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Business processes, efficiency and value creation as a result of digital transformation

UNDERGRADUATE THESIS

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1. INTRODUCTION

These days, the rise of Artificial Technology (AI) and its many benefits and uses are the hottest news in the business world, across all imaginable fields – from education and music, to medicine and national security. With the use of AI, it is now possible to obtain information in a matter of seconds, no matter how complex, and even make calculations and conclusions that help make crucial decisions. It is able to easily recognize disease and diagnose patients, write constructive and non-biased essays, detect and fix errors among millions of lines of code. It will soon become an indispensable part of many industries and help solve for now unsolvable problems. It is at the forefront of the Industry 4.0, often referred to as the Fourth Industrial Revolution, which might ultimately make running a business without any use of technology obsolete and infeasible.

As we can see, technology has truly come a long way in the last few decades, and its integration into business will only become more visible and prevalent. However, the progress happening today would not have been possible without the first, slow and gradual implementation of technology into everyday business use. It is becoming increasingly difficult to run a business nowadays without at least some use of technology, whose implementation has completely disrupted traditional business models and shifted the way business is conducted. The implementation of digital technology into everyday business operations is a concept often referred to as **digital transformation**. Be it to communicate with customers and partners and present their services on a simple website, or to conduct complex business operations completely digitally, digital technology is becoming an imperative part of every business, especially in today's global market. The progression of technology has interconnected the world markets and made it possible to easily reach audiences everywhere, with no need for a physical presence; hence, it is becoming difficult to reach all potential customers without digitally transforming the business model (Pejić Bach et al. 2018).

Additionally, digital transformation vastly changed the way the firm collects, analyzes and presents its financial data. In the global market, all data must be easily accessible to anyone; similarly, it is now easier than ever for investors to find and invest into companies in another

country – it is only a few clicks away. Therefore, firms prepare and present their crucial financial data in a digital format and post them on their website. Operating digitally and creating smart solutions also allows the firm to greatly simplify the process of obtaining, storing and analyzing their data (Veerabhadran 2021). Digital transformation has made it possible to automate some previously manual bookkeeping and accounting practices, which now only take seconds and provide very reliable results.

This paper will aim to create a comprehensive summary of the current state, knowledge and trends of digital transformation in the business environment. Using extensive research the process of digital transformation into the business will be examined, as well as its perceived impact on business profitability and operational efficiency. Additionally, the author's own knowledge experiences will be added to assess and comment on the digital transformation's utilization in the financial sector and in the financial aspect of the businesses, such as digital technology's role in obtaining initial funding, and utilization in bookkeeping, accounting and the financial analysis of the firm.

2. DIGITAL TRANSFORMATION: AN OVERVIEW

2.1. Importance of Digitalization

Rather than just a trendy buzzword used by companies to elevate their vision statements or to make their business strategy contemporary, digital transformation is an extremely important approach to modern business, one in which a company recognizes the changing environment and takes the necessary steps to adapt accordingly. Digital transformation is the consequence of the broader concept of digitalization, which entails the process of the conversion of analog, manual or physical data into digital (Veldink 2020). A company that utilizes digital transformation creates changes to – or accelerates the existing – business model in order to provide a more seamless service to their customers, and streamline processes to meet new market requirements. Implementing digital technology helps companies' internal dimensions, reach customers and external partners; but also – affects services, disrupts and fundamentally changes markets as a whole (Sprenić 2017).

It is important for each company to identify the drivers and main actors behind its operations, and find a way to maximize the utility of digital technologies in order to elevate and optimize its own business processes. In general, we can identify two main drivers behind the growing need for digital transformation in business: technological trends, and globalization (Pejić Bach et al. 2018). From a few decades ago when employees started using PCs to work, to the early 2010s when this need further expanded with the introduction of smartphones, it is now estimated that every employee has at least three work devices – an office PC, a smartphone to work on the go, and a home work station, a trend which has been accelerated by the 2020 pandemic (Dužević 2023). By following the technological progress on the market and integrating the necessary apps and business processes, businesses have grown increasingly dependent on digital devices, which are now an indispensable part of their employee's ability to work.

Furthermore, this technological progress led to the development of the global market, meaning that businesses and consumers are interconnected on a global scale (Pejić Bach et al. 2018). Consumers are able to easily browse millions of products on the Internet and engage with businesses from anywhere in the world, and businesses are bound to develop their infrastructure and technical expertise to seize these new opportunities.

One of the most important competencies of a business is the ability to adapt to the changing business landscape: which changes continuously, not only periodically. Direct and indirect market competition, society and consumer's expectations, technological advancements, and the development of new, more efficient and cost saving business methods are only some of the factors that influence the business environment. Digital transformation gives businesses the ability to transform their business models, empower their employees and create new value opportunities for their customers. Successfully implemented digital transformation breaks down barriers between people, businesses and products (Schwertner 2017). As digital technologies further develop, they will continue to enable new forms of collaboration, as well as interdependency among various networks of actors, beyond the boundaries of any individual firm (Vial 2019).

The importance of digital transformation is further highlighted by the European Parliament, whose goal is to create a genuine Digital European market. Through cooperation with and provision of funds for the Member States' projects in automation, artificial intelligence, high-performance computing and many others, it hopes to create a fully digital network of public and private services in Europe (Szczepański 2021). Together with the fact that global spending on digital transformation technologies is expected to nearly double by 2026 (Sava 2022), this paints a clear picture of the global prominence of digital transformation.

