; ineffective and clumsy human resources information systems; reduced human resources effectiveness. Given these problems, the necessity of collaboration and alignment between information technology and human resource management to meet the challenges of the future is the same reason for a study focusing on the barriers to collaboration between IT and HR. The purpose of the paper is to investigate these issues, trying to understand how a good collaboration between these two functions can lead to competitive advantages for firms.

Over the past years, many organizations have found that an integrated strategy between human resources and information technology provides a useful way to tackle business challenges. In such organizations, contributing strategically to the organization's goals, being flexible and innovative, and being able to compete effectively are recognized as key challenges. Both fields - human resources and information technology - have a significant part to play in addressing these challenges. It is widely recognized that people, in terms of their skills and inventive abilities, are crucial for any organization in order to support and adapt to the changing conditions of the market. In addition, the use of information systems and technologies has become increasingly necessary, in order to allow firms to innovate and enhance their level of service. The point is that people and computer-based technologies are two important assets for firms, and managing them effectively may lead to competitive advantage, by enabling systems and processes to generate highly specialized knowledge, skills, and attributes typical of successful companies.

From an empirical point of view, it is interesting to highlight that Spain is a country that has undertaken a very intense technological effort and is fast catching up with the most advanced European countries. However, we do not analyze all the implications and

consequences of increasing computerization and its interaction with the world of work in its two dimensions: globalization of economic processes and internal restructuring of economic units themselves. The main objective of this intervention is to present a precise idea of the dimensions to be analyzed and to expose the main theoretical approaches that seek to explain the complex reality of the interaction between HR and ICTs. Finally, we offer some methodological guidelines about the works about these topics, which we will deal with in a more concise form⁷³.

It is common knowledge that without ICTs (Information and Communication Technologies), organizations would be unable to carry out their operations. Their processes have been radically changed, and the role of their human resources has also diverged in another direction. This integration of HR and ICTs is found in every area of these organizations, and the new roles of the support departments have been transformed into a neutral structure of the traditional strategies. This is derived from the fact that it has a most internalized process, not only in terms of staffing but also in continuous management⁷⁴.

6.2 Technology as Part of the HR Function

It generally appears that the driver behind some innovations in the human resources function is the belief in technological solutions over non-technological solutions and the potential of harnessing knowledge and expertise through the use of digital technology. The new digital technology has led to the emergence of novel software and products and services support for more effective and efficient people management in the workplace. Technology helps HR executives to get more quickly and easily at the people data that they need to support the new initiatives and strategies within the business⁷⁵.

The rapid advances in information technology in the past two decades have grown immensely and produced dramatic impacts on almost all areas of human life in many parts of the world. Recent advances in artificial intelligence, computer programming, and the highly complex digital technology forming the backbone of computers, wireless

⁷³ (Hartmann et al.2021)(Sempere-Ripoll et al.2020)(Cieřlik&Wciřlik, 2020)

⁷⁴ (Parra et al.2021)(Kuzior et al.2021)

⁷⁵ (Thite, 2022), (Chowdhury et al.2023)

communication, and the internet have created several new service and product commercialization opportunities not known before. Information and communication technologies are the engines of change and the lifeblood of society and business. They are changing the way business is conducted by facilitating the rapid access, dissemination, and analysis of information vital for making sound business decisions and getting closer to customers. The traditional form of some functions within organizations, such as the human resources function, is undergoing significant reform, and the major reason for it is the rapid advances in information technology⁷⁶.

HR technology companies develop specialized applications to improve recruiting activities (such as easy-to-do administration, improvement of candidate background research, greater capacities for data mining, and developing match algorithms). Moreover, several companies are indeed using video technology applications to assess potential employers during an interview. Onboarding represents another interesting field where HR technology is expected to evolve quickly, mostly to better integrate companies and new hires. This type of HR technology can easily provide new hires with information about their duties, responsibilities, and first meetings they have to attend. Providing easy access online to formalities and documents also eases integration during the onboarding phase⁷⁷.

Another way of categorizing future developments in HR technology is through the employment/recruitment relationship spectrum. This involves all stages of the employment relationship, from employer branding to recruitment, onboarding, career management, and even termination. The advent of Web 2.0 applications (also known as 'social media') largely modified employer branding (i.e. the way companies are positioned as employers) and recruitment. For instance, more and more companies use marketing social networks for employer branding activities. LinkedIn is widely used to identify potential candidates, improving speed, quality, and cost of search⁷⁸.

