National Report for older senior logistic workers

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Introduction

The Erasmus+ project "DiRECT – Digital Skills for Senior Logistic Staff" tackles a key challenge. It focuses on the digital shift in logistics. It considers its impact on older workers, specifically those over 50. Automation is growing. E-commerce booms. Digital tools are used more. Logistics firms face a task to prepare their workforces for the future, but firms do not want to lose valuable experience.

Older employees bring expertise and practical knowledge. These workers often face new demands, however. They include digital warehouse management, GPS route planning, and cloud communication tools. Research reveals this group is not inherently averse to technology. They need targeted support and suitable training.

The project aims to create digital training resources. Training formats and support are also created. These developments specifically address the needs of senior logistics professionals. Practical content is important. Digital accessibility is also important. It takes into account appropriate teaching for different ages. The project shares best practices across Europe.

With this project, DiRECT boosts digital skills in vocational education and training. It secures skilled workers in the logistics sector. It also strengthens social inclusion for older employees amidst digital change.

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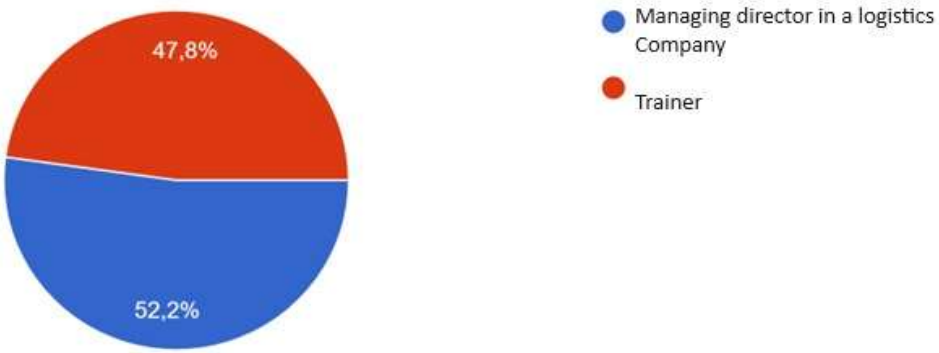
1. Field Research

This document represents the results from a survey of a 23 logistics professionals & VET trainers in the field of logistics from Austria. The data was collected in the period of end March – mid April. 12 answers came from employees of logistics companies and 11 from logistics trainers. Figure 1). First, the logistics executives data will be presented, followed by trainers data.



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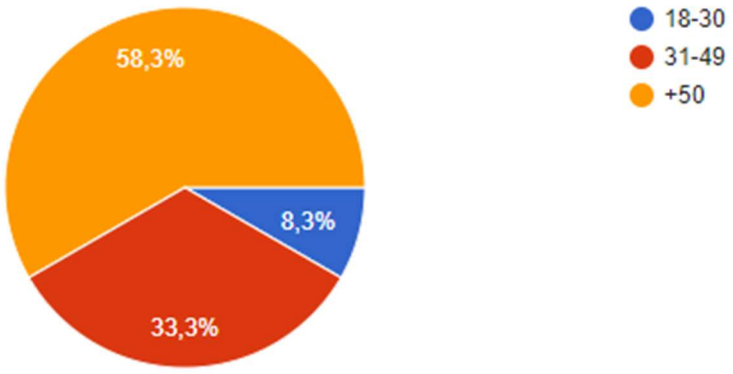
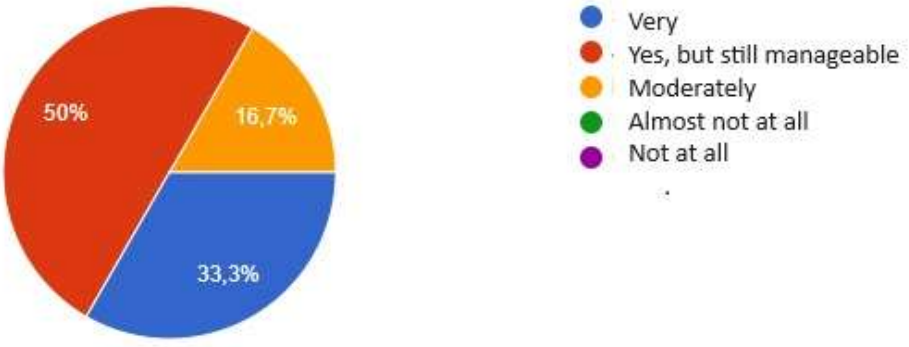
1.1 Logistics company executive

How old are you?



