# Transportation and Logistics Leadership in an Age of Digital Transformation in Austria

Master Thesis submitted in fulfillment of the Degree

Master of Science

in International Tourism Management

Submitted to Dr. Stefan Bauer

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Vienna, 13 June 2022

# AFFIDAVIT

I hereby affirm that this Master's thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

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# ABSTRACT

The world is going through the 4th technological revolution which is much faster and will probably have a deeper social and economic impact in the future. Due to the outbreak of the COVID-19 pandemic the world has changed dramatically. People have been forced to change all their behaviors. People working at home, students are attending classes online, meetings are hold online, and even shopping is mostly done through the internet. The interesting part is that individuals are rapidly adapting to the new normality. As a result of this, a variety of companies witness the comfort of technology. Many business leaders rely on IT because it improves business communication, optimizes production and it creates a stronger image. Thus, it is specifically significant for leaders to be open for innovations, to make crucial changes to their organizational culture and strategy-making process. Many companies are already using Artificial Intelligence, Virtual Reality and Machine Learning to stand out from competition.

The purpose of this research is to examine the success factors of digital transformation in the transportation and logistics industry in Austria. The primary aim of this research is to examine how digital transformation has affected the transportation and logistics industry and how it will shape the future. A secondary aim is to analyze the role of leadership and which characteristics have to be fulfilled to be a leader.

The study follows an interpretative paradigm. To provide an adequate response to the questions and the topic, following steps are sought after. Starting with on an extensive literature review, the achievement factors for the use of advanced devices and techniques is dissected. Moreover, a comprehensive assessment of academic papers, documents and books are completed to acquire a superior understanding of the subject matter. Based on the literature review, a qualitative research phase is conducted. First, semi-structured expert interviews with a selection of specialists on leadership and digital tools & methods to lead is conducted. By conducting expert interviews the knowledge gained by extensive literature research could be further explored. After analyzing the success factors, a second round of qualitative semi-structured interviews with employees and their leaders are done to reinforce the discoveries.

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| | |
|---|---|
| AI | Artificial Intelligence |
| COVID-19 | Coronavirus disease-19 |
| GPS | Global Positioning System |
| IoT | Internet of Things |
| IR | Information Retrieval |
| IT | Information Technology |
| LSPs | Logistic Service Providers |
| NLP | Natural Language Process |
| RFID | Radio Frequency Identification |
| SCI | Supply Chain Innovation |
| SCM | Supply Chain Management |
| SCV | Supply Chain Visibility |

# 1 INTRODUCTION

*Technology is, in its purest essence, knowledge – knowledge to solve our problems and our goals (Schilling, M.A, 2019, pp.3).*

A key message is conveyed by this statement. It is through the advent of technology that individuals can acquire new information and discover market gaps. The remarkable development of technology is significantly influencing businesses and economic activities alike. It likewise has massively affected our society and will continue to have a major effect in the future. It is interesting to observe how entrepreneurs adapt IT into their business and how this adaption affects employee and consumer experience based on the number of parts of technology. Individuals are effectively transforming themselves into the new "normality" in the world that we live in. In the face of the Covid-19 pandemic, it shows how technology impacts our lives on a daily basis (Kumudumali, 2020). Whether it´s lectures or meetings held online to thriving internet shopping industry. As a result of the pandemic, several old habits have been destroyed and new ones have been imposed. The Covid-19 pandemic has therefore affected every nation in the world across different areas (Kumudumali, 2020). Keeping up with technology and being aware of its power is very important. In light of that, it is vital to consider the significance of future business pioneers who are and will be incorporating new digital tools into their operations.

It is beyond doubt that digitalization has affected all parts of the organization, including supply chains and operating models. Modern technologies, such as RFID, GPS, and sensors, empower organizations to transform their current hybrid supply chain into platforms that are more adaptable, open, lithe, and collective (Capgemini, 2011). Digital supply chains, as opposed to hybrid supply chains, allow for automated business processes, organizational flexibility, and advanced management of corporate resources, rather than introducing rigid structures, inaccessible data, and a divided relationship with suppliers (Capgemini, 2011).

A prologue to this chapter concludes the master thesis. Throughout the section, the subject is clarified, and a correlation is demonstrated between research and core aspects of the topic. Within the accompanying section, the proposal´s aims and objectives are characterized, the study questions are raised, and the approach to addressing them is reviewed.

## 1.1 Problem definition

Today there are an enormous number of products built on the planet as the world becomes more globalized and more people live on the planet. That number has tripled in recent years. Transport and logistics seem to be at the height of their power right now. The prediction of the researcher for the future is that there will be a lot of change. In the same way, digitization is also crucial for the environment, which is why it is so important.

Innovation in consumer-oriented businesses has also changed the landscape significantly. The increasing penetration of the internet, universal data accessibility, and the rapid growth of social networks have a significant influence on consumer buying patterns (Jackson, 2020). The implications of technology are seen by entrepreneurs as extremely relevant. Digitalization has shifted the world into a digital age, but it has also raised the question: How has it changed the world? Through the application of digital tools, businesses can increase their efficiency, increase customer satisfaction, and look for new revenue sources. The world is experiencing disruption on an unprecedented scale. Technological change is transforming not only society, but also the whole world's economy. Leadership is, therefore, crucial for achieving a successful business's digital transformation. Traditionally, it has been assumed that globalization has grown slowly and is not comparable to the development of COVID-19 (Jackson, 2020).

Following a disastrous event like Covid-19, every industry has learned the need to incorporate recovery and crisis management strategies into their business planning. The Institute for supply management has measured the impact of Covid-19 on supply chains as rising from 80 to 95% between early March and late March (Van Hoek, 2020). Surveys reveal that 86% of supply chains are affected.

## 1.2 Aims and objectives

The objective of this research is to investigate the impact of digital transformation in the transportation and logistics industry. The primary aim of this research is to analyze how digital transformation has affected the transportation and logistics industry and how it will shape the future. It is the researcher´s aim to examine the importance of IT in the transportation and logistics industry, particularly, and how the business is affected after a crisis such as COVID-19. The question of how digitization changes working life in logistics, and what may be reasonable applications for digitized technologies in logistics and supply chain management will be investigated.

Furthermore, the thesis examinations the impact of digital transformation on customer and employee experience and to what extent companies ought to incorporate technological devices.

## 1.3 Research questions and propositions

This master thesis includes a series of investigations into theory. As the aims and goals of the postulation were clarified in the past section, it shifts to cause the development of significant inquiries regarding:

Research Question:

> ***What are the success factors for the use of digital tools in the Austrian transport and logistics industry?***

| | |
|---|---|
| Sub - Questions | *SQ1. Which characteristics must be fulfilled to be a leader in the 21st century?* |
| | *SQ2.Which digital tools and methods are used to effectively lead teams?* |
| | *SQ3.Which success factors are existing for the integration of natural language processing in the transportation industry?* |
| | *SQ4.Does the application of digital innovation impact the attractiveness towards potential consumers* |

The researcher has chosen these research and sub-question, as an element to find answers for essential questions.

Propositions:

1. *The application of Technology can positively shift leadership to innovative leaders.*
2. *Natural Language Process and digital tools influence positively the* working behavior and *consumer experience.*

The significance of these assertions to the study operates as verification of theory. As part of this thesis, data is gathered to build up a conceptual framework, find answers to questions and investigate new digital tools in order to identify topics and patterns.

Technology adoption by consumers has a major impact on the supply chains in traditional industries which continue to produce physical goods. Application of emerging technologies in supply chains, across industries, helps organizations better fulfill the needs of their customers.

## 1.4 Methodology

The most successful procedure is to implement a flexible strategy since it will allow a more comprehensive examination of the topic. Qualitative research will also include expert interviews with partners. Considering that the study is about digital transformation in Austria, it would be difficult to simply collect quantitative data. To ensure a comprehensive outcome regarding the research question, it is critical to conduct interviews. A conceptual paradigm and interpretive approach are employed in the study. The accompanying updates will be sought after in order to react adequately to the inquiries and topic.

It will begin by reviewing a comprehensive literature review, then explore the factors that affect the effectiveness of digital tools and strategies. In addition, a thorough analysis of academic papers and documents will be performed to gain a more comprehensive understanding of the subject matter. Qualitative research will be conducted after the literature review. The first step entails conducting semi-structured interviews with leaders, digital tools, and leading methods experts. In addition to extensive literature reviews, expert interviews can further explore the information gained. In order to reinforce the data gathered from the qualitative semi-structured interviews with employees and their leaders, the second round of interviews will be conducted to analyse the success factors.

## 1.5 Thesis structure

Four sections are included in this thesis. A general introduction to the thesis is given in chapter one, as is an overview of the main theme of the exploration. In this section, a more detailed explanation is provided which includes the goal and objectives of the problem definition, the research questions, and the methodology.

Next, the researcher will discuss the literature review, which is divided into four parts. In the first part, leadership is discussed. Next, there is a discussion on digital leadership. Finally, there

is a discussion about the characteristics of successful leaders. With this text, readers will gain a thorough understanding of how to be an effective leader. Technology and innovation are the topics of the subsequent chapter. To begin, types of innovation will be determined. Part two will examine digital tools in the transportation and logistics sector. A brief definition of NLP will be given, as well as success factors for NLP within large organizations. This chapter concludes by discussing the impact of digital innovation on consumers. Furthermore, the goals of digital innovation for the transportation and logistics field will be discussed, as well as automating departments through the use of natural language processing and other tools.

In the third section, the methodology applied is evaluated. Existing literature on leadership is reviewed to collect information on the topic.

A summary of the literature review and empirical study is presented in the last section. These findings are discussed and concluded in this section. In conclusion, the researcher provides some key ideas for future research that can reorient the field and make upcoming analyses more thorough.

# 2 LITERATURE REVIEW

This chapter provides a general understanding of the concept of leadership, its capabilities, and its characteristics. Throughout the scholarly study, leadership models are summarized in detail, with the researcher exploring each model in-depth to create a deeper understanding of leadership. A special emphasis is placed on digitalization, its importance, and its effects on logistics and transportation. In summary, we conducted interviews to gather very detailed information and understand opinions, in addition to analyzing data.

## 2.1 The Nature of Entrepreneurial Leadership and its importance

A business manager´s simple leadership skills are insufficient to keep up with the development, improvement, and maintainability of enterprises in the current environment. Furthermore, business decision makers should be able to take advantage of opportunities around them, as well as face fewer challenges. Leadership and entrepreneurship are two characteristics of managers who possess these characteristics**.** This is where the idea of entrepreneurial leadership comes in. Entrepreneurial leadership is defined as leadership with the qualities of an entrepreneur. Thus, entrepreneurs are leaders who face problems, take advantage of opportunities, search for opportunities, be creative, deliver, exchange and be strategic (Esmer and Dayi, 2017).

As organizations have ended up constantly redesigning their business sectors, rebuilding their tasks, and adjusting their business models, acquiring the abilities to think and act innovatively has turned into the source of competitive advantage (Kuratko, 2007). As described by Bagheri and Harrison (2020), when entrepreneurs focus on innovation and opportunity recognition, particularly in perplexing, turbulent, and critical conditions, they not only develop effective plans to overcome the difficulties facing their business, but in addition direct the course of their business´ growth and development. In most discourses on leadership, it is assumed that leading is about having a purposeful impact on others. This is to guide, structure, and facilitate activities and connections within a group. Since leadership has such countless various implications for individuals, a few theorists question whether it is even helpful as a logical construct (Yukl,2010).
To create new value, entrepreneurship needs powerful leadership of individuals, assets, and cycle. It focuses on identifying, assessing, and utilizing explicit opportunities to create new value. In order to discover how and why entrepreneurship is produced. In general, leadership is a highly evolved field of exploration that can provide additional insight into our understanding of entrepreneurs and entrepreneurial cycles (Reid, Anglin, Baur, Short, and Buckley, 2017). Over ten years prior, a potential consolidation of leadership and entrepreneurship research was officially

imagined. A comprehensive examination of four notable reasonable field can potentially reveal new directions for productive investigation in both of these fields. In their first point, they underscored the correlation between the way executives phrase their vision in an effort to persuade their adherents and the process entrepreneurs undergo to rouse the organization´s key partners, which executives use to influence others to accomplish specific objectives. This generally mirrors the strategy utilized by entrepreneurs when looking for assets from investors. Executive and business managers working in exceptionally complex organizations require appropriate planning (Reid, Anglin, Baur, Short, and Buckley, 2017).

Northouse (2019) states that, despite the large number of manners by which leadership has been conceptualized, the accompanying parts can be distinguished as key to the peculiarity: (a) leadership is an interaction, (b) leadership includes influence, (c) leadership happens in gatherings, and (d) leadership involves shared objectives.

Innovative ideas, creativity, and creative thinking are significant in keeping up with the rapid progress of the world. In today´s quickly evolving world. Pioneers should be dexterous. They need to settle on choices rapidly, make a move and learn from the outcomes. Leaders need to expect the future, react to unexpected conditions, and adjust to change. This load of angles depends on entrepreneurial leadership. To ride the floods of progress, they need a solid feeling of direction and inspiration and a submitted and powerful team. Also, they require the deftness to react rapidly and shift course when required (Oglethorpe, 2018). Esmer and Dayi (2017) state that entrepreneurial leaders understand themselves and their current circumstances well, recognizing new opportunities and creating value for their organizations, partners, and society as a whole.

### 2.1.1 The Heritage Leadership Models

Who will be viewed as a leader? Is it someone who has those “personality characteristics” or is it someone who exhibits those “perceptible behaviors”? It may be that both traits and behaviors are desirable, but what are their relative weights? All things considered; leadership theories were initiated with solid confidence in characteristics defining leaders.

Mango, (2017) explains the term leadership with the following story .A story about six blind (metaphorically speaking) men who had never seen an elephant provides the best illustration of the current situation of leadership theory in today's society. Every man touched a different part of the elephant, unlike his peers, on one day, and each man did so. Blind men holding the trunk, tusk, ears, legs, belly, and tail were the first, second, third-, and fourth-blind men. Blind men holding the trunk were, the second blind man, the tusk, the third blind man, the ears, the fourth

blind man, the legs, and the fifth blind man, the belly toward the back. Following the blind person's examination of all parts of the elephant, they were challenged to describe it. Having touched the trunk, the blind man said, "an elephant is a snake"; having touched the tusk, he stated, "an elephant is a spear"; having touched the ears, he said, "an elephant is a fan"; touching the leg, he said, "an elephant is a pillar"; touching the belly, the blind man said, "an elephant is a wall"; and touching the tail, he declared, "an elephant." There was a debate among the blind men when each described an elephant in his own way, and each said that his description was correct. Blind men did not evaluate other aspects of the elephant and did not have a complete understanding of what an elephant is. They simply did not consider other aspects of the elephant, which is not to say that they were wrong. There are a great many people who are aware of some things about leadership but have not yet engaged in leadership as a whole. As the blind men each knew something about the elephant, so did each of the blind men. Because of this, many perspectives on leadership are incomplete (Mango, 2017).

Many leadership experts, like the six blind men, never miss an occasion to promote one leadership perspective as the entire truth about leadership (Mango, 2017).

| **The Theory** | | **Period** | **Summary of Theory** |
|---|---|---|---|
| **Great Man Theory** | | Before 1950 | Leader decides course of the history. |
| **Traditional Leadership Theories** | Trait Approach | Between 1910-1940 | General and common characteristics of the leader is explained. |
| | Behavioral Approach | Between 1940-1960 | Behaviors of the leaders are told. |
| | Contingency Approach | Between 1960-1980 | There is not a certain leadership behavior that suits every situation. It varies depending on the situation. |

| | | | |
|---|---|---|---|
| **New Leadership Theories**<br>Authentic Leadership<br>Transformational Leadership<br>Spiritual Leadership<br>Charismatic Leadership<br>Ethical Leadership<br>Servant Leadership<br>Entrepreneurial Leadership | | From 1980s till today | It varies depending on the direction of change of the society. |

Table 1: Leadership Theories – own creation

Source: Aksel, 2008
(Esmer and Dayi, 2016)

According to the **Great Man Theory**, leaders are born, not born. This theory expresses that leadership is an inherent quality. The theory declares that leadership is an inherent quality. Leaders of this type tend to have natural attributes such as wisdom, courage, self-confidence, intuition, and charm (Indeed Editorial Team, 2021). The great man theory was proposed in the 19th century. Leaders of it were born with innate physiological and individual characteristics, such as age, height, Intelligence, academic accomplishments. Some popular leaders are Julius Caesar, Mahatma Gandhi, and Abraham Lincoln (Cherry, 2020). According to Organ (1996), individuals in every society possess different degrees of intelligence, energy, and moral force, and in whatever direction the masses may be influenced to move, they are always led by the superior few. Few studies recognized different general factors that separate leaders from non-leaders. Some of these factors incorporates capacity, accomplishments, obligation, cooperation and involvement, and socio-economic status. Exhaustively, capacity alludes to critical thinking capacities and making decisions, and working hard. Achievements include academic records, information, and supports accomplishments. Obligation alludes to dependability, reliability, self-drive, diligence, aggressiveness, and self-assurance. Support and contribution are about profoundly evolved social connection, ubiquity, quick adaption to evolving circumstances, and more straightforward collaboration contrasted with non-leaders. At long last, socio-economic status implies that viable leaders, as a rule, have a place with higher financial classes (Stogdil, Kerr, Schriesheim, and Murphy, 1974).

A traditional leadership style encourages individuals to assume their responsibilities by providing them with direction, bearing and inspiration. The primary focal point of a traditional leader is to advance the business position of the organization or the association in the market (Trait, 2020).

According to Indeed Editorial Team, (2021) the behavioral theory of leadership emphasizes on how a person´s environment, rather than intrinsic skills shapes him or her into a leader. Conditioning is a crucial notion in behavioral theory. Conditioning argues that because of environmental responses to conduct, a person will be more likely to act or lead in a certain manner (Indeed Editorial Team, 2021). Since the **behavioral theory** excludes organizational elements, it is impossible to discern if a behavior that performs well under one set of conditions will continue to provide favorable results when those conditions change. For example, it is impossible to anticipate whether an operational manager will persist to be a successful leader if organizational regulations prevent him from pursuing disciplinary actions against his subordinates using the behavioral model (PhD Essay, 2020).

Moreover, the **contingency theory** assumes that leadership style is reliant on situational factors. This indicates that a leader who is competent in a circumstance may not be successful in another. This theory aids in a deeper comprehension of a leader´s behavior in a particular circumstance by taking into consideration two organizational framework aspects (PhD Essay, 2020). The two organizational criteria that are considered when assessing a leader´s performance, are authority and job description. Based on these variables, one may be able to discern if a person who has demonstrated great leadership in a specific situation may or cannot provide effective leadership in another (PhD Essay, 2020).

Leadership who employs transformational leadership theories rely heavily on the feeling part of the understanding to influence their devotees´ commitment and responsibility. Leaders can inspire followers and devotees through vision and a strong ideology, thus resulting in a passionate connection between adherent and disciple. This theory underlines the strength of the relational relationship and limits the effect of outer impacts (Mosley, 1998).

### 2.1.2 Power and Influence of Leaders

The researcher wants to start the chapter with a quote from Shakespeare.

> "Yet have I in me something dangerous, which let thy wisdom fear?"
> (Elze, p.91, Shakespeare, 1857).

As discussed by John Kotter "power is the ability to influence others to get things done, while authority is the formal rights that come to a person who occupies a particular position, since power does not necessarily accompany a position." (1985, p.86). Given these assumed linkages between power and successful impact, it is scarcely astonishing that leadership scholars have focused on the investigation of how leaders utilize their power and social impact to accomplish their objectives (Kramer, 2011).

To begin with, it is pertinent to define what characterizes power versus what characterizes influence. Influence is the essence of leadership. To be effective as a leader, it is necessary to influence people to carry out requests, support proposals, and implement decisions. The effectiveness of managers in large organizations is determined by their influence over subordinates and superiors, as well as their leadership. It is imperative to analyse the complex web of power relationships and influence processes found in all organizations (Yukl, 2010) so that one can have a deeper understanding of the factors that affect managers' effectiveness. While time and again one can find influential individuals who don't stand firm on authentic footholds of power, one often finds individuals who are in a place of power yet are weak to impact the conduct of others. Leadership can be learned, and power can be evolved, yet to be a compelling leader, one should have the option to recognize the different types of power and select the one most in accordance with his or her leadership style, personal attributes and working climate (Goncalves, 2013).

The concept of "power" is useful for understanding how people are able to influence each other in organizations. Power involves the capacity of one party (the "agent") to influence another party (the "target"). The term may refer to the agent´s influence over a single target person, or over multiple target persons. On occasion, the term refers to potential influence over things or events as well as attitudes and behavior. Sometimes the agent is a group or organizations rather than an individual. Sometimes power is defined in relative rather than absolute terms. In this case, it means the extent to which the agent has more influence over the target than the target has over the agent. Finally, different types of power exist, and an agent may have more of some types than of others (Yukl, 2010).

Kramer (2011) asserts that leaders´ essential decisions regarding which impact practices to use in each circumstance are determined to a certain degree by what they see as rational appraisals and rational calculative judgments. Specifically, they mirror leaders' deduced convictions regarding the viability of various impact procedures and strategies, apparently based on their related knowledge in such circumstances. Consequently, in the event that they utilize severe impact strategies, for example, ultimatums when attempting to accomplish their objectives it is on the grounds that they accept that such strategies are vital or adequate; alternately, assuming they use "delicate power" types of impact, like ingratiation and mollification, it is on the grounds that they trust the impacts of such delicate impact endeavors will be positive (Kramer, 2011).

### 2.1.3 What is digital Leadership?

The expanding strength innovation plays in our lives can undoubtedly be capable through behavioral perceptions of professionals, organizations, guardians, youngsters, and even grandparents (Sheninger, 2019). As of March 2021, approximately 65.6% of the world´s population was on the internet (Internet World Stats, 2021). The latest apparatuses are springing up quicker than at any time in recent memory. The present speed of innovative change is faltering, and the speed of current leap forwards has no authentic point of reference. Consumers might appear to be knowledgeable with the most recent individual contraptions, yet development in artificial intelligence (AI), robotics, autonomous vehicles, the Internet of Things (IoT), and nanotechnology remains barely known but to technology masters who focus intensely on ones and zeros. Through the coming transaction of technologies from both the physical and virtual universes, the previously inconceivable will become possible (Sheninger, 2019).

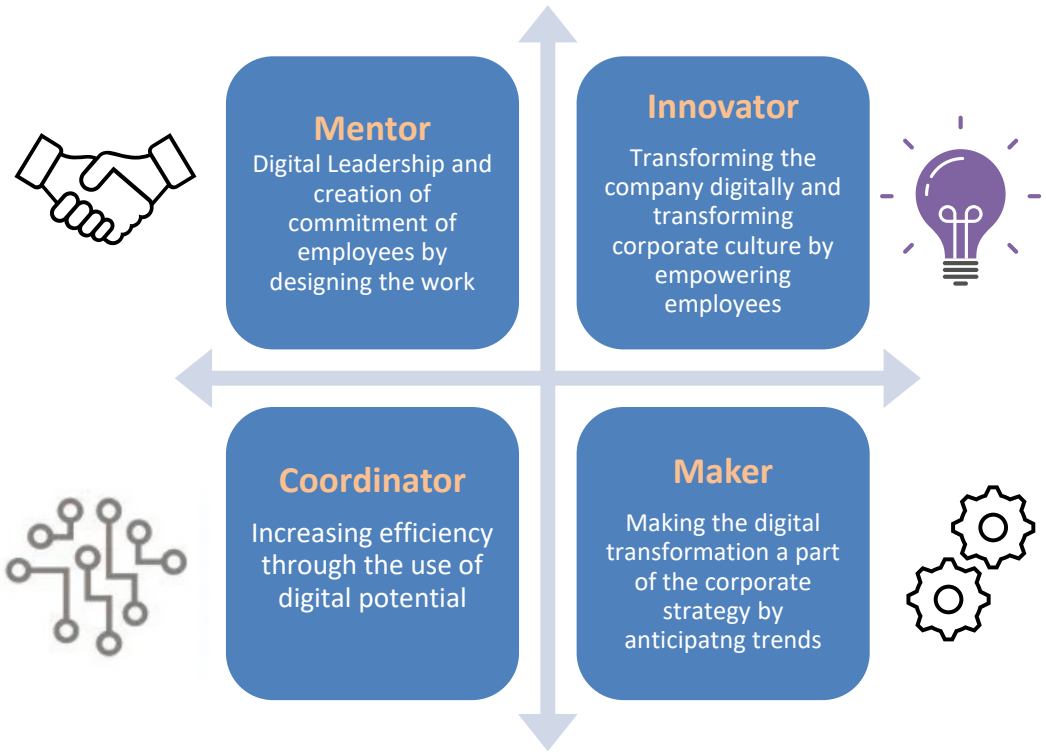



Figure 1: The Role of Management - own creation

The four roles of management in the digital age are briefly explained below:

Long-term planning and a focus on employees are part of the innovation process. The person works to transform the corporate culture through digital transformation and renewal. These professionals actively encourage and support innovation. As part of the transformation, employees are encouraged to contribute by supporting them. Information, awareness, and qualification are the main tasks for the innovator (A1 Digital 2022).