6.3 Best Practices and Case Studies in HR Transformation through Communication Technologies

Sometimes, enabling a modest technological solution reduces stress and increases the bottom line. Workers who had long produced and maintained office furniture at Haworth, Inc.'s manufacturing operations were dead tired when it came to solving nitty-gritty

⁷⁶ (Vrontis et al.2022)

⁷⁷ (Biea et al., 2024)

⁷⁸ (Nikolaou, 2021)

problems from their own workstations. They had to communicate their design problems to staff who were located a short distance away inside the manufacturing building. They found the journey to solve relatively minor design problems disruptive and time-consuming and would often just let the problem slide, thereby building up blockages on the factory floor. When information is not free to move, organizations get bogged down with the kinds of barriers that prevent them from being efficient. By providing computer terminals and software that connect workers at the point of production with staff who can quickly solve problems and suggest other improvements to remaining office design problems, the organization has supported decentralized decision making while cutting back the number of minor problems that were allowed to accumulate on the factory floor. Online communication eliminated these barriers faster than they appeared and built the capability of workers to solve problems⁷⁹.

For Whirlpool Canada, when its HR staff was relocated some 12 miles from the manufacturing plant it served, HR problems began to escalate. Mounting grievances, unauthorized sick days, and an increase in repetitive strain complaints were linked with decreasing employee knowledge of the HR staff. This disengagement between employees and HR staff was seen as harmful to business in terms of insufficient staff – personnel were not able to keep up with administrative information that was redundant or solved at a lower level, which also derailed their ability to advocate and work supportively with staff in resolving more complex issues. To ease this impasse, Whirlpool established a hotline and a computer link between the HR department and the non-union staff, thereby building and monitoring staff communication with HR without requiring their physical presence there. This system relieves some of the pressure on individual HR employees and makes job tasks more rewarding, as phone inquiries are answered quickly and often eliminate the need for follow-up paperwork, meaning a single call can solve⁸⁰.

6.4 Digital Transformation

The profound influence of this digital business model has been experienced more and more extensively in related activities. The traditional enterprise business model is extremely simple. It can be said that in value chain management, it has almost no silver on the brain. On the other hand, the digital business model is a complex battle, involving a

⁷⁹ Contreras-Cruz et al., 2023, Basu and Ferreira, 2021, Carleton and Cockayne, 2023

⁸⁰ Long, 2024

changing and complex process that includes an enterprise's product innovation logic, business network logic, competition logic, resource allocation logic, horizontal value chain logic, and vertical value chain logic. Starting the enterprise digital transformation is not easy. It requires "leaving themselves, smashing the old way, and doing the traditional." In order to successfully promote enterprise digital transformation, the main responsible person of the enterprise must fully recognize its importance and urgency⁸¹.

Digital transformation generally means the technology-induced change in business and organizational activities, which seeks to create new abilities and advantages and establish actionable standards. It considers that the elements of change are not just information technology but also the process or business model as a whole, based on the combination of technologies. A company should completely change its way of management, the scope of operation, and the way of cooperation by developing and using new information technologies in a pervasive way. This investment should be made repeatedly to drive the enterprise to achieve a high transformation of sales, profits, and market share⁸².

Although most of the best practices shared in this chapter by the case study organizations have been discussed by the respondents of this research, some new insights and details enrich this chapter. Despite the various maturity levels of transformation initiatives, case study participants provided input on successful initiatives, activities, characteristics of the change, and approaches, conclusions, and learning experiences gained. Even politically sensitive topics such as job reductions can be discussed in terms of the impacts on employees and anticipated changes to work processes and the organization in a calm and professional atmosphere. It is essential not to terminate this topic abruptly, however. Publishing the roadmap improves transparency and is rated by the organizations as having a positive effect on the corporate culture. It also helps to reduce insecurity among employees. The case study organizations also believe that a roadmap increases the trust employees have in the success and acceptance of the transformation initiatives. It is essential to stipulate realistic time frames in this roadmap, and to carefully consider how thorough the information and communication measures included in it are when developing

⁸¹ (Rohn et al.2021)

⁸²(Rodriguez-Lluesma et al.2021)(Ubiparipović et al.2023)

the document. Ultimately, the roadmap must perfectly reflect the nature of the organization⁸³.