The fact that the majority of respondents are over 50 years old suggests that digitalisation in the logistics industry is encountering obstacles. There may be a lack of skilled workers who are familiar with the latest digital technologies, or there may be resistance to change from older employees.

If yes, is your company facing a shortage of logistics professionals?



More than 80% of respondents are confronted with a shortage of logistics specialists

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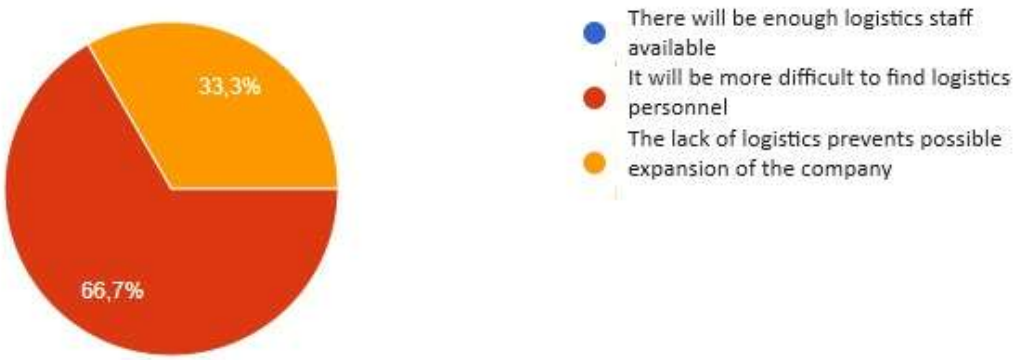

None of the respondents believe that there will be enough logistics personnel: The reasons for this could be:

Growing demand due to economic growth: As the global economy grows, so does the demand for logistics services. If the supply of qualified personnel does not keep pace with this demand, bottlenecks could arise.

Demographic change: In many countries, there is a demographic change that is leading to an ageing population. This can lead to fewer workers being available, particularly in sectors such as logistics, which often require physically demanding work.

Skills shortage: There could be a shortage of qualified workers in the logistics industry, especially those with specific skills such as supply chain management, IT skills or knowledge of new technologies such as automation and artificial intelligence.

Attractiveness of the occupational field: The logistics industry may not be attractive enough for many potential employees, whether due to working conditions, pay, working hours or other factors. This can lead to less interest in a career in logistics and thus limit the supply of personnel.

Education and training system: If the education and training system is not sufficiently geared towards the requirements of the logistics industry, this could lead to a shortage of qualified personnel. This includes both formal education and vocational training opportunities.

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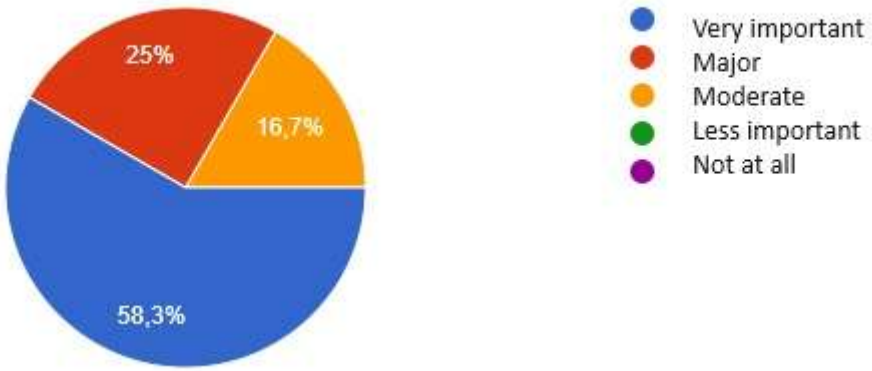
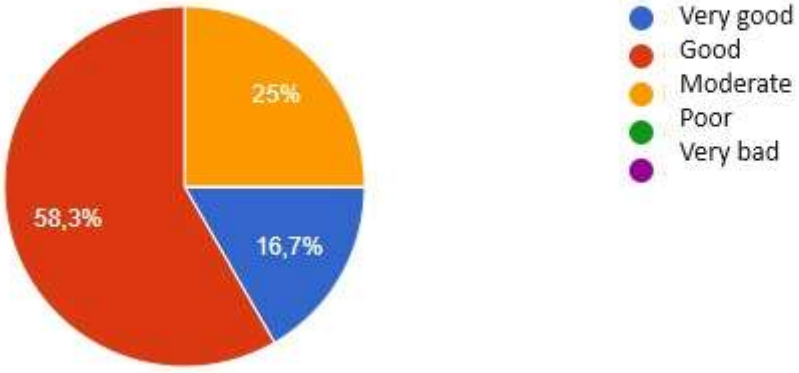
Technological changes: Advancing digitalisation and automation in the logistics industry could change workforce requirements, potentially rendering existing jobs obsolete or requiring new skills that may not be readily available.

