



★★★★★  
5 Star Airport

# SHAPING THE FUTURE

Munich Airport  
Integrated Report 2018

Living ideas – Connecting lives

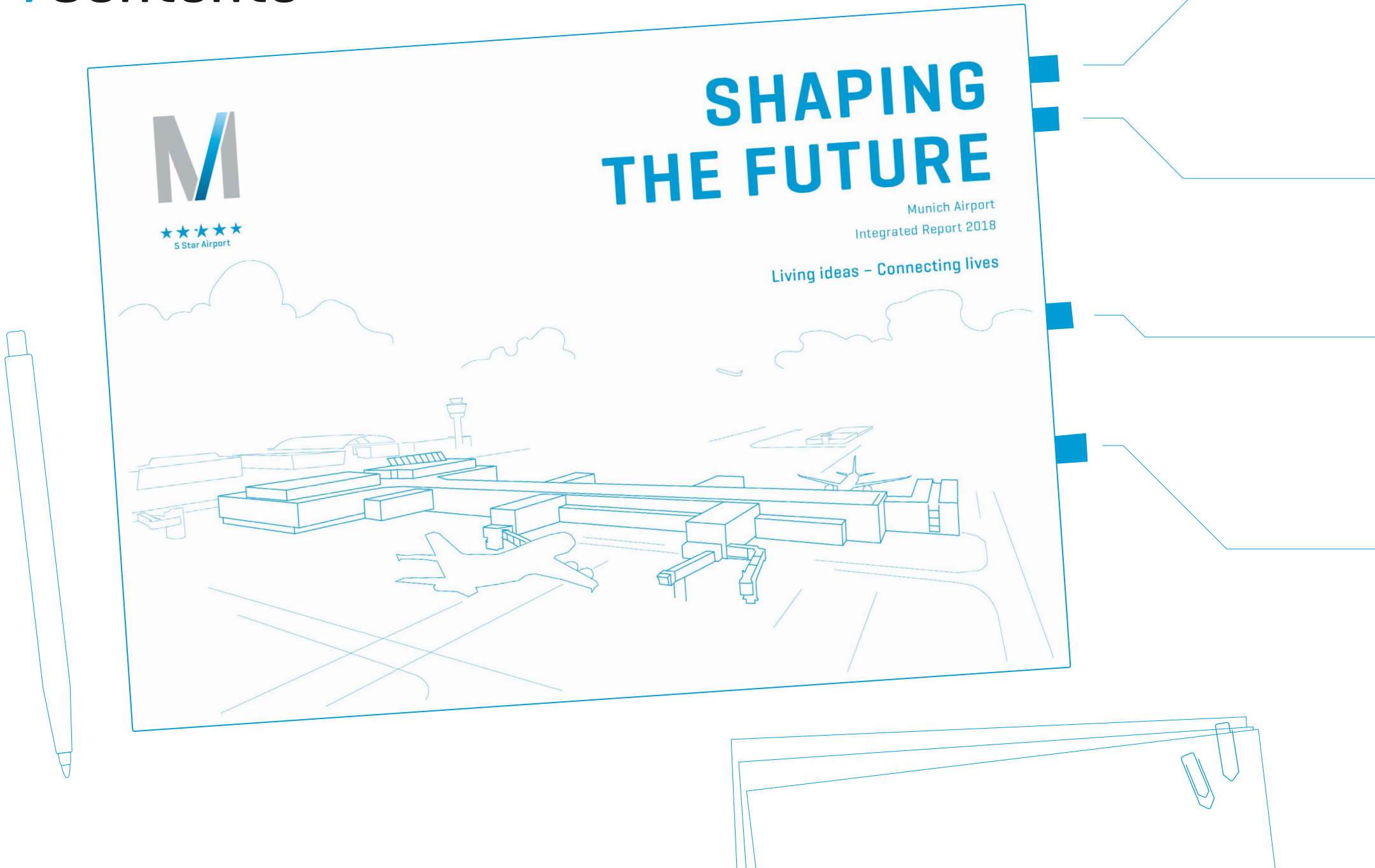




# Shaping the future

Anyone wanting to succeed cannot rest on their achievements when it comes to development. Munich Airport is already preparing for future challenges by purposefully expanding its infrastructure, by adapting its HR strategy to suit demographic change, and by implementing intelligent digital solutions. With this approach, the airport is shaping its future.

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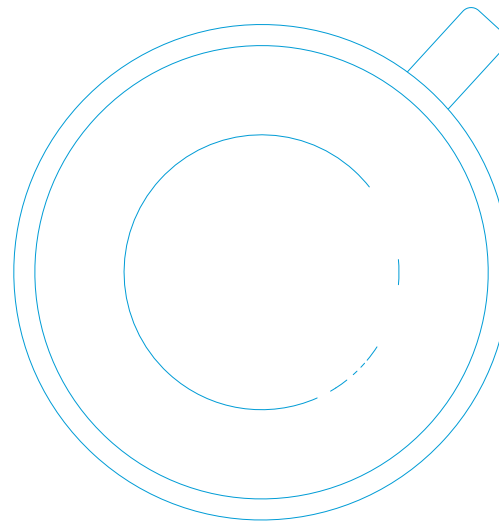
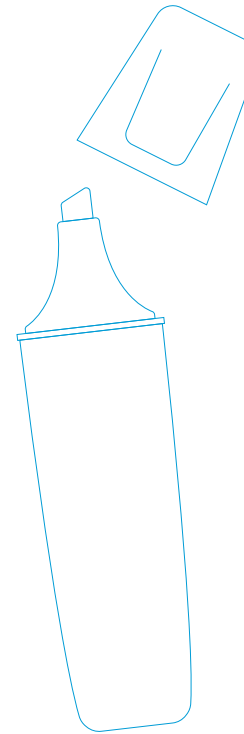
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# /Key figures

## Key economic figures

### Results of operations, net assets, and financial position

In € million	2018	2017	2016	Change in % 2018/17
Group revenue	1,508.8	1,468.7	1,364.1	2.7
Of which Aviation in %	54	54	53	
Of which Non-Aviation in %	46	46	47	
EBITDA	538.1	520.0	529.0	3.5
EBIT	322.2	302.4	289.9	6.6
Consolidated earnings after taxes [EAT]	148.7	158.8	151.6	-6.4
EBITDA margin in %	35.7	35.4	38.8	
EBITDA/Pax in €	11.6	11.7	12.5	-0.9
EBIT margin in %	21.4	20.6	21.3	
ROCE <sup>1)</sup> in %	7.4	6.9	6.6	
Cash flow from operating activities	468.3	381.9	528.8	22.6
Investments	204.7	136.3	274.9	50.1
Free cash flow	271.7	265.2	257.0	2.5
Equity	2,212.5	2,086.3	1,942.9	6.1
Equity ratio in %	41.3	39.3	37.1	
Net debt	2,079.4	2,221.5	2,393.0	-6.4
Net debt/EBITDA	3.9	4.3	4.5	
Net gearing (net debt/equity) in %	94	106	123	

<sup>1)</sup> ROCE = EBIT/(equity + net debt + ongoing employee benefits).

Airport at a glance  
Key figures

## Key environmental figures

### CO<sub>2</sub> emissions

In tonnes	2018	2017	2016	Change in % 2018/17
Direct emissions Scope 1	87,341	88,668	85,262	-1.5
Indirect emissions Scope 2	15,045	17,237	16,329	-12.7
Other indirect emissions Scope 3	47,719	46,154	49,024	3.4
<b>Total annual CO<sub>2</sub> emissions open to influence</b>	<b>150,105</b>	<b>152,059</b>	<b>150,614</b>	<b>-1.3</b>

### Specific CO<sub>2</sub> emissions

In kilograms	2018	2017	2016	Change in % 2018/17
CO <sub>2</sub> emissions per passenger	3.24	3.41	3.56	-4.7%

### Drinking water and wastewater

In cubic meters	2018	2017	2016	Change in % 2018/17
Volume of purchased drinking water	986,580	1,016,708	1,050,791	-3.0
Drinking water consumption per 1,000 TU <sup>1)</sup>	19.8	21.0	23.0	-5.7
Total wastewater discharged	2,404,292	2,336,314	2,278,602	2.9
Wastewater per 1,000 TU <sup>1)</sup>	48.2	48.3	49.8	0.2

<sup>1)</sup> Traffic units.

## Key social figures

### Employee structure<sup>1)</sup>

Number	2018	2017	2016	Change in % 2018/17
Total	9,626	9,413	8,502	2.3
Women in %	33.14	33.47	33.39	-1.0
Men in %	66.86	66.53	66.61	0.5
Full-time in %	79.75	76.07	80.30	4.8
Part-time in %	20.25	23.93	19.70	-15.4
< 30 years in %	15.92	16.11	16.48	-1.2
30-50 years in %	52.17	53.26	53.05	-2.1
> 50 years in %	31.91	30.64	30.48	4.1

<sup>1)</sup> Reporting date: December 31: Figures exclude apprentices, workers in minor employment, temporary workers, and interns.

### Apprentices

Number	2018	2017	2016	Change in % 2018/17
Total	277	275	274	0.7

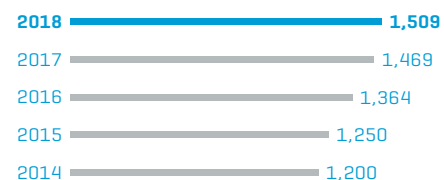
### Occupational health and safety

Number	2018	2017	2016	Change in % 2018/17
Reportable occupational accidents	231	225	195	2.7
Resulting days of absence	5,820	5,761	4,331	1.02
Rate per 1,000 workers	26.55	26.42	24.50	0.5

## Key operating figures

### Revenue

In € million

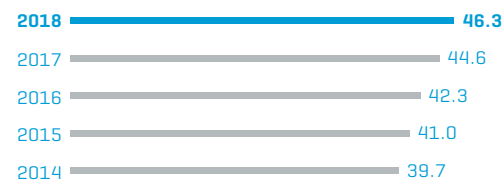


- In 2018, Munich Airport increased revenue by 2.7 percent to around € 1.51 billion.
- In terms of revenue from airport charges, passenger and landing charges made the largest contribution to growth in revenue.

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### Passengers

In millions



- In 2018, the passenger figures rose by just under 1.7 million, or 4 percent, to a new peak of 46.3 million.
- With that, the annual passenger volume at Munich Airport has already more than doubled since the turn of the century.

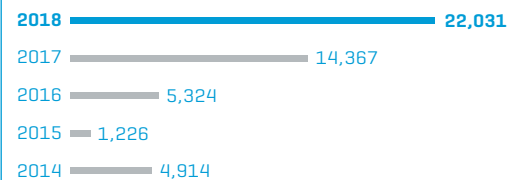
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## Key management figures

Munich Airport has defined three key performance indicators to measure the development of the company. These key performance indicators are a measure of doing business in a sustainable and integrated manner and influence the variable remuneration components for managers.

### CO<sub>2</sub> reductions

In tonnes

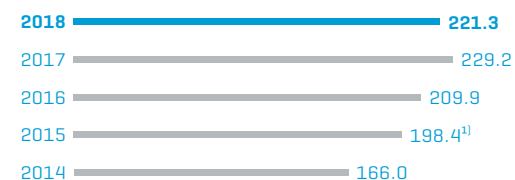


- Munich Airport wants to be the first carbon-neutral airport in Germany by 2030.
- The objective for 2018 was clearly exceeded with this result.

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### Consolidated earnings before taxes (EBT)

In € million



- The consolidated earnings before taxes fell a little less than expected in 2018, by just 3.5 percent.
- The anticipated result was thus exceeded.

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<sup>1)</sup> Value adjusted in accordance with IAS 8

### Passenger experience index (PEI)

In percent



- Since 2017, the Passenger experience index (PEI) has replaced the Airport Service Quality value as a non-financial key performance indicator.
- In 2018, an indicator was used as a target value that differs from 2017.

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# /Letter from the Executive Board

*Dear Reader,*

From left to right

**Dr. Michael Kerkloh**

President and Chief Executive Officer,  
Personnel Industrial Relations Director

**Andrea Gebbeken**

Chief Commercial and  
Security Officer

**Thomas Weyer**

Chief Financial Officer and  
Chief Infrastructure Officer

I am delighted to report that Munich Airport has once again achieved positive results in the fiscal year just ended. With revenue of a good 1.5 billion euros, we generated around 2.7 percent more in 2018 than in the previous year. While earnings before tax (EBT) are down by around 3.5 percent to just over 221 million euros, this was due to the major investment projects underway in the area of maintaining and expanding our infrastructure; projects which will equip Munich Airport for the future.

The traffic figures have likewise been very positive: 46.3 million passengers flew from or to Munich in 2018, 1.7 million or 3.8 percent more than in the previous year – a new record. Despite Transavia Airlines pulling out of Munich, and Air Berlin ceasing operations completely, the number of aircraft movements rose to more than 413,000 take-offs and landings, 2.2 percent more than in 2017. This also means, however, that the two-runway system is being stretched to its limit.

Construction of the planned third runway can no longer be pursued at present following the agreement reached last autumn between the ruling coalition parties, the CSU and Freien Wähler (Free Voters), to impose a five-year moratorium. The capacity bottlenecks already being experienced will consequently be tightened in the coming years. Airlines will therefore find it increasingly difficult to offer additional flights from and to Munich, and to meet the rising demand for mobility from both the general public and the business community in Bavaria.

The company is currently broadening its position and developing new fields of business. Increasingly, we are offering our expertise in the area of relocation, planning, construction, and operation to other airports worldwide. Our subsidiary Munich Airport International GmbH is currently very active in the U.S. At the same time, with LabCampus, an innovation center is being created in the west of the airport premises, on an area measuring 500,000 square meters, that will initiate cross-sector, technological developments and be an international meeting point for renowned companies, start-ups, and research facilities. Our new company headquarters is to be built there.

## Facing new challenges

This year's integrated report is very deliberately focused on the topic of «shaping the future». With that we want to show that we are actively engaging with the three major challenges currently facing Munich Airport: the need to expand our infrastructure, the generational change, and the megatrend that is digitalization. Each of these challenges also brings with it opportunities. We have therefore introduced a range of measures to utilize these:

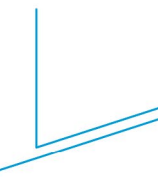
- We are investing massively in our infrastructure. Terminal 1 has been showing its age, so we are renovating and expanding it. Planning approval was granted in 2018 and construction works already started on the apron in April this year. A new, attractive passenger handling area with a pier for up to twelve aircraft will be completed here by 2023.
- We are making increasing use of digital solutions for new services. The key phrase here is ensuring as seamless a journey as possible. We want to serve air passengers an attractive offering along the entire travel chain. Useful applications for smartphones, and test runs with artificial intelligence are just a few examples of the digital solutions that FMG is currently exploring.
- We are also responding to the generational change. Many experienced colleagues who have helped to make the airport what it is today will be retiring in the coming years. As a result, we, as an employer, will be stepping up our recruitment of young employees, who will bring new values and expectations. That Munich Airport once again numbers among the 20 best employers in Germany is a strong testament to our HR policy.

As you can see, there is a lot going on. We will be doing everything to ensure that our airport retains its 5-star quality level. We are confidently building the future of our company on the foundations of our strong economic position.

To finish, I would like to thank most sincerely everyone who contributed to our success: the airlines, the passengers, our business partners, shareholders, and most especially our employees. Together with you, we want to shape the future at Munich Airport.



Dr. Michael Kerkloh



Creating a new  
location for  
innovation



# / Integrated reporting

## Integrated thinking, responsible action

Integrated thinking has been a matter of course at Munich Airport for many years now. The Group increasingly makes its strategic decisions, following consideration of all material resources: finances, employees, expertise, environment, infrastructure, and society. This sustainable management approach requires the networking of various divisions – and thus agility and efficiency – within the company.

Integrated action as a logical continuation of integrated thinking starts with the identification of key performance indicators that serve as the basis for the operative and strategic alignment. Ultimately higher quality decisions become evident leading to sustainable company success.

Integrated thinking and action also form the basis for integrated reporting. This offers an holistic and farsighted description of the business activity of a company. This year's integrated report is

Munich Airport's ninth; an annual balance sheet of its responsible activities, in the form of a comprehensive online version and an abridged print version. In terms of its integrated reporting, Munich Airport is guided by the framework concept of the International Integrated Reporting Council (IIRC) and shows the key activities with which it is creating its short-, medium-, and long-term financial and non-financial value.

## Creating value

As part of its day-to-day business, every company has an impact on a wide array of stakeholders, as well as on internal and external factors. In order to present these qualitative and quantitative interactions of the business model, Munich Airport has defined for itself the six forms of capital of the IIRC, which represent the basis of its business activity. Using the changes in the forms of capital, the airport can demonstrate key cause-and-effect relationships as well as value added and impairment.



## The six forms of capital

### Finances €

Solid funding forms the basis for Munich Airport's long-term earnings power, profitability, and financial stability.

### Infrastructure 🏗️

The wide range of services offered by Munich Airport is reliant on building and transport infrastructure that works and that taps into and makes the most of existing space.

### Expertise 💡

Munich Airport has acquired great deal of expertise – from technical, process-based, and organizational knowledge called upon in consultancy projects worldwide; through to copyrights for airport software.

### Employees 👥

Employees are critical for the success of a company. Consequently, the airport is particularly diligent about meeting its obligations as an employer.

### Environment 🌳

As the operator of a major piece of infrastructure, Munich Airport is aware of its responsibility to the environment. The aim is to keep its impact on nature and the environment to a minimum.

### Society 🗣️

Good cooperation with the region is essential if Munich Airport is to succeed, with open and honest dialog with the surrounding communities playing a key role.



# /Business model

In the four business units, different products and services are generated [output]. The value added process is based on six forms of capital [input], that the airport uses to generate new values. This is the basis for the next fiscal year [outcome].

## Input

### Finances

- Cash and cash equivalents: € 164.6 million [of which € 6.6 million was freely available funds and € 158.0 million was short-term deposits with banks]
- Loan portfolio: € 2,024.1 million
- Equity: € 2,086.2 million

### Infrastructure

- Buildings/spaces: terminals, commercial areas, office/technical building, parking structures, MAC, AirSites, hotels, two runways
- Transport links: autobahn access, two suburban train lines, regional and long-distance bus links [via «Neufahrner Kurve»]

### Expertise

- Qualification: in-house professional development center «Airport Academy»
- Off-campus: expertise in ORAT issues [Operational Readiness and Airport Transfer]
- Quality/innovation: InnovationPilot, passenger feedback

### Employees

- Employees: 9,903 employees<sup>1)</sup> in the Group
- Employer: personnel expenses of € 299.3 million in FMG
- Training/HR development: 20 apprenticeships and dual study courses, € 3.2 million of an external FMG further training budget

### Environment

- Climate protection: carbon-neutral airport by 2030
- Resources: waste management concept, de-icer treatment
- Noise protection: strict night-flight curfew, aircraft noise monitoring at 16 fixed stations, additional voluntary mobile measurements

### Society

- Stakeholder: transparent dialog through a wide range of channels, at European, national, and regional level as well as in Munich, membership in associations
- Value added: positive effects for the region
- Community engagement: support for more than 750 projects in the region

## Business Unit

### Aviation

is our traditional core business and covers all services related to the correct handling of air travel at Munich Airport.

### Commercial Activities

covers the commercialization of the spaces in and around the terminals. FMG, and its subsidiaries Allresto and eurotrade, market commercial and catering space by issuing leases and franchising.

### Real Estate

develops, runs, and markets all real estate on the airport campus, the terminals, public transport facilities, surrounding real estate, and ecological compensation areas.

### Participations, Services & External Business

deals with landside and airside services related to aircraft, passenger, and freight handling, looks after checks and security services, and provides consultancy services.

<sup>1)</sup> Including apprentices.

## Output

### Aviation

- Take-off and landing runway system
- Looking after airline customers
- Flight scheduling

### Real Estate

- Real estate development
- Real estate marketing
- Civil engineering and infrastructure
- Landscape design

### Commercial Activities

- Shops
- Parking
- Catering
- Advertising and Events

### Participations, Services & External Business

- Ground Handling
- Aircraft, passenger, and freight handling
- International consultancy

## Outcome

- Group revenue for 2018: € 1,508.8 million
- Cash and cash equivalents increased to a total of € 221.8 million
- Loan portfolio reduced to € 1,911.6 million
- Equity increased by € 126.3 million to € 2,212.5 million
- Buildings/spaces: Completion/acquisition of the new real estate office building
- Transport links: since December 2018, direct regional train connection to eastern Bavaria via the «Neufahrner Kurve», start of construction work on the railway tunnel for the «Erdinger Ringschluss», car sharing offers
- Qualification: more than 38,000 training days in the TÜV-certified [German Technical Inspection Authority] Airport Academy
- Off-campus: 16 active international projects 2018
- Quality/innovation: 604 submitted ideas, new digital offers for passengers
- Employees: low turnover rate of 3.8 percent in FMG
- Employer: social services, support for women in management positions
- Apprenticeship/HR development: in total 277 apprentices in the Group, 97 new apprentices in 2018, around 16 further training hours per employee
- Climate protection: 43 percent reduction in CO<sub>2</sub> emissions per passenger since 2005
- Resources: 5.7 percent drop in drinking water consumption, around 57 percent recycling rate for de-icer
- Noise protection: 71 percent of the permitted noise level at night is used
- Stakeholder: 225,000 fans and subscribers on social media
- Value creation: large income tax, local trade tax, and social insurance payments; in 2018 total Group procurement stood at around € 750 million
- Community engagement: increased acceptance in the region



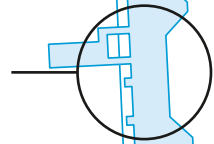
# Measures for value creation

**Node West 0** Construction of another bridge over the Zentralallee to relieve the burden on the existing «Node West 1»

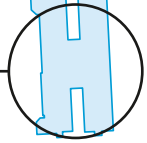


**Investments** in maintaining and expanding airport infrastructure in the amount of € 204.6 million

**Occupational health and safety** Ergonomic design of work stations through innovative lifting aids in the baggage transportation system in Terminal 1



**E-mobility** Expansion of charging infrastructure and procurement of other electric vehicles



- € Finances
- Infrastructure
- Expertise
- Employees
- Environment
- Society

Airport at a glance  
Business model

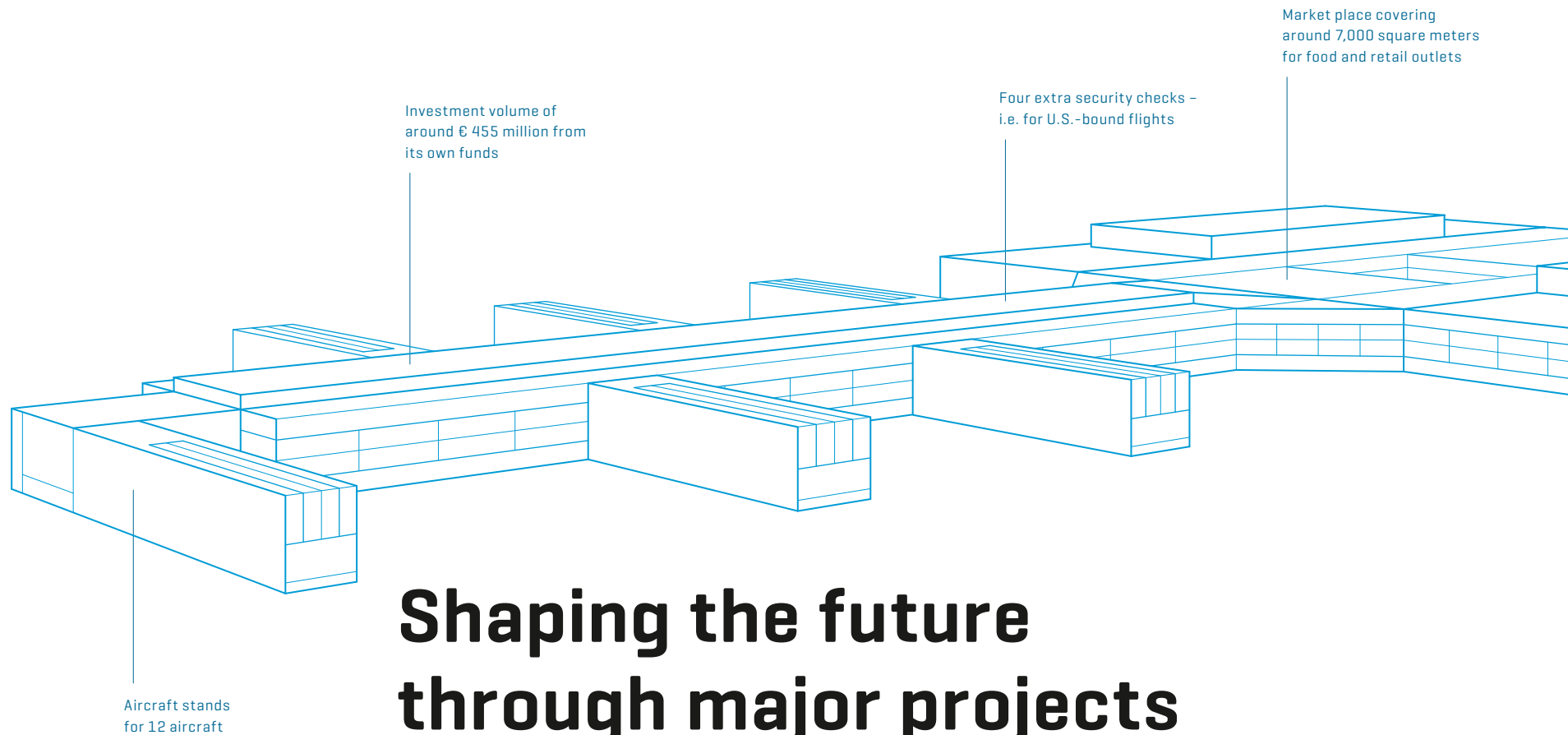
**Dialog** Maintaining and intensifying regional dialog through regular discussions with stakeholders, for example through information events and the regional reception



**Digitalization** Design and realization of new technologies for passenger information and management, and a targeted sales approach

## Further measures

- Finances: distribution of € 30.0 million from the 2017 consolidated profit to the shareholders in accordance with their shareholdings
- Buildings/spaces: procurement of affordable living space for employees
- Buildings/spaces: further development of the urban concept and implementation of building measures for the LabCampus
- Climate protection: increased use of renewable energy from photovoltaic systems
- Quality/innovation: further development of the quality and service offensive [5-star program]
- Off-campus: establishment of sales organizations
- Employer: medium-term management of future personnel requirements and derivation of suitable measures in the demographics program for the future
- Community engagement: continuation of sponsorship agreements and intensive dialog with partners



# Shaping the future through major projects

In order to continue its success story into the future, Munich Airport has started work on a number of building sites.

The expansion of Terminal 1 was given the green light in 2018. Construction vehicles have been preparing the ground since April 2019. The terminal is to have an additional pier with a central terminal building. While this project is the largest investment in

financial terms, it is only one of several strategic projects, with which the airport aims to meet the challenges of the future: to secure its existing business and open up new fields.





With six wide-body stands, the new pier offers even more space for large aircraft.



Construction works started on the western apron in early March 2019.

At around

# € 455 million

the expansion of Terminal 1 is currently the single largest investment in the airport's future.

## Queues in Terminal 1 will be the exception in the future

It is shortly after midday on an ordinary Wednesday in January at Munich Airport. The Christmas holidays are over, and there is still a good while to go before carnival. A queue has formed in front of the entrance to departure area B and passport control; the display tells passengers that the waiting time is more than 15 minutes. A family of four from Bahrain are starting to get nervous. They are due to fly on the Emirates afternoon flight to Dubai and have barely an hour left before departure. Fortunately, a service employee approaches them quickly. He sends them over to departure area C, where the security checkpoints are all free; «same way to the gates», he says. Patiently, he repeats this information for all newly arriving passengers. Some hesitate, like the two young men who are not yet familiar with the new extra security checkpoint area upstairs in Terminal 1. More than 25 years after it opened, Terminal 1 now has insufficient capacity for today's requirements and is thus set to be modernized, renovated, and expanded.

The man who will build the newest structure at the airport is sitting in one of the oldest buildings. Nestled cheek by jowl with the chic annex of the Hilton hotel are three simple, two-story office buildings that date from the end of the 1980s when the airport was built. Michael Hiss smiles at this observation: «The shoemaker's son always goes barefoot. What is important is what the shoes he makes look like.» It is barely three years since the 47-year old Frankfurt native and client representative in charge handed over Terminal 2's new satellite building – on time and on budget.



## New pier to meet increased requirements

Now, another major project awaits him and his colleagues at the newly established subsidiary, Flughafen München Realisierungsgesellschaft mbH. With a budget of over € 450 million, this project constitutes Munich Airport's most important investment in its own future. Over the next four years, Hiss, his approximately 50 employees and numerous construction firms will build a new pier for twelve aircraft at

Terminal 1 as well as a new check-in building for passengers, encompassing a total floor area of 95,000 square meters. The new complex will be built along the front of Terminal 1 and project 320 meters into the current apron. In the current arrival area B, the existing building will be completely gutted and redesigned. Then the public area will advance to where the current building edge meets the apron, becoming the

central entrance to the new departures area for all flights to non-Schengen countries. In future, the entire northern part of the terminal including the new building will be reserved for flights to these countries with regular passport controls; the entire southern part, which will also be modernized and redesigned – thus the current areas C and D –, will be reserved for flights to Schengen countries, without passport control.



Passenger capacities in Terminal 1 can increase by around six million per year to some 21 million – with a simultaneous increase in quality.

## Sustainable building

One objective that Munich Airport is pursuing with the expansion of Terminal 1, as with all of its construction measures, is the principle of sustainable building. The aim here is to ensure that the impact on the environment from the construction work itself and then from the subsequent operation of the building is minimal in terms of how resources, water, and energy are consumed. Even though environmental improvements may initially require additional investment, these frequently prove to be economically sustainable as well, as the long-term operating costs fall when, for example, less energy is consumed. This applies particularly for buildings such as Terminal 1, which is now nearly 30 years old.

## More space thanks to the expansion

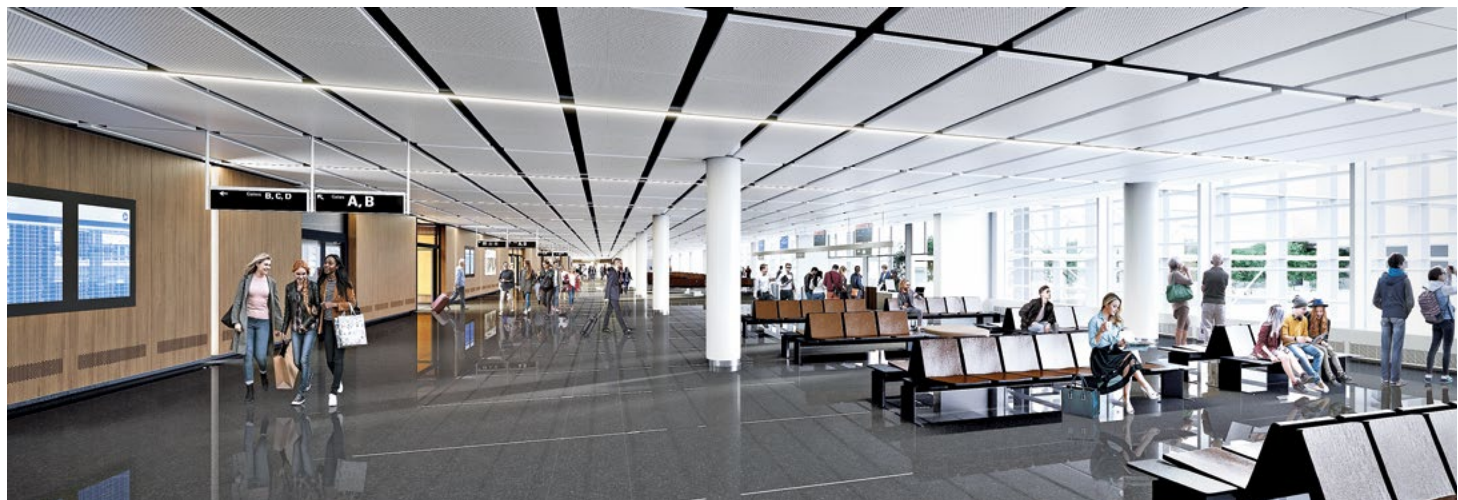
The start of construction brings to an end almost five years of planning for Katrin Hennig (architect) and Stefan Fornasier (aerospace engineer), who head up the project group that prepared the expansion. They and their whole team were delighted to receive the planning approval notice from the government of Upper Bavaria in November 2018. «Terminal 1 is bursting at the seams», says Fornasier, «it is high time that we finally get started on construction.» The security checkpoints and baggage claim areas need significantly more space, as do the food and retail outlets, and the airline companies for their lounges. What will differentiate the new building from the existing airport buildings is the design of the interior. «No longer will that brilliant white dominate, instead there will be warmer colors, more wood and other natural materials», Hennig tells us.

She herself has changed sides with the start of construction, and since the beginning of the year has been responsible for the further conversion measures and the marketing of areas in Terminal 1. Instead of the interests of the client, she is now focused on the current and future users. Even though it will be at least 2023 before the first tenant can move into the new building, there is already real interest in some areas such as one of the two new lounges. Terminal 1 will have many more restaurants and shops in the future, and offer entirely new retail, interaction, and event areas. Overall, the quality of stay is to be enhanced significantly.

# 95,000 m<sup>2</sup>

of new floor space

After the expansion, large departure lounges promise high quality amenities for passengers.



# Discover new paths

## 1.

The airlines continue to operate under high cost pressure.

## 2.

Retailers are feeling the consequences of changing consumer behavior and online competition.

## 3.

New players are pushing into the market, offering customers services such as information, transfers, and parking.

The expectations and needs of passengers and customers are changing. The airport wants not only to respond to these but also to set trends via innovative solutions.

Munich Airport wants to meet the challenges of the coming years with numerous measures, and thus shape the future of the company. The man responsible for the Group strategy behind this is Jörg Ebbighausen, head of Corporate Development at Munich Airport. Before coming here, he worked for many years in leading companies in the media and telecommunications sector. «If we do not identify the key trends of the future and position ourselves accordingly», he warns, «we will not be able to utilize all the successes of the past and the present.»

Even though all the forecasts indicate that aviation will continue to grow strongly in the medium term, the 45-year old has identified three developments that will play an important role for the airport: Firstly, the airlines will continue to experience high cost pressure. Secondly, the retail businesses at the airport have long since been feeling the impact of competition from online retailers and of changed consumer behavior. And thirdly, new actors are increasingly pushing their way into the journey chain, offering and marketing services to customers such as information, transfers, and parking. «All three trends challenge our business model», says Ebbighausen. «We can only counter this by ensuring that our existing business model is as well protected as possible and, on the other hand, by opening up new business fields for ourselves.»



## TRAIN



The expansion of Terminal 1, which is now underway, primarily serves the first objective: «By improving the quality of stay for passengers there and meeting the higher requirements of the airlines, we are creating an attractive space for new offerings and services», says Ebbighausen. Other measures that protect the existing business model include offers that are not directly related to aviation (non-aviation). Here the concept of «seamless travel», where the entire journey from door to door is organized such that it is as seamless as possible, plays an important role. In addition, the landside access and traffic development are to continue to improve.

€ 115 million:  
Investment in  
better rail access

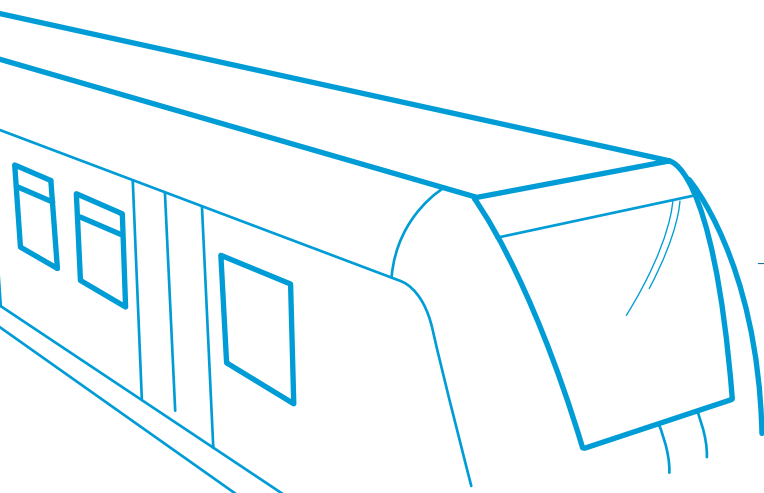
## Improved landside access via train

«With the commissioning of the Neufahrn curve at the end of 2018, a first step has been taken toward rectifying a «birth defect» of the airport», says Ebbighausen happily. Since the winter timetable of 2018/2019, direct trains from and to Regensburg can now come directly into the terminal. As part of the Erding ring closure, the extension of the existing railway tunnel under the airport is also progressing – requiring an investment of € 115 million. «The airport is funding this from its own resources», according to Ebbighausen. The next step in this process is the planned expansion of the Munich-Mühldorf-Freilassing railway line. This would secure and even enlarge the catchment area of Munich Airport, which currently already extends from Ulm in the West to Nuremberg in the North, Linz in the East to Bolzano in the South.

With the **Neufahrner Kurve**, rail passengers from eastern Bavaria can come directly to the airport. At the moment, work is ongoing on the **Erdinger Ringschluss** and the connection to southeastern Bavaria.



The airport's access to the rail network is improving significantly.



Commissioning of the Neufahrner Kurve end of 2018

## Seamless travel from door to gate

Stefan Häberlein is also working on closing the gaps for Munich Airport. The 37-year old head of Strategy and Sustainability organized the process with which the concept of seamless travel was developed. This is the response to the challenge posed by the large Internet companies, who through their increasing number of applications are also pushing their way into the traditional business of the airport: for example with apps that organize parking, with travel services, with online shopping. «In the digital world, we no longer have our business in our own hands exclusively, and we must therefore take action», says Häberlein. The result is the «passngr»-app, an information system that other airports alongside Munich are now offering their passengers – airports such as Hamburg, Düsseldorf, and Münster-Osnabrück. «Other airports could follow this year; our aim is to make passngr a go-to application in the German-speaking world», says the trained economist, who started at Munich Airport eleven years ago as an intern. «If an app like this can offer passengers added value, it will increase its reach», Häberlein forecasts.

