OUT-STANDING!

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AUSTRIAN LOGISTICS

THE MAGAZINE OF AUSTRIAN LOGISTICS

SUMMER 2019

Austria – country of logistics

In the Heart of Europe!

Four of the most important European transport corridors lead through Austria.

The member states of the European Union pursue the goal of a multimodal, comprehensive transport network of rail, road, waterways, aviation, terminals and airports: the TEN-T net ("trans-European Network-Transport").

The highest-ranking core network, consisting of 50,762 kilometres of rail infrastructure, 34,401 kilometres of road infrastructure, 12,880 kilometres of waterway infrastructure and 92 airports, including the infrastructure for operations and handling, will be completed by 2030. The overall network, which will also provide a better connection for the regions, will be completed by 2050.

The multimodal integrated core net is characterized by its nine powerful core network corridors – four of them lead through Austria. The development of a high quality traffic infrastructure enjoys highest priority in Austria – in the interest of the location, the people and the location for business.

Federal Ministry
Republic of Austria
Transport, Innovation
and Technology

Dear readers,

Excellent logistics are the backbone of every modern economy. And the importance of this discipline, and experts agree on this, will only increase in the years and centuries ahead. Almost all of the significant technological developments we are collectively embracing – digitalisation, automation, artificial intelligence, and the Internet of Things – have an immediate impact on logistics and are driven forward by them at the same time.

If a country wants to succeed against fierce international competition, it has to realise that its infrastructure and its logistical systems are a central competitive advantage.

Logistics are sometimes regarded as a problem. But getting logistics right is part of the solution. When it comes to the increasingly important issue of sustainability and the ecological footprint of products and services, the contribution of freight transport in particular is usually overrated and leads to certain reservations. However, the environmental problems will not be solved by forgoing logistics, but by improving the system - constantly. In this respect, Austria's logistics have already made outstanding progress and more is due to follow, and that's because excellent logistics are an essential part of a sustainable economy.

"Excellent logistics are an essential contribution to a sustainable economy!"

And finally, careers in the field of logistics rank among the most exciting and promising that young people can take up today. In light of insecurities about changing professional fields, this is one of the strengths of this discipline.

So, we can safely say that a country which achieves excellence in the field of logistics, really is ready for the future.

We called this magazine "OUTSTANDING!" as it wants to demonstrate Austria's outstanding accomplishments in the fields of logistics and infrastructure. The logistics hotspots in Austria. The capacity and innovative power of the different modes of transport. The diverse opportunities of education Austria offers in the field of logistics. The internationally significant research that is done at the location. And last, but not least, the diversity of the flourishing logistics start-up scene.

"OUTSTANDING!" can only provide an overview, a foray into the country's diverse logistics scene, but we hope to inspire enthusiasm for both the logistics industry and the country of Austria – the perfect partners.

Enjoy the read,

Your team at AUSTRIAN LOGISTICS

AUSTRIAN LOGISTICS

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Austria's airports handle about 235,000 tonnes of freight per year.

UPDATE

WE STAND OUT. WORLDWIDE!

UNDER ONE UMBRELLA!

Founded by the Federal Ministry of Transport, Innovation and Technology, since 2018 AUSTRIAN LOGISTICS has been the country's umbrella brand for the discipline of logistics. So what exactly is it, how can you participate, and why would you?

AUSTRIAN LOGISTICS

In spring 2018, the time had come: AUSTRIAN LOGISTICS saw the light of the day. The leaders of the major lobbies of the logistics sector, which presented the new umbrella brand to the public together, were in a visibly good mood during the presentation of the joint brand identity for the discipline of logistics in Austria. It was an essential step towards strengthening one of the central sectors of the country.

AN INVITATION ADDRESSED TO THE WORLD...

On the one hand, AUSTRIAN LOGISTICS is wooing business from other countries. The brand communicates the advantages of Austria's logistics capabilities with all its well documented innovation and efficiency. It is an invitation addressed to companies from all over the world to take a closer look at a country that is situated right in the heart of Europe, and that is an intersection of various important transcontinental transport axis. Moreover, it is a country that provides stable economic and political circumstances with security, reliable transport systems and excellent infrastructure.

... AND TO AUSTRIA.

On the other hand, AUSTRIAN LOGISTICS addresses its home country. It invites domestic companies to benefit from the brand's image as partners. Network partners exclusively have the opportunity to use the AUSTRIAN LOGISTICS brand in the context of their customer approach and public appearance – and thus increase their customers' trust in them.

In addition, the brand aims to remind the country how valuable this sector is for Austria - it creates about 160,000 jobs and generates a turnover of some 34 billion euros per year. More than that, the brand aims to realign perceptions of an industry that everyone needs and relies on, but is often poorly understood and sometimes misrepresented.

The umbrella brand addresses young people in particular. Logistics is one of the most exciting and most diverse professional fields – and there is no doubt that it has a strong future. Furthermore, Austria offers a very wide range of corresponding education – from apprenticeships to academic education.

In this sense, AUSTRIAN LOGISTICS is an invitation to become a part of one of the most exciting sectors that exists.

FAQ

What does AUSTRIAN LOGISTICS want to achieve?

- **To highlight the outstanding accomplishments in the discipline of logistics in Austria.**
- **To jointly communicate a uniform image of the discipline of logistics.**
- **Increase the national and international visibility of Austrian logistics among decision-makers from politics, industry, commerce as well as services and the entire public.**
- **Strengthen the cooperation, exchange of knowledge and experience between the stakeholders.**
- **Point out and raise awareness for important subjects within the discipline of logistics.**
- **Make occupational profiles in the discipline of logistics more attractive and support forward-looking education and training.**

Who stands behind AUSTRIAN LOGISTICS?

The umbrella brand was founded by the Federal Ministry of Transport, Innovation and Technology (BMVIT) in the context of the logistics initiative. Representatives of the umbrella brand also include:

- **Bundesvereinigung Logistik Österreich BVL**
- **Industriellenvereinigung IV**
- **Verein Netzwerk Logistik VNL**
- **Wirtschaftskammer Österreich WKO**
- **Zentralverband Spedition & Logistik ZV**

HOW TO BECOME A BRAND PARTNER?

Companies that would like to take part in the selection process as a brand partner of AUSTRIAN LOGISTICS find the corresponding application form on the website www.austrianlogistics.at.

Application is possible at any time or email: info@austrianlogistics.at

Survey of Austria's world of logistics: ALI.

WHAT IS ALI?

The AUSTRIAN LOGISTICS INDICATOR can provide a unique indicator system to highlight the strengths and weaknesses of individual regions.

The news was pleasant, of course. When the Logistics Performance Index (LPI), which is issued every two years, was published by the World Bank in summer 2018, Austria found it had reached a sensational fourth place. The joy is merited, but that's not the whole story. On the one hand, traditionally Austria always performs well in the LPI, but there were some leaps in the rankings over recent years that cannot be explained objectively.

Just like all corresponding rankings, the LPI has some weaknesses. For example, it prefers countries with seaports and focuses very strongly on the international exchange of goods – so one can hardly make a statement on the development of individual regions within a country.

REPRESENTATIVE AND OBJECTIVE

With the AUSTRIAN LOGISTICS INDICATOR (ALI), the BMVIT created, along with the Logistikum Steyr (the University of Upper Austria), an indicator system that does not replace indices such as the LPI, but that goes deeper regarding essential subjects.

For regions in Austria, ALI constitutes a representative and objective basis for deducing specific recommendations for action concerning regional logistics: strengths of a region can be consolidated, weaknesses can be compensated as far as possible and synergy effects existing between the regions can be identified and used in a better way.

At the same time, the evaluation of measures should be facilitated. Crucially here, the ALI is not just a snapshot, but will be a frequently updated indices.

How ALI works: 15 criteria

For creating the indicator, the researchers had a look at the indices of nine international indicator systems. They were evaluated in terms of usability for a national survey during workshops with logisticians and shippers from industry and commerce, as well as with other relevant stakeholders. It resulted in a system that is divided into three main categories, each with five subcategories of their own:

Regional framework conditions

- **Attributes of the regional market**
- **Demography**
- **Location/centrality**
- **Regional risks**
- **Flows of people**

Logistical framework conditions

- **Transport infrastructure**
- **Service providers**
- **Resources**
- **Logistics properties**
- **Costs for logistical performances**

Logistical performance catalysts

- **Information and education**
- **Research**
- **Technology**
- **Innovation**
- **Politics**

The basis of the indices are data from publicly accessible databases such as Statistik Austria. Further to this, a representative survey was conducted throughout Austria among small, medium-sized and large companies from s industry, commerce and transport industries. The result of the indicator is a presentation of the regions in Austria that shows their logistical capacity in a transparent way.

The data are – up to a certain depth – publicly accessible: on www.logistikum.at/ALI one can retrieve the current status and also filter it by numerous criteria.

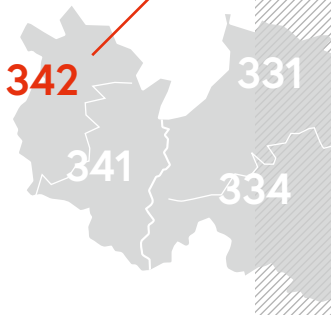
WHAT DOES ALI SAY?

Austria ranks among the world's leading countries regarding logistics and infrastructure. OUTSTANDING! took a closer look at the ten strongest regions in the country.

Region of Rhine Valley-Lake Constance

Especially strong in the categories

- **Research**
- **Innovation**
- **Costs for logistical performances**
- **Logistics service providers**
- **Resources**



Survey of Austria

The AUSTRIAN LOGISTICS INDICATOR is based on these criteria.

Regional framework conditions
Comprises all subcategories that do not have a direct connection to logistics. (activity rate, rate of unemployment, …)

Logistical framework conditions
Comprises all subcategories that have direct influence on the discipline of logistics or that are influenced by the discipline. (street charges, service providers, …)

Logistical performance catalysts
Comprises subcategories which are all supposed to enable the rendered performance in the discipline stably in the long run. (company formations, patents, …)

Attributes of the regional market
This subcategory comprises all fundamental factors (e.g. gross regional product) which can serve the creation and revival of a market.

Demography
Demography is a comprehensive influence factor on the logistics performance as one can extrapolate from the resident population to the market size and personnel availability as well as to the required complexity of the logistics performance.

Flows of persons
The effects of commuting flows affect, on the one hand, the demand in the region and, on the other hand, the availability of manpower. Commuters also influence the need of transport routes and their quality.