How important will digital skills be in the future?



More than 58% of the logistics managers surveyed consider digital skills to be very important for logistics employees. None of the respondents rated digital skills as less important or not important at all. This is very interesting considering that the majority of respondents are older than 50 and may be sceptical about digitalisation.

How do you assess the digital skills of your logistics staff (50+ years)?



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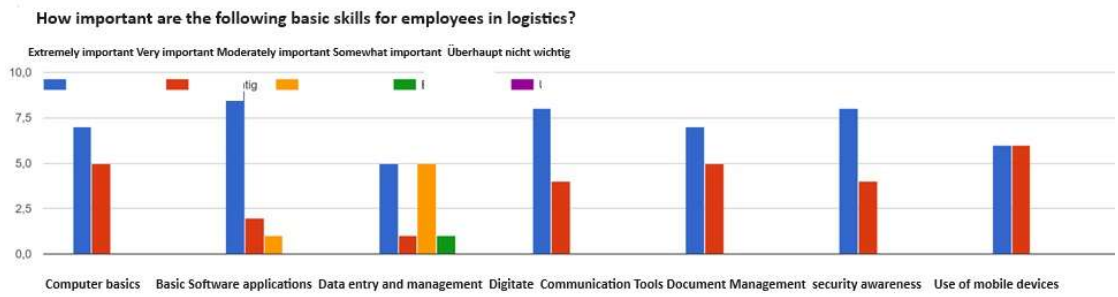
More than 80% of respondents rated their digital skills as good and moderate. Only 16% as very good. A high need for further training can be recognised here.

How do you assess the expertise in your company in relation to new technologies in the logistics field?



The competences were rated on a scale from "Extremely important" to "Not at all important". Here is the description and interpretation of each category:

Computer Basics:
Extremely important: High rating (7.0)
Very important: Moderate rating (5)
Low ratings in the moderately, somewhat and not at all important categories.

Basic software applications:

Extremely important: Very high rating (9)
Very important: Moderate rating (2)
Hardly any ratings in the other categories.

Data entry and management:

Moderately important: Highest rating (5)
Very important: Moderate rating (5)
Somewhat important: Existing (1)
Extremely important and not at all important have lower ratings.

Digital communication tools:
Extremely important: 6
Very important: 4

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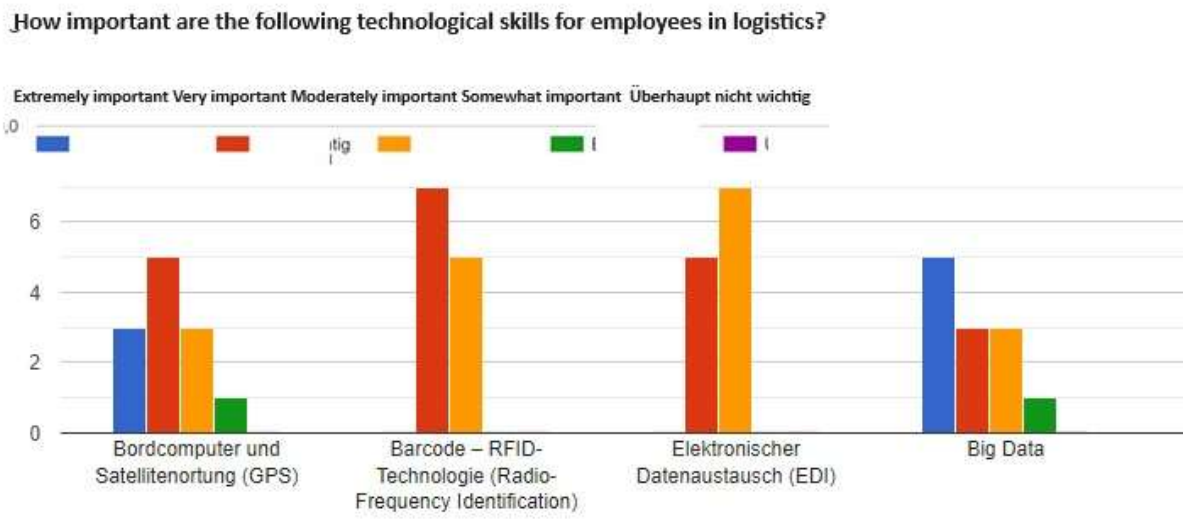
Basic software applications, security awareness and use of mobile devices and digital communication tools are predominantly rated as extremely important. Computer basics and document management are also rated highly, with a strong focus on their extreme importance.