## Passngr-App

With apps such as «Passngr», users receive offers tailored to their personal needs along the entire journey chain: traffic updates and information on route alternatives, information on the availability and prices of parking, on the expected duration of check-in, waiting times at security, and offers from their favorite restaurants and shops in the departures lounge. The same applies for the destination airports, including the anticipated waiting time at the baggage carousel. The app will interact with popular route planners and navigation systems and also integrate information on car sharing and taxi services. In addition, passengers will be able to book services directly: the rental or car-sharing vehicle or washing, refueling, and repair services during their trip.

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## New concepts for changing mobility and shopping behavior

In recent times, more and more people have been using the app, for which Rainer Beeck is responsible. «Almost 20% of parking at the airport is already booked online», the head of Commercial Activities reports delightedly. But the area of parking is also being challenged, says Beeck. «Already, we are seeing 150,000 movements with car sharing vehicles per year; that is one fifth of the rental car market.» And then autonomous driving is also knocking at the door. «For us, this has commercial, technical, structural, and legal consequences, which are a long way from being fully clarified.»

Another area of Beeck's Commercial Activities division is also facing major changes. «The brand manufacturers are very unsettled given the enormous increase in online trade; they are asking themselves whether they even need new locations at the airport.» Nonetheless, Beeck is not anxious about the future of his division: «Locations that are as attractive as our terminals and boast their footfall are few and far between and for many of our tenants, the sales achieved there are not the only factor to be considered. For them, events, creating brand identity, establishing contacts, and sometimes even market research are also important.» Instead of purely retail stores, he and his colleagues are noticing a trend toward hybrid concepts comprising retail and catering as well as what are known as «concept stores». The expansion of Terminal 1 will also create very attractive spaces for innovative ideas.



**One in five people already books their parking space at the airport online.**



# Successful projects thanks to comprehensive experience

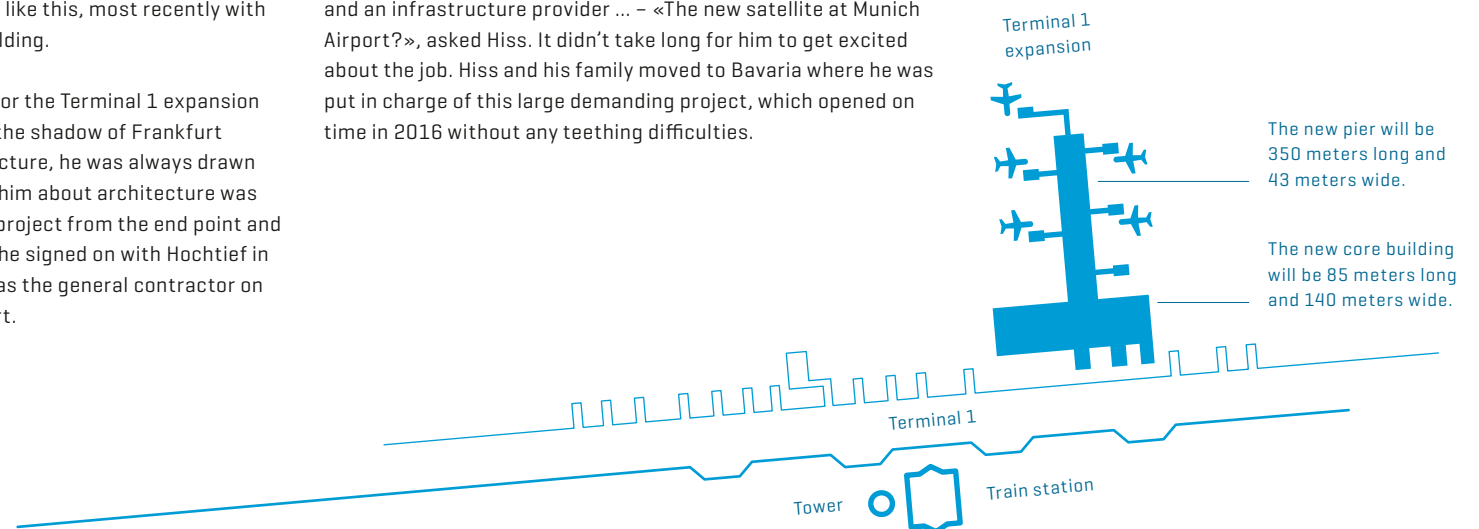
## The expansion of Terminal 1 and a new innovation center are safe investments in the future

A few steps away from the Munich Airport Center, the biting wind of a cold January afternoon sweeps across the apron in front of Terminal 1. Underneath the access road to Terminal 1, construction vehicles are already on site. A ramp is being built here, which will serve as an access road to the building site. A new fence is being set up to separate it from the apron. The challenge for Michael Hiss and his team lies in clearing and preparing this construction area, without impacting on ongoing flight operations. But Hiss is familiar with tasks like this, most recently with the construction of the satellite building.

The man in charge of construction for the Terminal 1 expansion project was born in Kelsterbach, in the shadow of Frankfurt airport. Even while studying architecture, he was always drawn to the building site; what attracted him about architecture was the process of «thinking about the project from the end point and working backwards». As a student, he signed on with Hochtief in Athens. At the time, the company was the general contractor on the construction of the Greek airport.

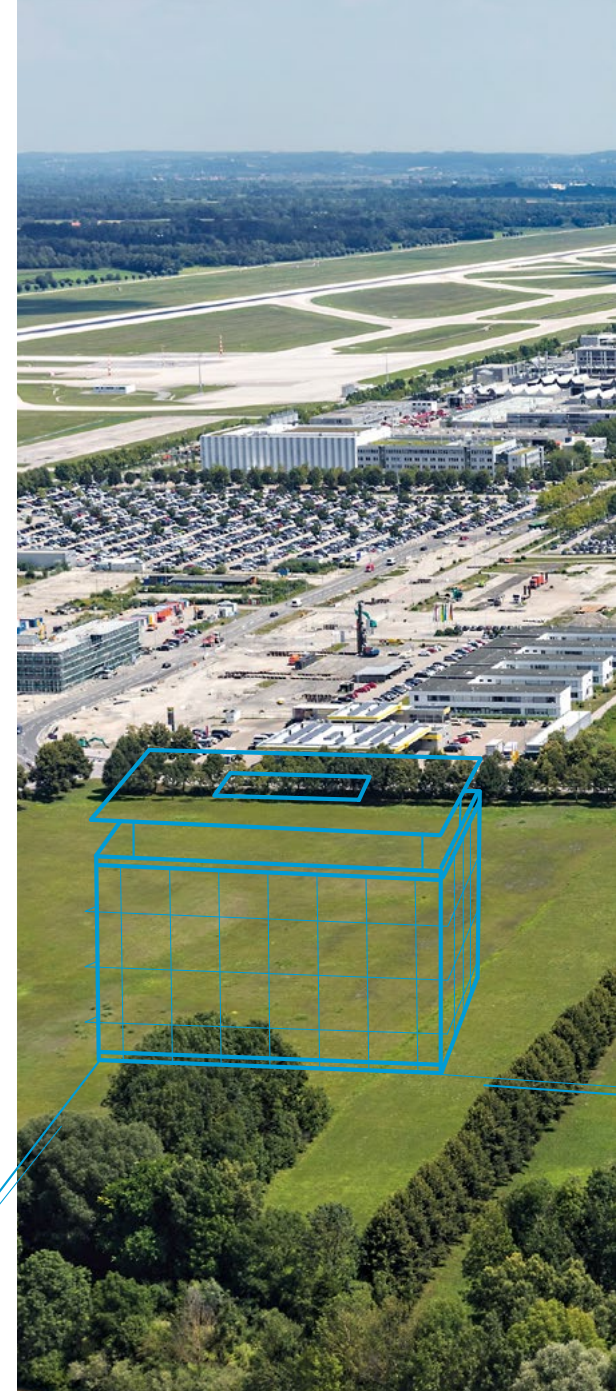
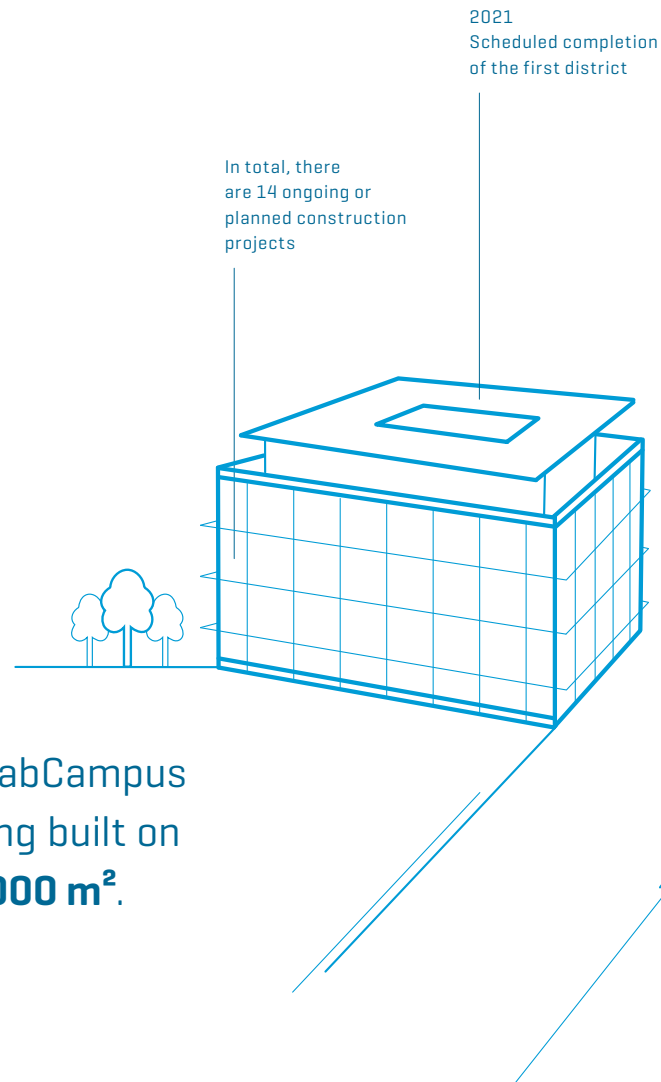
An internship became his first job overnight, when one of the site managers handed in his notice. Later, he moved to Lufthansa and worked with the team that completed the expansion of their head offices at Frankfurt airport.

One day the phone on his desk rang and a headhunter was on the line: There was a transport infrastructure project coming up in southern Germany, the clients were a mobility service provider and an infrastructure provider ... – «The new satellite at Munich Airport?», asked Hiss. It didn't take long for him to get excited about the job. Hiss and his family moved to Bavaria where he was put in charge of this large demanding project, which opened on time in 2016 without any teething difficulties.



## Strict security measures

The greatest challenge with this building site was that it had to be set up as an island in the middle of a working airport complex. In addition, the satellite building was built directly on the existing baggage handling area and the apron tower also had to be integrated into the new building. «I think that for the entire duration of construction we only brought the baggage carousels to a standstill on two occasions, thank God», says Hiss. Will the Terminal 1 expansion be simpler than the satellite building? Hiss shakes his head. «From a technical security perspective, the same exact requirements apply. Every single tradesman requires a background check.» That means: translated and notarized certificates of good conduct from everywhere they have lived in the last ten years outside Germany. «Given the international character of the workforce on the site this is a huge effort – and a risk for the project: no permits, no workers, no progress on site», says Hiss.







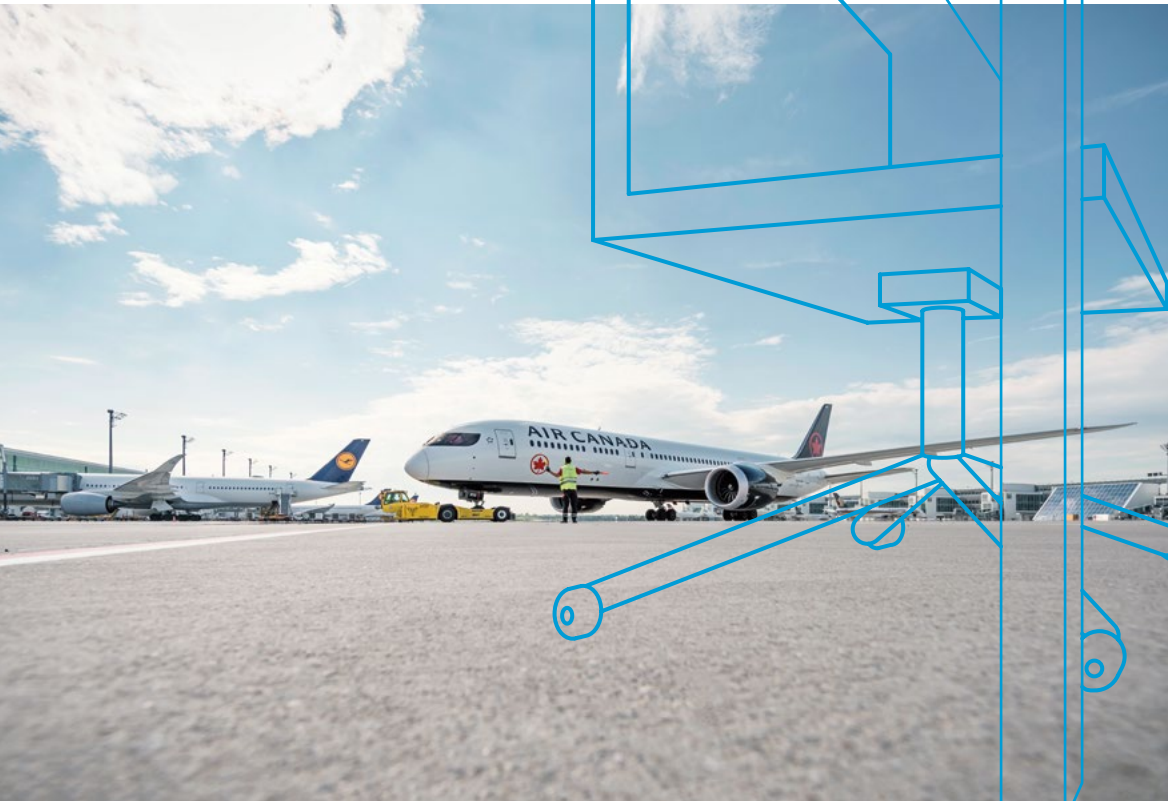
## LabCampus, the new innovation location

Just a little further west from the emerging apron building site, another building has recently gone up. North of the access route to the complex is the place where Munich Airport is shaping the future, and where the architect of this future invites visitors to a modern glass cube from a standing desk. The office building was the first to be completed in the new LabCampus. Dr. Marc Wagener has been managing this cross-company and cross-sector ideas center since 2018. «We want to bring together companies and knowledge carriers, start-ups and global players, creatives and investors here at Munich Airport», says the 47-year old engineering graduate, who also holds a doctorate in business administration. He previously designed and ran a start-up project for Siemens and has comprehensive professional experience in communications, marketing, and strategy.

«Before, companies only had to bring together the right people and enough money to create technical innovations.» But the era of large research departments is coming to an end. «Today, we are at a point where new changes are constantly happening, sometimes at a blisteringly fast pace. Often we don't know beforehand where those changes will come from. Innovation has become a lot less plannable, something large companies are struggling with», adds Wagener. LabCampus therefore sees itself as a place that makes possible such innovations: a place where we can come together, think together, research, and develop together.

Optimal connection of  
workplace and infrastructure

Greater independence  
from purely aviation



## Connecting people, work, and mobility

Over the coming years, on an area measuring 500,000 square meters, buildings for offices, research facilities, catering, conferences, childcare services, and other service providers will be built in several stages – overall it will be like an urban center for innovation. «Our task is not just to let space», says Wagener. «We want to create an attractive environment, offer services for LabCampus and network actively with all our partners.»

What makes him so sure that the concept of LabCampus will work? «Because the airport, with the 150,000 passengers, visitors, employees, and business partners that visit it every day, offers an excellent location to try out ideas in the real world.»

## Keeping the finish line in mind from the very outset

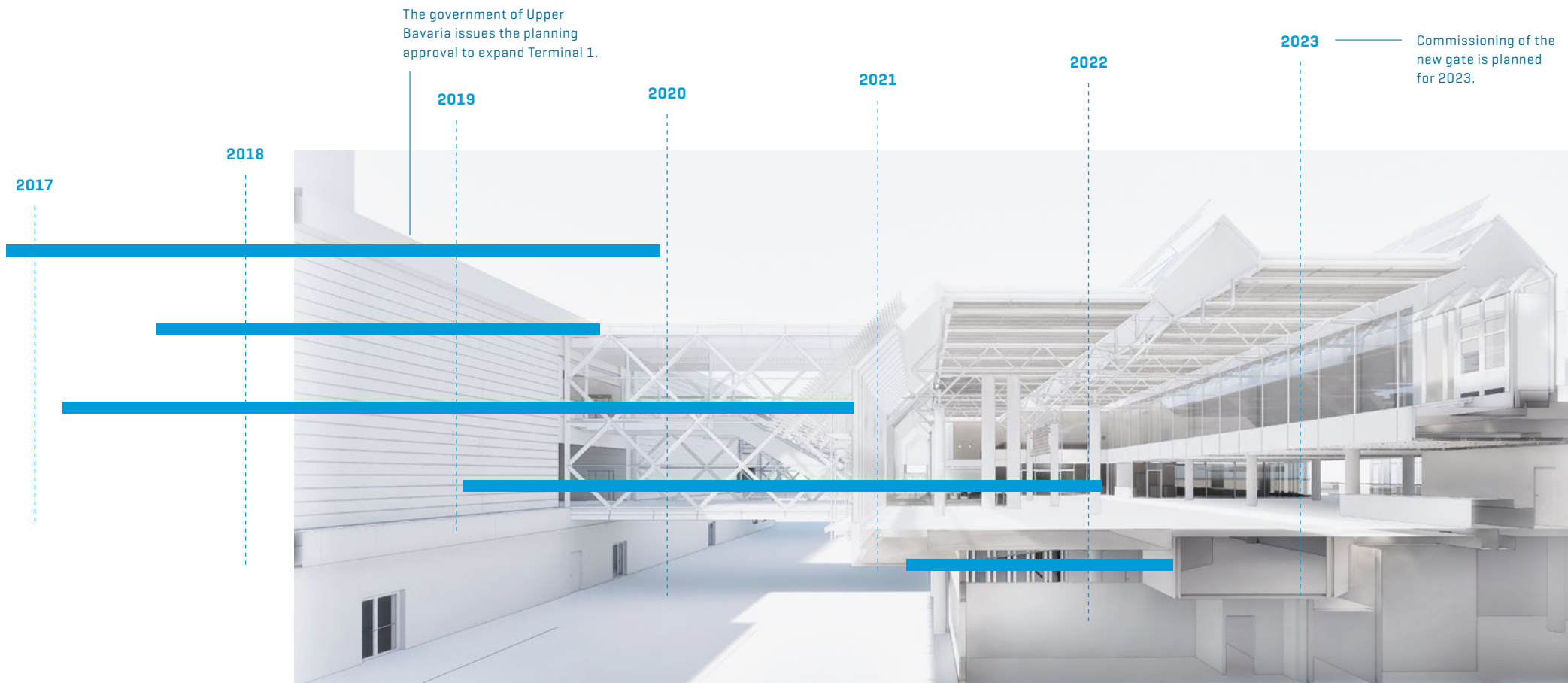
Michael Hiss, too, is already thinking far into the future; he is working on project plans for the commissioning of the expanded Terminal 1. This date may be four years away, «but it's never too soon to do this», emphasizes Hiss. «If you don't think it through from the finish line backwards, you will find yourself overrun at some point.» This is due to the extreme complexity of the technical systems. Ensuring that the functions required for fire safety are in place is as important as the separation of passenger flows and the correct functioning of displays, boarding gates, and baggage carousels. Consequently, it is not just the purely technical functions that must be put through their paces before the start of operations. The operative processes also have to be rehearsed. «To ensure that everything works in the end, we prepare for commissioning with military precision. We are therefore already pushing – in the planning phase – for the hardware required for the function tests to be delivered to the building site as early as possible. These may be boring details but in four years time they will make our lives significantly easier.»



It is of huge assistance to Hiss that in his previous career he has had experience of nearly every role involved in such a mammoth project. However, this depth of professional knowledge gets him only half way to success, he says. Added to this are honesty, transparency, and an open error culture. It is important that project participants don't just pay lip service to these concepts, but that they live them. «Those who work make mistakes. The task is not just to ensure that the mistakes are as small and as few as possible, but also that when things do go wrong they are put right again – sooner rather than later.» Mistakes only become dangerous when we try to gloss over them or pass the blame onto others. This is particularly true of large-scale projects such as the expansion of Terminal 1. «We will be giving individual assignments to an estimated 150 companies. That means several hundred project and site managers. In addition, given the long project duration there will always be changes. «We must approach this openly, transparently, and constructively», says Hiss.

## Ensuring that large construction projects do not fail

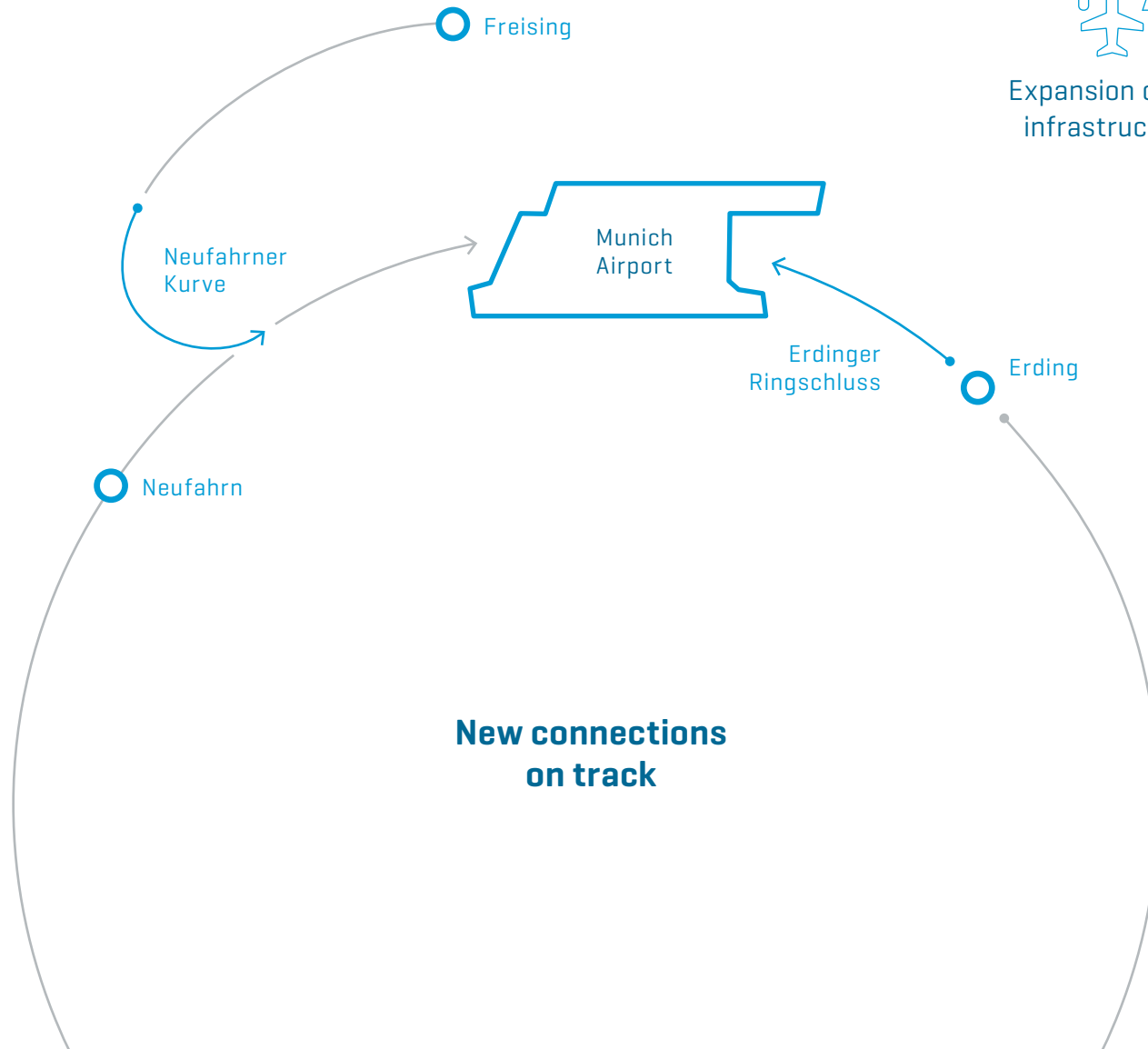
With this construction project, Munich Airport is relying on the individual awarding of works and will not just be assigning projects to general contractors. «That's a lot more work for us and we also need the right people for it, but it allows us to get to the issues that actually need to be resolved much more directly», says Hiss. These projects need more than some sort of abstract notion of management, they need real, concrete leadership: the good example demonstrated daily, the impetus, the creativity, the know-how, the fairness, the passion, and the problem-solving competence of a committed management team. «We, as the client, have a substantial impact on the project and the conduct of all those involved», says Hiss. Much of what contributes to success cannot be prescribed in a contract, «you have to exemplify it yourself each day every day». Is Michael Hiss afraid at all that this hugely ambitious project could go awry? «No, not as long as we respect the task and remain vigilant – it is not so long ago that we proved here in Munich that it can work and now we have to prove it all over again.» Ultimately, Hiss is full of optimism for the future that Munich Airport is currently shaping.



# Strategy and management

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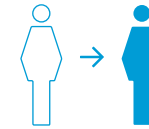
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## Three major challenges



Expansion of the infrastructure

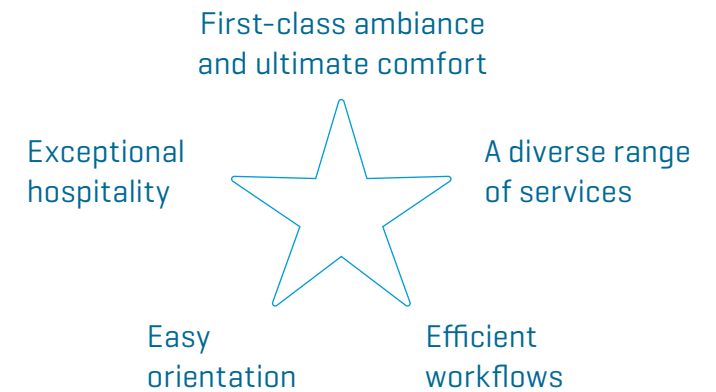


Generational change in the workforce



Digital transformation

## Munich Airport is Europe's first-ever 5-star airport.



## Strategy

### Thinking sustainably, acting responsibly

Flughafen München GmbH (FMG) combines sustainable economic value added with ecological and social responsibility. The airport's business activities have a major impact on various areas and stakeholders: on Munich, Bavaria, and Germany as business locations, on the region and its inhabitants, the airport staff and passengers, as well as on other companies in and around the hub plus other stakeholder groups. In addition, the municipalities and districts of Bavaria are profiting from the enduring employment boom at the airport. However, the company is also aware of the negative effects that its business may have and is making every effort, through suitable initiatives and measures, to avoid these, keep them to a minimum, and, where required, compensate for them. In this context, for example, Munich Airport aims to be carbon-neutral by the year 2030.

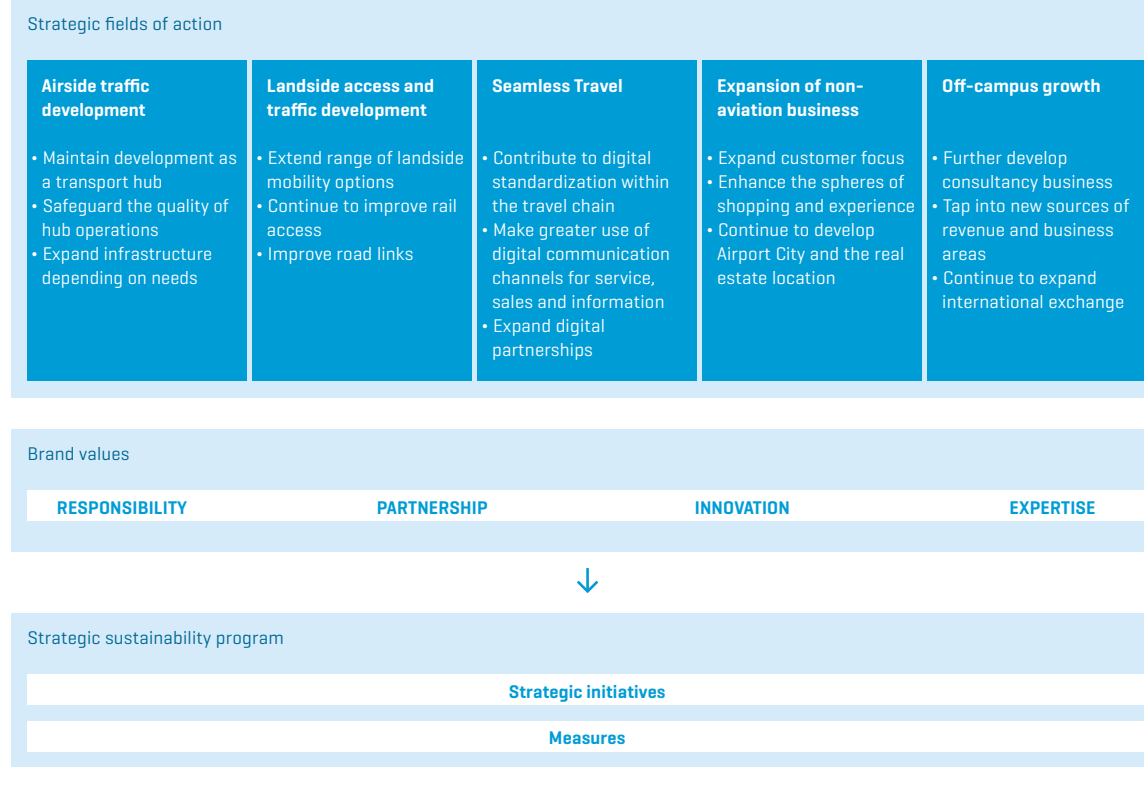
### Planning for the future today

For the future, the company has identified three key strategic challenges:

- The needs-based and demand-oriented expansion of the infrastructure at the airport
- The imminent generational change
- The digital transformation

The airport defined guidelines for its medium-term development in the Strategy 2025. This describes five key fields of action for the successful operation of Munich Airport:

## Strategy 2025



1. Airside traffic development
2. Landside access and traffic development
3. Seamless travel (contribution to digitalization and customization of the travel chain)
4. Expansion of non-aviation business
5. Off-campus growth

The fields of action are the result of scenario analyses on the future of aviation and of talks with the stakeholders. The initiatives and measures from the sustainability program serve to realize the strategy and thus bring about the further development of the airport. FMG measures the success of implementation using defined key performance indicators. A fundamental review of the Strategy 2025 is planned for 2019, in order to identify any areas that need adjustment and to take stock.

➔ [munich-airport.com/sustainability-program](https://www.munich-airport.com/sustainability-program)

## Experiencing «M»

Munich Airport Group places great importance on anchoring its brand values in the Group, and on making the brand promise «Living ideas – Connecting lives» something that can be experienced by all the various stakeholder groups. The continuous further development of the «M» brand is therefore an indispensable component of the corporate strategy. The climate protection strategy, for example, underlines the «Responsibility» brand value and supports the positive perception of the airport as an environmentally aware and sustainable company. And with the launch of the newly developed subsidiary brand LabCampus, Munich Airport is highlighting its commitment to innovation. 80 percent of staff know what the brand «M» stands for and its significance for their daily work. This is also true of the customers<sup>1)</sup>: 60 percent said they felt that Munich Airport was particularly customer-oriented. 51 percent stated that the customer experience at Munich Airport is significantly better than at other airports. Its identity as a premium airport with a Bavarian core also cultivated a strong emotional connection for passengers:

59 percent named Munich as their «favorite airport», while 66 percent perceive «M» as a trustworthy brand. 63 percent of those surveyed viewed Munich Airport as «very innovative». When it came to «family friendliness», the airport was able to improve on last year's score by five percentage points, rising to 63 percent.

<sup>1)</sup> External brand study, market research institute: IMPACT IRC, October 2018

## Expansion plans

### Planning and expanding in line with requirements

Strategy 2025 highlights key issues for the refinement of the business model and sets the course for Munich Airport's future growth. Against this backdrop, FMG is expanding the airport infrastructure based on need, networking various transportation operators, and is actively involved in the expansion of the landside transport services – all while keeping quality and the changing needs of customers brought about, for example, by increased digitalization, at the heart of its work. Negative effects on the environment and the area around the airport are kept as low as possible, for example by applying extensive compensating and noise protection measures.

### Terminal 1: meeting expectations, enhancing quality

In many respects, Terminal 1 can no longer meet the quality standards of passengers and the official requirements on control facilities. The building will therefore be extended to include a new gate with needs-based passenger handling facilities. The pier, which will extend 350 meters into the west apron, will be able to accommodate up to twelve aircraft. This renovation is also creating new retail and catering offerings as well as two large airline lounges, while simultaneously improving the passenger handling processes through centralized security zones; the aim is to make the area significantly more appealing to passengers and airlines in the non-Schengen segment. The first milestone in the realization of this plan was reached in autumn with the planning approval notice; the supervisory bodies had already spoken positively about the construction of the new gate beforehand. The preparatory building works on the apron began at the end of 2018; commissioning of the new gate is provisionally planned for 2023. At that time, Terminal 1 will once again be able to cater for the passenger numbers expected in the coming years, to international quality standards.



With the LabCampus, a new type of urban center is being created on the airport grounds.

Total project costs of around 455 million euros have been budgeted for the expansion project, which FMG will source from its own funds.

## New lounge for passengers

Terminal 1 already has a new premium address: the «Airport Lounge World», which extends over two floors, opened in Departures/Arrivals B last October. For a fee, all passengers can come into the well-being area, covering 1,700 square meters, to relax and take a break.





### LabCampus: collaboration, interaction, and ideas for the future

In the northwest of the airport property emerges the cross-sector innovation center called LabCampus. Knowledge carriers, global players, start-ups, and creatives working in areas such as mobility, digitalization, and security, will find the workspaces, showrooms, project and conference spaces here that they need for systematic and networked research and development work. As a cross-sector meeting point for innovators from the most varied of fields, LabCampus will benefit in particular from the airport's global access, and the constant presence of thousands of international guests.

2018 saw the launch of a number of important developments for the future: Research institutions such as the University of Erlangen-Nuremberg, UnternehmerTUM GmbH, and the Fraunhofer Institut have committed to being innovation partners. The renowned Massachusetts Institute of Technology (MIT), Cambridge, which was involved in the concept stage of the establishment and development of the new LabCampus at Munich Airport, is also on board. Construction on the first two new buildings at the innovation center is set to start at the end of 2019. Over the course of 2019, the first research results from the cooperation with MIT will be published. The MIT Senseable City Lab will initially work with Munich Airport as a research partner for three years, in order to develop LabCampus into an innovative Smart City.

### Third runway remains the most important future project Politics determines the schedule

The ruling coalition parties, CSU and Freie Wähler (Free Voters), have agreed to impose a five-year moratorium on the construction of the third runway, with the result that the project cannot be pursued at present. The third runway nonetheless remains the most strategically important expansion project for Flughafen München GmbH. The planning permission is still valid following the ruling of the German Federal Administrative Court.

### Important hub function

This moratorium-induced delay in realizing the expansion project will lead to a further exacerbation of the already existing capacity bottlenecks in the runway system over the coming years. The growth potential for further connections will diminish as the time window still available

now becomes filled with additional take-offs and landings. If airlines cannot continue to expand to meet demand in Munich, they will move their flights to other airports with available capacity. In the worst-case scenario, Munich could lose its status as a high-performance hub airport in the international aviation industry. The current attractive direct connections offered to and from Munich would also come under pressure in the long-term, in the absence of the third runway.

### Apron extension to the east: more space for more aircraft

At peak times, there are frequently no available aircraft stands on the aprons of Munich Airport. This is because of the increased number of flight movements and the use of wide-bodied aircraft like the Airbus A380, which require a lot of space. As further increases in traffic are expected in the coming years, but utilization of capacity is already currently high, aircraft must stay longer on the ground between landing and take-off and the demand for aircraft stands continues to rise. For this reason, the apron on the eastern side of the airport near the T2 satellite building will be expanded as of 2019 with the addition of 23 aircraft stands for all aircraft types. The new area will then have a modern infrastructure, in order to be able to guarantee safe, efficient, and sustainable aircraft handling. For example, the taxiway and apron lighting will be designed using modern LED technology with flight schedule-dependent switching. The installation of charge columns for handling equipment and the stationary ground power supply for aircraft are also contributing to a reduction in emissions from aircraft handling. Completion of the apron expansion is planned for spring 2021.

[munich-airport.de/  
labcampus/en](https://munich-airport.de/labcampus/en)





### New road and rail connections

The «Erdinger Ringschluss» is taking shape: The official starting shot for the eastward extension of the railway tunnel by approximately 1,500 meters was fired in September 2018. The tunnel itself is to be completed by the airport in 2021, and will then be fitted out by DB Netz AG with the required technical equipment for train services. Suburban and long-distance trains will then be able to pass via the airport in the future. The first stage through to the Schwaigerloh reverser forms the basis from which the planned improvements in railway transport to the airport can be realized. This is also simultaneously dependent on the construction of the second trunk route through Munich, the first preparatory measures for which began in 2018. The Neufahrner Kurve, which makes possible direct rail access in the direction of Freising and Regensburg, has been operational since December 2018. The trains are now running hourly. Furthermore, the double-track expansion of the Munich–Mühldorf–Freilassing rail route including the Walpertskirchener Spange was classed as an «urgent need» in the Federal Transport Infrastructure Plan. In terms of road projects, both the new Freising northeastern bypass as part of the 301 federal highway and the Freising west bypass are well advanced with construction progressing on schedule. Both route stages, which are important link roads for passengers and staff, are due to be completed by the end of 2020.