In addition to long-term thinking, doers are also focused on the technologies and strategies that drive their organization's digital transformation. A clear strategy for change, based on the technological point of view, is given, considering new technologies. Doers anticipate and seize opportunities early and utilize them over the long term; they are the ones who anticipate (technological) trends. Both coordinators and doers are focused on technologies that are used in operational tasks. These technologies include collaboration tools. Some examples of such tools are Wunderlist, Trello, etc. It is crucial to use existing technologies and digital potentials to improve the performance and efficiency of the enterprise. Mentoring is about the employee in the short term. Employees' daily work is adapted accordingly, along with their individual performance being promoted, to create a commitment to digital topics (A1 Digital 2022).

A person in a leadership or employee role does not occupy their role exclusively but engages in it with others to maximize the importance of key issues. From the perspective of management, it is also imperative to occupy different roles according to the project, the objectives, and the situation. A hybrid leader takes all of the above into account (A1 Digital 2022)

According to Goethals, Sorenson, and Burns (2014), the development of digital leadership not only changes over time, but also evolves. While digital leadership development is not static, it does change over time. As technology advancement is so powerful, the blend of leadership qualities required changes as well. As an example, the internet businesses go through various stages, such as pre-commercial, business, competitive, and union. In each case, there is a unique mix of leaders who communicate across field such as public, private, and research. Leadership initiative in research and development stages is at first determined by ground-based leaders. Later, in the business and competitive stages, it is determined by entrepreneurs. There is a unique blend of challenges at every stage of technological, political, and asset development. A change of mindset and asset preparation skills are essential during the early stages. The later period is marked as a period when functional abilities are particularly valued. As a result of the Silicon Valley, such pioneers as William (Hewlett-Packard), Andy Grove (INTEL), and Steve Jobs (Apple) played key roles in the development, assembly, and commercialization of silicon chips and PCs (Goethals, Sorenson, and Burns, 2004). Identifying how technology impacts the global market and its underlying benefits is crucial in the development of innovative organizations. This brought benefits to the economy, as well as society, and it is essential to learn all there is to know about the impact of technology and embrace innovation as an open door. There is no doubt that technology is creating, transforming, and changing in an unprecedented rate, so fast that it is increasingly difficult to keep up. Certainly, technology has in a very real sense changed every viewpoint and had an impact on how individuals work, and those changes have never happened so quickly in history. As a result of technology, many doors have opened over the past several decades in areas such as wellbeing, education, agribusiness, assembly, and administration (Davis and Schwab, 2018). As Dahlstand (2007) asserts, inventive and innovative firms often exhibit the characteristics of entrepreneurial activities and other exclusive standard industries.

Through the essential use of innovation, digital leadership helps organizations change and improve work cultures. With the start of development and utilization of the intelligent web, chief from every corner of the globe started to adapt to change, demonstrate straightforwardness, demonstrate a greater level of commitment, use joint effort, stress sharing, begin a worldwide exchange network, and assemble local area elements (Sheninger, 2019). It was not long before

leaders discovered that computerized tools could help and upgrade traditional aspects of leadership (i.e., management, efficiency, teamwork, assessment, inputs, and correspondence) while constructing new avenues to start change that would lead to changes. Digital leadership includes factors such as universal availability, open-source innovation, artificial intelligence, mechanical technology, mobile devices, and personalization (Sheninger, 2019). The growing use of internet and different innovations have made it possible to work more efficiently, ensuring further growth and development. A developing mind will allow one to create another way of leading; further development of thinking will allow one to do it**.** In this sense, digital leadership can be described as establishing direction, affecting others, creating supportable change by accessing data, and establishing connections to create change (Sheninger, 2019).

Ultimately, leadership innovation and versatility are vital in this highly unique environment, particularly the capacity of the leader to channel the perfect information to the ideal individuals at the perfect time and in the perfect place. In light of these factors, the post-modern style of leadership may be defined as one where the elite within an industry or nation have a closer dialogue, including government pioneers, business executives, specialists, and citizens as a whole (Goethals, Sorenson, and Burns, 2004).

## 2.2 Types and Patterns of Innovation

“Creativity, as has been said, consists largely of rearranging what we know in order to find out what we do not know. Hence, to think creatively, we must be able to look afresh at what we normally take for granted” (Kneller, pp.1). Innovative thinking drives progress and allows organizations to remain competitive. It is pertinent to keep in mind that creativity and innovation are nuanced concepts that each considers several distinct, but closely related, processes that result in different, but sometimes closely related outcomes. As creativity and innovation are complex and dynamic in nature, it is perhaps unsurprising that both have proven difficult to define and measure (Hughes, Lee, Tian, Newman, and Legood, 2018).

Entrepreneurship and leadership are both characterized by the emergence of new ideas, forms, and methods. Creating successful products or businesses requires entrepreneurs to be creative both in recognizing and exploiting market opportunities. As such, organizational performance can be positively impacted by leaders who motivate creativity and innovation among their followers (Reid, Anglin, Baur, Short, and Buckley, 2017).

Supply chain management, in the minds of Arlbjorn, Haas, and Munksgaard (2011), grants modern associations an edge. The presentation of new products and administrations, or parts into

new markets can be more effective if they are implemented in conjunction with innovative production network plans and supply chain management practices that empower innovation. In the field of supply chain management (SCM), new possibilities for gaining control arise. It requires a new mindset to grasp the global distribution, logistics, and correspondence organizations of a business in order to use these opportunities and to win the competitive scene.

Implementing supply chain technology has an explicit application in the SCI engagements, as well as referenced in the systems for supply chain management. As a further illustration, the three collaborating content components of SCI are as follows. Supply chain business processes, (2) supply chain network construction, and (3) supply chain innovation.

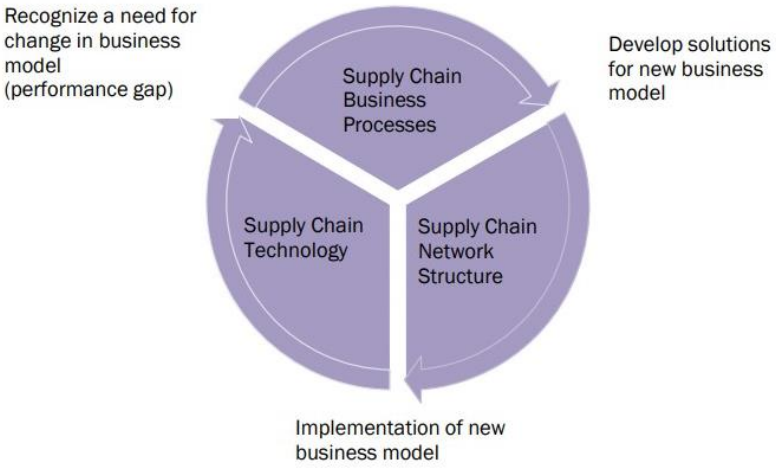



Figure 2: Elements of Supply Chain Innovation – own creation

(Arlbjorn, Haas, and Munksgaard, 2011, pp.8).

Figure 2 likewise perceives a unique interaction in and around the transaction between the three components in acknowledgment of a requirement for change in an organization´s plan of action. Typical issues setting off SCI might be long lead times, a high production network, and low assistance levels, however, they likewise might be coming about from endeavors to explain ´s an organization more readily offer, to recognize new market fragments, and to rethink the construction of the worth chain to acquire an advantage over rivals (Arlbjorn, Haas, and Munksgaard, 2011).

The Oslo Manual, the preeminent global guide for the assortment and utilization of information on advancement activities, for estimating innovation characterizes four kinds of innovation:

product and process, which identify with technological innovations just as marketing and organizational, identified with nontechnological innovation (Shestakov, and Poliarush, 2019).

There exist several types of digital transformation. One type is the so-called process transformation. Within the professional workplace, much emphasis has been placed on better ways to rehash processes to bring down costs, improve quality, or shorten process durations using data, analytics, APIs, and AI (ChaiOne, 2021). Several compelling companies have successfully changed their interactions with customers, such as Domino's Pizza, which clients can order from anywhere today. They have totally rethought the food request process. Several organizations have implemented mechanical interaction robots to work on their administration center cycles, including legal and accounting processes. As specific examples, Pizza Hut has been able to outpace them on this front. Process change can make gigantic work in an organization (ChaiOne, 2021). The second type is business model transformation. Businesses change processes based on the limited spaces available to them. Plan of action changes focuses on the basic structure squares of how worth is conveyed in a particular industry. Digital transformation generally allows organizations to alter conventional ways of working. Instances of this kind of a rehash of the plan of action incorporate Netflix´s upgrade of video conveyance and Apple´s reevaluation of music conveyance: iTunes (ChaiOne, 2021).

A popular illustration of how domain transformation functions is the internet-based super retailer, Amazon. As Amazon Web Services (AWS) took off into another market area, AWS is now the biggest distributed computing/foundation administration company in a field once ruled by IBM and Microsoft (ChaiOne, 2021).AWS is a reasonable illustration of how new innovations reclassify items and administrations, obscuring industry limits and making totally distinct arrangements of non-conventional contenders. Organizational development right now is mainly driven by area change (ChaiOne, 2021).The last type of digital transformation is cultural/organizational transformation. Any industry that wants to succeed in developing long-term digital transformation has to rethink mentalities, cycles, capabilities, and capacities. Partnering effectively in a computerized world will require a decentralized dynamic cycle, a proclivity toward testing and learning, and a willingness to dance across various business ecosystems. This transformation of culture/organisation is best illustrated by the development of shopper credit by Experian. It had the option to change its association by ingraining joint effort and coordinated advancement into its work processes. Moreover, it initiated a major change in representative concentration from hardware to information all through the organization (ChaiOne, 2021).

### 2.2.1 Digital Transformation in the Transportation and Logistics Industry in Austria

Organizations have embraced digitization to handle all aspects of their operations, including supply chains and working methods. Gapgemini Consulting (2011) reports that advances in RFID, GPS, and sensors now allow associations to replace their current crossover inventory network structures with flexible, open, and communitarian computerized ones. In ChaiOne's article (2021), they note that it's challenging to characterize digital transformation because it's so distinctive for different industries. A more typical definition clarifies that it involves fusing digital technology into all business sectors. This results in a fundamental change in how organizations work and communicate with clients. It's a revolutionary reevaluation of how associations are able to use innovation related to cycles and individuals in order to transform business execution.

In an article published by Wei, Alias, and Noche (2019), it was pointed out that logistics, by and large, refers to exercises that are specifically requested. A set of prerequisites is built not just for items, people, and material goods, but in services as well, such as data and energy.

The coordination and transportation process has consistently relied on productivity, enhancement, speed, and timing. In the present day, it is a lot more prevalent in the context of quickened developments and a technological environment where computerized changes are making an impact on the 4.0 movement of industry. In a survey of chief executive officers, 76.9% concurred or exceptionally concurred that business processes were affected by the development towards a continuous economy (I-SCOOP, n.d.). Logistics and transportation processes are multifaceted and deeply interconnected. The transition to a continuous economy is also affecting how chiefs are establishing their organizations and conducting their business. The shift towards a continuous economy influences the organizational hierarchy more than 70% of the time (I-SCOOP, n.d.). In an ideal situation, (Chainone, 2021) reports that a CEO drives an organization's digital transformation in conjunction with chief information officers, chief human resource officers, and the other leaders within the organization. For fast application development models to be successfully integrated with business-oriented reasoning, digital transformation requires extensive cross-departmental participation within an organization.

In Dmitrievs (2019) view, it is necessary to apply contemporary digital transformation and correspondence technology to the management of orders, the planning, setting up, screening, and the continuous control of all methods for transferring merchandise to the consumer today.

As described in (Cichosz, Wallenburg, and Knemeyrer, 2020), the "digital age," which occurred in the last decade, drastically changed the competitive environment of enterprises, including the logistics sector. New entrants, for example Amazon and Alibaba – e-tailers who invest in innovation to support and develop their distribution centers and transportation, or uShip, Delive, and Cargonexx – are taking the industry by storm. Various kinds of digital startups are entering the logistics market with different degrees of intermediation, including swarm logistics. They are testing current policies and future opportunities of officeholder logistics service provider (Cichosz, Wallenburg, and Knemeyrer, 2020).

Therefore, customer suspicions and serious division necessitate speed and timing, driving several important changes in logistics and coordination, with speed being a competitive advantage. Various districts have genuine distinctive advertisement advantages (I-SCOOP, n.a). Publicizing geared toward data-driven data aims to attract people in an environment where there is a direct consequence of changes/exercises (I-SCOOP, n.a). When providing customer care, leaders should provide the appropriate information at the optimal time, at the right place, and at the ideal moment for the right processes, people, settings, and purposes. A mobile world, where information and communication are hugely important yet there is also a great deal of expectations about information, means customers are expecting quick and accurate responses**.** It is vital to not be too far or too soon from reversing a decision for new game plans or advancement affiliations (I-SCOOP, n.a)

Furthermore, the transportation and logistics industry are highly integrated with hyper-connectedness. As a matter of course, transportation and coordination have one essential task: ensuring that whatever the referred to and various things are, it appears in the best conditions in the best climate. It does not matter whether it is a distributor, an end customer, a transportation company, or a retailer, there is always someone waiting for something (I-SCOOP, n.a). Many social occasions are required to get a thing from where it is delivered to where it is intended, as is the case in many situations in modern, globalized society. When a provider is too far away to turn back, and others must stop, it takes more time and resources to keep events together for these social occasions (I-SCOOP, n.a)

The industrial and logistic industries were among the unmistakable leaders of the crisis, despite mostly extreme drops in transaction volumes due to the pandemic (CBRE, 2021). In 2020, this sector was the third most predominant resource class, outpacing the previous year's accomplishment. In Austrian logistics real estate in 2020, around € 525 million was invested, which corresponds to an increase of around 5% in comparison with 2019. Around 66% of the aggregate

speculation volume was contributed by financial investors from around the world, particularly from Germany. This is evident by Nuveen's acquisition of Vienna's City Park as well as DEKA acquiring parts of the Industrial Campus Vienna East in Enzersdorf an der Fischa (CBRE, 2021).

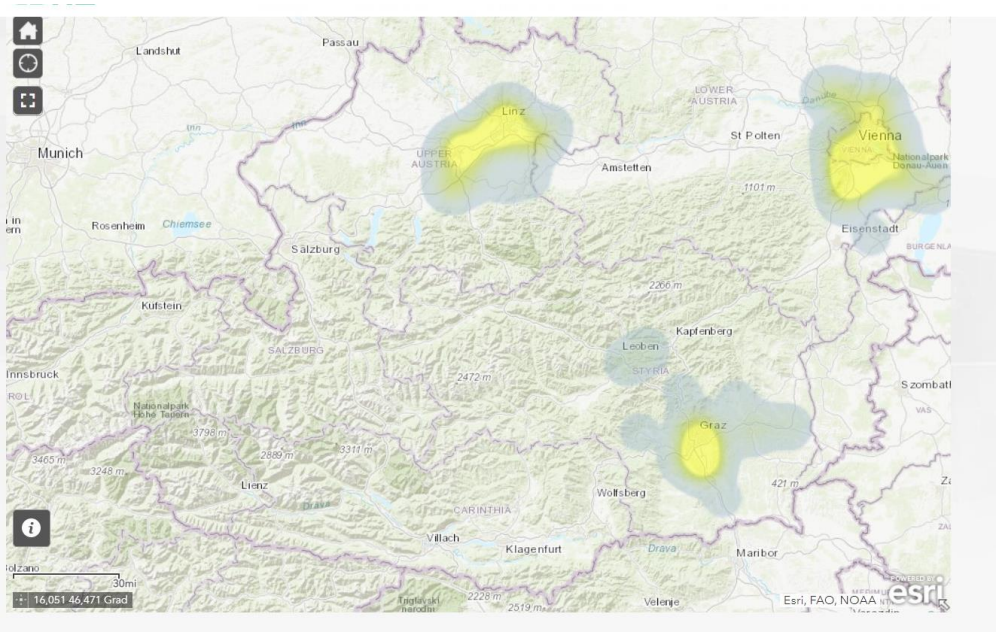



Figure 3: Logistics Locations Austria

(CBRE, 2021)

The following map shows the logistics areas in and around the cities of Vienna, Graz, and Linz at different scales. On a national level, the spatial density of logistics real estate is shown by means of a heat map. In this way, hot spots on the market can be quickly identified. A more detailed view is offered by the regional scale, in which the individual properties are specifically located and differentiated according to their area. A distinction is made between the current stock and future development (CBRE, 2021).

Since interest in industrial and logistics properties has consistently increased lately, CBRE (2021) noted that the crisis of Coronavirus again stoked the interest in these properties. In light of the growth of the online business and parcel services, the logistics industry particularly proved to be immune to the emergency. It's possible that investment action will keep on expanding as more new venture developments will be created soon, resulting in a greater general supply on the investment market. Consequently, the superb yield for logistics properties last year was significantly weighted down by the popularity of concurrent still restricted stock, and subsequently fell by around 40 premises compared with the previous year (CBRE, 2021).

The following figure shows the forecast for 2021. A comparable advancement is for the current year, which would produce a prime yield of around 4.0% by the end of 2021, and thereby pull even closer to other Western European nations (CBRE, 2021).

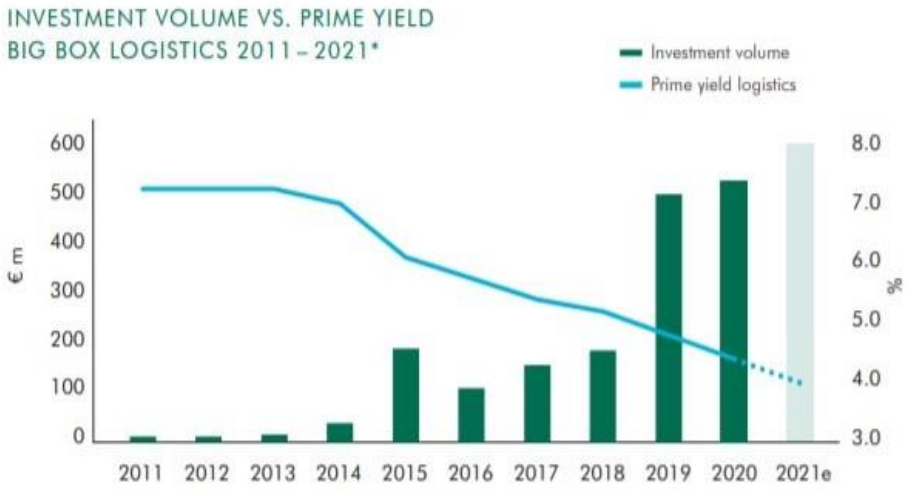



Figure 4: Forecast for 2021
CBRE (2021)

In spite of the crisis, the industrial and logistics sector managed to gain ground. Most asset classes saw massive dropdowns in transaction volumes as a result of the pandemic. Among all asset classes in 2020, this sector had the third-strongest performance and was the only one that replicated results from the previous year. The logistics sector in Austria recorded investment of around 525 million euros in 2020, up around 5% from 2019. The German economy remained particularly active among international investors. More than two-thirds of the total volume of investments came from foreigners. Nuveen purchased Vienna's City Park, and DEKA acquired three additional building sections of the Industriecampus Vienna Ost in Enzersdorf an der Fischa (CBRE, 2021).

The Coronavirus crisis further boosted demand for industrial and logistics real estate, which has already been increasing steadily in recent years. Due to the positive development of e-commerce and parcel delivery services, the logistics sector in particular has been able to weather the crisis relatively well. In the coming years, new developments are expected to broaden the supply of investment opportunities. As a result, we should continue to see a rise in investment activity. As a result of high demand and limited supply, logistics properties experienced a 40 percent drop in prime yield last year. Due to the strong demand for goods, supply was down by

around 40 basis points from the year before. This trend is predicted for this year, which will result in the estimated prime yield at the end of 2021 remaining around 4.0%, thus continuing to approach the levels of other Western European countries (CBRE, 2021).

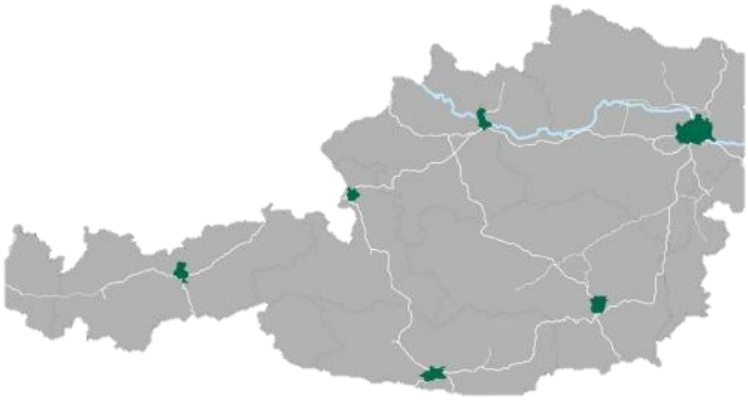


Figure 5: Logistics Hotspots of Austria

Table 2 below describes Figure 5 shown above. It examines the logistic hotspots in Austria.

| | |
|---|---|
| Linz | •As a hub between Germany and Eastern Europe, this logistics location is the most central.<br>•The inventory is limited to properties in categories A and B.<br>•International developers are showing a heightened interest in large-scale, speculative developments.<br>•Only certain sites remain. |
| Salzburg | •Land prices are high and land reserves are low in and outside the city, causing less logistics space to be available<br>•German and Austrian areas are preferred locations for logistics space. |
| Vienna | •There are very few A and B properties available in markets with the greatest demand.<br>•Since new developments are in the pipeline, it is not unusual to find large, contiguous, high-quality sites in different locations<br>•Urban areas are experiencing declining land reserves. |
| Villach | •Due to its proximity to the Adriatic ports and Germany, it offers potential as a logistics location in the medium term<br>•Land at transport hubs is available at reasonable prices.<br>•Various projects are being considered by international developers |
| Graz | •Construction by owners is responsible for most of the modern stock.<br>•Rentable spaces are in short supply.<br>•There are unlikely to be major speculative projects<br>•Graz is surrounded by land reserves<br>•Best access to ports on the Adriatic Sea. |
| Innsbruck | •Because of the topography, land reserves are scarce in urban and rural areas.<br>•Restrictive laws limit upcoming land development<br>•The main traffic routes in the Oberland and Unterland present an occasional opportunity |

Table 2: Logistics Hotspots of Austria – own creation

### 2.2.2 Digital Technologies in Transportation and Logistics Industry

With the web and mobile upheavals gaining ground over the past two decades, our daily lives have become increasingly digital. Email must be buried, and digital downloads replace physical goods, resulting in a considerable hit to the logistics industry. In comparison with the past, more packages are now delivered than ever in recent memory. Every day, 85 million packages and records are transmitted all over the world (WEF, 2021).