6.5 Benefits of Digital Transformation

Personalizing employee benefits with a focus on flexible benefit plans can lead to several advantages, such as higher employee motivation, satisfaction, and retention; increased firm performance; and cost savings. Flexible benefit plans can also help employees find an optimal work-life balance. In a flexible benefit plan, the traditional one-size-fits-all compensation model is replaced with a theory-focused model that values employee renewal, growth, and personal well-being. Research shows that such personalization can lead to a more secure financial position for employees, especially in a multi-generational workforce in which the life cycle stages differ among the workers. This flexibility is especially important due to the labor market dynamics. The competition for talent is getting tougher, and employers need to find other ways to attract and retain employees. One way to do this is by personalizing their benefits to the employee's personal needs. A flexible benefit plan offers the ability to tailor a benefits package to an employee's changing needs and life stages⁸⁴

In the modern workplace, employees expect more than just a good salary. They also want to receive benefits that perfectly match their personal needs. Employees are more satisfied and motivated when the benefits most important to them are personalized to their specific situation. One way for employers to offer personalization is to offer flexible benefit plans. This is where HR technology comes into the scene; it delivers innovation by digitizing benefits administration and by providing employees with efficient, self-service tools⁸⁵.

Benefits and challenges of integrating HR and IT: For a long time, human resources processes have been operated in isolation from each other. There is a very good reason for the independence of these process subjects. In personnel administration subject, personal information is much more qualified; therefore, it is necessary to be very confidential and it cannot be shared even in the human resource department. Consequently, non-operational units were structured in human resource departments irrespective of the size of these organizational structures in organizations. Accurate and empirical information is obtained thanks to the new on-specialist system which is integrated in these applications. Thus,

⁸³(Zoppelletto et al.2023)

⁸⁴ Baker, 2020 and Adeoye, 2024&Qiu et al.2021

⁸⁵ Milton2024

using this information in other processes of human resource management is possible. The on-specialist system attempts difficult fiscal, legal, and organizational tasks. By using information technologies, physical work is eliminated. Accuracy and inter process-information revenues improve by being controlled on a regular basis. A high degree of automation of the recruiting process is possible by using the might of the Internet. Small companies or companies which have a low-ability human resource department cannot embark on recruitment work easily; their costs rise, and this work is conducted intermittently. Usage of information technologies in human resource management decreases the cost of operations as well as their duration⁸⁶.

Objectives of the study: The aim of this research is to identify the integration of human resources management and information technologies and explore how information technologies help in human resource management. Additionally, this research is carried out to determine the progress of information technologies used in human resource management, the opportunities provided by these technologies, the challenges and problems that human resource managers face in human resource administration, and the significance created by the merging of human resource management with information technology⁸⁷.

6.6 Challenges of Organizations Transitioning to Digital HR

Organizations in the past have focused on more significant challenges such as revenue, competition, and economic instability, with a clear lack of attention to human resources. However, with changing business models and industries, digital human resources have become the main focus as organizations realize the importance of manipulating the workforce to influence growth and success⁸⁸.

Manage Change

The nature of the organizations is to incorporate changes . Their implementation needs a long-term plan, which is very challenging for HR. The change may be economic, procedural, technological, geographical, managerial and structural.

Regardless of the type of change, HR teams face significant issues in terms of decreased employee morale and satisfaction, self-doubt, and management attrition. Failure to adapt

⁸⁶ (Vahdat, 2022)

⁸⁷ (AlHamad et al.2022).

⁸⁸Ιορδάνογλου, 2008; Μπουραντάς, 2015; Mouroutsos, 2020

to change may be due to workers' resistance to change, lack of the necessary skills and training to adapt to change, sudden but drastic demands for change etc.

The solution

One way to change management effectively is frequent and transparent communication the whole period of change. Significant warning of upcoming changes and equipping workers with the necessary skills and strategies to respond and overcome them is required. It is also considered appropriate to involve employees in decision-making and to communicate the reasoning behind the changes.

Considering different scenarios that could affect the business model and work processes may benefit the development of alternative plans to address these scenarios as they arise in order to minimize the impact. In addition, adaptability skills enable the firm or organisation to adapt to changes in the industry as well as to changes within the firm itself. They allow them to respond more quickly to new ideas, responsibilities, expectations, and strategies. As a result, they may be critical to the implementation of a change management strategy. Key skills that promote adaptability in the workplace include communication, relationship building, problem solving, creative and strategic thinking, teamwork and organisation and productivity.

Retraining and skills upgrading

Keeping up with the pace of digital transformation is a major challenge facing the workforce, because the integration of the latest technologies not only brings strong business opportunities but also creates challenges and skills gaps for the current workforce.