Regional risks
Regional risks show the probability of delaying circumstances in the region. Examples are opening hours of customs or total lock-ups of main routes.

Logistics service providers
Logistics service providers make a large contribution to the logistics performance and are therefore considered in this subcategory separately.

Costs for logistical performances
If one considers the costs of logistical service provision across all means of transport, the focus is on additional transport costs, toll costs and costs for multimodality in this subcategory.

Logistics properties
Logistics properties are not only already existing objects, but also potential areas for rededicating or expanding existing operational areas.

Resources
The factors of resource availability can gain great significance in terms of location planning, so the water price or the price of diesel are included in this category.

Transport infrastructure
This category shows all fundamental data on the infrastructure of the different transport modes, which represents, in line with transport logistics, a classic service provider in the discipline of logistics.

Information and education
In this subcategory the degree of networking as well as the availability of information and educational offer is evaluated.

Technology
In the age of digitalisation and Industry 4.0, technology plays a key role, which is reflected in indices such as the access to new technology as well as the number of technology centres.

Research
The research performance in the field of logistics is an important basis for competitiveness.

Innovation
This category comprises innovation relating to logistical capability, for example indices about start-ups or patents as well as the evaluation of e-mobility are contained in this category.

Politics
The influencing factor of transport political and socio-political measures is assessed in this category. Indices concern, for example, the distribution of public funds as well as duration and effort related to obtaining operating licences.

Regions in the AUSTRIAN LOGISTICS INDICATOR correspond to NUTS-3 level. This allows a reasonable comparison between urban and rural regions.

Mostviertel-Eisenwurzen

Especially strong in the categories

- Research
- Innovation
- Costs for logistical performances
- Resources

Surrounding areas of Vienna/Northern part

Especially strong in the categories

- Research
- Costs for logistical performances
- Resources

Linz-Wels

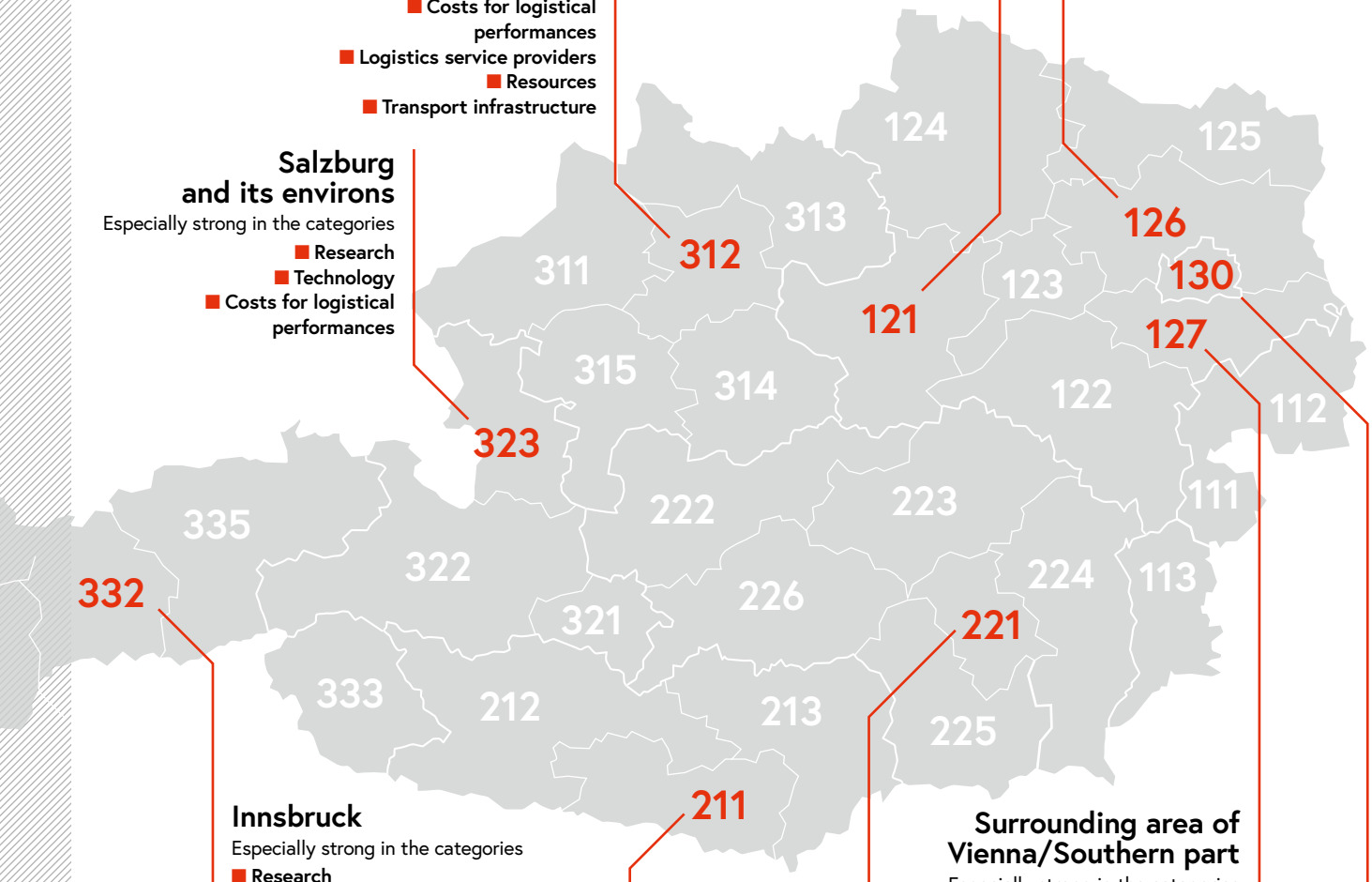
Especially strong in the categories

- Research
- Innovation
- Technology
- Costs for logistical performances
- Logistics service providers
- Resources
- Transport infrastructure

Salzburg and its environs

Especially strong in the categories

- Research
- Technology
- Costs for logistical performances



Innsbruck

Especially strong in the categories

- Research
- Information and education
- Technology
- Resources

Surrounding area of Vienna/Southern part

Especially strong in the categories

- Research
- Costs for logistical performances
- Resources
- Regional risks

Klagenfurt-Villach

Especially strong in the categories

- Technology
- Costs for logistical performances
- Regional risks

Vienna

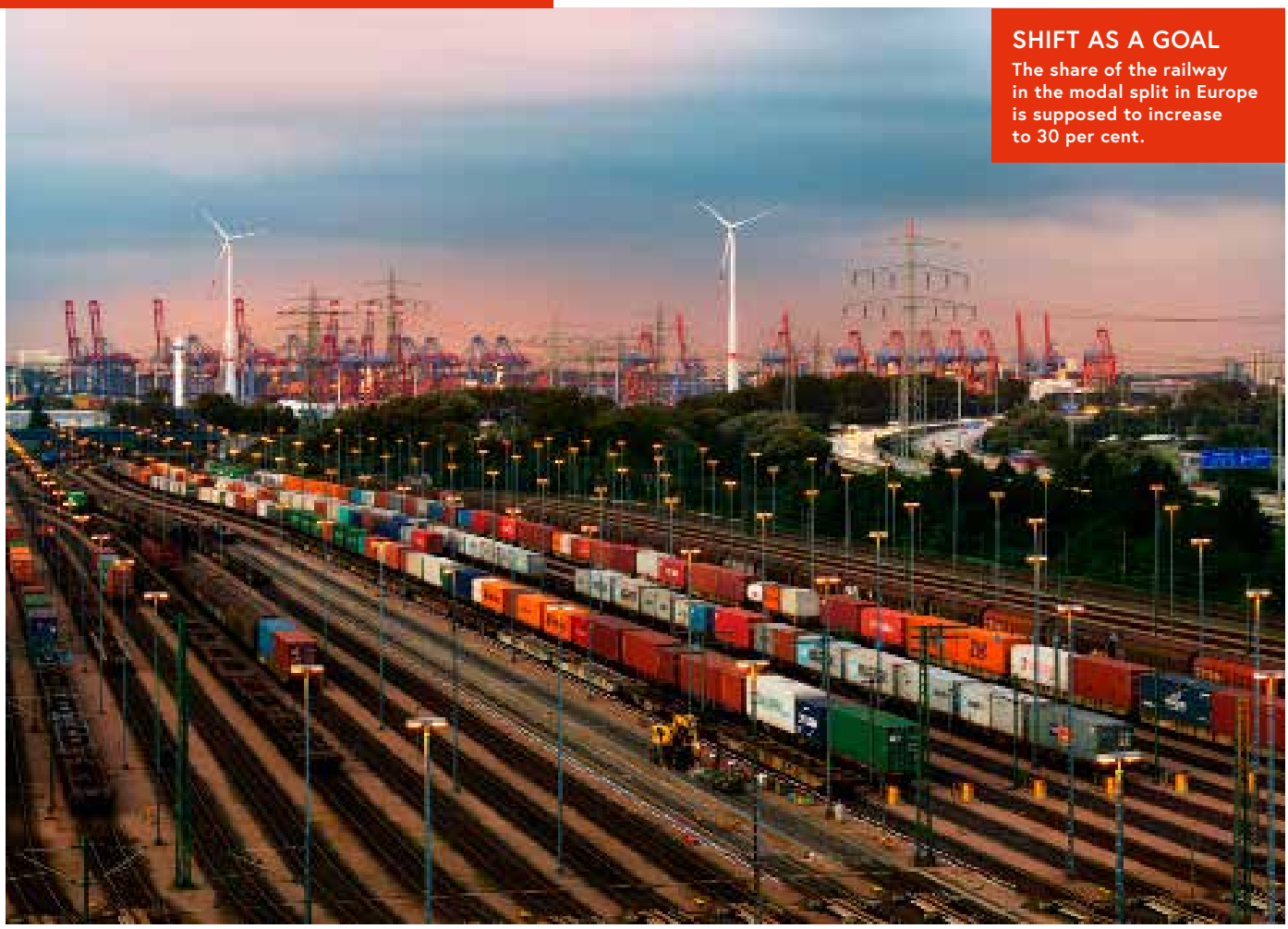
Especially strong in the categories

- Research
- Information and education
- Technology
- Costs for logistical performances
- Logistics service providers
- Resources
- Demography
- Regional risks

Graz

Especially strong in the categories

- Research
- Information and education
- Technology
- Costs for logistical performance



SHIFT AS A GOAL
The share of the railway in the modal split in Europe is supposed to increase to 30 per cent.

