

Open University of Cyprus

Faculty Economic and Management

Postgraduate Programme of Study *Master of Business Administration (MBA)*

Master's Dissertation



Covid 19. The pandemic effect to real estate market. Crisis, new opportunities and new trends to office buildings.

Panagiotis Katsiavaras

**Supervisor
Antonios Georgopoulos
June 2023**

**Open University of Cyprus
Faculty Economics and
Management**

Postgraduate Programme of Study *Master of Business Administration (MBA)*

Master Thesis

**Covid 19. The pandemic effect to real estate market. Crisis, new opportunities and new trends
to office buildings**

Panagiotis Katsiavaras

**Supervisor
Antonios Georgopoulos**

This Master's Dissertation was submitted in partial fulfillment of the requirements for the award of the
postgraduate title
on Business Administration (English MBA)
by the Faculty of Economy and Management
of the Open University of Cyprus.

June 2023

Abstract

This study aimed to investigate the ramifications of the COVID-19 pandemic on the transformation of businesses and office facilities, as well as the resulting reorganization. Utilizing a qualitative approach, the research collected data through interviews with five companies of varying sizes (1 medium, 3 large, and 1 small). A thematic analysis was performed to identify key themes and patterns emerging from the interview data. The main findings of the study revealed that businesses had to adapt to remote work, leading to reorganization of office spaces and an increased emphasis on digital transformation. Companies reevaluated their office space needs, opting for smaller, more sustainable spaces, and focused on ensuring business continuity and efficiency. The pandemic accelerated digital transformation, with businesses embracing digital tools for collaboration and communication, automation, and data-driven decision-making. The study also highlighted cost-saving opportunities and the need for businesses to align with global trends and challenges. In conclusion, the COVID-19 pandemic has significantly impacted the way businesses operate and utilize office spaces, driving a shift towards remote work, digital transformation, and flexible working arrangements. Businesses must continue to adapt to these ongoing changes to remain competitive and resilient in the post-pandemic world. However, the study's small and non-diverse sample size and qualitative methodology limit the generalizability of the findings, suggesting the need for further research with larger, more diverse samples and mixed-methods approaches to better understand the pandemic's long-term implications for businesses and office facilities.

Key Words: COVID-19 pandemic, Business transformation, Office facilities, Workspace reorganization, Global trends and challenges.

Contents

Chapter 1	8
Introduction	8
1.1 Study's Background	8
1.2 Research Objective and Questions	10
1.3 Significance of the Research	10
1.4 Thesis Structure	10
Chapter 2	12
Literature Review	12
2.1 Business Reorganization	12
2.2 Reasons for Business Reorganization	13
2.3 Business Reorganization Process	14
2.4 Strategic vs Functional Reorganization	17
2.5 Digital Transformation	20
2.5.1 Impact of Pandemic on Digital Transformation	20
2.6 Synopsis: The Post-COVID Era for the Business	24
Chapter 3	26
Research Methodology	26
3.1 Research Design	26
3.2 Research Philosophy	26
3.3 Type of Research	27
3.4 Research Sample	27
3.5 Research Tool	27
3.6 Data Analysis	28
3.7 Research Ethics	28

Chapter 4	30
Research Data.....	30
Chapter 5	32
Discussion of the Results.....	32
Chapter 6	39
Conclusions and Recommendations	39
6.1 Recommendation for Business	42
6.2 Study's Limitations and Recommendations for Future Research	43
References.....	44
Appendixes	50
Appendix A: Interview Guide	50
Appendix B: Participant's Information Sheet	52
Appendix C. Interviews Transcript	53
Participant 1	53
Participant 2	54
Participant 3	57
Participant 4	58
Participant 5	61

Chapter 1

Introduction

In December 2019, a new virus (SARS-CoV-2) appeared, starting in Wuhan in China. The easy spread of the virus among people resulted in the World Health Organization (WHO) declaring it a global pandemic under COVID-19. The virus affects people of all ages, and to date, nearly 633 million people have been infected, and more than 6 million have died (World Health Organization, 2022).

More specifically, on December 31, 2019, the Chinese government confirmed that health authorities deal with dozens of cases. Days later, researchers in China identified a new virus that had infected dozens of people in Asia. Health officials in China said they were monitoring the phenomenon to prevent the outbreak from developing into something more serious. On January 11, 2020, Chinese state media reported the first known death caused by the virus (Ciotti et al., 2020).

The first confirmed cases outside mainland China were in Japan, South Korea, and Thailand, according to the WHO's first status report. While a few days later, the first confirmed case in the United States was found in Washington State, where a man in his 30s developed symptoms after returning from a trip to Wuhan. On January 23, Chinese authorities blockaded Wuhan by canceling planes and trains leaving the city and suspending buses, subways, and ferry boats within it (Ciotti et al., 2020).

In late February, Europe experienced its first significant outbreak as the number of reported cases in Italy rose rapidly. In the Lombardy region, officials locked down ten towns after a spate of cases suddenly appeared in towns southeast of Milan. By April 2, 2020, the pandemic had struck more than a million people in 171 countries on six continents, killing at least 51,000. The pandemic has put nearly 10 million Americans out of work in just a few weeks, the most since 1982. Japan, the world's third-largest economy after the United States and China, fell into recession for the first time since 2015. Its economy shrank by 3.4% while Germany, Europe's largest economy, also fell into recession. Its economy suffered the worst contraction since the 2008 global financial crisis, contracting by 2.2% in January-March 2020 compared to the previous quarter (Ciotti et al., 2020).

1.1 Study's Background

The ongoing COVID-19 pandemic has posed a severe health and economic challenge, bringing economic insecurity to businesses, consumers, workers, and society at large. The effects of the pandemic

on critical sizes of Greek businesses were enormous due to a large number of vulnerable Small and Medium Enterprises (SMEs) in Greek territory. Despite the long period of adjustment, it suffered during the 10-year economic crisis, the Greek economy did not resolve its structural pathologies. Greece's economic model remained weak, creating negative expectations for the future impact the pandemic would have on the domestic economy (Grant Thornton, 2022).

Minimizing the financial impact of businesses requires correct strategic choices and utilizing digital solutions of the 4th Industrial Revolution to the maximum extent possible. These technological solutions offer a high degree of interoperability and information sharing, automatic monitoring and analysis of field data in commercial enterprises, and the possibility of optimizing the supply chain (Ross and Maynard, 2021).

On the other hand, the importance of Human Resource Management became particularly evident after the challenges posed by the pandemic. Work models have changed rapidly, and companies have been forced to design the right strategies to support employees and manage remote work, hours, and costs (Deloitte, 2021). The practices until now have been about managing employees at the workplace rather than at home. Therefore, they had to be modified and meet the new requirements, such as teleworking. Also, several building facilities remained closed for long periods, remaining unused and burdening the organizations' costs.

The pandemic is now in everyone's daily life, bringing about multiple rearrangements and constant readjustments to habits, lifestyle, work, and movement. The UN International Labor Organization estimated that 140 million jobs were lost globally in the first wave of the pandemic. In contrast, during the outbreak of the second wave of the pandemic, the loss of jobs amounted to 340 million jobs (International Labor Organization (ILO), 2021). The rise of unemployment and the social crisis caused multiple large-scale effects for the need for transformation in the business and social environment.

The role and challenges in the private sector, which directly receives the effects of the pandemic, is complex as it is required, on the one hand, to maintain its viability and, at the same time, to contribute to the response to the crisis, transforming its operations (Kniffin et al., 2021). There are not a few cases where governments in different countries directly request the support of the private sector so that innovative solutions can be implemented. Governments worldwide, reacting with different reflexes and intensity, put their economies in a state of need in terms of taking measures to support the domestic economy and society as a whole (Mofijur et al., 2021).

1.2 Research Objective and Questions

The main objective of this research is to investigate in depth the ramifications that the COVID-19 pandemic has brought to date regarding the transformation of businesses and office facilities and the reorganization in this direction. However, as this is an original research topic, the scope of which is enormous, the present research focuses on the investigation of specific elements, which are presented below as research questions:

1. How did the companies proceed with the reorganization of their operations during the COVID-19 pandemic?
2. How did companies utilize digital transformation during the COVID-19 pandemic?
3. What were these effects on the costs of businesses, and how is their future shaping up?

1.3 Significance of the Research

It is of particular interest to examine whether the outbreak of the pandemic and its effects can cause a heterochronic total transformation of the Greek economy and entrepreneurship while focusing on the contribution of corporate governance, which is an essential factor in the modernization of organizations by upgrading transparency, organization and the management of a business.

In this fluid and ever-changing environment, it is crucial to identify the changes the COVID-19 pandemic has brought about in rearranging office facilities and transforming operations. The reorganization of businesses and office facilities in the new environment created is a critical factor in the sustainability and modernization of organizations. The limiting factors of transformation, the weaknesses and risks inherent in a realignment, and the comparative advantages of successful good practices that have managed to transform amid the pandemic must be explored. Focusing on the ramifications brought about by the outbreak of the pandemic to date, the operation of businesses and work is being redefined. At the same time, digital transformation is the norm that brings new solutions to reduce costs.

At the same time, these changes brought about by the pandemic are still reasonably early, and there have been no similar investigations. Thus, the present research is an original attempt to explore this gap.

1.4 Thesis Structure

After the presentation of the essential elements of this chapter, the second chapter of the literature review follows with the presentation of essential elements, such as the COVID-19 pandemic, the reorganization of businesses, their transformation, and related issues to digital transformation. The third chapter of the

research methodology follows, where the research process of the present study is presented in detail. The fourth chapter presents the research results, and the fifth chapter discusses the findings. Finally, the sixth chapter of the research of the conclusions and limitations of the study is presented.

Chapter 2

Literature Review

2.1 Business Reorganization

Business reorganization involves significant changes in the business environment's strategies, structures, processes, and functions. Therefore, the human, organizational and technological dimensions that characterize a business (Carpenter and Sanders, 2009) are expected to differentiate through the reorganization process radically. The reorganization of businesses is considered necessary due to the dynamic conditions in the business environment in which each economic organization operates. The reorganization process includes, among other things, an evaluation of the profitability of the activities and an assessment of the most efficient operations in the future, immediate improvement of cash flows, a drastic increase in productivity, new forms of organization, evaluation, and selection of modern information systems (Pitt and Koufopoulos, 2012).

Different definitions of reorganization can be given. For example, reorganization is the fundamental and radical redesign of business processes to achieve substantial changes in the vital areas that determine the performance of the business, such as productivity, production and service costs, quality, products, service customer, and speed (Hammer and Champy, 2009). In addition, *reorganization* can be defined as analyzing and designing workflows and processes within and between businesses (Davenport and Short, 1990).

According to Davenport and Stoddart (1994), the concept of the business reorganization process is a single part of a more significant "idea." It, therefore, introduces the term business innovation process, which denotes the creation of a strategic vision and involving human resources, technology, and other critical resources in planning and implementing change. According to Tapscott and Caston (1993), the concept of reorganization is related to the fundamental review and redesign of business processes and the organizational structure of a company to achieve a clear improvement in critical areas, such as quality, productivity, the satisfaction of the customer and the time it takes for a product to reach the market. In summary, a business reorganization can be considered the critical analysis, re-evaluation, and radical redesign of existing business processes to achieve significant improvements in performance indicators from the perspective of repositioning and changing the business's overall strategy (Johnson et al., 2011).

Essentially, through the reorganization, the company sets some fundamental goals, such as an increase in productivity, to increase in the product produced, the rational management of costs and existing resources, better utilization and upgrading of the available human resources, the improvement of the financial performance and cash flow and improving existing processes and operations. The ultimate strategic goal is to increase the value of the business.

2.2 Reasons for Business Reorganization

At this point, it is worth noting that specific reasons require reorganization. Based on the financial approach, reorganization may be necessary when a company's growth prospects are dismal. In this case, an unfavorable evolution of cash flows and their overall value is expected. Critical financial indicators, such as profitability, are characterized by a severe and permanent deterioration, while a significant liquidity crunch may be observed. The lack of liquidity leads the company to a financial or managerial impasse, and it needs drastic strategic and structural changes to recover and, in any case, avoid possible bankruptcy and liquidation. Therefore, the main reason for the reorganization may be poor financial management during the previous years (Datta and Iskandar-Datta, 1995).