The solution

To remain competitive, an organisation must have a workforce with the right skills to be productive, innovative, and ultimately more profitable. Creating a learning and development initiative on upskilling and retraining of employees is one way to ensure that the workforce has the skills needed to thrive and help the organisation or business grow.

Re-skilling is a process where employees learn new skills to move into a different job role within an organisation or to meet the new demands of a current role. On the other hand,

skills upgrading is the process of learning new skills and acquiring relevant competencies required for the current working environment and the near future.

Re-skilling is a complex task requiring strategic planning. However, providing the right skills for the future, developing effective training programs, and building a culture of continuous learning and development enables organizations to successfully upgrade their workforce.

Building digital competence

The last decade has seen a scale of digital transformation of human resources across organizations as companies upgrade their legacy processes and systems to new cloud technologies. These new software applications help to automate processes, promote innovation, and improve worker efficiency and productivity. The ability of the workforce to adopt these new software applications or technology designed to make them more efficient is called digital literacy.

Cloud technologies offer unlimited opportunities for data exploitation while saving resources, so that public services do not need to buy software or expensive servers and data storage facilities. In addition, the Commission will continue to monitor the implementation of the reform of the common agricultural policy and the implementation of the reform of the common agricultural policy. Finally, the adoption of cloud computing technologies promotes the digitization of public administration and contributes to digital governance.

The solution

Building digital competence is an organization's insurance policy for achieving a return on investment with digital technologies. Without the skill sets to use software applications correctly, technology investments will not only fail to get a return on investment, but will also face other serious consequences, such as inaccurate data, non-compliance with compliance laws, failure to achieve objectives etc.

Remote workforce management

As it has already been mentioned, the outbreak of the COVID-19 pandemic brought many changes to the world, but the most visible impact of this was the rapid adoption of the remote working culture. The adoption of the remote working culture has become the norm

for organizations. Providing employees with flexible working arrangements gives companies the advantage of attracting top talent. However, some workforce groups still struggle to maintain a productive remote workforce in their organisation⁸⁹.

The solution

The key to effective remote workforce management is to practice open communication, maintain employee loyalty, monitor team productivity, and avoid loss of efficiency. All these factors can be achieved with the right tools and knowledge and a little ingenuity⁹⁰.

⁸⁹(Vardarlier2020)

⁹⁰(Kong et al.2022)

CHAPTER 7: Digital Transformation and HR Function in Greece

7.1 Integration of Digital Technology in Greece

Our nation's current ranking in the European Union, as derived from the Digital Economy and Society Index (DESI), is 27th out of a total of 28 member countries. The European Commission's answer to the question as far as the factors contributing to a country's digital status are concerned, as described in the 2018 DESI, includes several dimensions. These dimensions include the country's performance in terms of connectivity, specifically in terms of broadband accessibility. In addition, the assessment considers the country's human capital, which includes the degree of internet usage and proficiency in digital skills. Moreover, the evaluation shall consider the use of online services, the integration of digital technology and the promotion of digital public services⁹¹. According to Mariya Gabriel, the esteemed Commissioner for the Digital Economy and Society, it has been observed that the European Union has made remarkable progress in its digital performance. It is noteworthy that the difference between the countries with the highest and the lowest level of digitization showed a marginal decrease, namely from 36 to 34 units. The nations of Denmark, Sweden, Finland, and the Netherlands have emerged as digital frontrunners, as evidenced by their outstanding performance in the DESI 2018 rankings. These countries have established themselves as world leaders in this field. Luxembourg, Ireland, the United Kingdom, Ireland, Cyprus, and Spain have made remarkable progress, exceeding the improvement of 15 units over the last four years, as Bousdekis and Kardaras point out⁹². However, it is worth mentioning that some Member States within the European Union still have a long way to go to achieve the desired results. Furthermore, it is imperative to recognize that the European Union as a whole needs to make significant improvements in order to strengthen its global competitiveness.

⁹¹Karagiannaki et al., 2017

⁹²Bousdekis, A. and Kardaras, D. (2020). Digital Transformation of Local Government: A Case Study from Greece. 2020 IEEE 22nd Conference on Business Informatics (CBI). [online] doi:<https://doi.org/10.1109/cbi49978.2020.10070>.

Bousdekis, A. and Kardaras, D. (2020). Digital Transformation of Local Government: A Case Study from Greece. 2020 IEEE 22nd Conference on Business Informatics (CBI). [online] doi:<https://doi.org/10.1109/cbi49978.2020.10070>.