LEADING!

With its flexible approach and willingness to meet its customer's needs, Rail Cargo Group is well known for being one of the most innovative and best-connected rail freight companies in Europe today.

It is supposed to become the new standard at the freight market and its presentation attracted attention far beyond Austria's borders: TransANT is an especially light platform concept for freight trains. The lightweight construction ensures higher load capacities and the flexible construction enables the implementation of various logistics solutions for different sectors. TransANT was developed by the Rail Cargo Group (RCG) – the freight transport division of the ÖBB (the state owned Austrian Federal Railways) – and the steel group voestalpine.

"We cannot meet the customer demands in the 21st century with technology from the 19th and 20th century," says Clemens Först, executive spokesman of the RCG. "From our point of view, large investments concerning digitalisation and asset innovation are therefore especially necessary."

One of those is SmartCargo - the equipping of all freight wagons of the Rail Cargo with telematics until 2020. The information this will generate about the location, movement, and condition of the freight will enable completely new services for customers. As does SelfCargo, an online platform for the booking of remaining transport capacities.

PRESENCE THROUGHOUT EUROPE

The Rail Cargo Group's approach can be summarises by examples such as SmartCargo and SelfCargo – or a couple of numbers. 8,700 people work for the RCG. The group also has subsidiaries in 18 European coun-

RCG/David Payr

tries and achieves an annual turnover of about 2.2 billion euros. Combined, these put the Rail Cargo Group at the forefront of railway logistics in Europe today.

The train connections and services of the RCG are offered under the joint product name TransFER: the connections comprise maritime train services for container transports from or to European ports, as well as continental and conventional train services. A comprehensive network with its own freight trains in eleven countries in Europe assures high quality along the entire chain of logistics and transport.

"We cannot meet the customer demands in the 21st century with technology from the 19th and 20th century".

Clemens Först, Executive spokesman of the RCG

Of course, this only works due to international cooperation. Along with its partners, RCG operates a comprehensive network of end-to-end logistics, opens up markets in central, South and East Europe and accompanies its customers to growth markets such as Russia, Turkey or China.

REACHING 30 PER CENT

Europe's (freight) train companies have to surmount a great obstacle. In contrast to the USA, for example, there are numerous different, historically conditioned technical standards. A lack of interoperability leads to the fact that freight trains often roll sluggishly across country's borders within Europe.

"Different company, infrastructural and technical standards mean great challenges for the transboundary rail traffic," explains Clemens Först. "We pursue the approach towards efficient rail freight transport in Europe particularly with the initiative Rail Freight Forward, among other things with our climate ambassador Noah's Train."

Rail Freight Forward pursues the goal of increasing the share of the rail in the European freight market to 30 per cent. By offering the highest quality service, a healthy price-performance ratio, and the use of intelligent systems, freight transport increasingly take the heavy lifting duty from the roads. In this, RCG is acting as a driving force not just in Austria, but internationally.

That 30 per cent in the modal split has approximately been reached in Austria already. By comparison, in Europe, as well as directly comparable Germany, about 17 per cent are common.

Clemens Först emphasises that a shift to the rails is not a luxury: "It has a clear economic advantage: the large modal share of the rail spares our society external costs caused, for instance, by emissions as well as congestion and accident costs. This is seldom considered: the consignor only pays part of the real costs for every road haulage; the difference is paid by us as a society. About three quarters of our transports are international and our competitiveness as the transport mode rail depends on our finding beneficial framework conditions throughout Europe, so as to bring goods from the road to the rail increasingly."

"Xrail" is another a successful cooperation. Along with rail freight companies from other countries - DB, CFL cargo, Green Cargo, Lineas, SBB Cargo and Fret SNCF - the Rail Cargo Group works on optimising the European wagonload traffic in terms of customer friendliness, efficiency, and competitiveness. The Xrail alliance improves the liability, information, performance and customer friendliness of the European wagonload traffic and thus creates the basis for a more competitive customer offer.

BIG ENOUGH, FLEXIBLE ENOUGH

The size of the Rail Cargo Group might be one of the reasons why it is one of the leading rail freight companies in Europe. "Our big advantage is that, on the one hand, we are large enough to operate a dense European, or rather international, network and that, on the other hand, we are flexible enough to offer custom-made logistics solutions," says Clemens Först.

With the know-how and use of innovative transport technologies, the RCG realises future-oriented and individual logistics solutions. It connects economic regions by containers, swap bodies and cranable semi-trailers. It realises high frequency long-distance connections for heavy goods and thus links the rail with overland transport and sea freight, within Europe and as far as Asia. Due to the European locations, specialists are directly on site with customers. Furthermore, the group undertakes transport with owner operated firms in eleven European countries and thereby has another means for ensuring quality at its disposal.

Train high-tech from Austria: the particularly light and flexible platform concept TransANT.

RCA/David Payr

ASTONISHING DIVERSITY!

Austria's rail network is about 5,600 km long. But the ÖBB are not the only ones that use it. Around 70 railway companies operate on the track, among them 36 rail freight firms – with increasing success.

Austria's private rail freight companies.make a significant contribution to the railway share in the modal split.

What does ALI say?

Data on freight transport on Austria's rails

Tonnes transported

Inland traffic	29,981,879
Cross-border receipt	28,671,679
Cross-border shipping	17,716,310
Transit	31,209,517
In total	107,579,385

1,000 tonne-kilometres (inland)

Inland traffic	4,583,947
Cross-border receipt	6,130,581
Cross-border shipping	4,169,952
Transit	7,371,804
In total	22.256.283

Rail freight transport of all railway undertakings in the Austrian rail network, data for 2017.
Source: Statistik Austria.

The competition has increased. The opening of the European railway market, funded by the EU, has already left much more noticeable marks in the field of rail freight transport than in the field of passenger transportation. Foreign rail freight companies have always operated in Austria as well, but in cooperation with other companies. This has changed. Today, more and more of them undertake transport services themselves, or via subsidiaries. The other side of the coin: domestic rail freight companies have long since been internationally active as well.

PRIVATE FIRMS GROWING IN NUMBER

This not only affects the incumbent Rail Cargo Group. In Austria, an astonishing range of private rail freight companies have established themselves, and they are getting more and more successful. While the RCG, as well as the private companies, were able to increase the quantity of transported goods in the past few years, the private companies gained in market shares. From 2013 to 2017 the private rail freight companies were able to increase their total market share from just under 25 to more than 30 per cent.

In Austria, an impressive array of private rail freight companies have established themselves – stiff competition means a good deal for the customer.

The private rail freight companies act rather differently here. The German Lokomotion Rail, for example, is particularly active in the trans-Alpine freight transport on the Brenner and Tauern axis. Meanwhile, fellow German firm, TX Logistik, connects numerous European destinations with Vienna and Hall in the Tyrol. The LTE Group and Cargo Service, for example, are Austrian companies. LTE is specialised in block trains across up to five borders and already has more than seven subsidiaries abroad. Cargo Service is a subsidiary of the voestalpine group and transports about four million tonnes of raw materials and finished goods every year.

GREAT MODAL SPLIT

The private rail freight companies along with the Rail Cargo Group also serve a delightful purpose for the whole of Austria. They make sure that the share of rail transport from the total volume, the modal split, is with just under 27 per cent of all transport modes on national territory - significantly higher than the European average. Not bad for a country whose topography rather speaks against the railway.

CargoServ

"When we receive an image of the state of the traffic flow, we can take informed decisions based on it," Operators' room of ASFINAG's traffic management centre.

ROADS WITH BACKBONES!

Austria has one of the best and most recently developed road networks in Europe. However, the most considerable innovation is situated beneath it.

In Austria, government-run ASFINAG is responsible for planning, building, running and toll- charging the high-level road network. Bernd Datler, managing director of ASFINAG Maut Service GmbH speaks with OUTSTANDING! about the technical backbone of the road network.

OUTSTANDING!: Mister Datler, ASFINAG already started to equip the high-level network with fibre optic cables more than 15 years ago. What was the motivation for it then?

Bernd Datler: Back then, it was mainly a matter of connecting toll stations and running traffic control systems. The equipping with fibre optic cables happened continuously and not in the sense of a great effort: we always just laid the optic fibres as well when other work was being done at the same time anyway. Today we have an almost 100 per cent cohesive fibre optic network. And with that, of course, we also have the opportunity to connect technological extensions quickly and easily. This network is the backbone of the infrastructure along our roads today.

Is Austria more advanced in this than other countries?

Datler: I do not know any other country with a similarly tight fibre optic network along the motorway. Of course, you can achieve good connectivity by mobile commu-

ASFINAG

"The service level ensures that the information reaches the clients quickly and accurately, who can plan their routes according to it then."

"It is a matter of cooperative systems in which vehicles and road communicate with each other and impart certain information to each other."

nications as well, it works very well in Finland, for example. However, Austria is, as is well known, not flat everywhere. In the area of tunnel chains, the cellular connection is also more or less sufficient for speech, but for data it is too poor in any case. So, we have to focus on fibre optic in order to provide perfect connectivity, and today we have a very good international position compared to others. This is a clear asset and it is also important for our future expansions: if one assumes that road and vehicle are growing into an overall system more and more, we have a really good starting point.

If we stay in the present: how does the network benefit us specifically?

Datler: On the one hand, of course, it helps us to get an image of the state of the traffic flow. We are then able to take informed decisions based on it. ASFINAG is already able to monitor 87 per cent of the entire network by cameras today – of course, they do not serve for personalised identification and the images are not saved. However, like this we detect traffic incidents such as congestions, wrong-way drivers or even the state of cleared roads.

Bernd Datler, Managing Director of ASFINAG Maut Services GmbH.

We also provide the end customers with this information. For example, we work with broadcasting partners who are partially located directly at the central office of ASFINAG. About 150,000 vehicles with connected navigation devices already receive data directly from us. For B2C customers this information is for free, it is only fee-based for B2B customers as there is a service level behind it that guarantees that the information reaches the clients quickly and accurately, who can plan their routes according to it then. Of course, there are also situations when the road network is simply congested due to the increasing traffic volume. However, this piece of information is important as well: the customers can reschedule or decide for another mode of transport. We are currently working intensely on driving forward the field of forecasting.

And when we look ahead? You have addressed the coalescence of road and vehicle. ASFINAG seems to be a kind of interface between infrastructure and research.

Datler: That's exactly the way we see ourselves. When one talks about the future of individual mobility, the four terms "connected", "automated", "shared" and "electric" turn up again and again. And for the first subjects, of course, infrastructure plays an important role. It is a matter of cooperative systems, in which vehicles and roads communicate with each other and impart certain information to each other.