Apart from financial deterioration, another intra-business reason for a reorganization is the rigidity of internal organizational structures, resulting in operational inefficiency and severe delay in critical management and other decisions. The two cornerstones of any business or organization are people and processes. However, even if the human resources have high motivations and goals and are characterized by high specialization, if the business processes, due to bureaucratic organizational structures, are complex, then the organization's efficiency will be limited and expected. In this case, restructuring the company is preferred to solve this problem, which increases as we move from the smallest to the largest companies. At the same time, it peaks in the case of influential business groups, which are made up of many business units, and each of them implements many functions (Fettig et al., 2018). Thus, a business group can take the following form (Fettig et al., 2018):

- Corporate level
- Business level
- Functional level

In addition, reorganization can be caused by the need to redefine the firm's overall strategy either because it is assessed as wrong or because it no longer fits harmoniously with the external environment (Baird and Bernstein, 2005). In more detail, the need to change the strategy can be referred to the following central elements (Baird and Bernstein, 2005):

- Goal and strategy direction,
- Range of activities (diversification – specialization),
- Allocation and re-allocation of resources,
- Adaptation to the changing environment,
- Response to market needs,
- Satisfaction of shareholders and stakeholders.

The reasons for restructuring are within the enterprise and its external environment, where management should seek and exploit opportunities and identify and avoid serious threats. In particular, the forces determining the revolutionary turn in business reorganization are changes in both the external macroeconomic environment and the industry microeconomic environment, as determined by market competition and changing customer needs. In several cases, the need for reorganization results from the company's attempt to create a harmonious relationship between the internal business environment and the dynamically developing external environment, the balance constantly changing over time. A deeper and more detailed analysis of the relationship between the two types of environment can be offered to the company's management by the SWOT analysis (Baird and Bernstein, 2005).

First, the importance of broader macro-changes should be highlighted because they constitute an exogenous variable for business management. Therefore, they are a particular challenge, as they should be predicted and successfully dealt with without the management being able to influence them simultaneously. The dimensions of the macro-environment have been thoroughly analyzed in the literature of strategic management (Papadakis, 2012; Papoulias, 2002), so we limit ourselves to recalling its main dimensions, as they are presented in the PESTLE analysis.

Changes in people's lifestyles can affect their consumption and investment behavior (social environment). For example, the changes in the social environment brought about by the COVID-19 pandemic forced all businesses worldwide to reorganize and find new marketing solutions (Radfar et al., 2021).

2.3 Business Reorganization Process

Achieving reorganization requires a carefully thought out and structured process to be followed. In the reorganization, a *process* is defined as a structured set of activities designed for the firm to produce a specific desired result for the customer or target market. It becomes clear that the process determines how a strategic reorganization plan is executed (Sozinova et al., 2017).

The most crucial criterion for implementing reorganization processes is the company's revised strategy and goal to offer customer-oriented services by adopting a more customer-centric system (Greasley,

2000). The individual areas of reorganization are related to the rapid improvement of cash flows through the reduction of production costs, the reduction of product storage and handling costs, and the elimination of low-value-added processes and tasks (which do not add significant value to the product), the evaluation of the performance of the executives and the development of a strategic plan for its improvement, the evaluation of the possibility of long-term survival and development of the company, the better organization of healthy units and departments and the cutting off of those that constitute a growth brake of the company (Brocke et al., 2008).

The essential elements of a business reorganization program are the process of benchmarking, which refers to the comparison of a company's performance, based on a series of measurable parameters of strategic importance (performance indicators), about other competitive companies, especially about the company- industry leader. It also requires adopting performance metrics, establishing goals for each department and executive, and redesigning all processes so that they are simplified, reducing operational costs and increasing customer satisfaction. The reduction of decision levels is also considered necessary so that most decisions for daily operational issues are taken directly by the employees who perform the individual tasks within the framework of their responsibilities (Greasley, 2000).

Following the rudimentary tactics of the reorganization, the central axes around which it moves are the upgrading of human resources, where the executives are provided with the appropriate means to be effective in their work, such as the appropriate information - information, the appropriate training, the right work environment, and the necessary competencies needed. In addition, it is essential to provide information, which helps the staff in the smooth execution of the tasks, as well as the provision of the appropriate technological tools, so that the executives process the various financial data faster and more efficiently (Rice, 2013).

At the same time, rational and broad utilization of IT systems is required for the processing and intra-company dissemination of information. IT systems can very often provide up-to-date and effective training methods that significantly reduce the time it takes to retrain and train employees. A vital component of the changes is the limitation of non-productive time. The use of modern systems can reduce the time that employees spend on non-productive tasks and channel it into more efficient operations. Research in the financial press shows that professionals and business managers spend a not inconsiderable part of their time on tasks and activities that do not directly relate to their object. Furthermore, in addition to the proper use of time, activities should focus on creating value within the business. For this reason, activities that do not add appreciable value to the business should be identified in time and deleted from the strategic map of the reorganization (Rice, 2013)..

Finally, reducing the burden and volume of archiving and, by extension, data management is also of significant importance. Data processing is included in most jobs, which means that improving data processing can help the business run more efficiently and faster. At the same time, effective archiving requires modern systems, immediate response, employee preparedness, and correct logistical infrastructures. Reorganization can bring significant improvements and changes in business efficiency and effectiveness through mathematical, computational, structural, or analytical models (Sozinova et al., 2017). The redesign, the upgrading of the equipment, and the modernization are the main pillars of the reorganization.

In general, the steps followed in the business reorganization process are repositioning strategic objectives and creating a leadership group of executives to implement the strategic plan. Also, the study and adoption of best business practices, developing technological networks, identifying opportunities and potential problems and threats, and using ideal performance indicators. Furthermore, the application of a modern financial management model, the implementation of an effective decision-making system in combination with the adoption of an efficient system of measuring results (Greasley, 2000; Rice, 2013; Sozinova et al., 2017).

In summary, the process of implementing the reorganization plan can include four main stages (Greasley, 2000; Rice, 2013; Sozinova et al., 2017):

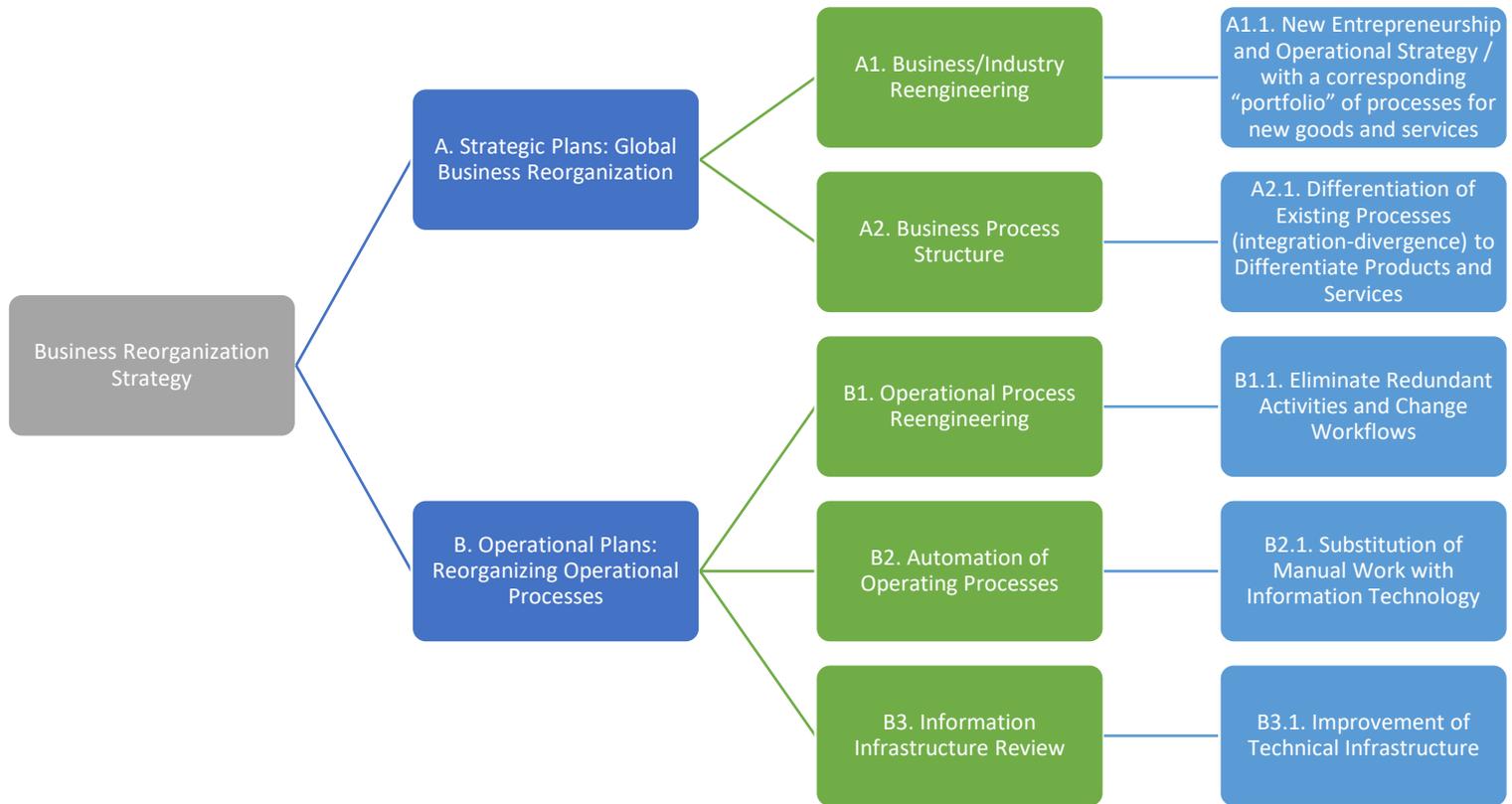
1. Assessment of the current situation (products, financial data, organization chart, competition, customers, suppliers, banks, SWOT analysis).
2. Identifying reorganization objectives and preparing the work plan (recording the reorganization objective, preparation of an action plan, discussion, acceptance, and adoption of the plan by executives and employees - communication of the vision, preparation of executives and personnel for the change process).
3. Implementation of the work plan (accurate action schedules, identification of significant milestones for the course of the project, accurate division of tasks, process of monitoring the project, and correcting any deviations of results from the expected ones).
4. Evaluation of results (creating a reliable comparison mechanism of the situation before and after the reorganization, recording results and experiences for future use by the company).

2.4 Strategic vs Functional Reorganization

Business reorganization strategies cover a broad spectrum, from the most complex and global activities to individual and straightforward functions (Kallio, Saarinen, and Tinnilä, 2002). Then, the main ones are presented and developed.

In principle, a categorization should be made at a higher level of all the transformations that take place in a company (A and B, graph 2.4.1). According to Kallio, Saarinen, and Tinnilä (2002), these transformations can have either a global-strategic dimension (strategic projects) or an operational dimension (operational projects). A corresponding distinction can be made with the following concepts: changing the business as a whole or even to a large extent and changing operational processes.

Graph 2.4.1. Strategic and operational reorganization



Source: Kallio, Saarinen and Tinnilä (2002), adopted by the author

The factors that push the implementation of purely strategic changes are usually uncontrollable and unpredictable for the company because they mainly come from the external environment, which is why they usually have sectoral ramifications. Such external factors are the unfavorable economic situation, new institutions, technological changes, and the changing demands of customers and suppliers (Kallio, Saarinen and Tinnilä, 2002), i.e., factors that were also affected by the COVID-19 pandemic.

In the second case (A2), the changes are milder and are focused on the enterprise level. Here the transformation process is more evolutionary than radical-revolutionary. Through the differentiation of existing processes and structures, such as distribution networks (integration or deviation, e.g., separation

of order - delivery), the differentiation of existing products and services is sought. However, without affecting the company's actual production "range" (A2 .1), a possible differentiation of products can be characterized between standardized products and goods of personalized needs. The reasons that cause these changes are primarily in the internal business environment, such as low quality and high costs (Kallio, Saarinen, and Tinnilä, 2002).

Functional reorganization can be distinguished into three categories:

1. Business process reengineering.
2. Business process automation.
3. Information infrastructure revision.

The first case (B1) is the most current and widespread and aims to redesign functions. The primary motivation is the low performance of the processes, such as high costs, low quality, and low level of service, due to inefficient composition of work flows structural malfunctions, and operational malformations. Here the redesign of operations is achieved by eliminating redundant activities, using information technologies, and adopting methods such as total flow management and workflow change (B1.1). This strategy is preferred by companies with low performance (Kallio, Saarinen, and Tinnilä, 2002).