The above observation is developed in a comprehensive analysis conducted by the prestigious McKinsey Global Institute. It states that the increase in global data flows has caused a remarkable increase of over 10% in global Gross Domestic Product (GDP). However, it is worth noting that Europe has so far only tapped a fraction, namely 12%, of its latent capacity in the field of the data economy. One of the fundamental prerequisites for successful outcomes is the availability of high-quality data. The persistent shortage of skilled personnel in the sector remains a pressing problem, as evidenced by the significant number of 449.000 in absolute figures for the year 2017. This shortage is expected to escalate significantly, exceeding the impressive 2 million threshold by the year 2025. This issue is gradually becoming more complex, as building trust plays a key role in facilitating business models based on sustainable data. The assessment of Greece's level of digitization is rather discouraging, as it currently ranks 27th out of the 28 EU Member States in the aforementioned index.

7.2 Digital Transformation in the HR Department of Greek Companies

Greece is at a critical point in its digital transition journey. The strategic roadmap for 2020-2025 aims to enhance Greece's economic competitiveness and societal resilience, although notable gaps in various dimensions still demand effective interventions. The adoption of new technologies like AI (and especially Generative AI), their impact on companies, environmental and social responsibility strategies, and also the possibilities and outcomes of open innovation initiatives are what Greek companies are focusing on at the moment.

To fully leverage on artificial intelligence tools, an organization's workforce must develop some new skills, while its leadership team must also be in a position to deeply understand the new technologies and envision their usefulness and ROI for their organization. A fresh approach to organization and mindset is crucial for this journey. All those transformation practices will be used to examine what it takes to become more efficient. Continuous learning and ample opportunities for employees to enhance their skills and stay updated with the latest advancements in technology are important for every company. Encouraging its workforce to acquire fresh skills, any organization stands a chance to boost the effectiveness of technological devices and propel progress⁹³.

⁹³<https://thefoundation.gr/innovation-platform/our-publications/digital-transformation-in-greece/>

Ο Ψηφιακός Μετασχηματισμός πολύ σημαντική συνεχή στρατηγική ανάπτυξης

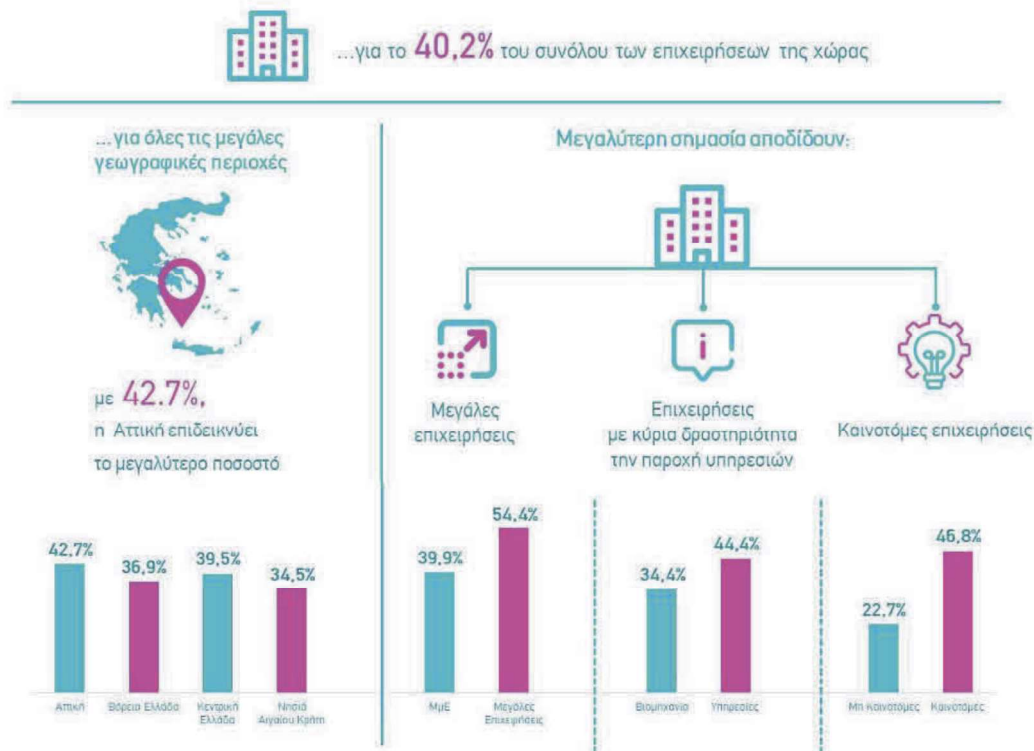


Figure 1: Digital transformation as very important continuous development strategy of MetricsEKT