The new tunnel runs directly under the airport and enables suburban and long-distance trains to pass through.

## Digital offering and seamless travel

With its digitalization strategy, Munich Airport intends to secure the future of its business model. The aim is to help shape technological innovations in order to be able to offer passengers a variety of services that will support them on their journey. For the airport, this specifically means that services are also available digitally. FMG sees digitalization as key to a smooth customer journey: punctuality of departure and arrival, good navigation, and route guidance as well as appropriate shopping options for guests. Thus, through digital processes and tools a seamless travel experience is created without hindrances or delays, which is enhanced with offers that are individually tailored to the needs of passengers and customers.

The four fields of digitalization at Munich Airport:

1. Establishment of digital end customer contact for better passenger services
2. Increase in data quality and availability for enhanced data utilization in decision-making processes
3. More intensive networking of internal and external data to increase system quality
4. Greater automation of processes

As the digital transformation progresses, the risk of cyber crime and attacks on IT systems also increases. The Information Security Hub (ISH) at Munich Airport aims to counter these risks. FMG cooperates with experienced IT security firms in the operation of the ISH. The high-tech center of competence for IT security, housed in the former airmail sorting center at the airport, is used for training courses, conferences, and all types of events.

## Management

### Making an impression with quality

Munich Airport is particularly well-known for the quality of the services it offers. These high standards apply across all areas – in the core business of aviation as much as in the consumer business and internal processes.

### Passenger Experience Index (PEI): measuring quality and managing measures

Passenger satisfaction is of central importance to Munich Airport. A survey developed in-house provides information on how comfortable the passengers feel in the airport and what they think of the quality of the services provided. The PEI has been established as one of the non-financial key performance indicators in the airport's targets system. It allows FMG to derive fields of action that sustainably improve the passenger experience.

### Airport Service Quality (ASQ): worldwide benchmark

Munich Airport is one of more than 340 airports worldwide that regularly takes part in the ASQ survey on service quality initiated by the international airport association ACI [Airports Council International]. As a result, it can compare itself to the best hubs in Europe. In 2018, Munich Airport ranked third place in the category for central European airports with more than 40 million passengers.

### Europe's only 5-star airport

As Europe's only 5-star airport, Munich Airport is part of an exclusive group of just twelve airports worldwide that is permitted to carry this premium mark of approval. In particular, it was the commitment, friendliness, and expertise of the airport staff that contributed to the airport receiving this award once again. In addition to hospitality, the evaluation criteria included ambiance and comfort, services, processes, and orientation.

### Skytrax: consolidating an international reputation

At the Skytrax «World Airport Awards 2018», Munich Airport was once again crowned the best airport in Europe and the best airport worldwide in the size category of between 40 and 50 million passengers. Terminal 2, which was used by 34 million passengers in the reporting year, received the accolade of second best passenger terminal in the world. In the overall ranking of all international airports, Munich Airport came in sixth place. Just under 14 million passengers from 100 countries rated 550 international airports and numerous airlines for the survey. They considered criteria such as the friendliness and expertise of airport staff, the range of shopping and leisure outlets, and transfer options.

### Ten years of mobility service

Together with the Aicher Ambulanz Union, Munich Airport caters for passengers with restricted mobility. To date more than 2.5 million passengers have utilized the service, which, in the terminals and on the apron, provides barrier-free mobility using the most modern equipment.



→ **Group management report**  
see page 90

**Goal 2019**  
Development of structures for the creation of a networked campus mobility

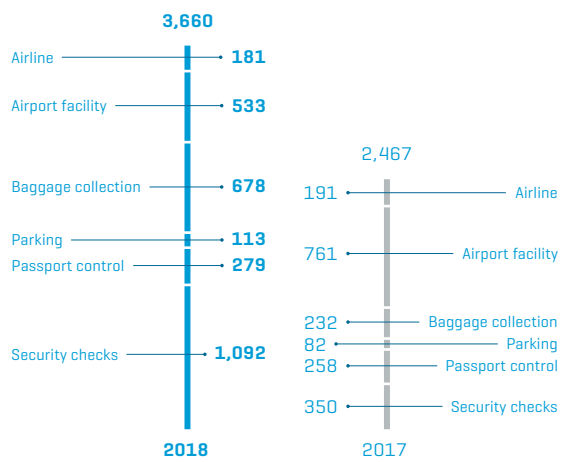
→ **Glossary**

## Dialog management: dealing with feedback professionally

The central dialog management team quickly responds to, categorizes, and analyzes all customer feedback on a case-by-case basis. This office deals with constructive criticism and positive feedback, in addition to complaints. In order to elaborate optimal process solutions for passengers and, if required, to develop improvements, the divisions, authorities, and system partners active all along the passenger experience chain are closely networked with one another. In 2018, Munich Airport recorded 79 complaints per one million passengers handled. The increase compared to the previous year [55 complaints per one million passengers] is due, among other things, to the closure of Terminal 2 at the start of the Bavarian summer holidays and the associated flight cancellations and delays on arrival and departure.

### Dialog management

Number of complaints on key issues



## Service and hospitality: maintaining and optimizing standards

Tailor-made training courses and workshops on the subject of service and hospitality raise the operational heads' awareness of customer contact and emphasize their role as ambassadors for the service culture. FMG thus encourages an awareness of customer orientation and the role model function within the Airport Family. This community encompasses not just the Group, but also all partners based on the campus, such as the 5-star airline Deutsche Lufthansa, and the authorities active at the airport.

## Certified quality management: creating effective processes

The quality management system launched at Munich Airport on the basis of the international standard DIN EN ISO 9001:2015 establishes structures that support the evaluation and improvement of processes. By optimizing its processes on an ongoing basis, Munich Airport has successfully established itself and its high quality standards on the market.

## Strategic management and corporate governance

In FMG's strategic sustainability program, concrete initiatives and measures for sustainable corporate development are set out. Members of top management take responsibility for the sustainability program initiatives, while members of middle management are responsible for implementing the associated measures. Manager remuneration then contains a variable element calculated according to the success of these. FMG monitors target achievement in an internal management report prepared on a quarterly basis. This approach aims to ensure that the strategic targets are actually being realized in practice.

## Munich Airport is contributing to the Sustainable Development Goals of the UN

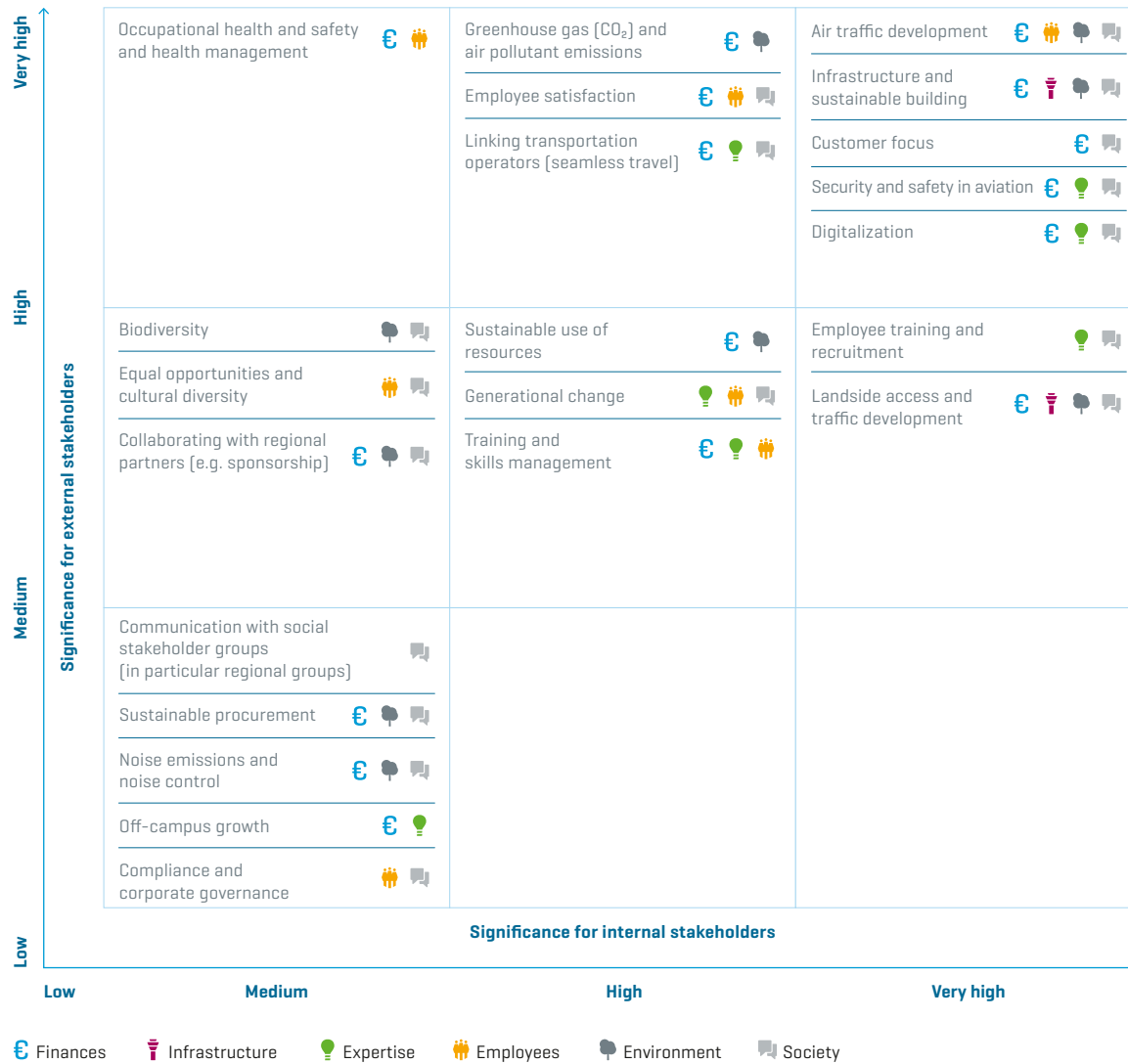
Munich Airport supports the Sustainable Development Goals (SDGs) of the United Nations and contributes to their realization. FMG has identified twelve SDGs that are relevant to it and that it can influence, and which it wishes to work on through its strategic projects up to 2030. For 2019, Munich Airport plans to bring its own targets more closely in line with the Sustainable Development Goals. The target formulations of the German Sustainability Strategy elaborated by the Federal Government are also binding here.

### The Sustainable Development Goals (SDGs) relevant for Munich Airport





## Materiality matrix



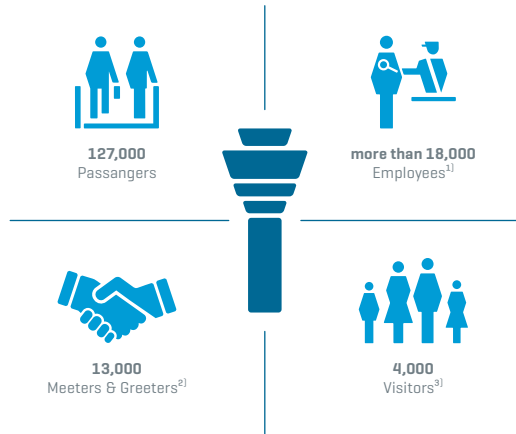
## Identifying and integrating key issues

Munich Airport acts as a «corporate citizen» within society, consciously acting in a responsible manner and always looking to pick up on issues of importance to its stakeholders. It welcomes dialog as an opportunity to continue developing its corporate policy, focused on sustainability. The company’s sustainability management incorporates the concerns of the stakeholders into the strategic planning and operational implementation. Using a materiality process, FMG identifies and prioritizes the issues that are important to external stakeholders and Group employees. Existing in-house processes and methods are linked to the internal strategy process for this purpose. FMG has set itself the goal of continuously improving processes, particularly with respect to the assessment and measurability of internal and external impact.

The Group-wide materiality analysis is based on the principles of the [Global Reporting Initiative \(GRI\)](#). It is an important tool for strategic sustainability management and provides the basis for the Executive Board to set the central parameters for the sustainable development of the Group. In 2018, internal and external stakeholders’ top priorities were air traffic development, infrastructure and sustainable building, customer focus, security and safety in air traffic, and digitalization.

[→ Glossary](#)

### «Airport City Munich»: around 160,000 people on the airport campus every day



<sup>1)</sup> On the airport campus including all businesses etc.

<sup>2)</sup> People who bring passengers to the airport or pick them up and who actually enter the terminal itself rather than just accompanying them to the door/car park.

<sup>3)</sup> People who have visited the airport without flying themselves.

#### Bavaria came to visit Erdinger Moos

Some 40,000 people attended the «Family & Music Days» in 2018. The chance to see aircraft up close, to enjoy live music, and a whole host of events, to experience the airport itself in a different light is something that draws numerous visitors from the region and the entire state to the airport every year.



## Transparency through dialog

Munich Airport's brand message is «Living ideas – Connecting lives». Working with all stakeholders is the only way for the company to tackle upcoming challenges and successfully shape its future. FMG applies a three-stage approach to stakeholder dialog, thereby encouraging transparency and social acceptance.

### Stage 1: information on target-group-specific channels

For the information of the various interest groups, the airport has defined customized communication content, which it places in the appropriate channels. One important medium for this is the integrated report. It addresses all the airport's target groups.

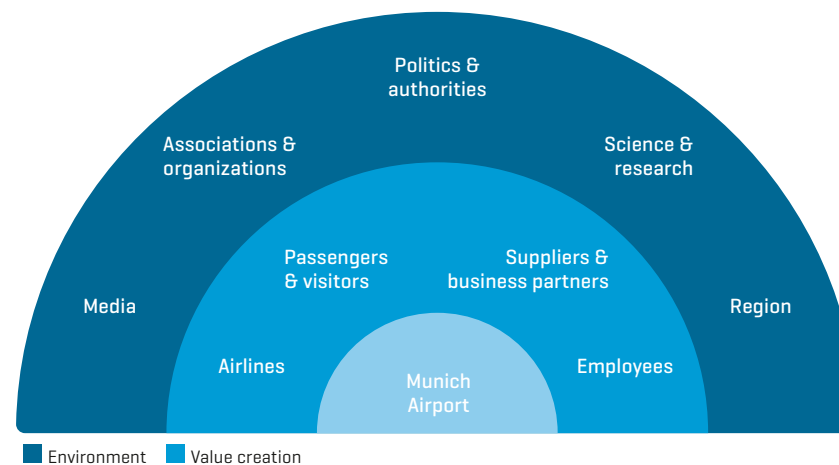
### Stage 2: exchange and collection of stakeholder feedback

The airport includes its stakeholders in discussions and decisions about issues that are important to them, thus creating the basis for trust and long-term acceptance. Via the reader survey, for example, the airport receives feedback on the integrated report every year and determines the significance of key issues for stakeholders.

### Stage 3: results of dialog flow into business operations

Finally, Munich Airport also takes into account stakeholder feedback in relation to its business activities. Its stakeholders force FMG to confront new issues and thereby act as a mirror of society. This in turn makes it possible to identify issues and trends at an early stage, benefit from outside knowledge, communicate the company's stance, and defuse conflicts.

## Key stakeholder groups



### Media

FMG's press office regularly and quickly updates the German and international media on the latest developments, caters for journalists on site, and thus pushes the airport to the forefront of media interest. Lufthansa's basing of five Airbus A380 in Munich, the launch of the «LabCampus», and the test run for the humanoid robot «Josie Pepper» were huge media events in 2018.

### Public relations

Corporate Communications shares information on the latest topics on its social media channels in the style appropriate for each online platform. The top stories for 2018, for example, the basing of the A380s as well as new routes and airlines, resonated well with the fans and followers of Munich Airport.

### Sponsorship activities in Munich

In 2018, in addition to FC Bayern Basketball, Midsummer Night's Dream in the Olympiapark, and the Munich Marathon, FMG supported more than 20 other flagship projects from the fields of sport, the arts and culture in the state's capital. Through this effective presence, Munich Airport is pushing ever closer to the city of Munich and is thus meeting its responsibilities to it.

### Region

Good cooperation with the region is essential if Munich Airport is to be successful, and the Regional Liaison Office is responsible for this. As a support office, it reports directly to the Executive Board and sees itself as a kind of bridge-builder between the airport and the region. For the municipalities, political decision-makers, institutions, and citizens, the Regional Liaison Office is the first port of call for questions relating to the airport.

- [facebook.com/flughafenmuenchen](https://facebook.com/flughafenmuenchen)
- [twitter.com/muc\\_airport](https://twitter.com/muc_airport)
- [instagram.com/munich\\_airport](https://instagram.com/munich_airport)

# Service portfolio

- 43 — Aviation
- 47 — Commercial Activities
- 49 — Real Estate
- 50 — Participations,  
Services & External Business

Total investment for AirSite West  
in the coming years



€ 700 million

Number of flight  
destinations

257  
2016



264

2018

266  
2017

International business

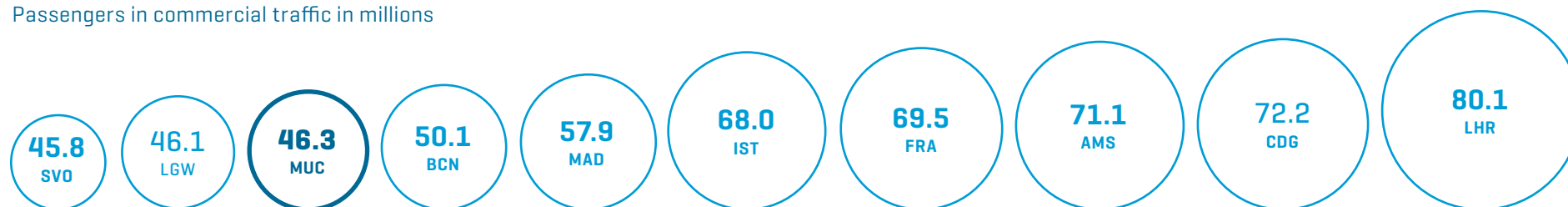
Over  
**62**  
successfully  
completed projects

→

More than  
**30**  
countries

Munich compared with other European airports in 2018

Passengers in commercial traffic in millions





## Aviation

### Important European hub airport

The Aviation business division enjoyed a successful fiscal year, setting a new passenger record. The division is responsible for FMG's core business, it provides aviation infrastructure and services for airlines and passengers, and markets them.

Munich Airport is an important hub airport, where flights are bundled efficiently and in a manner that conserves resources. It can thus offer a multitude of destinations with a significantly lower number of flights than in pure point-to-point traffic. In this process, Munich Airport functions, in particular, as a European node. No other airport offers connections to as many European destinations as Munich. In the ACI's Airport Connectivity Report, Munich Airport once again put in an excellent performance in 2018 and took eighth place with more than 35,000 transfer connections. Compared to the previous year, it was possible to increase the hub connectivity at Munich Airport by more than 23 percent. The share of transfer passengers, which has risen again in the interim to 37 percent, secures Munich Airport's important hub function.

### Munich's growth is below average

In 2018, the passenger volume reached 46.3 million, an increase of around 3.8 percent and a new high. Measured against the growth rates of the European top ten [+ 5.5%] however, Munich's increase was below the average. The number of take-offs and landings rose by 2.2 percent to around 413,000 aircraft movements. Despite the bottlenecks in the runway system, significant but below-average growth was thus recorded [sector average for top ten in Europe: + 4%]. The growth dynamic was dampened predominantly also by the departure of the Air Berlin/Niki Group and the market exit of Transavia. These airlines had

generated some nine percent of the movement volume in the line and charter traffic in Munich. In addition, there were many flight cancellations and delays in 2018 due to the extraordinary weather conditions in the first half of the year with numerous storms, and to various traffic problems caused by European air traffic control and overly optimistic plans by the airlines. In total, 8,811 cancellations were recorded, a year-on-year increase of around 74 percent.

### Decline in freight transport

In 2018, approximately 351,500 tonnes of airfreight were transhipped, 3.1 percent less than in the previous year. This result reflects a slight economic slowdown. The smaller capacities for bellyhold cargo carried on long-haul passenger flights was another reason for this decline. In 2018, it accounted for just 84 percent of the airfreight volume, a two percentage-point decline on the previous year's figure. This is because some of the new long-haul aircraft operating in Munich have a smaller load capacity than the predecessor models. This includes, for example, the A380, which while it takes a great deal more passengers than the A340, has a smaller freight capacity. Technical load restrictions in the B787 also led to a temporarily reduced offering of freight volume. On the other hand, the all-cargo transported on purely freight aircraft recorded an increase of 11.3 percent. Overall, the airfreight volumes in Munich in 2018 were on a par with the level for the previous year, because airfreight is also transported by truck from Munich to other locations and flown on further from there. The share of this trucked airfreight increased significantly.

### Medium- and long-haul routes on the rise

The engine of growth at Munich Airport is still international tourist travel. Around one million additional air passengers were carried on the routes within Europe compared to the previous year. This represents an increase of approximately three percent. The passenger volume on long-haul routes increased by as much as seven percent. The main contributor to this increase was Deutsche Lufthansa, which expanded its long-haul route capacities significantly. Since the start of the 2018 summer timetable, five of their total of 14 large A380 aircraft have been deployed from Munich. In the summer timetable, the A380s flew daily to Hong Kong, Beijing and Los Angeles and reached very high levels of occupancy on all three routes. In total, the offering of inter-continental traffic from and to Munich in 2018 was larger than ever before. This is a further continuation of a long-term trend – the number of long-haul flights at Munich Airport has already increased by around 38 percent in the past ten years.

→ [Glossary](#)

### Munich compared with other European airports in 2018

Aircraft movements in line/charter traffic

Frankfurt/Main [FRA]	500,900
Amsterdam [AMS]	499,400
Paris-Charles de Gaulle [CDG]	480,900
London-Heathrow [LHR]	475,600
Istanbul-Atatürk [IST]	454,000
Madrid [MAD]	394,400
<b>Munich [MUC]</b>	<b>392,200</b>
Moscow [SVO]	357,200
Barcelona [BCN]	323,500
Rome-Fiumicino [FCO]	305,000

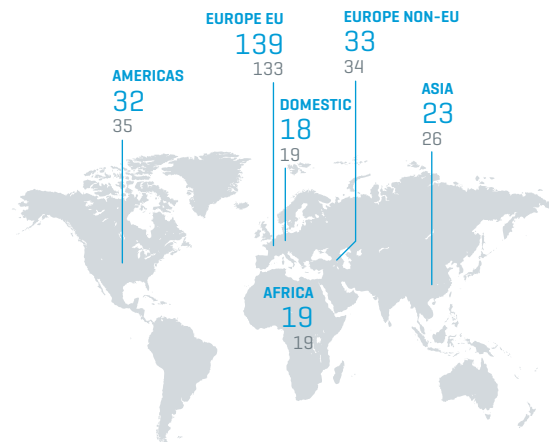
Data as of: January 2019/Source: Airports Council International [ACI]  
Istanbul and Moscow: Details provided by airport operator itself

## New record



## Dense traffic network to numerous destinations

2018 2017



## Lufthansa to increase its presence in Munich

Given the successful start to the A380 flights, Lufthansa is considering basing further A380s in Munich from 2020. The largest passenger aircraft in the world can only be used at particularly high-demand locations. Moreover, the fact that Deutsche Lufthansa wants to increase its use of aircraft with a first-class offering in Munich illustrates the great value-added potential of the location and the significance of Terminal 2 and the satellite buildings. Lufthansa also wants to expand Munich Airport into a hub for its Asian flights. In addition to increasing the frequency of flights to Seoul and Singapore, there will also be a once-daily flight to Bangkok from summer 2019. In addition, the connection to Osaka will be relocated from Frankfurt to Munich.

## The world moves closer

In 2018 there were also quite a few new connections from Munich. The Colombian airline Avianca has been flying five times per week from Munich to Bogotá since November 2018. At its home hub, the company which was crowned South America's best airline by the London-based Skytrax Institute, offers passengers a broad network of connections. Lufthansa increased its offering in the short- and medium-haul route segment significantly and, in the long-haul segment brought Singapore back into its schedule again. The Lufthansa subsidiary Eurowings operated up to three long-haul aircraft in Munich and served, alongside various continental destinations, the long-haul routes to Bangkok, Cancún, Fort Myers, Las Vegas, Mauritius, Montego Bay, Puerto Plata, Punta Cana, Varadero, and Windhoek. Air China increased its Beijing service to one flight a day.

## New additions to Terminal 1

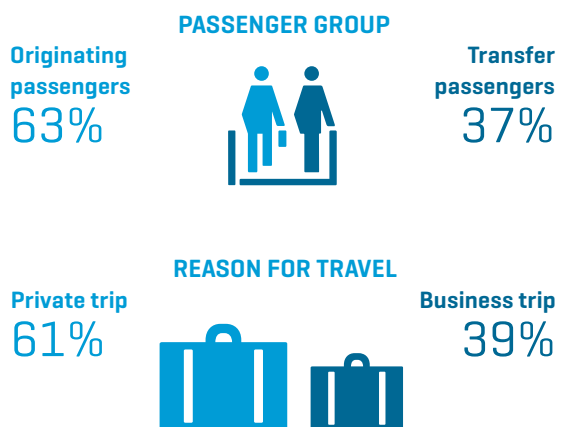
The Norwegian airline Widerøe has been bringing air passengers to Bergen in Norway on its new Embraer E190-E2 since August 2018. In addition, airlines such as Condor and Volotea are consolidating their continental offering in Terminal 1. On the Berlin route, easyJet took over the Air Berlin flights and this significantly expanded its presence in Munich. The Tarom airline increased its offering to Romania, adding a second daily flight to Bucharest and direct flights to Sibiu. For 2019, American Airlines has also announced a new daily connection to Dallas. In European traffic, the British Airways CityFlyer will connect Munich to London City Airport three times a day.

## Seat supply is increasing slightly

In 2018, flights to 264 destinations, two fewer than in the previous year, departed from Munich. The number of continental destinations increased from 181 to 185, while in domestic traffic with 18 destinations one airport fewer was served than in the previous year. The increased number of aircraft movements and the slight increase in aircraft sizes yielded a seat increase of around 2.5 percent.



### Passenger structure in 2018



### Airport Safety: new European specifications

Airport security and airport safety are of key importance for all airports. Airport safety encompasses the safe operation of aircraft and the guarantee of technical operational readiness of infrastructure and systems for the safe handling of airport operations. Munich Airport is obliged under the newly issued specifications of the EASA [European Aviation Safety Agency] to maintain certification according to European requirements. This includes fulfilling the airport operations-relevant standards in the areas of operation, organization, and infrastructure, the guarantee of EASA compliance, and the implementation

of a safety management system in operations. The receipt of the operating license is linked to this. Munich Airport is also subject to regular inspections and controls by the responsible approval authority, the government of Upper Bavaria, South Bavarian Aviation Office.

### Airport Rescue and Firefighting: important contribution to the high safety standards

The Airport Rescue and Firefighting service in Munich is responsible, on the premises of the airport, for fire safety, and for technical assistance in the area of fire safety in aircraft and buildings.

→ Glossary

With its own rescue vehicle, it also provides 24-hour emergency assistance for passengers and employees. From the two fire stations, the crews can reach any point on the flight operation areas within 180 seconds. The extinguishing capacity carried meets the highest requirements in accordance with Category 10 of the [International Civil Aviation Organization \[ICAO\]](#). The crews and vehicles of the building fire service were newly distributed into the two fire stations in 2018 as part of a reorganization, so as to be best prepared for the challenges of the many building projects underway on the airport campus and to be able to keep to the stipulated rescue time frames in the future too. «Pro.Fit» ensures firefighters' physical performance ability. Since March 2018, members of the Airport Rescue and Firefighting Service can train using this customized sports program.

### FMG cooperating on European aviation standards

➔ [www.sesar.eu](http://www.sesar.eu)

As part of the SESAR [Single European Sky ATM Research] project, Flughafen München GmbH is participating along with six other large airport operators [London-Heathrow, Paris, Amsterdam, Zürich, Avinor [Norway], and Swedavia [Sweden]] on the further development of the European aviation system. The airport operators have formed a consortium called SEAC [SESAR European Airports Consortium], for which FMG has assumed the role of coordinator for 2018. EURCONTROL, Airbus, Thales, and renowned airlines are also participating in the research project. They are all pursuing the goal of making the organization and flow of air traffic processes more efficient and safer. FMG is actively involved in shaping project content. This includes, inter alia, the definition of an «Airport Operation Center», which in the event of serious disruptions is to find joint solutions with all those involved, as well as the optimization of the taxiing process between the runway and the aircraft's parking position. Moreover, FMG is also working on the «Total Airport Management» project, dealing with fundamental processes and their improvement.

### Special biotope management prevents bird strikes

Collisions between aircraft and large birds or flocks of birds can endanger the safety of flight operations. Using a special biotope management system, Munich Airport protects against possible collisions. These safety measures do not impact negatively on the protection of the birds that have made their home at Munich Airport.

- The green areas around the runways are mown according to a concept that is adjusted to the local conditions.
- There are no larger bodies of water for ducks and geese near the flight operation areas.
- The drainage channels near the runways are spanned by steel ropes in order to make access difficult, in particular for waterfowl.
- «Wildlife Management» employees monitor the bird population on the airport campus and in relevant biotopes within a 13 kilometer radius, in order to ward off potential dangers from bird flight movements at an early stage.

FMG works closely with the relevant partners and institutions on the topic of bird strike prevention, in particular with the airlines, German air traffic control, regional and higher-level authorities, and the GBSC [the German Bird Strike Committee]. The statistics from the GBSC show that Munich Airport has had a relatively low bird strike rate for many years now. In areas 1 and 2, the average bird strike rates in Germany for 2018 were about 137 and about 268 percent higher respectively than the rates recorded for Munich Airport.







## Commercial Activities

### Five-star quality in retail and catering

The Commercial Activities business division at FMG is responsible for retail and catering in both terminals and in the München Airport Center (MAC). It is also responsible for parking services, marketing of advertising spaces, and events business, in particular in the MAC Forum. The business division places great store in striking an appealing balance between the transport options and retail space, and in having an appropriate mix of sectors and brands. International and national brands, a unique Bavarian identity with impressive brand recognition, and excellent service are important success factors in the non-aviation area.

### Retail is changing

For some time now, the increasing diversification of online sales channels has posed major challenges for shop-based retail. Retailers are increasingly searching for new sales channels. Munich Airport presents itself in this context not just as another sales channel or an additional retail space, but predominantly as a partner in high-profile brand staging for a high-quality target group segment. In addition, it will offer more flexible use of space and shorter rental agreement terms.

Allresto Flughafen München Hotel und Gaststätten GmbH operates around 85 percent of all catering facilities at Munich Airport. The diverse culinary offering has already received multiple awards. In 2018, Munich Airport once again took first place in Europe at the Skytrax World Airport Awards in the category «Airport Catering». Since 2018, four branches of a new catering concept have enriched the offering at Munich Airport in the non-public areas of Terminals 1 and 2, offering customers a mix of Bavarian and American cuisine.

The wholly owned subsidiary of FMG, eurotrade Flughafen München Handels-GmbH operates 54 retail businesses at Munich Airport as well as a duty-free shop at Friedrichshafen Airport. The range extends from duty-free items through newspapers/magazines and travel essentials to fashion, watches, and jewelry. To make the offering more appealing for customers, eurotrade overhauled the shop concept in 2018. For example, the duty-free shop in the non-Schengen area in Terminal 2 was completely transferred to the new MyDutyFree layout and new products were added. In 2018, Munich Airport was the first German airport to introduce a «same day delivery service» and now delivers items from the eurotrade range to guests' homes in the Munich metropolitan area on the day of purchase. eurotrade will initially offer the service in cooperation with the service provider, tiramizoo until March 2019. After a successful test phase, the plan is to extend this service to become «Home Delivery Deutschland» offering delivery throughout the entire federal territory.

➔ [munich-airport.com/shopping](https://munich-airport.com/shopping)

### Parking: online booking is increasingly popular

The Parking division increased its offering at Munich Airport in 2018 and is profiting in particular from the digital services: 18 percent more parking places were sold in the year under review via the online booking portal with its new parking offers than in the previous year. At the carpark pay machines, Apple Pay was launched as a new payment system. More and more customers are also using car sharing at Munich Airport – in 2018 the figure was more than 17 percent higher than in the previous year. The rental car center reached the limits of its capacity in 2018, with more than 750,000 rentals and returns. Due to these developments, the airport is making itself fit for the future by adding several new buildings. For example, the new multistory car park, P51 went into operation at the Visitors Park in 2018. It offers just under 2,000 parking spaces on five floors. Munich Airport promoted the area of electro-mobility in 2018 with the installation of eight fast charging stations in the P20 parking structure. Further charging stations and e-mobility measures will follow in 2019.

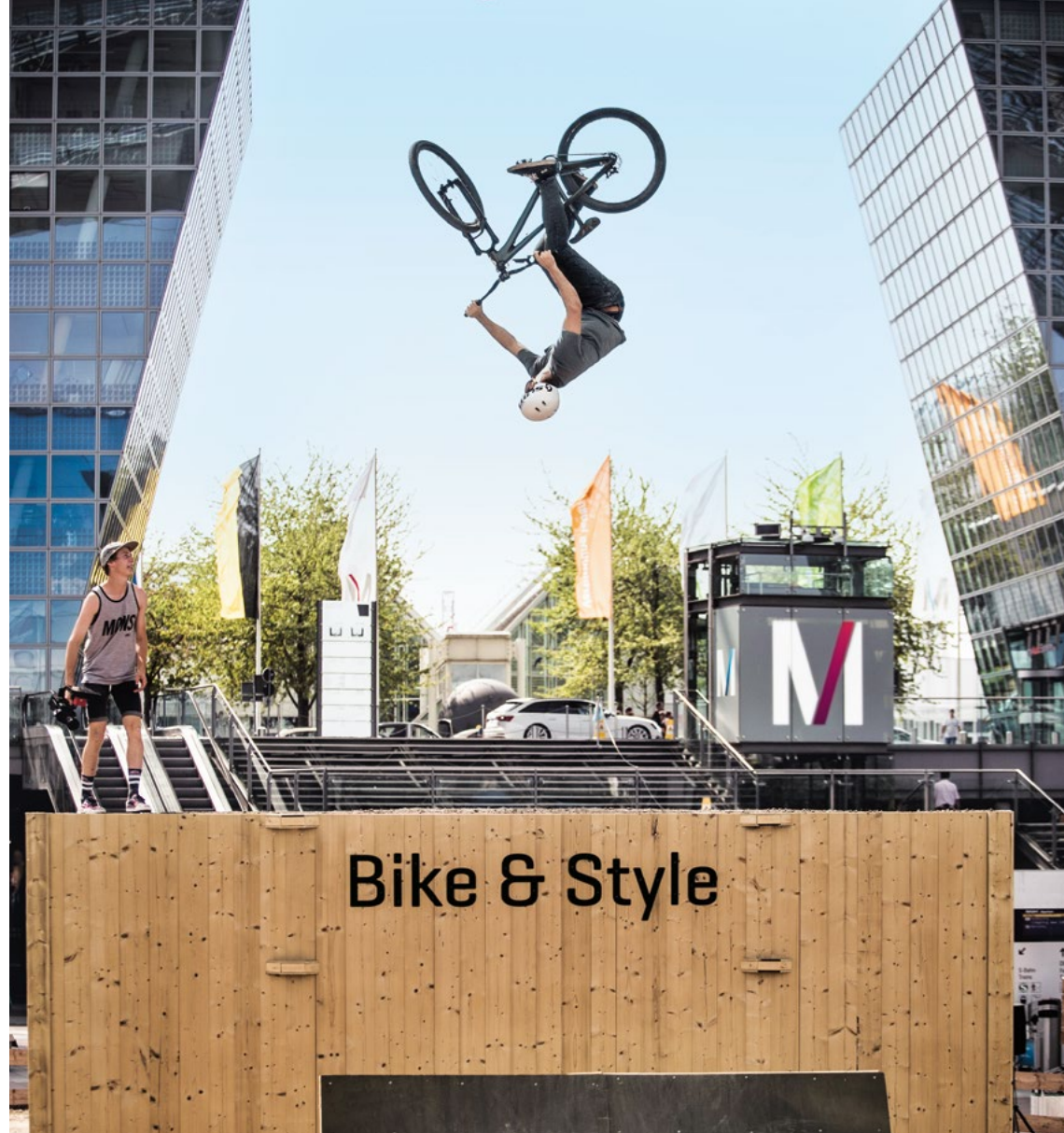
➔ [munich-airport.com/parking](https://munich-airport.com/parking)

### MAC Forum: an event space at the heart of the airport

Europe's largest roofed-over open-air space between the two terminals regularly hosts special events for passengers and visitors. The high points of the last fiscal year were:

- **Innovation & Style:** The premiere of this event in April focused on the latest technological developments, for example autonomous driving.
- **Public Viewing:** During the soccer World Cup in June and July, all games were broadcast live on a large screen; the stands provided space for 2,000 fans.
- **Bike & Style:** In August, the international mountain bike and freeride scene met again in the MAC Forum.
- **Taste & Style:** The food festival with culinary trends and live cooking demonstrations took place for the third time in September, taking guests on a culinary world tour.
- **Christmas and winter market:** The atmospheric market with public ice rink celebrated its 20th anniversary in 2018.

Munich Airport offers advertising customers an attractive environment with high contact numbers and target groups boasting strong purchasing power. One highlight of 2018 was the LEGO sales campaign. In the MAC Forum, the company, in cooperation with Bugatti, presented a fully functioning Bugatti Chiron designed in its original size and built from tailor-made LEGO Technic parts. In November, Microsoft presented its new games console here, the Xbox One X. Visitors and air passengers were able to test out the games console to their hearts' content. In addition, digital formats are also gaining importance – including during acquisition. For the marketing of advertising, catering and retail spaces at the airport, Commercial Activities is using an innovative marketing tool, the Sales Assistant Manager [SAM]. Using virtual reality technology, it makes possible exciting insights into all shopping, culinary, advertising, and parking spaces at Munich Airport.