The second case (B2) concerns the automation of operations. Essentially, this is the most common and traditional case of using information technologies, substituting manual work with technologies of this type (B2.1). Automation is usually caused either by the inadequacy of intra-business information systems or by the skewed synthesis of automated and manual processes (Kallio, Saarinen, and Tinnilä, 2002).

The third case (B3) aims to review and upgrade the company's information infrastructure, which is implemented primarily through improving the technical infrastructure (B3.1). This strategy has been applied to date, mostly in traditional industrial enterprises with slow growth rates. Here, the immediate priority is not the redesign of processes, but the creation and expansion of infrastructure and capabilities, before proceeding with any restructuring or redesign of operations (Kallio, Saarinen, and Tinnilä, 2002).

In conclusion, two kinds of distinctions should be made when choosing a reorganization strategy:

The first distinction answers at which level the reorganization will be implemented. Strategic or operational? The fact that operational process redesign (B1) was considered to bring about significant improvements in business performance and functionality, as well as in reducing delays in the intra-firm division of labor (Davenport and Short, 1990; Short and Venkatraman, 1992), also found finds wide application with the consequence that it even occupies the first place among all reorganization strategies.

At the same time, however, it is judged that its frequent choice led the center of gravity of the reorganization to the functional side rather than the strategy, as well as to a somewhat weak connection between these two categories of strategies. From this evaluation perspective, it is noteworthy that although operational efficiency is necessary for the competitive environment, it needs to be in a position to replace business strategy. Therefore, companies should focus more on developing new business activities and capabilities and not so much on redesigning old systems and processes (Porter, 1991), in the sense that sustainable competitive advantage can be "built" more effectively in the former.

The second distinction responds to the correspondence between the means and the intended goals of the reorganization. The disharmony above is considered the root cause of these strategies' high failure phenomenon (Bradley, 1994; Hammer, 1990). In this way, it is interpreted why, for example, projects with purely strategic objectives ended up in a simple upgrade of the infrastructure of the information systems. Therefore, a critical parameter of a reorganization plan is the appropriate matching of the intended purpose with the selected "portfolio" of the means and procedures used (Kallio, Saarinen, and Tinnilä, 2002). In other words, if a certain amount of automation is sufficient for business restructuring, more radical methods, such as redesigning the entire workflow process, should not be used.

2.5 Digital Transformation

The Digital Transformation from 1990 to 2010 brought significant changes to Greek society. It was the time of the creation/diffusion of intelligent cell phones. So businesses have tried to evolve their products and integrate into the digital world/e-commerce. The ever-struggling traditional business model has gradually changed towards a digital approach, changing day-to-day operations. Adopting the new process as a way of operating the business brought almost radical changes in how it operates (Ebert and Duarte, 2018).

2.5.1 Impact of Pandemic on Digital Transformation

In the first period, when the digital transformation was introduced to the companies, they claimed that this change would bring about upheavals in the hitherto data regarding the demand and supply of the products. For example, until recently, it was unthinkable for a customer to buy clothes or shoes without trying them on. Now with the use of websites, they buy directly, quickly, and comfortably from the seat of their sofa. The rise of this way of thinking/buying after the outbreak of the pandemic and the closing of stores has been a radical change in dealing with digital transformation. Now the companies in the advertisements they use state: "for your safety, use the electronic way of service through our site" (Fletcher and Griffiths, 2020).

The pandemic outbreak has also brought about an increase in users and purchases via the internet, greater use of e-banking, remote work, and supervision of employees. Customers are becoming more and more familiar with the possibilities provided by the internet. The possibility provided by using this to avoid moving and the "queues" in stores and not limiting the time they can be served through it gives e-commerce a new form and trend (Capital.gr, 2021).

Recent figures show that due to the COVID-19 pandemic, businesses achieved five years' worth of results within about eight weeks. Banks have moved to remote sales and service teams and started digital customer outreach to make flexible payment arrangements for loans and mortgages. Schools mostly only did online learning in digital classrooms. Doctors provided telemedicine with the help of a more flexible setting (Newsroom, 2020).

According to research by the McKinsey company (Fitzpatrick et al., 2020), companies have accelerated the digitization of interactions with customers and the supply chain, as well as their internal operations, by three to four years. In addition, the share of digital or digitally enabled products in their portfolios has accelerated by seven years. Almost all survey respondents say companies have come up with at least temporary solutions to meet many new demands much more quickly than they thought before the crisis. Furthermore, respondents expect most of these changes to be long-lasting and are already investing to ensure these changes are sustained. When executives were asked about the impact of the crisis on a range of measures, they said funding for digital initiatives had increased more than anything else—more than cost growth, the number of people in technology roles, and the number of customers. For companies to remain competitive in this new business and economic environment, new strategies and practices are required. The findings showed what executives are taking into account: most respondents recognize the strategic importance of technology as a critical element of the business, not just as a source of cost efficiency (Fitzpatrick et al., 2020).

During the pandemic, consumers moved to online channels, with companies and industries responding in turn. The survey results confirm the rapid shift towards interacting with customers through digital channels. They also show that adoption rates are years ahead of previous surveys, and respondents are three times more likely now than before the crisis to claim that at least 80% of customer interactions are digital. Consumers moved to online channels during the pandemic, with companies and industries responding. The survey results confirm the rapid shift towards interacting with customers through digital channels. They also show that adoption rates are years ahead of previous surveys, and respondents are three times more likely now than before the crisis to claim that at least 80% of customer interactions are digital (Fitzpatrick et al., 2020).

Realizing that the COVID-19 crisis has changed everything, businesses decided to invest in digital transformation and increase their budget. The pandemic has also pushed some industries more than others to open up future remote work opportunities. In addition, organizations have recognized that digital communications transformation is critical to meeting business challenges - intending to expand digital communication channels across the globe. During the lockdown, customers seemed to rely entirely on digital solutions. Facing a new reality after the pandemic crisis, businesses worldwide seem intent on leveraging their digital channels to complement and strengthen their relationships with customers and to use them to implement new work and collaboration models (Kniffin et al., 2021). They must ensure they are best placed to succeed and integrate into the new era of commerce and work (Mandviwalla and Flanagan, 2021).

The COVID-19 pandemic has also boosted demand for fast connectivity - at home and work. As a result, the development of 5G networks has already started to materialize. At the end of 2020, the commercial availability of 5G networks was made in many Greek cities, with speeds that in some areas exceed 1 Gbps. About 80 telecom operators in more than 35 countries have launched commercial 5G services, while Chinese hospitals use 5G-powered robots to monitor patients' temperatures (European Council, 2021). By combining 5G with Wi-Fi 6, ultra-fast connectivity for the home and office is just around the corner, and the first devices designed for Wi-Fi 6 technology are already on the market.

Big Data has always been on a steady growth trajectory. After COVID-19, the need for data is even greater. Data analytics were used in real-time, from contact tracing to make life-saving decisions in the workplace. What is expected is a massive continued investment by companies in data and analytics capabilities that power faster, leaner, and more innovative organizations. However, considering that data is the critical reason for any political, economic, and social battles at all levels - from global to local - data collection, integration, management, and use (or abuse), support of IT and application infrastructure and cyber security remain at the forefront. Greater control over personal data and protecting consumers from big tech companies exploiting the sale of data are some of the issues raised and will continue to be raised until there is more transparency. However, data without technology is useless. Artificial intelligence and machine learning have seen impressive growth in recent months. Businesses turned to technology to gain insight into their data as they realized during 2020 the value propositions of artificial intelligence and machine learning: speed, scale, and convenience. Furthermore, as companies see how fast artificial intelligence (AI) is evolving, they will increasingly seek to deploy it (Ahmad et al., 2021).

In May 2020, Satya Nadella, CEO of Microsoft (Spataro, 2022), highlighted three phases of digital adaptation to the pandemic. First, the immediate adoption of tools for working from home, online

collaboration, and e-commerce. Then, in the long "recovery" phase, companies try to optimize the technologies used during the previous phase. In the third phase, businesses will be asked to imagine what new business models, forms of organization, products, and services are now possible in the new digital landscape (Spataro, 2022).

The fundamental feature of the digital landscape in the 21st century is the inversion of terms between IT and business units. While IT was considered a support function that helped human resources do their work faster, algorithms now autonomously perform the main business work with the support of human resources. Paraphrasing Marshall McLuhan's saying, we can say that the algorithm is the business. For example, Ant Group, a member of Alibaba Group in China, started in 2016 as an electronic payment platform (Alipay) to grow into a banking giant. It offers services to over 1,200 million consumers and businesses with only 9,000 employees, while Bank of America, for example, needs 200,000 employees to serve 66 million customers. Such large economies of scale are achieved by automating all processes (e.g., authentication checks) and decisions (e.g., rate, approvals), end-to-end of the internal value chain, without human intervention, with extensive use of machine learning. Ant Group also expanded rapidly into a variety of financial services. Such economies of scale result from the sophisticated IT infrastructure that facilitates the interconnection and expansion of all operations. For example, by leveraging transaction data, Alipay assesses a customer's liquidity and solvency to offer a personalized loan, savings, or insurance product (Ross and Maynard, 2021).

As the application of AI algorithms to every aspect of business processes (e.g., payments) and decisions (e.g., granting a loan) creates new knowledge (e.g., solvency ratios), it promotes so-called learning economies. For example, despite the onslaught of powerful competitors such as Amazon, Apple, and Disney, Netflix is far better at learning the evolving preferences of each of its nearly 200 million subscribers and recommending the most suitable movies. Thus, it gains unsurpassed loyalty from its customers: 12 months after their first registration, over 65% of subscribers renew their subscription, while the corresponding percentage of the nearest competitor (Hulu) is below 55% (Bikse et al., 2021).

One can only assess the threats and opportunities for one's own business if one proceeds decisively with the digital transformation to accumulate relevant experience, as a recent survey of companies in Greece by Alba University showed. The digital transformation in each successful case study is driven by the CEO, whose agenda includes five key priorities. First, all understand a clear and measurable vision for the entire organization. Second, an ambitious but composed strategy for the continuous evolution of core operations, customer experience, and business model. Third, the upgrading of IT skills and infrastructure.

Fourth, a new leadership model based on small cross-functional teams' autonomy. Fifth, innovation with large-scale experimentation and risk-taking processes (Bikse et al., 2021).

80% of Greek CEOs state that the pandemic has accelerated digital transformation, with the most significant developments recorded in digital operations, where 30% report that the progress made has put them years ahead of where they expected to be at the moment. It is noteworthy that for Greece, the most outstanding developments in digital transformation are recorded in creating a digital experience for the customer, where 60% report that the progress made has brought them years ahead of where they expected. The challenge now for businesses is to focus on investing in areas that can generate the most value over time, avoiding areas that may ultimately be a short-term response to the pandemic. When CEOs were asked to define the most significant challenge they have faced in accelerating digital transformation, the biggest issue was "the lack of information about future operational scenarios, such as new ways of working" (27% and 33% of Greece and other countries, respectively). Companies need to understand whether the change associated with the COVID-19 crisis - such as the change in customer behavior - is indicative of a permanent emerging trend rather than a temporary pandemic effect (KPMG, 2020).

2.6 Synopsis: The Post-COVID Era for the Business

Businesses are considering returning to an unprecedented environment by changing how they used to work. To this end, they will have to deal with three structural changes that have occurred:

First, customer behaviors and preferred interactions have changed significantly, and while they will continue to shift, the rise in digital services is entrenched mainly. 75% of first-time users of digital channels say they will continue to use them when things return to "normal" (Fitzpatrick et al., 2020). Companies must ensure their digital channels are equal to or better than their competition to succeed in this new environment.

Second, many organizations have evolved into remote work models almost overnight (Brynjolfsson et al., 2020). Remote working allows companies to mobilize global expertise instantly, organize a project review with 20 or 200 people, and respond to customer questions faster, providing everything from product information to sales and after-sales support digitally. Shifting the business agenda rapidly to address these changes will be critical to the successful recovery of the business sector. Digitization will undoubtedly play a central role in this (European Council, 2021).

For many companies, customers have already adopted the habits demanded by the digital age. Employees are fully remote and flexible to some extent (Brynjolfsson et al., 2020). Businesses have

already started analytics and artificial intelligence (AI) initiatives in their operations (Gartner, 2020). Nevertheless, for most companies, the date changes represent only the first phase of the changes necessary for the future (Spataro, 2022).