2.2. Implementation of Digital Transformation

Having recognized the importance of digital transformation and the need to implement it into their business model, at the corporate level, each business should assess its ability to digitally transform, and to which extent to do so. Additionally, digital transformation is not only a wave of technological innovations and their application in business, but also a fundamental organizational, cultural and strategic change (Lasi et al. 2014), which is also something the firms should be aware of. This subchapter will dive deeper into the process of implementing digitalization into the business – what does it take for a company to integrate digital technology into their business, and what are some strategies to do so.

2.2.1 Dimensions of change

In the previous subchapter, the two main drivers behind the overall trend of digital transformation were identified – globalization and technological progress; as well as the factors which contribute to the ever changing market landscape – such as competition, consumer expectations, and arrival of new cost saving methods. External environment is a crucial influence on business decisions, and the process of deciding to digitally transform is no different. Afterwards, each business should look internally and observe the factors within the organization that might contribute to their decision to digitally transform, and assess their importance. In the table below, the most common variables were identified and described.

VARIABLE	DESCRIPTION
Company goals and strategy	<p>The most important factor in making any business decision are the goals, mission and vision statements, which should have been set before any operations began. A well-written mission statement can be a great referral point, which a company can look up to before making important decisions in other elements of the business model (Barringer et al. 2016), such as operations, product design, customer relations and many more. Companies should look up to their mission and vision statements before deciding to digitally transform, as they can provide guidelines on what the desired operations and outcomes are, as well as what the consumers are used to and are expecting from the company – and assess whether it is possible to achieve the same, and even create added value, by deciding to digitally transform. Meaning, digital transformation should not seek to “disrupt” the existing company strategy, but rather to enrich it, by bringing the necessary technological resources to improve performance indicators (Aslanova, Kulichkina 2020). This is why the “digital strategy” of the firm should be established, and aligned with the existing corporate strategic vision (Ivančić et al. 2019).</p>
Digital resources and a digitally skilled workforce	<p>Whether the business will adopt digital technologies and utilize them in their everyday operations depends heavily on the perceived benefits and value they might bring. Companies will implement new technologies only once they confirm they will bring new business opportunities, solve existing problems or add value for their stakeholders and customers (Omrani et al. 2022). Availability of digital technologies is also crucial for their application in the business – at which stage of development and how accessible are technologies such</p>

	<p>as AI, robotics, cloud, big data and similar concepts that might be useful for the company is of great importance.</p> <p>Additionally, the firm should assess the digital literacy of their employees, and find out whether the devices, apps, algorithms and other technologies they are planning to implement will be operated correctly. Digital transformation can be incredibly helpful in achieving efficiency through automation of repetitive tasks and easier flexibility and navigation as well as communication across the internal channels – but only if used with understanding.</p>
<p>Data governance</p>	<p>Data governance in general is everything a company does to make sure their data is accurate, relevant in their operations, and safely stored and secured (Google Cloud 2023). While digitally transforming, additional attention should be given to the way data is collected, handled and transferred into new forms. There are different practices and tools that help in data organization. For example, data science is a field which combines IT, statistics and mathematics to extract insights out of large amounts of information, while operations research helps run scenarios based on available data and resources to help a company set realistic goals and reach them. Microsoft Excel is the most widely known tool for data governance.</p>
<p>Organizational structure and support from top management</p>	<p>Technology itself is only one piece of the puzzle in helping businesses remain competitive in the digital world. Changes in the organization, including its structure, processes and culture might be required in order to create the needed capabilities and responsibility allocations (Vial 2019). The adoption of new procedures, devices and other technologies usually involves changes in business tasks, therefore a possible change in the internal structure. Additionally, with the adoption of new</p>

	<p>technology, constant training is required for employees to stay on top of the new procedures being introduced in their work (Ivančić et al. 2019). Moreover, management support is a critical factor in the process of digital transformation – supportive attitude and policies, provision of financial resources and the implementation of a strategic plan and roadmap are an important part of the process. In fact, research has shown that developing an adequate digital strategy is possible only with, alongside a clear vision and objective goals, consistent managerial support during the implementation process (Zentner et al. 2022). Through the encouragement and rewarding of innovation within the organization, management can enhance the initial value of new technology adoption (Omrani et al. 2022).</p>
<p>Stakeholders' pressure</p>	<p>Lastly, the factor closest to the external environment are the company's stakeholders, which includes the owners (shareholders), managers and employees as well as supply chain partners, creditors such as banks, local communities and legislative bodies. A firm's level of digitalization is dependent on the digitalization of their partners, and as previously mentioned may even be the main driver for a firm's adoption of digital technologies. When a core player decides to use a different approach to business and introduces a new system for, say, communication and cooperation with external parties, very often their partners may face the pressure of adapting to that system (Omrani et al. 2022) in order to continue the collaboration.</p>

(Thordsen 2023), (Omrani et al. 2022), (Lasi et al. 2014), (Aslanova, Kulichkina 2020), (Ivančić et al. 2019)

Firms being aware of their capabilities, external environment and technologies that are available is the first, mandatory step towards their digital transformation. However, it is important to note

that while companies can be perfectly aware of the new technologies on the market (such as robotics or AI) at their disposal, properly integrating them into their business processes is the challenge (Thordsen 2023). In digital transformation, it is not enough to simply use as many technologies as possible, but they should rather be used in accordance with the firm's strategy, leadership and employee involvement, and customer needs (Schwertner 2017). This will further be demonstrated in the following section, where it will be observed that different industries implement and use digital technologies in different ways – depending on their goals and the way their operations are conducted.