## Real Estate

### Successful positioning of Munich Airport as a real estate location

The Real Estate business division develops, markets, and operates FMG's property and real estate, some of which is located outside of the airport campus. Sustainable new-build concepts and city-style infrastructure form the basis for successful positioning on the market. Munich Airport is currently planning a wealth of new, converted and replacement buildings for the coming years, which the Real Estate business division will coordinate.

### Developments at AirSite West

AirSite West is currently undergoing a dramatic transformation: On the area in the west of the airport, new offices, a logistics center, a budget hotel, and a tradesman building are gradually being built. The first office building is already complete; it has been standing in the Nordallee since August 2018. Right next door, the new, larger BMW Service Center is to open its doors in spring 2019. As the buildings go up, the road infrastructure is also changing. In August 2018, works started on a large bridge, which will span the main access to the airport and connect the Nordallee to the maintenance area. Commissioning of this traffic node is scheduled for 2021. In the maintenance area, building preparations began in 2018 for a taxi fleet area, a temporary parking area for rental cars, and a supply tunnel under the road. The entire investment volume for AirSite West is around 700 million euros.

### MAC including the Forum is to be redesigned

FMG plans to redesign parts of the München Airport Centers and the MAC Forum. The focus is currently on replacing the technical building equipment so that the architectural appearance can then be redesigned.

### New apartment building for employees opens

FMG supports applicants and employees with their search for accommodation in the overstretched housing market of the region. In July 2018, the first renters moved into new employee accommodation in a property in Effnerstraße in Munich. The building comprises 46 furnished one- and two-bedroom apartments in the medium price segment. A company agreement regulates who receives access to the apartments and the criteria to be applied.

### Ambitious targets for sustainable construction

Munich Airport pursues the principles of sustainable construction, focusing in particular on ecological, economic, and socio-cultural aspects. In terms of ecology, the aim is that the building itself, and then afterwards the operation of the building, should have a minimal impact on the environment through contaminants and through the consumption of resources, water and energy. Building measures can lower greenhouse gas emissions and thus contribute to the achievement of the ambitious climate protection goals. One example of this is the already implemented switch of all the apron lighting from traditional lights to LED. In the area of water management, the concept of reusing washwater in the terminals, wherever possible, is pioneering.

Ecological improvements often require significant investment initially. However, they also frequently prove to be economically sustainable too, as the operating costs fall in the long-term, when, for example, less energy is consumed. As the original Munich Airport buildings are now more than 30 years old, there is significant potential, through renovations, to improve both their ecological and economic sustainability.

The third aspect of sustainable construction is the goal of creating, through the buildings, a healthy and pleasant environment for employees and users. Here ecological issues intertwine with issues of comfort and high-quality amenities. This goal was already realized with the new building for the Real Estate division on the edge of the emerging LabCampus, which offers relaxation spaces and communications zones.

➔ [munich-airport.com/  
real-estate](https://munich-airport.com/real-estate)

## Participations, Services & External Business

### AeroGround: punctuality improved

AeroGround Flughafen München GmbH is a wholly owned subsidiary of FMG. Together with its subsidiary, AeroGround Berlin GmbH, it offers all landside and airside services related to aircraft, luggage, and passenger handling at Munich, Berlin-Tegel, and Berlin-Schönefeld airports. As a founding member of ground.net, AeroGround is part of a European ground handling network with over 70 bases in Germany, Greece, Bulgaria, Cyprus, Switzerland, Scandinavia, Great Britain, and Italy.

[ground.net](#)

In 2018, some 2,800 employees in Munich and Berlin handled more than 275,000 aircraft movements, 24 million items of luggage, and 37 million passengers for 150 customers. The Transport Service division transported around 3.7 million passengers at Munich Airport. In Munich, AeroGround was the market leader once again in 2018. There, 99 percent of handled flights took off on time; in Berlin that figure was 97 percent.

Shortly before the end of 2017, AeroGround München and Deutsche Lufthansa agreed the handling conditions for the five A380 aircraft, which have been based at Munich Airport since the summer timetable of 2018. The volume amounted to around 840 handling operations. With the A380s, AeroGround also continues to handle the entire inter-continental Lufthansa fleet at the Munich location, as well as the Emirates A380s. In 2018, AeroGround acquired a number of new customers in Berlin-Tegel and Berlin-Schönefeld, including Laudamotion and Ryanair. This partly made up for the gap left in Berlin by the insolvent airlines Air Berlin and Niki. AeroGround also acquired new customers in Munich, including Laudamotion, Olympus, and VLM Airlines. The company also succeeded in extending cooperations with around 25 airlines in Berlin and Munich for the long term.

In order to counteract the lack of personnel and specialist skills, AeroGround initiated numerous projects in 2018: As a priority, it recruited workers with fixed working conditions and without personnel service providers, provided affordable accommodation for new employees, and developed new training concepts. Moreover, AeroGround is working on new developments and technologies in ground handling, with the assistance of the recently introduced innovation management unit.

### aerogate: high service quality in passenger handling

As a wholly owned subsidiary of FMG, aerogate München Gesellschaft für Luftverkehrsabfertigungen mbH is responsible for passenger service at check-in and at the gate, the baggage delivery service, the operation of lounges and reception services, the arrival service, an IATA ticket agency, loading planning, and ramp supervision at Munich Airport. In 2018, some 500 employees, on average, handled

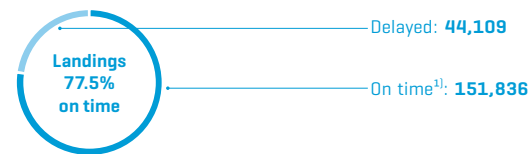
more than 26,300 flights with approximately four million passengers. In terms of passenger handling in Terminal 1, aerogate successfully staked its claim as the market leader with a market share of around 45 percent, despite the insolvency of its major customer Air Berlin. The FMG subsidiary increasingly uses digital solutions in order to further improve service quality. In 2018, its new scanner system for automated luggage processing proved its worth, speeding up the return of left luggage to the rightful owners. With just under 60 aviation services apprentices, aerogate was once again the largest trainer for this particular career in Germany in 2018.

### Cargogate: relative growth despite the trend

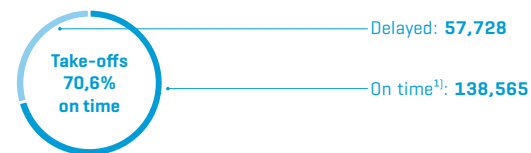
Cargogate Flughafen München Gesellschaft für Luftverkehrsabfertigungen mbH is responsible for the handling and storage of airfreight, as well as for documentation and customs formalities. 184 employees handled more than 57 percent of airfreight customers in 2018 and thus processed a quarter of all airfreight at Munich Airport. In addition to several contract extensions, Cyprus Airways also became a new customer. The switch from United Airlines to Lufthansa due to alliance obligations, however, led to a negative result in the end. In order to secure its success into the future, Cargogate initiated projects with the aim of replacing the former handling system and creating new employment conditions. A new process management system has already been successfully introduced. In addition, Cargogate obtained a pharmaceuticals certification that is unique in the airfreight segment on the campus. Medicines and other pharmaceutical products are, as temperature-sensitive and often urgent goods, subject to complex requirements, for which a closed refrigerated chain must be ensured.

### Punctuality statistics 2018 for Munich Airport in the line/charter traffic

Total number of landings: 195,945



Total number of take-offs: 196,293



<sup>1)</sup> Deviation of up to 15 minutes



### International business: MAI increasingly active in the United States

Munich Airport International GmbH (MAI) coordinates all international activities of Munich Airport for consultancy, management, and training services. Some 70 employees from 15 countries work for MAI. In addition to traditional transfer and operational readiness services (ORAT), it offers planning services, support during process

optimizations, training courses, concepts for location development, management services, and the complete assumption of operations. Since 2018, MAI has been increasingly active in the United States. After providing support during the technical and operative planning of the new Terminal 1 at Newark Liberty International Airport (EWR), the FMG subsidiary was also tasked with managing its operation. From the start of 2019

### International business activities

The most important projects of 2018:

- Hokkaido, Japan
- Istanbul, Turkey
- Libreville, Gabon
- Manama, Bahrain
- Muscat, Oman
- New Jersey, USA
- New York, USA
- Palmerola, Honduras
- Quito, Ecuador
- Saint David's Island, Bermuda

up to its closure in 2021, a wholly owned subsidiary of MAI, EWR Terminal One LLC, will operate the existing Terminal A. Once the new Terminal 1 is opened in 2022, the FMG subsidiary will operate the terminal buildings for the long term. Moreover, MAI and Carlyle Airport Group Holdings (CAG), a wholly owned subsidiary of the globally active private equity investor, the Carlyle Group, have agreed to form a joint venture to be called Reach Airports LLC. Though still in the start-up phase, the cooperation has already succeeded in winning the largest airport infrastructure project in the US: It is to play a significant role in the modernization of John F. Kennedy International Airport. Throughout the entire planning and construction phase of the new Terminal 1, Reach Airports LLC will be active as a consultant, and in the long term, will take over the operative management of the current and future Terminal 1.

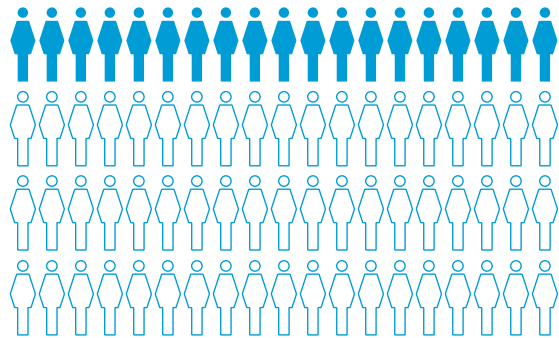
#### Goal 2019

Market entry in the USA via joint venture and its own terminal operating company

In addition to further activities in the US, MAI is planning to increase its presence in promising growth markets. It plans to establish its own sales offices in the second half of 2019. In tandem with that, it is also reviewing further strategic joint ventures and the takeover of airport-related consultancy firms in order to strengthen its own product portfolio and to expand the customer network.

# Work environment and society

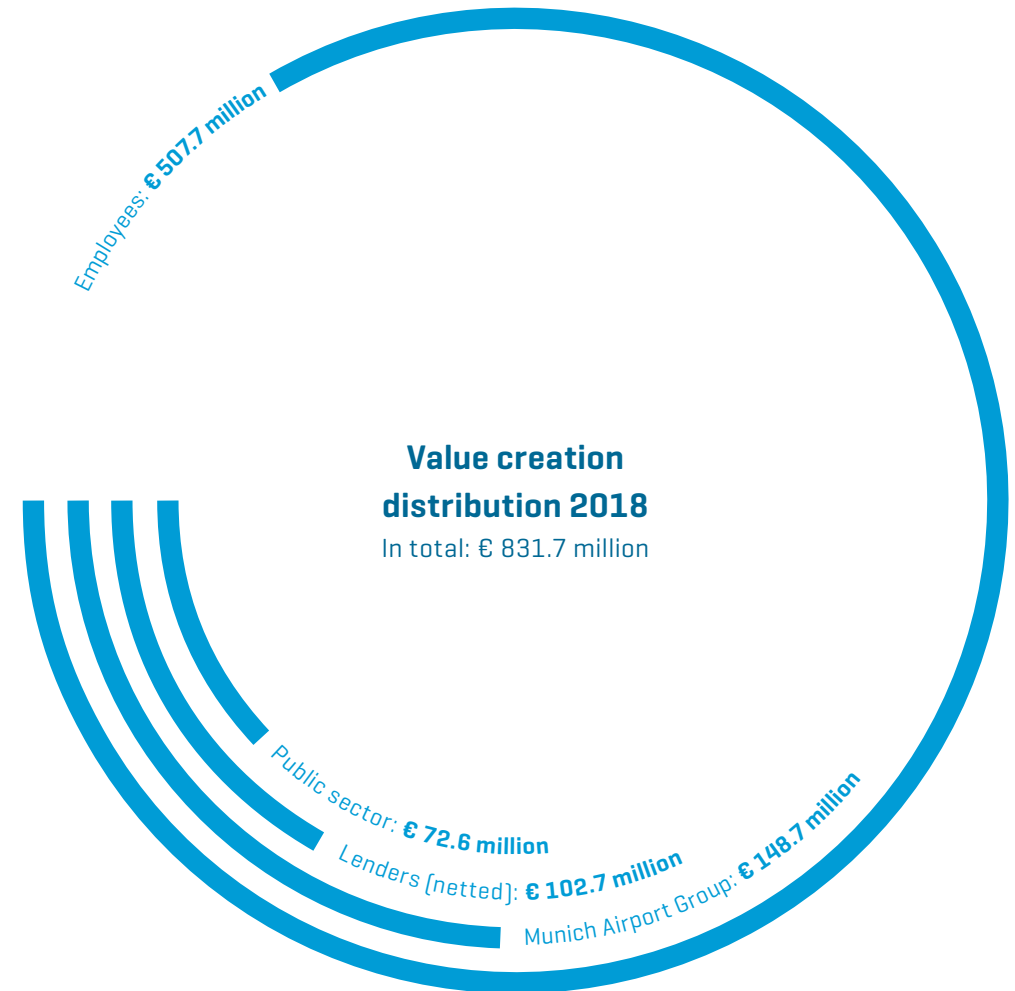
- 53 — A major employer
- 53 — Human resources strategy
- 54 — Employee satisfaction and codetermination
- 57 — A responsible employer
- 59 — Community engagement
- 60 — Value creation



The airport provides **25 percent** of all employment relationships liable for social security contributions in the districts of Freising and Erding.

€ 507.7 million

Total Group personnel costs  
[+5.3%]



## Major employer

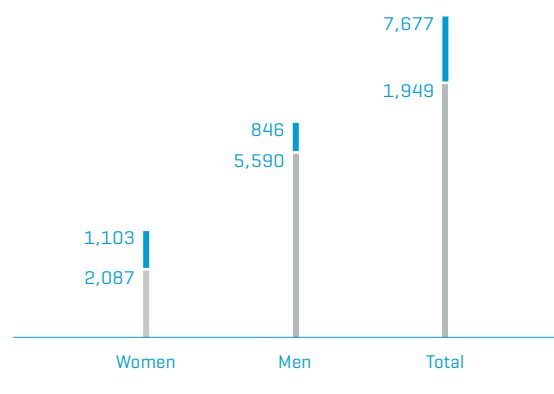
### An airport that makes an impact across the region

With its 9,903 employees<sup>1)</sup>, Munich Airport Group is the second-largest employer at the site after Deutsche Lufthansa AG. The neighboring Freising job center region, which also covers the Dachau, Ebersberg, and Erding districts, has one of the lowest levels of unemployment in Germany, at 1.9 percent on average. This corresponds to almost full employment and reflects the huge importance of Munich Airport for the regional labor market. The airport provides one in four of all employment relationships liable for social security contributions in the districts of Freising and Erding.

<sup>1)</sup> Including apprentices.

### Employment relationships in the Group<sup>2)</sup>

■ Part-time ■ Full-time



<sup>2)</sup> Figures exclude apprentices, workers in minor employment, temporary workers, and interns.

### First-class employer in the transport industry

In the latest survey by news magazine Focus, Flughafen München GmbH was named «Best employer in the transport and logistics sector» in Germany for the fourth year in a row, and ranked in the top 20 of national employers across all sectors.

## Human resources strategy

### Employer brand: the promise to employees

What factors make Munich Airport one of the most attractive employers in the region? The employer brand provides answers to this question; it is derived from the brand positioning of the company. It shows how the Group positions itself with respect to the competition for talent on the labor market, and brings together the arguments for a long commitment to the airport as employer.

### Farsighted HR policy

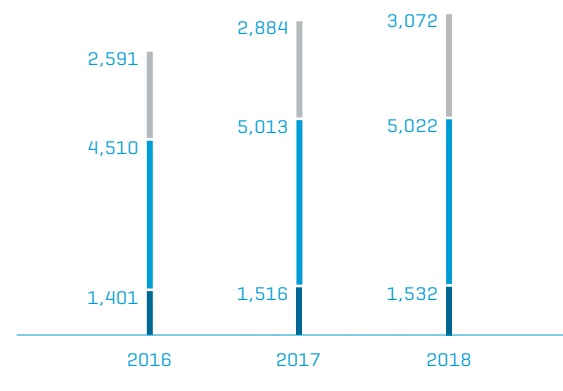
Munich Airport believes in the importance of an HR policy that not only focuses on people but also the company's performance. For this reason, the long-term HR concept is geared towards current business conditions and the corporate strategy, as well as social megatrends such as demographic change, diversity, digitalization, individualization, mobility, health, and education. The human resources strategy sets out important objectives for HR management, which are reviewed annually and adjusted as required.

### The huge challenge of generational change

Currently, the greatest HR challenge facing the company is demographic change. In order to meet the higher personnel requirements caused by the large waves of age-determined retirements expected over the coming years, it is absolutely essential that the airport's employer attractiveness be boosted in the competitive labor market of the region. Munich Airport is therefore committed to responding to the values of younger generations and the expectations they have for their everyday professional lives. As an employer, the airport wants to actively shape this cultural change and, at the same time, guarantee the knowledge transfer between experienced and new employees. This is a matter of cleverly dovetailing the consequences of the generational change, on the one hand, and the changes in the workplace caused by digitalization and process optimization on the other. In this way, it will be possible to work efficiently, while deploying personnel in a manner appropriate to the requirements, and to offer attractive employment conditions for all generations of the airport family.

### Age structure in the Group<sup>3)</sup>

■ Under 30 years ■ 30 to 50 years ■ Over 50 years



<sup>3)</sup> Figures exclude apprentices, workers in minor employment, temporary workers, and interns.

➔ [munich-airport.com/careers](https://munich-airport.com/careers)



## Employee satisfaction and codetermination

### Employee survey as an important tool for change

The results of the Group-wide employee survey in autumn 2017 reflect the employees' connection to and satisfaction with the airport. On the basis of the survey, the topics of «cross-division cooperation» and «perception of top management» were defined as fields of action. For example, the aim of the «Mitg'redt fora» is to facilitate a robust exchange of opinions with the top management level. The newly introduced «mixed tables» in all company restaurants contribute to colleagues networking with one another. Further measures are being planned. In parallel, the individual divisions and subsidiaries are elaborating ideas for their decentralized follow-up process, in which the executive board is also involved. Tangible changes are to be achieved by the next employee survey in 2020 – this is an important goal in terms of binding employees to the company.

### FMG promotes codetermination

The voice of the employee is a valuable factor in corporate decisions. Employees have numerous opportunities to get involved in committees that are required by law or other working groups, i.e. the Supervisory Board, Youth and Trainees Council and the Council for Employees with Disabilities. Most of the overarching regulations in the company culminate in works agreements with the works council, which currently has 31 members. The employee representatives have concluded important works agreements with the employer in the last few years, for example on topics such as accommodation for applicants and employees, partial retirement plans, and occupational integration management. Even the annual employee appraisal is anchored in the corporate culture in the form of a works agreement. All employees thus have the opportunity to

reflect on their work activities with their manager in a confidential setting, to discuss their job performance, and, if required, to stipulate targets or work priorities and qualification measures.

### Personnel expenses and above the general pay scale

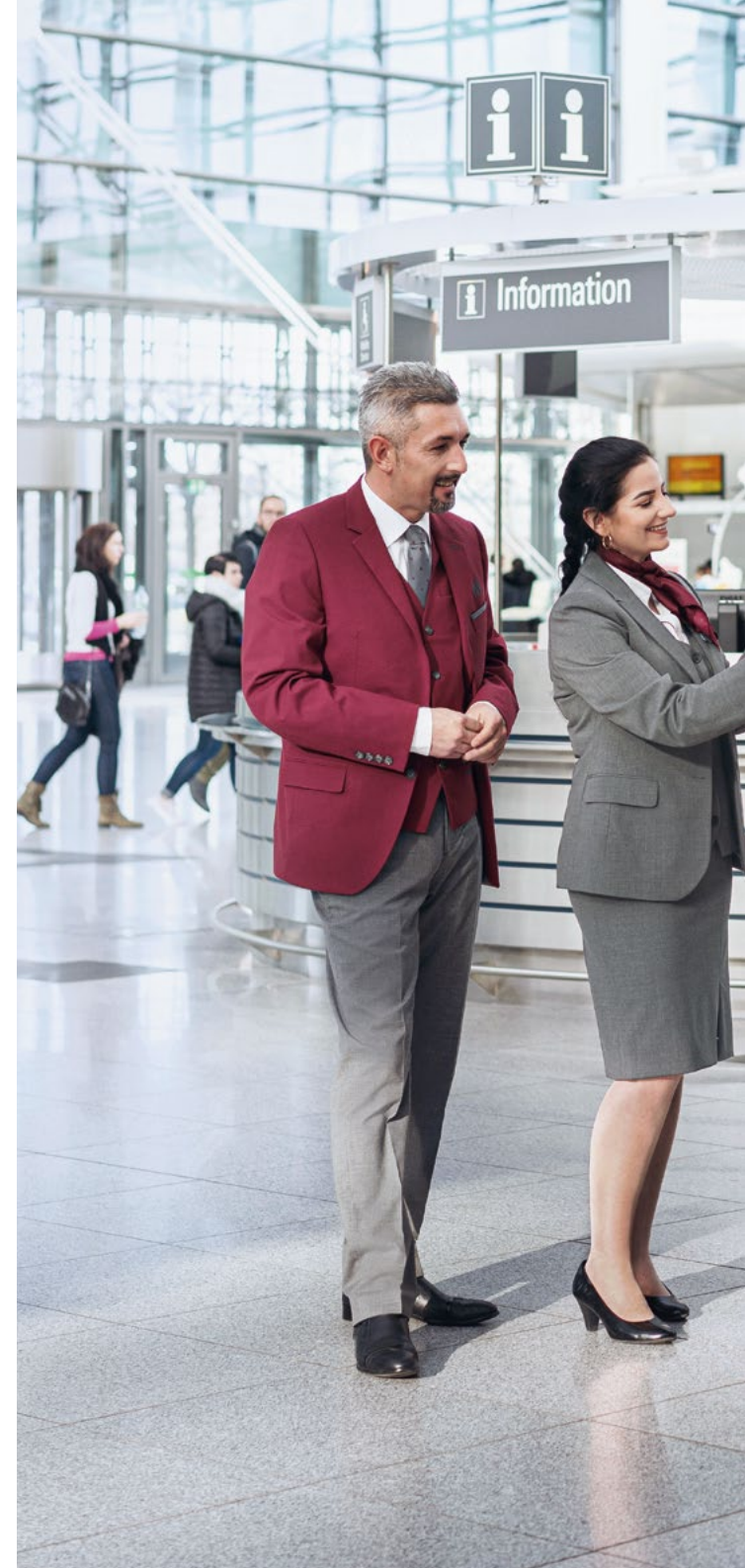
Flughafen München GmbH is a member of the regional public employers' association and, as such, is bound by the TVöD collective pay scale agreement for public sector employees. FMG employees participate in a company retirement scheme, which is governed by the pay scale agreement and covered by the Bavarian supplementary pension fund for municipal employers. Following negotiations with the labor unions ver.di and dbb, the remuneration for employees of FMG and AeroGround was increased as at March 1, 2018; in the first step this increase was on average 3.19 percent. Lower-paid wage groups tended to profit more from this collective agreement. In addition, two further wage increases were agreed: For April 2019, an average increase of 3.09 percent was agreed and from March 2020, employees will receive on average 1.06 percent more in their pay packets.

### Employees covered by collective bargaining agreements

Proportion of total employees in %<sup>1)</sup>

2018	95.95
2017	95.93
2016	94.23

<sup>1)</sup> All percentages are based on the total number of employees including apprentices, workers in minor employment, temporary workers, and interns.





### Commitment to the next generation

The Munich Airport Group is one of the largest training organizations in the region. School leavers have the choice of 20 different apprenticeships and dual fields of study. Flughafen München GmbH received 1,635 applications for the apprenticeships starting in 2018. On September 1, 2018, 97 apprentices embarked upon their professional career at Munich Airport. This meant there were 277 young people taking part in apprenticeships Group-wide as of the reporting date of December 31. At the same time, 46 young people completed their apprenticeships at FMG. A further 84 school-age children and 123 university interns received an insight into the world of airports, producing 17 project-related Bachelor's and Master's dissertations in the process. In a twelve-month graduate training program, university graduates received an effective preparation for professional life at the airport. This includes both specialist knowledge and an understanding of the complex overall system that is the airport. A mentoring program helps trainees to establish their own company-wide network.

### Large job fair in the MAC

In October 2018 some 15 of the companies based at the airport held an «Apprenticeship Night», in order to present the variety of career opportunities that they offer. 3,000 interested visitors, in particular, school-age children and their parents from the airport region, came to the München Airport Center to learn about the more than 50 different apprenticeships and courses of study offered on the airport campus.

The employees were included in the selection process for the new uniforms.

### Employment costs

**€ 507.7 million**

Total Group personnel expenses



of which

**€ 299.3 million**

FMG personnel expenses



of which

**€ 239.9 million**

wages & salaries<sup>1)</sup>



and

**€ 59.4 million**

social security contributions, expenditure for retirement provisions and other benefits

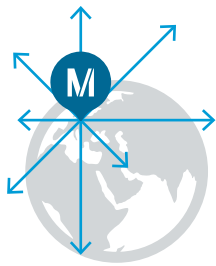
<sup>1)</sup> Including subsidies for travel and meals.



→ Glossary

➤ [kununu.com/flughafen-muenchen](https://kununu.com/flughafen-muenchen)

➤ [xing.com/company/flughafen-muenchen](https://xing.com/company/flughafen-muenchen)



## Global airport network

The popular international exchange programs help employees to develop as people, and Munich Airport to progress as a business. In 2018, as part of the European mobility program «Erasmus+», 19 apprentices visited partner airports in Athens, Malta, and Vienna. 32 selected specialist and management staff broadened their knowledge and skills during stays at sister airports in Bangkok, Singapore, and Moscow, and established important contacts with their counterparts. In return, delegations from other airports, including Denver and Nagoya, visited Munich.

## Sister airports

<b>ACSA</b>	Airports Company South Africa
<b>AOT</b>	Airports of Thailand
<b>BCIA</b>	Beijing Capital International Airport
<b>CAG</b>	Changi Airport Group [Singapore]
<b>Centrair</b>	Central Japan International Airport [Nagoya]
<b>DEN</b>	Denver International Airport
<b>DME</b>	Moscow-Domodedovo

## Airport Academy: experts in education and training

Munich Airport operates a certified, in-house training center with just under 50 employees. On more than 38,000 participant days, 26,700 Group employees and external customers attended seminars there, focused particularly on the areas of human resources, management, aviation, and security. Digital training formats via a learning management platform are a fixed component of the offering, including, for example, the cross-Group safety management training as part of the EASA certification of the airport. The Airport Academy, moreover, offers training for an international audience, as an

accredited training institute of Airports Council International [ACI] – in cooperation with the international umbrella association of passenger airports. For example, more than 100 external cyber security specialists completed training in four different seminar types at the Information Security Hub, which opened on the airport campus in early 2018.

## Airport is once again «Germany's Best Training Organization»

Business magazine «Focus Money» again awarded Munich Airport the title of «Germany's best training organization» in the Transport and Traffic segment. In a survey of 20,000 companies from all across Germany, FMG stood out for the particular quality of its training management. Both the high rate of hiring of graduates in the company and their excellent training results justified this accolade. A special on-boarding program enables apprentices, at the very start of their careers, to make contacts, gain initial experience of team work, and to get to know the airport campus. Another particular feature of the airport as a training organization is the intensive professional and personal support provided by the full-time trainers and the 220 part-time instructors. Participation in the Erasmus+ exchange program, the health day for apprentices and the apprentice-parent day were also decisive for the award.

Many opportunities for young people and a high rate of hiring in the airport training organization



## Responsible employer

### Diversity: both personal and cultural

Munich Airport benefits from the diversity of its employees. It respects the cultural heritage of all of its employees, taking into account their diverse interests and needs. Some 24 percent of Group employees come from more than 100 different countries. Most non-German employees come from Turkey, followed by Croatia and Hungary. The promotion of women to management positions is an integral feature of the HR policy. Munich Airport Group has set itself the target of successively increasing the proportion of women in these roles. In autumn 2017, individual target figures were agreed to this end, and as a follow-up deadline, a three-year period up to June 30, 2020 was defined. Women receive support at the start of their management activity, for example, via the «cross-mentoring program», in which each participant is assigned a manager from another company as a mentor for a period of one year. The aim of the «MStars» network for female FMG managers is to promote continuous exchange between professionally successful women within and outside the company. In 2018, it was possible to expand the network further, and intensify the cooperation with other companies. The first events especially for a female audience also took place, which were initiated or supported by the airport.

### A flying start at the airport

Flughafen München GmbH was awarded the Deutschlandtest seal of «Top career opportunities for women» by Focus Money and Deutschland Test 2018.



### Focusing on family and health

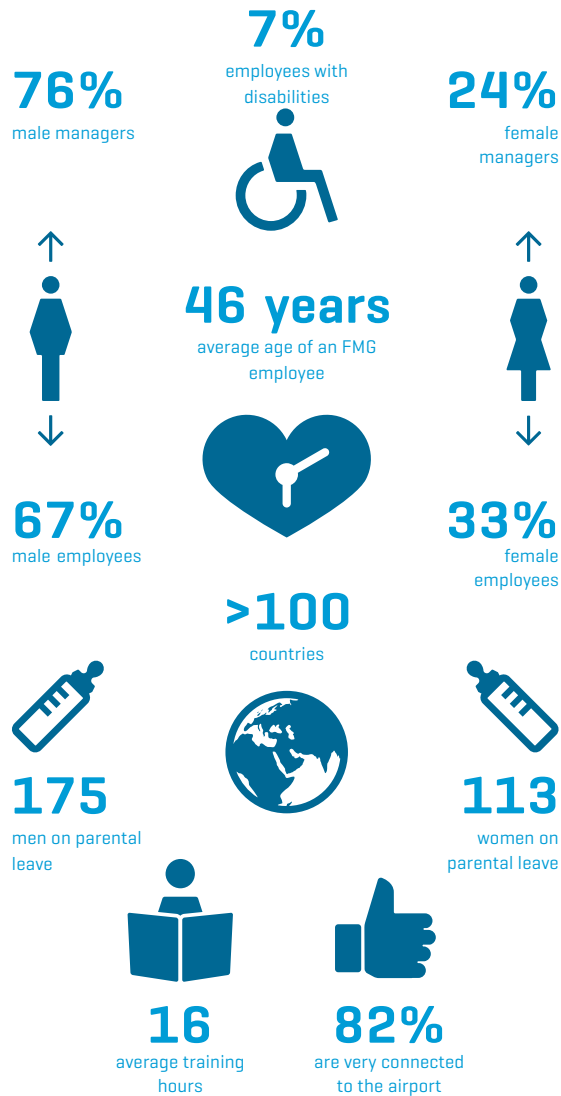
Group management is convinced that good performance and a family-friendly working environment are mutually dependent. FMG has for many years placed a high priority on being family friendly and has supported this with numerous offerings. Moreover, much of the airport's work in this area aims to maintain or improve staff ability to work. The Corporate Health and Social Management

[BGM] division offers a wide array of services, ranging from occupational medicine and employee catering to advice for people living in difficult circumstances. The Munich Airport Group offers a range of supplementary company benefits for a healthy work/life balance. For example, more than 700 employees utilize the offer to work up to 30 percent of their individual working hours from their home or mobile office.

Employees meet and converse in the canteens on the campus.

**Goal to 2020**  
Equal participation of men and women in management positions

## The employees – facts and figures



## Additional offers for employees

### Catering in the employee canteens

900,000 meals are served annually in the five employee canteens on the airport campus. The goal of the canteen concept is to offer employees well-balanced meal options in a pleasant environment. In 2018, the canteen in Terminal 2 was completely renovated and re-opened with the theme «Mediterranean meets Art».

### Support during long periods of illness

As at January 1, 2019 a new works agreement for occupational integration management (BEM) came into effect. It regulates the processes around the voluntary procedure for employees, who were off sick for more than six weeks within a period of a year and then return to their workplace. The program counteracts future incapacity to work and contributes to maintaining employability.

### «AufWind» [Ascent] musculoskeletal system program

From 2013 to 2017, 30 percent of all days missed due to illness in FMG are attributable to problems with the musculoskeletal system. For this reason, Corporate Health and Social Management implemented a holistic prevention program, aimed at reducing chronic musculoskeletal disorders, maintaining the ability to work, and thus improving productivity. As part of this program, the FMG occupational medicine service also works closely with external physiotherapists.

## Further considerations for occupational safety

### Shared task, shared responsibility

FMG has set itself the goal of continuously improving working conditions, and of lowering the accident and illness figures. New solutions are constantly being developed at Munich Airport, to counteract health hazards and risks in the workplace. The first Group-wide workplace safety committee meeting, held in 2018, provided the opportunity to exchange ideas, information, and opinions on cross-Group topics such as safety standards, accident prevention strategies and health care. Around 70 managers, works council members, specialists in occupational health and safety, and safety officers from the subsidiaries took part in the event.

### Occupational health and safety conference at Munich Airport

A high safety level in the ground handling service is only guaranteed through close, cross-department cooperation in the area of occupational health and safety. In 2018, some 30 occupational health and safety specialists, safety officers from the subsidiaries, managers, works council members, and managers of external ground handling service companies met at the Airport Academy for an occupational health and safety conference, in order to exchange on topics like the role of managers regarding occupational health and safety, and possibilities of improvement in communication with and among workers on the apron. The aim was to identify fields of action and to derive measures together, in order to minimize hazards and avoid accidents. Another Group-wide occupational health and safety conference will be held in 2019.



## Ergonomics

One of the core tasks of the Occupational Health and Safety division is the design of ergonomic workstations. In particular, aircraft ground services staff perform challenging physical activities with a verifiably heightened risk of musculoskeletal disorders. In 2018, FMG made a number of investments in a study conducted together with the Fraunhofer Institut, on the development of an automated luggage loading system using robots. The aim is to reduce significantly the manual activities of employees in aircraft ground handling. Further concrete project steps are planned for 2019.

## Outlook

The Occupational Health and Safety division works closely with the Airport Academy – for example, on the development of web-based training for occupational health and safety-related topics. In 2018, the review of FMG's in-house occupational health and safety management system by the Trade Supervisory Office was of paramount importance; the certification is scheduled for 2019.

## Numerous prospects for employees with impaired health

FMG possesses a great deal of expertise in the employment of employees with impaired health. In order to facilitate as normal an everyday working life as possible, a range of offers is provided: occupational integration management, the continued employment of employees whose abilities have changed, the recruitment of people with severe disabilities, and the training of young adults whose intellectual development must be supported. As at December 31, 2018, the Group employed 698 staff members with disabilities or equivalent limitations, corresponding to around seven percent of the total workforce.

## Community engagement

### The airport and its regional projects

Munich Airport always endeavors to be a good neighbor and is very aware of its social responsibility within the region. In the past year, funds and resources were provided to more than 750 projects, which can be attributed to the airport's five sponsorship pillars: education, social affairs, sport, culture, and nature. In 2018, numerous associations, in which employees themselves were active on a voluntary basis, received financial support through the «regional sponsorship of employee initiatives». Thus, for example, many voluntary fire departments were able to buy additional equipment, sports clubs were able to buy much needed training supplies, and community initiatives were promoted. In 2017, the airport launched its «NachWuchsWald» [new talent forest] project: in future, for every new-born child of an FMG employee, a tree will be planted in the Kranzberger Forest outside Freising. The next planting event is scheduled for 2019.

Munich Airport once again lent its support in 2018 to many projects aimed at promoting the personal development and talents of children and young people, and at helping them in their choice of career.

### • The «SchuleWirtschaft» working group for schools and businesses

In the «SchuleWirtschaft» working group Flughafen München GmbH works alongside principals from local schools, regional businesses, specialist tradespeople, and representatives from employment agencies. The stated aim of this voluntary network is to make the transition from school to working life easier for young people.

### • «Jugend forscht» [youth research] at the airport

As a mentor and one of the organizers of the regional research competition for young people «Jugend forscht – Schüler experimentieren», Munich Airport supports up-and-coming talent in the fields of mathematics, IT, the natural sciences, and technology [MINT]. At the event held in February 2018 under the slogan «Spring» [jump], some 119 young inventors took part, presenting 78 projects from MINT subject areas.

### The Flughafenverein – help without borders

For three years now, the Flughafenverein has borne the «DZI Seal of Approval», evidence that an association handles all of its donations carefully and responsibly. As well as making a number of anonymous donations and helping sick children's dreams come true, the airport's charitable association also supports local young people, senior citizens, and refugees, as well as regularly taking part in projects outside Germany. For instance, it has already transported around twelve tonnes of charitable donations to Latvia, for the ninth time. In cooperation with AeroGround and FMG, the association also organized the donation and handover of three decommissioned apron buses to Ghana, Romania, and Poland last year. In summer 2018, the Flughafenverein donated medical equipment and 200 folding beds for the victims of the wildfires in Greece. An aid project near the Turkish coastal town of Ayvalik also captured hearts and minds in 2018. Families and orphans are living there under the most difficult conditions. The Munich Flughafenverein donated food and hygiene products as well as school supplies. The project will be continued in 2019. The association also continued its commitment to Ukraine, sending a truck fully loaded with hospital beds, medical equipment, and devices to the Eastern European state.

### Goal to 2020

Using innovative lifting aids in the baggage handling system of Terminal 1

## Value creation

### Economic benefits

Munich Airport has regional economic impact at a number of different levels. A basic distinction is made between the effects resulting directly from airport operations on the one hand and the effects of its use on the other. The value-added effects generated by airport operations can be categorized into direct, indirect, and induced effects.

- **Direct effects:** All value created by Munich Airport's economic activities. The direct value created is used to pay salaries and wages.
- **Indirect effects:** The sum of all effects in a region which are generated by the supplier and service relationships of the companies at Munich Airport.
- **Induced effects:** Economic activities with a value-added effect in the region which are generated by purchases made using income at Munich Airport.