Could you name use cases here?

Datler: The technology is called C-ITS, which means "Cooperative Intelligent Transport Systems". The goal is a permanent exchange of safety-relevant information between vehicles and road in real time. Here, we cooperate with the producers of telematics technology, so as to specify this use case. The information you get from the infrastructure will be understood by all producers who use these cooperative systems. In the near

"We are currently working intensely on driving forward the field of forecasting."

ASFINAG

"About 150,000 vehicles with connected navigation devices already receive data directly from us."

What does ALI say?

Data on freight transport on Austria's roads

Tonnes transported

Inland traffic	360,295,807
Cross-border receipt	10,725,085
Cross-border shipping	10,886,942
Transit	1,183,324
Other international traffic	3,765,885
In total	386,857,043

1,000 tonne-kilometres (inland)

Inland traffic	16,214,139
Cross-border receipt	986,985
Cross-border shipping	1,075,258
Transit	123,461
In total	1,488,526

1,000 tonne-kilometres (abroad)

Inland traffic	590,365
Cross-border receipt	2,492,858
Cross-border shipping	2,756,050
Transit	622,221
Other international traffic	1,117,030
In total	7,578,524

Road freight transport by Austrian companies, data for 2017, Source: Statistik Austria.

future, the first models that can process this will come onto the market, starting with the new Volkswagen Golf.

The first use case is the construction site warning where we inform about an upcoming construction site through an intelligent warning sign trailer or a route station.

In-vehicle information is another use case. One can already have the information that is offered on overhead signs displayed in the cockpit today. However, this works via camera signals and sometimes additional information is not identified correctly. We are working on transmitting information, for example on speed limits or dangers, directly from the road into the vehicle, with all additional attributes. This use case is also defined across brands.

A third example is Probe Vehicle Data. Modern vehicles already gather loads of data while moving – for instance about slipperiness, rain or road surface temperature. So, the vehicles know a lot about the overall system. Probe Vehicle Data now means gathering this data – anonymised, of course – and enlarging the data basis for the traffic management.

"Today, we have an almost a hundred per cent cohesive fibre optic network. And with that, of course, we also have the opportunity to connect technological extensions quickly and easily."

Here, we are approaching the field of marketable products, which the producers already install in their vehicles. We will see this with a couple of producers in the near future.

ASFINAG operates some separate test sections for special functions as well, though, doesn't it?

Datler: Yes, for example in Greater Graz. Here we have installed a bit more than just our normal equipment in two sections: better cameras that deliver images in higher resolution and radar sensors linked to the infrastructure that capture all vehicles as points on the route. The combination of this information allows, in a sense, an image of the collective behaviour in this section.

If one wants to test an assistance system or an automated vehicle, on the one hand, one learns what the vehicle seems to know about the world, but not if this really reflects the situation. However, in these two sections you see the complete throng of vehicles, even time-synchronously. And the ride also feels better for the people. These test routes are interesting for the OEMs, of course, but even more for the Tier 1 suppliers.

What will be the next steps of ASFINAG in this context?

Datler: We have talked about the coalescence of vehicle and road into one overall system. In this context, the distributed processing of information will be a matter as well. When one gets information from numerous sources, the question is, of course, if one has to send it all to a server or if one can pre-process it. Here, we are already undertaking first tentative steps towards installing intelligence in the network itself, so as to do the pre-processing of data partially on the route already.

THE PORT OF VIENNA
Changing from a trimodal logistics centre into an economic area.

PORTS UNDERGOING CHANGE!

Austrian ports have long since become more than transhipment points. As trimodal logistics centres, they already provide a broad range of services, but now they are also increasingly evolving into real economic areas.

If you would like to see the Port of Vienna, you can visit it, of course. Or you can see it on TV. The natural scenery of the port and its facilities have already served as a perfect film location for numerous TV series and films. A connection that has become closer recently: at the HQ7 – an operational area with offices, workshops and warehouses that was developed in 2017 – some film productions have recently settled.

A trend which Fritz Lehr, commercial manager of the Port of Vienna, greatly appreciates, "It does not change anything about our business model, but we see with pleasure that a film centre is evolving here".

ECONOMIC AREAS

The business model of the four public Austrian Danube ports - Vienna, Linz, Krems and Enns - has long since outgrown water-side transhipment. They are neutral, trimodal logistics centres which offer a broad range of services apart from transhipment.

At the Port of Vienna, for example, which at around 3 million square metres is as large as Central Park in New York City, WienCont provides the largest container terminal and depot in Austria. 270,000 square metres of storage space in warehouses and outside are available as well as a car terminal for 11,000 vehicles, two bonded warehouses and, of course, numerous rentable properties. More than 120 companies have taken lodgings here, among them most of the large forwarding agents.

One can only comprehend the entity of the port if "one sees all the different aspects as one", says Fritz Lehr. "In many cases, it is the mix we can offer, the package

LBS Redl; Hafen Wien/feel image

of all services of the Port of Vienna, which makes us economically successful. And that's also exactly where we see our future."

However, most notably in Vienna, more is already happening. Favoured by its privileged location – in the middle of the city, but far enough from residential areas so as not to cause conflicts with the population – the Port of Vienna has evolved into a real economic zone where numerous companies are located that have little to do with logistics in the narrower sense.

"Everyone practises logistics today. Therefore, they are the ideal initiator for an economic area,"

Doris Pulker-Rohrhofer, CTO Port of Vienna

Doris Pulker-Rohrhofer, chief technical officer of the port, regards the development of such an economic zone around a logistics centre as the signs of the times, though: "Of course, it is not a coincidence, logistics gain more and more in importance and they have long since reached the private homes of people – to an extent that many of them are not aware of. Everyone practises logistics today. Therefore, they are the ideal initiator for an economic area."

LOGISTICS AS A TRIGGER

The Port of Linz is developing in an interesting way as well. Unlike Vienna, the port is situated in the middle of the city here, so it has to find a way to integrate itself into the city life without threatening its expansion towards logistics and services. The solution is an offensive one.

With project Neuland, one pursues the goal of an urban-planning development in Linz, linked with the partial use of the port area by the population. The focus is particularly on the hall roofs: up to 10,000 square metres might be used as viewing platforms, as "leisure and adventure areas" – including offices, local suppliers and catering. It is a completely different approach – however, it leads towards an economic area as well, triggered by logistics.

Moni Fellner, Fotolia

What does ALI say?

Freight transport on Austria's waterways

Tonnes transported

Inland traffic	276,747
Cross-border receipt	3,793,364
Cross-border shipping	1,776,694
Transit	1,355,564
In total	7,202,368

1,000 tonne-kilometres (inland)

Inland traffic	27,696
Cross-border receipt	728,942
Cross-border shipping	257,441
Transit	474,447
In total	1,488,526

1,000 tonne-kilometres (abroad)

Inland traffic:	-
Cross-border receipt	2,700,107
Cross-border shipping	1,328,215
Transit	1,447,132
In total	5,475,454

Data for 2018, Source: Statistik Austria

In a radical way!

In thinkport Vienna, an exciting innovation laboratory for urban freight logistics exists at the Port of Vienna.

Hubert is a new approach for Viennese city logistics: business-to-business expedited parcels are delivered to a hub at the Port of Vienna and from there they are distributed further with resource-friendly vehicles. It's a bundling which is supposed to help reduce delivery traffic in particular and thereby CO2 emissions. On their way back, the drivers even take the packaging with them if required, so as to recycle it. City logistics plus an ecological approach: Hubert combines two crucial aspects of thinkport Vienna.

thinkport Vienna is a cooperation of the Institute of Production and Logistics of the University of Natural Resources and Life Sciences, Vienna and the Port of Vienna. Supported by the BMVIT in the context of the programme "Mobility of the future", thinkport is one of five mobility laboratories in Austria.

According to its own definition, thinkport is an open innovation laboratory for urban freight logistics with the goal of developing, testing, and implementing innovations in Vienna. So, it is not a research institute, but a bridge between university research and practice, a catalyst and a multiplier. Martin Posset, director of innovation at thinkport describes the approach that way, "We pursue viral co-creation. We want to include the city and its citizens, we want to react on their needs. At the same time, we also address topics ourselves we regard as interesting. We kind of throw them in and look what happens." They strive for quite "radical innovations", though.

Besides the viral co-creation, thinkport Vienna focuses on using pre-existing infrastructure for new services for the city. Furthermore, the institution wants to deepen and improve the cooperation and collaboration between passenger transportation and freight transport.

"We want to include the city and its citizens, we want to react on their needs,"

Martin Posset, thinkport Vienna

A PATH WITH NUMEROUS DESTINATIONS

Interested in working in logistics? Austria has it all. OUTSTANDING! explores the reasons why should young people be motivated to enter a field that is often misunderstood, and looks at how we encourage them to do so?

If you would like to know how far logistics have already advanced in various fields, a great strating point would be to browse the course catalogue of Vienna's University of Natural Resources and Life Sciences (Boku). At this world famous institution, subjects such wildlife ecology, food science, and agricultural and nutrition science are taught. But you're probably more interested in the Institute of Production and Logistics.

Its director, Manfred Gronalt, talks about the goal: "That young people apply the 'multi-perspectivity' they have learned. Then they will also be able to work successfully in random thematically related disciplines."

In this spirit, at the Bokustudents also learn how to organise transport logistics and material flows in the timber and forestry industry, as well as how to optimise extramural nursing services, and how to make city logistics environmentally compatible.

The rapid digitalisation is unsettling as well as scary. Some professions will undoubtedly have disappeared in the coming decades, new ones will emerge. Logistics are, based on experience, not the first professional field that is on young people's mind after school. That may be because it does not even cross their mind, but the image of logistics is can be improved. In Austria, that's happening right now.

Six reasons

why it is worth following this path



1 Logistics are everywhere!

Our life is influenced permanently by logistics. More precisely, we all practise logistics ourselves. Even though we do not always notice it.

One characteristic logistics share with few other disciplines, is that the less you notice them, the better they work. The classic example is probably e-commerce, which has been experiencing fabulous growth rates for years. The less consumers are aware of the incredibly complex systems they trigger by placing a single order, the better the system is.

"Usually Amazon is one of the first companies that comes to your mind hearing the keyword 'logistics'," Gerald Reiner says. "For an Amazon customer the fast and inexpensive delivery of the products ordered is thereby an important criterion. However, it mostly remains unknown to the end customer which multitude of different logistics processes and coordination and planning tasks are necessary for an order and delivery."