2.2.2 Applications in business sectors

Depending on the external drivers and internal circumstances, as well as the company's field of operations, digital transformation may be used in a variety of ways, and bring value to each firm in a different way and amount. However, we are able to define some universal business processes with common features that can indicate the benefits of digitalization, no matter the industry. Deploying the right set of digital tools streamlines operational processes – makes them more efficient and run smoothly – by automating tasks and integrating data (Veerabhadran 2021).

In general, digitalization of processes brings about faster data entry and analysis, therefore the processes best fit for digital **automation** can be characterized as: (1) highly manual and repetitive processes, (2) rule-based processes, (3) mature and stable processes and (4) high volume processes (Zitec 2023). In practice, this would be any type of process that deals with a high amount of data, which is always processed in the same way, and has been for a very long time with trusted and tried-and-true methods. For example, automatically sending invoice attachments to clients as soon as the purchase is complete, while simultaneously matching the invoices with the received cash on the company account. This will be further discussed in the digital transformation in the finance sector chapter.

When it comes to specific needs of each industry, we can observe different ways in which digital technologies can be implemented to better the performance of the companies – be it to speed up processes, help in decision making, analyze data or similar. Below are listed a few key industries that are using digital transformation to further their processes.

Retail – E-commerce is already a well-established presence in the retail industry, and gives companies who utilize it a serious advantage over those who do not. Recent innovations also point to the automation of in-store operations, chatbots that assist with customer service and AI-enabled logistics that accommodates and predicts buying patterns of customers (Zitec 2023).

Healthcare – Digital transformation of healthcare was expedited by the COVID-19 pandemic, wherein the problems of accessibility and equality of all those in need, as well as the optimal efficiency of procedures came to the surface. It is reported that healthcare services provided via electronic information and telecommunication technologies (also known as telehealth) accounted for nearly half of all healthcare services during the pandemic (Davidoff 2023). Nowadays, the healthtech industry is placing further attention on using AI to handle remote patients, as well as provide easy digital medical assistance. Additionally, the use of big data analytics to handle large numbers of patients and their medical records, and an overall digitally-focused approach to healthcare might greatly increase productivity, freeing up time by removing manual data management for medical personnel to be more hands-on with the patients (Zitec 2023, Davidoff 2023).

Manufacturing – The manufacturing sector is seeing a shift towards ‘smart manufacturing’, where sensors and similar technologies associated with IOT (Internet of Things) are used to improve supply chain efficiency (Vial 2019). Integrating an IOT platform would bring benefits in the form of monitoring of the manufacturing process, smart procurement and predictive maintenance of the equipment – through sensor analysis and predictive analytics (Zitec 2023, Vial 2019). Moreover, introduction of robotics and AI into the production process can decrease production costs, time of production, and eliminate human error (Zitec 2023).

Banking, financial services and insurance (BFSI) – Finally, as an overture into the topic that will be discussed in larger detail later in the paper, the finance and insurance sector is a large consumer of digital technologies and one of the rapid enforcers of digital transformation. As fintech and insurtech startups as well as vetted neo-banks such as Revolut gain momentum on the market, traditional banks and similar financial institutions need to meet the rising demand for digitalization of their services. In fact, the focus of companies providing financial services has

started shifting from the digitalization of already existing, traditional services and tasks to the introduction of fundamentally completely new business models, commonly referred to as Digital Finance – encompassing a range of new opportunities, finance-related software and solutions, and new forms of customer interactions (Gomber et al. 2017)

2.3 Assessment – Digital Maturity

Having assessed their market position, environmental circumstances and internal readiness, and having taken the necessary steps to implement digital technologies into their everyday business, the role of the company management is now to continuously assess the level of digitalization of the firm. In order to stay competitive and preserve the competitive advantage gained through the digital transformation (Thordsen, Bick 2020), it is important to stay on top of industry trends as well as be aware of employee and clients’ opinions and needs. This is because the ever-emerging digital technologies and the continuous digital transformation do not only change the business processes, but also redefine strategy and value networks as well as shift the structure of industries as a whole (Spremić et al. 2022).

This is where the concept of digital maturity comes into the picture. Simply defined, digital maturity measures the company’s achievements thus far, having implemented digitalization into their business. More broadly, digital maturity can be defined as a measure of the company’s adequate reaction to changes in the digital environment, implementation of digital technologies into business processes, and finally the development of the staff and employee's digital literacy and competences (Aslanova, Kulichkina 2020). In order to assess their organization’s “status quo” on these issues, managers seek to consult digital maturity models (DMMs), which are used to measure and report on the status, or level, of the organization’s digital transformation (Thordsen, Bick 2020). They are in content very similar to the IT maturity models (ITMMs), with the exception that ITMMs focus on assessing solely the IT infrastructure of the business, and its interaction with the other organizational departments, such as IT-related processes, softwares, policies and standards, etc. (Thordsen, Bick 2020)