Chichosz, Wallenburg, and Knemeyer (2020) explain that innovations are precondition for digital technologies. Whether hardware or software is praised in the logistics services industry. The development of digitalization has seen even the hardware arrangements undergo

modernization and become high-tech items (such as greatly adaptable transports following a distribution center worker). To be considered as technological advancements, hardware and software arrangements must be novel in the market, regardless of whether standardized or modified versions (Chichosz, Wallenburg, and Knemeyer, 2020).As a rule, they are simply new to the agency that executes them. Those technologies form the basis of LSP development, ranging from gradual improvements to extreme changes. According to the findings of studies, LSPs have traditionally been focused on gradual service or cost upgrades of day-to-day business tasks that are typically "pulled" by the client (Chichosz, Wallenburg, and Knemeyer, 2020).

In a digital environment, the use of data and analytics can speed up processes, help partners and clients see what their organizations are doing, digitalize value chains, and build new business models (I-SCOOP, n.d.). In this way, it becomes evident which are the few technologies that play a significant role in business. In the case of the Internet of Things, large-scale data analytics, and social computing, as well as mobile platforms, data capture and handling platforms, and the cloud (I-SCOOP, n.d.), the majority focus on the Internet of Things (IoT), big data analytics, and social computing in addition to the platforms for capturing, managing, and utilizing/gaining access to information.

Global competition is forcing the ability to upgrade to become an important part of the development of transportation and logistics systems, as well as a method for effectively dealing with a sudden emergency (Dmitriev, 2019). Managing transport and logistics processes digitally is both innovative and helpful. Yet, their execution is constrained by legal and authoritative boundaries (Dmitriev, 2019). The fact remains, they will undoubtedly be the driving force behind the merging of the economy, the association and coordination of transportation, the adjustment of how moving stock is used for transporting goods and travelers, and the completion of logistics-related changes, particularly regarding natural necessities, transport rules and the protection of goods, the task of managing the effects of car accidents, and the matters of customs control. Furthermore, modern inventions of Industry 4.0, specifically the Internet, big data, artificial intelligence, act as impetuses for the digital transformation, enabling us to come up with an arrangement of progressive insurgent ideals: motorization - technologization - digitalization - intellectualization (Dmitriev, 2019).

Throughout the continuous digitization pattern within transportation and logistics, an evolution of technological arrangements may assume a major role. The Internet of things and the Internet of services, as well as digital actual frameworks, sensors, video cameras, augmented reality, and

virtual reality also deserve attention**.** Wei, Alias, and Noche (2019), introduce a few instances of the application of these technologies to transportation and logistics processes.

The logistics industry has been attacked for a long time by sensors. In the logistics sector, the evolution of radio frequency identification (RFID) from the late 1990s to today stands out as a renowned example. RFID transponders have been applied in an extensive range of logistics operations, but have proven to be particularly helpful, as well as economically prudent, in closed-circuit frameworks or in conditions with unique requirements (Wei, Alias, and Noche, 2019). In many organizations, organizations have increasingly relied on an enormous scope of receiving a large number of sensors and actuators to measure one or a few viewpoints. Various parts of interaction can be estimated and observed at varying levels of heterogeneity and number of sensors available today (Wei, Alias, and Noche, 2019). In one model, new sensor combinations enable forklifts and warehouse vehicles to be observed in action. Those measurements can be made of temperature, vehicle speed, vibration, and fork occupancy. The distribution center can follow and check pallets all the way through when other examination drives are used. Any sensor of this type can be used, even for tracking human movement in manual picking procedures. Video cameras and modern picture management are excellent tools for gathering ongoing data about interaction information because they are creative, dependable, cost-efficient, and practical. Observing cycles can be performed both manually or semi-automatically using cameras, which offer opportunities for both reviewing and reviewing circumstances. A few independent testing groups manage such projects all over the planet in regard to camcorders, as well as modern picture handling in transportation and logistics (Wei, Alias, and Noche, 2019).

Using augmented and virtual reality in transportation and logistics is another instance of how digital technologies are entering the area. Wei, Alias, and Noche (2019) claim that this is the case as well. The applications of augmented reality range from manual picking to dispatch and returns management, consignment logistics, setting up and improving formats, as well as streamlining transportation. It is similar in the real world: there are increasing numbers of applications, yet they are confined to a few areas, such as format arranging and enhancement, authoritative advertisements, and team training.

As technology progresses, it becomes increasingly evident that continuous data analytics encompass both factual and data mining approaches. Continuing to develop, big data examination sits in the same technology category as clear, predictive, and instructive examination. There are numerous investigation groups that are chipping away at a variety of aspects of logistics

concerns and challenges, making logistics one of the most powerful and developing areas in analysis (Wei, Alias, and Noche, 2019).

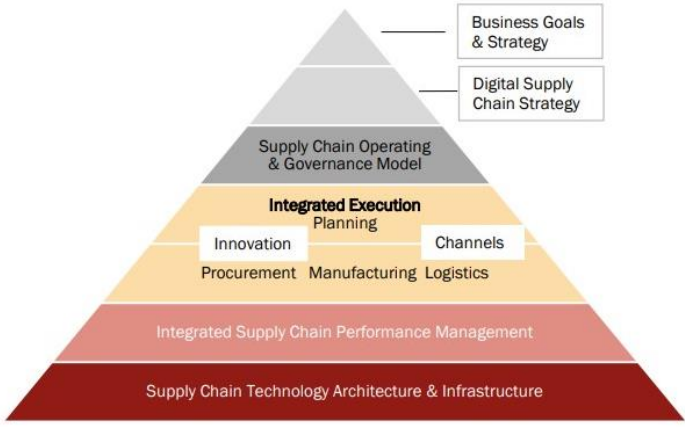
### 2.2.3 The Importance and success factors of Digital Transformation in the Transportation and Logistics sector

Adapting to the digital era is a challenging task for companies today. Scientists first coined the term "digital transformation" at the end of the 20th century, when digital management methods began altering business strategies beyond what was possible with conventional technologies. 1.3 trillion dollars will be generated by digitalization by 2025 according to the World Economic Forum. There have been numerous benefits associated with the digital transformation of the economy, such as the acceleration of GDP growth, the increase in the share of the information economy, the reduction of production costs, the creation of new jobs, and the decrease in labor costs (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020).

Considering that logistics is experiencing some extreme failures such as 50% of trucks returning from a delivery empty, the World Economic Forum states that digital transformation can also boost society and the environment by expanding productivity and cutting energy consumption (I-SCOOP, n.a.) Customers and clients are unquestionably the major forces derived from the various drivers. However, individuals who really want something else and are incessantly versatile are likewise major factors. Furthermore, customer experience and dedication rank high in the fundamental concerns in transportation and collaboration as well. Several movements, including adaptability, created an opportunity for differences in lead, where customers are similarly improved by the occurrences they are used to in amazing set-rings conceptually, with the affiliations and trades with someone's business. Similarly, every extension sits on a network as well as every affiliation is composed of a customer, a planned activities partner, or yet another enhancement. There are countless examples of customer or customer-focused working models everywhere (I-SCOOP, n.a.).

When a company goes through digital transformation, one of the most common mistakes is to apply digital initiatives in silos or through a technology-centred approach. Organizations often face problems of inefficiency and interdepartmental conflict when they implement digital initiatives disconnected across functions. In such an event, the initiative could be perceived as a one-off rather than a transformational program (Capgemini, 2011). Rather than being concerned with new technology, digital transformation is viewed as a significant change in how business is done across an entire enterprise. In order to establish a successful digital supply chain, business

models and organizational structures need to be integrated. While converting the entire organization to a digital operating model clearly offers the best opportunities, it also poses the greatest complexity and risk. The following five dimensions should be considered regardless of the scale of the transformation (Capgemini, 2011).




- Digital Supply Chain visioning and strategy development
- Digital Supply Chain economic model
- Aligning Supply Chain models with digitization of other processes (multi-channel marketing strategy etc.)

- Globalization of P&L centres/ financial governance
- Delineation of functional building blocks
- Shared services, offshoring and outsourcing of supply chain activities

- Core process digitization
- Open innovation and collaboration with eco-system
- Visibility across value chain

- Analytical driven supply chain performance management (Monitoring, Forecasting)
- Technology infrastructure for supply chain (GPS, RFD, digital devices etc.)

Figure 6: Use of Digital Applications in Logistics I – own creation

Source: Capgemini Consulting Analysis (2011)

According to Wei, Alias, and Noche (2019), digital technologies offer significant opportunities, including better efficiency, more capacity, and unwavering quality, as well as increased adaptability, for organizations involved in logistics and supply chain management. Likewise, the significance of maintainability has grown fundamentally in logistics. In a survey of approximately 508 organizations (50 of them employing more than 50 employees) 84% have already implemented digital solutions for logistics, and 6% are considering doing so. A summary of digital logistics applications can be found in the following figure (Wei, Alias, and Noche, 2019).

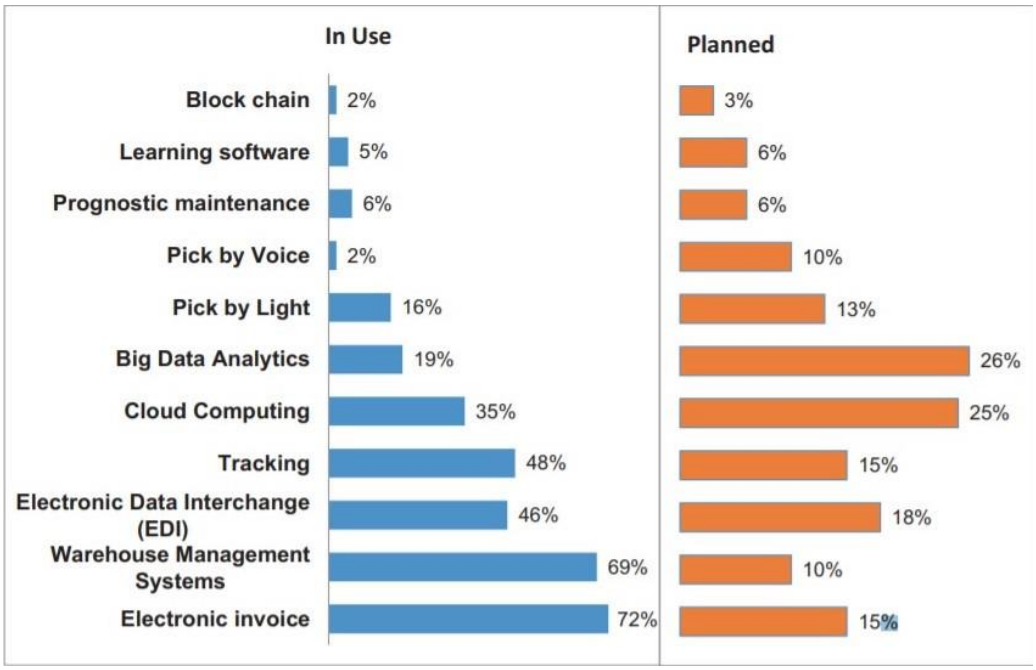



Figure 7: Use of Digital Applications in Logistics II

Source: Kersten, 2017

(Wei, Alias, and Noche, 2019)

According to Figure 4, this final example illustrates how BVL helps transform logistics and supply chains into digitally driven organizations through technology. This presentation does not just demonstrate the importance of the technologies mentioned, but also their condition. This diagram illustrates the number of organizations preparing to utilize the technology over the next five years. A Bitkom study clearly demonstrates the adoption of some digital tools in many organizations. Yet there are a few technologies of high importance that are not widely used, such as location technology or prescient examination. Technology like Blockchain is too insignificant to be of significance to most organizations. It appears that Bitkom's review and the BVL study are predominantly in agreement (Wei, Alias, and Noche, 2019).

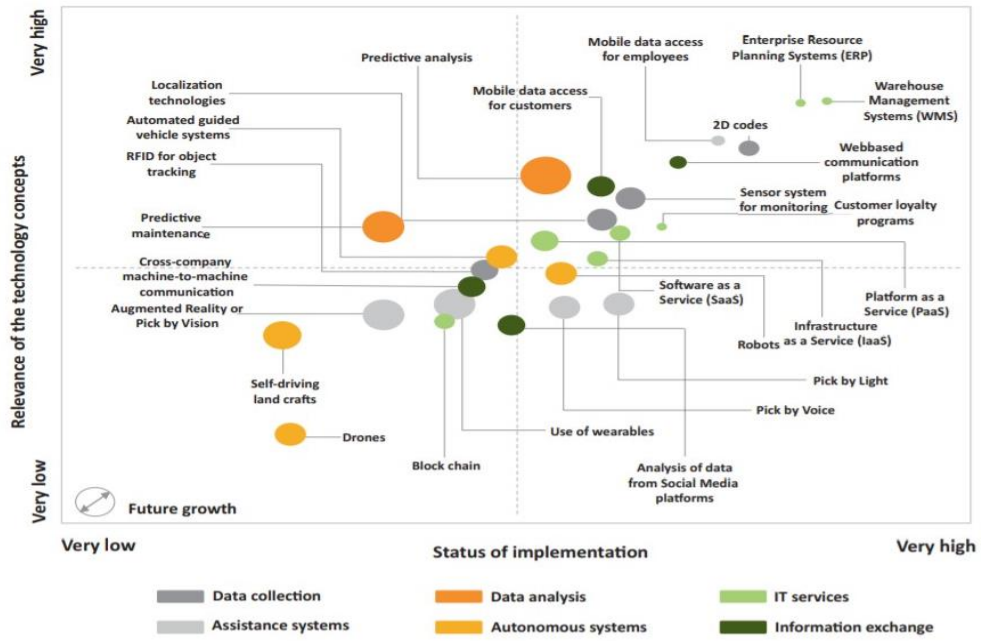



Figure 8: Application of Digital Applications in Logistics
Source: Bitkom, 2017
(Wei, Alias, and Noche, 2019)

According to both investigations, the warehouse management system (WMS) and automated guided vehicles (AGVs) are of a high degree of execution. BVL and Bitkom (Weil, Alias, and Noche, 2019) indicate that drones play an important but less significant role for organizations.

As far as supply chain and logistics activities are concerned, the constant flood of blockchain initiatives also fits in with the era of digitization. Applications leveraging blockchain technology allow companies to communicate free of risks with authorized parties, as well as connect with employees quickly and efficiently. It is therefore acceptable in delicate business regions and cycles where documentation plays an important role and may not be designed (Wei, Alias, and Noche, 2019).

Wei, Alias, and Noche (2019) conclude their chapter by stating that digitalization has numerous positive impacts in the logistics sector: in some arranging levels, more, in others, less. Even though there are countless technologies and software available, only one out of every odd technology or software is applicable to organizations. Regarding digitization, small and medium-sized businesses are still cautious. Due to the typically high costs associated with new projects, along with the development costs for information security and support, as well as the need to improve IT talent, these costs are driving this decision. Considering new segment changes, this decision is particularly important.

Frequently, the financial gain is the most conclusive component of digital transformation, while rarely considering the social or environmental implications (Kersten, Seiter, See, Hackius, and Maurer 2017).

In a nutshell, businesses want digitization to increase efficiency, transportation reliability, the efficiency of production networks, consistency, and adaptability. In addition, digitalization affects individual behavior and the environment as well. As a result of implementing help frameworks, the possibility of errors can be reduced, and ergonomics can be improved. The software assists logistics organizations at key and strategic levels in reducing chances along the supply chain and deciding how to proceed. The customers are also benefited by digitization. Developing logistics technology can deliver "immediate conveyance" and make products observable. In addition to social and environmental angles, digitization has a noticeable effect on our planet. A key purpose of the product is to reduce void runs and CO2 emissions at the strategic planning level. Reenactment software can be used on a functional level in preparing material streams for more efficient and low carbon dioxide outflows in intra-logistics (Wei, Alias, and Noche, 2019).

### 2.2.4 The impact of digital innovation on consumer experience

Almost all purchaser-arranged associations are experiencing rapid change in their location because of technology. In general, consumer buying behaviors and solicitation strategies are influenced by the overwhelming access to information, the all-encompassing availability of information, and the rapid growth of interpersonal organizations (Capgemini, 2011). Hence, it impacts purchaser-oriented fields like music, distribution, client contraptions, retail, and financial administrations. As one example, the U.S.-based land transportation association J.B. Pursue began integrating sensor-based innovation and Global Positioning Systems (GPS) to further promote porous shipments and increase fill rates. Through appropriate planning, account management, and customer relationship management, J.B. had the capacity to achieve a quintupling in its piece value in four years through an additional EBIT margin (Capgemini, 2011).

Using technology can, on the fundamental event, chip away at the usefulness of employees, making it possible for businesses to pass on savings. Jones (2018) states that technology can be used to chip away at the working usefulness of employees. Whatever the case, it is used to diminish the sumptuous experience for the customer and to justify monitoring excessive costs. The digital transformation process was studied by Capgemini Consulting and MIT Sloan School of Management (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020). It was found that digital transformation cannot be omitted entirely. As a result, in this instance, the decrease in profits

will be 24% per year as opposed to competitors. Using technology and new management methods together produces a 26% increase in company profits. Companies could increase profits by 9% if only they improved their management rather than using digital technologies. A company's profit does not grow if it invests only in technology, without considering the changes in management that must be made (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020).

1. In the decade from 2020 to 2023, more than 6.8 trillion dollars will be invested directly in the DX sector, translating into economic gravity. 65% of world GDP will be transferred to the DX sector by 2022
2. In comparison with today, 75% of organizations plan to undertake a comprehensive digital transformation by 2023
3. The G2000 predicts that around 60% of managers will shift their focus from processes to results by 2023, resulting in more flexible, agile, and responsive operating models.
4. Due to the uncertain economic environment, 75% of business leaders will use digital platforms and ecosystems to sustain relevance of value chains in new markets, industries, and ecosystems by 2025
5. 60% of businesses are investing heavily in employee experience in 2021, which will change the relationship between employers and employees.
6. Rethinking business models is becoming more and more common. In 2021, 30% of organizations will rethink their business and operating models through innovation and implementation of a transformation program to ensure future proof operations.
7. By 2022, several companies will realize significant value by combining digital technologies with sustainable development, which will facilitate the establishment of sustainable development projects using digital technologies
8. 50% of companies will have digitally optimized cultures by 2025, which place customers at the center of the company´s strategy.
9. In order to enhance customer interactions, increase employee productivity, and improve business resilience, 70% of businesses will actively transform their business processes by 2022.
10. In the new environment that is expected to support innovation and growth by 2023, 60% of global 2000 companies are expected to create their own business innovation platforms.

The digital economy offers excellent opportunities for companies that do well on digital platforms and are driven by new digital business models. In order to reorganize logistics activities in

accordance with the needs of the digital economy, logistics and supply chain management must also be adapted in accordance with these changes. As a result, logistics can be seen as evolving into components that encompass new components for customer service, manufacturing, storing, marketing, and transportation, as well as waste recycling. Therefore, Logistics 4.0 can effectively be applied in the context of digital business models to solve a new, qualitative problem (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020).

The profound advances in technology have changed individual cycles, which influence social, economic, and environmental points. Work prosperity, work security, and work association is all everywhere suggested from a social standpoint. Improving a workplace can help people to discover the real value of their jobs. It is necessary to ensure that representatives do not encounter an overabundance or underabundance of work from the new digital framework; however, they should also be fairly distributed within it. Furthermore, by further improving the cycles, those who had previously been deemed unqualified for the work could now be selected and prepared. Wei, Alias, and Noche (2019) consider it a monetary advantage when cost savings are realized by improving collaboration.

As discussed by Westerman, Bonnest, and McAfee (2014), leaders are cautiously altering three essential spaces of their endeavors: customer experience, functional cycles, and plans of action. In addition, each of these three segments has three specific elements that are evolving. In order to achieve digital transformation, it is crucial to structure these nine pieces. In this way, leaders can move ahead in the manner they believe is most beneficial for their association from among these design squares.

In the digital era, organizations have three significant building blocks for transforming the customer experience: client understanding, top-line growth, and customer touchpoints.


Figure 9: Features of Digitalization - own creation

**Customer comprehension**: Businesses are using investments from the past to acquire an in-depth understanding of explicit topographies and market segments. Social media is being investigated extensively to determine which aspects of the service satisfy clients and which disappoint them. Marketing the brand through social media can generate and sustain conversation at lightning speed (Cross, 2019). Digital media also allows organizations to advance their brands such that they are able to achieve greater success. As of late, firms are developing web-based systems in medical and real estate services, as well as financial services to prompt and build trust with customers. Yet another category of items is being developed to make a mark in the lifestyle area (Westerman, Bonnest, and McAfee, 2014). Moreover, being as accessible as possible is key. Cross (2019), states that social media has misled consumers into believing businesses are accessible 24/7.

Using both online and offline channels to interact with customers is another important factor when it comes to customer comprehension. According to Cross (2019), business owners can create one-on-one relationships through personal engagement versus social media, which addresses a larger audience. The utilization of examination capabilities is common practice among companies wanting to understand their clients better. The insurance industry, for instance, uses examination-based endorsements and valuations to improve portfolio portfolios and cost structures. Examination-based investigations are being conducted by numerous organizations to influence client behavior. Among some diversified stores, one restaurant leads estimation and

promotion analyses. According to Westerman, Bonnest, and McAfee (2014), items' cost changes progressively based on demand, weather, stock levels, and closing time. Moreover, the employees in a company are the public face of the business. They answer calls, write emails, and close face-to-face sales. Regular training of teams, regardless of where they are in the perception process, to ensure everyone stays “on task” will result in customers always seeing consistency and constancy (Cross, 2019).

**Top-line Growth:** According to Divvy (2022), the top line represents the total revenue, also known as the gross sales or total earnings, The top line represents the profit before any business expenses. This number can be boosted by increasing sales to generate more revenue. Organizations are leveraging technology to upgrade face-to-face deals discussions. The financial services industry makes sales pitches with tablets instead of slide decks that are printed on paper. Assist salespeople and clients can use mobile devices to assist with research-based arrangements, insurance companies are adopting mobile devices. Digital communications are replacing face-to-face interactions in the realm of medical devices (Westerman, Bonnest, and McAfee, 2014).

Organizations can change their business experiences with better agreements. Customers' shopping information is being coordinated by companies to offer more customized deals and customer service while even offering item bundles tailored to the client. In the case of an accommodation business utilizing location-based advertising, and analysis is used to send customized mobile coupons to potential clients as they approach an office; the business can thus track the uptake over time. As part of a CRM project, a lending company is establishing relationships when clients and nearby real estate sources. A web-based proposal system provides various new proposals over time. Idea stores are being utilized by organizations to initiate their digital sales initiatives (Westerman, Bonnest, and McAfee, 2014).

An organization offering mortgages, for instance, presents its clients with an integrated interaction that marries real estate and banking services with outside providers - and enables investors to meet in an idea megastore. By integrating a computerized module into their business cycle, some organizations try to enhance the client's experience (Westerman, Bonnest, and McAfee, 2014). Consequently, a retailer's e-commerce webpage includes a client's last web-based shopping list. Thus, customers have additional chances to compare items, improving the shopping process. In that case, the client will be in a position to choose home delivery or a drive-by service with a specific pickup time (Westerman, Bonnest, and McAfee, 2014).

**Customer Touchpoints**: Measures to improve customer support that can dramatically improve customer experience. As a way to assist clients with avoiding going to a branch, a bank has set up a Twitter account to answer client complaints quickly (Westerman, Bonnest, and McAfee, 2014).

It exists two types of customer journey touchpoints. First, digital customer touchpoints. Today, there are numerous customer touchpoints that take place online. There doesn't have to be any direct interaction between brand and consumer. A first customer touchpoint can already be an advertisement in the user's social media feed or a visit to the company website (Qualtrics, 2022). Second, personal customer touchpoints describe those touchpoints where users and the brand actively interact with each other. This can be, for example, a visit to the physical store or a telephone conversation with customer service (Qualtrics, 2022). The professional local area was also used for crowdsourcing, allowing different employees and customers to contribute. Several channels exist for organizations to connect with customers, so they are under pressure to provide a unified experience. According to Westerman, Bonnest, and McAfee (2014), a multichannel administration requires the ability to conceive and execute change across client experiences and within functional cycles. Currently, many retailers offer home shopping options including delivery to your door via mail or in-store purchases. However, a retail boss described clients as outraged that customer service representatives in a store could not access online order histories. Digital self-service is becoming increasingly popular among some organizations. Several organizations are currently offering client applications to improve client touchpoints, allowing clients to save time and save the organization money (Qualtrics, 2022).