Gerald Reiner, director of the Institute for Product Management at the Vienna University of Economics and Business and also of the Institute of Operations, Energy, and Environmental Management at the University of Klagenfurt, takes this example as one of the crucial arguments as to how he would make a corresponding education look tempting to young people: logistics processes are the basis for any kind of operational performance. Without operational performance there would be no added value, there would be no possibility to economise successfully.

The real challenge at Amazon is not the visible 'last mile', Gerald Reiner says, but the processes of internal logistics. Warehouse management, for example, inventory management, removal and packing processes, internal transport. "And thereby always new and exciting challenges arise, for example through the increased digitalisation and automation of these processes, through using robots for efficiency enhancement of the commissioning process.

If one starts an education in logistics, one also learns the complete opposite of an exotic subject: it is about a discipline which permeates and controls the entire modern economic life profoundly.

Fotolia

2 Logistics are diversity!



If you pursue an education in logistics, you open the not one door, but many. Behind each lies a different destiny. The choice is yours.

There is no company that can do without coordinating logistics. Strictly speaking, this concerns all sections of operating performance, starting with procurement through to production to distribution and beyond. Therefore, return flows are also getting more and more important. "So, all doors are open at all hierarchical levels," as Gerald Reiner says.

Logistical competences, Andreas Breinbauer reckons, are basically in demand everywhere. Breinbauer, rector of the FH BFI Vienna (The University of Applied Sciences BFI Vienna) and head of the study programmes Logistics and Transport Management, sees the typical graduates of his programmes settle down in the many different fields. In the logistics departments of industrial companies, in companies of the transport modes rail, road, air shipping and ship or in companies of logistics service providers.

"Logistics play a large role in many fields because it is a matter of meeting customer requests. And they are particularly taking more and more a key role related to online trade," he says.

Thinking of "transport" immediately when one hears "logistics" is only half the story. Especially in Austria, there is a range of internationally important companies which deal with intralogistics, robotics and related topics. It is an enormous variety that covers really different skills of the students. Whether interest in business administration, fondness of IT, social intelligence and competence, love of complexity or foreign languages: all these traits predestine a person to become a logistician.


3 Logisticians are in demand!

There is a shortage of logisticians in Austria – so the job opportunities are excellent.

In the media, the topic is mostly treated under the catchphrase "shortage of drivers", but for companies a hand-wringing search for logisticians takes place at all levels. Starting with truck and courier journeys through to auxiliaries, for instance for commissioning, to academic education with all its specialisations. Young people that start an education in logistics will most likely not experience a lack of offers.

The classic middle class is particularly affected in many places – most of all in regions where large concerns and well known brands graze the logistics job market. But there is also an eminent demand for logisticians at small and medium-sized companies across the country.

"Logistics play a large role in many fields because it is a matter of meeting customer requests. And they are particularly taking more and more a key role related to online trade,"

Andreas Breinbauer, FH of the BFI Vienna

"Logistics and the corresponding education have already been changing for a long time. The focus is on a holistic approach which goes far beyond the mere internal logistics processes."

Gerald Reiner, Vienna University of Economics and Business

4 Logistics are the future!

All technological developments are pointing in one direction: the profession of logisticians is definitely becoming more and more important.

Logistics rank among those few professional fields which will not be negatively affected by the upcoming changes at the job market. Andreas Breinbauer links this to the customer as a "moving target".

"Everything happens faster and faster and every product or service is supposed to be available immediately," he explains. "This means that the customer becomes more and more a moving target – at different times, in different places they want to place their orders immediately and receive them immediately at best. Everything that takes place in the background for it – this is logistics. In the future, logistics will therefore have greater significance, which everybody can already see with e-commerce." This means enormous chances for logisticians. "Of course, certain processes are automated due to digitalisation, but for planning and sustainably implementing complex logistics and supply chain processes, we need well-educated people."

Gerald Reiner points out that the professional field means more than coordinating transport or internal processes. Consistent "supply-chain thinking" is more and more in demand. "All cross-company processes along the entire value-added chain are relevant for the operating success of a company after all."

Everything that has emerged under the catchwords digitalisation and Industry 4.0. confirms Reiner's claim. In the future, new challenges will lie ahead of logistics, just due to the increased availability of information. Data along the entire supply chain will be available promptly – maybe even in real time. Due to automation, the digital transformation of processes and the networking of production facilities and other operating resources, new challenges for people and technology arise almost every day. At the same time, all processes are supposed to be arranged in a fast, efficient and sustainable way, which sometimes leads to conflicting goals. "The future supply chain managers can help solve exactly these conflicting goals," Gerald Reiner is convinced.

LBS Redl; Hafen Wien/feel image

5

Logistics: A practical education!

The different kinds of education are extremely close to practice – and they open doors to research.

One can argue well and extensively about the academisation of education. In the field of logistics this is not really an issue. There are hardly any fields where education is closer to practice, which may well be down to the density of corresponding offers in Austria where competing education and training establishments surpass each other with internships, co-operations with the industry and hands-on elements.

What's more is the close interdependence with research. When one starts an education in logistics, one has the opportunity to take part in countless research projects and to broaden one's horizon greatly in this direction as well.

Furthermore, Gerald Reiner points out a fundamental change: "Logistics and the corresponding education have already been changing for a long time. The focus is on a holistic approach which goes far beyond the mere internal logistics processes. Especially in the light of the better and better availability of accurate information and the associated growing importance of logistic processes, education in logistics has to focus increasingly on analysing and processing data. Only this way we can rise to the challenges of the future concerning education."

"People in logistics are responsible and solution-flexible in numerous occupations and positions. Let's use this for a quick, necessary progression!"

Franz Staberhofer, Logistikum Steyr.

6

Logistics are change!

Education in logistics does not only convey knowledge. At its best, it is a bearer of individual responsibility.

Students, Franz Staberhofer believes, are changing. The director of the Logistikum at the Campus Steyr of the University of Applied Sciences Upper Austria sees numerous tendencies: the wish to go to university in large cities; higher expectations concerning time management and local variability; the desire for online offers and different ways of information transfer – also visually. After all, he says, it is clear to the students that professional profiles and occupations can change frequently and greatly in professional life.

In his opinion this means: "The traditions of the way of studying will just not be apt anymore. These traditions are rooted in the people themselves who still live the lifelong commitment to their own competence development and sustainability far too little as their individual responsibility." The urgently required progress, Staberhofer says, will not be attainable by stereotypical analyses without a reflected conclusion in any case. "In co-operation, people's individual responsibility has to be central as the Austrian revolution. Then, at the latest, the suppliers will provide customer-oriented offers as well. It is a painful road to change, which will achieve something beautiful as a result."

For surmounting inhibiting traditions, for achieving real individual responsibility, the discipline of logistics just holds an excellent starting situation: "People in logistics are responsible and solution-flexible in numerous occupations and positions. Let's use this for a quick, necessary progression!"

Moni Fellner, Fotolia

THE AGONY OF CHOICE

If you want to learn about logistics in an academic environment, you face an enormous offer. An overview.

Given the increasing significance of the discipline, it is natural that the great universities of Vienna, Innsbruck, Linz or Graz treat the subject of logistics in the context of their economic fields of study. Beyond that there is a considerable abundance of specialised training.

1 FH Tirol Kufstein University of Applied Sciences

The FH Kufstein offers different kinds of education in the fields of economy, management and communication. In the context of the bachelor's programme Industrial Engineering there is a strong focus on supply chain and logistics management. www.fh-kufstein.ac.at

2 University of Klagenfurt (AAU)

The Institute of Operations, Energy, and Environmental Management at the University of Klagenfurt has its own Department of Product Management and Logistics. The entire range of logistics disciplines is covered in Klagenfurt as well. www.aau.at

3 FH Joanneum University of Applied Sciences

The master's course International Supply Management at the FH Joanneum in Kapfenberg conveys logistics knowledge to future purchasing managers: the focus is on the flows of information, material and value in contractor-customer relations. www.fh-joanneum.at

4 Montanuniversität Leoben

In Leoben the two chairs for economic sciences and business administration, as well as for industrial logistics, form a joint department. Industrial logistics stand for an interdisciplinary discipline which connects the individual disciplines with each other and which ensures effective as well as efficient material flows. www.unileoben.ac.at

5 University of Applied Sciences Upper Austria

The University of Applied Sciences Upper Austria has four campuses in total. Among other courses, the master's and bachelor's programmes for logistics take place in Steyr. Under the roof of the "Logistikum" the education and research in all fields of logistics management, supply chain management as well as traffic logistics & mobility take place. In light of the closeness to research, and the location in the country of industry Upper Austria, the education at the Logistikum is regarded as especially practice-oriented. www.fh-ooe.at, www.logistikum.at

ENOURMOUS OFFER Students can expect a large number of offers.

FH Kufstein: Focus on supply chain and logistics management

University of Klagenfurt (AAU): Entire range of logistics disciplines

FH Joanneum: Logistics knowledge for future purchasing managers

University of Applied Sciences Upper Austria: Practice-oriented "Logistikum"

Montanuniversität Leoben: Interdisciplinary industry logistics

Foto Alpen-Adria-Universität: aau/Daniel Waschnig

6 Graz University of Technology

The Institute of Technical Logistics of the Graz University of Technology sees itself as a link between science and practice. The traditional subjects of building and developing materials-handling and storage technology are combined with forward-looking subjects like digital planning and simulation, adaptive material flow technology and auto-ID technology with RFID and communication technologies.
www.tugraz.at

7 Vienna University of Economics and Business (WU)

The Vienna University of Economics and Business includes a large Institute of "Transport Economy and Logistics". In the context of the business administration studies if offers master's and bachelor's programmes on Transport Economy and Logistics, Supply Networks and Services as well as Supply Chain Management. Besides the teaching, the institute also permanently runs scientific and practice-oriented research projects on transport and logistics questions.
www.wu.ac.at

8 FH of the BFI Vienna

The University of Applied Sciences specialised in economics, management and finance offers a bachelor's and master's degree in Logistics and Transport Management. The subjects of education are Traffic and Transport, Statistics & Mathematics, Supply Chain Management, Economic Law, Rail, Road, Shipping and Air Traffic, Investment, Integrated Logistics, Emerging Markets, Leadership & Sustainability, Management & Entrepreneurship.
www.fh-vie.at

9 TU Wien

At the TU Wien logistics are, as a cross-sectional matter, resident at various institutes. Numerous lectures convey knowledge on Procurement and Production Logistics, Logistics Management, Technical Logistics, Transport Economics or Waste Management and Disposal Technology. The TU Wien also does intense research on logistics issues.
www.tuwien.ac.at

10 University of Natural Resources and Life Sciences

At the "BOKU Vienna", logistics is taught in its connection to bioenergy, forest and wood management, environmentally sustainable traffic, extramural care, and as food logistics.
boku.ac.at

Foto TU Wien: TU Wien/Thomas Blazina

Graz University of Technology: Link between science and practice

Vienna University of Economics and Business: "Transport Economy and Logistics"

FH of the BFI Vienna: Bachelor's and master's degree in logistics

TU Wien: Logistics as a cross-sectional matter at various institutes

„BOKU": Logistics in its connection to bioenergy or forest and wood management

FIRMLY ROOTED!