Digital maturity models take it a step further by taking a more holistic approach. Through DMMs, managers take a comprehensive look at the entire organization and its relationship with

technology, i.e. the strategic alignment of IT technologies with the business goals (Thordsen, Bick 2020). They are typically formatted using a likert scale and sets of scenario-based questions, used to measure the strength of the digitalization performance, with a “scoring” scale that lets the company know what level of digitalization it is operating at, and lets it assess whether it should digitally transform further. The levels range from using basic IT to support everyday business, through various levels of IT growth, employee training, and IT alignment with the company strategy, to finally more advanced levels of digital adoption through Digital business model implementation and innovation of new technologies (Thordsen 2023). In general, these questions are set to measure the strength of critical DMM components: content, experience, and platform (Spremić et al. 2022). Some examples of the questions and scenarios to be examined on a likert scale (completely disagree, completely agree, somewhat agree and so on) given by Thordsen, which respondents deemed as notably important, are as follows:

“Our competitive strategy depends on the use of digital technologies”

“Our board and our C-level executives back our digital strategy”

“The usability and intuitive application when purchasing or developing software for internal use is of great importance”

“Every employee is provided with short-term full functional IT support”

and many more. (Thordsen 2023), (Thordsen, Bick 2020)

Zentner, Spremić and Zentner propose that firms’ maturity will also depend on their customer and partner participation; namely, the amount of content created by user participation, through the acts of sharing, commenting and similar; as well as the existence of platforms to track customer experience, and enable integrations with key partners’ own systems. Some likert scale-based questions proposed here are as follows:

“Our clients think our digital content is of excellent quality and value”

“Our clients actively participate in creating our digital content by sharing their experiences online, ratings etc.”

“We have established procedures to constantly track our clients’ opinions about

our services”

“Our technological platform is effective, easy to use and of a good quality”

“Our platform allows easy integration with partners' technologies and systems”

and others. (Zentner et al. 2021)

It is important to note that not every company needs to follow all trends, nor does every company need to digitalize all aspects of their business. The level of digitalization provided by the DMMs is only for the company’s internal assessment and should not be compared between cases. Companies should look to digitally transform as long as it creates **value-added** to their vision and strategy, and aligns with their customers’ expectations.

3. PROFITABILITY AND EFFICIENCY AS A RESULT OF DIGITAL TRANSFORMATION

There is a reason why digital transformation is among the most talked about business decisions in the last decade. The advantages are abundant, as well as the research and findings supported by many success stories. Forrester, a US-based research and advisory firm, even stipulates that investors are very interested in digitally conscious companies, as they have a better understanding of their customers and provide state-of-the-art services that are currently in high demand. These companies are, thus, rewarded with high investments and growth (Schadler 2019).

The process of digitalizing the business is neither quick nor cheap. To recap what was discussed up until this point of the paper, the process of digital transformation cannot begin before the identification of the company’s characteristics, strengths, goals and strategy, as well as the assessment of external factors and customer expectations. For the digitalization to be a success, this stage should be done thoroughly, as not all companies (even all industries) have the same needs, circumstances and resources to transform their everyday operations in such a big way. Once assessed, the company can choose which processes to digitalize. There are some general tasks that bring the most benefit by digitally transforming – tasks that are highly repetitive and handle large amounts of data are perfect for digitalization through automation – where the task will no longer be done manually, but rather the data will be managed automatically, creating a

faster output and fewer human error type mistakes. But mostly, it is dependent on the industry a company is operating in, to decide how to digitally transform: in a way that is most beneficial to its customers, above all. Therefore, the complete process takes a lot of time, research and assessment, even trial and error to be done right.

Once the company has found the optimal way to digitalize its operations, it can quickly observe the benefits it achieved. Firstly, the **efficiency**. The aforementioned process of automation is the best example of operational efficiency - taking tasks that are already mature, well-known and polished (Zitec 2023), and transforming them into a unique program or algorithm that solves the problem by itself. Cloud computing is another example, as it provides on-demand resources available to the firm, without needing supervision and interference of the IT staff (Vial 2019), similarly to automation. Data science, or analytics of large data sets, provides an extremely fast way to comprehend substantial volumes of data, and is therefore expected to considerably speed up the decision making process; while using tools such as artificial intelligence that will leverage those data sets can help in automated, algorithmic decision making (Vial 2019).

Digital transformation also fosters efficiency in communication within the firm. Firms can utilize their digital platform to create direct contact between employees regardless of their location or status, and also establish communication channels with customers and outside partners. We could see this during the 2020 pandemic, when most firms were constrained to move their entire communication network to digital platforms such as Slack, Teams, Google Hangouts and similar. Mobile applications have also become important in improving internal communications of employees, even more so than solely to interact with customers (Schwertner 2017).

Finally, the use of digital technologies can help firms become more flexible by contributing to organizational agility – the firm’s ability to recognize market opportunities and to act on them with swiftness (Vial 2019). Efficiency in the process of putting together the needed resources and knowledge to pursue given opportunities is the key characteristic of organizational agility. In order to achieve this, resource analytics as well as IoT can greatly contribute to the identification of available assets and reduce surplus in production and slack resources (Vial 2019), meaning the reduction of spare capabilities available, but not used in due time.