[Source:https://metrics.ekt.gr/sites/metrics-ekt/files/ekdoseis-pdf/2022/EKT_DigitalTransformationBusiness_2018_2020_el.pdf]

7.3 Digital Transformation in Public Sector vs Private

Both sectors must learn from each other in order to exploit the full potential of digital transformation, improve institutional capacity, and the way services are delivered to citizens or customers, tailoring services to them. This chapter covers the digital transformation in the public sector vs the private one and compares two different institutional points of view in terms of interoperability and data governance.

Information technology (IT) influences our modern world, our society, individuals, industries, and economy. IT changes the way we do things, like access public services, interact with other people, and control devices like a mobile phone. In the public sector, e-government with electronic document management, electronic budgeting and accounting, electronic procurement, standards in interconnecting data sharing, and workflow management give an opportunity to unify the government's processes, procedures, and provide the best possible services, improving its public value. Digital transformation can generate huge economic benefits and opportunities in the public administration sector. It is the way government engages, delivers, and empowers.

Generally speaking, public services are being upgraded, including Citizen Service Centres (CSCs) and the creation of the gov.gr website. CCPs will undergo a technological upgrade, including digital cash registers and CRM software. The gov.gr website provides a single portal for access to government services. There are also initiatives to enhance transparency in public administration.

Training programs for OTA officials

To meet the needs of local governments, the Institute of Public Administration offers various training programs for public officials and municipal staff. The training focuses mainly on targeted issues of importance to municipal councils and planning committees, such as urban planning and zoning, legal issues, economic development, and sustainability.

One of the key prerequisites for accelerating the digital transformation of the country is the development and strengthening of the digital skills of the workforce, as continuous training and acquisition of new knowledge is necessary in any work environment⁹⁴.

In this context, the Ministry of Digital Governance, the responsible one for the digital transformation of the country, through the initiative of the National Alliance for Digital Skills and Employment, collaborated with the Ministry of the Interior Affairs, the relevant ministry with responsibilities for the exploitation of human resources in the public sector, and the National Centre for Public Administration and Self-Government, the strategic body for the training of civil servants and employees of Local Government Organizations, on a series of educational programs addressed to public sector executives. The public sector executive training program envisages that by 2025, more than 20,000 public sector employees will have been trained in basic and specialized digital skills in cloud computing technologies (skilling, upskilling, reskilling) through the Microsoft “GR for Growth”

⁹⁴<https://www.nationalcoalition.gov.gr/good-practice/epimorfosi-ton-stelechton-tis-dimosias/>

initiative. The initiative was launched in June 2021 and to date, 73 training programs have been implemented and 1950 Public Administration and Local Government officials have been trained. In accordance with the programming for the period from 1st of April 2022 to 30 June 2022, 38 Microsoft training programs were available in the above-mentioned discrete subject areas in which approximately 1,300 executives are expected to participate.

The programs were addressed to Public Administration and Local Government officials with computer science-related studies or work. Participation in the programs and the possibility of obtaining the corresponding certification is free of charge, and the training is provided in Greek and English. The first phase of the program, involving 3,000 civil servants, was completed in June 2022.

It is the first time that such a large number of government officials have been trained in cutting-edge technologies. Considering that more than 20.000 civil servants will be trained in basic and specialized digital skills in 'cloud computing' technologies by 2025, the courses are not limited to general government employees but are also aimed at local government employees. The free participation of civil servants in such training without any geographical restriction is also encouraged. Since the courses are both face-to-face and online, employees from any part of the country can access them online.

In addition, the action encourages the adoption of cloud technologies in the daily administrative processes of the Greek public sector. Cloud technologies offer unlimited opportunities for data exploitation while saving resources, so that public services do not need to buy software or expensive servers and data storage facilities.

In addition, the Commission will continue to monitor the implementation of the reform of the common agricultural policy and the implementation of the reform of the common agricultural policy. Finally, the adoption of cloud computing technologies promotes the digitization of public administration and contributes to digital governance.