Effects resulting from the use of Munich Airport are known as location effects. These include positive economic effects, such as an increase in productivity and investments, plus a high level of employment and innovation. Proximity to the airport is seen as an important criterion for companies deciding to settle in the area. The airport also offers advantages for the tourism industry.

### Central procurement of services

#### Group-wide product group management

Munich Airport does not have a conventional supply chain, but procures a wide range of products and services needed to operate and expand an international hub airport. The range of essential products are comparable to the requirements of a small town: The 139 product groups range from things like office supplies and road construction to vehicles and buildings. In 2018, the total procurement volume<sup>1)</sup> of Munich Airport Group amounted to around € 750 million. All procurement by specialist areas and subsidiaries is handled by the central Group-wide product group management system. Only the merchandise, food & beverage, and medical equipment product groups were procured directly from subsidiaries.

#### Legal provisions in respect of procurement

The Munich Airport Group, a sectoral contracting entity, operates in the field of «Ports and Airports». As such, it ensures its procurement policy is consistent with public procurement legislation. Where public contracts are involved, calls for tenders are issued on a Europe-wide basis in keeping with the binding regulations under procurement law. The Group normally puts contracts that are not subject to public procurement legislation to tender based on a formal, company-specific process.

<sup>1)</sup> Figures relate to the total procurement volume of the Munich Airport Group in 2018.

### Supplier structure and management

Around 5,100 suppliers work for the Munich Airport Group. The supplier structure during 2018 was relatively consistent with the previous year. 98 percent of the procurement volume of the airport went to companies headquartered in Germany. Of these, 61 percent are from Bavaria, and 38 percent are from Munich and the area surrounding the airport.

### Local help for the airport

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For flight operations to run smoothly during the winter, runways, aprons, and taxiways must be free of snow and ice. To clear the area of more than four million square meters, Munich Airport has been actively supported for more than 20 years by farmers and haulage firms from the region. To this end, tractors are equipped with specialist devices such as plows, sweepers, and radio equipment.

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In 2018, Flughafen München GmbH assessed around 150 of its framework agreement partners according to the following criteria: the quality of the product or services, reliability, service and price trends, as well as the company's certification according to quality and environmental standards. In the event of poor outcomes, the suppliers had the opportunity to eliminate existing deficiencies in supplier audits.

Legal basis  
Section 21 SektVO  
Section 7 SektVO



### Responsibility in the supply chain

A party submitting a tender must confirm it complies with the statutory provisions in order to rule out anything that would prevent it taking part in public procurement or tendering procedures. They must also provide evidence that they comply with the standards relating to quality assurance and environmental management. The top priority when commissioning products or services is to draw up agreements that satisfy environmental, social, and economic requirements. For vehicles and equipment for the FMG vehicle pool, it must be ensured that environmentally-friendly vehicles, specifically those with low CO<sub>2</sub> emissions, are procured. The Munich Airport Group awards contracts on the basis of cost-effectiveness and places particular emphasis on the utilization of materials and products that are both durable and use low levels of natural resources. For investment goods, any subsequent costs for servicing and maintenance [life cycle costs] are also considered, where necessary. The Group is mainly supplied by business partners in the region, which helps reduce transportation distances and CO<sub>2</sub> emissions. For example, Allresto purchases food worth around 20 million euros each year – nearly all of which originates from Bavaria, and a good 50 percent of which comes from the area directly around the airport. Moreover, the food purchased is predominantly seasonal produce.

Focus on the local area: The airport procures the vast majority of its supplies from regional business partners.

#### Goal

Integrating further sustainability criteria into supplier management

# Environmental and climate protection

- 63 – Climate protection strategy
- 67 – Resource management
- 69 – Noise protection
- 70 – Biodiversity

Proportion of reuse  
has increased

57%

recycling rate  
waste

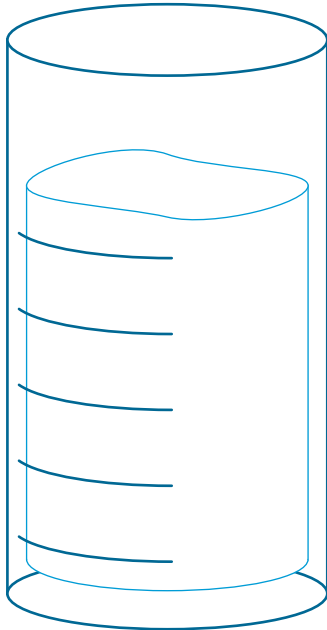
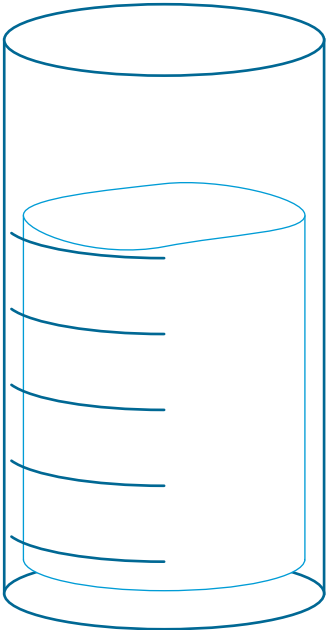
Efficient use of drinking water  
(per 1,000 traffic units)

19.8 liters

2018

21.0 liters

2017



Carbon-neutral operation of  
the airport by 2030

40%

regional  
compensation  
measures



60%

in-house reduction  
measures

## Climate protection strategy

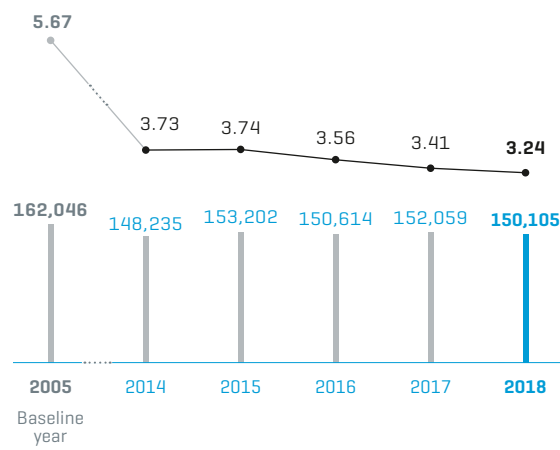
### The commitment: carbon-neutrality by 2030

The climate-policy goals are developing quickly, and FMG's standards are high. These two parameters are the foundations of Munich Airport's climate goal: From 2030, the airport will be carbon-neutral – the first German airport ever to be so. To achieve this, the Munich Airport Group is reducing the greenhouse gas emissions that can be attributed directly to its operations by at least 60 percent using various technical measures. The remaining 40 percent are to be balanced out by suitable compensation measures, preferably within the region. This climate protection goal adopted in December 2016 is significantly more ambitious again than the previous goal to achieve carbon-neutral growth by 2020. Flughafen München GmbH is investing € 150 million by 2030 to achieve this target, almost an entire year's net profit.

### Carbon emissions at Munich Airport

Scopes 1, 2, and 3 without the LTO cycle, APUs, and public transport  
In tonnes per year

● Specific carbon emissions per passenger in kilograms

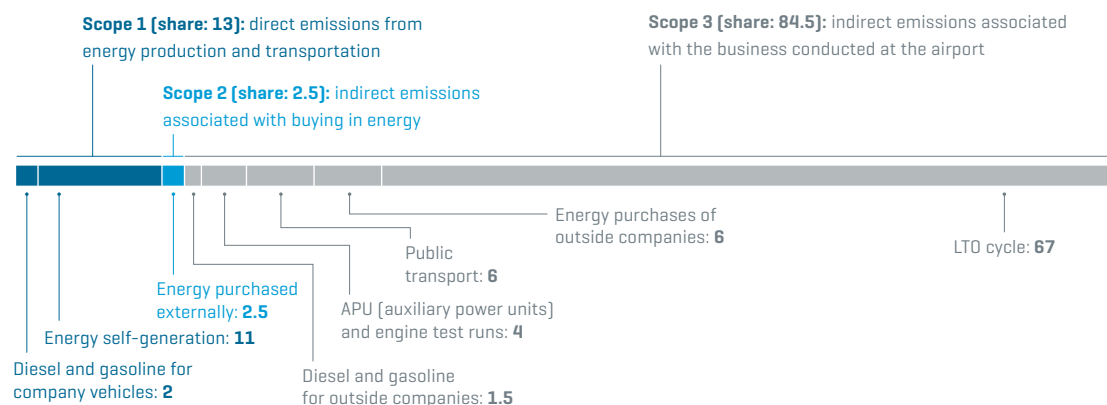


### CO<sub>2</sub> emissions per passenger are sinking further

FMG has lowered CO<sub>2</sub> emissions from around 162,000 tonnes in the reference year 2005 to around 150,000 tonnes to date. Had the some 249 individual measures not been taken, CO<sub>2</sub> emissions at Munich Airport would be significantly higher than they actually are – more than 36,000 tonnes a year higher. Added to that is the more than 400 tonnes of savings generated by the commissioning of the first large-scale photovoltaic system by Munich Airport Group on the roof of the P51 parking structure. In 2018, Flughafen München GmbH invested around € 2.1 million, to reduce greenhouse gas emissions by 3,667 tonnes in the long term. The improved energy efficiency is particularly evident in this comparison: While passenger figures at the airport have increased by around 62 percent since 2005 and the building areas have grown by around 16 percent, the CO<sub>2</sub> emissions of buildings, systems, and vehicles fell by some seven percent. CO<sub>2</sub> emissions per air passenger in the same period thus fell by 43 percent. These successes make it clear that even the most ambitious of climate goals can be achieved by continuously improving efficiency in existing stock, through sustainable building construction and through the increased use of renewable energy.

### Greenhouse gas emissions at Munich Airport

In percent



### Footprint: complex math problem

The operation of a piece of international infrastructure involves emissions from the most varied of pollutants. They all flow into the accounting of the greenhouse gas emissions of an airport (sorted by descending order of relevance):

- Air traffic in the LTO cycle (landing and take-off cycle): taking-off and landing aircraft up to an altitude of 3,000 feet (914 meters)
- Natural gas and heating oil for the power centers
- Power, district heat, cooling power, fuel, and natural gas supplies to external companies
- Feeder traffic: landside/public vehicle traffic (employees, passengers, visitors, and freight)
- Auxiliary power units (APU) and engine test runs
- Power and district heat purchases for the Group
- Airside/in-house vehicle traffic (such as buses on the apron, luggage transporters, and aircraft tug vehicles), ground power units, and other service and de-icer equipment



→ Group management report  
see page 90

→ Glossary

→ «Our climate, our contribution»  
[munich-airport.com/publications](http://munich-airport.com/publications)

→ Glossary



→ Glossary

→ [munich-airport.com/  
climate-protection](https://www.munich-airport.com/climate-protection)

→ [klimaschutz-portal.  
aero](https://www.klimaschutz-portal.aero)

→ Glossary

#### Goal to 2020

Expansion of  
photovoltaics

Carbon footprints provide the basis for the reliable recording of all forms of emissions and lend themselves to international comparisons. They break down all greenhouse gas emissions that can be attributed to an airport into three different sources [scopes] according to an international standard, the «Greenhouse Gas Protocol».

### Scope 1 and Scope 2

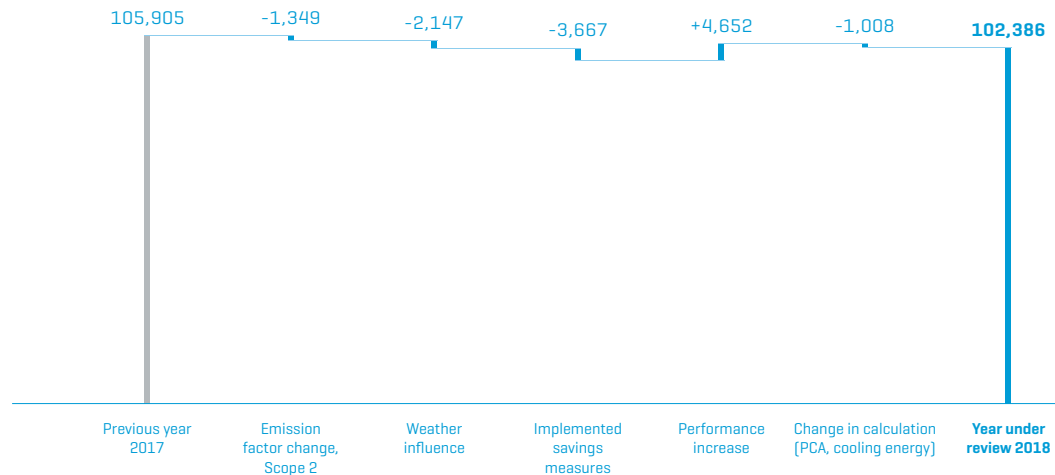
In the year under review, it was possible to further reduce the emissions of Scope 1 and 2, i.e. the emissions of the Munich Airport Group. In addition to factors over which the airport has no influence, such as the changes in the German electricity mix and the weather, two things contributed especially to this development: a modification in the calculation [the energy requirement of the pre-conditioned air systems is attributed to the airlines, which thus avoid emissions from the auxiliary power units] and a performance increase caused predominantly by rising passenger figures and the associated increase in energy requirements. This is offset by savings in the amount of 3,667 tonnes of CO<sub>2</sub>, which almost completely canceled out the increase. The development shows clearly that additional measures are required to achieve the CO<sub>2</sub> goal; plans are underway.

### Block heat and power plant is highly efficient

With its block heat and power plant, the airport generates over half of its on-site energy requirements using natural gas. The waste heat generated from this alone covers almost all of its heating and cooling requirements without requiring the use of additional energy. The airport then covers its remaining heating requirements by procuring district heat from Fernwärmeversorgung Freising. In turn, 50 percent of the purchased district heat – i.e. around 14 Gigawatt hours (GWh) – comes from a biomass thermal power plant in Zolling, which reduces

### Development of CO<sub>2</sub> emissions [Scope 1 and Scope 2]

In tonnes



the CO<sub>2</sub> emissions by a further 3,000 tonnes approximately per year. If the heat and power were generated separately in the mix applied in the Federal Republic of Germany, the amount of CO<sub>2</sub> produced each year would be 40,000 tonnes higher.

Less than a third of the power used on the airport campus comes from external energy providers. Overall, emissions produced by the external procurement of power and district heat have decreased by 25 percent since 2005. Looking at the Munich Airport Group alone, this figure has fallen by almost 50 percent. This is down to the new, even more efficient engines for cogeneration of heat and power on one hand, and reductions in power consumption on the other.

### Photovoltaics generate renewable energy

In its drive to achieve a carbon-neutral airport, Munich Airport is also using renewable energy. The first system of this type with an installed rated output of around 750 kilowatt was realized in the summer of 2018 on the new P51 parking structure. It will then generate around 730 megawatt hours of renewable electricity per year and thus save 423 tonnes of CO<sub>2</sub> annually. An expansion will take place in 2019. By 2030, systems with a total output of up to 20 megawatts are planned.

### LED changeover on the aprons completed

One milestone on the road to carbon-neutrality at the airport has been achieved: After a six-year implementation phase and the investment of more than two million euros, the airport has completed the changeover of the apron lighting to energy-saving LED technology. With 185,000 LEDs in around 1,900 lamps on lamp posts standing up to 34 meters tall, Munich Airport currently boasts one of the largest LED high mast systems in the world. The new LED lighting impresses with its particularly high levels of energy efficiency combined with better light output, longer service life and low maintenance costs. Already, the airport is saving around 14,700 tonnes of CO<sub>2</sub> through the optimized lighting alone – about a fifth of that is attributable to the aprons. Time for the next major project: The external lighting in the public areas of the airport will also be switched to LED technology by 2022.

### E-mobility on the rise

As part of its climate protection program, Munich Airport uses alternative fuels from renewable energy sources within its vehicle pool:

- 24 cars use biogas.
- 85 passenger cars/mini-transporters and 268 pieces of handling equipment are electrically operated. 44 additional electric passenger cars have been ordered.

The proportion of electric vehicles is rising significantly: By 2030, they should comprise the lion's share of the vehicle pool. In 2018, Munich Airport replaced a further 85 of its older vehicles run on gasoline or diesel. Electric vehicles currently comprise more than 20 percent of the current vehicle pool. The six-figure, environmentally-friendly investment is supported by subsidies from the German Ministry of Transport. Compared to 2017, it proved possible to reduce the local emission of CO<sub>2</sub> by around 76 tonnes.

### Synthetic fuels from waste

The new fuel «C.A.R.E. diesel», which is made from residual and waste materials as well as from renewable raw materials, also promises further potential. A successful practical trial was started in November 2017 in the road sweeper fleet. It has been possible, with approximately 60,000 liters of C.A.R.E. diesel, to avoid around 157 tonnes of CO<sub>2</sub> emissions compared to conventional diesel. In the meantime, the use of this fuel has been suspended.

### Scope 3

One important factor in the climate protection strategy is the new pre-conditioned air systems (PCA systems). Since autumn 2016, this technology has been supplying aircraft parked in the parking positions next to the buildings at Terminal 1, Terminal 2, and at the satellite building with pre-conditioned air. As a result, the aircraft no longer need to run their auxiliary power units (APUs), which are responsible for high levels of noise, carbon emissions, and other air pollutants. In 2018, the operating times of the 64 PCA systems increased further, which led to a reduction of 18,364 tonnes of CO<sub>2</sub>.

Flughafen München GmbH together with the airlines and the companies based at the airport also improved other climate protection measures in 2018, such as the environmentally-sound continuous descent operations (CDO) and the optimized taxiing system (ACDM; Airport Collaborative Decision Making), which reduces taxiing times.

After nightfall, the old and the new lighting technology is recognizable at a glance. While the old sodium vapor lamps light yellow, the new LED lamps give off a radiant white light.

### Excerpt from the CO<sub>2</sub> reductions program projects completed in 2018 (Scope 1)

Issue	Measure	Carbon reductions per year
Lighting	Changeover of the lighting in the suburban railway tunnel to LED technology	41 t
	Changeover of street lighting in the Zentralallee and in the freight area	113 t
Air conditioning	Use of air doors in the C-West hall	197 t
	Use of air doors in Terminal 1, Level 3	1,072 t
Renewable energies	Photovoltaic system on the roof of the P51 parking structure	423 t
Mobility	Increase in efficiency of drives and expansion of electromobility (without C.A.R.E. diesel)	396 t



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→ [munich-airport.com/air](http://munich-airport.com/air)

## Air quality

### Influence of road and air traffic

In the assessment of air quality at the airport and in its environs, nitrogen oxide  $\text{NO}_x$ , sulfur dioxide  $\text{SO}_2$  and the particulate matter fractions  $\text{PM}_{10}$  and  $\text{PM}_{2,5}$  play a key role. In terms of air pollutants, as with  $\text{CO}_2$ , the aircraft cause significantly more emissions than the ground traffic on the apron, feeder roads, and service roads. It is not possible however to differentiate between the immissions metrologically.

### Landing charges are also charged based on nitrogen oxide emissions

Flughafen München GmbH levies emissions-oriented landing charges. This gives engine and aircraft manufacturers a long-term incentive to invest in the development of aircraft that produce less in the way of harmful emissions. Munich Airport is thus actively contributing to better environmental quality in its environs. With the information on the aircraft types that have landed, the airport can record the contaminants – including  $\text{CO}_2$  – specifically for the engine, and directly map the technical progress.



### Fixed and mobile measuring points

The air quality at Munich Airport is continuously monitored at two measuring points. The measurement stations in the western and eastern areas of the airport record the effect of pollutant emissions from road traffic, air traffic, and other airport operations – overlaid with the background levels from the Munich metropolitan area and the natural background concentration in the atmosphere. The contaminants ozone, nitrogen monoxide, nitrogen dioxide, sulfur dioxide, carbon monoxide, benzene, toluene, xylene, dustfall, particulate matter  $\text{PM}_{10}$ , and particulate matter  $\text{PM}_{2,5}$  are monitored. All statutory limits for the protection of human health were once again met in 2018. For particulate matter  $\text{PM}_{10}$  there were twelve [permitted] breaches of the statutory 24-hour limit. The 2018 annual averages for the key parameters of nitrogen dioxide ( $\text{NO}_2$ ) and particulate matter were in fact significantly below the limits, as they have been in previous years.

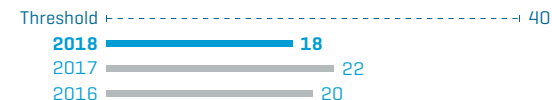
Munich Airport is the first airport in Germany to additionally determine the quality of air using a mobile air quality measurement station. It measures the same substances as the stationary measuring point in the east of the airport in specialist investigations conducted over several months in the surrounding municipalities. In 2018, the mobile measurements took place in Wartenberg and Haimhausen. The measured concentrations were below the statutory limits and thus confirmed the results from the stationary measurements.

Using kale and grass cultures, Munich Airport determines whether the operation of the airport is having an impact on the quality of vegetables and forage/fodder crops.

### Concentration of contaminants at the measuring point on the east side of the airport premises

Annual averages in  $\mu\text{g}/\text{m}^3$

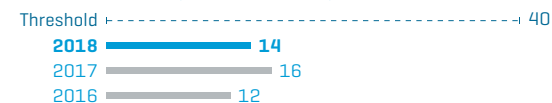
$\text{NO}_2$  concentration [nitrogen dioxide]



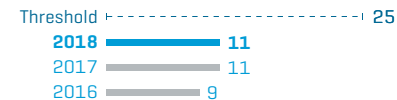
$\text{SO}_2$  concentration [sulfur dioxide]



$\text{PM}_{10}$  concentration [particulate matter]



$\text{PM}_{2,5}$  concentration [particulate matter]



### Keeping track of contaminants

Long-lasting contaminants can accumulate in the environment and therefore seep into the food chain. Munich Airport has been monitoring this situation for many years using a variety of methods. In 2018, plant pots containing Italian ryegrass and kale, and pots for collecting dustfall were set up at twelve measuring points around the airport site. 240 grass cultures and 36 kale samples provide around 1,700 measurements per year relating to air pollutants and their impact. Work also continued on the honey monitoring project in 2018.

## Resource management

### Airport is meeting stricter environmental standards

Munich Airport uses natural resources considerately, and with a sense of responsibility toward future generations. Respectful exchange with the stakeholder groups is thus of major importance – including in relation to the topic of environmental management. Since 2005, Flughafen München GmbH has operated a certified environmental management system to the international standards of DIN EN ISO 14001 and the requirements of the EU regulation EMAS [Eco-Management and Audit Scheme]. In 2018, it was audited for the first time in accordance with the updated, more stringent international environmental standard DIN EN ISO 14001:2015, and successfully certified. Over the course of the audit, environmental issues, opportunities and risks were newly assessed and additional environmental management targets included, for example the «increase in biodiversity». The consideration of life cycles has also increased in importance. Moreover, FMG is supporting subsidiaries whose activities have a high environmental relevance with the introduction of a systematic environmental management system. Allresto, aerogate, and Cargogate have all been successfully recertified already. All employees are called on to conserve resources. Thus for example, an environment module in one training course for ground handling service providers focuses on reducing fuel consumption and on avoiding waste or collecting it correctly.

### Waste: high recycling rates

Flughafen München GmbH seamlessly fulfills the specifications of the German Waste Management and Product Recycling Act and synchronizes the at times major updates to the waste legislation with operational requirements. Producing as little waste as possible has priority. However, waste and scrap products are generated from the operation of the airport – across the board – and these are then collected where they occur in various separating systems, handed over to certified specialist businesses close to the airport, prepared in sorting plants, and then recycled. The small proportion of residual waste that cannot be recycled is converted by the Munich North power plant into district heat and power. Sustainable waste management contributes to generating secondary materials, while also helping to save on costs.

Flughafen München GmbH is making continuous improvements to the entire process chain as well as to the process for separating and sorting all waste and scrap material. Thus for example a new shredding plant shreds confidential data material promptly «in-house». Sensitive files are not now sent to the disposal firm. The waste paper created in this process is sent to a paper plant for use as a raw material. Since April 2018, one airport employee, certified to LAGA PN 98 [Government/States Working Group on Waste], has been taking samples during building and demolition projects under his own direction, and has thus been ensuring quality controls. A key advantage lies in the fact that the prescribed and most cost-effective disposal form is determined at the same time.

The majority of waste and scrap material is generated by affiliated companies, the companies based at the airport as well as airlines. A custom-designed disposal concept tailored specifically to the party generating the waste is therefore essential for successful resource conservation – from the actual generation of the waste through to recycling and disposal. FMG therefore provides regular information on current waste topics, gives tips on environmentally friendly conduct, and is on hand to offer advice.

The year-on-year increase in waste is based essentially on the increase in demolition and building renovation works. The «top soil» excavation material, all of which was recycled, lead to a higher recycling rate.

### Disposal methods for waste

In tonnes [previous year's figures]



➔ «Environmental statement»  
[munich-airport.com/publications](https://munich-airport.com/publications)

Goal  
 Recertify  
 DIN EN ISO 14001

➔ Glossary

➔ Glossary



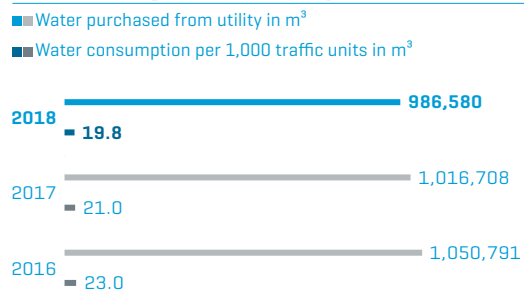
## A responsible approach to water

The aim of water management at Munich Airport is to affect the natural water balance as little as possible and arrange the various effects caused by water resource management, drainage, and the provision of drinking and extinguishing water so that they have as little impact as possible. Overall, FMG aims to achieve the following:

- Minimize the volume of wastewater
- Separate waste water at the source, and treat and dispose of it separately
- Only use drinking water where drinking water quality is really needed
- Keep wastewater away from sealed surfaces so as to prevent peak run-off
- Make sure the condition of the groundwater and bodies of water above ground is not impaired

For example, for some years now, quaternary groundwater close to the surface [process water] from our own wells has been used for cooling in the power centers, west and east, instead of precious tertiary groundwater [drinking water]. This led to a saving on drinking water of around 1,727,100 cubic meters by the end of 2018. Preparatory building works have started on additional process water wells in a bid to save up to a further 50,000 cubic meters of drinking water a year over the next few years. Overall, drinking water consumption at Munich Airport fell by around three percent in 2018 compared to the previous year. This is because the airport takes an economical approach when handling drinking water. For every 1,000 traffic units (1 traffic unit = 1 passenger or 100 kilograms of airfreight), specific drinking water consumption decreased further: to 19.8 liters, compared to 21 in the previous year.

## Total drinking water consumption<sup>1), 2)</sup>



<sup>1)</sup> Includes all companies on the campus.

<sup>2)</sup> Values are derived as follows: Water metering in m<sup>3</sup> measured at the drinking water feed points (transfer points) from the water utility company to Munich Airport.

## Total wastewater discharge<sup>1), 2)</sup>



<sup>1)</sup> Includes all companies on the campus.

<sup>2)</sup> The wastewater discharged to the sewage plant consists of domestic wastewater, industrial wastewater, mixed water, and de-icing waste.

A sewage system stretching for around 300 kilometers collects wastewater at Munich Airport. Depending on the level of contamination, the water is pretreated in the airport's own plants, retained, added to bodies of water, or sent to the sewage plant in Eitting.

## Ground filters protect groundwater

Ground filters in the area around the heads of the runways prevent de-icer from entering into the groundwater. They are used to retain and clean the collected waste de-icer. Regular examinations of the leachate using a TOC measuring system (TOC = Total Organic Carbon) verify their cleaning efficiency. Depending on the level of residual contamination, it is routed to a body of water or – during harsh winters where lots of de-icer is used – sent straight to the sewage plant. The filter at the heads of the north runway and to the east of the south runway are already in operation, a fourth is currently being constructed to the west of the south runway and is due for completion in 2019.

## Aircraft de-icer cycle

De-icing vehicles keep aircraft free from ice and snow before take-off. The de-icer dripping off the aircraft during this process finds its way via slit drainage gutters and channels into underground basins. It is then mechanically and chemically treated in the airport's own recycling plant, before being distilled and converted back to its original state with the use of additives. The recycling rate for the active glycol component in de-icer was around 57 percent for the 2017/2018 season. The average for the last few years has ranged between 41 and a maximum of 59 percent – depending on the weather and taking into account a level of energy consumption suited to the environmental footprint.

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#### Goal to 2020

Design and further develop a noise protection strategy

## Noise protection

### Regulations regarding noise protection Aircraft are required to adhere to strict noise limits

The main regulations for the aviation industry are defined on an international level. Under the umbrella organization that is the United Nations, the ICAO [International Civil Aviation Organization] deals with the issue of reducing aircraft noise. But the airport operator can also regulate this area. Munich Airport does not allow loud aircraft without certificates to ICAO Annex 16 to take off from or land on its premises. For the planned third runway, the same will

also apply to aircraft assigned to Chapter 2, or which only marginally fulfill Chapter 3. The EU pursues similar targets: With «Flightpath 2050», it is aiming for a 65 percent reduction in noise emissions by 2050, taking the figures for 2000 as the starting point.

### Night flight regulations at Munich Airport

The night-flight curfew includes a noise quota, which is based on aircraft types and sizes, and the number of aircraft movements. During 2018, only 71 percent of the permissible noise volume was used at Munich Airport. In 2018, the mean night-time **continuous sound level** at the borders to the control zone did not exceed the permitted

value of 50 dB(A). The current night-flight curfew, introduced in 2001, will also apply for the planned third runway. The third runway may only be used at night in exceptional circumstances, such as an emergency or closure of one of the other runways.

### Noise reduction measures provide relief for residents

Munich Airport aims to keep the impact on residents and employees caused by flight noise as low as possible. It applies a range of steps to achieve this, including operational, technical, and financial measures.

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➤ [umweltbundesamt.de/en/daten/umwelt-gesundheit/belastung-der-bevoelkerung-durch-umgebungs-laerm](https://umweltbundesamt.de/en/daten/umwelt-gesundheit/belastung-der-bevoelkerung-durch-umgebungs-laerm)

→ **Group management report**  
see page 76

→ Glossary

### Engines running idle during final approach

Continuous Descent Operations (also known as Continuous Descent Approach, CDA) designates a flight procedure, during which the aircraft descends with its engines set to minimal power (ideally, they should be idling), thus avoiding, in as far as possible, any horizontal flight phases. As a result, fuel is saved and the emissions of CO<sub>2</sub> are reduced. In some areas, the noise can also be reduced, if required. For Munich passenger airport, the application of this flight procedure has been announced.

### New engine architecture halves noise levels

The Airbus A320neo, currently the most efficient and quietest short- and medium-haul aircraft also serves Munich Airport. It features the latest generation of engines, reducing fuel consumption by 15 percent, and therefore also reduces both carbon dioxide emissions and noise levels. The Airbus A350-900 is one of the most modern and environmentally-friendly long-haul aircraft in the world. Compared to its predecessor, the A340, it creates significantly lower noise levels: up to 7 dB(A) less on start-up and up to 3 dB(A) less on landing. In contrast to an A340, the A350-900's noise contour is around 40 to 50 percent smaller and its noise level does not exceed 85 dB(A) outside the airport premises. This results in lower aircraft noise pollution in the airport region. Thanks to its cutting-edge engines and special design, the A350-900 consumes 50 percent less kerosene overall and thus emits 50 percent less CO<sub>2</sub>. Lufthansa bases fifteen long-haul aircraft of type A350-900 at its Munich hub.

[munich-airport.com/  
noise-protection](https://munich-airport.com/noise-protection)

### Landing charges: quiet equals cheap

Munich Airport can influence the type of aircraft used by ensuring its landing charges depend on noise levels. Airlines using quiet aircraft benefit from a charges system based on a broad sliding scale. Noise-based take-off and landing charges may be as much as eight times higher for a loud aircraft type than a quiet one.

### Dense measurement network for aircraft noise monitoring

Using 16 fixed measurement points, FMG continuously monitors aircraft noise within a radius of about 20 kilometers around Munich Airport. It also performs mobile measurements as a voluntary service for municipalities that are not covered in the stationary measurement network. In 2018, eight mobile aircraft noise measuring systems recorded values on a total of 306 days, including – for the first time – in Berg, Kranzberg and Ast, Tiefenbach. Mobile measurements have already been performed on multiple occasions in Velden, Krüglau, Wurmsham, Sünzhausen, Zieglberg, and Rudelzhofen. There are plans in place to procure new mobile measurement stations in the future, which will be equipped to take their power supply from environmentally friendly solar panels.

### Tracking aircraft movements live

Current aircraft movements can be retrieved via the FMG website with just a few minutes of a delay. Aircraft type, airline, starting point or destination, elevation, speed, as well as the angle of ascent or descent are displayed there. A mark can be placed at any point on the map in order to see the elevation at which an aircraft passes over or what its lateral distance to the arrival or departure baseline is. The data from the aircraft noise measuring stations is also available at the click of a mouse.

## Biodiversity

### Landscape design benefits the environment

To integrate Munich Airport into its environment in the best possible way, FMG set about – from the very outset – creating structures that would upgrade the environment in the wider area and link it together. The concept divides the areas in Erdinger and Freisinger Moos into three zones:

#### Zone I: Airport premises with runway system, buildings, and roads

Green areas, originally with over 6,000 additionally planted trees, make up almost two thirds of the airport premises. Specialist care and maintenance has led to a rich variety of vegetation and ecologically valuable spaces, particularly inside the security fence, on the green areas between the runways and their infrastructure facilities.

#### Zone II: Wooded green belt with structural diversity around the airport premises

With its woods, ditches, and meadows, this area around the edge of the airport acts as sound protection and as a buffer for settlements and agriculture. For instance, more than half of the area around the northern receiving ditch with its near-natural, designed course, is now home to plants that are worthy of protection, such as the pasque flower, ox-eye, perennial flax, and campanula. On the list of particularly protected species are the local marsh gladiolus and fen pondweed.

### Zone III: Ecological compensation measures

FMG has in the interim created approximately 450 hectares of compensation areas. The aim is to offset the interventions in the natural landscape caused by the building projects. The responsible certification bodies have confirmed that sufficient areas have been cultivated and that these are looked after properly. These compensation areas for conservation, with their new woods and species, are making an important contribution to biodiversity in the region. They are distributed in the agricultural land and ensure species diversity, among other benefits. They are neither fertilized nor mown.

#### Valuable spaces for birds

As of 2017, FMG has created around 70 hectares of compensation space in the north of the airport, which are relevant for European species and land protection. The damp depressions in the terrain and the wide, open spaces should benefit, above all, meadow breeders such as the lapwing and Eurasian curlew. The measures are intended as compensation for road and rail works in the east of the airport.

### The airport is part of a bird sanctuary

Munich Airport is part of the 4,525-hectare «Nördliches Erdinger Moos» European bird sanctuary, which is home to 40 endangered species of bird, some highly endangered. It includes the 658 hectares of airport meadow around the runways and is an important habitat for endangered species of meadow breeders and also for rare species of plants, reptiles, dragonflies, and butterflies, such as creeping marshwort, sand lizards, ornate bluets, and the dusky large blue.

### Protected habitat for meadow breeders and butterflies

To improve the habitats of meadow breeders, FMG set up a project in 2016, entitled «Meadow breeder protection in the area around Munich Airport», receiving specialist support from the Bavarian Ministry of the Environment. To achieve this goal, around 50 hectares of land currently used for agriculture will be used to develop and test preventive concepts and measures by 2020. These will include steps such as nest protection, more extensive cultivation, mowing concepts designed to suit meadow breeders, fencing to protect against predators, and the development of ecological lease agreements with corresponding requirements regarding cultivation.

One of the flagship projects within the Bavarian Environmental Pact is the airport's voluntary commitment to protect rare species of moor-based butterflies on «Freisinger Moos». Scarce heath butterflies, bog fritillaries, dusky large blues and scarce large blues are the four

### «Nördliches Erdinger Moos» European bird sanctuary

■ Eurasian curlew ■ Lapwing ■ Blue-headed wagtail



at-risk species that will enjoy a new, protected habitat in six appropriate areas in the region, covering a total space of five hectares. These areas were also mown in a manner suitable for these species in 2018, in order to counteract the success of the measures already taken. In addition, experts toured the area for the purposes of performing an interim evaluation. The conservation project on butterfly protection will run provisionally until 2020.

### Hunting as active nature protection

Conservation and species protection play an important role in hunting activities in the airport area. For instance, fox and marten populations on the airport meadows are controlled by the airport hunters in an effort to protect at-risk meadow breeders. In addition, FMG owns land in the Isar floodplains, one of Bavaria's eleven designated areas for red deer. In the past, it has succeeded in safeguarding population areas ensuring red deer continue to be able to move safely, and in striking a balance between nature protection and hunting interests.

- «Bird sanctuary and airport operations» [munich-airport.com/publications](https://munich-airport.com/publications)
- [munich-airport.com/bird-sanctuary](https://munich-airport.com/bird-sanctuary)

40 endangered species of birds or birds threatened by extinction, including the Eurasian curlew, the lapwing, and the blue-headed wagtail, enjoy a highly protected habitat at Nördliches Erdinger Moos.



# Financial report

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## **Information on the consolidated financial statements and the Group management report for the fiscal year 2018**

The online report published in full on the Internet is decisive for the audit of the consolidated financial statements. In addition to the unconditional independent auditor's report, the full consolidated financial statements and the Group management report for the fiscal year from January 1 through December 31, 2018 are generally accessible at [report2018.munich-airport.com](http://report2018.munich-airport.com). The version published there was audited by KPMG AG Wirtschaftsprüfungsgesellschaft. The present printed Group management report 2018 corresponds to the audited version. The consolidated financial statements are presented in abridged form in the printed report. This includes the consolidated statement of profit or loss, the consolidated statement of comprehensive income, the consolidated statement of financial position, the consolidated statement of changes in equity, and the consolidated statement of cash flow. The Group notes under IFRS are published only in the online report.

# Group management report

## Situation of the Group

### Business model of the Group Situation

Flughafen München GmbH (FMG) is headquartered in Munich. As the parent company of the Munich Airport Group [Munich Airport] it is the operator of Munich's commercial airport.