Efficiency of operations goes hand in hand with operational **profitability**. The automation of manual tasks and integration of data through the digital transformation tools streamlines the workload, making it simpler and faster to operate. These initiatives contribute to the reduction of time as well as costs of operations, resulting in increased profits (Veerabhadran 2021). In fact, digitalization in general lies on the principle of reducing the need for workers doing manual tasks, instead replacing them with programs and algorithms that solve problems faster and with less resources. Reducing costs by digitizing the processes through all the production stages: development, testing, producing and prototyping is of significant importance (Schwertner 2017) to any firm wishing to increase their productivity and profits.

Furthermore, the firm's profitability is also highly connected to the efficiency of its digitalized communication channels with customers and business partners. The firm's digital platform is an instrument to foster customer connectivity, but also to encourage connections to new, potential customers as well as partners and suppliers. It has been shown that utilizing digital tools, through the boost of engagement and participation from various parties, increases profits of the firm. This is made possible by allowing the firm greater insight into the external environment through direct communication with interested parties, and thus, giving it the ability to design its response and adapt to the new circumstances (Vial 2019). We can tie this back to the beginning of the chapter where, through the example of Forrester, it was stated that well-digitalized firms have a good insight into the complexity of the environment and are thus rewarded with fast growth and investments (Schadler 2019) – increasing their financial resources.

Companies can also gain market insight for the purpose of improving their product offer by using other digital tools. Namely, easily accessible online survey tools can be utilized for little to no cost, and provide a fast acquisition and immediate analytics of responses. Previously mentioned Big Data technologies, of course, help to further understand and dissect large arrays of data. These and other digital transformation trends and prospects create new ways for firms to optimize their production costs as well as upgrade their product and/or service mix in accordance with market conditions, thus having a positive impact on business profitability (Romanova et al. 2021). Overall, a study done by the Massachusetts Institute of Technology showed that digitally transformed businesses are 26% above the standard profitability (Schwertner 2017), and this

number is likely to have increased after new technological advancements, as well as the pandemic.

4. DIGITAL TRANSFORMATION IN FINANCE

4.1 Digital Transformation in the Financial Sector – an outline

We have seen that the process of digital transformation helps companies create new business opportunities, competencies and cost savings through the use of digital technologies. The rise of the digital economy as well as the changing business and market requirements fundamentally influence the way businesses operate and deliver value to their customers, doing so in the long run (Veldink 2020).

The finance sector is not an exception, in fact, technological advancements have been following the financial, especially the banking sector since its inception – from notes and cheques to wire transfers, debit and credit cards and the Internet banking, it has been crucial for banks to keep up with new technology developments in order to not only stay competitive, but to survive. Other actors of the financial sector such as insurance, government supervisory institutions and investment companies have also been subject to following technological advancements throughout time. Now, technological progress has made it possible for small, digitally-abundant banking, insurance and investment startups to compete with traditional financial institutions.

Collectively, these examples can be connected by a single term – FinTech. As a combination of the words “financial” and “technology,” FinTech describes the cooperation between modern, digital, usually Internet-related technologies with established business activities of the financial industry (Gomber et al. 2017). FinTech has been an unstoppable force in finance, leveraging the groundwork laid by digital transformation to create fully digitally-immersive companies that can - and do - compete with traditional financial institutions. In the following subchapter, the fundamentals of the FinTech sector will be presented.