Smartphone applications are connected to a client's profile at one hospitality organization, enabling mix of text messages, applications, and social media initiatives. Geolocation and augmented reality applications offered by media organizations will help clients locate interesting locales and give remarkable discounts through vouchers and e-coupons (Westerman, Bonnest, and McAfee, 2014).

*Moreover, although improved client experiences are the most noticeable and arguably most exciting elements of transformation, organizations are recognizing likewise extremely significant benefits from transforming their own processes through process digitization, employee engagement and performance management (Westerman, Bonnest, and McAfee, 2014).*

**Process Digitization:** Digitization means using some digital technologies in processes and managing data digitally (digitized data and digitally native data), making operations more efficient,

productive, and profitable, and creating a better customer experience across physical and digital channels (Robledo, 2022). Computerization can empower organizations to pull together their people on more essential undertakings. A producer has started to bring together the HR work, permitting economies of scale through self-administration while liberating HR individuals to "center around augmenting chief abilities, rather than counting days off." A claim to fame materials organization has computerized numerous R&D processes. Westerman, Bonnest, and McAfee (2014) states that automation permits scientists to focus on development and innovativeness rather than dull endeavors. It additionally makes floods of information that can be helpful in later data-mining endeavors (Robledo, 2022). One paint producer has made completely robotized plants that essentially diminish work necessities, further develop item quality, and improve environmental, wellbeing, and secure execution. An attire organization has moved to digital configuration processes while working together with assembling accomplices. Going digital dispenses with most need to deliver physical models vacillating, lessening the product improvement lifecycle by 30%. Digitizing business processes enables companies to maximize business results and generate new revenue, optimize costs, and create new customer experiences, which is of great value to companies using digital technologies (Robledo, 2022).

**Process digitalization:** It is necessary to digitize the entire process in order to be able to map the process exactly as it is (AS-IS) or to improve it by improving the process (Robledo, 2022). Processes can enable organizations to focus their people on more significant tasks. In order to facilitate economies of scale, a producer has brought the HR department together to allow for self-administration, allowing HR individuals with their focus to be “focused on enhancing chief abilities, rather than counting the days off” (Westerman, Bonnest, and McAfee, 2014).It makes floods of information that can help in later data mining endeavors. An organization that makes claim to fame materials has computerized numerous R&D processes. This permits scientists to focus on the development and innovation rather than mundane and mundane duties. The production process at one paint manufacturer has been completely automated, reducing the work requirement, improving the quality of the product, and improving environmental and health performance. The actions described by companies often indicate that they have digitized (understood as "digitization") by stating that almost all paper has been eliminated (by storing information digitally) and that process models have been created under BPMN notation instead of manual processes (Robledo, 2022). With the help of assembly partners, an apparel outfit organization has gone digital. By going digital, less physical models need to be produced, bringing down product development time by 30% (Westerman, Bonnest, and McAfee, 2014). The process model and notation are capable of automating paper-based manual processes that are executed

with vertical applications that solve the task chain or, if preferred, are executed by an enterprise-wide business process management system that manages and orchestrates the entire process. Although this is a good start, this digitization is neither progress in process digitization nor progress in digital transformation (Robledo, 2022).

**Worker Enablement**: Isolating work interactions from the work area has essentially enabled individual-level work to be virtualized. A business that provides monetary services redesigned its base camp so that no one had a designated area for work, including the CEO. When employees are in the office, they sit next to those colleagues with whom they briefly work. Currently, they work from home a couple of days of the week. The organization's coordinated effort and organizational system, nonetheless, allow employees to communicate with anyone within the organization from anywhere in the world. The organization is therefore able to experience greater advancements due to globalization (Westerman, Bonnest, and McAfee, 2014). According to Wai (2022), the concept of employee empowerment refers to helping workers perform their jobs effectively. All of these elements contribute to the success of employees, such as learning and development, policies, and employee communications. Though they are implemented for the sake of cost savings, the devices that virtualize individual work are helpful tools for sharing information. For example, salesmen and workers on the front lines are now able to recognize specialists and get support on demand from cooperative tools. Further, organizations are more and more accessing a unified perspective on client collaborations across the world (Westerman, Bonnest, and McAfee, 2014). It's important that leaders ensure their teams have access to the tools, knowledge, and resources they need to succeed. The employee development ideas below will hopefully help companies motivate their employees to reach their full potential. The core of employee development is giving employees the support they need, when and where they need it (Wai, 2022).

**Performance Management**: Transactional systems give chiefs a more profound understanding of products, areas, and clients, permitting choices to be made on real data and not on suppositions. This is occurring in both inward cycles and client confronting processes. The degree of detail is additionally expanding, permitting chiefs to analyze status across destinations or redistribute item producing limits in manners they couldn't do previously. Past being better educated; digital transformation is really changing the course of strategic decision-making. Top leaders in a medical gadget producer utilized the organization's current joint effort tools to broaden key arranging meetings from 12 individuals to more than 300 of the business' top chiefs. This

empowered better contribution to the cycle and better take-up of the vision later choices were made (Westerman, Bonnest, and McAfee, 2014).

*Currently, organizations are reclassifying the way they communicate and increasing the capacity of their capacities as well as developing limits and exercises for their organizations. Digital transformation is divided into three structural blocks, namely digital modifications to the business, creation of new digital businesses, and digital globalization* (Westerman, Bonnest, and McAfee, 2014).

**Digitally Modified Business**: As companies use digital channels to extend their products and services, digitally enhanced business models are the first stage of digitization. However, sales and product are still separate at this stage (FourWeekMBA, 2022). One media leader said: "We've understood that assuming we don't change the manner in which we carry on with work, we will pass on. There's really no need to focus on changing the manner in which we do technology yet changing the manner in which we carry on with work." The organization is tracking down ways of expanding augmented physical with digital contributions and utilizing digital to share content across authoritative storehouses (Westerman, Bonnest, and McAfee, 2014).A grocery organization is remaining consistent with its conventional business however utilizing digital to change another development business. As one chief revealed, "Following two years, our online business stage is bringing us 20% of our new customers and our conventional customers are devouring 13% more by and large." notice. Different organizations are building computerized or administration coverings around customary items. A national post station is making a free digital post box appended to each physical mail address that organizations can use as a substitute for an individual's physical mailbox. A business credit organization is fostering a digital business for some credit items that require less inclusion than their conventional high-contact contributions (Westerman, Bonnest, and McAfee, 2014).

**New Digital Businesses:** One media executive said: "We've understood that in the event that we don't change the way we carry out work, the business will pass on. It makes no sense to focus on changing the way we do technology when we can change the way we carry out work." The organization is tracking ways to expand augmented physical with digital contributions and to use digital to share content among authoritative content repositories. Continually maintaining its traditional business, a grocery company has used digital to change a construction company. A chief reported that two years after launching online business, 20% of our new customers come from it, and 23% of our traditional customers are gaining new customers from it. There are various organizations combining programming and administration around traditional products. An

organization can use a digital post office address as a substitute for an individual's physical mailbox by using a post office appended to each physical address. In addition to their conventional high-contact contributions, a business credit organization is developing a digital business for some credit items that require less inclusion (Westerman, Bonnest, and McAfee, 2014)

**Digital Globalization**: Transforming multinational operations into truly universal enterprises is becoming increasingly common in organizations. Incorporating digital technology with data enables organizations to assume global responsibilities without sacrificing their local responsiveness in the process. Organizations like these enjoy system-wide shared administrations for finance, human resources, and even center abilities such as planning and assembly. Sharing services worldwide improves performance and decreases risks. It even encourages world-wide adaptation. As a result of interference or an abundance of interest, a producer can move production all over the world within a couple of days (Westerman, Bonnest, and McAfee, 2014).

A great opportunity is provided for a company by digital transformation, as it can be concluded at the end of the chapter. In order to differentiate itself from the competition, it requires strong leadership skills. Organizations across virtually every sector have benefited from digital transformation. A leader must have a vision and never lose faith in order for an organization to go digital.

### 2.2.5 The importance of NLP in the transportation sector

In the digital generation, bridging the gap between the abilities of a human thought process and the capabilities of autonomous technology will be one of our greatest challenges, particularly in teaching machines our human understanding of words. This ability to think autonomously is being developed by doing natural language processing (Bonhill Group Plc, 2019).

Natural language processing (NLP) started during the 1950s as the convergence of artificial intelligence and linguistics. NLP was initially particular from text information retrieval (IR), which utilizes exceptionally adaptable measurement-based methods to file and look through enormous volumes of text productively. With time, nonetheless, NLP and IR have joined to some degree. At present, NLP acquires from a few, exceptionally assorted fields, requiring the present NLP scientists and designers to expand their psychological information base altogether. Early shortsighted methodologies, for instance, in exactly the same words Russian-to-English machine translation, were crushed by homographs indistinguishably spelled words with various implications and analogy. Normal language's inconceivably enormous size, unrestrictive nature, and vagueness prompted two issues when utilizing standard parsing approaches that depended

simply on the representative, handmade principles (Nadkarni, Ohno-Machado, and Chapman, 2011). Computer science has established areas in both Natural Language Processing and Programming Languages, each of which has a long research tradition. While they are both centered around a similar theme - "languages" - there has been a marginal amount of interaction between them during the years (Mihalcea, Liu, and Lieberman, 2006). Kayne Putman, the analytics consultant at SAS UK & Ireland, says NLP is important for many downstream applications such as speech recognition and text analytics because it solves ambiguity in language and adds useful numeric structure to data. Therefore, it can be used for a wide variety of business use cases, for instance in fraud analysis and risk analysis, or in analyzing customer behavior. Prior to introducing NLP, you should have a proper data analytics infrastructure in place and know what you hope to accomplish (Bonhill Group Plc, 2019).

Chowdhury (2003), states that utilizations of NLP incorporate various fields of studies, for example, machine interpretation, natural language text handling and outline, user interfaces, multilingual and cross-language information retrieval (CLIR), speech recognition, artificial intelligence, and master frameworks, etc. One significant space of use of NLP that is moderately new. NLP has become very popular because of the expansion of the internet and advanced libraries. A few specialists have brought up the requirement for fitting examination in working with multi-or cross-lingual data recovery, including multilingual text handling and multilingual user interface frameworks, to utilize the full advantage of the www and computerized libraries (Chowdhury, 2003). The ability to speak to a computer using natural language can offer people an easier way to work with computers. This is because they will not have to learn computer languages. As for programming, however, the requirement for formalized languages to communicate with computers has always been assumed (Mihalcea, Liu, and Lieberman, 2006).

Recent advances in artificial intelligence (e.g., Computer chess) have shown that effective approaches take advantage of the strengths of electronic circuitry, such as high speed and enormous storage capacity, data compression and evaluation functions tailored to the problem, and high-performance searching, rather than replicating human neural function. Furthermore, statistical - NLP methods can be correlated with human thought processes in a minimal way (Nadkarni, Ohno-Machado, and Chapman, 2011). Bonhill Group Plc (2019) states, that more consumers than ever before are shopping online thanks to eCommerce and the expansion of the global market. The increasing demand for customer experience, brand reputation, and sales are driving organizations to embrace next-generation technologies such as NLP. Natural language processing has been cited as valuable by 92 percent of respondents in a recent survey by Aspect.

Analyzing vast amounts of unstructured data can enable one to extract important information about bills received, addresses, dates, and so on using artificial intelligence-based logistics solutions and natural language processing (NLP). Accounting tasks can be automated, among other things, to increase security. In addition to monitoring invoice anomalies, categorizing documents, and verifying compliance with a variety of regulations, ML-based systems are used by Ernst & Young. With a detection rate of 97%, the system has proven highly effective at detecting fraud. The use of artificial intelligence to improve logistics allows suppliers to mitigate risk and identify potential breakdowns. Meaningful data can be gathered from multiple social media sources using machine learning and natural language processing, process unstructured text, analyze sentiment, and identify potentially detrimental information (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020). As a result of everything discussed so far, it is clear that the deployment of artificial intelligence for maintenance can be an effective asset management solution for large organizations. Maintaining assets well will make them perform better and make them last longer. Artificial intelligence automates the collection, analysis, and detection of asset data. These systems gather information about failures, compile stats, and plan repairs based on this information. It helps to gain the trust of people and gain competitive advantages if a service provider can provide affordable and reliable assets (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020).

### 2.2.6 Aligning supply chain analytics to business goals

Technology management presents an amazing opportunity to support organizations in embracing measures designed to reduce outflows at a time of digital transformation. Accordingly, the business specialists clarified that collaborative and digitalized training, and an acknowledgement of applied investigations would, for the most part, be a decent first step in the search for advancements relating to manageable turn of events and the execution of the SDGs (Centobelli, Cerchione, and Esposito, 2020).

Fohr (2020) suggests a few key attributes for successful logistics leadership in the future.

- 1. Strategic, long-term thinking: Instead of simply cutting costs and increasing sales, segmenting the market, and applying the right business models should be the focus
- 2. Logistics efficiency optimization: Identifying the critical points in a program that impact profitability and improvement, dividing the process into logistical steps

- 3. Digital expertise: The ability to apply prior experience from a digital company or as a change agent. Prof. Dr. Stephan Wagner, chair of logistics management at ETH Zurich, said social media and other digital skills will become essential skills of the future.
- 4. Understanding that the customer experience is about understanding their needs (future digital philosophy) and not just presenting your products to them (old digital view).
- 5. A multidisciplinary approach to team building: Creating and building teams that have both digital (data, artificial intelligence, etc.) and traditional logistics experience.
- 6. Disruption readiness: Ability to accept new ideas and recognize when to seek innovation versus maintaining a steady state.
- 7. Capability to inspire: Ensuring the entire organization is on board with the digital transformation.

Logistical transformation is set to begin in the next decade. Technology, e-commerce growth, and sustainability are all megatrends that will remain relevant for a while. There will, however, be some areas that are more likely to grow than others. To understand how logistics is affected by these trends, it is essential to understand the underlying trends. It will be able to meet the logistics requirements of the future through the training and development of personnel who perform increasingly complex operations using increasingly sophisticated technology (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020).

Logistics companies will need to be alert and prepared for a predicted economic recession, new shipping regulations, and rising international tensions and trade wars in 2021. Transport carriers, for instance, are already working hard to meet the 0.5% global sulfur cap that takes effect on January 1, 2020. A 20-30% increase in total fuel costs could result, according to estimates from the IMO, and could affect as many as 70,000 ships (Transmetrics, 2022). A spike in popularity is also anticipated for Augmented Intelligence along with AI. AI is integrated with human intelligence in Augmented Intelligence. As a result, Augmented Intelligence is sometimes even preferred to conventional AI when planning logistics, since it incorporates all of the characteristics of human planners (experience, responsibility, customer service, flexibility, common sense, etc.) (Transmetrics, 2022). With the repetitive and tedious tasks being performed by the AI technology. By the end of this year, Gartner projects that augmented intelligence will generate $2.9 trillion in value and add 6.2 billion hours of productivity to workers globally. There is a good chance logistics corporations will implement more Augmented Intelligence solutions, which will allow logistics professionals to work more efficiently and reduce mistakes, thus saving money (Transmetrics, 2022).

Logistics companies do not have to suffer without Supply Chain Visibility (SCV). The next step for it will be to become real-time in 2021. As customers and carriers now demand real-time data more than ever, logistics and supply chain companies need to focus on incorporating cutting-edge SCV solutions into their operations. Companies can use real-time data for quick response to changes because new supply chain visibility startups provide technology that facilitates this. A user can use such data to increase demand, redirect supply, and optimize routes based on traffic patterns, weather conditions, and road conditions. Supply-chain integration has been shown to improve productivity by 20% for logistics companies with integrated supply chains (Transmetrics, 2022).

Trushkina, Dzwigol, Serhieieva, and Shkrygun (2020), states that strategic supply chain management will focus on this challenge in the coming decades. The COVID-19 requirement is a major factor here. Global pandemics are causing the transformation processes to accelerate in the logistics sector as well. A new generation of innovations has helped COVID-19 accelerate changes in logistics, automation, and digitalization. Moreover, many innovations in the logistics industry that were initially seen as revolutionary have not yet reached their full potential. The introduction of self-driving vehicles and drones is hampered by a lack of federal and state legislation, as well as a lack of public acceptance. Global logistics networks and renowned carriers are breaking into the market with their own digital offerings, which are backed by the market's stabilization. Cloud computing, collaborative robotics, big data analytics, and artificial intelligence, which are components of the cloud, are among the hottest technologies in logistics. Logistics and the supply chain have been impacted a great deal by increasing technology innovation across industries. As a sector characterized by manual processes and large amounts of data stored in many different formats and locations, logistics firms could benefit the most from new technologies and following the latest trends in Supply Chain and Logistics technology (Transmetrics, 2022).

In order to achieve long-term success, it is essential to retrofit all supply chain points. Innovative companies that expand their workforce's skill sets and successfully implement new technologies will have an edge in the logistics services market. Steady and intensive growth is continuing for e-commerce. Despite this, its share of consumer spending on FMCG only accounts for a small fraction of global spending. Not only has the Coronavirus epidemic accelerated the development of e-commerce and supply chain innovation, but it has also contributed to the growth of e-commerce itself. As a result of adopting and scaling new technologies like intelligent physical automation, IoT visibility, and artificial intelligence to fully meet growing customer needs, companies will be able to maintain leadership status (Trushkina, Dzwigol, Serhieieva, and Shkrygun, 2020).

# 3 METHODOLOGY

According to Kallet (2004), the method section of a thesis should serve as the fundamental basis for the data collection process and the subsequent analysis of the data. Therefore, the process of developing the interview guide will be discussed below, in addition to the data collection process, as well as the final data analysis.

This chapter illustrates the entire research method of the thesis. Firstly, the research approach and methodology selection will provide adequate evidence to justify the selected method, and a comprehensive research design will be designed. Moreover, the research approach, which was taken during the interviews and the limitations of the research method will be examined. The following chapters will delineate the item measurement, data analysis approach and research instrument. In conclusion, the approach research which is taken in this study will answer the research question and give a valuable insight.

Using a case study approach, this study aimed to determine how digital transformation will impact the working behaviour of employees as well as customer experience in Austria's transportation and logistics industry.

## 3.1 Research Problem

The topic and research problem of this study are leadership in digital transformation in the transportation and logistics industry. This research aims to examine how digital transformation has impacted the transportation and logistics industry and how it will affect the future. The researcher wants to examine the importance of IT in the transportation and logistics industry, especially, how the industry is affected after an event such as the COVID-19 pandemic.

Moreover, the thesis analyses the influence of digital transformation on customer and employee experience and to what extend companies should integrate digital tools. Additionally, benefits which come along with the automatization of different department within the transportation and logistics industry will be illustrated. Lastly, several goals about adjusting technology tools in the workplace that leaders should consider for the next five years will be determined. For this reason, the research questions and sub questions were used as a reference point for the development of the interview guide:

Research Question:

> *What are the success factors for the use of digital tools in the Austrian transport and logistics industry?*

Sub – Questions*:*

- *SQ1. Which characteristics must be fulfilled to be a leader in the 21st century?*
- *SQ2.Which digital tools and methods are used to effectively lead teams?*
- *SQ3.Which success factors are existing for the integration of natural language processing in the transportation industry?*
- *SQ4.Does the application of digital innovation impact the attractiveness towards potential consumers*

Propositions:

1. *The application of Technology can positively shift leadership to innovative leaders.*
2. *Natural Language Process and digital tools influence positively the working behavior and consumer experience.*

The interview guide in English and the German transcripts can be found in Appendix 1 and 2, respectively, with each transcript numbered and labelled with the name and date of the interview. The interview guide consisted of 13 open-ended questions, some of which contained subquestions. The goal was to obtain as much information as possible. Therefore, the first question asked about the extent of experience with digital transformation. In the case of Hamidovic (2012), the question was raised in two different publications by Showkat (2017). Showkat (2017) proposes introducing a topic and gaining insight into it at the start of an interview guide. Researchers can then gauge the scope of the event before asking specific questions.

## 3.2 Conceptual Framework

The following figure illustrates the conceptual framework of the paper**.** A goal of the paper is to demonstrate how theories influence four domains that directly affect leadership in the transportation industry's digital transformation. The relation and interaction of the propositions will lead to an adequate answer to the research question.

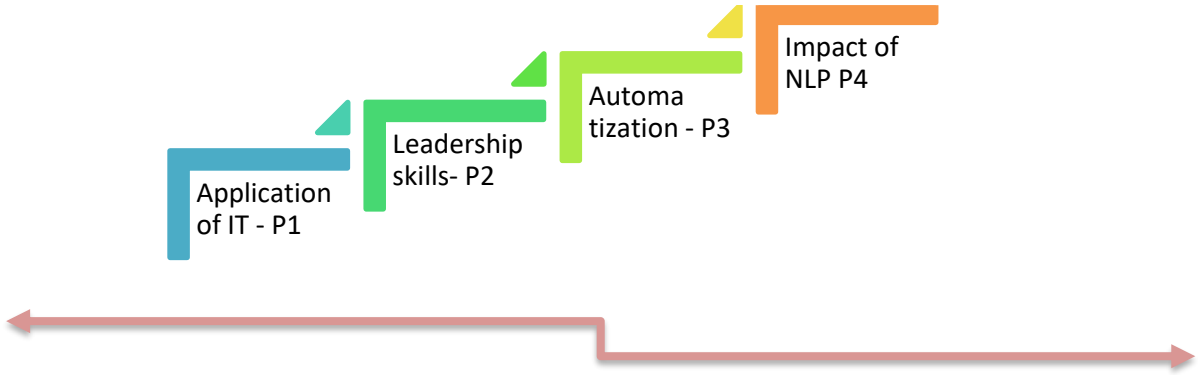



Figure 10: Conceptual Framework Model - own creation

Leadership can be better understood when it is positioned in the context of four-way interactions occurring in the sectors and institutions directly involved in the technical and sociological innovations of the information revolution. Countries, and communities which have more robust, predictable, balanced, and interactive quadrilateral "quad" relationships manage a sustained transition to the knowledge society more successfully, while nations with weak quads experience weak transitions. By tying macrostructural phenomena to micro behaviours and small group interactions in a meso-level structure, the cross-sectoral "quad" leadership model overcomes the limitations of other explanations. Furthermore, the Quad model calls attention to the role that distributed, interactive technologies play in enhancing individuals', groups', and organizations' abilities to create, manage, and sustain the increasingly dispersed, interactive social leadership networks of the digital age (Goethals, Sorenson, and Burns, n.a).

## 3.3 Research Approach & Selection of Methodology

The study follows an interpretative paradigm. To provide a sufficient response to the questions and the topic, following steps will be pursued. Starting with on an extensive literature review, the success factors for the usage of digital tools and methods will be analysed. To gain a thorough understanding of the subject matter, a comprehensive examination of academic papers and documents will be conducted. Based on the literature review, a qualitative research phase will be conducted.

In Brooks (1997), research strategies may be quantitative, qualitative, or a mixture of both, such as mixed methods. The quantitative method utilizes numerical data to test hypotheses, represent phenomena, or apply concepts and specific variables, and they are performed in the laboratory. Methods of qualitative research are descriptive in nature, involve verbal data, assume certain assumptions, and aim to examine and understand phenomena through their use of

verbal data. Moreover, many qualitative approaches lack a fixed organization and rely on natural settings and environments to discover and reveal information. In addition to observation, participant observation, document review, and interviews such qualitative research methods are discussed by Creswell and Poth (2016) and Brooks (1997).

Expert interviews were conducted for the purpose of obtaining valuable data. This method of interviewing is efficient and focused, making the exploration phase of a project more productive (Bogner, Littig, & Menz, 2009). As a result of the organizational structure of interviewees and the companies in which they work, this can provide even more information because they have access to valuable data that they might not otherwise be able to get (Bogner, Littig, & Menz, 2009). In order to accomplish this, Sinem Ekiz interviewed stakeholders and experts in logistics and transportation. These individuals all resided in Vienna. Consequently, the data was collected from experts in the field and in the industry and was based upon first-hand knowledge.