The current crisis has forced organizations to quickly adapt to new realities and new, faster ways of working with customers, suppliers, and colleagues. Companies that want to achieve digital turnaround must quickly realign their digital agendas to meet the needs of new customers, support decision support systems, and align their organizational models and technology to work with a higher effective speed. It is necessary to set these goals at the beginning and measure their progress regularly. Achieving equality across digital channels, rebuilding the most critical decision support models, and doubling development speed are emerging trends in the post-COVID era.

Chapter 3

Research Methodology

This chapter aims to present the methodology followed by this research to fulfill the objective and research questions presented in the introduction chapter.

3.1 Research Design

The research design is the general plan of the research study. Based on specific criteria (nature of the research question and degree of control of the parameters of the problem), three (3) are the primary research plans. Descriptive research design is an effort to address the problem under investigation by observation or description (typically, the answers are “what, who, when, where.” On the other hand, exploratory research tries to determine the cause of a problem, seeking to answer the “why.” Finally, the causal research design seeks to determine the relationship between cause and effect and answers the “how” by interpreting phenomena (Kumar, 2018).

As this paper aimed to investigate in depth the survivals of the pandemic in the transformation of businesses, the descriptive research design is the most appropriate research design. This research does not seek to determine why or identify relationships that led to the transformation. On the contrary, it seeks, through observation, to describe the phenomenon of business transformation.

3.2 Research Philosophy

Research philosophy refers to the epistemology followed by each researcher to investigate the phenomenon under study—the main philosophical currents of research concern positivism and interpretivism. The main difference between positivism and interpretivism is that positivism proposes using scientific methods to analyze the subject under study, as it rests on the principle that truth can only be perceived through observing phenomena. In contrast, interpretivism recommends using non-scientific, qualitative methods to analyze the subject under study, obtaining in-depth information based on the experience of the subjects under study (Kumar, 2018).

In the present research, interpretivism is chosen as a philosophical approach as the nature of the research concerns the in-depth investigation of the phenomenon of business change due to the pandemic. As this is an important topic, there needs to be more research and tools to measure the topic

objectively, based on the positivist approach. Thus, as this is a new topic, hermeneutics is chosen as the most appropriate philosophy to explore the experience of change and its effects.

3.3 Type of Research

The types of research are divided into three main categories, which are quantitative, qualitative, and mixed. Quantitative research is the systematic investigation of phenomena using statistical methods and numerical data. A representative sample of observations is usually used to generalize the results to the broader population. Data collection is done with questionnaires, scales, etc. Qualitative research aims to investigate and understand phenomena in depth. The qualitative research researcher answers questions about the "Why?" and "How?" of these phenomena. With qualitative research, representations, attitudes, perceptions, motivations, as well as data on the behavior of individuals are investigated in depth. The qualitative inquiry aims to gain a holistic understanding of a situation. Finally, mixed research combines qualitative with quantitative data to better compare and understand the phenomenon under investigation (Kumar, 2018).

For this research, the qualitative type of research was chosen. As mentioned, this is a new topic to investigate, and the qualitative approach is considered the most appropriate as it helps in an in-depth understanding of the topic. Qualitative methods are used when a research phenomenon is new, and there are no standardized tools for measuring this phenomenon. In addition, data from qualitative research form the basis for deriving standardized measurement scales (Kumar, 2018).

3.4 Research Sample

Each survey is aimed at a population. However, due to the impossibility of investigating the entire population, researchers use a sample considered representative of the population (Kumar, 2018). As can be understood from the purpose of the research, the population of the present study concerns the Greek territory businesses; therefore, the sample concerns a minor part of these businesses. In his opinion, the researcher uses purposive sampling, according to which he selects a representative sample to which he can have access to investigate the phenomenon (Kumar, 2018). Thus, for the present research, the researcher selects the sample based on ease of access and willingness to participate in the research. Executives and business owners of all sizes were invited to participate in the survey.

3.5 Research Tool

The research tool refers to how the researcher collects the data (Kumar, 2018). As this research applies qualitative research, interviews will be used as a data collection tool. More specifically, for this study,

semi-structured interviews are used, which enable the researcher to have some questions prepared, if necessary, to add questions or extend the discussion when deemed necessary (Kumar, 2018).

The interview guide (Appendix A) consists of four sections. The first section concerns collecting demographic data, such as gender, age, company size, and years of working/owning the company. The second section concerns the process of business reorganization. It consists of three questions to collect data regarding the influence of the pandemic on a reorganization, the reasons, and the process. This section aims to gather data for the first research question.

The third section concerns digital transformation, the sectors in which it was applied (e.g., customers, decision-making, work, etc.), and what effect it might have had on office facilities. This section aims to gather information for the second research question. Finally, the fourth section is about benefits and future directions and consists of three questions. The data collected is about how data collection (Big Data) has affected decision-making and operations, its benefits, and future directions. The last section aims to collect information for the third research question.

3.6 Data Analysis

By analyzing qualitative data, which have been produced in the context of an empirical study (e.g., transcribed interview texts), an attempt is made to assign meaning to these data to answer the central research questions. Within the interpretive epistemological tradition, there are many approaches to qualitative research. Different methods of analysis proposed are, for example, thematic analysis, narrative analysis, hermeneutic phenomenological analysis, discourse analysis, etc. (Kumar, 2018). Despite individual differences, most involve a kind of thematic processing of the data, following the principles of thematic analysis (Kumar, 2018).

For this research, thematic content analysis is chosen to analyze the data collected. The thematic analysis consists of the systematic identification, organization, and understanding of recurring patterns of meaning within a data set. The researcher can detect numerous patterns of meaning within the data. He focuses, however, on those relevant to the topic he is studying and, in particular, on those suitable for answering his research questions (Terry et al., 2017). Therefore, the research questions act as a guide during the thematic analysis process.

3.7 Research Ethics

Research ethics refers to the procedures and measures each researcher takes to collect and process data. Research ethics issues refer to voluntary participation, participant anonymity, and confidentiality of

responses. Also, an essential element in qualitative research concerns processing and storing the collected data (Wiles, 2012). For this reason, before the start of the interviews, the participants were given the information form to disclose the above principles applied by this research (Appendix B).

Chapter 4

Research Data

This chapter presents the data collected from the thematic analysis carried out in detail. A total of five interviews were collected from five participating companies. The transcribed interviews are presented in Appendix C. However, it is essential to clarify that Participant 5 did not answer each question individually but provided an overall text of answers.

Table 1 below presents the participants' demographics for a first understanding of the companies that participated in the survey. As seen from the table below, except for participant 4, most of the participants have several years of experience/owning the business, which is a positive element in providing interview responses. At the same time, only one company was small, while three were large and one medium.

Table 1. Demographic data

	Gender	Age	Years of working/owning	Company Size
Participant 1	Male	49	10	Small
Participant 2	Female	41	17	Large
Participant 3	Male	50	10	Large
Participant 4	Male	31	1	Medium
Participant 5	Female	60	30	Large

Then table 2 below presents the thematic analysis that emerged from the study of the data. Five main thematic sections were extracted, which refer to remote work adaptation, reorganizing physical workspaces, embracing digital transformation, ensuring business continuity and efficiency, and adapting to global trends and challenges. The first column presents the codes that emerged for each of these themes.

Table 2. Thematic analysis

Codes	Themes
Adapting to remote work: Remote work and flexible workspace.	Remote work adaptation
Office space reorganization. Changes in office space. No change in office space. High demand for prime office spaces. Reduced demand for low-spec spaces.	Reorganizing physical workspaces

Digital transformation. Digital tools for collaboration and communication. Automation and process optimization. Digital document management.	Embracing digital transformation
Business continuity and efficiency. Cost savings. Flexibility and faster response.	Ensuring business continuity and efficiency
Global trends and challenges. Data-driven decision-making.	Adapting to global trends and challenges

Chapter 5

Discussion of the Results

After presenting the descriptive findings of the thematic analysis, this chapter discusses the results. More specifically, taking into account the thematic sections and the resulting codes, a critical discussion of the findings is then carried out, taking into account the responses of the research participants.

The COVID-19 pandemic has significantly impacted the way businesses operate, forcing them to adapt to remote work and flexible working arrangements. The main theme of "Remote work adaptation" reflects this shift and is supported by several codes derived from the participants' responses.

One of the codes, "*Adapting to remote work*," highlights the necessity for businesses to adjust (International Labor Organization (ILO), 2021) their operations due to the pandemic. This rapid shift from traditional office spaces to remote work was a response to the global health crisis and an attempt to maintain business continuity (Kniffin et al., 2021). Something that was also mentioned by different participants. For example, Participant 1 mentioned, "*During the COVID-19 pandemic, we had to adapt to flexible working space, many of us working from home.*" Similarly, Participant 2 noted, "*More specifically, in our company, remote work was adopted as a new way of working,*" and Participant 4 stated, "*The pandemic has forced the adoption of new ways of working.*"

Another code, "*Remote work and flexible workspace*," suggests that the future of work is moving towards a combination of remote work and mixed schemas (Greasley, 2000; Rice, 2013; Sozinova et al., 2017), where employees work in flexible spaces and collaborate with colleagues from different sections (Gartner, 2020). For example, Participant 2 commented, "*In the future, it seems that remote work will prevail, and the majority of the employees will work in a mixed schema.*" This trend aligns with the broader movement towards increased remote work and the growing importance of digital technology in the workplace (Brynjolfsson et al., 2020).

The shift to remote work has several implications for businesses, including changes in organizational structure, communication, and collaboration (Johnson et al., 2011). Organizations need to consider new ways to maintain employee engagement, foster a sense of belonging, and ensure effective communication in a remote work environment (Kniffin et al., 2021). The use of digital tools, such as video conferencing platforms and collaboration software, can help facilitate remote work and improve overall productivity (Brynjolfsson et al., 2020).

In conclusion regarding the first theme, it becomes evident that the COVID-19 pandemic has accelerated the adoption of remote work, leading to significant changes in the way businesses operate. The main theme of "*Remote work adaptation*" and its corresponding codes reflect the ongoing transformation in the workplace, as organizations adapt to new ways of working and embrace more flexible work arrangements.

Regarding the second theme of "*Reorganizing physical workspaces*" some main codes were extracted that give some critical views regarding the reorganization of physical spaces. One of the main codes had to do with "*Office space reorganization*." The COVID-19 pandemic has significantly impacted how businesses manage their office space, with many companies reevaluating their requirements and seeking smaller, more sustainable spaces (DeFilippis et al., 2020). This shift has been driven by an increase in remote work and the need for greater flexibility in accommodating employees' evolving needs. Participant 1's comment, "*We are now in the process of rethinking how much space do we actually need, since vacancy rates have increased,*" highlights this trend.

In addition to downsizing, organizations are increasingly opting for office spaces with "green" specifications and updated technical standards, as they recognize the importance of sustainability and the role of technology in facilitating remote work (Bengtsson et al., 2020). Participant 1's statement, "*We are currently looking for smaller office space but within a new commercial development with 'green' specifications and updated technical standards,*" illustrates this emerging preference.

As companies continue to reorganize their office spaces, it is likely that more businesses will adopt flexible, adaptive layouts that can accommodate different working styles and varying degrees of remote work (Brown, 2009). This may include the creation of shared spaces for collaboration and relaxation, as well as dedicated areas for private work, as mentioned by Participant 2: "*Less office space was needed due to remote work, common areas for relaxation and conversation were constructed to reinforce brainstorming between colleagues, offices were constructed in a more flexible way and with no specified area for each employee.*"

The shift towards remote work has led to reduced energy consumption in offices, as fewer employees are present in the physical workspace, reorganizing the business structure (Johnson et al., 2011), which is evident from the code "*Changes in office space*". However, this has also resulted in a transfer of costs to individual employees, who now bear the responsibility of providing their own workspaces, utilities, and other resources needed to perform their jobs remotely. This change in office space utilization has implications for both organizations and employees, as it requires adapting to new ways of working and balancing the costs and benefits of remote work.

Some organizations are seeking to address these challenges by implementing innovative solutions, such as providing employees with stipends to cover home office expenses, or offering flexible work arrangements that allow for a mix of remote and in-office work (DeFilippis et al., 2020). These approaches can help to ease the burden on employees and ensure that they have the resources and support they need to be successful in their remote work environments.

As the pandemic continues to shape the way we work, it is crucial for organizations to remain attentive to the changing needs of their employees and to invest in solutions that facilitate effective remote work. This includes not only reevaluating physical office spaces but also developing new policies and practices that promote a healthy work-life balance and support employee well-being.