4.2 FinTech

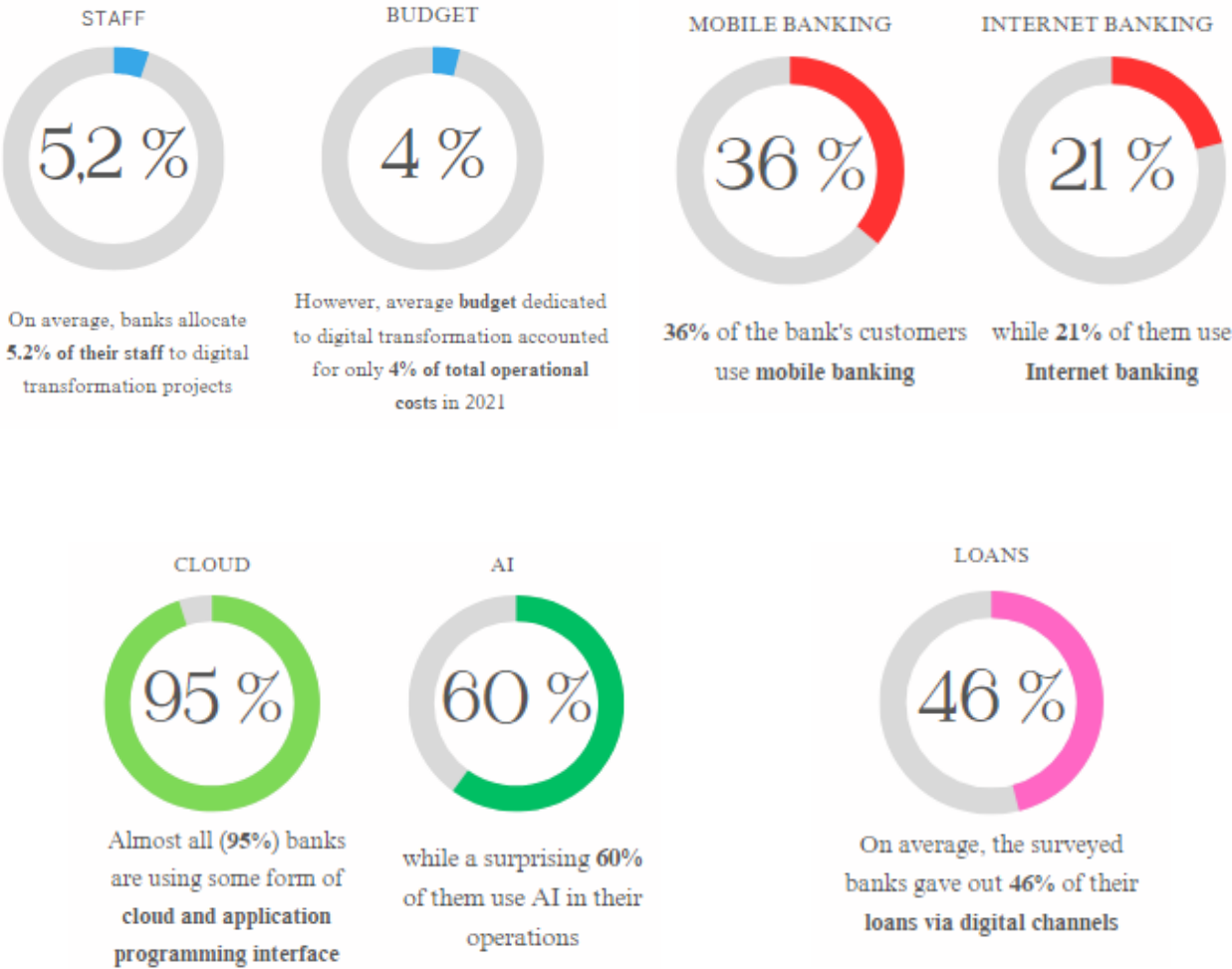
While traditional companies adopt digital technologies after already having established their business model in order to improve their everyday operations, modern companies emerging today base all of their business processes on technology from the start. Due to the advancements in information technology (IT), the process of digitization now does not lead only to an increasing automation of processes, as explained previously in the paper, but to a fundamental reorganization of the business models, services provided and new market entrants. In the financial sector, the term “financial technology” or short “FinTech” reflects this development of an IT-induced transformation in the provision of financial services (Puschmann 2017). Furthermore, the term “Digital Finance” is also used to describe the widespread digitalization of the financial sector (Gomber et al 2017). Let us examine how Fintech has impacted different parts of the financial sector.

Fintech in Banking – There are a number of trends on the market which have brought the banking sector to digitally transform quickly: firstly, the consumers, who are increasingly calling for digital solutions, expedited by their daily use of mobile devices and apps, in order to fulfill their daily banking needs. On average, 105 large banks surveyed by the ECB Banking Supervision concluded that 46% of their loans are given via digital channels, while 36% of their customers use mobile banking (McCaul 2023). Secondly, the digital advancements themselves are making “old” processes used by financial institutions obscure, as digitalization provides easier and more cost-effective methods that also allow for extraction of valuable information from already available data. This, in turn, creates a new way to gain competitive advantage on the market, which is now filled with pressure from expectations from consumers and stakeholders as well as the new market entrants (McCaul 2023) – including fintech startups.

The visuals on the following page present all findings of the research conducted by the ECB Banking supervision, and give insight into the current trends of digitalization in the banking sector.

While banks have become aware of digital transformation and started incorporating it into their business, by allocating both staff and budget to its development, it is still only at the early stages

of implementation. We can see that on average, surveyed banks had only 4% of total operational costs dedicated to their digital transformation, a number which could definitely improve in the future. However, banks have recognized the digital tools that work best for them, resulting in nearly all observed banks utilizing cloud interface in their operations, and a staggering 60% using AI – the already mentioned recent trend which has taken the world by storm. We will likely observe a continuing development of AI and its usage in all business sectors, due to the plethora of opportunities and merits it offers.



Author's visual representation of data provided by Elizabeth McCaul, member of the Supervisory Board of the ECB, during her speech in Rome, 10 March 2023.

As a part of a new generation of business models which base their processes on the use of analytics, big data and digital technologies, fintech has the ability to disrupt already established financial intermediaries, particularly banks (Vives 2017). Fintechs are slowly chipping away at banks' market positions by leveraging their unique advantages – their main focus is the development of novel and customer-centric solutions, while they run asset-light, cloud-based operations allowing them to be scaled on demand (Lanteri et al. 2021). However, they are missing one important aspect – banking charters and licenses, which have become heavily addressed topics for Fintech recently.

This is why today, traditional banks have to either compete with new fintech and banking-as-a-service (BaaS) startups, try to imitate their processes, or leverage their banking licenses to team up with them (Gomber et al. 2017). However, as more and more fintech have begun obtaining their own banking charters, such as Revolut and Paypal (Vives 2017), traditional banks will likely have to find their own ways to digitalize and appeal to their tech-savvy customers.

Fintech in Insurance – Inside the FinTech sphere, InsurTech is a rising industry which aims to improve the efficiency of insurance services by use of technological innovations (Tibco 2023). A lot of Insurtech companies work on making insurance accessible to anyone with a mobile device, thus providing their services even to previously uninsurable individuals, for example people with no or with a bad credit history in the US (England 2022). Similarly to the banking sector, traditional insurance companies can adopt InsurTech practices to simplify their service offer – one example being Croatia's first fully-digital car insurance platform, LaQo, under the Croatia Insurance company.