Munich Airport is active via the business units Aviation, Commercial Activities, Real Estate and Participations, and Services & External Business. The service profile of the Group covers virtually all the services available on the airport campus – from air travel including passenger and cargo handling through to retailing, hotels and catering services. This integrated business model and depth of added value sets Munich Airport apart from its European competitors.

Munich Airport is committed to a corporate policy of sustainability. The orientation towards economic, environmental, and social goals ensures public acceptance of the airport and consequently the viability of its business model.

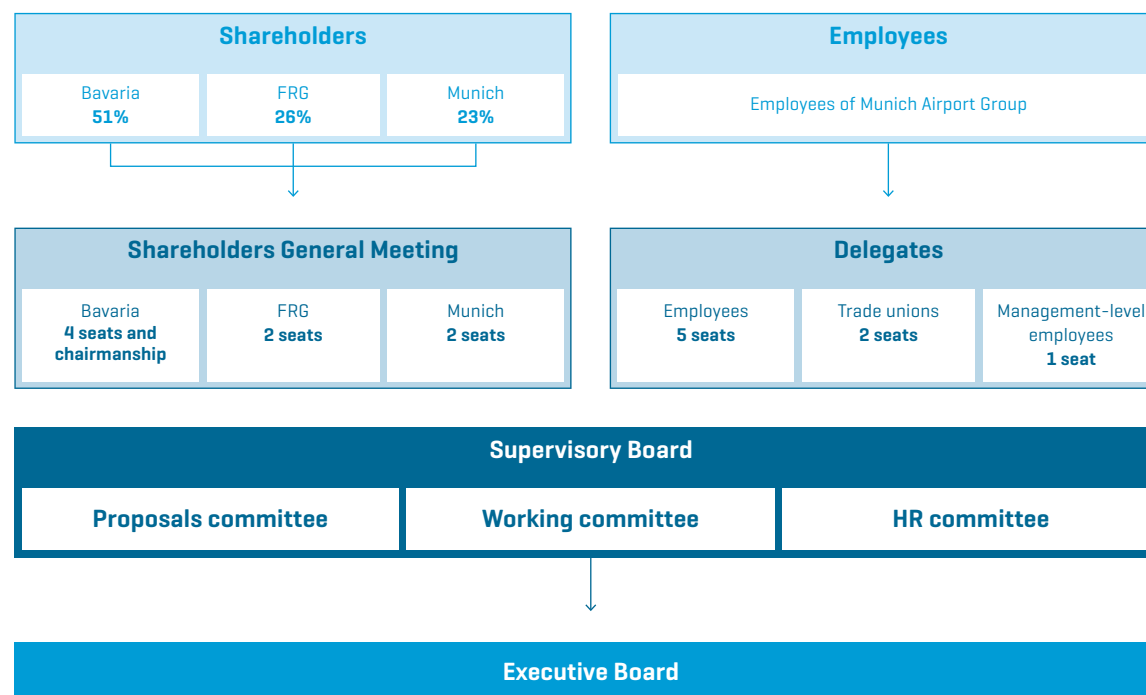
### Main features of management and control Fig. 1

The owners of FMG are the Free State of Bavaria with 51.0 percent, the Federal Republic of Germany with 26.0 percent, and the City of Munich with 23.0 percent.

The shareholders' general meeting is the highest monitoring and decision-making body. It decides unanimously on the Group's business fundamentals, including such matters as airport expansion and borrowing. On all other issues, resolutions are adopted by a simple majority.

### Governance Structure

Fig. 1



### Supervisory Board

FMG has a Supervisory Board, as specified in Article 1 [1], [6] of the German Co-Determination Act (Mitbestimmungsgesetz – MitbestG). The Supervisory Board exercises monitoring and co-determination rights. It appoints members of the Executive Board and determines their remuneration. Transactions exceeding certain thresholds and terms require Supervisory Board

approval. The employees' representatives in the Supervisory Board are elected for a five-year term by the Group employees. The shareholders' representatives are elected by the shareholders' general meeting. Their term in office ends with the shareholders' general meeting that resolves on the formal discharge of the members for the fourth fiscal year after the start of their term in office.

The Supervisory Board has appointed a proposals committee, a working committee, and an HR committee. The proposals committee, working committee, and the HR committee were entrusted with the following tasks, inter alia: Fig. 2

### Executive Board

The Executive Board of FMG's term of office is normally five years; reappointment or extension of the term in office is permissible. It comprises three members and is responsible for the Group's corporate policy and strategic focus. It determines the budget and monitors business developments.

The executive officers of FMG receive a fixed [salary] and a performance-related remuneration including short and medium-term incentives [bonus]. The bonus is primarily linked to the consolidated profit before taxes.

### Female quota

In the context of ensuring equal participation of women and men, the Supervisory Board and Executive Board of the parent company FMG stipulates targets and deadlines for the proportion of women in the Supervisory Board, Executive Board, and on the first two management levels.

A target of 31 percent was stipulated for the proportion of women on the Supervisory Board by June 30, 2020.

The proportion of women in the Executive Board is currently 33 percent, and is to be retained at this value until June 30, 2020.

The Executive Board of FMG has defined a target of 19 percent by June 30, 2020 for the proportion of women at the first management level. For the second management level, the target value of 29 percent is to be retained.

### Committees in the Supervisory Board

Fig: 2

Proposals committee	<ul style="list-style-type: none"> <li>• Right of proposal for the appointment of a member of the Executive Board in the event that voting in the Supervisory Board does not achieve the requisite two thirds majority for the member of the Executive Board to be appointed in the first ballot</li> </ul>
Working committee	<ul style="list-style-type: none"> <li>• Statement on the resolutions proposed by the Executive Board</li> <li>• Approval of certain legal transactions that exceed set maximum monetary values and terms</li> </ul>
HR committee	<ul style="list-style-type: none"> <li>• Designing the contracts of the chief executive officer (with the exception of remuneration), general representatives, and authorized representatives</li> <li>• Consent to the setting and amendment of the rules governing remuneration in the area of the Group not governed by collective wage agreements, to the setting or amendment of the salary level of certain employees above a set salary level or level of remuneration as well as to commitments to an occupational pension, including the company pension scheme</li> </ul>

### Business activities

#### Organizational structure

The Group's organizational structure is divided into the business divisions, service divisions, and corporate divisions of FMG. Commercial management and the internal reporting system are based on the business units. The business units shown in the figure comprise the business and service divisions of FMG and the Group companies integrated in the business units. The business units are explained in the following sections. Fig. 3

There have been no fundamental changes to the legal and organizational structure in the 2018 fiscal year, compared to the previous year. There have been no material increases or reductions in shares. A detailed overview of the ownership structure is included in the Notes to the consolidated financial statements.

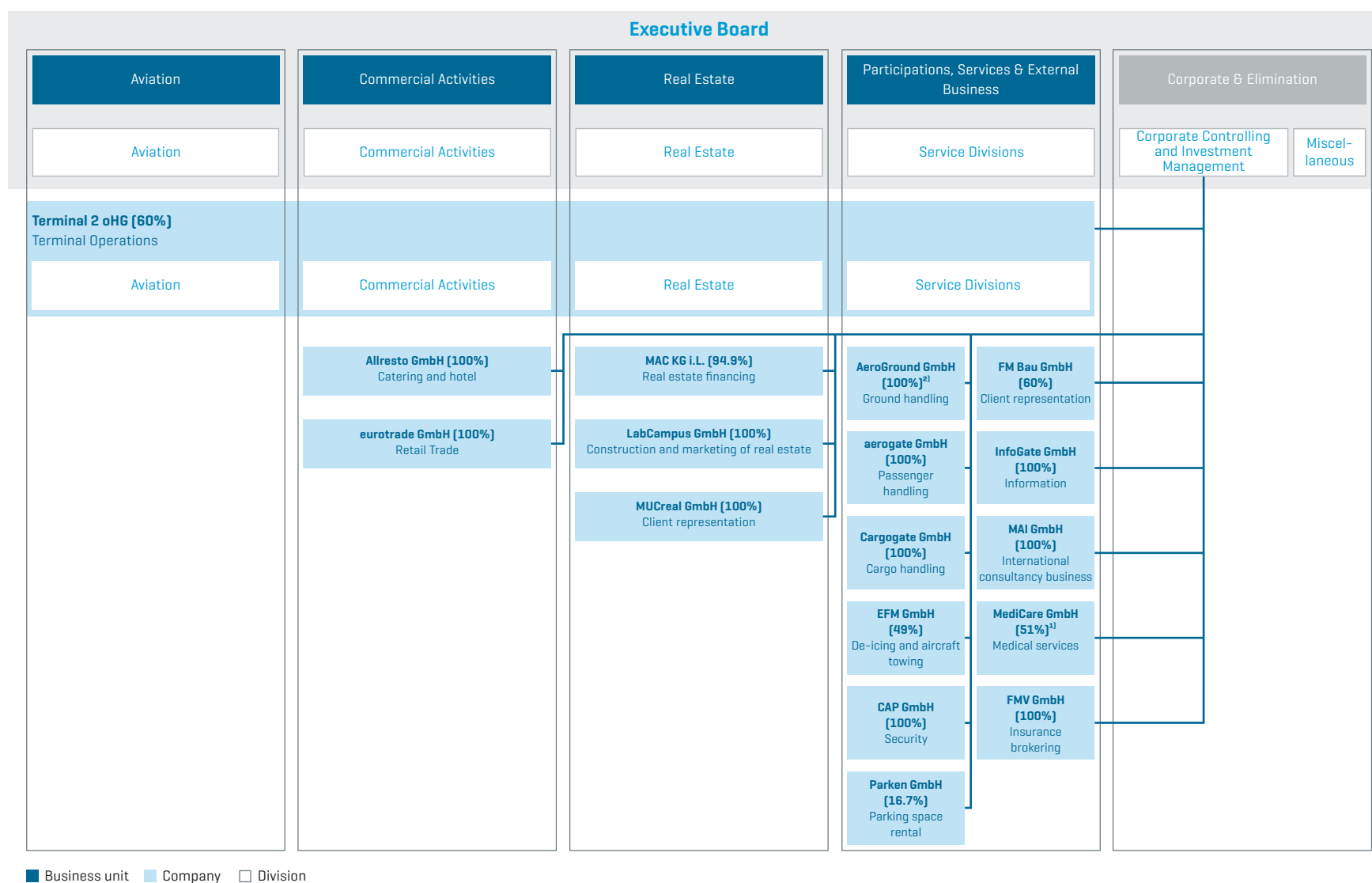
On February 20, 2018, LabCampus GmbH (hereinafter LabCampus) was established as a wholly owned subsidiary of FMG. The purpose of the company is to build, market, and operate buildings and infrastructure on the area of the LabCampus.

Flughafen München Realisierungsgesellschaft mbH (hereinafter MUCreal) was established on July 17, 2018 as a wholly owned subsidiary of FMG. The purpose of the company is business activity conducted on instructions for the planning and realization of infrastructure and expansion projects as well as the construction of buildings in conjunction with the operation of Munich Airport.

In total, the Group comprises 14 fully consolidated companies, one associate, and four companies that are not consolidated. These are directed by Corporate Controlling and Investment Management in line with the business division strategy assigned in each case.

## Organizational structure of Munich Airport

Fig. 3



<sup>1)</sup> MediCare Flughafen München Medizinisches Zentrum GmbH has a 100% equity interest in Munich AirportClinic GmbH.

<sup>2)</sup> AeroGround Flughafen München GmbH has a 100% equity interest in AeroGround Berlin GmbH.

[As of Dec. 31, 2018]





## Business units

- Infrastructure at the limit of capacity
- Wide variety of first-class services and offerings along passenger routes
- Highly attractive real estate location
- Participations: Full service provider for the airlines
- Services: Energy and telecommunications for all airport tenants

### Aviation business unit

The Aviation business unit covers the operation of Munich Airport's air traffic infrastructure.

The following airport charges are levied for the provision and operation of the air traffic facilities: Fig. 4

### Air traffic charges

Fig. 4

	Assessment basis
Take-off and landing charge	Maximum take-off mass of the aircraft (MTOM) on take-off and landing
Noise-bowed charge	Fixed amount per landing depending on the noise category
Emission-bowed charge	Nitrogen oxide equivalent emitted per landing
Passenger charge	Number of passengers on take-off
Cargo charge	Number of workload units on take-off/landing
Parking charge	Maximum take-off mass (for every started period of 24 hours, from the fourth hour)
Security charge	Number of passengers and/or workload units on take-off
Fee for passengers with reduced mobility (PRM fee)	Number of passengers on take-off
De-icing charge	Number of passengers and/or workload units on take-off
Waste disposal charge	Number of passengers on take-off

In fiscal year 2014, Munich Airport agreed a master agreement on charges with uniform terms and conditions for all airlines, which sets the future trend of air traffic charges until 2020 and consequently ensures funding for infrastructure. On average charges rise by around 2 percent per year.

Currently, Munich Airport has two runways with a maximum capacity of 90 aircraft movements per hour during daytime operations. In principle, this capacity is fully utilized over large parts of the day. Market-appropriate traffic development is hardly possible anymore, as many requests from airlines cannot be satisfied. This fact has been confirmed again by the airport coordinator of the Federal Republic of Germany charged with assigning the landing and take-off times (slots). Between 10:00 p.m. and 6:00 a.m., flights are very limited and confined solely to exceptionally quiet aircraft. Scheduled and charter traffic is restricted to 28 planned aircraft movements per night. The restrictions may also be relaxed for homebase airlines and delayed flights. In the period between 12:00 midnight and 5:00 a.m., only night mail and survey flights by German air traffic control are permitted. Other exceptions to the curfew include, for example, emergency and medical aid flights, landings required for reasons of air safety as well as flights approved by the Bavarian Ministry of Housing, Building and Transport as the responsible authority in justified exception cases.

The improvements made and extensions built at the terminal over the past number of years, particularly the construction of the satellite building at Terminal 2 and the extensions to the identity check areas have further enhanced the efficiency of handling.

Through its central location in Europe, at the heart of one of the most economically successful regions, Munich Airport is ideally positioned in strategic terms. The region around the airport is distinguished not only by above average economic development but also by constant growth in the population and people in employment. This is also why Munich Airport is the German airport with the highest proportion of business travelers and is consequently predestined for especially valuable scheduled connections. At the same time, population growth and rising prosperity are also leading to increased demand for private flights from Munich Airport.

Collaborative work with Deutsche Lufthansa AG (hereinafter Deutsche Lufthansa) has helped Munich Airport become a major international air traffic hub. Joint extension projects, such as Terminal 2 and the satellite building, form the basis for a sustainable partnership that ensures long-term growth, secures global connections for Munich and Bavaria as business locations, and satisfies the continuous growth in demand for air travel with a high quality offering.

Thanks to its excellent market position and successful cooperation with Deutsche Lufthansa, Munich Airport has the densest network of continental connections in Europe, measured on the basis of the number of flight destinations. Highly frequented transfer connections ensure an optimal connection of the Bavarian business hub to Europe and the world. The combination of a dense network of German domestic and European links and a strong local demand makes it possible to offer an attractive portfolio of long-haul flights from Munich. Due to the attractiveness of the location as a tourism destination as well as the growing catchment area with an affluent population, Munich Airport is becoming increasingly interesting for point-to-point connections. This is evidenced, inter alia, by the increasing number of low-cost airlines trying to establish a base in Munich.

The positive growth scenarios for Munich Airport are being impeded by the bottleneck in the runway system. In addition, the lack of traffic rights and still ongoing traffic right negotiations are slowing the development of traffic, to Africa [Ethiopia] and China, for example. The departure of Great Britain from the European Union [Brexit] could also have an impact on the aviation market and the entry requirements. The German aviation tax continues to be an additional obstacle to market-appropriate growth.

Cargo handling too is heavily dependent on the development of passenger traffic and the capacities of the runway system. Because the largest share of airfreight at the location – over 80 percent – is transported as bellyhold cargo on normal long-haul flights. Pure freight flights are a little more flexible in terms of their flight times than passenger airlines. Freight airlines are however increasingly dependent on night flights, which are only possible in Munich in exceptional situations due to the strict night-flight curfew.

### Commercial Activities business unit

The Commercial Activities business unit is responsible for developing, marketing, and managing space throughout Munich Airport that may be used for commercial purposes. This includes both strategic planning of the sector mix with regard to the retailing, service, and catering space as well as the issue of leases and concessions to third parties and Group companies.

Munich Airport has around 21,000 square meters of catering space and approximately 25,600 square meters of space dedicated to retailers and service providers. There were changes with respect to the previous year due to the closure and re-opening of individual units as well as renovations to existing units. FMG's subsidiaries operate their own retail or catering businesses on around 63 percent of the total area.

Commercial Activities is also responsible for the five-star hotel in Munich airport's central area. It has 551 rooms and 30 conference rooms.

This business unit also develops and markets demand-oriented parking capacity. At present, there are around 36,000 parking spaces, of which 27,000 are in multi-story or underground car parks, and around 9,000 spaces are on paved and unpaved car parks.

Commercial Activities markets the advertising media and spaces at the airport as well. The offer of what is known as out-of-home advertising at Munich Airport features high-profile advertising spaces with little wastage, tailored to clients' individual requirements.

The business unit's service portfolio also includes the events business.

### Real Estate business unit

The Real Estate business unit develops, operates, and markets all real estate and property owned by Munich Airport, both on and off-campus. The real estate location is divided into location-specific areas, which are marketed under the AirSite concept.

Munich Airport has a lot to offer as a real estate location: an attractive environment, good road connections, very good parking, and a comprehensive range of goods and services for daily needs. The existing rail traffic access has significantly improved as a result of the addition of the Neufahrner Kurve. The cross-regional airport express has established a direct rail link between Munich Airport and eastern Bavaria [Regensburg and Landshut]. The rail access in the direction of Erding is to be expanded in the future via the Erdinger Ringschluss.

In keeping with the high expectations of the entire site, a vibrant, distinctive urban development concept, which will provide the basis for excellent leisure amenities and a successful business environment, is currently being developed.

The demand for living space in the airport region is growing constantly. For this reason, Munich Airport has developed strategies to support new employees in finding accommodation. The aim is to provide fixed-term, furnished accommodation within easy reach of Munich Airport.

### Participations, Services & External Business business unit

The Group's other companies complete the airport's business. The most significant subsidiaries are: Fig. 5

#### Significant subsidiaries

Fig. 5

AeroGround	The companies provide landside and airside handling services for airline passengers, including ground handling services and passenger care, at the Munich and Berlin locations.
aerogate	The company offers passenger handling services, operation services with ramp supervision, ticketing services as well as Lost & Found services with a baggage delivery service and arrivals service at Munich Airport. The range is completed by general aviation services and consultancy and training services.
Cargogate	As a regulated agent, the company carries out services in relation to the throughput of airfreight and dealing with the associated customs formalities. The company packs and stores the airfreight in a hall area of circa 20,000 square meters as well as handling the documents involved. Cargogate also offers handling services for all common special goods, such as hazardous substances, refrigerated goods, and valuable goods. Since September 2018, Cargogate is the only airfreight handler on the campus certified according to the Pharma Good Distribution Practice [GDP].
MAI	In addition to the traditional relocation and commissioning services, the company's portfolio also includes the provision of management and terminal operation services at airports in other parts of the world.



Besides the business units and subsidiaries, Munich Airport's service divisions are also involved in external sales. The largest contribution comes from the following service divisions: Fig. 6

### Significant service divisions

Fig. 6

Technology	The service division is responsible for the secure, cost-effective, and technical operation of airport infrastructure. Among other things, this includes the supply of energy and heating/refrigeration, maintenance of buildings and airport specific equipment as well as vehicle management for series vehicles and handling equipment. This division also plays a significant role in implementing Munich Airport's CO <sub>2</sub> strategy as part of its energy management.
IT	The IT service division offers its customers at Munich Airport various services from the fields of media and communications technology, workplace IT equipment as well as server, database, and storage system technology. The core competencies of the division lie predominantly in the integration of various technical IT platforms and in the creation of tailor-made support services for logistical processes at Munich Airport.

In total less than 5 percent of the Group's external sales are accounted for by activities in the Participations, Services & External Business business unit (excluding ground handling services). Therefore, the economic development of this business unit is not explained in detail. In contrast to this, the developments in handling services within the Group have been included in the passages covering aviation.

### Control system and values management

Munich Airport measures the performance of its managers using financial and non-financial indicators. The most important of these are the indicators that measure corporate sustainability and quality. Accordingly, the perception of traditional sustainability management is governed economically by earnings before taxes (EBT) and ecologically by CO<sub>2</sub> reductions. With the Passenger Experience Index (PEI), Munich Airport determines whether quality goals, which envisage the enhancement of customer satisfaction as a strategic approach, have been achieved. Every year, FMG surveys internal and external interest groups to determine and regularly affirm the relevance of the performance indicators for stakeholders.

### Earnings before taxes (EBT)

The earnings targets of management are formulated on the basis of earnings before taxes (EBT). EBT is the input factor for determining profitability. It relates to the consolidated profit before taxes, calculated by applying the International Accounting Standards in the version adopted into European law by the European Commission.

### CO<sub>2</sub> reductions

Using the indicator carbon reductions (in tonnes), not only can the direct reduction of greenhouse gas emissions be measured, but factors such as the conservation of resources and the efficient use of energy can also be taken into consideration. At the end of 2016, Munich Airport set itself the new climate protection goal of ensuring that as of 2030 its airport operations would be carbon-neutral. At least 60 percent of the emissions are to be effectively saved, while the remaining 40 percent will be offset using high-quality compensation measures. Both emissions caused directly by Munich Airport itself through energy supply and fuel consumption (Scope 1) and emissions arising from energy procurement (Scope 2) are factored into the calculation.

### Passenger Experience Index (PEI)

The PEI is a customer satisfaction measurement model that allows Munich Airport to derive location-specific targets adjusted to the needs of target groups and assign the fields of action to improve service to existing customer contact points. In the interests of objectivity, an independent, external service provider determines these values. Using questionnaires, it regularly surveys satisfaction levels among departing and arriving passengers through the entire year. On a monthly basis and at the year's end, Munich Airport thus receives a great deal of detailed information on the satisfaction levels of its air passengers in eleven categories along the passenger experience chain. As a target value for 2019, the total satisfaction level of departing and arriving passengers is taken from the PEI.

### Innovation and ideas management

The aim of Munich Airport's innovation management is to enhance customer satisfaction and customer experience through new services and products. Since 2017, there has been an increasing demand for the development of products for the airport industry.

Through the analysis of trends and market requirements, innovation management develops targeted innovations for passengers and customers. The feasibility and cost-effectiveness of innovations is reviewed in pilot projects and subsequently a decision is made on whether they should be continued, implemented, and possibly expanded to further areas. In this process, Munich Airport innovation management cooperates with start-ups and established companies in the region, but also increasingly with globally active companies, so that it can always access the latest scientific and entrepreneurial expertise.

Further important input for innovation management comes from the ideas of the company's own employees. In the year under review 2018, a total of 604 ideas were submitted via the in-house open innovation and ideas management system «InnovationPilot» on topics such as employees, spaces and buildings, technical plants and vehicles.

## Economic report

### Economic environment

- Economic upturn continues
- German air traffic registers growth – but falls short compared with other countries
- Retail trade – profits from strong economy
- Catering and hotel business – upswing continues
- Advertising business – decline in the area of out-of-home advertising
- Parking – dependency on the customer structure
- Office rental market in Munich continues at full steam

### Macroeconomic environment

Both national and international economic growth are crucial for an international air traffic hub such as Munich Airport.

Growth in the global economy in 2018 corresponded largely to that forecast at the start of the year. Current projections from the International Monetary Fund (IMF) suggest an increase in global gross domestic product (GDP) of 3.7 percent<sup>1)</sup>. The growth rate in the global economy is thus slightly below the level for the previous year.

In the emerging markets, the picture was more heterogeneous compared to the previous year. In the commodity-exporting countries of Russia and Brazil, the economy continued to recover from the crises of 2015 and 2016. The increased oil and commodity prices have led to the Russian and Brazilian economies growing by 1.7 percent and 1.3 percent respectively in 2018. Moreover, the economy of the People's Republic of China also continued to perform well. The growth rate for 2018 was 6.6 percent. In contrast, Argentina and Turkey, in particular, contributed to the fears surrounding global economic growth.

<sup>1)</sup> International Monetary Fund, World Economic Outlook, January 2019

<sup>2)</sup> German Council of Economic Experts, Autumn Report 2018, November 2018

<sup>3)</sup> IMF, World Economic Outlook, January 2019

In both countries, the economic situation worsened appreciably in the past year. While economic output grew at a positive rate in both cases in 2018, their currencies depreciated strongly against the US dollar and inflation rates were high. Furthermore, the trade balances of both countries displayed a significant deficit.<sup>2)</sup>

In industrialized countries, the upturn of recent years continued for the most part. In the United States, the economy gathered momentum again, while in Japan and Great Britain the growth dynamic slowed. The reason for the positive development in the United States continues to be the strong domestic economic forces. For example, private consumption and investments in equipment performed very positively as in the previous year; this was partly stimulated by fiscal measures (corporate tax reform). The Japanese economy grew less strongly in 2018 than in the previous year. The reason for this is primarily the poor performance of exports. Great Britain posted rather restrained growth of 1.4 percent. The Brexit vote in 2016 has led to consumer

prices rising comparatively strongly due to the decline in the value of the British pound sterling, which has led to a subdued growth in private consumption. The inflation rate in Great Britain in 2018 was significantly above the inflation target of 2 percent.<sup>2)</sup> Fig. 7

The upturn in the eurozone continued in 2018, but lost momentum compared to the previous year however. According to current forecasts from the IMF, the growth rate for 2018 was 1.8 percent.<sup>1)</sup> The growth is thus distributed heterogeneously across the countries of the eurozone. France and Italy posted comparatively low growth rates, while Spain displayed a significant positive development again. Fig. 8 The unemployment rate has fallen again in the eurozone and is thus almost back to the pre-crisis level. The monetary policy of the European Central Bank remained extraordinarily expansive in 2018 and thus supported the upturn in the eurozone. The reason for the waning growth dynamic in the eurozone was the less positive performance of the most important growth drivers compared to

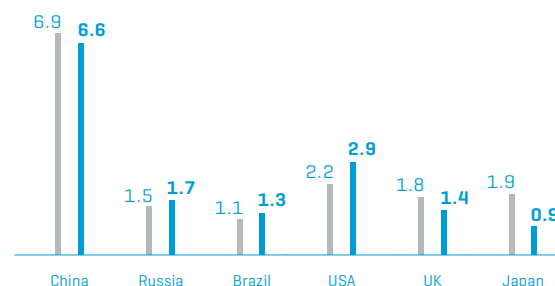


### Economic growth in selected destinations worldwide

Fig. 7

In %

■ 2017 ■ 2018



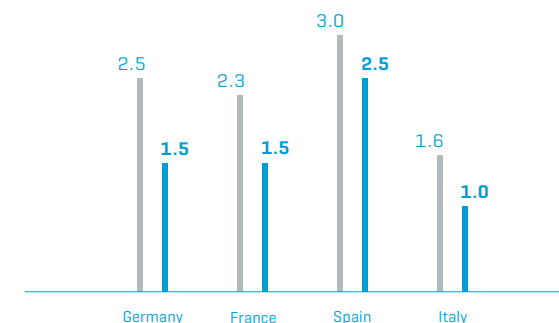
GDP growth in 2017 and 2018<sup>3)</sup>

### Economic growth in selected destinations throughout Europe

Fig. 8

In %

■ 2017 ■ 2018



GDP growth in 2017 and 2018<sup>3)</sup>



the previous year. For example, rising inflation [driven primarily by the increased price of crude oil] curbed the positive development in private consumption, looming trade conflicts deterred companies from investing and the strong development of the euro and the weaker growth in foreign demand hampered export growth.<sup>4)</sup>

The Federal Republic of Germany is currently in a phase of strong economic growth. The upturn which has lasted for nine years already lost significant momentum in 2018. At 1.5 percent, growth in GDP in the Federal Republic of Germany in 2018 was weaker than in the previous year. The reasons for this included the significant production-side problems in the automotive industry, less favorable external economic framework conditions and worsening capacity bottlenecks.<sup>4)</sup> The ongoing upturn was supported by private consumption that remained strong as well as above-average investment in construction and equipment. In contrast, German exports put in a significantly more restrained performance than in the previous year due to lower demand from other EU countries and export weaknesses in the automotive industry associated with the introduction of the new emissions testing procedure known as the «Worldwide Harmonized Light-Duty Vehicles Test Procedure» [WLTP]. The positive development of consumer spending is sustained by the favorable situation on the labor market (unemployment rate of 5.2 percent) and rising wage levels. Private consumption, for example, recorded a growth rate of around 1.1 percent in 2018. In terms of construction investment, which continues to be driven by low interest rates, there was a growth rate of 3.2 percent in 2018. Investments in equipment and in other plant rose by 4.1 percent

and 0.4 percent respectively. German exports, however, grew at a rate of only 2.0 percent. In the previous year, export growth was still at 4.6 percent. The annual average inflation rate in 2018 was, at 1.9 percent, still significantly higher than in previous years.<sup>5)</sup>

In the previous year, the oil price (Brent) fluctuated between USD 45 and 67 per barrel. At the start of October 2018, it achieved a three-year high at just under USD 86, but finally fell in December 2018 to around USD 52.<sup>6)</sup>

### Economic environment Aviation

According to analyses conducted by the International Air Transport Association (IATA), global air traffic was once again setting records in 2018. In total, 4.3 billion take-offs in passenger traffic [+6.1 percent] and a significant increase in sold passenger kilometers [+6.5 percent] were recorded. With that, the performance was below that of the previous year [+7.3 percent and +8.0 percent respectively], but still displayed a stable growth trend. Airfreight also increased by 4.1 percent [freight tonne-kilometers] and was thus weaker year on year [+9.7 percent].<sup>7)</sup>

The airports that are members of the **German Airports Association (ADV)** also achieved significantly positive growth rates on average in 2018. The commercial passenger volume rose overall by 4.0 percent. Aircraft movements increased by 3.9 percent, and cargo throughput [total of airmail and freight excluding transit] was up 1.4 percent. With that, Munich Airport recorded slightly below-average growth rates in 2018.<sup>8)</sup> Further explanations on this are included in the section «Aviation business».

<sup>5)</sup> ifo Institute for Economic Research, economic forecast, December 2018

<sup>6)</sup> onvista website, December 2018

<sup>7)</sup> IATA, 2018 End-Year Report, December 2018

The changes in offering brought about by the insolvency of the Air Berlin/Niki Group have balanced out, in terms of Munich Airport, over the course of 2018. With the exception of the connection to Düsseldorf, all of Air Berlin's former German domestic routes posted an increase in traffic. Intra-continental traffic was also up at Munich Airport, quickly compensating for the loss of Air Berlin's services in this segment as well.

In the global comparison, measured according to sold passenger kilometers, the Asia/Pacific region was in first place with growth of 8.5 percent in 2018, followed by Europe [+6.4 percent] and Latin America [+6.0 percent]. In general, according to initial estimates from the IATA, the still significant growth rates were in some cases considerably below the performances for the previous year; only North America, with +5.0 percent, grew stronger than in the previous year [+3.9 percent]. The forecasts for 2019 continue to assume global growth, however the trend will only strengthen in the Gulf states and in Africa, which will recover after a poor year in 2018. Latin America will probably remain stable, Asia, North America, and Europe will register weaker growth rates.<sup>7)</sup>

According to information from the German Aviation Association (BDL), the German airlines performed below average compared with the rest of Europe. While the traffic performance of European airlines [measured in sold passenger kilometers] was able to keep pace with the global average [+6.5 percent] with an increase of 6.6 percent, German airlines posted a negative result of -1.0 percent. The losses due to the insolvency of the Air Berlin/Niki Group [market share 2017: 10 percent] could not

<sup>8)</sup> ADV, ADV news: Traffic forecast of the ADV for 2019

→ Glossary

be completely compensated for by German airlines in 2018. These took over only five percent of the Air Berlin/Niki market share. Four percentage points was distributed between foreign companies such as easyJet and Ryanair/Laudamotion. Various other foreign airlines accounted for the remainder. Overall, the BDL considers the gap in the offering to be closed.<sup>9)</sup>

Compared to the airlines, the passenger airports in Germany recorded a positive result according to the BDL. Their passenger figures rose by 4.1 percent, whereby the European and overseas traffic contributed particularly to growth. Domestic German traffic posted a slight decline. Across Europe, passenger figures at the airports grew by 6.2 percent, and were thus slightly above the global average of 6.0 percent.<sup>9)</sup>

The IATA also pointed to the deficits in the European airspace infrastructure and determined a rise in the corresponding delay minutes by 61 percent. Monetary losses resulting from this were quantified by the IATA at over USD 2.2 billion for airlines and around USD 2.5 billion for passengers.<sup>10)</sup> This assessment is shared by the BDL: The rising number of take-offs and landings [+4.0 percent] at German airports, which are controlled by Deutsche Flugsicherung GmbH [German air traffic control], and the number of overflights, which have increased by 13 percent in the past five years, represent a huge challenge for the existing infrastructure.<sup>9)</sup>

<sup>9)</sup> BDL, Annual balance sheet 2018, February 2019

<sup>10)</sup> IATA, 2018 End-Year Report, December 2018

Accordingly, in its current aviation concept, the Federal Ministry of Transport and Digital Infrastructure has examined 20 measures to deal with these requirements. It came to the conclusion that the objective [participation in global growth] could not be achieved in full, despite implementing all the proposals in the portfolio. Consequently a further delay in realizing these measures would fundamentally endanger the competitiveness of the German aviation industry. The main problem for German aviation is therefore not a lack of demand, but instead lies in being able to satisfy demand with an appropriate offering.<sup>11)</sup>

### Economic environment Commercial Activities

Thanks to higher incomes and record employment, German retailers also recorded growth in 2018 according to the Federal Statistical Office, with an increase in sales of 2.3 percent to € 525 billion. More and more bricks-and-mortar retailers profited from online growth [2018: +9.7 percent], by utilizing the opportunities of digitalization.<sup>12)</sup>

According to the German Retail Association [HDE], the retail trade is still doing well. The favorable labor market situation and current wage development are however being dampened by the expectations of citizens with respect to the economy. Nonetheless, consumer confidence is still good. This is also confirmed by the ifo Business Climate Index: the majority of retail companies surveyed assessed the business climate for the next six months positively.<sup>12)</sup>

According to the German Hotel and Catering Association [DEHOGA], the catering sector recorded a positive performance in 2018, for the ninth time in a row, and thus continued its upward trend. In the area of guest accommodation too, a sales increase of 3.7 percent was achieved, which when adjusted for

<sup>11)</sup> Aviation Report of the Federal Ministry of Transport and Digital Infrastructure

<sup>12)</sup> Federal Statistical Office & HDE, press release, January 2019

price, represents a growth rate of 1.5 percent. With a nominal sales increase of 2.8 percent [real 0.6 percent], the restaurant trade also performed well. The catering sector was likewise able to increase sales by 3.0 percent [real 1.2 percent].<sup>13)</sup>

In the fiscal year 2018, the gross advertising expenditure of the advertising companies was on a par with the previous year at € 31,862 million. The advertising category used primarily at Munich Airport is out-of-home advertising. The gross advertising expenditures in this area are down 2.8 percent compared to the previous year.<sup>14)</sup>

Shifts in the modal split, which reflects the manner in which passengers who live in the catchment area of Munich Airport travel to the airport, as well as changes in the number of visitors relating to passengers from Germany and abroad had different impacts on the Parking business unit. In particular, the «Shared Mobility» business [rental cars and car sharing] profited from increased passenger volumes. Displacement effects to other methods of traveling to the airport, particularly to the S-Bahn railway network, were achieved in terms of sales by a price increase as well as through parking transactions in higher value product categories.

### Economic environment Real Estate

The City of Munich remains an attractive market for office property. With a floor-space turnover of 979,300 square meters, the million mark may have been narrowly missed, but an extraordinarily high result was still achieved. The floor-space turnover is thus almost on a par with the previous year's figure of 984,200 square meters.<sup>15)</sup>

<sup>13)</sup> Federal Statistical Office & DEHOGA, press release, February 2019

<sup>14)</sup> Nielsen, Advertising trend: Top trends in December 2018, January 2019

<sup>15)</sup> Colliers International, press release, January 2019

Market developments are still shaped by the limited space availability. The vacancy level fell year-on-year by 125,300 square meters to 410,600 square meters. The vacancy rate dropped 0.6 percentage points to 1.8 percent.<sup>16)</sup>

The average rent for office property in Munich rose 10 percent to € 19.0/m<sup>2</sup>. In comparison to this, the average rent in the region around Munich was € 12.8/m<sup>2</sup>. The prime rent developed somewhat more moderately, rising 1 percent to € 36.0/m<sup>2</sup>.<sup>16)</sup>

In the real estate market, there was a tendency for large companies to rent more space than they need in order to cover their future growth. For the time being, space that is not required is being sub-let. In addition, there are indications that there will be more happening again on the project development side. For this, locations that were less in focus in the past will also become interesting. Given Munich's role as an important office location, in a national and international context, growth in available space is also required in order to remain attractive for companies already located there and for new companies coming in.<sup>16)</sup>

## Course of business



Course of business

- Start of the «LabCampus» project
- Start of construction of the Erdinger Ringschluss
- Moratorium on the «third runway»
- Approval for the expansion of Terminal 1
- New passenger record and increase in aircraft movements
- Ground handling services in a difficult economic environment
- Retail trade – growth in revenue not in line with passenger numbers
- Catering and hotel trade on the path to success
- Parking – demand increases with passenger volume
- Advertising – a challenging market environment
- Impetus for further location and real estate development

<sup>16)</sup> Colliers International, press release, January 2019

## Key events in the past fiscal year

On March 8, 2018 the «LabCampus» project was launched. With this, Munich Airport plans to create a unique location for innovation and cross-sector cooperation. On the AirSite West area, a forward-oriented infrastructure will be created, which will bring together companies and research institutes, start-ups and global players, creatives and investors, in order to drive forward the development of new ideas and products. To realize the project, customer acquisition and the provision of all required innovation services on site, FMG established the LabCampus subsidiary in the fiscal year 2018, which was included in the group of consolidated companies.