First, semi-structured expert interviews with a selection of experts on leadership and digital tools and methods to lead will be conducted. By conducting expert interviews the knowledge gained by extensive literature research can be further explored. After analysing the success factors after the interviews, a second round of qualitative semi-structured interviews with employees and their leaders will be done to strengthen the findings. The interviews may help to discover a convenient way to get more information due to the structure behind the interviewees and its corporate structure.

## 3.4 Method of data collection

The thesis follows a flexible strategy, since it will allow a more comprehensive overview of the topic. Furthermore, expert interviews with stakeholders will be conducted which will be a part of the qualitative research. Since the topic of study is about digital transformation, it would not be feasible to only gather quantitative data. Thus, it is essential to illustrate the precise background for the approach and to name the measurements captured to approach the aim of this method. The reason, the participants of the interviews were selected, was because of their priceless and lifelong experience in the field of Information Technology and Leadership.

Expanding the interviewees was important to obtain enough knowledge to discuss the topic in detail. Initially, it was expected that it would be relatively easy to coordinate the meetings, but it has been more difficult than originally anticipated to schedule meetings

Because of COVID-19, it was very likely that not all participants would be willing to be interviewed in person; therefore, respondents were offered the opportunity to choose from an in-person interview, a phone interview, a Microsoft Teams conversation, or a Zoom conferencing session. In light of respondents' lack of preference, the interviewer decided whether an in-person or telephone interview would be conducted. For that reason, most interviews were conducted over the phone or via Microsoft Teams. Also, participants were informed in advance that their interviews would be anonymous, if that was their preference. The interview guide was requested by most of the interviewees in advance, and it was provided to them. Moreover, it was incredibly important to conduct as many interviews with stakeholders as possible, since a diverse outcome leads to better conclusions and discussions.

The interviews were always semi-structured and stimulating to obtain the most accurate insights into sustainability certifications and as mentioned above, were only conducted with experts with years of professional experience in the field. As a result, all the interviewees were between 40 and 65 years of age. In all interviews, two people were present. Aside from that, all interviewees resided in Vienna, Austria. An interview guide, which consists of four sections and 15 questions, served as the basis of the interview. The interview guide provided the interviewee with a more level of direction for the conversation. Candidates were given the chance to comment in-depth on questions related to this topic in addition to providing valuable information and suggestions. An interview typically lasted between 26 and 40 minutes. Having interviewed six people and noticing the same themes repeated over time, the author recognizes that the data has saturated. Transcribing interviews is a valuable method of collecting qualitative data and analysing them. Thus, once the interviewer received some consent from the interviewees, the interviewer transcribed the interview. During the interview, additional notes were taken to capture tone of voice and body language.

These interviews were held over a period of approximately three weeks, beginning in April 2022, but took more time to coordinate than expected. Of course, the interviewer had the opportunity to observe the applicant at length during the interview, which will later help them understand their basis from which they judged the subject based on their background. Since the subjects all worked for companies, they all had a background that could lead to a slight bias towards the topic, as they had a monetary advantage of their position. However, the respondents were informed that this study was conducted for scientific purposes, and during the interview they had the opportunity to express themselves in an objective manner.

However, this approach might also have some limitations as the study is mainly focused on Vienna due to the location of the companies and the interviewees. In addition, their companies are based in Vienna, so while the feedback may apply to Vienna, it is not possible to generalize these findings. In addition, the number of respondents is relatively small, as it is difficult to get in touch with many of these individuals and their valuable information.

## 3.5 Method analysis

The analysis will be based on the information gathered from the interview participants due to the method chosen. In order to keep the interviews digital, they are all included in the appendix. Our analysis of all notes involved categorizing and thematically theorizing the data, identifying themes in broad categories, and assessing the ethical and social significance of the data. An overall interview pattern was produced by organizing the information provided by the interviewees in this manner.

## 3.6 Evaluation of the methodology

First off, it can be stated that there are a lot of topics related to leadership in the transportation and logistics industry. Whether we are talking about technology's impact on every industry or not, it has and will continue to have a huge impact. Due to the vast amount of information of this topic, gathering data is not exceedingly difficult.

Moreover, it is not challenging to contact various interview partners, since a lot of people work in the transportation and logistics industry or at least with IT. However, it is difficult to contact suitable interview partners since the researcher does not have a broad network.

Although there are ethical concerns, they are very small due to the fact that I will be interviewing specialists in their fields and have a guideline for the interview. The answers in the interviews can be slightly biased if the companies that employed the participants adhere to certain guidelines, internal rules, and mind-sets. Furthermore, the fact that the participants were interviewed in Vienna might have limited the research to this specific place, and conclusions should not be generalised too widely.

## 3.7 Appraisal of the interviews

For the purpose of analysing the interviews, the study obtains qualitative approach. This method will assist to determine the individual aspects of the discussions to solve the issues of the different sections of this study. The following paragraphs will help to achieve an outline of the approach of the meetings in order to understand the structure. The feedback from the interviews will be measured after the top sections from the interview guideline. Those are:

1. The nature of Leadership
2. Implication of Technologies in the transportation industry
3. Guest & Employee experience
4. Future implications

The full interview guide will be found in the appendix.

Firstly, the input which is gained through the conducted interview will be studied and distributed into various chapters of the thesis. If the researcher gets additional information, those will be included into the discussion and conclusion section.

Nevertheless, the interviews were structured from the beginning for the specific purpose of receiving direct input for this study, which was discussed openly during the interviews. Additionally, each participant was asked the same questions so that each participant's input was comparable. In the appendix (Appendices) is the full text of the interviewees' discourse, which includes everything mentioned and provided by the interviewees that did not pertain to the study's topic.

The following section discusses the results more thoroughly.

# 4 RESULTS FROM THE INTERVIEW

## 4.1 Introduction

The results of the interviews are presented in this chapter. The interviews were analysed independently, as described in the methodology chapter. The samples were presented in a concise framework, arranged according to the interview guide, and arranged according to the themes. These categories thus represent the findings, which are sub-categories. Below, the most salient aspects of the interviews will be reviewed, along with the most pertinent statements made by the interviewees. In one sense, this would support the conclusions made in the theoretical chapters. Floating these questions through the whole life cycle of a property can clarify whether or not the certification impacts its sustainability. This would relate to resource consumption and how the asset is used.

The researcher interviewed companies that are primarily located in Vienna but who are in the transportation and logistics industry. There was an operator, a consultant, and a manager among the companies the researcher interviewed. The purpose of this analysis is to obtain an objective picture of the situation of these various players in logistics and transportation. The researcher particularly enjoys watching the interplay among the players and how their actions affect one another. As a result, the two sides can find themselves approaching the topic in quite different ways.

Prior to getting started, it is vital to point out that only information obtained during interviews was used for the subsequent sections. In any case, the interviewees simply expressed their own perceptions and attitudes, as well as those of the company. While this study focuses on generalizing the results to a wider audience or industry, its findings could have a wider impact. However, the results of this study will not be published.

The interview process was conducted in German. There are numerous translated quotes and paraphrases from these German interviews in the following section. To avoid an accumulation of confusing paragraphs, the German counterparts of this paper are not included in the body of this paper.

## 4.2 Evaluation and interpretation of interviews

### 4.2.1 Interview partners and their descriptions

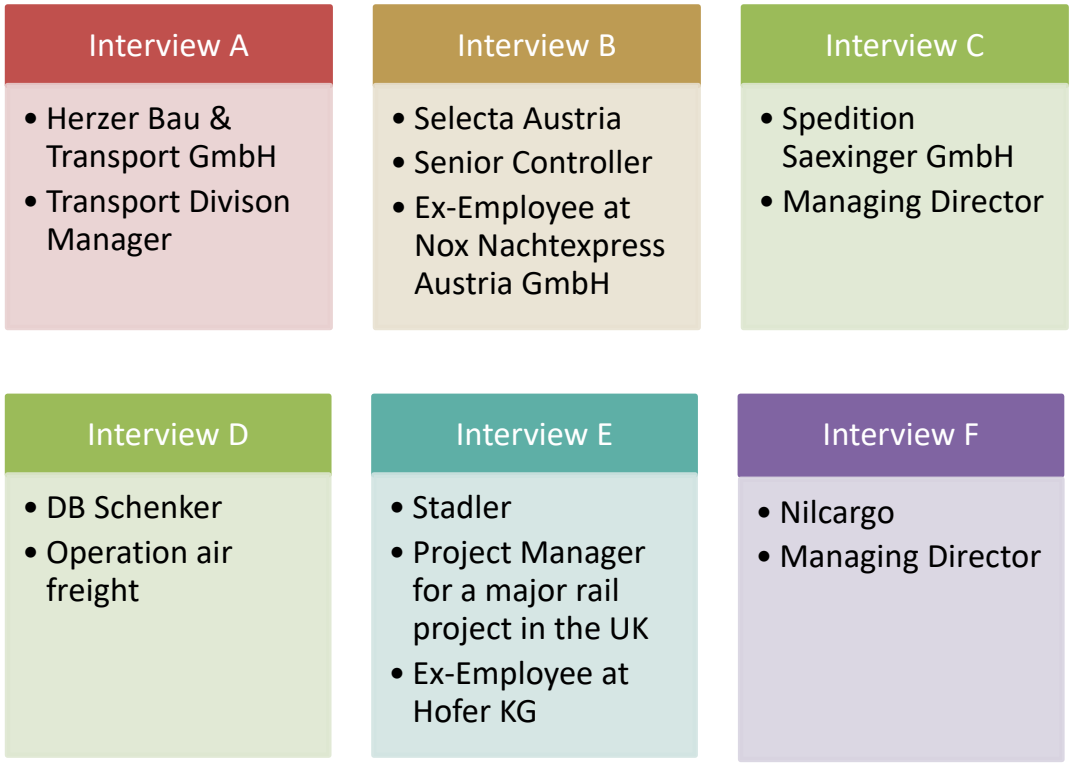



Figure 11: Interview Partners - own creation

The following figure gives an overview of the interview partners, which were chosen for the interview and five of these 6 interviews are men, whereas only one are female. The age range among the interview partners lays between 30 and 55 years. Since the case study of the thesis is Austria, six participants from Vienna, were interviewed. There is a limitation concerning the interview partners since all of the participants are from Vienna. Therefore, only the opinions from interviewed people who works in Vienna is given.

The first question was to introduce themselves and their current position. All three other interviewees have work experience ranging from five to fifteen years. Furthermore, three of the respondents are owners of their own companies and have more than 25 years of business experience. Among them, Interviewee A has been working in his family business since he was 18, which has been in existence since 1881. He has worked his way through all positions and is now division manager of transportation and authorized signatory of a subsidiary. Interviewee C is the owner and managing director of Spedition Saexinger GmbH and has been working in the company for

26 years. It is a family business in the third generation. Lastly, Interviewee F is the managing director of the company Nilcargo for 22 years and are focusing on international transports.

Interviewee B has been a senior controller at Selecta Austria since November 2021. Before that he was also in controlling in a logistics company Nox Nachtexpress Austria GmbH for 5 years. The company was specialized in overnight express deliveries. Moreover, Interviewee D has been working for DB Schenker in Vienna since 2010. Since 2013 she has been working in Operations Airfreight Import. The daily handling of import shipments at Vienna Airport, including customs work, is the main focus here. Lastly, Inteviewee E works for Stadler as a project manager for a major rail project in the United Kingdom, where 53 metro trains are being built for the Liverpool region.

The interviewers continued to ask more in-depth questions after asking the basics about themselves. Digitalization experiences, digital transformations, and success factors were the three main topics discussed. Overall, all topics are components of digital transformation, but it is necessary to distinguish between these different subchapters in order to make the analysis more understandable.

### 4.2.2 Experience with Digital Transformation

The answer to: “What experience have you had with digital transformation?” was quite the same of all six respondents. Interviewee A states that the digital transformation is now the change of the times. Many companies want to become „paperless“ in the next few years, therefore this is now standard to use the latest technology. Another respondent answered this question by comparing the current company he is working with his previous company. In his old company there were very many old processes, and old handling of the business. They did a lot of things manually. According to the respondent, one example was the route planning. To be able to calculate the routes or identify the best routes, they didn't really use a tool for that. Last year, they have started to build an interface where one could then really optimize the routes with certain programs. During the respondents last months in the company, they really tried to incorporate digitization and technology specifically in route planning to optimize the whole business.

Another respondent answers this question, which is another aspect of this topic, that companies that do not even consider the digital transformation of their business will perish by today. The process is tedious, but it simply has more advantages than disadvantages, according to the interviewee. Not only is it important to build a digital landscape, but it must be constantly maintained. It's a must. No matter how well the programs/tools, etc. are set up, if one doesn’t have

a good background in the company of IT people who can maintain the programs and tools the way they need to be maintained, then it doesn't matter how good the tool is. Constant maintenance is the key.

Interviewee C, the managing director of Spedition Saexinger, provides an answer by describing his first years at the company. Back then, he was still writing on a typewriter. Then e-mail slowly came along, then came the data link. Today they work with scanner solutions, etc. So, he points out that he really had a journey from old-school with a typewriter, still taking letters to the post office and sending them, to today's situation where he can actually handle a large part of his entire activity via a smartphone or via a tablet.

Interviewee F gives a similar answer. He pointed out that digitalization has changed drastically for him in the first place, because in the past they used to communicate with drivers by fax, now they do it via Whatsapp. In the past, when he needed to send his drivers an address, he would ask them to go to a gas station, call him from there and send a fax number. Then he would send a fax through. Nowadays, everything is done over the Internet.

Another respondent refers to the COVID- 19 pandemic, which brought major changes to the company, especially during the pandemic period, such as home offices, meetings held online and the drastic cutting of social contacts. In areas where it seemed impossible in some cases, ways and means were found to implement this.

It can be noted that all respondents answer these questions very generally and very similarly. They all have the same opinion when it comes to the drastic change. While answering this question, the interviewer could see how excited all the respondents were when answering this question. The researcher believes that all of the respondents are more than grateful for such a transformation in the Transport and Logistic Industry.

### 4.2.3 Personal opinion on the importance of digital transformation in the Transport & Logistics Industry

The following question considers the personal opinion on the importance of digital transformation in the Transport and & Logistics Industry.

One respondent states that this question could be answered quite simple with one word: Paperless. The respondent added that it will soon be the case in this industry, too, that there will only be a PC or tablet and no more traditional paperwork. Another answer was the simplification

of the logistics chain, for example with new more modern software or new technologies in warehouse logistics. To continue with Interviewee F answer: He expresses that everything has become much faster. They used to have to wait an insanely long time for the fax to even go through, then they had to hope that it arrived at all. At the end, everything has become much faster for him and his company.

Interviewee C amplifies that in his current company he works with Power PI, Big Data, etc., while his previous company Nox Nachtexpress Austria GmbH did not bring any technology into the organization at all. He also explains that Selecta is a really big company and is represented in 16 countries, while his old company was only represented in 3 countries. They have interfaces like that where they work with very big data, and also platforms like Power PI where they can pull the data in real time. They used to have to pull the data on an Excel basis, and that took forever. With Big Data, it's a very different story. The reporting is centrally controlled. Of course, they work with Excel because controlling doesn't work without Excel. But the provision of the data, the processing and the uploading of the data is now only done online.

Furthermore, another respondent talks about times from warehouse logistics. This is an essential aspect for improving the efficiency of work performance. There are reasons why one can't digitize everything because some customers won't play along. But on the whole, in a medium-sized company, they are already trying to push massively for digitization, but not in the sense of staff reductions, but as a support to make the element better and faster.

Interviewee E indicates that digital transformation in the logistics industry means mapping all data flows in incoming goods, goods provisioning, and outgoing goods with an intelligent system, thus ensuring highly efficient work for employees. Subsequently, this can be the basis for automating warehouse logistics. In transport planning, by integrating transport planning software into the ERP environment via an optimizer, a perfect route plan can be created with optimal utilization of the trucks and thus very low forwarding costs. All this together with an F&R system in distribution leads to the fact that by means of collected data from the past and calculated target values for the future, so-called commission peaks can be smoothed and the system smoothest the goods nicely over the individual weekdays.

The fact that some of the respondents pointed out the extent to which they have applied digitization in their businesses underscores the impact of digital transformation in the industry. For instance, three of the respondents told the researcher that they use advanced software, Big Data, Power PI, F&R system, and other programs that are extremely supportive of today´s work

performance. In addition, all of the respondents express the convenience behind the digitalization.

### 4.2.4 The stage of digital development in the company

The following question: What is the stage of digital development in the company" is asked to obtain in-depth information about the digital process in the organization.

Interviewee A states that they are constantly adapting their company to the development. Many clients already prescribe various software such as electronic delivery bill, electronic invoice on the same day of delivery to the customer, 24-hour vehicle and driver monitoring, etc. Another interviewee feels that there is still a lot of room for improvement and the company is probably still at the very beginning in this respect.

Interviewee C points out that of course there are internal processes that they can still improve, and they are working on that. But it's all a question of money. Digitalization costs money. What they can't get a handle on is that they are actually more innovative than their customers when it comes to digitalization. He is referring to large companies. It's incredibly difficult to get this issue through to really large customers because they don't know their own IT systems.

Interviewee D comments that in some areas, the state of digital development is more advanced than in others. In air freight, for example, paperless work is still not possible because some software is outdated and does not offer this option. In land transport, however, they are already working completely paperless. In warehouse logistics, new robotics have been implemented, but in her opinion, there is still room for improvement, especially in terms of software.

Interviewee E remarks that the company Hofer KG belongs to the Aldi Süd group. In Austria, all 500 stores and 6 distribution centres have been switched live to the new AHEAD system. Now the goal is to bundle as much control activities as possible and to manage them centrally. The remaining 80 distribution centres worldwide in various regional companies will go live in the next 4 years.

Interviewee F answers this question similar to Interviewee A. He explains that there is still a lot of room for improvement, because many things could still be digitalized. Certain work processes could be simplified by certain programs. For example, they could attach a GPS interface to a truck and transfer this signal directly to a freight forwarding program. Because, for example, they still have to call the driver in the same way and ask him where he is and if everything is

okay, etc. But with a GPS interface that the truck has on board, they could transfer everything directly into the forwarding program. They are also working very diligently on that.

To comment the question, it can be said that all companies are already incorporating digital tools into their organization. Additionally, they all share the same opinion that they are in the first stages of digitizing the organization.

### 4.2.5 Implementing a digital business strategy

Four out of six interviewees could answer the question: Are you implementing a digital business strategy in your company? Is this planned for the near future?

Interviewee A states that, his company will not get around this because this is the general development, but they are learning every day because there are no limits to the top. There is currently no clear strategy, they move with their customer base and develop so forced by itself.

Interviewee B approves that they are expanding the existing digital business strategy. It is not 100% mature yet. Primarily, they do not want to achieve anything other than linking the sites together. Each country should be able to quickly provide data everywhere. They are still working on that. Second, the vending machines. They want the vending machines to be networked as well. They also need to get the data, such as how much turnover the vending machines make, which products are missing, etc., and all this is networked with each other. All this information is networked with each other. They are trying to improve and optimize the structures they have. Interviewee C answers the question with just two sentences and explains that the focus on digitization is a high priority for the company. However, he emphasizes that this is not the measure of all things. There are customers for whom this will not work in the next few years. Interviewee F states that the company is already in the process of implementing a digital business strategy. They want to introduce a program that automatically connects to their trucks via a GPS signal, feeds it into their program via an interface, and then automatically communicates the status to the customer. This strategy is planned for 2023.

### 4.2.6 The motivation behind the company´s decision to implement digital transformation

There was a wide range of interesting and different answers to this question. Interviewee A, for instance, does not see implementing digital transformation as a motivation, but rather as a normal necessity. Among the highest cost centres in a company is administrative expenses, and as with any company, this should be minimized as much as possible. This leads to lower personnel costs by implementing a comprehensive digital transformation strategy. Other options were not available, Interviewee B explained. There are 3,000 machines in Austria alone. The company must track all data from these machines. It will be impossible to manage such an enormous amount of data.

Two other interviewees described their perception of digital transformation as driven by the desire to work faster, to get to their goals faster, and of course to make higher profits. Furthermore, time gained from new acquisition is another important driver, along with investing the time gained in new acquisition. They could invest more valuably by using that time to acquire new customers rather than waste it on a phone call to the driver and email to the customer. This is about discovering new customers.

In addition, Interviewee C emphasizes that getting along with customers is a primary requirement in the industry. On the other hand, digitization will make the processes that have been manually managed for a long time more efficient, transparent, and effective. As well as saving personnel, he claims that it saves time as well. The company does not focus on this aspect. Copying delivery bills has been the order processing method up until now. As they become more and more successful, the company is starting to convince customers that it's in fact a pointless job. As a result, it is error-prone due to the fact that an employee can make an error in quantity or line. One example is customer service. This is because leftover problems in logistics are inevitable. This activity is no longer about tendering, archiving, etc. as the customer wants to focus more on the employees.

Apparently, the company Aldi Süd has tens of regional companies across the globe, based on the anonymous interviewee. Different systems are used to handle the logistics for each of them. As part of the AHEAD transformation, all stores and logistic centres throughout the world will be upgraded to the same software version. In addition, certain parts of the logistics warehouse will be automated.

The interview question: “How does the digital transformation process benefit the customer, the organization, and employees?” was answered very similarly by all interviewees.

There is an advantage and a disadvantage, according to one respondent. Among the benefits of digital transformation is that it simplifies workflows to a significant extent. This results in reducing personnel requirements and providing customers with all the information they need as soon as possible, such as fast billing and quick payment receipts.

One interviewee points out that employees can access data faster and process it more efficiently. Reporting is faster and more accurate, the interviewee says, because erroneous information is reported immediately. Now, data comparisons can be made immediately that were not possible before. The customer receives their information faster. If the customer wants monthly / annual / vending machine sales, they get it quickly. Both the customer and the employees get to their goal faster. From a business perspective, the benefit is clearly financial gain.

Based on Interviewee C opinion, it benefits customers by making data transmission and reception faster. As a result, many manual processes become unnecessary. In other words, the customer has the goods out the door or in storage much faster. Their older employees are more likely to have problems with digitization as far as the employees are concerned. He states that it is naturally challenging for them since they do not have the same affinity for smartphones, tablets, etc. It is clearly an area in which young people excel. Employers also benefit from the program. Several employees pointed out that scanning and working off the VIN codes would never work years ago, and that was nonsense, etc., etc. Now, no one can remember working five years ago. This factor also benefits the organization because it is a yield factor.

Other respondents state that customers would benefit from faster processing, while the organization and employees would benefit above all from simplified processes and shorter runtimes. This could possibly create more work and time for new customers. In the logistics sector in particular, a functioning digital transformation can massively accelerate processes and thus save costs. The organization notices it in a positive further development, which secures the long-term existence of the company. It opens the organization also the selling etc. on new channels / new expirations / processes...

Lastly, Interviewee F indicates that people nowadays aren't even interested in talking to each other on the phone. Instead, they prefer to communicate via social media, such as Whatsapp, SMS, etc. Customers and employees are both happy with it. Younger generations, as well as his young employees, are very happy to remain in the car all day, without having to communicate. He certainly could not have imagined this 10 years ago. This is what makes the customer's journey faster. Customers can go online in the future and see the location of their shipments by

receiving an e-mail or simply logging in. As an organization benefits from digitization, they gain more customers, allowing them to acquire new customers more quickly.

The following chart shows a summary of the most common responses from respondents regarding the motivation for the company's decision to implement digital transformation.