Fintech solutions in the insurance industry cover processes such as client outreach and communication, insurance advice, service provision and calculation of fees, risk management and the handling of claims. Advanced areas also include big data analytics, either for company records or in order to create more personalized offers to customers (Puschmann 2017). With the continuing IT advancements and traditional insurance companies' ignorance of the same, a number of impressive startups are disrupting the marketplace and positioning themselves as

perfect examples of value-for-money, fast service providers in a sector that was previously thought to be non-innovative and slow (England 2022). Insurtechs are rewriting the way the insurance sector provides customer centricity, becoming strong competitors in the industry that traditional companies will have a hard time catching up with.

Fintech in Investments – Likewise, investment companies have also been affected by the rising digitalization. While established investment companies, such as investment funds, still exist and operate, it has become much easier for individuals to invest on their own – without the need for an intermediary. In fact, one of fintech’s main strengths is the potential to lower or completely eliminate the need for intermediation. This, in turn, also allows them to create financial inclusion – give access of financial services to the unserved parts of the population as well as to less developed countries (Vives 2017). Where, in most cases, in order to participate in an investment company such as a hedge fund, a substantial buy-in is required, fintechs allow any individual to invest as much or as little as they wish.

4.3 Case study – Revolut

One of the biggest fintech companies in the world, Revolut, is truly disrupting the finance sector from various angles.

It is a fully-digital bank, where customers can hold money, track their spending and make easy, free transfers to other users. Just like in traditional banks, Revolut also allows users to create a digital savings account, called the Vault, where they can earn interest on their savings deposit, which has no minimum amount. If desired by the user, Revolut will also provide a physical debit card that works on any payment system, as well as the majority of ATMs, allowing for cash withdrawals with no additional fees. In contrast, traditional banks charge fees on the use of their ATMs with another bank’s card, as well as for money transfer to an account held by another bank. This makes Revolut and similar neo (digital) banks the cheaper and more convenient option.

Alongside this, Revolut also serves as a digital stock exchange, where any user can easily make investments into stocks from anywhere in the world. They can invest as little as \$1, create their own desired portfolio and track their earnings from minute to minute. Moreover, Revolut is one

of the most popular platforms for investments in crypto, allowing customers to momentarily exchange their cash for a crypto currency with no fees. Similarly, one of the users' favorite features is the free-of-charge currency exchange, which instantly creates a new account, making for an easy overview of all balances in different currencies.

The biggest convenience of Revolut and comparable platforms comes from the fact that all of these services are available on a single app. It is intuitive, easy to navigate, and available to anyone, anywhere, for a fraction of the cost required by traditional institutions. Revolut is only one example of how disruptive fintech has become to the finance industry, and it is no wonder that banks are investing in digitalization after seeing its enormous success. However, as some countries have already started allowing for salaries to be paid directly on Revolut, and the fact that it has recently become a fully licenced and regulated bank in the European Union, there might be little traditional banks will be able to do to compete with this fintech giant.

5. DIGITAL TRANSFORMATION IN THE BUSINESS FINANCE

We have identified that the usage of digital technologies in business contributes to value creation, innovation, and ability to foster growth and impact of the firm (Zentner et al. 2022). We have seen that, following this principle, financially-oriented companies have started heavily implementing digital technology into their everyday operations. Banks, investment companies, insurance and many others now rely on digital transformation in order to compete in the new market, where the increasingly tech-savvy clientele is demanding seamless solutions with an easy to understand, user-friendly interface. Customers now have on-demand access to all of their data, such as credit card spending history or insurance claims, making everything more transparent and simple to navigate.

Moreover, the implementation of digital technology in finance does not stop in firms providing financial services. Rather, digital tools, platforms and applications are used by internal staff to collect, analyze, prepare and report financial data for stakeholders. We have entered the era where platforms and intelligent tools, and the previously mentioned automation of operations have become irreplaceable regardless of the market and industry sectors. (Kenney, Zysman

2018). Listed and non-listed companies both have to prepare financial statements with a breakdown of their financial activities, income, expenses and, in case of listed companies, the allocation of profits to shareholders. Thanks to the development of online and digital tools, it has become significantly easier to capture and analyze financial data with little to no manual work to be done.

In order to digitally process and analyze financial data, a few crucial instruments have been identified as the following:

- (1) Cloud technologies. The biggest advantage of cloud is the ability of relocating the database and giving access to any desktop, anywhere in the world (Romanova et al. 2021). This not only speeds up the process of gathering data from all parties, but also lowers cost of operations and communication (Kenney, Zysman 2018).
- (2) Artificial intelligence and machine learning. Both innovations allow for the use of relevant information to broaden the capabilities of the process. The predicted further growth drivers include the continuous need for data analysis at a granular level, and the rapid rise of usage of smart devices (Zitec 2023). They are especially expected to enhance the firm's digital capabilities in accounting and tax calculations (Romanova et al. 2021).
- (3) Electronic document management systems. The right storage of data is of extreme importance in finance. In general, management systems – such as document management systems, are systems which carry out the preparation, processing and storing of data files (Spremić 2017). These systems, like cloud technologies, contribute to the optimization of document circulation and access, and the reduction of overall costs.