It is worth noting that for the first time, so many actors (three from the public sector and one from the private sector) are joining forces to design and implement a long-term public policy. There is central planning with specific numerical targets taking advantage of the strengths of each sector. At the same time, as cloud computing services are constantly evolving, Microsoft's presence in this collaboration ensures that the training material is constantly updated with the latest developments.

Current State of Digital Transformation in the Public Sector in Greece

Many Greek citizens are using electronic services to interact with the state, and as the public administration is moving towards digital transformation, the successful integration of information communication technologies (ICTs) into decision-making processes is one of the most important challenges. The European Commission stresses the importance of e-Government and views the objective of the 2016-2020 e-Government Action Plan as "to digitally enable more efficient and effective delivery of secure cross-border eServices to citizens and businesses." Despite the availability of digital transformation in the public sector in Europe, there is limited evidence on the current state of the Greek public sector, which is, by nature, different compared to its peers in the private sector, the extended public sector, and the public administration.

Using the eGovernment data that the European Commission produces every year, we were able to conclude that Greek citizens are using digital government on a daily basis – much more than expected. However, Greece is underperforming compared to its peers in the availability and number of Key Online Public Services (KOPS) offered. The objective of this research would be to clarify the performance factor of the Greek state and to highlight its drivers that could help public policy and administration increase the general satisfaction of its citizens, the quality, and the efficiency of KOPS. As it turns out, although digital transformation can have a positive impact on the delivery of public services by the state, the Greek state is underperforming in the domain of Adoption E-Government Performance — GDP, as well as eGovernment Use eParticipation. Also, the Multivariate Probit Analysis for the use of Key Online Public Services highlights that Pension and Health Services are the prime choice for the elderly.

Current State of Digital Transformation in the Private Sector in Greece

The private use of technology has developed extensively. It is widely used to cover life's needs but also specific business operations. The private sector is driven by the need to speed up processes, increase data security and control, simplify and optimize their internal processes, become flexible and adapt to a changing macro environment, change the routes their processes follow, and exceed existing limitations by establishing and expanding e-market presence and alternatives (e-commerce). Consumer behavior has evolved. Modern life has increased the need for speed in services and products, at a cost as close to zero as possible, in a secure environment. The public must also react to trends and cover the

expectations of the private sector by providing public services that exceed customer expectations.

The efficiency and effectiveness of public administration depend on the degree of digital transformation it embraces. Digital transformation currently concerns the private sector more than the public. However, digital transformation does not concern both the public and private sectors in Greece as much, regardless of the velocity and degree of transformation achieved, compared to other countries as well as international standards. Quite the opposite, they are both lagging behind. The world is constantly changing, with technology leading to a new political, economic, and social reality, reshaping structures and human life. It is now necessary, more than ever, for citizens to receive public services adapted to their lifestyles and needs. Also, in order for public administration to become efficient and effective in covering social needs, a change in the public-private relationship is necessary.

CHAPTER 8. Conclusions of Dissertation

8.1 Conclusions and Practical Implications

The following findings should be noted. The transformation of an HR service through the application of technology or data and analytics should focus on specific problems that matter to stakeholders. Digitization opens the door to broader organizational transformation and will require a re-examination of the services HR is expected to provide at an organizational level and the skills required of HR professionals. On customer service, the use of chatbots (or virtual assistants) often allows employees to have answers to their questions immediately and at any time, which is appreciated. On employee relations, technology can maintain consistent and personalized communications with employees easily, distribute targeted content, and measure employee sentiment. Technology aimed at employee engagement is, for example, ensuring that the experience of an employee passes through structured and inclusive onboarding. It is an experience that starts from recruitment and goes up to the moment in which, after a certain period of time, the employee is offered a vision of the organization and of the watch that he would like to continue to play in the future. The onboarding process is divided into separate stages, each of which makes the employee feel us. We can also observe new trends in talent management, personalizing new training experiences, implementing concrete on-the-job experiences, and constantly updating the employee profile⁹⁵.

The present has investigated the impact of HR digitization on the transformation of the HR functions in the workplace. To do this, we conducted a systematic literature review on HR digitization and HR transformation to build a conceptual framework. Our study provides the following three contributions. First, we present a model for HR digitization toward HR transformation. The model contributes to the investigation of the impact of HR digitization on HR transformation in the workplace. Second, we provide an overview of HR digitization versus HR transformation compared to previous studies. We present the impact of HR digitization in various fields, including some uncertain fields, such as employee commitment/engagement, training and development, customer service, dealing

⁹⁵(Zhang & Chen, 2023)(Carlsson et al., 2022)(Walkowiak, 2023)(Dash2023)

with employee relations, etc. Finally, we suggest some lessons learned and give implications on directions for the future⁹⁶.