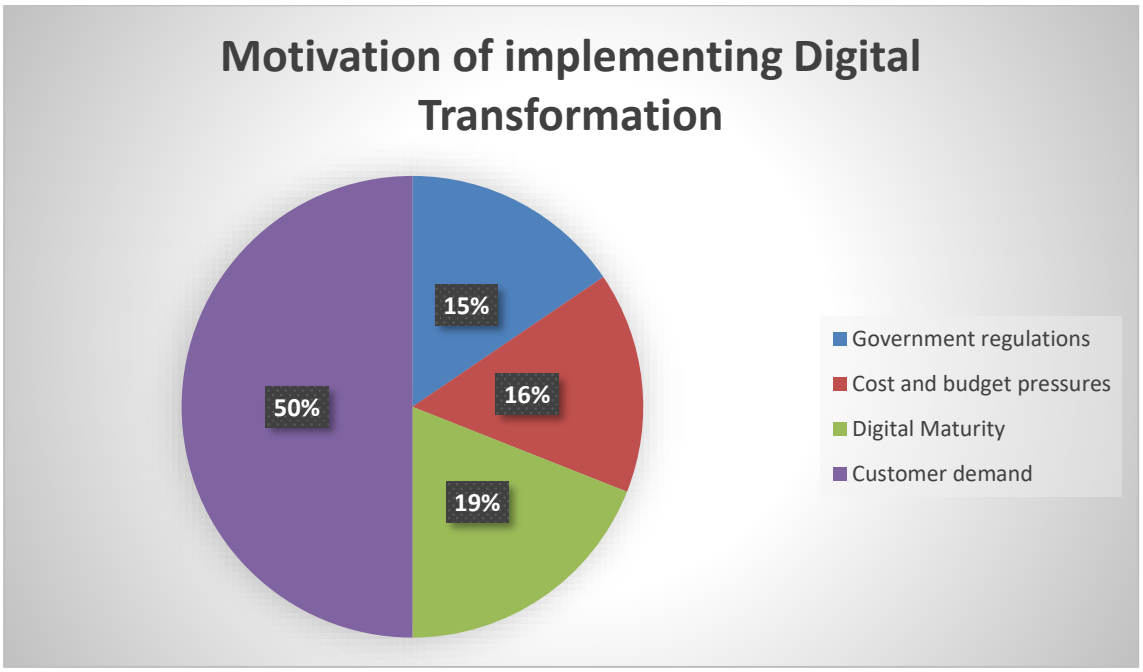



Figure 12 : Motivation of implementing Digital Transformation

In the preliminary stages of business innovation, the pressure of a budget can lead to the decision to acquire talent and technology. Some respondents indicate that annual goals in the company are directly or indirectly linked to investments in technology and innovation, and that the costs of these investments are directly or indirectly included. Moreover, training employees and transforming the processes and operations are some of the ways they can maintain their competitive edge. Those things must be accomplished before the direct competitors do them. All company departments should also be involved in digital literacy. Additionally, finding professionals who are knowledgeable in the first guidelines is crucial.

### 4.2.7 Factors that are important for the success of a digital transformation

A number of interesting findings have come from analysing which factors lead to successful digital transformation. According to a respondent, the initial investment as well as the implementation process were very difficult before the systems were in place and the employees were

trained. Even though it takes months, the investment is definitely worthwhile. The success factors of the company are described in three words by another interviewee: Acceptance, competence, and work culture.

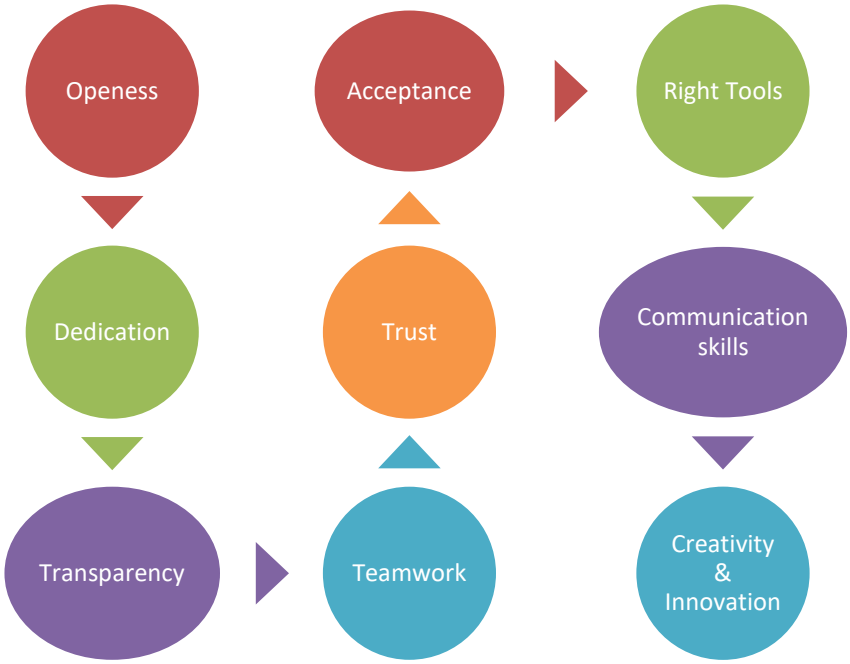



Figure 13: Success Factors of Digital Transformation - own creation

Openness to new things is something Interviewee B emphasizes. As compared to his old company, where everyone was opposed to a lot of things, this was very similar. The company has to have a high level of acceptance. It takes time to implement this because it needs to have a prominent level of acceptance. The level of acceptance is crucial. Employees need to be informed that digital transformation would lead to positive changes. Making sure the right tools are selected is also important. The tools must not be prone to error. If the machines are programmed incorrectly, the data will enter the database incorrectly and one will get incorrect results. Incorrect programming of the machines will result in incorrect data entry into the database, and incorrect results will follow.

In addition, respondents indicated that communication is the key to successful digital transformation. Giving and receiving feedback, listening to employees, appreciation, respect in the relationship between employee and manager are some examples of communication. In terms of transparency, some respondents stated that free access to internal information empowers employees to be creative and innovative and encourages them to think "outside the box" as it also challenges existing structures.

According to one of the interviewees, the organization developed its own software because its old IT system was no longer state-of-the-art. This software must be state-of-the-art if they spend so much money on it. The system was implemented three years ago, and it has been continuously adapted since then. In essence, they have an IT system that keeps up with their business and is continually adapted to match the demands. In this way, it can be considered a living system. Basically, the requirement was that a living system should use as much information as possible. As opposed to, as occurs in most other companies, using SAP and then exporting data from SAP into Excel, and then exporting it again. In Interviewee C strategy, everything is managed through an integrated IT system. This includes not only the operational layouts of the logistics of the warehouse, but also the entire cost structure involved, as well as the invoicing - all that is integrated into the system.

Having long planning of the hypercare phase for software integration and providing enough IT specialists is also a factor for the success of digital transformation, according to another interviewee. There must be an enormous amount of IT support available 24/7. Resolute employees who go above and beyond the call of duty, especially during the software implementation process. Additionally, the business key users must develop a sound understanding of the software to support the operational business by working closely with the system integrators.

### 4.2.8 Feedback from employees about the Digital Transformation

Interviewee A reveals that it was very time-consuming to make it through the training sessions. In part, employees became discouraged. All of his employees were extremely satisfied with their jobs, which was due to their motivation. Upon listening to what Interviewee B overheard, he says they have taken it differently for the past year as it stands at the moment. During this time, there had been a high flotation rate. Since the company is automating, he cannot determine whether the employees feel redundant. There is always a need for people. His role as a controller requires that he extract and interpret the data correctly and work out what the key is from it. The tools they currently have are not capable of executing that task. The digitization of his work does not threaten his job. It simplifies it, not replaces it.

As Interviewee C points out, there are three things he needs to mention. Getting employees to embrace digitization was easier when they were younger and more open-minded - for instance, department heads at their company or those with a commercial education. Those who were of an older age found it much more difficult as they were accustomed to working with their paper economy, which they preferred thousand times over.

It was a difficult decision, but he told his employees: "Get used to it, it's not going to change. And today no one can imagine working the way they did 5 years ago. And it is also essential that when the employee approaches him with an issue that is not being resolved optimally that he acts. Because everything that they plan in theory does not mean that it is the same in practice. It is essential to pay attention to the operational forces and improve them.

The viewpoint of Interviewee F is very interesting. The employees of his company actually encouraged him to start investing in digitization. Eventually, they might be able to save personnel because of digitization. An investment that costs a company €35,000 is justified if it saves a company €70,000 a year by eliminating two employees. However, digitalization has been well accepted by the employees.

Similar responses were provided by the other interviewees. It is generally accepted that employees are always open to new opportunities and possibilities offered by the digital world. As a result, most people gave positive feedback.

### 4.2.9 How does digitalization affect the workplace and qualification requirements?

The question: How does digitalization affect the workplace and qualification requirements was asked to obtain a deep insight of the influence of digitalization in the workplace.

In response to the question, one respondent gives an example. Typical examples were truck drivers at their company. Full-time drivers accounted for 150 employees.

It was not so long ago that this field was not so demanding, the vehicles weren't too complicated, and the work processes were almost primitive as well. By now, vehicles have become high-tech products, and their operation is extremely challenging. In addition to the external processing, their internal processes are now just as demanding. This includes the electronic delivery of invoices and electronic payroll systems. Several driver trainers are already in place to train existing drivers as well as new ones. They also have their own academy where they educate their staff. Sadly, the ready-made employee no longer shows up so often on job applications. In the meantime, one has to be prepared. This is very costly, but unfortunately, this is the system. The company already have several driver trainers in place who train their drivers and also new ones. They also have their own academy where they educate their staff. Training new and existing employees, accordingly, is very costly but unfortunately, this is the reality.

The Covid 19 pandemic is mentioned by two interviewees. Meetings are conducted only online because of Covid-19. Client meetings are no longer scheduled. Presentations and meetings are all conducted electronically. Another respondent reported that they had become more mobile and flexible during the course of their working day. Holding meetings online, and working from home, are all no longer problems today. In addition, Covid-19 plays a significant role as well. With regards to quality requirements, he can say that their new workers have an excellent knowledge of IT.

One respondent refers to the massive support for digitalization. As warehouse and transport logistics become more digital, the quality of services will improve. Basically, the organization becomes more transparent. Customers can receive information more quickly as things become digital. In the past, they used to pick up the phone. Today, they can check where the truck is, and how far they are with the transport process, and this can be done right away via my cell phone.

According to Interviewee F, the company is ISO-certified and attaches importance to it as well. Furthermore, having expertise in IT is crucial if one wishes to work on certain programs in the future. He believes, however, that finding IT specialists is easy. Computer savvy is certainly a characteristic of the younger generation as opposed to the older generation. Furthermore, finding people who are easily trained will be easier in the future. They do everything online and do not need to speak to the customer or call the driver.

## 4.3 Summary of the interviews

The following sections give an overview of the messages that the interviewees made. When it comes to the achievement of digital transformation, something is clear. It is only possible to perform transformation if the clients agree to it. Moreover, collecting data and using it in a targeted manner and focusing on the customer, and using the latest IT technologies and software contribute to digital transformation. Existing procedures and processes would have to be examined in detail and then evaluated to see where there could be potential for improvement and simplification.

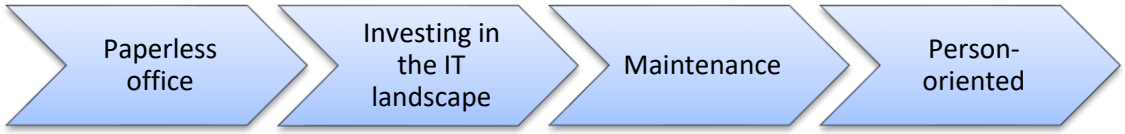



Figure 14: Key findings of the Interviews - own creation

As mentioned previously, paperless office and processing will soon become standard in the transport and logistics industry. Digitalization brings advantages and disadvantages, but in summary, this is simply the time of development, and it is essential to adapt. There is no way to resist digitization. Investing extensively in the IT landscape is important. The companies that have not even done that to date will eventually go under. The process is laborious, but it simply has more advantages than disadvantages. It is not only important to build a digital landscape, but it also needs to be constantly maintained. It is necessary. No matter how well the programs/tools etc. are set up, if companies do not have a good background in the company of IT people who can maintain the programs and tools as they need to be maintained, then no matter how good the tool is. Constant maintenance is the be-all and end-all.

The interviews all seem to agree on the same thing. There is a significant role in digitalization. Neither is it an AI tool nor will it ever be an AI tool. Introducing it in a person-oriented and targeted manner is crucial. Employees must be consulted as to what methods are needed to improve, make it a lively system, and, in general, the path taken by the organization will allow them in the future to develop more digital connections with customers and partners and to create resource applications that can be used more effectively.

A respondent testified that the more substantial the company, the more comprehensive the system requirements usually are. Many of these issues cause major problems in the initial introduction phase, which translates into a high cost of introduction. The importance of this cannot be overlooked. It is also critical not to overlook the steep learning curve which IT support requires. By automating warehouse logistics processes, logistics costs can be significantly reduced, and productivity can be greatly improved.

As a result, companies today have employees all over the world doing their jobs. The world's economy has become increasingly globalized. Digitization has always been practiced by large companies, but now it is also being practiced by small and medium-sized businesses. The

importance of personal contact is still very high among respondents. On the other hand, young people consistently value digital communication highly. Unfortunately, it is impossible to change the fact that the human aspect is lost in the process. There is a tendency for this to happen throughout all of human history. Humanity suffers from this disadvantage, but it will have to adapt to the digital future.

# 5 DISCUSSION & RECOMMENDATION

An examination of the results of the research is provided in the concluding chapter of this thesis. Conclusions and recommendations for stakeholders are discussed. It outlines the contributions to knowledge and provides concluding remarks.

The logistics industry will be transformed largely by the growth of digital platforms, allowing small firms to compete with sector giants and have a global presence. There will be a race to build a dominant global platform in the next few years, which will completely change the customer's experience of logistics and determine which businesses will be winners and losers in a truly digital logistics industry (World Economic Forum 2021).

Companies' growth and future operations are affected by factors specific to properties and external factors. Among the biggest challenges among logistics property owners, according to the study, are the costs and financial conditions associated with new properties as well as environmental permits and the partly inflexible leasing terms currently in place. By contrast, the respondents are hardly mentioning the conversion of logistics space for non-logistical purposes as a major issue. CBRE (2021) states that, a number of external factors contribute to the affordability crisis, such as the labour shortage and the Coronavirus outbreak.

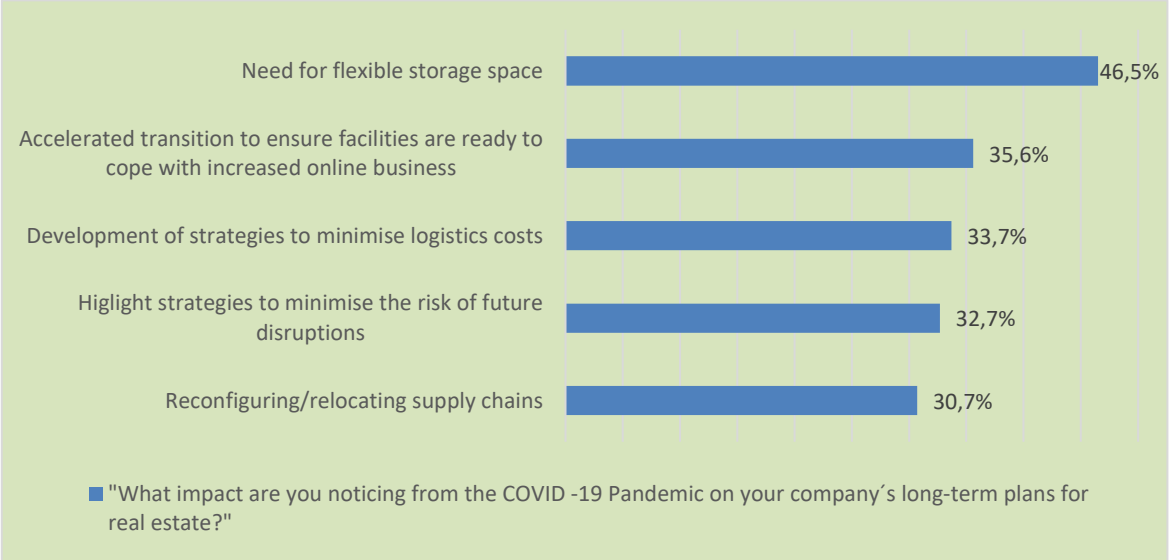



Figure 15: CBRE European Logistics Occupier Survey 2021 – own creation

According to CBRE's 2021 European Logistics Occupier Survey, respondents say the need for flexible warehouse space is the biggest influence on companies' long-term real estate plans at 46.5% of Covid 19. Approximately 36% find it important to increase the real estate industry's

ability to accommodate increased online business. A similar percentage sees minimizing logistics costs as a priority. Building and location requirements are influenced by personnel availability and labour costs, customer delivery times, and proximity to motorways. By contrast, this property is located near residential areas or similar businesses (CBRE, 2021).

To continue and answer the research question, which is: What are the success factors for the use of digital tools in the Austrian transport and logistics industry?

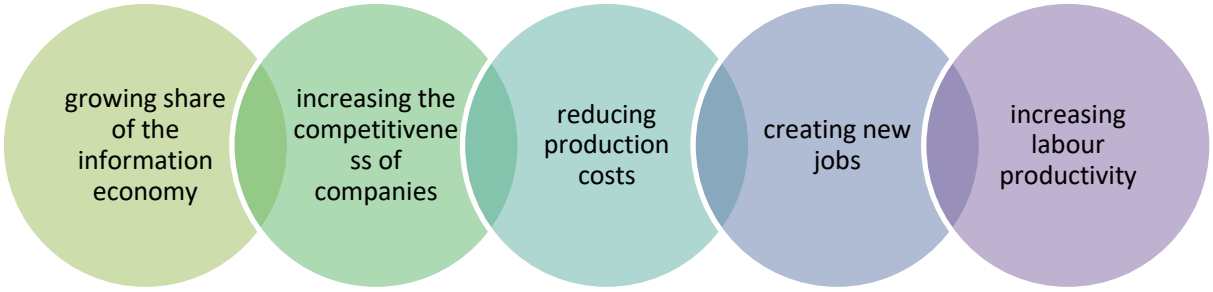



Figure 16: Success factors for the use of Digital Tools in the Austrian Logistics Industry

-own creation-

Based on the interviews conducted and extensive research, it can be said that there are several factors, such as the growing share of the information economy, increasing the competitiveness of companies, reducing production costs, increasing labour productivity, and creating new jobs. Considering that there are extreme failures in logistics, such as 50% of trucks returning empty from a delivery, the World Economic Forum notes that digital transformation can also benefit society and the environment by increasing productivity and reducing energy consumption. In addition, all respondents said that digitalization has only positive effects on business. Above all, they saw a sharp increase in customer orders and customer satisfaction.

It's incredibly fascinating how work behaviour has changed under the influence of digitization. In the interviews conducted, everyone stated that everything was done manually on a sheet of paper, handwritten on a grid form. Faxing was the most used "technological" tool to communicate at that time. And the communication between the drivers and the riders was also exclusively manual. You sent a text message and there was no confirmation if it had actually arrived. The information was kind of free form. There was no historical record of the data. When new orders came in during the day, there was very little latitude to change the process and reorganize

the schedule. Now, with the digitization approach, every single order is fed into the system. They can see the status of the system in real time. The drivers are all given a cell phone that is activated with the app. Once they complete the order at the customer's location, they can pull up proof of delivery, whether it's a signature or a customer's name if there's a problem with the delivery. The data is in real time, which allows for better scalability, because a person doing a manual process, if they're really good, can do maybe a hundred shipments a day. A person with a computer can do maybe 300-400 in a couple of hours. So, technology is completely changing the scope of operations. It allows companies to continue with their growth plans without having to employ a whole army of people who are basically doing their work manually.

The researcher believes that modern natural language processing techniques can enable the use of natural language for (at least partial) expression of programming ideas, dramatically increasing the accessibility of programming to non-expert users. Digital transformation can be undertaken by a company for many reasons. However, survival is the most compelling reason for companies to undergo digital transformation. The COVID 19 conference highlighted the importance of adapting quickly to dramatic changes, such as supply chain disruptions, time-to-market pressures, and rapidly changing customer expectations. Investing in digital transformation has never been more important for the survival of companies, products, and organizations.

Therefore, it is the researcher’s belief that today’s leaders must possess the power of storytelling to convey, at least for the time being, that the power of charisma, along with the power of information should be the predominant types of power leaders should master. No longer do legitimate and coercive powers hold the edge. On the contrary, in a business world full of deceit and greed, unless leaders have a delightful story to tell, no one will be willing to follow. In the end, how do you know if you are a leader? By simply looking back and finding out if there is anyone following you. If so, then you are a leader.

When it comes to defining digital leadership, the researcher thinks any technology creates new opportunities. It creates new opportunities, and leadership is about how we can actually take advantage of those new opportunities. And the researcher would add that it is not just about opportunities, it is about using them in a safe and holistic way. So, the researcher thinks digital leadership is something that is not just the traditional understanding of leadership. Currently, the world has turned around. Nowadays people look at young people to see what is new. Leadership is not just about long-standing tradition; it is about looking back and seeing new opportunities that can come from anywhere and bringing that together to develop innovative ideas hopefully create a better world. Digital transformation involves integrating digital technologies

across a company from all areas. One of the most important aspects is that it changes the way one doe's business. It changes the way one run a business, and it has completely transformed the way one delivers value to people, to customers, and to everyone around.

Having written and analysed the master's thesis, the researcher also believes that digital transformation is change management. There are three elements.

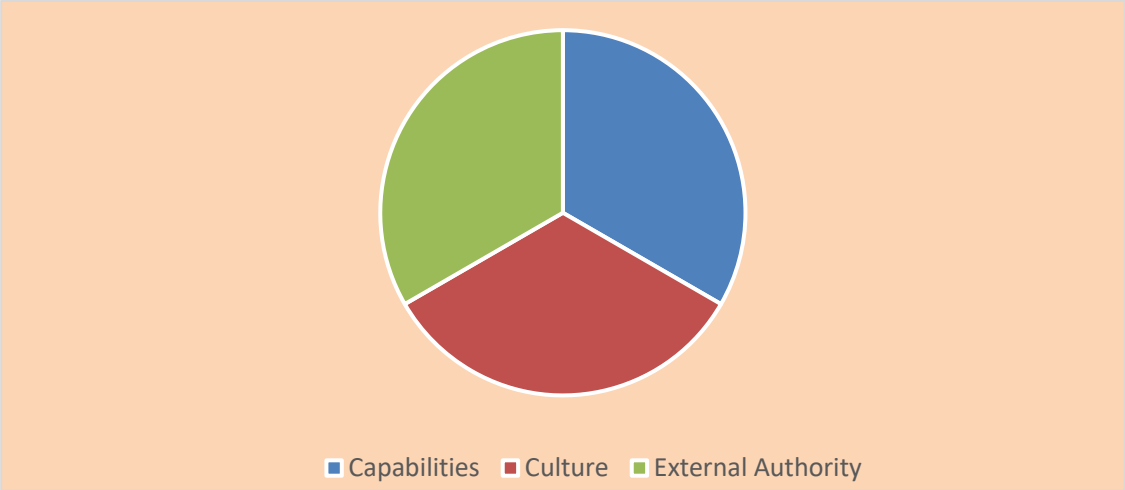



Figure 17: Three elements of Digital Transformation – own creation

First, capabilities: How can one do it? If not, how can one close the skills gap. The second is culture: Do one really want to do this? If not, what is the reason? How can one motivate people to do the same? The third is external authority: the authorities one need to find out on this journey of change or digital transformation. By digital transformation, the researcher understands the use of any type of technology that helps improve businesses. It can be enterprise resource planning software, ERP systems, customer relationship management software for managing sales, financial and accounting software, robotics, IoT, blockchain, artificial intelligence, etc. The point is that digital transformation is any type of technology that enables a business to be more productive, efficient, and effective (Bonhill Group Plc, 2019).

Although technology is a driving force behind some of these digital transformations, it is more of a business change that companies are trying to achieve. It can be said that they are striving to become more efficient, to provide a better customer experience to their customers, to become more effective as an organization, and to streamline the tasks of their employees. So, it is business needs that drive them, and it happens that technology is one way to enable those changes (Bagheri &Harrison, 2020).