Continuing with an opposite with the above code "*No change in office space*," while many organizations have embraced remote work and the reorganization of their physical workspaces, some have opted not to change their office space usage, despite the ongoing digital transformation. Participant 5's response, "*Despite this, for now, the Administration has no visible intention to proceed with shrinking the office space and increasing telecommuting*," highlights this resistance to change.

There may be various reasons for an organization's decision to maintain its current office space arrangements, such as the belief that remote work is a temporary measure, or concerns about the potential negative impacts of remote work on employee collaboration and productivity (Kniffin et al., 2021). For some companies, the costs and logistical challenges associated with downsizing or relocating may also be prohibitive, leading them to maintain their existing office spaces.

It is essential for organizations that choose not to change their office space usage to consider the potential long-term implications of this decision, as the future of work is likely to be increasingly characterized by remote and hybrid work arrangements (Brynjolfsson et al., 2021). Companies that do not adapt to these changes may risk falling behind their competitors, as they may struggle to attract and retain talent, maintain employee engagement, and foster innovation.

Despite the general trend towards remote work and smaller office spaces, there remains a strong demand for high-quality, certified office spaces located in prime areas, as the code "*High demand for prime office spaces*," makes evident. As Participant 5 noted, "*My opinion is that the interest of investors and users for newly built or renovated office spaces in prime locations (CBD, South and North Athens Suburbs) remains undiminished, especially properties that have certification (such as Leed, Breeam etc.)*." This continued interest can be attributed to several factors, including the desire for prestigious office locations and the benefits associated with sustainable building certifications.

Certified office spaces, such as those with LEED or BREEAM certifications, offer numerous advantages to both occupants and investors, including improved energy efficiency, healthier work environments, and higher resale values (Deng et al., 2020). These factors contribute to the ongoing appeal of prime office spaces, even as the overall demand for office space may be declining. In addition, the presence of a prestigious office location can serve as a signal of a company's success and stability, which may be particularly important in times of uncertainty (Glaeser and Ponzetto, 2010). As businesses continue to navigate the changing landscape of work, it is possible that prime office spaces will retain their appeal, even as other aspects of the office market evolve.

Conversely, there has been a decline in demand for lower-quality office spaces in secondary locations as it is shown by code "*Reduced demand for low-spec spaces*". As Participant 5 observed, "*Given that the supply of spaces with the above characteristics is increasing, it is natural to observe reduced demand and increasing vacancy in low-spec spaces in secondary locations.*" This trend can be attributed to the increased focus on remote work and the resulting shift in organizations' priorities when it comes to office space.

As companies prioritize flexibility, sustainability, and technological capabilities in their workspaces, lower-quality spaces that do not meet these criteria may become less attractive to potential occupants (Brown and Cowling, 2021). Additionally, as remote work becomes more prevalent, organizations may have less need for large office spaces, particularly those in less desirable locations. In the long term, this decline in demand for low-spec spaces may have significant implications for the office market and the broader commercial real estate sector, as property owners and developers may need to adapt their strategies to respond to these changing dynamics (Glaeser et al., 2021).

Concluding for the theme "Reorganizing physical workspaces," the COVID-19 pandemic has profoundly impacted the way organizations manage their physical workspaces. Companies are reorganizing their offices to adapt to remote work, shifting towards smaller and more sustainable spaces, and focusing on prime locations. As businesses continue to navigate this new landscape, it is essential to remain attentive to the long-term effects of these changes on the office market and to adapt accordingly.

The next theme that emerged had to do with "*Embracing digital transformation.*" The initial code had to do with "*Digital transformation.*" The COVID-19 pandemic has accelerated digital transformation across industries, pushing companies to rapidly upgrade their technology infrastructure and become more proficient with digital tools (Fitzpatrick et al., 2020). Participant 1's statement, "*Digital transformation – we had to upgrade our internet speed and related hardware equipment,*" reflects this trend. As organizations have been forced to adapt to remote work and find new ways to deliver services, digital transformation

has emerged as a critical factor in ensuring business continuity and resilience (Verma and Gustafsson, 2020).

Digital transformation has not only impacted the way businesses operate but also how employees interact with technology in their daily work. Participant 2's comment, "*Through this new way of work we all became more familiar with technology and this led to more efficient and flexible way of working,*" highlights the potential benefits of embracing digital transformation, including increased efficiency and flexibility for both organizations and employees.

The pandemic has also prompted businesses to explore automation possibilities and optimize processes to enhance efficiency and service provision (Bughin and Hazan, 2021), as it became evident from the second code of the them regarding "*Automation and process optimization*". Participant 1's response, "*Moreover, we are now examining the possibilities of automated models that might be used for a specific service provision,*" and Participant 3's statement, "*As a function we implement a Citizen Developer framework, whereby provided tools, training and coaching to function to produce everyday automations,*" both illustrate this trend.

Automation can help organizations streamline operations, reduce costs, and increase productivity by automating repetitive tasks and improving decision-making processes (Daugherty and Wilson, 2018). By embracing automation and process optimization, businesses can enhance their competitiveness and better position themselves to navigate the challenges posed by the pandemic and beyond.

The rise of remote work has necessitated a shift in document management practices, as businesses adapt to new ways of storing, accessing, and sharing information (Serrat, 2017). Participant 4 noted, "*The digitization process of all the documents, involved in our work was a big issue,*" and Participant 2 mentioned, "*Some of the intercompany procedures and approvals became digital and many types of documents (external and internal) were digitally signed.*" This shift has led to an increased reliance on cloud computing and digital document management systems to ensure accessibility and security of information.

Cloud computing, as highlighted by Participant 4's comment, "*We insist on gaining a cloud computing environment that uses a mix of on-premises, private cloud and third-party, to provide accessibility to all the documents,*" allows organizations to store and access data remotely, enabling seamless collaboration and information sharing among remote teams (Mell and Grance, 2011). As businesses continue to embrace digital transformation, digital document management and cloud computing are likely to play an increasingly important role in ensuring operational efficiency and business continuity.

Concluding for the theme of *“Embracing digital transformation”* the COVID-19 pandemic has significantly influenced the way businesses approach digital transformation, collaboration, automation, and document management. By embracing these changes, organizations can enhance their resilience, efficiency, and competitiveness in an increasingly digital and remote work environment. As the pandemic subsides and businesses continue to evolve, it is crucial for organizations to remain adaptive and maintain the momentum of their digital transformation efforts.

Continuing in the next them of *“Ensuring business continuity and efficiency,”* *“business continuity and efficiency”* (code) have been key concerns for companies during the COVID-19 pandemic. As Participant 2 pointed out, *“organizations had to reorganize to ensure efficient remote work and adapt to paperless procedures.”* This shift towards remote work and digital transformation has been crucial in enabling businesses to continue functioning efficiently despite the pandemic's disruptions (Gupta et al., 2020). In addition, Participant 4 emphasized the need to *“trim operational costs, which is essential for businesses to navigate the challenges posed by the pandemic and maintain profitability.”* Companies that successfully adapted to these changes were better equipped to maintain business continuity and efficiency (Bartik et al., 2020).

On the other hand, the code *“Cost savings”* as a concept have played a vital role in ensuring business continuity and efficiency during the pandemic. Participants 1 and 2 highlighted the benefits of reduced operating expenses, such as rent and utilities, resulting from the need for less physical office space. Data analysis has been instrumental in identifying cost-saving opportunities and informing strategic adjustments to improve profitability (Chesbrough, 2020). Participant 4 mentioned that companies leveraging data analysis can achieve an average 10% reduction in costs each year, demonstrating the importance of a data-driven approach to cost savings during the pandemic.

“Flexibility and faster response” as the final code emphasize the need to customer demands and internal processes have also been essential for organizations during the COVID-19 pandemic. Participant 5 discussed the ongoing transformation aimed at enhancing flexibility and responsiveness, particularly for appraisers and auditors. The need for agility and rapid adaptation has become increasingly important in an uncertain business environment, with companies seeking to streamline their operations and ensure customer satisfaction (Sim et al., 2020). By prioritizing flexibility and responsiveness, businesses can better serve their customers and adapt to the rapidly evolving market conditions brought about by the pandemic.

Finally, the last theme that emerged had to do with *“Adapting to global trends and challenges.”* The initial code that was extracted had to with *“Global trends and challenges.”* Adapting to global trends and

challenges has been a significant aspect for businesses during the COVID-19 pandemic. As Participant 3 mentioned, it is crucial to be "*aligning to global mega trends, macro forecasts, and logistics challenges.*" The pandemic has emphasized the importance of staying competitive and resilient amidst rapidly changing market dynamics and logistical challenges, which may include supply chain disruptions and shifting consumer preferences (Ivanov, 2020). Companies that have been able to adapt effectively to these global trends and challenges have been better positioned to maintain their competitive advantage in the marketplace (Queiroz et al., 2020).

Participant 3 also pointed out the importance of "*business/product portfolio rebalancing and prioritization, global logistics challenges.*" In order to successfully adapt to global trends and challenges, businesses must reevaluate their product and service offerings, as well as their operational processes, to ensure that they align with the changing market landscape (Koide et al., 2020). By prioritizing products and services that are most relevant to the current environment and addressing logistical challenges, companies can stay agile and responsive to evolving customer needs (Van Hoek, 2020).

Finally, the second code emerged had to do with "*Data-driven decision-making.*" Data-driven decision-making is another key factor in adapting to global trends and challenges. As Participant 2 highlighted, "*all these data gave important information to the top management aiming to proceed to the right decisions.*" The pandemic has accelerated the shift towards digital transformation, which has, in turn, facilitated greater access to data and analytics for businesses (Sim et al., 2020). As a result, companies can make more informed decisions and strategic adjustments based on real-time information, allowing them to better navigate the challenges posed by the pandemic and the evolving market landscape (George et al., 2020).

Participant 4 emphasized the value of data-driven decision-making in the context of understanding market trends and conducting competitor analysis, stating that "*the major effect was the contribution to a better understanding of the current market trend, competitor analysis, and knowledge on the real estate cycle.*" By leveraging data and analytics, businesses can gain valuable insights into market conditions and competitive dynamics, enabling them to make more informed strategic decisions and better anticipate future challenges (Bag et al., 2020). In the face of ongoing global trends and challenges, adopting a data-driven approach to decision-making is essential for businesses to remain competitive and resilient (Wamba et al., 2020).

Chapter 6

Conclusions and Recommendations

Finally, this chapter presents the research conclusions and provides some suggestions. Specifically, this chapter answers the research questions raised in the introductory chapter based on the findings extracted. Also, the main objective of the research is answered, and then some suggestions for organizations today are presented. Finally, the limitations of the research are mentioned, and suggestions for future research are presented.

It is recalled that the central objective of the research was to investigate in depth the ramifications that the COVID-19 pandemic has brought to date regarding the transformation of businesses and office facilities and the reorganization in this direction through interviews in organization. The first research questions was seeking to find *“How did the companies proceed with the reorganization of their operations during the COVID-19 pandemic?”*

The COVID-19 pandemic has forced businesses to rapidly adjust their operations and decision-making processes in various ways. One significant change has been the widespread adoption of remote work and flexible working arrangements. Companies had to transition from traditional office spaces to digital platforms for communication, collaboration, and service delivery. This has led to the reevaluation of office space needs, with many organizations seeking smaller, more sustainable spaces, and incorporating open spaces and meeting rooms to accommodate flexible work arrangements.

Another important adaptation businesses made during the pandemic was the acceleration of their digital transformation. Companies were compelled to upgrade their technology infrastructure, become proficient in using digital tools, and explore automation possibilities to enhance efficiency and service provision. This shift to a more digital work environment has led to an increased reliance on data-driven decision-making, allowing businesses to better understand market trends, competitor analysis, and make strategic adjustments to stay competitive and resilient in the face of global challenges.

Lastly, businesses have focused on ensuring business continuity and efficiency during the pandemic. This has involved reorganizing operations to maintain efficiency, reduce operational costs, and respond more flexibly and quickly to customer demands and internal processes. By leveraging data analysis to identify cost-saving opportunities and making strategic adjustments, companies have managed to improve their profitability and remain agile in a rapidly changing business landscape. In summary for the

first research question, the COVID-19 pandemic has prompted businesses to adapt their operations and decision-making processes in ways that promote remote work, digital transformation, and efficient and flexible responses to global challenges.