Overall, the chart shows that RFID technology is considered to be the most important technological capability in logistics, followed by EDI and GPS. Big data is also considered relevant, but not as strongly as the other technologies. The ratings reflect that different technological capabilities in logistics are prioritised differently, with RFID technology enjoying the highest priority.

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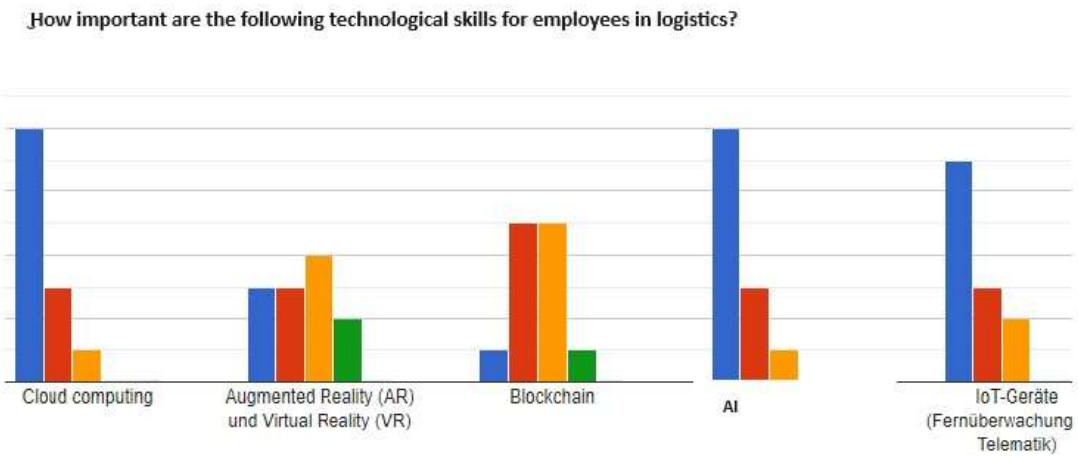
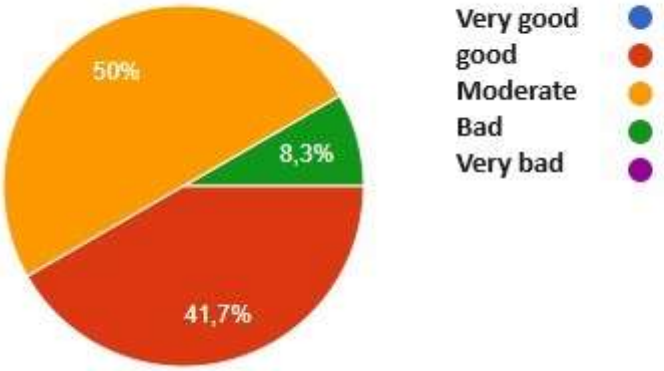


Cloud computing and artificial intelligence are rated the highest

How would you assess education and training on "new technologies in logistics" in your country?



Training opportunities in Austria are only rated average

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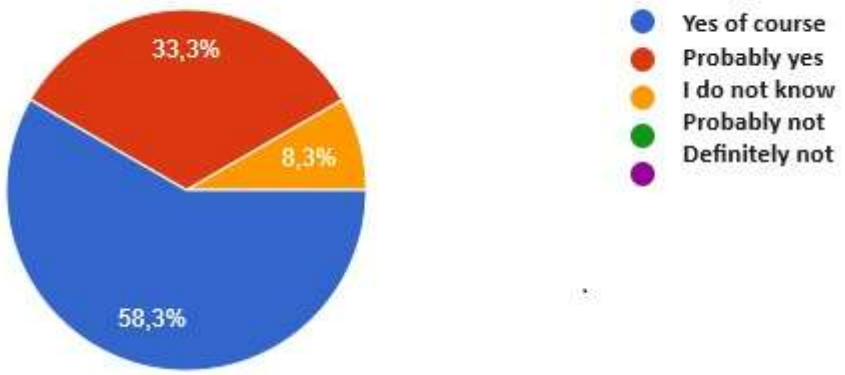
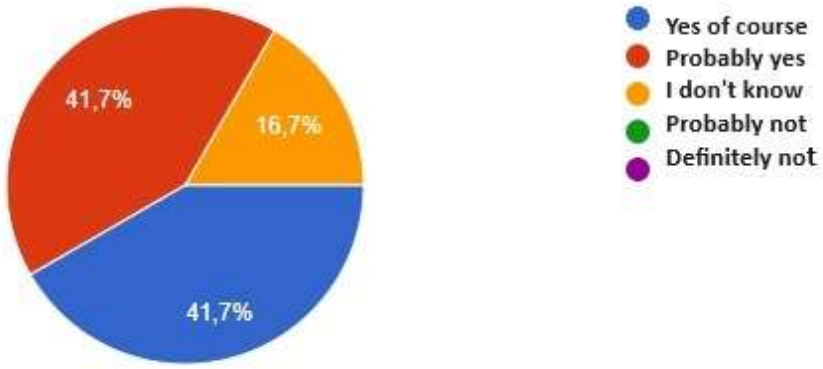
Do your customers require the use of sustainable and new technology services and if you had them would it be a competitive advantage for your company in the future?