Regardless of how mature the technology is, failure is highly likely if we do not take diligent care of people and processes and do better than we invested in the technology. Adopting digital transformation can be very painful for many companies. For companies that do not have much experience with it, it can be overwhelming, and they do not always know what to do. To ensure the success of digital transformation, it is important to not only invest in the technology, but also pay attention to the people and processes. The conclusion of the master's thesis is that the key to transformative digital technology is to put people at the centre. The reason for this is that performance is expected of them. Until their needs are met through user-friendly, flexible, and accessible technology, businesses cannot thrive (Chichosz, Wallenburg, and Knemeyer, (2020).

It is appropriate to consider few limitations of this work. First, it was more difficult to interview larger well-known companies than smaller/medium-sized companies; therefore, more interviews were conducted with medium-sized companies. As a result, the author may not be able to draw conclusions about the situation of larger companies in the current economy. In addition, the study focused exclusively on Vienna, which was a geographical limitation. It was difficult for the author to draw broad conclusions about best practices given the detailed information provided by the respondents and the specific strategies developed by each company.

Future research could explore what positive impact or opportunities digital transformation will have for managers and employees in a few years. Finally, it could examine how other companies have dealt with the effects of digital transformation and whether similarities and differences can be identified.

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# APPENDICES

## APPENDIX 1: INTERVIEW GUIDELINE

**1. Introduction**

1.1 Could you please briefly introduce yourself and your current position. What is your experience with digital transformation?

1.2 What do you understand by Digital Transformation? How would you define it?

1.3 How would you evaluate the digital stage of your company?

**2. Digital Transformation – General Questions**

2.1 Does your company have a digital business strategy? If not, does it plan to implement it? When?

2.2 What was your company´s motivation behind Digital Transformation implementation?

2.3 What are the objectives of the Digital Transformation?

2.4 What is the value proposition of Digital Transformation for clients/carriers/employees?

**3. Digital Transformation – Success Factors**

3.1 Which factors were important for a successful Digital Transformation?

3.2 What is the feedback from your employees about the Digital Transformation?

3.3 What are the next steps for extending the Digital Transportation?

3.4 How does digitalization affect the workplace and qualification requirements?

**4. Conclusion and outlook**

4.1 Please draw a brief conclusion. What are the most important success factors for digital transformation of your company?

4.2 What were the major learnings for your firm and for your personnel from the Digital Transformation?

## Appendix 2: Interview Transcripts

| Interview A. 15.04.2022 / Herzer Bau & Transport GmbH | |
|---|---|
| Interviewer | Danke M., dass du dir Zeit genommen hast dieses Interview mit mir zu führen. |
| Respondent | Nicht zu danken! |
| Interviewer | Ich möchte gleich mit der ersten Frage losstarten. Würdest du dich und deine derzeitige Position bitte kurz vorstellen? |
| Respondent | Mein Name ist M.H, ich bin seit meinem 18. Lebensjahr in unserem Familienunternehmen tätig. In unserem Unternehmen, welches seit 1881 besteht, habe ich alle Positionen durchgeschnuppert und bin nun bei Bereichsleitung Transport und Prokurist eines Tochterunternehmens gelandet. |
| Interviewer | Sehr interessant und gleichzeitig sehr beeindruckend, dass das Unternehmen seit 1881 besteht. Ich komme gleich zur nächsten Frage. Welche Erfahrungen haben Sie mit der digitalen Transformation gemacht? |
| Respondent | Die digitale Transformation ist mittlerweile der Wandel der Zeit, viele Unternehmen möchten in den nächsten Jahren „Papierlos“ werden daher ist dies mittlerweile Standard, die modernste Technik anzuwenden. |
| Interviewer | Was bedeutet für dich digitale Transformation in der Logistikbranche. Wenn du es definieren müsstest, wie würdest du es tun? |
| Respondent | Ganz einfach zu erklären - Papierlos, es wird auch in unserer Branche bald so sein, dass es nur mehr einen PC bzw. Tablet geben wird und keinen klassischen Papierkram mehr. |
| Interviewer | Wie ist der Stand der digitalen Entwicklung in deinem Unternehmen? |
| Respondent | Wir sind laufend dabei unser Unternehmen an die Entwicklung anzupassen, man muss mit der Zeit gehen. Viele Auftraggeber schreiben schon diverse Softwaren vor sowie zum Beispiel den elektronischen Lieferschein, elektronische Rechnung am gleichen Tag der Zustellung beim Kunden, 24 Stunden Fahrzeug und Fahrer Überwachung etc. |
| Interviewer | Führst du in deinem Unternehmen eine digitale Geschäftsstrategie ein? Ist dies für die nahe Zukunft geplant? |

| | |
|---|---|
| Respondent | Klar, daran werden wir nicht vorbeikommen da dies die generelle Entwicklung ist, allerdings lernen wir täglich dazu da es nach oben hin keine Grenzen gibt. Eine klare Strategie gibt es derzeit nicht, wir wandern mit unserem Kundenstamm mit und entwickeln uns so gezwungenen Maßen von selbst. |
| Interviewer | Was war die Motivation für die Entscheidung deines Unternehmens, die digitale Transformation umzusetzen? |
| Respondent | Ich sehe es nicht als Motivation, sondern als Selbstverständlichkeit, der Verwaltungsaufwand ist wie in jedem Unternehmen einer der höchsten Kostenstellen, diese sollte man so gut wie möglich mindern daher -> mehr digitale Transformation = weniger Personalaufwand |
| Interviewer | Wie kann die digitale Transformation erreicht werden? |
| Respondent | Gibt jeden Tag neues, wir können die Transformation nur so durchführen, soweit es unsere Kunden akzeptieren. |
| Interviewer | Wie kommt der digitale Transformationsprozess Kunden, Organisation und Mitarbeitern zugute? |
| Respondent | Es hat vor und Nachteile, wenn die digitale Transformation richtig eingesetzt wird, vereinfacht es um vieles den Arbeitsablauf daher wird Personal reduziert und die Kunden haben in kürzester Zeit alle Daten und Fakten der Leistung, schnelle Informationen, rapide Fakturierung, schneller Zahlungseingang |
| Interviewer | Welche Faktoren waren für den Erfolg einer digitalen Transformation wichtig? |
| Respondent | Die Investitionen sowie die Einführungsprozesse waren sehr schwierig, bis die Systeme zu 100% Sitzen und die Mitarbeiter geschult werden, vergehen Monate allerdings lohnt es sich auf alle Fälle! |
| Interviewer | Wie wurde die digitale Transformation von Ihren Mitarbeitern aufgenommen? |
| Respondent | Die Schulungen waren ehrlich gesagt keine schöne Zeit da dies sehr aufwendig war. Die Mitarbeiter verzweifelten teilweise, hier war die Motivation an meine Mitarbeiter sehr wichtig, wie dies gesessen hat, waren alle äußerst zufrieden. |

| | |
|---|---|
| Interviewer | Ist ein Ausbau des digitalen Verkehrs geplant? |
| Respondent | Auf alle Fälle! Daran kommt man nicht vorbei, wenn man sein Unternehmen an die Zeit anpassen möchte. |
| Interviewer | Welchen Einfluss hat die Digitalisierung auf die Arbeitswelt und auf die Qualifikationsanforderungen? |
| Respondent | Eine sehr gute Frage! Bei uns war das typische Beispiel der LKW-Fahrer, wir haben 150 Kraftfahrer Vollzeit beschäftigt. Vor einigen Jahren war dieser Beruf kein anspruchsvoller, die Fahrzeuge waren unkompliziert und die Arbeitsabläufe genauso fast primitiv. Mittlerweile sind die Fahrzeuge schon Hightech Produkte, von der Bedienung sehr anspruchsvoll. Die interne Abwicklung bei uns mittlerweile genauso anspruchsvoll, elektronischer Lieferschein, elektronisches Lohnsystem, weniger persönliche Kommunikation da über ein Tablet kommuniziert wird usw.<br><br>Wir haben bereits mehrere Fahrertrainer im Einsatz, die unserer Fahrer und auch neue ausbilden. Wir haben auch eine eigene Academy, wo wir unser Personal ausbilden. Der fix fertige Mitarbeiter kommt leider nicht mehr so oft zu einer Bewerbung. Man muss mittlerweile dies nehmen was kommt und dementsprechend ausbilden, dies ist sehr aufwendig aber leider das System. |
| Interviewer | Können Sie bitte Ihre Ergebnisse in wenigen Worten zusammenfassen? |
| Respondent | Wie bei den ersten Fragen mal erwähnt, papierloses Büro und Abwicklung wird bald Standard in unserer Branche, es hat vor und Nachteile, aber summarum ist dies einfach die Zeit der Entwicklung und man muss sich anpassen. |
| Interviewer | Könnten Sie bitte die wichtigsten Erfolgsfaktoren für die digitale Transformation in Ihrem Unternehmen beschreiben? |
| Respondent | Einfach zu erklären, jede Information, die man benötigt, hat man per Knopfdruck! |
| Interviewer | Welches waren die wichtigsten Lehren aus der Digitalen? |
| Respondent | Gibt es derzeit keine |

| Interview B. 19.04.2022 / Selecta Austria | |
|---|---|
| Interviewer | Danke J., dass du dir Zeit genommen hast dieses Interview mit mir zu führen. |
| Respondent | Kein Thema! |
| Interviewer | Ich möchte gleich mit der ersten Frage losstarten. Würdest du dich und deine derzeitige Position bitte kurz vorstellen? |
| Respondent | Ich bin seit November Senior Controller bei Selecta Austria. Das ist eine Automaten Firma. Vorher war ich auch im Controlling in einem Logistik Unternehmen Nox Nachtexpress Austria GmbH für 5 Jahre. Das Unternehmen war spezialisiert auf Nachtexpresszustellungen. |
| Interviewer | Dankeschön. Welche Erfahrungen haben Sie mit der digitalen Transformation gemacht? |
| Respondent | Bei Nox war es sehr altgedientes Unternehmen. Es gab sehr viele alte Prozesse, alte Handhabung des Geschäfts. Wir haben sehr viel händisch gemacht. Ein Beispiel: Routenplanung. Um die Routen zu kalkulieren oder die besten Routen identifizieren zu können, haben Sie nicht wirklich ein Tool dafür verwendet. Sie haben im letzten Jahr damit angefangen eine Schnittstelle aufzubauen, wo man dann wirklich die Routen mit bestimmten Programmen optimieren kann. Welche Programme das waren, kann ich dir leider nicht sagen. Aber am Schluss haben sie wirklich versucht die Digitalisierung und die Technologie speziell in der Routenplanung einzubauen, um das ganze Geschäft zu optimieren. |
| Interviewer | Was bedeutet für dich digitale Transformation in der Logistikbranche. Wenn du es definieren müsstest, wie würdest du es tun? |
| Respondent | Ich muss sagen von den Programmen her... Wir also Selecta ist wirklich ein Großkonzern. Wir sind in 16 Ländern vertreten. Nox gab es nur in 3 Länder. Wenn ich die Frage als Selecta Mitarbeiter beantworten darf, kann ich sagen wir arbeiten mit Power PI mit großer Data und das war bei den Nox Zeiten nicht so. Bei Selecta ist es gang und gebe. Wir haben so Schnittstellen, wo man mit sehr großen Daten arbeitet. Wir haben Plattformen wie zB Power PI wo man wirklich die Daten in Echtzeit runterziehen kann. Früher musste man die Daten auf Excelbasis runterziehen und das hat ewig gedauert. Mit Big Data schaut das Ganze sehr anders aus. Das Reporting ist alles zentral gesteuert. Wir arbeiten natürlich mit Excel, ohne Excel funktioniert das |

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| | Controlling nicht. Aber die Bereitstellung der Daten, die Verarbeitung und das Hochladen der Daten, das erfolgt nur noch Online. |
| Interviewer | Wie ist der Stand der digitalen Entwicklung in deinem Unternehmen? |
| Respondent | Es ist auf jeden Fall viel effektiver und schneller. Aber ich bin mir sicher, dass da noch viel Luft nach oben ist. Ich weiß von anderen Unternehmen, da ist es wieder ganz anders. Da wird viel mehr mit der Datenbank gearbeitet. Wir sind wahrscheinlich diesbezüglich noch ganz am Anfang. |
| Interviewer | Führst du in deinem Unternehmen eine digitale Geschäftsstrategie ein? Ist dies für die nahe Zukunft geplant? |
| Respondent | Naja, die bestehende digitale Geschäftsstrategie bauen wir natürlich aus. Das ist klar. Es ist noch nicht 100% ausgereift. Primär wollen wir ja nicht anderes erreichen als die Standorte zusammenzukoppeln. Jedes Land soll schnell die Daten überall bereitstellen können. Da arbeiten wir noch daran. Zweitens, die Automaten. Wir wollen, dass die Automaten ebenfalls vernetzt sind. Wir müssen ja auch an die Daten herankommen, wie zB wie viel Umsatz machen die Automaten, welche Produkte fehlen usw. usw. und das alles ist vernetzt miteinander. Diese ganze Information sind vernetzt miteinander. Da versuchen wir die Strukturen, die wir haben zu verbessern und zu optimieren. |
| Interviewer | Was war die Motivation für die Entscheidung deines Unternehmens, die digitale Transformation umzusetzen? |
| Respondent | Es gab keine andere Möglichkeit. Du musst bedenken, wir haben egal ob die Maschinen uns gehören oder nicht, verschiedene Verträge mit den Unternehmen. Aber wir haben allein nur in Österreich 3.000 Automaten. Wie willst du das sonst managen? Das kann man nicht ansonsten managen. Die ganzen Daten des Automaten muss man tracken. Bei der Masse geht es nicht anders. |
| Interviewer | Wie kann die digitale Transformation erreicht werden? |
| Respondent | Indem man die Daten sammelt und gezielt nutzt. Den Kunden im Mittelpunkt sieht und aktuelle IT-Technologien und Softwaren verwenden. |
| Interviewer | Wie kommt der digitale Transformationsprozess Kunden, Organisation und Mitarbeitern zugute? |

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| Respondent | Von meiner Seite (Mitarbeiter), dass ich schneller an die Daten komme und sie schnell verarbeiten kann. Dass, das Reporting speziell schneller und genauer wird, weil eine Meldung sofort aufpoppt, wenn Daten fehlerhaft sind. Es werden gleich Datenvergleiche gemacht, was früher einfach nicht gab. Der Kunde kommt schneller an seine Information. Der Kunde möchte Monatsumsätze / Jahresumsätze/ Automatenumsätze, bekommt er dadurch zügig. Sowohl der Kunde als auch die Mitarbeiter kommen schneller ans Ziel. Für das Unternehmen klarerweise der finanzielle Gewinn. |
| Interviewer | Welche Faktoren waren für den Erfolg einer digitalen Transformation wichtig? |
| Respondent | Offen für Neues sein. Das könnte man mit meiner alten Firma vergleichen, wo man sich wirklich quer gestellt hat bei vielen Sachen. Es muss eine hohe Akzeptanz vorhanden sein. Es ist mühsam am Anfang, da man es implementieren muss. Akzeptanz ist ein großer Faktor. Mitarbeiten kommunizieren, dass die digitale Transformation nur Vorteile bringen kann. Sich für die richtigen Tools entscheiden. Die Tools dürfen nicht fehlanfällig sein. Wenn die Automaten falsch programmiert sind, kommen die Daten falsch in die Database und ich bekomme dann falsche Ergebnisse. |
| Interviewer | Wie wurde die digitale Transformation von Ihren Mitarbeitern aufgenommen? |
| Respondent | Ich bin seit November dort und so wie ich es mitbekommen habe, seit einem Jahr haben sie das anders aufgenommen so wie es grad im Stehen ist. In der Zwischenzeit gab es eine sehr hohe Flotation. Ich kann nicht sagen, ob die Mitarbeiter das Gefühl hatten, dass sie nicht mehr gebraucht werden, weil sich das Unternehmen automatisiert. Den Menschen braucht man immer. Ich als Controller muss schauen, dass ich die Daten richtig rausziehe sie richtig interpretiere und richtig daraus den Schlüssel ziehe. Und das ist noch nicht möglich mit den Tools, die wir haben. Mein Job wird nicht gefährdet, sondern die Digitalisierung erleichtert meinen Job und ersetzt ihn nicht. |
| Interviewer | Ist ein Ausbau des digitalen Verkehrs geplant? |
| Respondent | Auf alle Fälle! Die bestehenden Tools werden adaptiert und verbessert. Ob es komplett was Neues kommt, weiß ich gar nicht. Mich würde es aber nicht wundern. Alle Vorgaben kommen von der Schweiz. Die Schweizer sind sehr übermotiviert und sie ticken auch anders. Aber ich kann mir schon sehr gut vorstellen, dass da was Neues kommen wird. |

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| Interviewer | Welchen Einfluss hat die Digitalisierung auf die Arbeitswelt und auf die Qualifikationsanforderungen? |
| Respondent | Eine sehr gute Frage! Durch Covid-19 werden die ganzen Meetings nur online abgehalten. Es gibt keine Kundenmeetings mehr. Alle Meetings / Präsentation erfolgt alles online. Bei Nox hat man telefoniert, oder die Gespräche wurden in Besprechungszimmer geführt. |
| Interviewer | Können Sie bitte Ihre Ergebnisse in wenigen Worten zusammenfassen? |
| Respondent | Man kann sich nicht gegen die Digitalisierung wehren. Man muss vieles digitalisieren. Man muss viel in die IT-Landschaft investieren. Die Unternehmen die das bis zum heutigen Tag noch gar nicht gemacht haben, die werden irgendwann mal untergehen. Der Prozess ist mühsam, aber es hat einfach mehr Vorteile als Nachteile meiner Meinung nach. Es ist nicht nur wichtig eine digitale Landschaft aufzubauen, sie muss auch ständig gepflegt werden. Das ist ein Muss. Auch wenn die Programme/Tools usw. noch so gut eingerichtet sind, wenn man keinen guten Hintergrund in der Firma von IT-Leuten hat, die die Programme und Tools warten können, wie sie gewartet werden müssen, da kann das Tool noch so gut sein. Das bringt uns dann nichts. Ständige Pflege ist das A & O. |
| Interviewer | Könnten Sie bitte die wichtigsten Erfolgsfaktoren für die digitale Transformation in Ihrem Unternehmen beschreiben? |
| Respondent | Big Data, Reporting, Kommunikation |

| Interview C. 21.04.2022 / Spedition Saexinger GmbH | |
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| Interviewer | Guten Tag, Herr B. Ich danke Ihnen recht herzlich, dass Sie sich Zeit für ein kurzes Interview nehmen. |
| Respondent | Grüß Gott! Ja kein Problem, ich unterstütze öfter Studenten bei Diplomarbeiten. |
| Interviewer | Sehr nett von Ihnen. Ich starte gleich mit der ersten Frage. Würden Sie sich und Ihre derzeitige Position bitte kurz vorstellen? |

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| Respondent | Mein Name ist K.B. Meine derzeitige Position ist Eigentümer und Geschäftsführer der Spedition Saexinger GmbH. Ich bin seit 26 Jahren im Betrieb. Es ist in der dritten Generation Familienbetrieb und seit 16 Jahre bin ich davon selbstständig. |
| Interviewer | Welche Erfahrungen haben Sie mit der digitalen Transformation gemacht? |
| Respondent | Ich habe angefangen in der Firma, da haben wir mit der Schreibmaschine geschrieben. Dann kam langsam das E-Mail auf, dann kamen Datenverbunde. Heute Scanner Lösungen usw. Also wirklich von Oldschool mit Schreibmaschine, Briefe noch auf die Post bringen und verschicken bis zur heutigen Situation, was ich eigentlich über ein Smartphone oder über ein Tablet ein Großteil meiner gesamten Tätigkeit abheben kann. |
| Interviewer | Was bedeutet für Sie digitale Transformation in der Logistik- und Transportbranche? Wenn Sie es definieren müssten, wie würden Sie es tun? |
| Respondent | Also grundsätzlich muss man sagen, die Branche ist natürlich extrem groß. Ich rede jetzt von Zeiten von der Lagerlogistik her. Das ist ein wesentlicher Aspekt zur Verbesserung der Effizienz der Arbeitsleistung. Es gibt halt schon Gründe, warum man nicht alles digitalisieren kann, weil teilweise Kunden nicht mitspielen. Aber im Großen und Ganzen ist in einem Mittelstand Unternehmen und wir versuchen da schon massiv auf die Digitalisierung zu drängen, aber nicht im Sinne des Personalabbaus oder Personalreduktion, sondern als Unterstützung, das Element besser und schneller zu machen. |
| Interviewer | Wie ist der Stand der digitalen Entwicklung in Ihrem Unternehmen? |
| Respondent | Da ist immer Luft nach oben. Aber wie gesagt, es gibt natürlich interne Prozesse, die wir noch verbessern können, da sind wir dabei. Aber das ist alles auch natürlich eine Frage von Faktor Geld. Digitalisierung kostet halt Geld. Woran wir am Meistern scheitern, ist eigentlich, dass wir innovativer sind, was das Thema Digitalisierung angeht als unsere Kunden. Da rede ich jetzt nicht von Kleinkunden, da rede ich von Konzernen. Es ist wahnsinnig schwierig, bei wirklich großen Kunden, dieses Thema durchzubringen, weil die sich mit ihren eigenen EDV-Systemen nicht auskennen. |
| Interviewer | Führen Sie in Ihrem Unternehmen eine digitale Geschäftsstrategie ein? Ist dies für die nahe Zukunft geplant? |

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| Respondent | Der Fokus der Digitalisierung ist bei uns mit hoher Priorität versehen. Aber es ist jetzt nicht so, dass ich sage, dass ist das Maß aller Dinge. Wir haben Kunde, wo das in den nächsten Jahren nicht funktioniert wird. |
| Interviewer | Was war die Motivation für die Entscheidung Ihres Unternehmens, die digitale Transformation umzusetzen? |
| Respondent | Erstens, in unserer Branche, musst du teilweise das Mitmachen was Kunden fordern und auf der anderen Seite muss man schon sagen, die Digitalisierung, führt dazu, dass ich Prozesse, die ich langwierig über Zettel wirtschafte, effizienter, transparenter und besser mache. Ehrlicherweise muss man auch sagen, natürlich ist Personal sparender. Aber das ist nicht der Fokus bei uns. Die Auftragsabwicklung war bis jetzt, das Abschreiben von Lieferscheinen. Wir beginnen jetzt immer wieder Kunden davon zu überzeugen, dass es eigentlich eine sinnlose Beschäftigung ist. Sie ist fehleranfällig, weil man sich in der Zeile & Menge irren kann, aber die Leute, die das Geschäft gemacht haben, kriegen neue Aufgaben. Zum Beispiel, Kundenbetreuung. Weil es wird, immer Restfragen in der Logistik geben. Der Kunde möchte mehr den Fokus für die Mitarbeiter, dafür ist das Ausschreiben, das Archivieren usw. halt nicht mehr im Fokus dieser Tätigkeit. |
| Interviewer | Wie kommt der digitale Transformationsprozess Kunden, Organisation und Mitarbeitern zugute? |
| Respondent | Den Kunden kommt es insofern zugute, weil wir schneller Daten übermitteln können oder Daten erhalten. Das heißt viele manuelle Prozesse sind nicht mehr notwendig. Das heißt, der Kunde hat viel schneller die Ware bei der Tür draußen, oder eingelagert etc. Was die Mitarbeiter angeht, ist es natürlich schon so, dass die älteren Mitarbeiter bei uns, sich schwerer tun natürlich mit der Digitalisierung. Die sind auch nicht so affin mit Smartphone, mit Tablets usw., die tun sich natürlich schwerer. Du musst halt viel mehr Rücksicht drauf nehmen. Die Jungen sind klarerweise viel besser dabei. Aber auch die Mitarbeiter sehen die Vorteile. Am Anfang wie wir begonnen haben, massiv auf Scanner zu setzen und die VIN Codes abzuarbeiten, haben viele Mitarbeiter gesagt: Ja das wird nie funktionieren, und das ist ein Blödsinn usw. usw.“ Heute kann sich keiner das vorstellen, wie wir vor 5 Jahren noch gearbeitet haben. Und der Organisation… Es ist ein Faktor des Ertrags. |
| Interviewer | Welche Faktoren waren für den Erfolg einer digitalen Transformation wichtig? |