Continuing, the second research question was seeking to find *“How did companies utilize digital transformation during the COVID-19 pandemic?”* During the COVID-19 pandemic, companies leveraged digital transformation to maintain business continuity and adapt to the new normal. One crucial aspect of this transformation was the adoption of digital tools for communication and collaboration. Businesses implemented various digital platforms, such as video conferencing applications and project management software, to facilitate remote work and ensure that employees could stay connected, collaborate effectively, and deliver services efficiently. This also led to a shift in training and education, with employees becoming more familiar with technology and learning to navigate these new digital tools.

Another way companies utilized digital transformation during the pandemic was through the automation and optimization of processes. Faced with the need to streamline operations and enhance service provision, organizations explored various automation possibilities and invested in solutions that could help them achieve greater efficiency. This included digitizing document management, automating routine tasks, and implementing cloud computing solutions to provide easy access to documents and resources. These efforts allowed companies to adapt to remote work arrangements and minimize the disruption to their operations.

Lastly, companies utilized digital transformation to drive data-driven decision-making. By collecting and analyzing data, businesses were able to gain valuable insights into market trends, competitor analysis, and customer preferences. This enabled them to make more informed decisions, adjust their strategies, and ensure that they remained competitive during the pandemic. The increased reliance on data analysis also allowed companies to identify cost-saving opportunities, leading to reduced operational expenses and improved profitability. Overall, digital transformation played a vital role in helping companies navigate the challenges brought on by the COVID-19 pandemic and adapt to the evolving business landscape.

Finally, the third and last research questions were focusing to find *“What were these effects on the costs of businesses, and how is their future shaping up?”* The COVID-19 pandemic and the subsequent shift to remote work had a significant impact on the costs of businesses. One noticeable effect was the reduction of operating expenses related to office space. As companies transitioned to remote work arrangements, they reevaluated their office space needs and downsized accordingly. This led to decreased rent and utility costs, as well as a reduction in energy consumption. However, it is important

to note that some of these expenses were transferred to individual employees who had to shoulder the cost of setting up a comfortable and functional workspace at home.

Another effect on business costs was the increased investment in digital tools and technologies. Companies had to upgrade their infrastructure, such as internet connections and hardware equipment, and invest in digital platforms for communication, collaboration, and service delivery. While these investments initially increased costs, they ultimately led to long-term savings by streamlining operations, enhancing efficiency, and allowing for data-driven decision-making. Data analysis enabled businesses to identify cost-saving opportunities and make strategic adjustments, which often resulted in an average reduction of costs each year.

As businesses continue to adapt to the post-pandemic world, the future appears to be centered around flexibility and digital transformation. Remote work is likely to prevail, with many organizations opting for hybrid work models that combine remote and in-person work. This shift will lead to a continued emphasis on digital tools, automation, and process optimization, as well as a focus on creating sustainable and efficient office spaces that cater to the evolving needs of employees. By leveraging these trends, businesses can remain competitive, resilient, and better prepared to face future challenges.

The COVID-19 pandemic has had a profound impact on the transformation of businesses and office facilities, as well as the reorganization of work environments. Through in-depth interviews with participants from various organizations, several key conclusions can be drawn that demonstrate the pandemic's far-reaching effects on business operations and the future of work.

Firstly, the pandemic has accelerated the shift towards remote work, forcing companies to adapt their work arrangements and reconsider their office space needs. This has led to the reorganization of physical workspaces, with businesses seeking smaller, more sustainable spaces, and focusing on creating flexible work environments that cater to both remote and in-person employees. This shift has also highlighted the importance of embracing digital transformation, as companies have turned to digital tools and technologies to ensure business continuity and efficiency.

Secondly, businesses have made significant investments in digital transformation, which have allowed them to overcome the challenges posed by remote work and maintain productivity. These investments have included upgrading hardware and internet infrastructure, adopting digital communication and collaboration platforms, and implementing automation and process optimization strategies. This digital transformation has not only helped businesses navigate the pandemic, but has also positioned them for long-term success in an increasingly digital world.

Thirdly, the shift to remote work and digital transformation has had a notable impact on business costs. While operating expenses related to office space have decreased, companies have had to allocate resources towards digital tools and technologies. However, these investments have ultimately led to long-term savings, as businesses have been able to streamline operations, enhance efficiency, and make data-driven decisions to reduce costs further.

Fourthly, the pandemic has forced businesses to adapt to global trends and challenges, such as logistics and supply chain disruptions. By utilizing digital transformation and data analysis, companies have been able to make informed decisions and align themselves with global trends, ensuring their competitiveness and resilience in a rapidly changing business landscape.

In conclusion, the COVID-19 pandemic has fundamentally reshaped businesses and office facilities, prompting a reorganization that emphasizes remote work, digital transformation, and flexibility. By adapting to these changes, companies can better navigate the challenges of the pandemic and position themselves for future success in a post-COVID world. The insights gained from this study can help organizations understand the far-reaching ramifications of the pandemic and make strategic adjustments to remain competitive and resilient.

6.1 Recommendation for Business

Considering the findings from this study, there are several recommendations that businesses can implement to successfully adapt to the changes brought about by the COVID-19 pandemic and position themselves for long-term success.

First, businesses should continue to invest in digital transformation and embrace remote work as a core element of their work culture. This includes adopting digital tools and platforms for communication and collaboration, as well as creating flexible work environments that cater to both remote and in-person employees. By prioritizing digital transformation and fostering a remote-friendly work culture, businesses can enhance efficiency, reduce costs, and attract top talent in an increasingly competitive labor market.

Second, organizations should focus on using data-driven decision-making to optimize their operations and identify cost-saving opportunities. By leveraging data analysis, businesses can gain insights into market trends, competitor analysis, and potential areas for improvement. These insights can help companies make strategic adjustments that enhance efficiency, reduce costs, and improve overall profitability. Additionally, data-driven decision-making can help businesses better navigate global trends and challenges, ensuring their competitiveness and resilience in a rapidly changing business landscape.

Finally, businesses should prioritize sustainability and environmental responsibility in their office space decisions. As the demand for high-quality, certified office spaces in prime locations continues to grow, companies should consider investing in green office spaces and adopting environmentally friendly practices. This not only helps reduce operational costs but also demonstrates a commitment to social and environmental responsibility, which can contribute to a positive brand image and attract both customers and employees who share these values. By implementing these recommendations, businesses can successfully adapt to the new reality brought about by the COVID-19 pandemic and position themselves for long-term growth and success.

6.2 Study's Limitations and Recommendations for Future Research

One limitation of this study is the relatively small and non-diverse sample size, consisting of only five companies of varying sizes. The findings may not be representative of the broader population of businesses across different industries and geographical locations. Additionally, the study relied exclusively on qualitative data, which, while rich in context, may be more challenging to generalize and quantify. This limitation may affect the applicability of the results to other contexts and settings.

Future research could expand upon the current study by utilizing a larger and more diverse sample of businesses, ensuring that the findings are more representative of the broader population. Additionally, researchers could adopt a mixed-methods approach, combining qualitative and quantitative data to provide a more comprehensive understanding of the pandemic's impact on businesses and office facilities. This could include surveys, in-depth interviews, and case studies, offering a more robust picture of the ongoing transformations in the business landscape. Furthermore, longitudinal studies could be conducted to track the evolution of these changes over time and better understand the long-term implications of the COVID-19 pandemic on businesses and their office spaces. By addressing these limitations, future research could provide valuable insights and contribute to our understanding of the pandemic's impact on the world of work.

References

- A digital future for Europe – consilium*, 2021. European Council. Available at: <https://www.consilium.europa.eu/en/policies/a-digital-future-for-europe/> (Accessed: November 18, 2022).
- Ahmad, A., Alshurideh, M.T., Al Kurdi, B.H. and Salloum, S.A., 2021. Factors impacts organization digital transformation and organization decision making during Covid19 pandemic. In *The Effect of Coronavirus Disease (COVID-19) on Business Intelligence* (pp. 95-106). Springer, Cham.
- Altman, E.J., Kiron, D., Schwartz, J. and Jones, R., 2021. The future of work is through workforce ecosystems. *MIT Sloan Management Review*.
- Bag, S., Pretorius, J.H.C., Gupta, S. and Dwivedi, Y.K., 2021. Role of institutional pressures and resources in the adoption of big data analytics powered artificial intelligence, sustainable manufacturing practices and circular economy capabilities. *Technological Forecasting and Social Change*, 163, p.120420.
- Baird, D.G. and Bernstein, D.S., 2005. Absolute priority, valuation uncertainty, and the reorganization bargain. *Yale LJ*, 115, p.1930.
- Bartik, A.W., Bertrand, M., Cullen, Z.B., Glaeser, E.L., Luca, M. and Stanton, C.T., 2020. *How are small businesses adjusting to COVID-19? Early evidence from a survey* (No. w26989). National Bureau of Economic Research.
- Bengtsson, M., Alfredsson, E., Cohen, M., Lorek, S. and Schroeder, P., 2018. Transforming systems of consumption and production for achieving the sustainable development goals: moving beyond efficiency. *Sustainability science*, 13, pp.1533-1547.
- Bikse, V., Lusena-Ezera, I., Rivza, P. and Rivza, B., 2021. The development of digital transformation and relevant competencies for employees in the context of the impact of the COVID-19 pandemic in latvia. *Sustainability*, 13(16), p.9233.
- Bradley, S., 1994. Creating and Adhering to a BPR Methodology. *Gartner Group Report*, pp.1-30.
- Brocke, J.V., Mendling, J. and Recker, J., 2008. Value oriented process Modeling-Towards a financial perspective on business process redesign. *AMCIS 2008 Proceedings*, p.350.

Brown, R. and Cowling, M., 2021. The geographical impact of the Covid-19 crisis on precautionary savings, firm survival and jobs: Evidence from the United Kingdom's 100 largest towns and cities. *International small business journal*, 39(4), pp.319-329.

Brown, Z.B., 2009. Occupant comfort and engagement in green buildings: Examining the effects of knowledge, feedback and workplace culture (Doctoral dissertation, University of British Columbia).

Brynjolfsson, E., Horton, J.J., Ozimek, A., Rock, D., Sharma, G. and TuYe, H.Y., 2020. *COVID-19 and remote work: An early look at US data* (No. w27344). National Bureau of Economic Research.

Bughin, J. and Hazan, E. 2023. *Twenty-five years of digitization: Ten insights ... - mckinsey & company, McKinsey Digital*. Available at: <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Twenty-five%20years%20of%20digitization%20Ten%20insights%20into%20how%20to%20play%20it%20right/MGI-Briefing-Note-Twenty-five-years-of-digitization-May-2019.ashx> (Accessed: April 1, 2023).

Capital.gr, 2021. *Η επόμενη ημέρα στο ψηφιακό επιχειρείν μετά την πανδημία*, Capital.gr. Available at: <https://www.capital.gr/market-news/3602167/i-epo%20i-epo%20era-sto-psifiako-epixeirein-%20eta-tin-pandi%20ia> (Accessed: November 18, 2022).

Carpenter, M.A. and Sanders, W.G., 2009. *Strategic Management*. 2nd ed., Pearson International Edition.

CEO outlook 2020, 2020. KPMG. KPMG. Available at: <https://home.kpmg/gr/el/home/insights/2020/09/kpmg-2020-ceo-outlook-covid-19-special-edition-evimeria.html> (Accessed: November 18, 2022).

Chesbrough, H., 2020. To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective. *Industrial Marketing Management*, 88, pp.410-413.

Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W.C., Wang, C.B. and Bernardini, S., 2020. The COVID-19 pandemic. *Critical reviews in clinical laboratory sciences*, 57(6), pp.365-388.

Datta, S. and Iskandar-Datta, M.E., 1995. Reorganization and financial distress: An empirical investigation. *Journal of Financial Research*, 18(1), pp.15-32.

Daugherty, P.R. and Wilson, H.J., 2018. *Human+ machine: Reimagining work in the age of AI*. Harvard Business Press.

Davenport, T.H. and Short, J.E., 1990. The new industrial engineering: information technology and business process redesign. *Sloan Management Review*, 31(4), pp.11-27.

Davenport, T.H. and Short, J.E., 1990. The new industrial engineering: information technology and business process redesign.

Davenport, T.H. and Stoddard, D.B., 1994. Reengineering: business change of mythic proportions?. *MIS quarterly*, pp.121-127.

DeFilippis, E., Impink, S.M., Singell, M., Polzer, J.T. and Sadun, R., 2020. *Collaborating during coronavirus: The impact of COVID-19 on the nature of work* (No. w27612). National Bureau of Economic Research.