Sustainable and technological services are clearly seen as a competitive advantage in Austria.

Would you be interested in training your employees over 50 in new technologies in the sector?



More than 80% of 50+ employees are willing to take part in training concepts for digital skills

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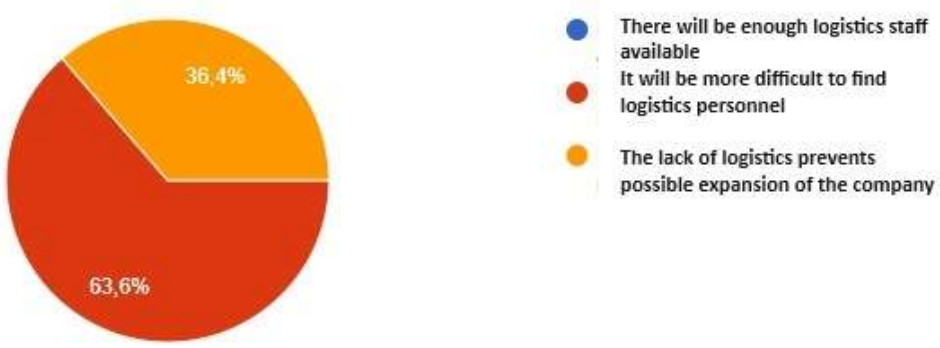
1.2 Trainer

How do you think the situation will evolve in terms of logistics recruitment over the next 10 years?



Recruiting logistics personnel will become increasingly difficult in the future

How important will digital skills be in the future?

- How would you assess education and training on "new technologies in logistics" in your country?
- Do you have trainees over the age of 50?
- Do you incorporate in your training programmes the new technologies applied in the logistics sector?
- Have you attended specific training on recent developments in the logistics sector?
- Do you adapt your teaching method according to the needs of logistics learners?
- Do you consider continuous training as essential for the development of logistics workers?
- Do you offer practical training or laboratory experience to trainees?
- Do you evaluate the performance of trainees during and after the training programs?

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1.3 Summary

Twenty-three Austrian logistics professionals participated. Among those professionals, twelve were managers from logistics companies. Eleven were trainers in vocational education. The survey took place between the end of March and mid-April. It aimed to gain insight into the impact of digitization on older workers (50+) in logistics.

Logistics Companies (Executives)
Most survey respondents are over 50. This age suggests possible challenges with digital transformation. Acceptance and skills are examples of these challenges.

Over 80% report a shortage of skilled workers in logistics. This shortage is mainly because of:

* Demographic changes
* Low attractiveness of the job description
* Missing education and training
* Technological needs

Digitization is considered very important. More than 58% believe digital skills are "very important." No one thinks they are "unimportant."

In a majority opinion, employees 50+ only have "moderate" digital skills. There is a great need for further training.

Highly rated digital skills include:

* Basic software applications
* Digital communication tools
* RFID, EDI, and GPS are seen as the most important technologies.
* Cloud computing and AI are considered relevant to growth.

Training on new technologies gets only an average rating in Austria.

Sustainable and technological services can be a competitive advantage.

Over 80% of employees over 50 are willing to participate in digital training.

Logistics Trainers (VET Sector)
Trainers expect recruitment in logistics to be more difficult in the future.

Digital skills are also considered critical for the future here.

Many trainers already use modern technologies in training. In addition, they also see a need for improvements in the further training offered.

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It is emphasized that:

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* Individualized training approaches
* Practical elements
* Continuous training courses

are necessary for optimal support of older learners.

Conclusion
The results reveal something. Executives and trainers see digitization as a central challenge and opportunity. There is a shortage of skilled workers. Older employees need more training. A clear need exists for structured training concepts suitable for older people. Projects like DiRECT address these challenges directly. They contribute to strengthening the digital skills of older logistics employees in Austria.