Austria is the home of numerous high-tech companies that are also hugely successful at exporting. But what is so special about it that even the biggest ones among them have maintained their ties with the country.

OUTSTANDING! has paid a visit to three companies which are closely linked to their location – and which are maybe for this very reason that successful.

Hart, Styria

The Knapp AG

The specialists for intralogistics, automation and software have been hugely successful in the past years.

Intralogistics solutions, automation, logistics software: the Knapp AG.

"We really like to be in Austria. There is very well-trained manpower and the quality of life is really high in the country."

Wolfgang Skrabitz, CEO Knapp Industry Solutions

The company has 40 locations and 4,200 employees all over the world and on almost all continents – however, the headquarters are, and will remain, in Hart near Graz. That Knapp AG – specialised in intralogistics solutions, automated storage systems and logistics software solutions – believes strongly in its location is demonstrated not least by its large investments there. An innovations centre is being built in Hart and its other two Austrian locations in Dobl and Leoben are being enlarged. The campus in Dobl near Graz was opened in September 2017 after a construction period of 12 months. At the moment there are 150 employees from different subsidiaries.

A KIND OF MAGNET

The investments in its own infrastructure make the above average increase in employees necessary – 300 new colleagues join the Knapp family every year, half of them at the headquarters near Graz.

"We really like to be in Austria. There is really well-trained manpower and the quality of life is really high in the country," Wolfgang Skrabitz, manager of Knapp Industry Solutions, says. The location probably also comes in useful regarding the skills shortage – as a kind of magnet: "A lot of employees from neighbouring countries join us as well."

For finding the right manpower and showing the prospects in the company to young people, Knapp definitely breaks new ground. Thus, for example, a planning office was opened at Lakeside Park in Klagenfurt.

The investments in its own location are also enabled by the fact that the past business year 2017/2018 has been the best financial year in the 65-year history of the company. The net revenue was increased by 12.3 per cent to 709.7 million euros, the profit by 29.8 per cent to 45.2 million euros and the order volume by 32 per cent to 962 million euros – numbers that speak for themselves, profits that put the focus on further new developments.

"THE CHILDREN DEVELOP WELL"

Especially in the times of digitalisation and booming e-commerce, solutions in the fields of automation and administration are in demand. Knapp has also enlarged its know-how through the participation and integration of other companies. Since autumn 2017 the company ISS-Automation has been majority owned by Knapp AG.

Further important knowledge about control and software solutions for the sorting of goods was thereby pooled. Some Knapp solutions are also used by start-ups. "And we also support start-ups ourselves," Skrabitz says proudly. "We have seen that these companies can develop well themselves as children of the mother companies."

NOT THINKING OF MOVING

However, despite the company's industry knowledge, it sees no reason to leave Hart – nobody is thinking of moving. "We stick with our responsibility towards Austria and our long-standing employees," Skrabitz states clearly. "All colleagues and customers worldwide appreciate Austria. The local proximity in America is important for them, of course, but they also like to come here." Especially because the innovative power of the company is centred at the headquarters, its distinctive feature in both in Europe and the rest of the world - its intelligence.

"Companies that have little complexity and little know-how are moving further and further away," Skrabitz says. "Precisely for this reason we have to concentrate on intelligent solutions which also comprise software and service."

Moni Fellner, Fotolia

Vienna

The Ottakringer Brauerei

The brewery in the heart of Vienna is more than a beer producer. Ottakringer is a reflection of its location in many ways.

Opened in 1837 under the name Planschke Brauerei, the historic brewery has been known by the name Ottakringer Brauerei for a long time. Vienna's oldest and Austria's most urban brewery matches its location thoroughly. After all, an important part of the production – the water – comes from exactly this place. "Our location is not without relevance for the beer production as we use water from the 'Ottakringer Tiefquell – our on-site brewing water well," says Matthias Ortner, manager of the Ottakringer Brauerei, explains.

The water is not only used for the entire brewing process including the bottling, but also for the cleaning. The existence of the well and its maintenance by Ottakringer is also important for the rest of the city – if water ran short in Vienna, the brewery would feed its well water into the city's water system.

AWARD-WINNING PIONEERS

Sustainability plays an important role for this company. In 2008 Ottakringer was the first brewery to be awarded with the AMA quality label, a seal which represents outstanding quality, traceable origins and independent controls. It has also received organic certifications from Austria Bio-Garantie as well as the EU organic logo for its certified organic beer. But other beers from this house are also talking points. In 1991 Null Komma Josef was Austria's first alcohol-free beer and Ottakringer Sechzehn has been certified vegan since 2018. There's also been a creative brewery for craft beers at the brewery premises since 2014.

THE LIFESTYLE OF THE CITY

Its urban location in the heart of bustling Vienna is the essence of Ottakringer. The brewery's manager, Ortner, thinks so too: "According to our corporate philosophy we opened up a major part of our brewery premises and turned them into an event location." The events can take place under the labels "Green Meeting" or "Green Event" – because the location has received the Austrian ecolabel. "We are the most urban brewery and we want people to experience this as well. Our mission is to make people feel the lifestyle of the city," he says.

Some 250,000 people visit the brewery every year, they take part in guided tours, beer tastings and brewing seminars. Matthias Ortner's personal highlight: "Our Braukultur-Wochen which have been visited by thousands of beer lovers every summer since 2013."

"A VIENNESE ORIGINAL"

Ottakringer has committed itself to sustainability by reducing CO2 emissions, by going easy on its water reserve, and by focusing on the reduction of packaging and energy consumption. In 2017 the company managed to cut the CO2 emissions from its production process by 2.3 per cent. By 2020, the goal is a further five per cent reduction. The company plans to achieve this through improvements to energy use, mobility and packing. In the field of delivery, it's focused on route optimisation and increased delivery quantities for every stop as a contribution to sustainability.

It's clear that its location is important to the company, not least because it can be found in the brand name. "We have been here in the heart of Ottakring for more than 180 years. And nothing will change about that," Ortner says. "Because we are a Viennese institution, a Viennese original and therefore a fixed part of the city."

"Turned a major part of the brewery into an event location": the Ottakringer Brauerei.

"We are the most urban brewery and we want people to experience this as well. Our mission is to make people feel the lifestyle of the city."

Matthias Ortner, manager Ottakringer Brauerei

Ottakringer Brauerei

Lenzing, Upper Austria

The Lenzing AG

Fibre manufacturer Lenzing may be a global manufacturer, but coming from the market town of Lenzing, it outdoes even the Ottakringer Brauerei when it comes to hometown branding loyalty. And not without reason.

„We feel really comfortable here“: Lenzing AG.

"Here, all our research and developing takes place and that is what makes this location so strong."

Stefan Doboczky, CEO Lenzing Group

Located in Upper Austria, and with a population of not quite 5,000, thanks to its most famous offspring, the town of Lenzing has exported its name to three different continents. For 80 years Lenzing has been producing fibres from wood, but its headquarters has never been relocated.

"We produce worldwide as our customers and partners can also be found worldwide. Like this we can keep our global footprint low," Stefan Doboczky, CEO of the Lenzing Group tells OUTSTANDING!, as he explains the numerous overseas subsidiaries abroad from York and to Jakarta, Singapore to Istanbul and Heiligenkreuz.

DOMESTIC WOOD

Almost half of the wood used by the company's Austrian production facilities, mostly beech, comes from domestic sources. The rest comes from neighbouring regions, such as Bavaria or the Czech Republic – because with wood one has to pay attention to logistics, and a short transport route is good and environmental protection is really important for the company.

This seems to pay off: "Lenzing is the only large producer of wood-based fibres in the western hemisphere," notes Doboczky. "All the others mostly had to shut down for lack of investments in environment protection."

These are several, quite large investments, though necessary for the company to not only exist but to work well. Thus, last year it expanded – without subsidies – in Heiligenkreuz in Burgenland, its second location in Austria. The decision to invest there was taken in the 1990s, "as we were searching for an Austrian leading company for the cross-border business park," Doboczky says.

"WE FEEL COMFORTABLE"

Even though the fibre manufacturer is well-positioned internationally, and it works with fashion brands all over the world, its centre will always be in the small name-giving town of Lenzing.

"We are very content with the location and feel really comfortable here," explains Doboczky. "Here, all our research and developing takes place and that is what makes this location so strong. Each first pilot product is made here, all employees we need for it are on site. The integrated production characterises our location and contributes significantly to cost efficiency."

Founded in 1938, Lenzing achieves an annual turnover of more than two billion euros and numbers some 6,000 employees today. Around 2,800 employees are located at the Upper Austrian headquarters, which is also its largest production site. Another 300 are located in Heiligenkreuz. Combined with a factory in the Czech Republic, 570,000 tonnes of cellulose are produced every year.

SUSTAINABLE BRANDS

70 per cent of Lenzing's produced wood fibres are used in textiles, 30 per cent in toiletries and cosmetic products, as well as in industrial and agricultural applications. They are biodegradable and fully compostable.

But the company is not resting on its laurels. "For decades we have been developing applications really intensely together with all customers and partners. We use the machines in Lenzing, Hongkong and Purwakarta that our customers and partners use as well, so as to test the usage of our fibres by our customers and partners and to develop it further together," Doboczky explains.

In 2014 a new production plant was added at the Upper Austrian location, after it had been tested successfully in Burgenland in the 1990s. "Through our daughter Lenzing Technik we build many of our machines ourselves," concludes Doboczky. Another proof of how content the company is with its location.

Lenzing AG

THE CONSEQUENCES OF CURIOSITY!

When it comes to logistics, Austria's dedication to research places it at the top of the international tree - tree has many branches.