(Romanova et al. 2021)

It is worth noting that smaller companies, including SMEs and startups, who do not have the resources to develop these tools and platforms for financial analysis on their own, are able to instead purchase online tools. These include very intuitive and easy to use apps that can be navigated and operated no matter the industry, number of subsidiaries and total budget of the firm. One of the oldest and most famous such apps is Quicken – it can be used by both

individuals and firms in a way of simply inputting data and getting immediate calculations of income and expenses. It also allows for predictions of future earnings and spending based on historical data, and even the creation of “what-if” scenarios to assess, for example, the attractiveness and viability of taking out a loan (Quicken 2023).



Logos of Quicken Inc and Xero Inc

Another app that works on a similar principle, but goes a bit further by offering a wider variety of options, is Xero. Xero is primarily an accounting and bookkeeping platform that allows users to not only input data, calculate results and draw graphs, but also store and keep track of their invoices, connect their bank accounts, even with various currencies, and thus control spending, and even keep track of projects, accept e-payments, account for inventory, and much more (Xero 2023).

These, among many other finance softwares, show the application of digital transformation on a mass scale. These tools mostly work on the automation principle, where repetitive tasks stop being operated manually – for example, dates on invoices and outflows of cash from bank accounts are matched immediately as they occur. These apps are only an example of how far digital transformation has come in a short period of time, as now even solo practitioners and small firms can have access to technology that streamlines their operations without the need to develop their own. Finally, the digital transformation’s importance, specifically in Europe, is evident from the EU Parliament’s 2021’s Digital Europe programme, mentioned early in this paper, which is expected to provide real added value not only to businesses, but citizens of the EU as the market develops post-pandemic (Savastano et al. 2022). Among many goals of the

programme is the initiative of the EU to fund firms' investments into digital technologies such as AI, cybersecurity, high-performance computing and data processing, and many others (Szczepański 2021). Digital transformation has thus proved to be indispensable in the modern market, economy and society, as the EU even plans to slowly move toward the “genuine digital single market” – where businesses, individuals and generally devices will be interconnected within the area. This is the reality that likely awaits the rest of the world as well, and it will be interesting to observe how important digital transformation continues to be in the future.

6. SUMMARY AND CONCLUSION

In this paper, the fundamental framework and current trends of digital transformation were presented. The development and implementation of digital transformation into businesses was discussed, stipulating that, regardless of the industry, firm goals, available resources, organizational structure and top management support are among the most important factors to consider before introducing digital technologies into the operations. Depending on the industry the firm is operating in, on the other hand, there are different ways of implementing and using technology in order to enhance the business – digital tools and the way they will be used will be different for a manufacturing business and a bank, for example. Deploying the right set of digital tools helps processes run more smoothly and efficiently, doing so by generally automating tasks (Veerabhadran 2021), meaning that mature tasks are transformed into a program or algorithm that solves problems automatically, instead of doing so manually by employees. (Zitec 2023). Overall, the degree of development of digital content, tools and platforms is expected to have a positive impact on business success and its sustainability over time (Savastano et al. 2022).

One of the most important contributions of digital transformation to businesses is its impact on the profitability and efficiency of operations. In this paper we have found that it is the automation of operations, as well as the integration of data through digital tools, that drives their efficiency, as it minimizes the human error component and creates a much faster output of data and results. This, in turn, creates for a higher profitability of operations, as it reduces both the time and labor

costs, while the digitalization gives the firm a greater insight and analytical capabilities into its environment, rewarding them with faster growth and investments (Schadler 2019).

Finally, towards the end of the paper we turned our focus to the financial industry and discussed in more detail how digital transformation affects business and the way operations are performed. Digital transformation has been an integral part of the finance industry since its inception, and has culminated today as FinTech – a business combining financial services and technology, which is taking the banking, insurance and other financial services sectors by storm. Traditional institutions now have to compete with these new, tech-abundant companies and startups, which the new generation of customers is gravitating towards due to their convenience and transparency in use. Furthermore, digitalization is also present in the way bookkeeping, accounting and financial analysis and reporting why the firm is conducted. In place of manual collection of data and calculation, there are now many possibilities of softwares, platforms and tools that help companies present their finances and even forecast future results based on historical data, in a much faster and more accurate way.

This paper's aim was to shed light on the significance of digital transformation and its impact on the current business environment. It was prepared with the help of numerous scientific and other relevant journals and papers, although it does not claim to have covered every single topic available on the subject. The findings of this paper present that digital transformation has become an integral part of the modern business landscape, crossing the borders of industries, sectors and clientele served. Through automation and integration of processes, along with the analytical expertise provided by digital tools, companies are able to reduce costs, minimize errors, and facilitate faster decision-making, empowering them to flourish in the rapidly changing market with an increasing customer demand for tech-savvy solutions.

In conclusion, digitalization of operations has become an indispensable part of running a business in the last few decades. It offers the companies the potential to streamline their tasks and, by leveraging the right set of digital tools and strategies, even enhance their long-term sustainability and success needed to survive in the digital economy. Needless to say, digitally transforming is no longer a choice for firms to make, but a necessity to survive in today's

turbulent and data-driven environment, and will become even more so as technologies, such as AI, develop further and become a standard on the market.

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