Deng, W., Bao, L., Liu, J., Xiao, C., Liu, J., Xue, J., Lv, Q., Qi, F., Gao, H., Yu, P. and Xu, Y., 2020. Primary exposure to SARS-CoV-2 protects against reinfection in rhesus macaques. *Science*, 369(6505), pp.818-823.

Ebert, C. and Duarte, C.H.C., 2018. Digital transformation. *IEEE Softw.*, 35(4), pp.16-21.

Fettig, K., Gačić, T., Köskal, A., Kühn, A. and Stuber, F., 2018, June. Impact of industry 4.0 on organizational structures. In *2018 IEEE international conference on engineering, technology and innovation (ICE/ITMC)* (pp. 1-8). IEEE.

Fitzpatrick, M., Gill, I., Libarikian, A., Smaje, K. and Zimmel, R., 2020. The digital-led recovery from COVID-19: Five questions for CEOs. *McKinsey Digital* <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/the-digital-led-recovery-from-covid-19-five-questions-for-ceos>.

Fletcher, G. and Griffiths, M., 2020. Digital transformation during a lockdown. *International Journal of Information Management*, 55, p.102185.

Gartner, R., 2020. Gartner HR survey reveals 88% of organizations have encouraged or required employees to work from home due to coronavirus. *Gartner*.

George, G., Lahani, K.R. and Puranam, P., 2020. Shcho zminylosia? Vplyv pandemii Covid na poriadok dennyi doslidzhen upravlinnia tekhnolohiiamy ta innovatsiiamy [What has changed? The impact of the Covid pandemic on the technology and innovation management research agenda]. *Journal of Management Research*, 57(8), pp.1754-1758.

Glaeser, E.L., Jin, G.Z., Leyden, B.T. and Luca, M., 2021. Learning from deregulation: The asymmetric impact of lockdown and reopening on risky behavior during COVID-19. *Journal of Regional Science*, 61(4), pp.696-709.

Glaeser, E.L., Kerr, W.R. and Ponzetto, G.A., 2010. Clusters of entrepreneurship. *Journal of urban economics*, 67(1), pp.150-168.

Greasley, A., 2000, December. Effective uses of business process simulation. In *2000 Winter Simulation Conference Proceedings (Cat. No. 00CH37165)* (Vol. 2, pp. 2004-2009). IEEE.

Hammer, M. and Champy, J., 2009. Reengineering the corporation: Manifesto for business revolution, a. Zondervan.

Hammer, M., 1990. Reengineering work: Don't automate, obliterate. *Harvard business review*, 68(4), pp.104-112.

International Labour Organization (ILO) (2021) United Nations. United Nations. Available at: <https://sustainabledevelopment.un.org/index.php?page=view&type=30022&nr=2882&menu=3170> (Accessed: November 17, 2022).

Ivanov, D., 2020. Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. *Transportation Research Part E: Logistics and Transportation Review*, 136, p.101922.

Johnson, G., Scholes, K. and Whittington, R., 2011. Βασικές αρχές στρατηγικής των επιχειρήσεων. *Εκδόσεις Κριτική*.

Kallio, J., Saarinen, T. and Tinnilä, M., 2002. Efficient change strategies: Matching drivers and tracers in change projects. *Business Process Management Journal*, 8(1), pp.80-92.

Kniffin, K.M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S.P., Bakker, A.B., Bamberger, P., Bapuji, H., Bhawe, D.P., Choi, V.K. and Creary, S.J., 2021. COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American psychologist*, 76(1), p.63.

Koide, R., Murakami, S. and Nansai, K., 2022. Prioritising low-risk and high-potential circular economy strategies for decarbonisation: A meta-analysis on consumer-oriented product-service systems. *Renewable and Sustainable Energy Reviews*, 155, p.111858.

Kumar, R., 2018. Research methodology: A step-by-step guide for beginners. Sage.

- Mandviwalla, M. and Flanagan, R., 2021. Small business digital transformation in the context of the pandemic. *European Journal of Information Systems*, 30(4), pp.359-375.
- Mell, P. and Grance, T., 2011. The NIST definition of cloud computing.
- Mofijur, M., Fattah, I.R., Alam, M.A., Islam, A.S., Ong, H.C., Rahman, S.A., Najafi, G., Ahmed, S.F., Uddin, M.A. and Mahlia, T.M.I., 2021. Impact of COVID-19 on the social, economic, environmental and energy domains: Lessons learnt from a global pandemic. *Sustainable production and consumption*, 26, pp.343-359.
- Newsroom, 2020. Πώς η πανδημία του κορονοϊού αλλάζει το μέλλον της εργασίας, *Business Daily*. Available at: https://www.businessdaily.gr/epiheiriseis/15173_pos-i-pandimia-toy-koronoioy-allazei-mellon-tis-ergasias (Accessed: November 18, 2022).
- Pitt, M.R. and Koufopoulos, D., 2012. *Essentials of strategic management*. Sage.
- Porter, M.E., 1991. Towards a dynamic theory of strategy. *Strategic management journal*, 12(S2), pp.95-117.
- Queiroz, M.M., Ivanov, D., Dolgui, A. and Fosso Wamba, S., 2022. Impacts of epidemic outbreaks on supply chains: mapping a research agenda amid the COVID-19 pandemic through a structured literature review. *Annals of operations research*, 319(1), pp.1159-1196.
- Radfar, S.R., De Jong, C.A., Farhoudian, A., Ebrahimi, M., Rafei, P., Vahidi, M., Yunesian, M., Kouimtsidis, C., Arunogiri, S., Massah, O. and Deylamizadeh, A., 2021. Reorganization of substance use treatment and harm reduction services during the COVID-19 pandemic: a global survey. *Frontiers in psychiatry*, 12, p.639393.
- Rice, A.L., 2013. *The enterprise and its environment: a system theory of management organization*. Routledge.
- Ross, P. and Maynard, K., 2021. Towards a 4th industrial revolution. *Intelligent Buildings International*, 13(3), pp.159-161.
- Serrat, O., 2017. *Knowledge solutions: Tools, methods, and approaches to drive organizational performance* (p. 1140). Springer Nature.
- Short, J.E. and Venkatraman, N., 1992. Beyond business process redesign: redefining Baxter's business network. *MIT Sloan Management Review*, 34(1), p.7.

Sim, S.S., Yip, M.Y., Wang, Z., Tan, A.C.S., Tan, G.S.W., Cheung, C.M.G., Chakravarthy, U., Wong, T.Y., Teo, K.Y.C. and Ting, D.S., 2021. Digital technology for AMD management in the post-COVID-19 new normal. *The Asia-Pacific Journal of Ophthalmology*, 10(1), pp.39-48.

Sozinova, A.A., Fokina, O.V. and Fufacheva, L.A., 2017. Reorganization of entrepreneurial structures within global crisis management: Problems and perspectives. In *Overcoming Uncertainty of Institutional Environment as a Tool of Global Crisis Management* (pp. 3-8). Springer, Cham.

Spataro, J. (2022) *2 years of digital transformation in 2 months*, Microsoft 365 Blog. Available at: <https://www.microsoft.com/en-us/microsoft-365/blog/2020/04/30/2-years-digital-transformation-2-months/> (Accessed: November 18, 2022).

Tapscott, D. and Caston, A., 1993. *Paradigm shift: The new promise of information technology* (Vol. 15). New York: McGraw-Hill.

Terry, G., Hayfield, N., Clarke, V. and Braun, V., 2017. Thematic analysis. *The SAGE handbook of qualitative research in psychology*, 2, pp.17-37.

The Future of Work BSE Digital Transformation Observatory (2021) *deloitte.com*. Deloitte. Available at: https://www2.deloitte.com/content/dam/Deloitte/gr/Documents/human-capital/gr_SEV_Deloitte_Future_of_work_noexp.pdf (Accessed: November 17, 2022).

van Hoek, R., Gibson, B. and Johnson, M., 2020. Talent management for a post-COVID-19 supply chain—The critical role for managers. *Journal of Business Logistics*, 41(4), p.334.

Verma, S. and Gustafsson, A., 2020. Investigating the emerging COVID-19 research trends in the field of business and management: A bibliometric analysis approach. *Journal of Business Research*, 118, pp.253-261.

Who coronavirus (COVID-19) dashboard (2022). World Health Organization. Available at: <https://covid19.who.int/> (Accessed: November 18, 2022).

Wiles, R., 2012. *What are qualitative research ethics?*. A&C Black.

Μελέτη επίδρασης του covid-19 στις ελληνικές επιχειρήσεις & στην ελληνική οικονομία (2021) Συμβουλευτικές υπηρεσίες | Grant Thornton Greece. Grant Thornton. Available at: <https://www.grant-thornton.gr/insights/article/survey-coronavirus-greek-economy-gr/> (Accessed: November 17, 2022).

Appendixes

Appendix A: Interview Guide

Section 1. Demographics

Gender:

Age:

Years of working/owning the company:

Company Size: Small, Medium, Large

Section 2. Business Reorganization

During the COVID-19 pandemic, the labor and commercial business landscape changed drastically.

- 1. Has this influenced your business to head for some reorganization?*
- 2. What were the main reasons that led to the reorganization of the business?*
- 3. Can you tell us about the process of reorganizing the business after the pandemic? What changed? What is different now?*

Section 3. Digital Transformation

The Digital Transformation of businesses has been a fact for more than a decade. Several companies have stepped up their digital transformation processes with the pandemic outbreak.

- 4. Please tell us about the areas where your company has implemented digital transformation.*
- 5. Has this had any effect on the office premises? What changed, and with what consequences?*

Section 4. Benefits and Future Directions

- 6. What has changed with data collection for decision-making (Big Data)? How did it affect operations and cost decision-making?*

7. Please elaborate on the benefits of the above process for the organization.

8. After all the above, how does the future look with the new data for your business?

Appendix B: Participant's Information Sheet

Dear Future Participant,

My name is Panagiotis Katsiavaras, and as part of my postgraduate diploma research, I am carrying out research titled "*Covid-19. The pandemic effect on the real estate market. Crisis, new opportunities, and new trends to office buildings*". The research aims to understand how the pandemic has reorganized businesses, focusing on reorganizing operations, digital transformation, and costs.

So, I invite you to participate in an interview as the information and knowledge are valuable for understanding the subject under study.

Your participation in the survey is voluntary, and no remuneration is given. Also, your participation in the survey is anonymous, no personal data is required, and your business name will not be recorded to ensure the confidentiality of your responses.

The interview will be recorded, and after the interview is over, the audio file will be saved in a folder with a code that only I (the researcher) will know. Then, they will be transcribed and recorded in a word file. After recording, all audio files will be destroyed.

Thank you very much for your participation,

For any information, please contact the researcher:

Panagiotis Katsiavaras

panoskatsiavaras@gmail.com

Appendix C. Interviews Transcript

Participant 1

Section 1. Demographics

Gender: Male

Age: 49

Years of working/owning the company: 10

Company Size: Small, Medium, Large: Small

Section 2. Business Reorganization

During the COVID-19 pandemic, the labor and commercial business landscape changed drastically.

1. Has this influenced your business to head for some reorganization?

Office Space - During the covid—19 pandemic we had to adapt to flexible working space, many of us working from home. Following this we are now in the process of rethinking how much space do we actually need, since vacancy rates have increased. Moreover, we also need to decide between more open spaces and meeting rooms instead of closed office areas. We are currently looking for smaller office space but within a new commercial development with “green” specifications and updated technical standards.

Digital transformation – we had to upgrade our internet speed and related hardware equipment.

2. What were the main reasons that led to the reorganization of the business?

Need of flexibility, working remotely and reorganization of office space needs. Additionally, we focused on coved solutions offered at the time by vendors, that also tried to cope with the new situation.

3. Can you tell us about the process of reorganizing the business after the pandemic? What changed? What is different now?

We are a very small company thus decision making and adaptation to new environment was fast. We are still in the process of new mis evaluation, as well as relocating our premises.

Section 3. Digital Transformation

The Digital Transformation of businesses has been a fact for more than a decade. Several companies have stepped up their digital transformation processes with the pandemic outbreak.

4. Please tell us about the areas where your company has implemented digital transformation.

We tried to develop processes by using technology in order to use our employee skills more efficiently. We have been educated and trained to use various platforms in order to participate in video calls and meetings with customers, and utilized internet technological tools to work without compromising the quality of our delivered service. Moreover, we have applied quality controls in different steps of our work. Moreover, we are now examining the possibilities of automated models that might be used for a specific service provision.