OUTSTANDING! puts on its lumberjack shirt to bring you three of the finest fruits from three of the most promising branches as proof.

Fotolia, ÖBB/krischanz.zeiller, Fotolia

1 IN RANK AND FILE

Is truck platooning, the use of connectivity technology to link trucks travelling in convoy, really an alternative to make road transport more economical and more environmentally friendly? In Austria massive research on this subject is being conducted.

It is one of the largest research projects of the country and the list of partners of the BMVIT is accordingly long: technology companies, users from the public and economic field, researchers of various leading universities and research institutes. "Connecting Austria" will examine the effect of energy-efficient semi-automated truck platoons for three years.

Platooning, in which various wirelessly connected trucks are coupled, is one of the hot topics of current research in the field of road transport. If successful it could lead to distinct ecological and economic savings. The main goal of "Connecting Austria" is the evidence-based generation of evaluation bases for assessing the effects of energy-efficient semi-automated truck platoons. With it, the prerequisites are created to increase the competitiveness of Austria's leading industries such as logistics, suppliers of telematics infrastructure, automotive suppliers, vehicle development, and connected research.

"The lead project is internationally unique as it includes the infrastructure and parameterised traffic perspective of semi-automated truck platoons. It also considers traffic light controlled intersections before and after slip roads and motorway exits," project manager Wolfgang Schildorfer explains.

Bildtext: Can platooning help make road transport more ecological und economical?

> "The lead project is internationally unique."
>
> **Wolfgang Schildorfer, project manager Connecting Austria**

In the context of the project, four use cases about networked and semi-automated freight transport are treated and demonstrated: joining the motorway and forming a platoon; approaching a danger point; exiting the motorway; the platoon's crossing of a signalised intersection. For the purposes of the current research, a platoon consists of two or three trucks.

Within the framework of the project, test areas in the federal provinces of Salzburg, Upper Austria, and Vienna are planned. Researching the last mile consideration as far as the end customer in the city centre, as well as the consideration of automation at the goods distribution centre are not part of Connecting Austria. Completely driverless autonomous truck platoons will not be used in this context.

Four levels

"Connecting Austria" specifically comprises four levels of verifying and validating the results:

- **SIMULATION**
  Components and subsystems as well as their interaction in the vehicle, traffic and infrastructure overall system are tested with the help of comprehensive numerical simulations.
- **TESTS IN CLOSED ENVIRONMENT**
  Vehicle and infrastructure subsystems as well as their integration are tested in a closed area with project and cooperation partners participating.
- **CLOSED TESTS WITH INDIVIDUAL VEHICLES IN PUBLIC SPACE**
  Vehicle and infrastructure subsystems as well as their integration are tested on the road with project and cooperation partners participating.
- **OPEN TESTS WITH VEHICLES IN PUBLIC SPACES**
  Vehicle and infrastructure subsystems as well as their integration are tested in the context of public testing days on the road.

Scania CV AB

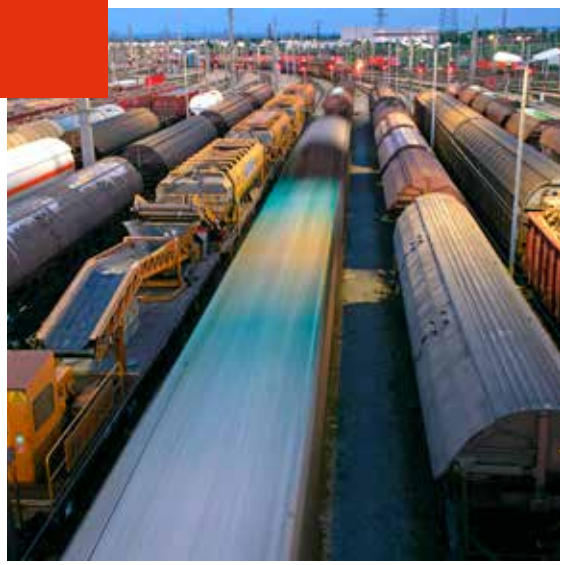
2

BACKING UP

The research project "Backbone PI: Rail" wants to enable proactive adjustment of capacities for the railway. And thereby support the shift to the rails.

What would a world of transport look like if the assets needed were already available in the right place, even before a transport order had been placed? That's exactly what the research project "Backbone PI: Rail" is working on: on proactive adjustment of capacities on the rail.

On the one hand, the background of this project is the increasing pressure on the rail. The traditional goods transported by rail are not decreasing, but they are losing proportionately against highly developed consumer goods, which have to be delivered faster and faster. At the same time, the Physical Internet is casting a longer and longer shadow: the sharing economy, synchromodality, intelligent containers that stack and unstack autonomously. All these aspects are usually negotiated in the context of road transport.



Assets available in the right place, even before a transport order has been placed: „Backbone PI: Rail".

"Backbone PI: Rail" wants to change this. The joint research project of Fraunhofer Austria Research, the Institute of Supply Change Management of the WU Wien, the Rail Cargo Group and the young Viennese AI company craftworks is supposed to prepare rail freight companies for both developments. It is also supposed to contribute to the shift of cargo from the road onto the rail.

"We want to shape the expected demand of different goods and service segments in one transport network. And we want to shape with which probability the right wagons can be made available in the right place," says Georg Brunthaller from Fraunhofer Austria Research explains.

The factor of probability will play a central role here, which means the question of which needs will arise, and with which probability. Therefore, the researchers will also take into consideration parameters such as the comparison of past prognoses and demands, weather data, or information on following traffic or waiting times in their models. Backbone PI: Rail will be finished in December 2020. And it is supposed to provide a very specific result.

"In the end there should actually be an algorithm which can be used for proactive adaption of capacities on the rails. It should also be proved that such a system can be economically feasible," says Brunthaller.

It would be a massive step towards making rail freight the backbone of transport in the setting of the Physical Internet.

"We want to shape with which probability the right wagons can be made available in the right place."

Georg Brunnthaller, project leader „Backbone PI: Rail"

In the right place

Fraunhofer Austria will assume the following tasks in he project:

- **Analysis of requirements concerning the rail transport system in the increasingly dynamic market environment of the Physical Internet;**
- **Development of an anticipative approach for proactive wagon planning and their timely supply;**
- **Continuous forecasting for the demand of wagons on various routes, and of the supply of wagons at the loading points in the international network;**
- **Dynamic deduction of actions through the comparison of the demand for and supply of wagons, as well as the identification of discrepancies;**
- **evaluation of economic and ecological added value due to greater competitiveness of the transport system rail.**

ÖBB/krischanz.zeiller

3

REDUCE TO THE MAX

Phenomena such as just-in-time, on demand or 24-hour delivery increasingly characterise business-to-business logistics.

Makes freight transport more sustainable and reducing it to the extent necessary: Smart Order & Delivery.

It's a catch twenty two: the customers' increasing demands lead to higher and higher frequencies of business-to-business deliveries. As the cycles of delivery are becoming shorter, new needs are created that did not exist originally.

For many products and shippers, as well as for the end customers, extremely short delivery times are basically not necessary. The development clearly has negative effects on the environment and the population, because while the performance of freight transport increases, the performance of the transport system itself does not. The real costs of delivery are mostly not visibly factored in, but hidden in retail prices or the prices of other products.

The project "Smart Order & Delivery" of the University of Applied Sciences Upper Austria, Campus Steyr, aims at making freight transport more sustainable and reducing it to the extent necessary. Through intelligent order strategies, the number of delivery tours is supposed to be reduced to a necessary quantity. As the approach of Smart Order & Delivery combines the fields of order and transport, it will be possible to combine anticipatory planning with short-term, spontaneous orders.

"The prerequisite is, however, that all parties involved in the supply chain of an industry pull together. This means that shippers, retailers and end customers have to bring their interests in line and commit jointly to traffic reduction in the form of a voluntary code of conduct," project manager Marike Kellermayr-Scheucher says.

"Smart Order & Delivery" is basically applicable to various fields of delivery and store logistics. In spatial terms the approach will also be transferable to regions of different sizes and structures. Smart Order & Delivery is developed and tested by the example of pharmaceutical logistics in Steyr, involving the UML/OÖ (MobiLab), two pharmacies from Steyr, a pharmacy in Oberwaltersdorf as an application partner, and two pharmaceutical wholesalers. Building on this, upscaling strategies will finally be deducted for other industries and regions.

"Shippers, retailers and end customers have to bring their interests in line and commit jointly to traffic reduction in the form of a voluntary code of conduct."

Marike Kellermayr-Scheucher, Projektleiterin SmartOrder&Delivery

Fotolia

YOUNG AND WILD!

The discipline of logistics is becoming more and more important – this is evident when you take the flourishing Austrian start-up scene as an example. Supported by a strong funding landscape, more and more young entrepreneurs are working on innovative solutions for intra and transport logistics.

Tapkey enables digital access to buildings, boxes, car boots – and anything else that is lockable.

Better Access: Tapkey

The Viennese start-up Tapkey provides a platform for smartphone-based access solutions. The combination of hardware and software allows users "keyless" access via Bluetooth Low Energy or NFC. Thanks to the corresponding app, the authorisations can be given and withdrawn dynamically at any time.

For logistics this system is exciting in two respects: companies which follow an asset-light philosophy can realise digital access by Tapkey so as to rent out areas via platforms in the case of insufficient occupancy. This applies to company headquarters as well as to logistics centres and storage places.

The system is also interesting for parcel and express services. Wherever addressees are difficult to find – think of construction sites, for example – delivery into boxes or even a car boot is possible. In the field of overnight delivery Tapkey saves the delivery agents huge bunches of keys – and enables very dynamic routing. Another development might play into the hands of the system as well. If the "last mile" developed towards white labelling under the pressure of particularly ecological requirements in the cities, dynamic solutions would also become necessary in the business-to-customer field.

Measuring on the fly: Cargometer

How big and how heavy is my cargo? A question that has relevant economic effects. According to empirical studies, more than 15 per cent of all loads in general cargo are priced wrongly due to inaccurate measured data. "Estimations" belong to the past.

Cargometer works with the help of high-tech MM3D sensors which are installed directly on the loading gates. When the lift truck drives through, the software determines the corresponding volume information immediately, and optionally also the weight of the load. Combined with the barcode scans, the collected data goes directly to the ERP of the company. The solution also has an ecological component. Due to the exact information on load volumes an optimised utilisation of trucks is also possible. The solution which has received numerous awards is already used by three of the European top five logistics groups

Volume measurement on the move: Cargometer enables the scan directly at the loading gate.