In terms of improving the airport's railway connection, the official start of the expansion of the railway tunnel on September 5, 2018 was an important event. With this building project, the realization of the Erdinger Ringschluss, i. e. the extension of the railway line from Freising via Munich Airport to Erding, is being driven forward.

The costs for the shell of the tunnel extension are being borne by Munich Airport, and pre-financed in the form of an interest-bearing repayable subsidy from the Free State of Bavaria. On commissioning of the tunnel extension, the payment of the investment costs will fall due for Munich Airport. In fiscal year 2018, T€ 13,674 was capitalized in relation to this construction measure as plants under construction.

After the state elections in October 2018, the coalition contract for the legislative period 2018 to 2023 between CSU and Freien Wählern (Free Voters) stipulated as follows: «The coalition partners have differing opinions regarding the need for a third runway at Munich Airport. The plans for its construction will therefore not be pursued during the current legislative period...» The stipulations, in particular the moratorium in relation to the third runway, is having profound repercussions for the Munich Airport Group. The effects of the moratorium were reflected in balance sheet in fiscal year 2018.

The government of Upper Bavaria issued the planning approval in November 2018 to expand Terminal 1 and add a new gate. The objective of this expansion project is to make the non-Schengen area fit for purpose and to enhance the quality of services and quality of stay in Terminal 1. Commissioning of the gate is planned for 2023. The total costs estimated for the expansion project are expected to be paid by Munich Airport from its own funds.

There were no other events that had a material impact or will have a material impact on the business development of Munich Airport in the fiscal year.

## Aviation business

### Traffic figures for Munich Airport<sup>1)</sup>

Fig. 9

	2018	2017	In-/decrease	
			Absolute	Relative
Aircraft movements	413,469	404,505	8,964	2.2%
Passengers in millions	46.3	44.6	1.7	3.8%
Cargo in tonnes <sup>2)</sup>	375,247	388,517	-13,270	-3.4%

<sup>1)</sup> Rounding differences are possible.

<sup>2)</sup> For better comparability with other passenger airports, the cargo throughput here is quoted inclusive of freight quantities that remain on board the airplane in transit at Munich Airport. The values may therefore differ from those in other publications, in which only freight or cargo throughput (without transit) are considered.

With an absolute increase of around 1.7 million passengers, Munich Airport again achieved positive growth and reached a new record result in the fiscal year 2018 with a total of 46.3 million passengers (+3.8 percent). A significant increase was also posted in terms of aircraft movements (+2.2 percent). With a total of 413,469 aircraft movements (take-offs and landings), Munich Airport approached its historic peak and the limits of its capacity. In contrast, the cargo throughput (result of airfreight and airmail including transit) fell by approximately -3.4 percent year on year to approximately 375,000 tonnes due to the decline in bellyhold cargo.

The development of traffic at Munich Airport shows that it has been possible to compensate for the decline in aircraft movements caused by the withdrawal of Transavia Airlines and the insolvency of Air Berlin, and indeed better than expected – further evidence of the consistently high demand at the Munich location. Despite this extremely difficult starting point, expectations regarding the development of traffic have been met and exceeded.

After a period of stagnation in the previous year, the average number of seats offered increased slightly to 154 seats per flight. While, with the Airbus A380, significantly larger aircraft were used, this was offset by the increased use of regional jets with below-average seat capacity, meaning that overall, there was only a slight increase in average aircraft size. In particularly good news, five Airbus A380s – the largest passenger aircraft in the world – were relocated to Munich and also at least

15 Airbus A350s – the most modern long-haul aircraft in the Deutsche Lufthansa fleet – are stationed in Munich. An essential target group in the long-haul business sector are the customers in the premium travel classes. Here too, Munich Airport is a world leader, particularly due to the high number of business travelers. Passenger growth was therefore made possible through the better capacity utilization of 77.5 percent (+1.0 percentage points) and an increased flight offering. Fig. 10

Both originating and transfer traffic were key growth factors in traffic development. With 28.9 million air passengers, Munich had more originating passengers (passengers who do not transfer) than in the previous year. The share of transfer passengers increased slightly to 37 percent.

Demand for German domestic flights was at 9.7 million passengers. This meant a reduction of around 140,000 passengers. In the cumulated net profit, the segment was thus just under the previous year's figure (-1.4 percent), but displayed considerable recovery trends from the start of the winter timetable at the end of October for the period 2018/2019. The slight decline is primarily attributable to the absence of the Transavia Airlines flights to Berlin-Schönefeld with around 90,000 passengers, which were not replaced. The Air Berlin routes, which recently served almost exclusively domestic German destinations, have largely caught up with Eurowings and Deutsche Lufthansa – only

### Aircraft movements at Munich Airport

In thousands

Fig. 10



the route to Düsseldorf has not yet completely exhausted its compensation potential. The route to Berlin-Tegel, on the other hand, is largely at the previous year's level; significant negative impacts as a result of the new ICE link between Berlin and Munich were not observed. The number of German domestic aircraft movements even increased by 3.5 percent or around 3,000 to some 91,000 takeoffs and landings. The different development of aircraft movements and passengers in German domestic air traffic is due to the expected start-up difficulties with the marketing of new airline connections and routes.

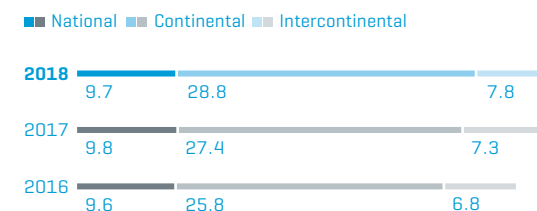
Continental traffic posted significant growth: Aircraft movements increased to around 266,000 flights, which equates to a rise of some 5,000 flights or 1.8 percent. Approximately 1.3 million additional passengers (28.8 million passengers in total) were transported compared to the previous year. This equates to an increase of 4.8 percent. In this traffic segment, the losses, caused by the market exit of Air Berlin as well as the departure of Transavia Airlines, were more than compensated for.

Measured by the number of passengers, the long-haul traffic segment posted the highest growth rates. Just under 7.8 million passengers took intercontinental flights, around 500,000 more than in the previous year (+6.9 percent). The long-haul movements also increased by 1.6 percent (more than 400 additional flights) to around 31,900 long-haul flights. Fig. 11

### Passenger numbers at Munich Airport

In millions

Fig. 11





In fiscal year 2018, airfreight handling could not continue the success of the previous years and declined by approximately 3.1 percent to around 352,000 tonnes. Various special effects such as the reduced freight capacity due to changed aircraft types, for example the Deutsche Lufthansa Airbus A380, and technical, temporary load restrictions in the Boeing B787 led to a slight decline. Nonetheless, the second best result in the history of the airport was still achieved.

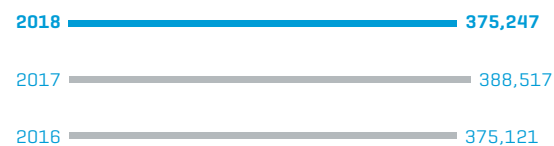
With a share of over 80 percent, the quantity of freight loaded on and unloaded from passenger aircraft, known as belly-hold cargo, was the most important traffic segment. The bellyhold cargo declined – in parallel with the reduced freight capacity – in the previous year by approximately 5.5 percent to around 294,000 tonnes. The quantity transported on purely freight flights increased considerably, due to the additional Air Bridge Cargo connections [to Russia for example], by around 11.3 percent to some 58,000 tonnes.

The airmail throughput increased to approximately 16,800 tonnes. After airmail services were partially suspended in the previous year, there was an increased demand for airmail services again in 2018. Fig. 12

### Airfreight and airmail [including transit items] at Munich Airport

Fig. 12

In tonnes



Compared with the traffic results of the airports represented in the German Airports Association [ADV], Munich was unable to continue the above-average growth observed in the previous year. The cargo and movement figures remained below the average; in terms of passenger volumes, Munich was within the ADV average. It is worth noting that the high ADV growth rates are attributable to the strong growth in Frankfurt – by far the largest location. There, growth rates of around 8 percent in passenger traffic were recorded. In contrast, the situation in terms of airfreight is different: Airports with 24-hour operation such as Cologne/Bonn and Leipzig recorded strong growth. There, the package services – particularly the rapidly growing E-commerce segment – increased the freight volume, a traffic segment that Munich cannot serve appropriately due to the strict night flight curfew. Fig. 13

### A comparison of traffic results for 2018<sup>17)</sup>

Fig. 13

In %	ADV	Munich
Movements [total traffic]	4.2	2.2
Passengers [commercial traffic]	4.0	3.8
Cargo [airfreight and airmail and transit]	1.8	-3.4

Despite pleasing growth, Munich remained in eight place in the ranking of the busiest European airports by passenger numbers, according to the Airports Council International [ACI]. In terms of aircraft movements, it was able to claim seventh place.<sup>18)</sup>

There are two ground handling licenses at Munich Airport. One of these is permanently assigned to the subsidiary AeroGround Flughafen München GmbH [AE Munich]. AE's market share was 54.5 percent in the fiscal year 2018, a decline of 3.2 percentage points on the previous year's figure. Despite the strong growth of Deutsche Lufthansa, AE Munich reported a handling volume

decline of 3.5 percent overall. These negative changes are essentially the result of the insolvency of its second largest customer Air Berlin and the latter's subsidiary Niki.

The sharply reduced market share in Terminal 1 was due, firstly, to market growth in the low-cost segment [inter alia Eurowings], in which AE Munich could not participate. Secondly, there were no further handling operations for Air Berlin and Niki in Terminal 1 after the suspension of air traffic in 2017.

AeroGround Berlin GmbH [AE Berlin] holds ground handling licenses at both Berlin airports. In fiscal year 2018, the market share was 24 percent at the Berlin-Tegel location and 17 percent at Berlin-Schönefeld. As a result of the insolvency of the largest customer, Air Berlin in fiscal year 2017, the ground handling volume declined by 40 percent in total compared to the previous year. Fiscal year 2018 posed a huge challenge in terms of consolidating the business and adjusting to the changed customer conditions.

### Commercial Activities business

Compared to the previous year, revenue in the Commercial Activities business unit put in a positive performance overall. In this process, the relocation of passengers from Terminal 1 to Terminal 2 and the resultant commercial effects led to at times quite heterogeneous developments.

The retail trade at Munich Airport failed to continue the positive trend of the previous year into fiscal year 2018. Despite rising passenger figures, the retail trade reported declining revenue overall, with the result that the revenue per passenger did not reach the previous year's figure. The relocation of passenger flows from Terminal 1 to Terminal 2 had a huge impact here, as they led to longer processing times at the security checks and thus to a shorter amount of time being spent by potential customers in the non-public area.

<sup>17)</sup> ADV monthly statistics 12/2018, February 2019

<sup>18)</sup> Airports Council International, as at: January 2019

In particular, the previous year's strong growth impetus in terms of passenger volumes for the destination, Russia, was not present this year. In contrast, revenue from passenger volumes for the more strongly demanded destinations of China and Hong Kong continued to be positive, though disproportionately lower with respect to the number of passengers.

Since Great Britain voted to leave the EU in 2016, the British pound sterling has lost considerable value, which has impacted directly on the consumer behavior of passengers from Great Britain. Despite rising passenger figures, revenue from this customer group remained in decline.

The passenger volumes flying to Turkey increased significantly compared to the previous year, however retail revenue for this customer group developed more slowly than average.

In fiscal year 2018, the restaurants and bars were able to profit from the rising passenger figures and revenue increased again, both in absolute terms and per passenger. This is because the trend among airlines to offer less food on board meant that passengers were availing more of the offering at Munich Airport, both as eat-in and take-away options. Newly opened or extended units thus contributed to the growth of catering-related revenue at Munich Airport.

In the Hotel sector, there was increased demand from guests and conference participants for rooms and the new conference center respectively. At the Skytrax Awards 2018, the five-star hotel in the central area of Munich Airport was named best airport hotel in Europe for the fourth time in a row.<sup>19)</sup>

<sup>19)</sup> Skytrax, World's Best Airport Hotels 2018, November 2018

The growth in passenger figures in originating traffic had only a limited impact on the parking business. Despite a slight decline in demand for parking spaces, it was possible to increase revenue overall in face of the changed parking behavior through a further development of product categories and the increasing popularity of «shared mobility» (rental cars and car sharing).

The decline in the «out-of-home» advertising category was also reflected at Munich Airport in fiscal year 2018. While advertising revenue were on a level with the previous year, this was however due to special and/or one-off effects. In the terminals, advertising revenue continued to develop heterogeneously. In Terminal 2 and the satellite building, significant growth was recorded due to the relocation of traffic there and the greater appeal of the advertising spaces. In Terminal 1, in particular, the marketing situation remains challenging due to the largely analog advertising options there.

### Real Estate business

Munich Airport's real estate business is developing only a little at the existing high level. The difficult competitive situation facing airlines, in particular, meant that the Group was unable to increase rental income on existing properties over and above indexing. Renovations and the fixed-term re-rental of a hanger lead to slight increases in revenue.

One important future project is the AirSite West area, on which the cross-sector innovation location, LabCampus and numerous new buildings will be constructed in the coming years.

The development measures for AirSite West are progressing well. A traffic circle with bypass was already completed in the previous year as a traffic easing measure at the Nordallee/Novotel cross-road. For the further accessibility of this area, another traffic circle was built at the western end of the Nordallee in fiscal year 2018. In addition, Munich Airport started on the construction of a traffic link via the Zentralallee (traffic node, West O). Here, a bridge structure will be constructed from the western end of the Nordallee over the Zentralallee and railway line to the airport maintenance area. In addition, Munich Airport conducted further sewer works in the area of AirSite West and tore down some buildings, in order to free sites for future construction.

The office building constructed on this area using a modular system had already been procured by the Real Estate business division in fiscal year 2018. In line with the real estate and parking strategy, the parking facility P51 with around 2,000 parking places was built next to the Visitors Park.


In the eastern area of the airport, Munich Airport started tunnel works related to the Erdinger Ringschluss project. The existing tunnel, which currently ends at the level of the satellite building of Terminal 2, will be extended eastwards. The tunnel extension is around 1.5 kilometers long and will be supplemented by a 300 meter long access ramp, via which the trains will return to the surface. Munich Airport plans to have the tunnel shell completed by 2021. Then this will be fitted out by DB Netz AG with the technical equipment required for railway traffic.

Furthermore, the construction works for the multi-lane expansion of the south ring and its extension eastwards in the direction of the East airport bypass started in 2018 in order to improve the eastern road link.

To enhance the quality of Terminal 1, Munich Airport is planning to optimize handling of non-Schengen passengers by building a new gate. With the extension, the airport is responding to the changing traffic structure and improving the handling of wide-bodied aircraft. In addition, the requirements on the security checks have increased constantly since 1992. In contrast to earlier, when numerous transfer passengers used this terminal without having to go through security, now almost all passengers in Terminal 1 including their luggage must be checked – just the simple addition of a new gate would make it possible to re-attain former handling capacities.

→ Glossary

The total concept for the extension includes a structure on three levels, comprising a core building adjacent to Terminal 1 and a gate. This will be connected with the existing Modules A and B and extend more than 320 meters into the western apron of Munich Airport. Up to twelve aircraft will then be able to dock at the gate. The total area of the extension including renovations in the existing arrivals area B is around 95,000 square meters. In fiscal year 2018, Munich Airport started on the initial preparatory works on the apron and on the planned construction site areas.

 Net assets, financial position, and results of operations

For the further development of air traffic, Munich Airport has constructed and commissioned a new ramp equipment station for de-icing and towing aircraft.

The first contracts were concluded in fiscal year 2018 to create living space for employees. In München-Bogenhausen, Munich Airport has rented a newly built residential facility. These furnished apartments will be sub-let on fixed term contracts to new applicants and employees. In Attaching, apartment buildings owned by the airport have been renovated. They are now also available for fixed-term rental to employees. Further collaborative projects with external partners are being negotiated.

## Results of operations

Fig. 14

T€	2018	2017	In-/decrease	
			Absolute	Relative in %
<b>Revenue</b>	<b>1,508,817</b>	<b>1,468,735</b>	<b>40,082</b>	<b>2.7</b>
Other income	44,894	44,057	837	1.9
<b>Total income</b>	<b>1,553,711</b>	<b>1,512,792</b>	<b>40,919</b>	<b>2.7</b>
Cost of materials	-393,602	-398,988	5,386	-1.3
Personnel expenses	-507,713	-482,081	-25,632	5.3
Other expenses	-114,318	-111,736	-2,582	2.3
<b>EBITDA</b>	<b>538,078</b>	<b>519,987</b>	<b>18,091</b>	<b>3.5</b>
Depreciation and amortization	-215,862	-217,617	1,755	-0.8
<b>EBIT</b>	<b>322,216</b>	<b>302,370</b>	<b>19,846</b>	<b>6.6</b>
<b>Financial result<sup>1)</sup></b>	<b>-100,897</b>	<b>-73,130</b>	<b>-27,767</b>	<b>38.0</b>
<b>EBT</b>	<b>221,319</b>	<b>229,240</b>	<b>-7,921</b>	<b>-3.5</b>
Income taxes	-72,586	-70,440	-2,146	3.0
<b>EAT</b>	<b>148,733</b>	<b>158,800</b>	<b>-10,067</b>	<b>-6.3</b>

<sup>1)</sup> This also includes income from companies valued using the equity method.

## Net assets, financial position, and results of operations

- Earnings after taxes decreased slightly
- Assets – Munich Airport is building up liquidity reserves

### Results of operations Fig. 14

In fiscal year 2018, Munich Airport's earnings after taxes [EAT] fell by T€ 10,067 to T€ 148,733. The causes of this decrease are explained in detail below.

In fiscal year 2018, the revenue of Munich Airport rose by T€ 40,082 or 2.7 percent to T€ 1,508,817.

In terms of revenue from airport charges (T€ 626,726; previous year: T€ 589,510), the largest contributor to growth was passenger and landing charges.

In comparison with growth in MTOM (Maximum Take-Off Mass) and passenger figures, revenue from landing and passenger charges increased disproportionately, driven by price. Fig. 15

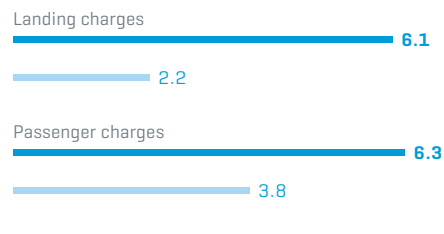
The decline in revenue from handling services of T€ 13,822 [-7.3 percent], in total, resulted primarily in the area of ground handling services from the insolvency of Air Berlin and Niki.

## Revenue and volume growth in passenger and landing charges

Fig. 15

In %

■ Revenue growth ■ Volume growth

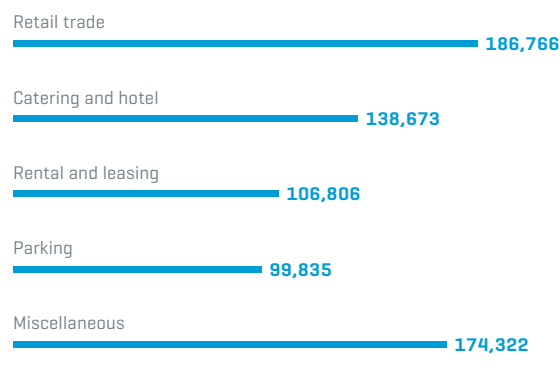


The revenue in other divisions was broken down as follows in fiscal year 2018: Fig. 16

## Breakdown of revenue of other areas

Fig. 16

In T€



After 25 years of being in operation, there is an ever pressing need to upgrade the buildings from the first stage of expansion at Munich Airport. Consequently, the expenses for refurbishment and optimization and reconstruction measures are rising constantly. In contrast, the cost of purchased services fell in connection with the commissioning of sub-contractors in the area of ground handling services at the Berlin-Tegel location. Overall, the cost of materials reduced by T€ 5,386 or 1.3 percent.

Munich Airport's personnel expenses are largely determined by the number of employees and the amount of remuneration paid to employees employed under the collective pay scale agreement for public sector employees (TVöD). The collective payment under this agreement was increased by 3.19 percent effective March 1, 2018. The Group again created new jobs in the fiscal year. The average number of employees increased from 9,316 to 9,521 year on year. In total, personnel expenses rose by 5.3 percent to T€ 507,713.

At T€ 114,318 other expenses were slightly higher than in the previous year. This is primarily attributable to higher project costs and other taxes. Conversely, the rental and leasing expenses, were reduced among other things.

In fiscal year 2018, depreciation and amortization (T€ 215,862) include impairment losses of T€ 16,408, which mainly relate to planning services performed and construction period interest (T€ 12,849) and must presumably be performed again due to the delay in building the third runway, most recently as a result of the postponement of the decision as a part of the moratorium. Overall, the scheduled depreciation reduced by T€ 18,163 or 8.3 percent. This is attributable, inter alia, to the fact that during the course of the previous year individual components of buildings were omitted from depreciation and amortization. Fiscal year 2018 was the first year in which this affected the entire year.

The financial result decreased by T€ 27,767 to T€ -100,897. This was due to the non-cash revaluation losses arising from the valuation of financial liabilities from interests in partnerships in Other financial result. At T€ -84,257, the net interest was slightly above the previous year's level, due to the recognized interest expense on financial liabilities from interests in partnerships. The interest actually paid was, in contrast, reduced further through debt repayments.

The tax expense was T€ 72,586, and thus on a par with the previous year's level. This includes current taxes in the amount of T€ 83,645 (previous year: T€ 76,887) as well as deferred tax income of T€ 11,059 (previous year: T€ 6,447).

## Net assets and financial position

### Financial position

Fig. 17

T€	Dec. 31, 2018	Dec. 31, 2017	In-/decrease	
			Absolute	Relative in %
Non-current assets	4,993,485	4,999,768	-6,283	-0.1
Current assets <sup>1)</sup>	357,327	306,516	50,811	16.6
thereof cash and cash equivalents	12,377	6,625	5,752	86.8
<b>Assets</b>	<b>5,350,812</b>	<b>5,306,284</b>	<b>44,528</b>	<b>0.8</b>
Equity	2,212,531	2,086,254	126,277	6.1
Other non-current liabilities <sup>2)</sup>	2,220,855	2,292,898	-72,043	-3.1
Other current liabilities <sup>2)</sup>	917,426	927,132	-9,706	-1.0
<b>Equity and Liabilities</b>	<b>5,350,812</b>	<b>5,306,284</b>	<b>44,528</b>	<b>0.8</b>

<sup>1)</sup> Including assets classified as held for sale.

<sup>2)</sup> Including financial liabilities resulting from partnerships.

In fiscal year 2018, Munich Airport invested cash with a total value of T€ 210,000 [previous year: T€ 158,000] in short-term money market transactions and term deposits. As a result of this, non-current assets increased by T€ 50,811 to T€ 357,327. Furthermore, a commercial paper program was launched for the first time in the previous year [without trading on the stock exchange] in the amount of T€ 100,000, which was available for short-term financing. Munich Airport issued several tranches within this program in fiscal year 2018, which were repaid in full on the balance sheet date.

The previous year's consolidated profit [T€ 158,800] was reduced by the distribution of T€ 30,000 to shareholders. The remaining amount was retained in fiscal year 2018.

The changes in other liabilities were mainly due to the financing area. The decline is primarily attributable to repayments of loans in the amount of T€ 125,713. Conversely, financial liabilities from interests in partnerships increased by T€ 30,683.

The equity ratio increased primarily due to the income in the fiscal year. Fig. 18

## Capital structure

Fig. 18

T€	Dec. 31, 2018	Dec. 31, 2017	In-/decrease	
			Absolute	Relative in %
Subscribed capital	306,776	306,776	0	0.0
Reserves	151,353	150,767	586	0.4
Other equity	1,754,388	1,628,698	125,690	7.7
of which annual profit/loss	148,733	158,800	-10,067	-6.3
Non-controlling interests	14	13	1	7.7
of which annual profit/loss	1	0	1	100.0
<b>Equity</b>	<b>2,212,531</b>	<b>2,086,254</b>	<b>126,277</b>	<b>6.1</b>
<b>Financial liabilities from interests in partnerships</b>	<b>346,058</b>	<b>315,375</b>	<b>30,683</b>	<b>9.7</b>
<b>Shareholder loans</b>	<b>491,913</b>	<b>491,913</b>	<b>0</b>	<b>0.0</b>
Fixed-rate loans	682,314	687,535	-5,221	-0.8
Floating-rate loans	730,286	829,527	-99,241	-12.0
<b>Loans</b>	<b>1,412,600</b>	<b>1,517,062</b>	<b>-104,462</b>	<b>-6.9</b>
<b>Derivatives</b>	<b>40,207</b>	<b>51,255</b>	<b>-11,048</b>	<b>-21.6</b>
<b>Other liabilities</b>	<b>847,503</b>	<b>844,425</b>	<b>3,078</b>	<b>0.4</b>
<b>Financial liabilities</b>	<b>3,138,281</b>	<b>3,220,030</b>	<b>-81,749</b>	<b>-2.5</b>
Equity ratio	41%	39%		



The main terms of Munich Airport's current and non-current financial liabilities can be found in the table below: Fig. 19

The shareholder loans are available indefinitely and interest is charged on the basis of the base rate plus a margin, if the results and anticipated economic development allow this.

The loans bear usual non-financial covenants, including negative pledge and pari passu clauses. In addition, there are other general conventional agreements concerning repayment in the event of changes in shareholder structure. There are no financial covenants.

Munich Airport uses payer interest rate swaps and forward exchange transactions to hedge against risks arising from interest rate and exchange rate fluctuations. Interest rate hedges are accounted for as a valuation unit. Fig. 20

### Liquidity

Sufficient funds were available from the net cash flow from operating activities in 2018 to ensure the liquidity of the company in operations. Cash outflows from investing activities mainly arose from the acquisition and production of property, plant, and equipment and short-term time deposits. A negative cash flow arose from financing activities due to distributions to shareholders, loan repayments, and interest repayments. Fig. 21

### Investments

In fiscal year 2018, investments in property, plant, and equipment for own use at Munich Airport was T€ 191,146 in total. This was offset by depreciation and amortization in the amount of T€ 190,101.

### Non-current loans conditions

Fig. 19

Method of funding	Currency	Interest rate	Residual debt in T€	Interest rate in %	
				from	to
Financial liabilities resulting from interests in partnerships	€	Earnings-based	346,058	-	-
Shareholder loans	€	Variable/earnings-based	491,913	Base rate plus margin	
Loans	€	Floating-rate	734,404	3M and 6M EURIBOR plus margin	
Loans	€	Fixed-rate	685,241	0.48	3.49

[As at December 31, 2018]

### Hedging transaction conditions

Fig. 20

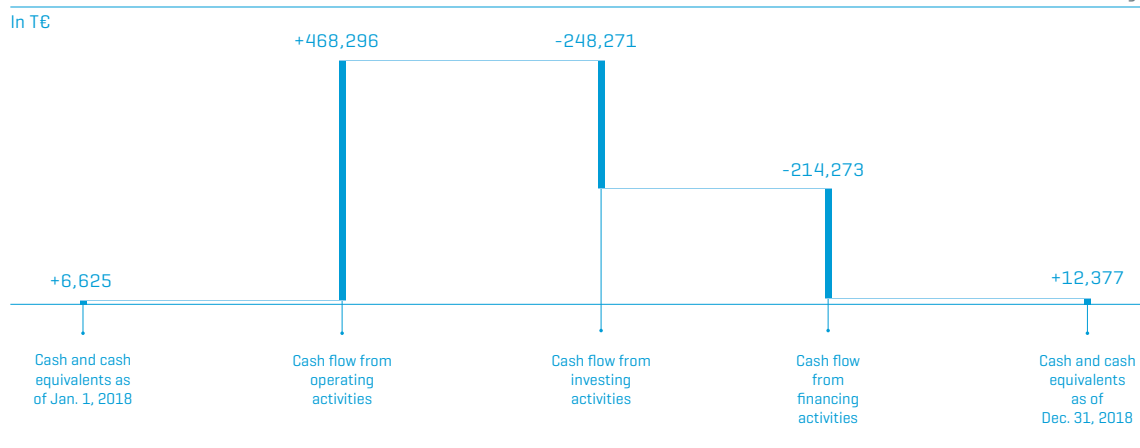
Hedging instruments	Nominal amount	Currency	Fixed rate in %		Forward rate in EUR/USD		Hedged items
			from	to	from	to	
Interest payer swaps	644,000	T€	0.28	2.92	-	-	Syndicated loans
Forward exchange transactions <sup>1)</sup>	1,391	T€	-	-	1.17	1.21	Expected transactions

<sup>1)</sup> These hedges are not recognized.

→ Glossary

### Cash flow statement

Fig. 21





In fiscal year 2018, Munich Airport opened the P51 parking facility. The five-story parking structure at the Visitors Park offers a total capacity of 2,000 parking spaces and was built in accordance with Munich Airport's climate protection strategy using a resource-conserving system design. Overall, Munich Airport invested T€ 14,095 in the new building. In fiscal year 2018, T€ 12,547 has been added to property, plant, and equipment for this purpose.

In addition, a large number of ongoing investment projects were implemented and continued in fiscal year 2018. This included, inter alia, investments in relation to the development of AirSite West, the expansion and modernization of Terminal 1, the expansion of the railway tunnel for the Erdinger Ringschluss and numerous replacement purchases in the area of IT and technology.

### Target achievement and overall assessment

Year on year and in comparison with the forecast development, these performance indicators have trended as follows: Fig. 22

#### Earnings before taxes (EBT)

Munich Airport's EBT for fiscal year 2018 fell by 3.5 percent to T€ 221,319, a decrease of T€ 7,921 which was slightly less than expected. The anticipated result was thus exceeded.

### Forecast/actual comparison

Fig. 22

	2017		2018		2018	
	Actual		Forecast		Actual	
			from	to		
			%	%		
EBT in T€	229,240	Decrease	-4.0	-10.0	221,319	Exceeded
CO <sub>2</sub> reductions in tonnes	14,367	Increase	22.1	27.1	22,031	Exceeded
Passenger Experience Index	78.53	Increase	0.0	0.5	79.16	Exceeded

#### CO<sub>2</sub> reductions

To achieve the long-term climate protection goals, binding targets are agreed annually for divisions and subsidiaries of the Group. These include stipulations regarding the implementation and recognition of efficiency measures, and special targets for the establishment of CO<sub>2</sub>-reducing technologies. One example of this is the first photo voltaic system operated by Munich Airport on the P51 parking structure, which has an output of more than 749 kWPeak. With a total amount of 22,031 tonnes of saved CO<sub>2</sub> emissions from efficiency and special targets, it was possible to exceed the target for 2018.

#### Passenger Experience Index (PEI)

In fiscal year 2018, Munich Airport was able to increase the satisfaction levels of passengers disembarking in Munich by 0.8 percent, compared with 2017 measured by PEI. This rise resulted, on the one hand, from the relocation of traffic portions from Terminal 1 to Terminal 2, where the passenger satisfaction level is empirically higher. On the other, the satisfaction levels improved due to the implementation of optimization measures,

such as the installation of an automatic boarding pass check and a passenger-friendly queuing system in front of the central security check in Terminal 2 and the expansion of the security check lanes there. In Terminal 1, the C-West hall was updated including a fully fledged special security control for departing US flights. This took the burden off the security checks at the access points to areas B and C. Furthermore, measures such as the installation of a queuing system in front of the entry passport check in Module C of Terminal 1 and the completion of the structural restoration work on the toilets had a positive impact on customer satisfaction in both terminals. In addition, service training courses were performed across the campus in 2018, in order to improve the customer experience.

### Events after the balance sheet date

Please refer to the Notes to the consolidated financial statements for details of events of particular importance that took place after the reporting date.

## Outlook, risks, and opportunities report

### Outlook report

#### Economic and industry-specific conditions

In 2019, the pace of global economic growth is set to lose momentum. The current IMF forecast assumes an increase in global GDP of 3.5 percent<sup>20)</sup>, which is slightly under the level of current calculations for 2018.

In the leading industrialized countries, the economy will grow at a somewhat weaker pace than in 2018. The dynamic growth in the USA looks set to continue; this was stimulated by, inter alia, the reduction in the effective corporate tax burden which came into effect in 2018.<sup>21)</sup> In Japan, on the other hand, the upturn will continue but at a slower pace, which is due to, among other things, the already heavily utilized, macro-economic production capacities.<sup>22)</sup> The Chinese economy will continue to expand with a strong, albeit slightly falling growth rate, which is supported by an expansive fiscal policy on the part of the government. Economic development in Great Britain will continue to be hampered by its planned exit from the European Union (known as Brexit), which represents a considerable risk to the British economy. Should a no-deal Brexit occur in 2019, the growth rate would fall even further than the currently forecast 1.5 percent. Since commodity prices stabilized in 2017 and 2018, the increase in economic output in the developing and emerging-market countries should, at 4.5 percent, be just as positive as in 2018. For Brazil and Russia, two countries included in this category which have been dealing with crises in recent years, continued solid economic growth is expected for 2019 following the recovery in the two previous years.<sup>23)</sup>

<sup>20)</sup> International Monetary Fund, World Economic Outlook, January 2019

<sup>21)</sup> Ifo Institute for Economic Research, economic forecast, December 2018

<sup>22)</sup> German Council of Economic Experts, Autumn Report 2018, November 2018

In 2018, the price of oil fluctuated in a range between USD 52 and 86. For 2019, a stagnation compared to 2018 is forecast. The price of oil should remain at an annual average of just under USD 60 per barrel.<sup>20)</sup> Fig. 23

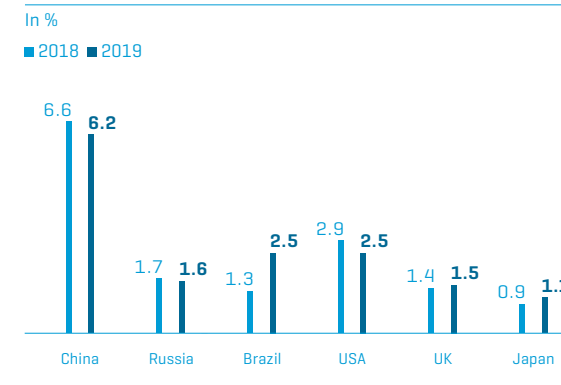
The long-standing upswing in the eurozone will probably continue in 2019. At 1.6 percent, however, lower economic growth is expected. On the labor market, a further positive performance is expected. Strong private consumption will therefore be a supporting pillar for the upturn. In contrast, the contribution of investments and exports to growth should fall. The economic performance of the eurozone is fraught with not inconsiderable risks due to the danger of a disorderly Brexit. The re-introduction of border controls and customs would have significant negative consequences on economic development in Great Britain and the eurozone, due to their impact on international production and supply chains. The current growth forecasts, however, assume an orderly Brexit.<sup>21)</sup> Fig. 24

The German economy also remains on a growth path for 2019. The economic performance of the Federal Republic of Germany is expected to cool further however. The increase in economic output for 2019 is forecast to be 1.3 percent. Early indicators for economic development in the Federal Republic of Germany are noticeably lower than they were a year ago. For example, the Ifo Business Climate Index stands at 101.0 points and the ZEW Economic Sentiment Index at minus 17.5 points.<sup>23)</sup>

<sup>23)</sup> Center for European Economic Research (Zentrum für Europäische Wirtschaftsforschung; ZEW) website, December 2018

### Forecast economic growth in selected destinations worldwide

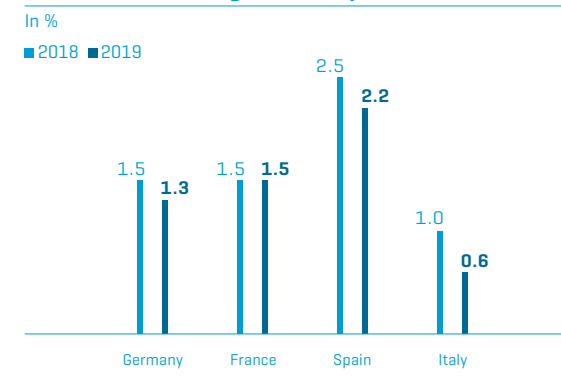
Fig. 23



GDP growth in 2018 and 2019<sup>24)</sup>

### Forecast economic growth in selected destinations throughout Europe

Fig. 24



GDP growth in 2018 and 2019<sup>24)</sup>

<sup>24)</sup> IMF, World Economic Outlook, January 2019

The upturn in the Federal Republic of Germany had a broader base than at the beginning of 2018. Private consumption [2019: 1.2 percent] will contribute significantly to growth, as in previous years. This is also indicated by the solid level achieved on the Consumer Climate Index of the GfK market research institute. It is currently at 10.4 points.<sup>25)</sup> The growth in construction investment will likewise continue to be dynamic in 2019 [2019: 3.1 percent] Investments in equipment [2019: 2.2 percent] and exports [2019: 3.0 percent] should develop more moderately however.<sup>26)</sup>

The demographic and economic general conditions in Bavaria and, in particular, the airport catchment area mean that further strong growth in transportation demand can be expected at Munich Airport. According to the results of the regionalized population projection by the Bavarian State Office for Statistics, the number of people living in Bavaria, especially around Munich, will grow in the period up to 2037 and this growth is characterized as strong to very strong. The population of Upper Bavaria will increase by 9 percent, in the district of Munich by 12.1 percent, and in the city of Munich by 11.6 percent.<sup>27)</sup> In the Prognos Zukunftsatlas, the district of Munich and the City of Munich, followed by the region of Ingolstadt, head the list of regions with the best future prospects.<sup>28)</sup> Driven by growing prosperity and an increasing population, the trend in the volume from Munich Airport's core catchment area was positive in the last two years in particular. This trend is expected to continue in future. These statements are supported by a study conducted by the business magazine «Focus Money», where all the regions in the top ten were in Bavaria or Baden-Württemberg.<sup>29)</sup>

<sup>25)</sup> Growth from Knowledge [GfK], press release, November 2018

<sup>26)</sup> Ifo Institute for Economic Research, economic forecast, December 2018

<sup>27)</sup> Bavarian State Office for Statistics and Data Management [Bayerisches Landesamt für Statistik], regionalized population projection for Bavaria up to 2037, December 2018

<sup>28)</sup> prognos, Prognos Zukunftsatlas 2016, May 2016

<sup>29)</sup> Focus, Large district ranking 2018, January 2019

The global aviation market will continue to grow. The International Air Transport Association (IATA) is assuming an average annual growth rate in global passenger volumes for 2019 of 6.0 percent. The annual average growth rate for airfreight is 3.7 percent globally for the same period and is thus significantly below the previous year's level, which reflects the weakening state of world trade.<sup>30)</sup>

In the German aviation market, the German Airports Association (ADV) is likewise forecasting further growth. Passenger numbers are forecast to rise for 2019 by 2.7 percent. German domestic traffic will contribute growth of 1.0 percent. For intra- and inter-continental traffic, growth rates of 5.1 percent and 2.8 percent respectively are forecast. The number of aircraft movements should rise by 1.2 percent and freight volume should rise by 2.3 percent in the same period.<sup>31)</sup>

### Forecast course of business

The Executive Board of Munich Airport has positive expectations of traffic volumes in 2019. The number of passengers should increase again by a good 4 percent and therefore climb above 48 million. Aircraft movements will increase by around 1 percent.