2. Desk Research

2.1 Impact of Covid in digital logistic sector transformation in Europe

The COVID-19 pandemic acted as a catalyst for digitization in many areas, even in logistics. Lockdowns and contact restrictions increased the pressure to automate processes. It also put pressure on using digital solutions for home-office tasks, contactless delivery, and e-commerce processing. The pandemic accelerated digitization often. But, recent surveys show the transformation remains ongoing. It is, at times, slower than hoped.

The proportion of Austrian companies rating their level of digitization as advanced has recently fallen slightly. Many businesses still do not use artificial intelligence. Security concerns, high costs, and a lack of skilled workers are cited as the main obstacles. Digitization of business processes, cybersecurity, and a lack of skilled workers are considered central trends in the industry. Most companies see digital transformation as an opportunity, but only some are truly on an integrated path. They aim to implement digitization, sustainability, and resilience at the same time.

Automation and AI play a central role in digitization. Many processes are already automated in intralogistics, like warehousing and picking. But, transport logistics are more complex. AI applications see use, especially for planning, forecasting, and customer service. However, advanced AI projects see use more in digitally mature companies. Platform solutions, like digital freight exchanges and logistics networks, support efficiency in the supply chain. The pandemic promoted their use through the need for flexible, digital coordination in exceptional situations.

E-commerce is a major driver of digital transformation. Record values were achieved in online retail due to COVID-19. Logistics companies had to adapt, and must still adapt, their processes. They do so through automated distribution centers, route optimization, and real-

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time communication with customers. Austrian Post, for example, invests specifically in technology and IT expertise. It does so to meet the rising parcel volume. Overall, the pandemic has increased the pressure to act on digitization. The current phase is characterized by implementing and anchoring these changes for the long term.

Before COVID-19

1. digitalisation in the early stages:

Before the pandemic, the digitalisation of the logistics sector in Austria was still at an early stage. Although many companies recognised the need for digitalisation, implementation was often slow and fragmented. There were efforts to optimise processes and implement new technologies, but penetration was not comprehensive.

2. traditional logistics processes:

Many logistics companies continued to rely heavily on traditional methods and manual processes. Paper-based documentation, manual inventories and poorly integrated IT systems were still widespread.

3. first steps towards innovative technologies:

Some progressive companies were already starting to utilise technologies such as Internet of Things (IoT), Big Data and Artificial Intelligence (AI) to improve efficiency and transparency in their supply chains. However, these initiatives were the exception rather than the rule.

4. competitive advantages through digitalisation:

Companies that have already invested in digital technologies have achieved competitive advantages through more efficient processes, better data analysis and optimised supply chains. These companies were able to react more flexibly to market changes and often offered better customer service.

According to COVID-19

1. accelerated digitalisation:

The pandemic acted as a catalyst for digitalisation in the logistics sector. The need to quickly adapt supply chains and respond to unforeseen challenges led many companies to invest more in digital solutions. Cloud-based platforms, automation and AI-based tools were increasingly implemented.

2. e-commerce boom:

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The sharp rise in e-commerce during the pandemic led to an increased need for efficient logistics solutions. Companies had to adapt their systems to the increased demand and invested in technologies that enabled faster and more reliable order fulfilment.

3. new business models and technologies:

Innovations such as drone deliveries, autonomous vehicles and smart warehouses became increasingly important. These technologies help to reduce costs and increase efficiency and were increasingly used in pilot projects and regular operations.

4. data-driven decision-making:

The use of data analytics and real-time data management has become the standard. Companies are increasingly turning to big data to make better predictions, avoid bottlenecks and make their supply chains more resilient.

5. change in the way we work

Remote working and flexible working models have been introduced in the logistics industry. Digitalisation supported these new ways of working through improved communication tools and virtual collaboration platforms.

6. sustainability and resilience:

Sustainability and resilience of supply chains have become more of a focus. Digital tools are helping to reduce CO2 emissions by planning more efficient routes and optimising energy consumption. In addition, more resilient and flexible supply chains are being developed that can respond better to future crises.

Overall, the COVID-19 pandemic has significantly accelerated the digitalisation process in the Austrian logistics sector and led to a broader and deeper integration of digital technologies. The companies that successfully implement this transformation are better positioned to master future challenges and secure competitive advantages.