Tapkey; Cargometer/Johann Ployer

Provides professional logistics for small and medium-sized e-commerce businesses as well: byrd.

Accurate text recognition without server access: Anyline relies on AI.

Fulfilment for small and medium-sized companies: Byrd

Can small and medium-sized e-commerce enterprises handle professional logistics as well? That's exactly what the start-up byrd offers to SMEs: a comprehensive fulfilment solution which covers all steps of e-commerce logistics. Starting with warehousing, including real-time stock information, tracking, and statistics, byrd assumes the compilation of the order, the packaging suitable for transportation, and also provides the individual branding of the delivery.

Customers of byrd can ship worldwide, including customs clearance and all formalities. byrd's own algorithm makes sure that in each case the suitable and cheapest shipping partner is chosen for every delivery. To top it off, byrd assumes the returns management as well.

Preconceived interfaces to integrators such as Amazon, Magento, Shopify or Shopware allow the smooth integration of the software in existing e-commerce shop systems. byrd is already represented in Austria and Germany with six logistics centres.

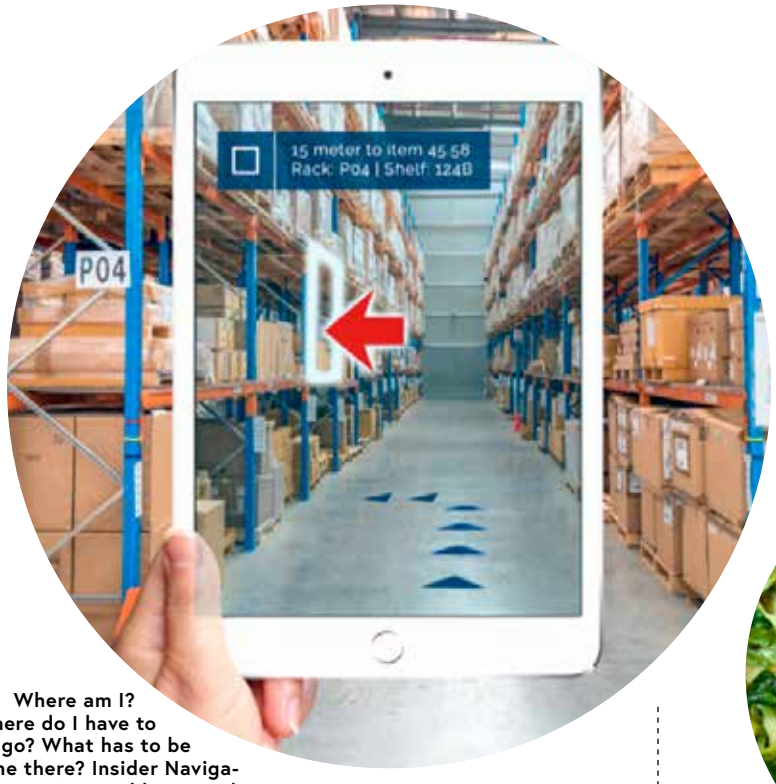
Read everything with AI Anyline

The police in Austria use the system for capturing number plates and IDs and power utilities use it for reading electricity metres accurately. Anyline is a software component of smartphone apps for text recognition, Optical Character Recognition.

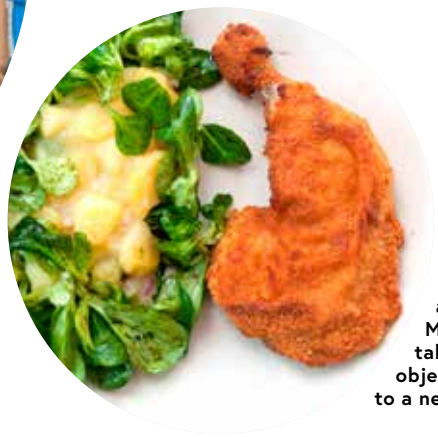
But what's special about it? Anyline works offline and in real time, so it does not have to fall back on servers and it therefore works where there is no mobile reception. In order to enable this, the system is based on learning neuronal networks that are trained by self-written tools.

The bridge to logistics is the next step that is planned by the Viennese AI business. Anyline is basically not a start-up any more, but the approach towards logistics is new. The company also wants to apply its system, step by step, to hardware other than smartphones too - for example, to fixed cameras. In the near future it might be possible to use the tool in distribution centres for capturing information on parcel's speeding past in real time, or for capturing the serial numbers of containers on a passing train.

byrd, Anyline



Where am I? Where do I have to go? What has to be done there? Insider Navigation enables countless applications.



From automated registering to industrial application: MoonVision takes real-time object recognition to a new level.

Location in rooms
Insider Navigation

The smooth production at the Volkswagen-Werk in Saxon Zwickau also benefits from the ingenuity of an Austrian start-up. The lift trucks are equipped with tablets which display information for the driver. Where do they have to drive exactly? And how far is it? What has to be done there? And when is the action completed successfully?

The Insider Navigation system translates rooms into data, and thereby makes them digitally recognisable. Interfaces connect it with external systems such as SAP, Oracle or the WMS. Insider Navigation is basically independent of hardware producers and operating systems, it works on Windows, Android, iOS and Linux.

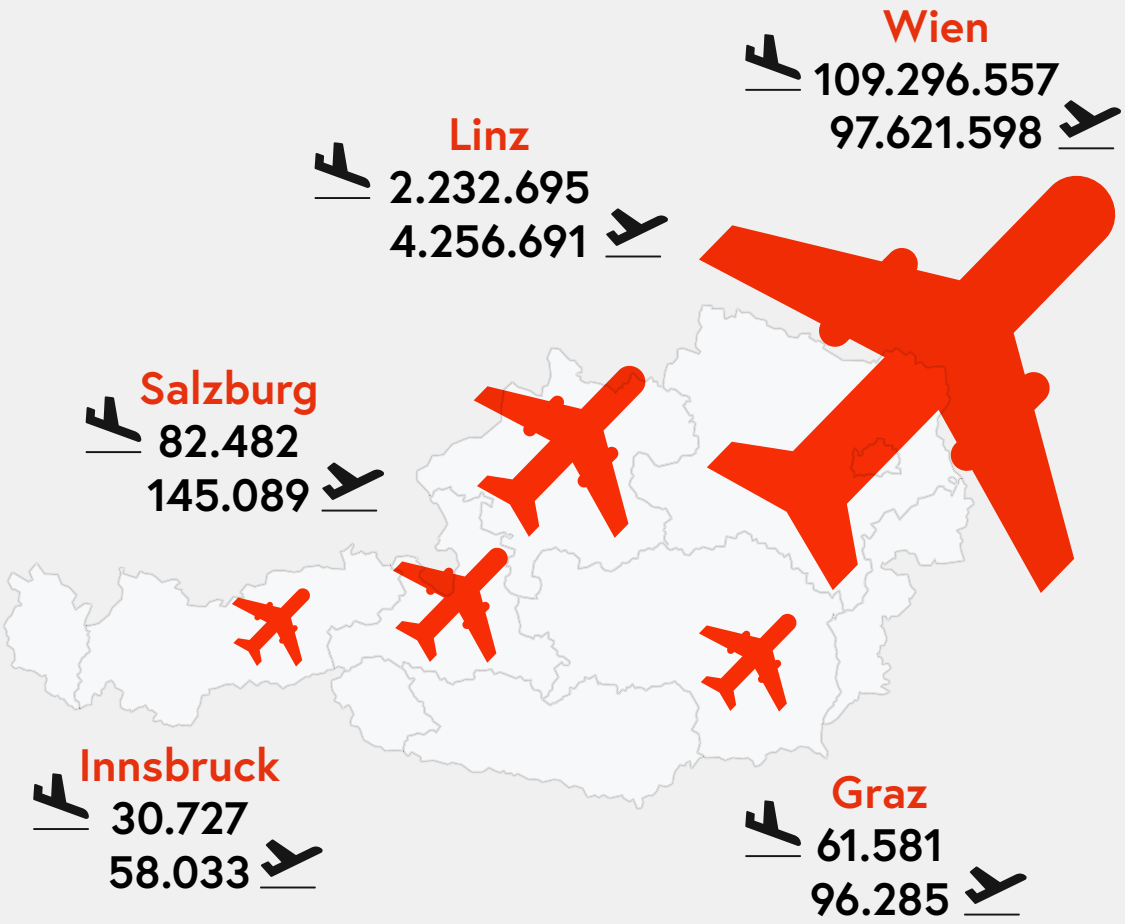
The applications of Insider Navigation are almost limitless, be it creating a floor plan for a fair, monitoring environmental parameters, inspection, maintenance, indoor navigation, or even automated driving.

See and understand
MoonVision

When MoonVision made sure that the fried chicken and the litres of beer were recognised automatically (and thereby registered) at the Munich Beer Festival, it caused a sensation overnight. The beginning of the Viennese specialist for real-time object recognition lies in the industrial sector, however. In 2016 the later founders of MoonVision won the Audi Smart Factory Hackathon and decided to develop a business model from the real-time object tracking technology.

The fact that the MoonVision technology cannot only see, but also identify due to artificial intelligence, makes the self-learning system interesting for many applications – basically any where the precision and endurance of the human eye are not sufficient. For example, the surface examination or wear control of machines. The recorded data for their part can control the processes or machines. What is also special about MoonVision is that no expensive equipment is necessary for installation, and no programming skills are needed for application.

Insider Navigation, Fotolia



Aerial views

Austria's airports handle about 235,000 tonnes of freight per year.

About 112,000 tonnes of cargo arrive in Austria by air every year, almost as much leaves us. Another 20,000 tonnes pass through in transit, and some 14,000 tonnes of mail can be added.

The Wien-Schwechat airport accounts for a major part that, but four smaller airports in Graz, Innsbruck, Linz and Salzburg also facilitate Austria's excellent performance in the air.

Commercial air transport at Austria's airports, data for 2017. Source: Statistik Austria

WE STAND OUT. WORLDWIDE!

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The goals of AUSTRIAN LOGISTICS benefit all partners.

To highlight the outstanding accomplishments in the discipline of logistics in Austria.

To jointly communicate a uniform image of the discipline of logistics.

To increase the national and international visibility of Austrian logistics among decision-makers from politics, industry, commerce as well as services and the entire public.

To strengthen the cooperation, exchange of knowledge and experience between the stakeholders.

Point out and raise awareness for important subjects within the discipline of logistics.

To make occupational profiles in the discipline of logistics more attractive and support forward-looking education and training.

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