5. Has this had any effect on the office premises? What changed, and with what consequences?

Yes, we are looking for a similar size area though open space and with more meeting rooms.

Section 4. Benefits and Future Directions

6. What has changed with data collection for decision-making (Big Data)? How did it affect operations and cost decision-making?

Do not apply to our business

7. Please elaborate on the benefits of the above process for the organization.

Customer service is very important for us and we are striving to offer one-on-one personalized services and solutions to our customers. That is the reason that many of them are repeaters each year. This has helped our company to budget future revenues more efficiently and at the same time stay profitable due to cost savings.

8. After all the above, how does the future look with the new data for your business?

It's a learning curve and we are at the beginning. So far, we can analyze information faster, though we need to focus on the quality of information as well. Our goal is to improve our processes and at the same time offer a reliable and cost-efficient service.

Participant 2

Section 1. Demographics

Gender: Female

Age: 41

Years of working/owning the company:17

Company Size: Large

Section 2. Business Reorganization

During the COVID-19 pandemic, the labor and commercial business landscape changed drastically.

1. Has this influenced your business to head for some reorganization?

COVID-19 pandemic forced companies to change the way they work. More specifically in our company remote work was adopted as a new way of working, teleconference was the new way to “meet” with each other and cooperate and finally we started working in a more paperless way. Through this new way of work we all became more familiar with technology and this led to more efficient and flexible way of working.

2. What were the main reasons that led to the reorganization of the business?

The main reason that led to the reorganization of the business is the business continuity, which means that even remotely employees should work the same efficiently and the several procedures needed to be done paperless.

3. Can you tell us about the process of reorganizing the business after the pandemic? What changed? What is different now?

First of all many procedures were completed digitally via company’s platforms, digital signature was introduced for external and internal documents, meetings and discussions were organized digitally and the majority of employees were working remotely. The way of work has become more flexible and efficient and employees are more satisfied with the new hybrid way of working. Employees have become familiar with new technologies (systems, platforms) and they nowadays feel more secure that they can do things remotely as if they were at work.

Section 3. Digital Transformation

The Digital Transformation of businesses has been a fact for more than a decade. Several companies have stepped up their digital transformation processes with the pandemic outbreak.

4. Please tell us about the areas where your company has implemented digital transformation.

COVID-19 pandemic forced companies to become digital. New systems were installed and systems already installed began to be used more intensively. Some of the intercompany procedures and approvals became digital and many types of documents (external and internal) were digitally signed.

5. Has this had any effect on the office premises? What changed, and with what consequences?

Less office space was needed due to remote work, common areas for relaxation and conversation were constructed to reinforce brainstorming between colleagues, offices were constructed in a more flexible way and with no specified area for each employee.

Section 4. Benefits and Future Directions

6. What has changed with data collection for decision-making (Big Data)? How did it affect operations and cost decision-making?

Due to the new way of working remotely and the consequently digital outbreak, large scale of data was collected. Each employee fed through his interaction the several systems with data, the video-conferences and the messages exchanged between colleagues via specific platforms added useful data for the working hours and the effectiveness of working. All these data gave important information to the top management aiming to proceed to the right decisions.

7. Please elaborate on the benefits of the above process for the organization.

Coastwise , less space was needed for the same number of employees and this led to less operating expenses (rent, utilities). Many companies use nowadays less or no build area than before COVID-19 pandemic. Employees make cost savings from transportation expenses as they work from home and at the same time they work more efficiently, are more flexible and save time for their personal life. Companies work more effectively as they have more satisfied personnel and at the same time they save costs and become more competitive.

8. After all the above, how does the future look with the new data for your business?

In the future it seems that remote work will prevail and the majority of the employees will work in a mixed schema. Additionally due to the remote work and the new platforms used to book a working space, employees will have no specified working space and they will work next to colleagues from different sections. This may lead to more impersonal way of work and the decrease of the ability to absorb the company's mentality which is the company's identity.

Participant 3

Section 1. Demographics

Gender: Male

Age: 50

Years of working/owning the company: 10

Company Size: Large

Note: Function/Site leader of conglomerate, SP500 company

Section 2. Business Reorganization

During the COVID-19 pandemic, the labor and commercial business landscape changed drastically.

1. Has this influenced your business to head for some reorganization?

Not as a function. Wider organization in multiple ways

2. What were the main reasons that led to the reorganization of the business?

Aligning to global mega trends, macro forecasts and logistics challenges

3. Can you tell us about the process of reorganizing the business after the pandemic? What changed?

What is different now?

Business/product portfolio rebalancing and prioritization, global logistics challenges

Section 3. Digital Transformation

The Digital Transformation of businesses has been a fact for more than a decade. Several companies have stepped up their digital transformation processes with the pandemic outbreak.

4. Please tell us about the areas where your company has implemented digital transformation.

As a function we implement a Citizen Developer framework, whereby provided tools, training and coaching to function to produce everyday automations.

5. Has this had any effect on the office premises? What changed, and with what consequences?

Yes, 20% of productivity/cost improvements are coming from automation. Mindset/skillset development for future gains

Section 4. Benefits and Future Directions

6. *What has changed with data collection for decision-making (Big Data)? How did it affect operations and cost decision-making?*

Nothing major from my viewpoint and function

7. *Please elaborate on the benefits of the above process for the organization.*

8. *After all the above, how does the future look with the new data for your business?*

Participant 4

Section 1. Demographics

Gender: **Male**

Age: **31**

Years of **working**/owning the company: 1

Company Size: Small, **Medium**, Large

Section 2. Business Reorganization

During the COVID-19 pandemic, the labor and commercial business landscape changed drastically.

1. *Has this influenced your business to head for some reorganization?*

The pandemic has forced the adoption of new ways of working. So, one of our counter-measures against covid-19 was to re-think the organizational plan. The procedure was compulsory to avoid a permanent lock-down. We had to think outside the box!

2. *What were the main reasons that led to the reorganization of the business?*

First and foremost, we had to find a new way to facilitate and conduct our research services through remote working.

Another reason was to trim the operational costs.

Finally, the competition on our field. The rate of transformation to be achieved was a real challenge.

3. *Can you tell us about the process of reorganizing the business after the pandemic? What changed? What is different now?*

There is no one-size-fits-all solution. The answer is different for every organization each time. There is no clear-cut answer. Concerning real estate and valuation, the digitization process of all the documents, involved in our work was a big issue.

The company were compelled to design a new way of distant working and had to acquire advanced software and a better personalized scheme to cover the business needs.

Section 3. Digital Transformation

The Digital Transformation of businesses has been a fact for more than a decade. Several companies have stepped up their digital transformation processes with the pandemic outbreak.

4. *Please tell us about the areas where your company has implemented digital transformation.*

During the lockdowns, organizations have necessarily adapted to go on collaborating and to ensure that the most important processes- here valuation -could be carried on remotely. This has worked well for some organizations and processes, but not for others. If we have to enumerate the areas then these should be:

Data & Analytics

Cloud Computing: We insist on gaining a cloud computing environment that uses a mix of on-premises, private cloud and third-party, to provide accessibility to all the documents

Mobility

5. *Has this had any effect on the office premises? What changed, and with what consequences?*

Electricity and the whole energy consumption was reduced dramatically. The cost of consumption, however, shifted on the individuals. Thereafter, the situation about energy consumption absorbed by the traditional style of work on site. It is true that covid-19 boosted the pace of structural shifts in the demand for specific property types. After the pandemic the need for qualified office premises is still exist and continuously developing.

Section 4. Benefits and Future Directions

6. *What has changed with data collection for decision-making (Big Data)? How did it affect operations and cost decision-making?*

Big data can help improve decision making is by identifying patterns. Identifying problems and providing data to back up the solution is beneficial as you can track whether the solution is solving the problem, improving the situation or has an insignificant effect. there are several benefits you can gain from using big data for decision-making.

In fact, the major effect was the contribution to a better understanding of the current market trend, competitor analysis and knowledge on the real estate cycle. Analysis of massive data using big data analytics aids to forecast trends of customer -investor's behaviour, markets, prices and so on.

7. Please elaborate on the benefits of the above process for the organization.

By implementing big data analytics, we can and we do predict emerging trends and discover valuable insights that help them make strategic decisions. That said, one of the biggest benefits of the effective use of data for organizations is its ability to help reduce costs. As you start analyzing your customer data, the real costs to serve become more visible. Instead of cutting costs at random, data analytics provides insight to make strategic adjustments—companies who can quantify gains from analyzing data report can gain an average of 10% reduction in their costs each year.

There is a good example came from national health system: Unstructured data forms about 80% of information in the healthcare industry and is growing exponentially. Getting access to this unstructured data—such as output from medical devices, doctor's notes, lab results, imaging reports, medical correspondence, clinical data, and financial data—is an invaluable resource for improving patient care and increasing efficiency. On the contrary, Electronic Health/Medical Record data (EHR or EMR): Medicare and Medicaid EHR incentive programs were established to encourage professionals and hospitals to adopt and demonstrate meaningful use of certified EHR technology. EHRs facilitate a comprehensive sharing of data with other providers and medical applications. EHRs contain the data from the delivery of healthcare, which includes diagnosis, treatment, prescriptions, lab tests, and radiology. Health Level Seven International (HLI) provides standards for the exchange, integration, sharing, and retrieval of electronic health record data.

8. After all the above, how does the future look with the new data for your business?

Dealing with big data is more than just dealing with large volumes of stored information. Volume is just one of the many categories of big data that organizations need to address. There usually is also a significant variety of data -- from structured information sitting in databases distributed throughout the organization to vast quantities of unstructured and semistructured data residing in files, images, videos,

sensors, system logs, text and documents, including paper ones that are waiting to be digitized. In addition, this information often is created and changed at a rapid rate (velocity) and has varying levels of data quality (veracity), creating further challenges on data management, processing and analysis.

Big data is proving its value to organizations of all types and sizes, and in a wide range of industries. Big data on Real estate is promising. Only time will tell us.

Thank you!

Participant 5

Gender: Θήλυ

Age: 60

Years of working: 30

Company Size: Large

Εργάζομαι στη Διεύθυνση Εκτιμητικών και Συμβουλευτικών Υπηρεσιών μεγάλου Τραπεζικού Οργανισμού.

Με την εμφάνιση της πανδημίας εφαρμόστηκε σε πολύ μεγάλο ποσοστό το μέτρο της τηλεργασίας. Στα πλαίσια αυτά πάρθηκαν τα απαραίτητα μέτρα για τον ψηφιακό μετασχηματισμό των υπηρεσιών, σε ένα μεγάλο βαθμό.

Ο μετασχηματισμός αυτός συνεχίζεται μέχρι και σήμερα, με σκοπό τη μεγαλύτερη ευελιξία του εκτιμητή αλλά και του ελεγκτή, με απώτερο στόχο την ταχύτερη απόκριση στις απαιτήσεις των πελατών και της Τράπεζας.

Παρόλα αυτά, προς το παρόν δεν διαφαίνεται πρόθεση της Διοίκησης να προχωρήσει σε συρρίκνωση των γραφειακών χώρων και αύξηση της τηλεργασίας.

Ως γενικότερο σχόλιο για την κατάσταση στην αγορά των γραφείων, η άποψή μου είναι ότι παραμένει αμείωτο το ενδιαφέρον επενδυτών και χρηστών για νεόδμητους ή ανακαινισμένους γραφειακούς χώρους σε πρωτεύουσες θέσεις (CBD, Νότια και Βόρεια Προάστια Αθήνας), ειδικά των ακινήτων που διαθέτουν πιστοποίηση (όπως Leed, Breeam κλπ.). Αυτοί οι χώροι επιτυγχάνουν υψηλά μισθώματα και χαμηλές αποδόσεις, ενώ δεν φαίνεται να μειώνεται το ενδιαφέρον τόσο από επενδυτές, όσο και από μεγάλες εταιρείες εγχώριες ή/και πολυεθνικές για τη μίσθωση χώρων αυτής της κατηγορίας.

Δεδομένου ότι η προσφορά χώρων με τα παραπάνω χαρακτηριστικά βαίνει αυξανόμενη, είναι φυσικό να παρατηρείται μειωμένη ζήτηση και αυξανόμενη κενότητα σε χώρους χαμηλών προδιαγραφών σε δευτερεύουσες θέσεις.