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| Respondent | Bei unserem Fall war das so, dass unser alter EDV nicht mehr im Stand der Technik war und wir ganz einfach eine Individual Software entwickelt haben. Und wenn wir schon so viel Geld investieren, muss diese Software Stand der Technik sein. Das System haben wir dann vor 3 Jahren implementiert und seitdem wird sie ständig adaptiert. Das heißt wir haben eigentlich ein EDV die mit unserem Unternehmen mithält und die Anforderungen ständig angepasst wird. Also man kann fast sagen, dass das ein lebendes System ist. Die Anforderung war halt, dass ein EDV-System so viel wie möglich abbildet. Und nicht wie bei anderen Firmen, dass ich ein SAP habe und dann die Daten von SAP zur Excel transferiere und von dort wieder in ein anderes EDV-System. Bei uns ist, fast alles in einem EDV-System drinnen. Das heißt nicht nur die operative Abbildung der Transporte der Lagerlogistik, sondern auch die gesamte Kostenstruktur, die da hinter ist, wie zB die Fakturierung all das ist zusammengebastelt in ein System. |
| Interviewer | Wie wurde die digitale Transformation von Ihren Mitarbeitern aufgenommen? |
| Respondent | Da muss man drei Sachen massiv vorbringen. Je Jünger desto aufgeschlossener und je höher der Bildungsstand also zB die die bei mir in Abteilungsleiter Funktion sind oder eine kaufmännische Ausbildung haben, die waren natürlich für die Digitalisierung leichter zu begeistern. Mitarbeiter älteren Baujahres haben sich viel schwerer getan, die waren es gewohnt mit ihrer Zettelwirtschaft das abzuarbeiten, war denen 1000-mal lieber. Aber irgendwann triffst du eine Entscheidung und ich habe meinen Mitarbeiter gesagt: Gewöhnt euch daran, es wird nicht mehr anders werden.“ Und heute kann sich keiner vorstellen so zu arbeiten wie vor 5 Jahren. Wichtig ist dann auch, dass wenn der Mitarbeiter kommt und sagt, das und das ist nicht optimal gelöst, weil alles was du auf der Theorie planst, heißt nicht, dass es in der Praxis auch so ist. Da musst du schon auf die operativen Kräfte hören und auch das Verbessern. |
| Interviewer | Welchen Einfluss hat die Digitalisierung auf die Arbeitswelt und auf die Qualifikationsanforderungen? |
| Respondent | Massiv unterstützend. Durch die Digitalisierung wird die Qualität unserer Leistungen im Rahmen der Lager und Transportlogistik zu steigern. Im Grunde genommen, werden wir transparenter. Dem Kunden können wir viel schneller, gewisse Dinge übermitteln. Früher haben wir auf die Telefonhörer |

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| | gegriffen heute schau ich, wo ist der LKW ist, wie weit sind wir mit der Transportabwicklungen und kann das gleich übers Handy. |
| Interviewer | Können Sie bitte Ihre Ergebnisse in wenigen Worten zusammenfassen? |
| Respondent | Grundsätzlich muss man sagen, man muss die Digitalisierung als das sehen, was sie ist. Sie ist ein unterstützendes Element. Sie ist kein AI Mittel, das wird es auch nie sein. Man muss sie zielgerichtet und personenorientiert einführen. Man muss auf das Hören was die Mitarbeiter als Verbesserungsmaßnahmen sehen, sich dass es ein lebhaftes System wird und grundsätzlich den Weg, den wir einschlagen haben, wird dafür führen, dass wir in Zukunft noch mehr schauen werden, dass wir mit unseren Kunden, Partnern digitale Anbindungen haben und dass wir Ressourcen zu schaffen die man besser nutzen können. |

| Interview D. 29.04.2022 / DB Schenker | |
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| Interviewer | Würden Sie sich und Ihre derzeitige Position bitte kurz vorstellen? |
| Respondent | Mein Name ist T.H., ich bin 27 Jahre alt und arbeite seit 2010 bei der Firma DB Schenker in Wien. Seit 2013 bin ich in der Operations Luftfracht Import tätig. Die tägliche Abwicklung der Importsendungen am Flughafen Wien inklusive zolltechnischer Arbeiten stehen hier im Vordergrund. |
| Interviewer | Welche Erfahrungen haben Sie mit der digitalen Transformation gemacht? |
| Respondent | Gerade in Zeiten der Pandemie gab es meiner Meinung nach einem großen Wandel bei uns, z.B. Thema Home-Office. In Bereichen, wo es teilweise nicht möglich schien, wurden Mittel und Wege gefunden dies umzusetzen. Ansonsten ist mir dieses Thema eher neu und ich habe mich noch nie so richtig damit beschäftigt. |
| Interviewer | Was bedeutet für Sie digitale Transformation in der Logistik- und Transportbranche? Wenn Sie es definieren müssten, wie würden Sie es tun? |
| Respondent | Die Vereinfachung der Logistikkette z.B. mit neuer modernerer Software oder neuen Technologien in der Lagerlogistik |

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| Interviewer | Wie ist der Stand der digitalen Entwicklung in Ihrem Unternehmen? |
| Respondent | In einigen Bereichen fortgeschrittener als in anderen. Bei uns in der Luftfracht ist beispielsweise paperless work noch immer nicht möglich da einige Softwares veraltet sind und diese Möglichkeit nicht bieten. Im Landverkehr wird schon komplett papierlos gearbeitet.<br><br>In der Lagerlogistik wurde neue Robotik eingesetzt, aber auch hier besteht meiner Meinung nach vor allem softwaretechnisch noch Verbesserungspotenzial. |
| Interviewer | Führen Sie in Ihrem Unternehmen eine digitale Geschäftsstrategie ein? Ist dies für die nahe Zukunft geplant? |
| Respondent | Das kann ich leider so nicht beantworten, mir ist in meiner Position nicht bekannt, dass etwas geplant wäre. |
| Interviewer | Was war die Motivation für die Entscheidung Ihres Unternehmens, die digitale Transformation umzusetzen? |
| Respondent | Einfach schneller zu arbeiten, schneller ans Ziel zu kommen und natürlich hat die digitale Transformation einen Einfluss auf das Profit. |
| Interviewer | Wie kann die digitale Transformation erreicht werden? |
| Respondent | Man müsste bestehende Abläufe und Prozesse einmal genauestens überprüfen und dann evaluieren, wo es Verbesserungspotenzial und Möglichkeiten der Vereinfachung geben könnte. |
| Interviewer | Wie kommt der digitale Transformationsprozess Kunden, Organisation und Mitarbeitern zugute? |
| Respondent | Kunden würden von schnelleren Abwicklungen profitieren, die Organisation und Mitarbeiter vor allem mit der Vereinfachung von Prozessen und ebenfalls von kürzeren Laufzeiten. So könnte eventuell mehr Arbeit und Zeit für Neukunden geschaffen werden. |
| Interviewer | Welche Faktoren waren für den Erfolg einer digitalen Transformation wichtig? |
| Respondent | Akzeptanz, Kompetenz, Arbeitskultur |

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| Interviewer | Wie wurde die digitale Transformation von Ihren Mitarbeitern aufgenommen? |
| Respondent | Ganz gut eigentlich, wir sind immer offen für neue Chancen und Möglichkeiten, die die digitale Welt uns anbietet. |
| Interviewer | Ist ein Ausbau des digitalen Verkehrs geplant? |
| Respondent | Diese Fragen kann ich so leider nicht beantworten da ich keinen Einblick in diesem Bereich habe. |
| Interviewer | Welchen Einfluss hat die Digitalisierung auf die Arbeitswelt und auf die Qualifikationsanforderungen? |
| Respondent | Unser Arbeitsalltag ist flexibler und mobiler geworden. Von zu Hause auszuarbeiten, Meetings online zu führen, dies ist alles heutzutage kein Problem mehr. Natürlich spielt Covid-19 ebenfalls eine große Rolle. Betreffend den Qualitätsanforderungen kann ich sagen, dass unsere neuen Mitarbeiter sehr IT Affin sind. |
| Interviewer | Können Sie bitte Ihre Ergebnisse in wenigen Worten zusammenfassen? |
| Respondent | Ich finde, dass die Digitalisierung in meiner Branche eine sehr wichtige Rolle spielt. Durch die Förderung der Digitalisierung kann die Luftfracht beschleunigt und damit die Emissionen reduziert werden. In Zukunft werden wir ständig neue digitale Tools und verschiedene Programme kennenlernen, die unsere täglichen Aktivitäten vereinfachen werden. |

| Interview E. 03.05.2022, Stadler | |
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| Interviewer | Würden Sie sich und Ihre derzeitige Position bitte kurz vorstellen? |
| Respondent | Ich bin derzeit als Projektleiter für ein grosses Bahnprojekt in UK zuständig in welchem wir 53 Metrozüge für die Region Liverpool bauen. |
| Interviewer | Welche Erfahrungen haben Sie mit der digitalen Transformation gemacht? |

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| Respondent | Als ehemaliger Logistik und Deployment Manager bei der Firma Hofer KG durfte ich bei einer der größten Digitalen Transformationen im Einzelhandelbereich mitwirken. |
| Interviewer | Was bedeutet für Sie digitale Transformation in der Logistik- und Transportbranche? Wenn Sie es definieren müssten, wie würden Sie es tun? |
| Respondent | Digitale Transformation in der Logistikbranche bedeutet für mich mittels eines intelligenten Systems jegliche Datenflüsse im Wareneingang, in der Warenbereitstellung sowie im Warenausgang abzubilden und damit ein höchst effizientes Arbeiten der Mitarbeiter zu garantieren. In weiterer Folge kann dies die Grundlage für die Automatisierung der Lagerlogistik darstellen. In der Transportplanung kann durch die Einbindung von Transportplanungssoftware in die ERP Umgebung über einen Optimierer ein perfekter Tourenplan mit der perfekten Auslastung der LKW und somit sehr niedrigen Speditionskosten erstellt werden. All dies zusammen mit einem F&R System im Verkauf führt dazu, dass mittels gesammelter Daten aus der Vergangenheit und berechneter Sollwerte für die Zukunft sogenannte Kommisionspeaks geglättet werden können und das System die Ware über die einzelnen Wochentage schön glättet. |
| Interviewer | Wie würden Sie die digitale Transformation definieren? |
| Respondent | Digitale Transformation ist für mich die optimale Nutzung von Software, AI Systemen sowie Automatisierungslösungen, um höchst effiziente Lösungen für unterschiedlichste Bereiche zu schaffen. Ziel ist eine größtmögliche Kosteneinsparung bei steigender Effizienz und die parallele Sammlung von wichtigen Daten, welche ausgewertet werden, sowie ins System zurückgekoppelt werden, um es stetig anzupassen und zu justieren. |
| Interviewer | Wie ist der Stand der digitalen Entwicklung in Ihrem Unternehmen? |
| Respondent | Die Firma Hofer KG gehört zu dem Konzern Aldi Süd. In Österreich sind alle 500 Filialen sowie 6 Distributionszentren auf das neue AHEAD System livegeschalten. Jetzt ist das Ziel so viel Steuerungstätigkeiten wie möglich zu bündeln und diese zentral zu verwalten. Die restlichen rund 80 Distributionszentren weltweit in unterschiedlichsten Regionalgesellschaften werden in den nächsten 4 Jahren live geschaltet werden. |

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| Interviewer | Führen Sie in Ihrem Unternehmen eine digitale Geschäftsstrategie ein? Ist dies für die nahe Zukunft geplant? |
| Respondent | Darüber kann ich keine Auskunft geben. |
| Interviewer | Was war die Motivation für die Entscheidung Ihres Unternehmens, die digitale Transformation umzusetzen? |
| Respondent | Die Firma Aldi Süd hat weltweit zig Regionalgesellschaften. Alle führen unterschiedliche Softwaresysteme im Logistikbereich. Ziel der AHEAD Transformation ist es alle Filialen sowie Logistikzentren weltweit auf denselben Softwarestand zu bringen und dann in weiterer Folge gewisse Teile des Logistiklagers zu automatisieren. |
| Interviewer | Wie kann die digitale Transformation erreicht werden? |
| Respondent | Durch einen effizienten Einsatz von ERP Systemen. |
| Interviewer | Wie kommt der digitale Transformationsprozess Kunden, Organisation und Mitarbeitern zugute? |
| Respondent | Vor allem im Logistikbereich können durch eine funktionierende digitale Transformation Prozesse massiv beschleunigt und somit Kosten eingespart werden. Der Kunde merkt dies an der Kassa, wenn das Börserl nicht allzu schwer belastet wird.<br><br>Die Organisation merkt es in einer positiven Weiterentwicklung, welche den langfristigen Unternehmensfortbestand sichert. Eröffnet der Organisation auch den Vertrieb etc. auf neuen Kanälen. Neue Abläufe / Prozesse… |
| Interviewer | Welche Faktoren waren für den Erfolg einer digitalen Transformation wichtig? |
| Respondent | Hypercare Phase für die Softwareintegration lang genug planen und genügend IT-Spezialisten zur Verfügung stellen. Es ist ein immenser IT-Support nötig welcher 24/7 im Einsatz ist. Motivierte Mitarbeiter welche weit mehr als das geforderte Leisten und vor allem beim GoLive der Software Tag und Nacht im Einsatz sind und unterstützen. Businesskeyuser welche eng mit den Systemintegratoren zusammenarbeiten und ein fundiertes Grundwissen der Software aufbauen, um das operative Business zu unterstützen. |

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| Interviewer | Wie wurde die digitale Transformation von Ihren Mitarbeitern aufgenommen? |
| Respondent | Überwiegend positiv |
| Interviewer | Ist ein Ausbau des digitalen Verkehrs geplant? |
| Respondent | Nein |
| Interviewer | Welchen Einfluss hat die Digitalisierung auf die Arbeitswelt und auf die Qualifikationsanforderungen? |
| Respondent | Technologische Grundkenntnisse sowie IT-Fertigkeit werden immer wichtiger. Auch für die Businessanwender. |
| Interviewer | Könnten Sie bitte die wichtigsten Erfolgsfaktoren für die digitale Transformation in Ihrem Unternehmen beschreiben? |
| Respondent | Riesen IT-Apparat welcher unterstützt hat. Support von Systemintegratoren. Enge Zusammenarbeit mit externen IT-Beratern und ein internes Team aus IT-Spezialisten, Prozessspezialisten und Logistikspezialisten, welche die Software ausgerollt haben und die Businessuser vor Ort bestens geschult und unterstützt haben. |
| Interviewer | Welches waren die wichtigsten Lehren aus der Digitalen Transformation für Ihr Unternehmen und die Mitarbeiter? |
| Respondent | Es kann Monate bis Jahre dauern bis so ein höchst kompliziertes System aus unterschiedlichsten Softwareprorammen effizient läuft und richtig parametriert ist. |
| Interviewer | Welche der Lektionen, die Sie aus der digitalen Transformation Ihres Unternehmens gelernt haben, war für die/ihre Mitarbeiter am wichtigsten? |
| Respondent | Nie den Sand in den Kopf stecken. Immer dran bleiben und auch seitens des operativen Businesses an effizienteren Prozessen etc. arbeiten. Engste Mitarbeit von IT affinen Businessusern mit IT dem Support ist vor allem zu Beginn notwendig, um das Tagesgeschäft aufrecht zu erhalten. Es sollte immer |

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| | definierte Worstcase Szenarien geben (offline) wenn das System nach der Einführung streikt, damit die Filialen trotzdem beliefert werden können. |
| Interviewer | Können Sie bitte Ihre Ergebnisse in wenigen Worten zusammenfassen? |
| Respondent | Ja zu der digitalen Transformation im Logistikbereich. Je grösser die Firma desto umfangreicher sind meist die Anforderungen an das System. Dies kann in der Einführungsphase oft zu massiven Problemen führen was sich auch in sehr hohen Einführungskosten niederschlägt. Dies darf nicht vernachlässigt werden. Auch der immense IT-Support welcher notwendig ist nicht zu vergessen. Jedoch kann durch die Automatisierung von Prozessen in der Lagerlogistik höchst effizient gearbeitet werden und die Logistikkosten massiv reduziert werden. |

| Interview F- 03.05.2022, Nilcargo | |
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| Interviewer | Würden Sie sich und Ihre derzeitige Position bitte kurz vorstellen? |
| Respondent | Ich bin der Geschäftsführer der Spedition Nilcargo seit 22 Jahren und machen internationale Transporte. |
| Interviewer | Welche Erfahrungen haben Sie mit der digitalen Transformation gemacht? |
| Respondent | In diesem Sinne hat sich die Digitalisierung für mich in erster Linie drastisch verändert, denn früher haben wir mit den Fahrern über Faxgeräte kommuniziert, heute machen wir das über Whatsapp. Wenn ich früher meinen Fahrern eine Adresse schicken musste, habe ich sie gebeten, zu einer Tankstelle zu fahren, mich von dort aus anzurufen und eine Faxnummer zu schicken. Dann schickte ich ein Fax durch. Heutzutage wird alles über das Internet abgewickelt. |
| Interviewer | Was bedeutet für Sie digitale Transformation in der Logistik- und Transportbranche? Wenn Sie es definieren müssten, wie würden Sie es tun? |
| Respondent | Es ist alles viel schneller geworden. Früher mussten wir irrsinnig lange warten, bis das Fax überhaupt durchgegangen ist. Danach mussten wir hoffe, dass es überhaupt angekommen ist. Für uns ist alles viel schneller geworden. |

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| Interviewer | Wie ist der Stand der digitalen Entwicklung in Ihrem Unternehmen? |
| Respondent | Es gibt noch viel Raum für Verbesserungen, denn viele Dinge könnten noch digitalisiert werden. Bestimmte Arbeitsabläufe könnten durch bestimmte Programme vereinfacht werden. Wir könnten zum Beispiel eine GPS-Schnittstelle an einem LKW anbringen und dieses Signal direkt in ein Speditionsprogramm übertragen. Denn wir müssen zum Beispiel den Fahrer immer noch auf die gleiche Art und Weise anrufen und ihn fragen, wo er ist und ob alles in Ordnung ist, usw. Aber mit einer GPS-Schnittstelle, die der LKW an Bord hat, könnten wir alles direkt in das Speditionsprogramm übertragen. Daran arbeiten wir auch sehr fleißig. |
| Interviewer | Führen Sie in Ihrem Unternehmen eine digitale Geschäftsstrategie ein? Ist dies für die nahe Zukunft geplant? |
| Respondent | Ja, genau. Wie ich bereits erwähnt habe. Ein Programm zu finden, das sich automatisch über ein GPS-Signal mit unserer LWK verbindet, dieses über eine Schnittstelle in unser Programm einspeist und dann den Status automatisch an den Kunden weiterleitet. Diese Strategie ist für das Jahr 2023 vorgesehen. |
| Interviewer | Was war die Motivation für die Entscheidung Ihres Unternehmens, die digitale Transformation umzusetzen? |
| Respondent | Zeit gewinnen und die gewonnene Zeit wertvoll in Neuakquisition zu investieren. Kundengewinn im Speziellen. Die Zeit, die ich jetzt bei einem Anruf mit einem Gespräch mit dem Fahrer verlieren würde, um dann eine E-Mail für den Kunden vorzubereiten, könnte ich durch die Nutzung dieser Zeit wertvoller investieren und neue Kunden gewinnen. Es geht also um Zeitgewinnung. Zeit ist Geld |
| Interviewer | Wie kann die digitale Transformation erreicht werden? |
| Respondent | In unserer Branche führt kein Weg daran vorbei. Ohne Digitalisierung kommt man nicht weiter. Das sehe ich auch bei den Wettbewerbern. Jeder versucht, auf die Schiene zu kommen. Es ist einfach wichtig, um zu überleben. Ich kenne beides. Ich kenne auch die Vergangenheit, aber natürlich gewinnt man durch die Digitalisierung eine Menge Zeit. Wer das nicht macht, für den ist das Unternehmen nicht mehr wirtschaftlich rentabel. |

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| Interviewer | Wie kommt der digitale Transformationsprozess Kunden, Organisation und Mitarbeitern zugute? |
| Respondent | Das Gute daran ist, dass die Menschen heutzutage gar nicht mehr am Telefon miteinander reden wollen, sondern nur noch über irgendwelche Medien kommunizieren. Sei es über Whatsapp, SMS usw. Das heißt, es ist bequem für den Kunden und bequem für den Mitarbeiter, denn wie gesagt, niemand will mehr reden, aber es wird viel mehr geschrieben. Ich bin kein Fan davon. Ich ziehe es vor, den Fahrer oder den Kunden direkt anzurufen. Aber ich merke es bei der jüngeren Generation und an den jungen Mitarbeitern, dass sie sehr gerne den ganzen Tag unterwegs sind, oft ohne zu telefonieren, was für mich vor 10 Jahren unvorstellbar gewesen wäre. Trotzdem kommt der Kunde schneller an sein Ziel. Er erhält eine E-Mail oder loggt sich in Zukunft einfach ein und sieht, wo seine Sendung ist. Unser Unternehmen profitiert von der Digitalisierung, weil wir mehr Kunden gewinnen und mehr Zeit für die Neukundenakquise haben. |
| Interviewer | Wie wurde die digitale Transformation von Ihren Mitarbeitern aufgenommen? |
| Respondent | Die Mitarbeiter haben mich eigentlich gedrängt in die Digitalisierung zu investieren. Aber für die Zukunft hast du vollkommen recht, es ist dann schon so, dass man dadurch Personal einsparen kann. Natürlich ist es sinnvoll in ein Programm zu investieren, dass mich 35.000€ kostet aber dafür 2 Mitarbeiter einsparen kann, die mich im Jahr 70.000€ kosten. Aber grundsätzlich haben die Mitarbeiter die Digitalisierung gut aufgenommen. |
| Interviewer | Welchen Einfluss hat die Digitalisierung auf die Arbeitswelt und auf die Qualifikationsanforderungen? |
| Respondent | Es ist schon so, dass wir ISO-zertifiziert sind und darauf lege ich auch großen Wert. Und natürlich sollte man, wenn man bestimmte Programme in der Zukunft hat, schon eine IT-Affinität haben. Aber ich bin der Meinung, dass es leicht ist, solche Leute zu finden. Ich denke, dass die jüngere Generation viel computeraffiner ist als die ältere Generation. Es ist auch für uns in Zukunft einfacher, Leute zu finden, wo man sagt, ich habe zwei Programme und ich schule dich ein und fertig. Man muss keine Kundenkontakte haben, man muss den Fahrer nicht anrufen, man macht alles online und das war's. |
| Interviewer | Wie hat Covid-19 Ihr Unternehmen getroffen? |

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| Respondent | Das Virus hat eine neue Ära eingeleitet. Wir könnten auch Mitarbeiter haben, die nicht vor Ort im Büro sind, aber die gleiche Arbeit machen. Wir haben auch Leute eingestellt, die nicht in Wien sind, so wie wir Mitarbeiter haben, die in Istanbul, Adana usw. arbeiten und die gleiche Arbeit machen wie die Mitarbeiter in Wien. Wir sind täglich mit ihnen über Teams, Outlook und Skype in Kontakt. |
| Interviewer | Können Sie bitte Ihre Ergebnisse in wenigen Worten zusammenfassen? |
| Respondent | Sie können überall Menschen haben, die Ihre Arbeit erledigen. Die Welt ist globaler geworden. Ich denke, dass große Unternehmen die Digitalisierung ohnehin praktiziert haben, aber jetzt profitieren auch kleine und mittlere Unternehmen davon oder versuchen, davon zu profitieren und zu lernen. Ich persönlich bin kein Fan der Digitalisierung. Ich lege sehr viel Wert auf den menschlichen Kontakt. Aber ich stelle fest, dass die neue Generation der digitalen Kommunikation durchaus eine große Bedeutung beimisst. Sie können nichts daran ändern, dass der menschliche Aspekt dabei verloren geht. Das wird generell in der Welt der Fall sein. Das ist ein Nachteil für die Menschheit, aber die Zukunft ist digital und man muss sich anpassen. |