8.2 Research Limitations in the Field of HR Digitization

Since the late 1990s, there has been a broad organizational transformation as technologies have evolved and enabled employers and workplace systems, of how work should be described, and of indicators that future corporate systems may be changing. Currently, HR is recognized as a function that operates across various organizations in a knowledge economy⁹⁷.

The history of work has been researched by many. However, it was observed by scholars in the 19th century that it was found to be difficult and challenging for humans in the workplace in relation to others, work designs, and organization development. While others have argued that regulating society has altered and shifted the nations with respect to changes necessitating the need for work and administration to be conducted by private managers⁹⁸.

The rise in technology being used and transforming human resources has been researched by many academics over the years, with the interest becoming more popular in the 21st century. Considering work as it is comprised of the HRM processes of maintaining core workforces, how HRM can impact an organization, and with the associated research between the theory of work and human resources, concerns the relationship between how humans achieve work via their relationship within organizations.

8.3 Suggestions for Future Research Directions

Another area for HRM research can involve the integration and use of technology in the field of HR management. As such, understanding new digital technologies in HRM and the integration of disruptive digital HRM technologies are clearly new frontiers for HRM research. Processes associated with sourcing, screening, selecting, and hiring candidates, to developing a strong applicant pool, can all be channeled and enriched by technology.

⁹⁶(Senoaji et al.2024)(Hooi& Chan, 2023).

⁹⁷ (Wilton, 2022)(Chelladurai & Kim, 2022)

⁹⁸ (Skultans, 2022)

They also then increasingly give human resource departments the ability to make comparative, quality-based decisions. As this domain becomes increasingly piecemeal, HRM research can undertake comparative high-quality evaluations. The implications of the digital management of information on government and corporate strategies, structures, and cultures have yet to be fully understood. Only by continually comparing what we know about the digital aspects of working in close integration with the broad field of HRM will the debate within the field of HRM on the challenges and opportunities afforded by the one be progressed⁹⁹.

Moreover, Human Resource Management is a field that is highly sensitive to the uncertainties and externalities that are introduced into organizational decision making by the deployment of core technologies such as automated decision-making and algorithmic management technologies. Understanding how management control influences employee behavior and under what conditions automation brings algorithmic decision-making benefits is now part of the HRM domain. Another research stream concerns that, HRM and the choices that are made with respect to employees' collaboration and communication technologies are crucial for employee well-being and health. In our world of increasingly unbounded work hours, non-stop work weeks, and 24/7 availability, particular attention is required to the ways employees wage the battle against the negative effects of non-stop internal work communications. The advent of messaging technologies, even those designed to be temporary, has consequences that span private, work, and broader society.

One possible research stream stems from the fact that HRM increasingly concerns the use of collaboration technologies with the aim of augmenting traditional workplace roles. Despite the fact that new workplace technologies, from email to virtual work-tools, have been used extensively for several decades and are a core concern for HRM, little academic work has focused on them. Indeed, despite recognition that HRM needs to consider how employees use, are engaged with, and adapt to using new technologies, the domain undertheorization of workplace technologies offers little guidance. These emerging areas, marked by technology that facilitates interactions within and across organizations, are key areas where HR needs to understand and manage how organizational members engage with and co-create value from contemporary workplace technologies¹⁰⁰.

⁹⁹ (da et al.2022)

¹⁰⁰ (Budhwar et al.2022)

The potential for new types of data and methods, such as observational data traditionally used in other research literatures, using quasi-experimental and experimental research methods, using natural language processing, and analysis of 'big data' in HR research is evident. As we have highlighted, HR digitization is reducing the cost of recording, storing, and analyzing people-related data. As such, future HR management research can conduct large-scale data analyses that would have been prohibitively costly in the past. Pioneering works might use traditional research methods but applied at a much larger scale (e.g. meta-analysis or lab experiments surveyed to a larger population). Additionally, the large-scale datasets that are now available allow researchers to quantify smaller scale variations within organizations (e.g. wage effects by department). While traditional HR management journals receive many data-heavy submissions, large datasets also allow researchers to investigate a broader range of research questions, beyond those that assess the relationships between HRM practices and firm performance¹⁰¹.

¹⁰¹ (Di et al.2024)

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