The following study is also interesting in this context:

Study IND4LOG4 Industry 4.0 and its impact on the transport industry and logistics (Federal Ministry for Transport, Innovation and Technology)

Executive Summary The aim of the IND4LOG4 project, which was carried out by the OeKB in cooperation with the WU, is to analyse the effects of Industry 4.0 on the Austrian logistics and transport industry. The project analyses the company level, the industry level and the macroeconomic level. Approach The topic was addressed on the basis of expert interviews, a standardised survey of 250 logistics and transport companies operating in Austria, in-depth case studies at the level of industrial and transport and logistics companies, and a scenario-based assessment of the impact of Industry 4.0 on production and value creation in Central European sectors, transport performance and labour market effects in Austria.

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Recommendations for action were derived on the basis of the findings. Key findings On the part of industrial companies, a number of successfully implemented Industry 4.0 concepts can already be observed in the area of collecting, storing, analysing and providing data with the aim of increasing efficiency in the production process. However, corresponding applications can also be identified in all upstream and downstream processes. However, the challenges of digitalisation for companies remain access to an efficient broadband infrastructure, comprehensive and standardised interfaces and data protection. Transport and logistics companies require intensive integration into their customers' processes; at the same time, however, they are also confronted with different interfaces and IT systems as well as a lack of trust on the part of their customers, with the latter being a particular obstacle to the realisation of Industry 4.0 potential in Austria. Promising new business models arise primarily from the changing needs of end and industrial customers, in particular from the increasing reduction in the size of shipments, same-day delivery concepts, new supplier structures in the area of raw and semi-finished products and flexible production planning, which enable just-in-time or just-in-sequence production in areas and for groups of goods that were previously not possible or necessary. The technology with the greatest potential to drastically change supply chains is 3D printing, although the profitability of these processes is currently still viewed critically. The analysis of industry interdependencies clearly shows that value chains and networks are likely to become more closely meshed as a result of the digitalisation of the economy. Due to Germany's central position in global value chains in particular, this also means advantages for Austrian and Central European industries in the medium term, regardless of where the impetus for digitalisation comes from. Digitalisation is likely to lead to growth effects in Austria in the medium term; in particular, value creation effects of +0.7% per year are expected in scenario 1 (Industry 4.0 is largely characterised by industrial manufacturing and automation technology), which is more favourable for Austria. In scenario 2 (Industry 4.0 is primarily characterised by the ICT sector), the estimated growth impulse here amounts to +0.3 % per year. Demand for freight transport is likely to increase in line with rising economic output in Central and Eastern Europe, although the efficiency of the transport system (in the sense of a reduction in empty runs and increased multimodality) is also likely to increase. While an accelerating increase in demand for freight transport is expected over the next four to five years, this will level off again from 2022 onwards.

Recommendations for action Industry 4.0 and its impact on transport logistics In the area of transport and infrastructure policy, the broadband capability of the telecommunications infrastructure and the real-time capability of the transport infrastructure are key challenges that need to be overcome, as is the connectivity of the infrastructure systems to corporate IT systems. RTI policy can support developments relating to digitalisation by creating test fields and test tracks for new transport technologies, promoting the development of intermodal and multimodal concepts to increase the resilience of supply chains, promoting technological retrofitting (especially in the SME sector) and promoting cooperation concepts, networking and interdisciplinarity based on existing tracks. Attention must also be focussed on the development and identification of potential applications for big data. In addition to RTI and infrastructure policy, there is also a need for action in other areas, such as education policy (schools, initial and further training) and proactive labour market policy. In connection with the dynamisation of company and industry structures, support for start-ups is considered important. Last but not least, the creation of standardised interfaces and data structures, which represent one of the key challenges for the transport industry, should not be forgotten at this point. Efforts are already being made at international level to ensure the broadest

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possible interoperability. From an Austrian perspective, it is necessary for the nationally responsible bodies to be heavily involved in this standardisation process in order to ensure an early and efficient conversion of existing and new systems.

2.2 Opinions and problems this change occurred in logistics workers over 50 years old in Europe

Logistics workers over the age of 50 face various challenges in connection with the digital transformation process. These problems can occur on a technological, psychological and organisational level. Here are some of the main issues faced by these logistics workers:

1. technological challenges

a. Digital skills shortage:

Many older logistics workers have less experience with modern technologies compared to younger colleagues. This can lead to uncertainty and difficulties in learning and using new digital tools and systems.

Fast-moving technological changes:

The speed at which new technologies are developed and introduced can be overwhelming. Older logistics workers may struggle to keep up with these rapid changes and continually adapt to new systems.

2. psychological challenges

a. Fear of the new:

The introduction of new technologies can cause anxiety and uncertainty. Older logistics workers may be concerned that they will not be able to learn new skills or that their previous knowledge and experience will be devalued.

b. Self-confidence:

Self-confidence can be affected if older logistics workers feel that they cannot keep up with technological demands. This can lead to reduced commitment and less willingness to take on new challenges.

3. organisational challenges

a. Lack of training and development opportunities:

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Not all companies offer sufficient training and development programmes that are specifically tailored to the needs of older logistics workers. This can result in these logistics workers not receiving the support they need to utilise new technologies effectively.

b. Age discrimination:

In some cases, older logistics workers may feel that they are disadvantaged because of their age. This may take the form of fewer training opportunities, fewer opportunities for career progression or less confidence in their abilities from management.

c. Unfavourable workplace culture:

A workplace culture that strongly favours younger employees and technological affinity can marginalise older logistics workers and make their integration process into the digital transformation more difficult.

4. physical and cognitive challenges

a. Health restrictions:

With age, health problems such as visual impairments, hearing problems or motor impairments can occur more frequently, which can make it more difficult to use new technologies.

b. Cognitive changes:

Older logistics workers may take longer to process new information and learn new skills, which can make the training process longer and more difficult.

Accelerated digitization creates unique problems for older logistics employees. Many people over 50 did not grow up with digital technology. Throughout their careers, they adapted to older processes. New tools and rapid changes sometimes cause insecurity, stress, and opposition. For instance, switching to real-time communication with digital warehouse management or collaborative platforms demands technical and mental adaptations.

At the same time, some opportunities have emerged. Flexible work models at home, as well as digital tools, can relieve physical strain. The key is targeted training. Awareness of training has grown in the general population. However, older employees attend these offerings less often. Reasons include a lack of access, less confidence in learning, and unsuitable learning formats.

Several good practices appear to solve these problems:

Encourage technology acceptance: Older employees often need more time and convincing to understand the benefits of digital tools. Respectful communication, customized training, and the inclusion of their experiences encourage openness and a willingness to learn.

Design age-appropriate training: Small groups, relevant content, time to practice, and different training levels are crucial. Blended learning, training videos, and peer learning like reverse mentoring have proven effective.

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Make ergonomic and health-related adjustments: Automated tools, ergonomically designed workplaces, and preventive measures help maintain the performance of older workers. Consider exoskeletons and health checkups.

National and European programs also support shifting. For instance, in Austria, the AMS and WKO offer funding for digitization and logistics training. The EU also provides clear direction to broadly promote digital training with its Skills Agenda and initiatives like the Pact for Skills. Logistics associations contribute to development with industry-specific training and networks.

The digital shift can succeed, even for older employees, if investments are made in people and not just technology.

2.3 Summary and Intermediate Conclusions

COVID-19 gave digitalization a boost in logistics. Automation, AI, platform solutions, and growing e-commerce are changing how people work.

It becomes clear the human element remains key. The 50+ generation brings experience but needs help with digital skills. Investments in training for older workers, better ergonomics, and a supportive work environment matter. This is both socially responsible and economically smart. Companies see these advantages, and they benefit from skilled, loyal, and teachable employees.

DiRECT and similar projects help older logistics workers build digital skills. These also secure the industry's ability to innovate long-term. There is a chance to shape digitalization across generations. It can be inclusive and ready for the future.

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3. Focus group

1. Dispatcher (CEP Service Provider)

The position available is for a dispatcher at a mid-sized courier, express, and parcel service provider. The job requires tour planning as well as vehicle and personnel scheduling. Several years of practical experience in CEP logistics are needed. This is particularly true of experience with the "last mile."

2. HR Manager (CEP Company)

She is the head of human resources at a CEP service provider. Her responsibilities involve talent acquisition, development, and retention. She has extensive experience in recruiting, onboarding, and training programs in logistics. It includes digitization and e-mobility.

3. Logistics Trainer (SZ Humer)

He works as a trainer in logistics at a training center. Training in warehousing, freight transport, and delivery are part of his duties. His vocational training and advanced education emphasize practical application, technology, and sustainability.

4. Managing Director (Technology-Oriented Logistics Company)

He serves as managing director of a company specializing in emission-free last-mile logistics. Strategic corporate management, training, and technology integration are the focus of his work. He has years of experience in operational logistics and cutting-edge technologies. Examples of these technologies include electric vehicles and cargo bikes. He also possesses experience in employee training.

5. IT Manager (Customs and Express Logistics)

He is the IT manager at a logistics firm specializing in cross-border express delivery. His duties encompass digital infrastructure, shipment tracking, and system integration. He offers strong IT skills in digital logistics, automation, and supply chain processes.

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