The reasons underlying passenger growth include the announcement of new connections, continued growth in transfer passengers and a rising seating capacity utilization. The major part of the growth was contributed by the Lufthansa Group. In inter-continental traffic, frequency expansion to Seoul, Singapore and Chicago as well as new connections to Bangkok and Osaka are planned. In addition, growth in traffic and an increase in capacity utilization are assumed for the main customer, Lufthansa. In addition, passenger number increases are also expected for other airlines.

<sup>30)</sup> IATA, press release, December 2018

<sup>31)</sup> ADV, ADV news: Traffic forecast of the ADV for 2019

In addition to the forecast positive traffic development, the 2.0 percent increase in air traffic charges, introduced on January 1, 2019 in accordance with the master agreement on charges, will lead to an increase in airport charges.

In the retail trade, Munich Airport expects further results-improving effects, quite apart from a traffic-determined growth in revenue. The product range is being streamlined in order to improve the margins continuously. Likewise, through the implementation of new retail concepts and the redesign of sales outlets, the growth in revenue should be stimulated further.

After a downturn in revenue from handling services as a result of the insolvency of Air Berlin in the past fiscal year, growth in revenue is expected again for 2019.

Revenue from the catering and hotel trade will grow more strongly in 2019 than passenger volumes. This is to be achieved, inter alia, through renovations and the establishment of new catering units. In the hotel trade, unchanged demand from large customers and improved capacity utilization overall is expected.

As a result of the planned renovation of the centrally located parking structures and the associated capacity bottlenecks, Munich Airport expects that parking transactions will not rise in line with passenger development. Therefore, parking revenue on a par with the previous year is expected.

The revenue from rental and leasing will rise, due among other things to the re-rental of spaces that were partially vacant in fiscal year 2018 and which in the past had been rented to Air Berlin.

Other revenue also performed well, due among other things to rising revenue in the international business.

In total, Munich Airport expects an increase in total income of approximately 4 percent.

The trend toward higher costs of materials due to increasing maintenance and conversion measures will continue in fiscal year 2019. Moreover, the Group expects an increase in third-party services in the context of the expansion of the international business.

The Executive Board expects an increase in personnel expenses as a consequence of increases in the collective pay rates. In addition, further staff capacities will be built up due to additional orders and the insourcing of previous external services.

Other expenses will fall in 2019 due, among other things, to fewer audit, consulting, and project services. Likewise, the expenses for rent and leasing will fall as part of the first-time application of IFRS 16. Various individual measures will have an inverse impact such that other expenses will remain unchanged overall in comparison to the fiscal year 2018.

In contrast to this, depreciation and amortization is expected to decrease as a whole in 2019, resulting in an improvement in earnings. The reason for this is that the special effect from 2018 arising from impairment losses is no longer included. This will be partially offset by higher depreciation and amortization due to the first-time application of IFRS 16.

In the financial result, an improvement is expected on balance. On the one hand, the interest expenses for loans will reduce due to repayments. On the other, Munich Airport is assuming that the other financial result [profit/loss from financial instruments] will improve. The interest expenses from the valuation of financial liabilities from interests in partnerships will reduce significantly. In contrast to this, the planning assumes a deterioration, largely due to higher interest for loans to shareholders. Munich Airport is expecting an increase in the underlying base rate due to the generally increasing market interest rates.

## Forecast financial and non-financial key performance indicators

Fig. 25

	2018	2019		
	Actual	Forecast		
			from	to
			%	%
EBT in T€	221,319	Increase	11.0	17.0
CO <sub>2</sub> reductions in tonnes	22,031	Decrease	-17.8	-12.8
Passenger experience index total satisfaction <sup>1)</sup>	82.01	unchanged	0.0	0.0

<sup>1)</sup> The 2018 value was adjusted, as the overall satisfaction level from the Passenger Experience Index will be used from 2019 as a target value.

Overall, Munich Airport expects EBT to increase by between 11 percent and 17 percent. Fig. 25

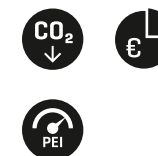
The PCA systems installed at Munich Airport will gradually be phased into normal operation. Their usage rate remains at a high level. A slight decline in target values for 2019 compared to the savings achieved in 2018 resulted from the considerable over-fulfillment of target values in 2018. For 2019, additional savings from efficiency measures of more than 2,900 tonnes CO<sub>2</sub> will be aspired to. The planned measures should primarily reduce the energy requirement for lighting and for ventilation and air-conditioning technology.

Munich Airport will strengthen and expand Passenger Experience Management in 2019 and consequently further intensify the continuous improvement measures in the area of passenger satisfaction. Thus, for example, there are plans to commission further easy pass systems to optimize passenger processes and to expand and improve the catering offering. Furthermore, it is on the agenda to elaborate with airport management a comprehensive passenger experience management concept, in order to secure the high satisfaction levels in the long-term also. For 2019, a different indicator [«total satisfaction»] compared to 2018 is used for the target value assessment basis. As a result, the measurement instrument for customer satisfaction, the

Passenger Experience Index, is to be further developed flexibly in accordance with the needs of the organization and as a response to changed customer requirements.

With respect to the net assets and financial position, Munich Airport expects a positive free cash flow for 2019, albeit lower in absolute terms compared to 2018, despite the planned high cash outflow for investments in major projects to expand the airport. Examples for these planned major projects are the new construction of a suburban train tunnel for the Erdinger Ringschluss, the expansion of Terminal 1 and the creation of additional aircraft parking position on the eastern apron.

On the assets side of the consolidated balance sheet, the planned investments will exceed ongoing depreciation and lead to an increase in non-current assets. Short-term deposits will fall as a result of the planned investment activity. The assumption that annual profit/loss will largely be retained in 2019 will result in an increase in equity; Debts should be reduced by further loan repayments.





## Risks and opportunities report

### Risk management system

The Executive Board of FMG and all subsidiaries and affiliated companies is responsible for the early detection and prevention of risks that jeopardize the continuity of Munich Airport and the investments. Group Management has overall responsibility for an effective risk management system and lays the essential foundation for it by communicating and defining corporate strategy and targets. It formulates specifications for the risk management process and the organizational structure of the risk management system.

The aim of the risk management system is to identify events and developments that may have a negative impact on the achievement of strategic and operational targets in good time and develop suitable countermeasures. It takes account of all aspects of entrepreneurial activity – economic as well as environmental and social.

The risk management guideline regulates the general principles of risk management in the Group as well as the tasks and responsibilities of the function holders involved in risk management. This is aligned in accordance with the internationally recognized framework model «COSO ERM» [Committee of Sponsoring Organisations of the Treadway Commission – Enterprise Risk Management].

The Risk Management Committee serves as an additional supporting management, control, and supervisory body within the risk management system. As the highest ranking risk management body, it is directly subordinate to the Executive Board and consists of the Chief Financial and Infrastructure Officer, the heads of the Aviation, Commercial Activities and Real Estate business divisions, the heads of corporate divisions Legal, Compliance, Environmental Affairs and Committee Support, Corporate Development, Corporate Controlling and Investment

Management, Corporate Security and Corporate Communications as well as, the head of the IT service area and the Risk Manager. The head of Compliance is involved in the Risk Management Committee as a guest. The task of the Risk Management Committee is to analyze the risks from a Group perspective and to monitor the effectiveness of countermeasures. It provides support with the development of the risk management system as well as with risk identification, assessment, and control. The Risk Management Committee meets quarterly and agrees the risk report, which is subsequently presented to the Executive Board and the shareholders.

The risk management process comprises the following steps. A coordination and communication platform has been established in the system to support this process.

### Identification and communication of risks

All divisional managers and Chief Executive Officers of subsidiaries and shareholdings are responsible for the identification and assessment of risks. In the relevant divisions, all risk-relevant information is coordinated, administrated, documented, and passed on by the relevant risk managers. The risk manager checks the divisions' risk reports for plausibility and compliance with the Group-wide standards for risk assessment. He combines the divisions' individual reports in a risk report, taking account of materiality for the Group, and reports quarterly to the Executive Board and shareholders. Risks that jeopardize the Group's existence that have been identified for the first time must also be reported to the Executive Board on an ad hoc basis.

As a basis for dealing with risks responsibly, each individual employee is involved in managing risks throughout the company. Each employee is responsible for eliminating risks in his area and reporting indications of existing risks to his manager without delay.

### Assessment of risks

The systematic risk assessment allows the company to determine the extent to which individual risks jeopardize the fulfillment of Munich Airport's corporate goals and strategies and which risks may possibly threaten its existence. The factors «expected loss» and «likelihood/frequency of occurrence» are presented in a two-dimensional risk matrix for this purpose. The expected loss describes the impact on profits that can be expected if the loss event occurs. The likelihood of occurrence indicates how reliably the loss event is expected to occur. In the case of events that recur over time, the company works with the frequency with which they occur. The assessment first takes place without measures to limit risk being considered [gross risks, see Section «Risks»]. Subsequently, the risks are assessed after risk-minimizing measures are initiated or implemented [net risks, see Section «Risks»].

### Dealing with risk

Starting from the risk analysis, appropriate countermeasures for dealing with risk are specified in line with corporate strategy and economic aspects. The strategies for managing risk include: controlling, insuring, minimizing, eliminating, and passing on. The risk officers have the task of specifying and implementing countermeasures to manage risks in the respective division affected.

### Risk monitoring

The risk manager monitors the effectiveness of risk management continuously. Risks are also monitored separately by Internal Audit.

## Compliance management system

Compliance covers compliance with all Munich Airport-related laws, specifications, and regulations, national and international rules and standards, as well as in-house rules and guidelines. Munich Airport has established a Group-wide compliance management system, which encompasses all organizational provisions ensuring compliance with the aforementioned rules.

The Compliance department submits reports on the current status of the compliance management system to the Executive Board on a regular basis and to the Supervisory Board on an annual basis.

Compliance risks are also communicated as part of the risk reporting to the Executive Board and shareholders if internal thresholds are exceeded. Regular dialog takes place between Risk Management and Compliance.

## Identifying and minimizing compliance risks

The Compliance department prepares the compliance risk analysis with input from the divisions and combines it with the subsidiaries' compliance risk analyses every year.

Compliance risks are assessed in the same way as the risk management process. Once the compliance risk analysis has been carried out, the Executive Board is notified of the results in a report. The compliance risk analysis was validated in 2018 by an external consultant.

The annual Compliance report to the Supervisory Board of FMG also includes the results of the compliance risk report. If there is an elevated loss potential and concomitant high likelihood of occurrence despite all the countermeasures taken, a detailed description is provided in the report.

In respect of 2018, there were no elevated compliance risks after the countermeasures taken were considered.

## Preventing corruption

The compliance guidelines and the guidelines covering gifts and invitations support managers and employees in ensuring legally compliant and ethical behavior at the workplace. They are published on the Intranet and are therefore available to all employees. The guidelines also reference other guidelines with which employees must comply, thus for example ensuring compliance with public procurement law with regard to procurement and contracting processes, data protection, and information security. These ensure that processes and procedures are transparent and traceable, both internally and externally. In contracting and tendering procedures, Munich Airport requires bidders to submit a declaration of commitment stating that they will undertake everything necessary to preclude corruption. Compliance failures are liable to sanctions, such as exclusion from the contracting process.

The position of anti-corruption officer is exercised by the head of the Compliance department. There were no confirmed cases of corruption in 2018.

## Communication and training

A key task of the Compliance department is to train and advise employees and managers in compliance matters as a preventative measure to stop compliance breaches from occurring.

Group compliance regularly provides training and publishes information to ensure that all employees and managers are familiar with the guidelines and any updates or amendments to them. Every year they must provide their signature to confirm that they have read the compliance documentation.

In 2018, some 45 managers of the Munich Airport Group took part in the three-hour training module on compliance as part of the Leadership Excellence Program. In addition to the legal fundamentals and the responsibilities of managers, this also covers Munich Airport Group's specific guidelines on compliance and the prevention of corruption. A total of 524 people have received training since the module started at the end of 2013. Participation in compliance training is documented.

The Executive Board and Supervisory Board deal with compliance issues at regular intervals.

## Electronic whistle-blower system

Through an electronic whistle-blower system, the Business Keeper Monitoring System (BKMS®), Group employees, business partners, and customers can report behavior potentially damaging to our organization. People inside the Group and outside can also contact the Compliance department by other means of communication (telephone, e-mail, face-to-face discussions) if they wish to draw attention to compliance infringements and need advice. Tender documents inform potential bidders of the possibility of using the BKMS® should compliance infringements be suspected.

## Data protection

Munich Airport has initiated comprehensive measures in order to comply with the General Data Protection Regulation (GDPR) which came into effect on May 25, 2018 and with the new Federal Data Protection Act. The project to implement GDPR Group-wide was implemented according to plan, with individual subsidiaries handling the topic independently. Compliance with data protection is a line task from now on. Responsibility for it lies decentrally with the individual technical departments or subsidiaries for their processes.

An awareness campaign with face to face and online training courses for the Group employees as well as further, ongoing training measures for managers and employees in data privacy law and data security have contributed to the sensitization process. Specialized, individual advice is also available in instances where people are unsure how to comply properly with data protection regulations.

Where required, the Group companies have appointed data protection officers with consultancy and monitoring tasks in accordance with the GDPR. The data protection officer of FMG is simultaneously the data protection officer for most subsidiaries. He is also assigned organizationally to the Compliance department but conducts his job independently and reports directly to the Executive Board. The Compliance department has furthermore built up additional know-how with respect to data protection consulting in the Group.

There were no known instances of complaints regarding breaches of customer privacy and losses of customer data.

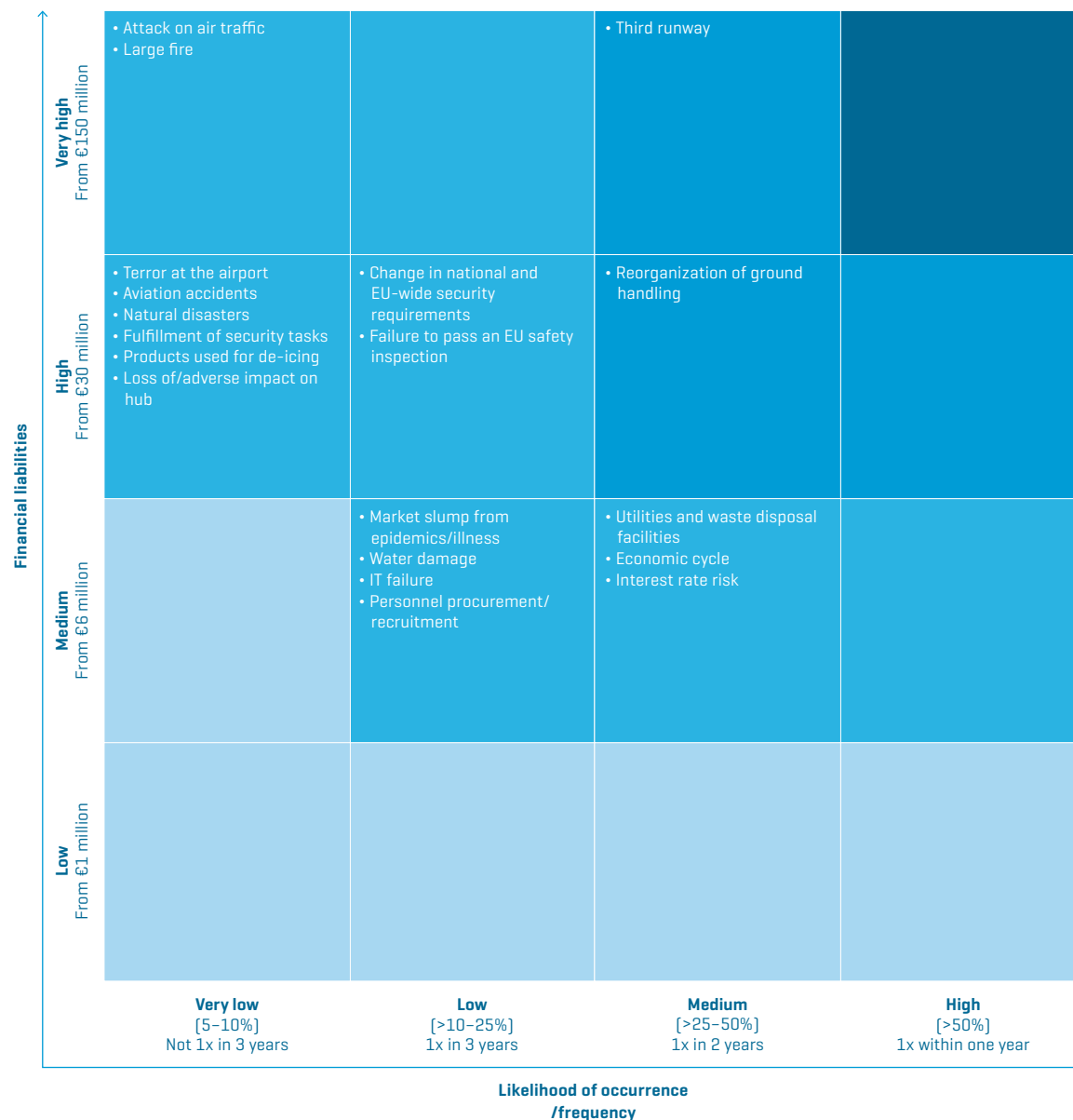
**Risks**

Risks that could have a material influence on the business activity or on the net assets, financial position, and results of operations as well as the reputation of Munich Airport are explained below. In each case, the risks are shown before [overview gross risks] and after consideration of suitable countermeasures [overview net risks].

The risk assessment relates to the economic impact in the assessment period quoted. As at December 31, 2018, the following material gross risks were identified for Munich Airport: Fig. 26

**Overview of gross risks**

Fig. 26



## Risks resulting from force majeure

Risk	Description and analysis	Countermeasure(s)
Natural disasters	A breach of the Isar dams near Freising caused by heavy rain could lead to the terminals being flooded.	Gradual upgrading of the Isar dams by the water authority. They have already been partially renovated. Insurance to cover earthquakes, storms, hail, and flooding has been arranged.
Attack on air traffic	The risk of terrorist attacks on air traffic remains high. In addition to bodily injury and property damage, this would result, at least temporarily, in a decrease in the number of aircraft movements and passengers.	To avert a terrorist attack, Group security is taking strategic, operative as well as technical & organizational measures: Provision of sufficient and well-trained personnel resources, construction measures to guarantee modern and approved security technology and infrastructure, monitoring of service quality through sustainable quality measures and through constant exchange with the responsible security authorities. Bodily injury and property damage as well as interruptions of operations are insured.
Terror at the airport	Acts of terror on the airport campus can result in bodily injury and property damage. A further consequence of such events would be, at least temporarily, a decrease in the number of aircraft movements and passengers.	To avert a terrorist attack, Group security is taking strategic, operative as well as technical & organizational measures: Provision of sufficient and well-trained personnel resources, construction measures to guarantee modern and approved security technology and infrastructure, monitoring of service quality through sustainable quality measures and through constant exchange with the responsible security authorities. Bodily injury and property damage as well as interruptions of operations are insured.
Fulfillment of security tasks	The airline companies are responsible for security tasks in transferred areas. In these areas, airline companies fulfill the same task as airport operators but are not subject to the same supervisory authority. For Munich Airport, there is a risk that inspections will reveal defects in transferred areas and the airport as a whole will lose its security status as a result. Defective controls could lead to property damage and bodily injury as well as reputational damage.	At present, a subsidiary of FMG is responsible for operational security tasks in the transferred areas; its services rendered are subject to regular monitoring by FMG. Furthermore, there follows a mutual, intensive exchange with the responsible government and supervisory authorities.
Market slump from epidemics/illness	Epidemic/sickness outbreaks can result in market downturns with reduced aircraft movements and passenger numbers.	Due to a relatively high fixed cost ratio, Munich Airport's ability to react to market downturns is limited.
Large fire	In the event of damage to or destruction of terminals or infrastructure systems caused by a large fire, property damage and bodily injury, as well as long-term interruptions of operations are to be expected.	To minimize the risk of a large fire, Munich Airport takes all required preventive and defensive fire protection measures, and has its own Airport Rescue and Firefighting unit. The risk of a large fire is additionally minimized by a fire insurance policy (property and interruption of operations insurance) and public liability insurance (liability claims of third parties). After taking the countermeasures into consideration, the net risk is below the risk tolerance limit.
Aviation accidents	Aviation accidents or damage to aircraft can result in bodily injury and property damage as well as interruptions of operations, and consequential damage.	To minimize the risk, Munich Airport maintains an Airport Rescue and Firefighting service, a medical service, and a counseling team. The risk of aviation accidents is minimized through liability insurance and fully comprehensive insurance. After taking the countermeasures into consideration, the net risk is below the risk tolerance limit.

## Market risks

Risk	Description and analysis	Countermeasure(s)
Loss of/adverse impact on hub	If Deutsche Lufthansa amends its strategy of operating Munich Airport as a hub, this would result in dramatic falls in the number of passengers and aircraft movements. In 2018, Deutsche Lufthansa further expanded its offering of flights in Munich. The hub was expanded in 2018 and the quality of Munich Airport as a hub was enhanced through the basing of five Airbus A380s here, the use of four additional aircraft from the Airbus A320 family for medium-haul routes, and the fleet renewal with modern long-haul Airbus A350 jets. The risk of the loss or impairment of the hub is therefore categorized as very low.	Munich Airport's collaboration with Deutsche Lufthansa is based on joint investments and long-term cooperation agreements.
Economic cycle	As a consequence of a weak economy, the growth parameters assumed in the planning process cannot be achieved, which has an adverse impact on profits. During more significant economic crises, a collapse in loan finance markets may occur. Increasingly protectionist political tendencies could prove a burden to global trade in general, but also to European-US trade and thus to the transatlantic aviation market. This could result in growth-inhibiting effects for Munich Airport. Brexit is fraught with risks for economic development not just in Great Britain but in the EU also, and requires further observation. A no-deal Brexit would also mean the departure of Great Britain from the European Common Aviation Area [ECAA]. Due to the changes in aviation rights, this would have profound consequences for the structures in the European aviation market and could temporarily inhibit development in the aviation market.	Reducing expenses through cost monitoring, if necessary reducing staff numbers in a socially responsible manner plus a short-term cut in the investment budget in non-critical divisions aim to mitigate the consequences of economic slowdowns. There are revolving credit lines to ensure the company is solvent. The European Commission submitted a proposal in December 2018, which provided for a freezing of the current traffic volume between Great Britain and the EU-27 for a transitional period of twelve months in the event of a disorderly Brexit.

In addition to the risks represented in the risk matrix, there was also a risk in the previous year referred to as «Commercial difficulties of airlines». With the insolvency of Air Berlin and Niki in fiscal year 2017, Munich Airport lost important customers. Within the shortest space of time, it proved possible for other airlines, including Lufthansa and Eurowings, to compensate for

the hole created by this loss through strong demand in domestic German and tourist traffic. With the exception of Lufthansa, none of the airlines operating at Munich Airport extended into the traffic share of Air Berlin, meaning that there is currently no financial risk of further default and the risk has been removed from the risk reporting in 2018.

## Operating risks

Risk	Description and analysis	Countermeasure[s]
IT failure	Damage to the IT system can result from fire, water ingress, or sabotage. Failure of IT for traffic operations with the corresponding interruptions of operations would be the consequence. Constant, new technological developments and the worldwide increasing risk of cyber attacks are also leading to risks in relation to the security of IT systems and networks as well as data security. In the area of cyber criminality, an increasing, abstract risk potential exists that requires constant observation and assessment. Failure of IT for traffic operations can lead to interruptions in operations. This would result in financial losses and reputational damage.	Critical corporate IT systems are fully redundant with systems located in physically separate locations. Property damage and interruptions of operations are insured. To avert a cyber crime attack at Munich Airport, a central information security management has been in place since 2004, which defines and monitors strategic, technical, and organizational measures to defend against cyber attacks. The awareness of cyber risks is increased through training courses for managers and employees. In addition, Munich Airport opened a center of competence to counter cyber criminality in 2018 [Information Security Hub]. Here the airport's IT specialists work together with experienced IT security companies under realistic conditions on various risk scenarios and test new methods for combating cyber criminality. The risk is additionally minimized through insurance. After taking the countermeasures into consideration, the net risk is below the risk tolerance limit.
Water damage	Water damage caused by a break in the main drinking water or fire extinguishing water pipelines could lead to the failure of infrastructure systems important for air traffic.	Remotely controlled emergency shut-off equipment and additional protective devices in the pipeline connections limit the possible damage. Property damage and interruptions of operations are insured. After taking the countermeasures into consideration, the net risk is below the risk tolerance limit.
Change in national and EU-wide security requirements [formerly expansion of EU security requirements]	Munich Airport is subject to national and EU-wide aviation security requirements encompassing the topics of airport security, air passenger and hand luggage checks, airfreight, airmail and goods controls, among others. Security requirements are adjusted continuously to the current circumstances. This can give rise to procedural and also infrastructural changes for Munich Airport. Corresponding financial burdens would then follow.	Munich Airport attempts to minimize these consequences through work in associations and on committees. Early information relating to ongoing legislative procedures ensures the timely implementation of security regulations. Additional expenses caused by infrastructural changes are dealt with in the master agreement on charges.
Failure to pass an EU safety inspection	The EU's aviation authorities conduct safety inspections at airports. Should it fail to comply with a safety standard and subsequently fail the follow-up audit, Munich Airport can lose its «Clean» status. The consequences would be a heightening of the safety regulations, considerable obstruction with operational processes, competitive disadvantages, and a loss of image.	Munich Airport conducts thorough and strict quality controls to manage the quality of all safety aspects at the airport.
Utilities and waste disposal facilities	The inadequate availability of substances necessary for operating activities, such as electricity, heat, cooling energy, drinking and extinguishing water, waste water, and waste, may result in property damage and interruptions of operations.	The service and maintenance programs, network redundancies, and storage reduce the risk of gaps in supply. Property damage and interruptions of operations are insured. After taking the countermeasures into consideration, the net risk is below the risk tolerance limit.
Reorganization of ground handling	The success of the reorganization of the former Ground Handling business unit could be put at risk by the following uncertainties and circumstances: sustained reductions in traffic from existing customers, ground handling losses due to the transfer of part fleets to third parties, aggressive pricing policies of competitors and increasing price decline at Munich Airport.	In the negotiations to extend the long-term contract with an important customer of AeroGround, a new contract was concluded at the end of 2016. As a result, associated collective restructuring agreements could be extended. To compensate for declining ground handling volumes, talks with potential new customers are ongoing. In the event of a loss of ground handling, capacities and associated costs will fall. Constant controlling and reporting of the renovation progress or renovation path.



## Operating risks

Risk	Description and analysis	Countermeasure(s)
Personnel procurement/recruitment	Personnel procurement is proving increasingly difficult in the various professional groups. This is caused by, among other things, the overstretched labor market in the region, the high costs of accommodation, the increasing age of workforce, the high fluctuation in the area of ground handling service. This could lead to a qualitative deterioration or delay in the performance of services and to breaches of contract for ground handling services.	To counteract this, a working group was installed. The aim of this group is to develop a Group-wide coordinated approach as well as target-group-specific HR marketing and procurement concepts. Further measures include the intensification of training activities, the promotion of marketing at universities, and a presence at trade fairs and job fairs. In addition, projects were initiated to procure affordable living space for Group employees. After taking the countermeasures into consideration, the net risk is below the risk tolerance limit.
Drones	In addition to the operational risks represented in the risk matrix, there is a risk, arising from the increasing number of drones in the sky, that drones can enter into the controlled space of Munich Airport without authorization, and disrupt or endanger flight operations. In 2017 with the regulation concerning the operation of unmanned aircraft, the Federal Government adopted tightened rules for the use of drones, including the obligation to register aircraft and a ban on operation within the controlled space of airports. In addition, the European Aviation Safety Agency (EASA) elaborated a draft law on harmonizing the regulations governing drone operation in the EU. This requires, inter alia, that drones with defined characteristics to be registered in national databases so that they can be precisely traced to their operators. In 2018, the European Parliament issued its consent. The law is scheduled to come into effect in 2019.	Together with the airport associations ADV, ACI, and the German Aviation Association (BDL), Munich Airport is working on a harmonized regulation for drone traffic at national and European level. In addition, the Aviation and Group security divisions are working on a study on the topic of drone protection, with the objective of obtaining manufacturer-independent valuations of the technologies available on the market for the selection of drone detection systems. The gross risk here is under the risk tolerance limit and is therefore not represented in the risk matrix.
Third runway	As a result of the postponement of the decision to realize the third runway project, all previously incurred planning and land acquisition costs must be checked in respect of their recoverability and depreciated if necessary. The consequences arising from the current moratorium were recognized in the balance sheet. There could be a significant loss of corporate value unless capacity is expanded through the construction of the third runway. This will be influenced primarily by a stagnation of or a decline in traffic volumes and the associated lower revenues in the Aviation and Non-Aviation divisions. The expansion project will have to be discussed further after the current legislative period and a decision as to the further procedure will have to be made.	The legal confirmation of the planning approval notice by the Bavarian Higher Administrative Court (BayVGH) of February 19, 2014, and in the following year by the German Federal Administrative Court was an important milestone with respect to the limitation of the legal risks for the project realization. As further countermeasures, the diversification of the product range and the expansion of international business are planned. Despite the moratorium, Munich Airport is holding firm on its future project.
Products used for de-icing	There is a suspicion that the formates in the products currently used for de-icing paved areas and runways accelerate the oxidation of aircraft brakes. There are discussions about banning formate de-icing products ongoing at the SAE (Society of Automobile Engineers) international standardization committee. As an alternative, there are currently only glycol-based de-icers on the market, the use of which is not permitted at Munich Airport by the Ministry of the Environment. If they are banned, Munich Airport would have to invest substantial sums in the waste water systems to comply with the requirements of water management legislation.	The German passenger airports within the ADV and BDL associations are together opposing the ban on formate-based de-icers. They are also aiming to influence the SAE via ACI Europe. In discussions with the Bavarian water management authorities, ACI Europe, and the responsible SAE working group, it was shown that as little de-icer as possible is used in order to minimize the environmental impact. In addition, the products used for de-icing paved areas and runways at Munich Airport are published in the Notice to Airmen (NOTAM). The manufacturers of the de-icer are to be involved in the future in order to find a solution to this problem.
EU General Data Protection Regulation	In addition to the legal risks listed in the risk matrix, there are also risks in connection with the EU General Data Protection Regulation (GDPR) which came into effect in 2018. The GDPR expands the existing obligations arising from the Federal Data Protection Act (BDSG) and increases the legal, operational, and technical/organizational requirements for data protection. An infringement of these rights and obligations could incur high fines, claims for damages, reprimands, and reputational damage. Currently, there are questions being raised at Munich Airport in connection with the use of video surveillance through the CCTV system (Closed Circuit Television).	At Munich Airport, the project to implement the requirements of GDPR has been successfully completed. As part of this, organizational structures and processes, as well as the documentation of same were adjusted and the awareness of data protection was raised within the Group. In particular, as countermeasures for data protection risks arising from CCTV the following measures were taken: Role use concept, new signage indicating the video surveillance, re-negotiation of the works agreement on CCTV. The gross risk here is under the risk tolerance limit set by FMG and is therefore not represented in the risk matrix.

As is customary in the normal course of business, Munich Airport is faced with various legal disputes. These can lead, in particular, to the payment of compensation claims or, in the case of construction projects, to changes in the remuneration of services. Moreover, other legal disputes can be initiated and existing legal disputes can be expanded. Apart from matters for which provisions have already been made in the balance sheet, Munich Airport is not currently anticipating any material negative impacts for the net assets, financial position, and operating results from other known cases at the present time.

As part of the planned establishment of foreign subsidiaries in the area of operation and consulting other airports and terminals, risks can arise from the first time assumption of operational responsibility abroad. In particular, airport operator projects are subject, just as at the Munich location itself, to general economic and company-specific risks. In order to reduce these risks, Munich Airport cooperates with local partners who have a great deal of experience with respect to the respective country-specific conditions and circumstances. In order to counteract liability risks in particular, local companies will be established in 2019 for the beginning projects.

Tax [operational] audits by the tax authorities are also considered a general risk.

With the exception of the interest rate risks, the expected financial liabilities for the listed gross financial risks were under the reporting limit as at December 31, 2018. Therefore they were not included in the risk reporting.

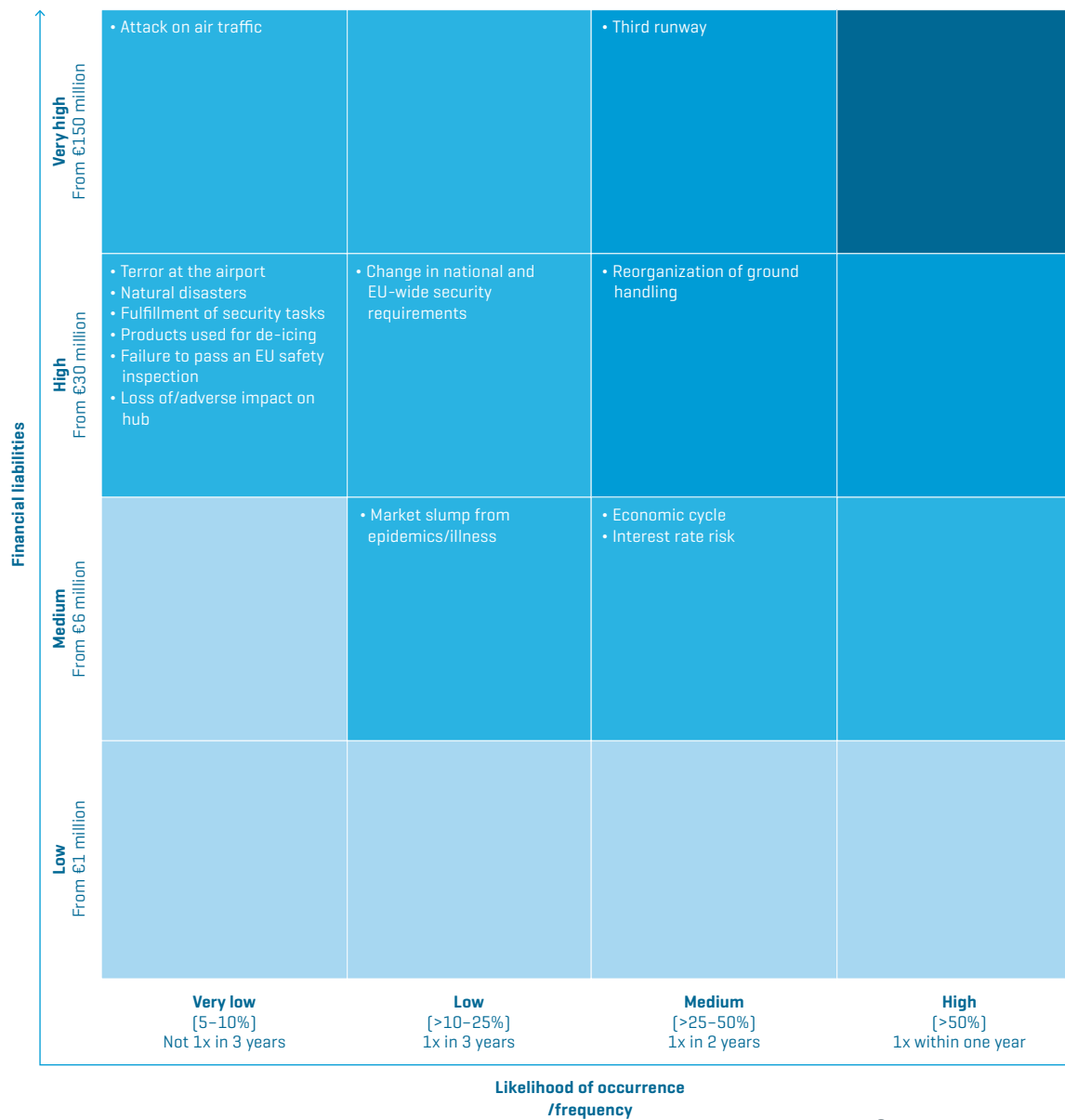
### Financial risks

Risk	Description and analysis	Countermeasure(s)
Currency risks	Currency risks arise insofar as planned sales in foreign currencies are not balanced by any corresponding expenses or outgoings in the same currency.	Munich Airport hedges currency risks using currency forwards.
Credit and credit rating risks	Credit and credit rating risks primarily arise from short-term deposits as well as trade receivables.	Deposits are [generally] only made with [German] banks with deposit protection. The management of credit risks includes the constant monitoring of debtors' creditworthiness, overdue invoices, and stringent collections management. Dependent on the credit rating, certain services are only performed against prepayment or provision of collateral in the form of guarantees.
Interest rate risks	Interest-rate risks largely arise from floating-rate financial liabilities from loans and financial liabilities to shareholders.	Interest-rate risks from floating-rate financial liabilities from loans are countered by Munich Airport by hedging with interest rate swaps.

After considering countermeasures, the following nets risks remain: Fig. 27

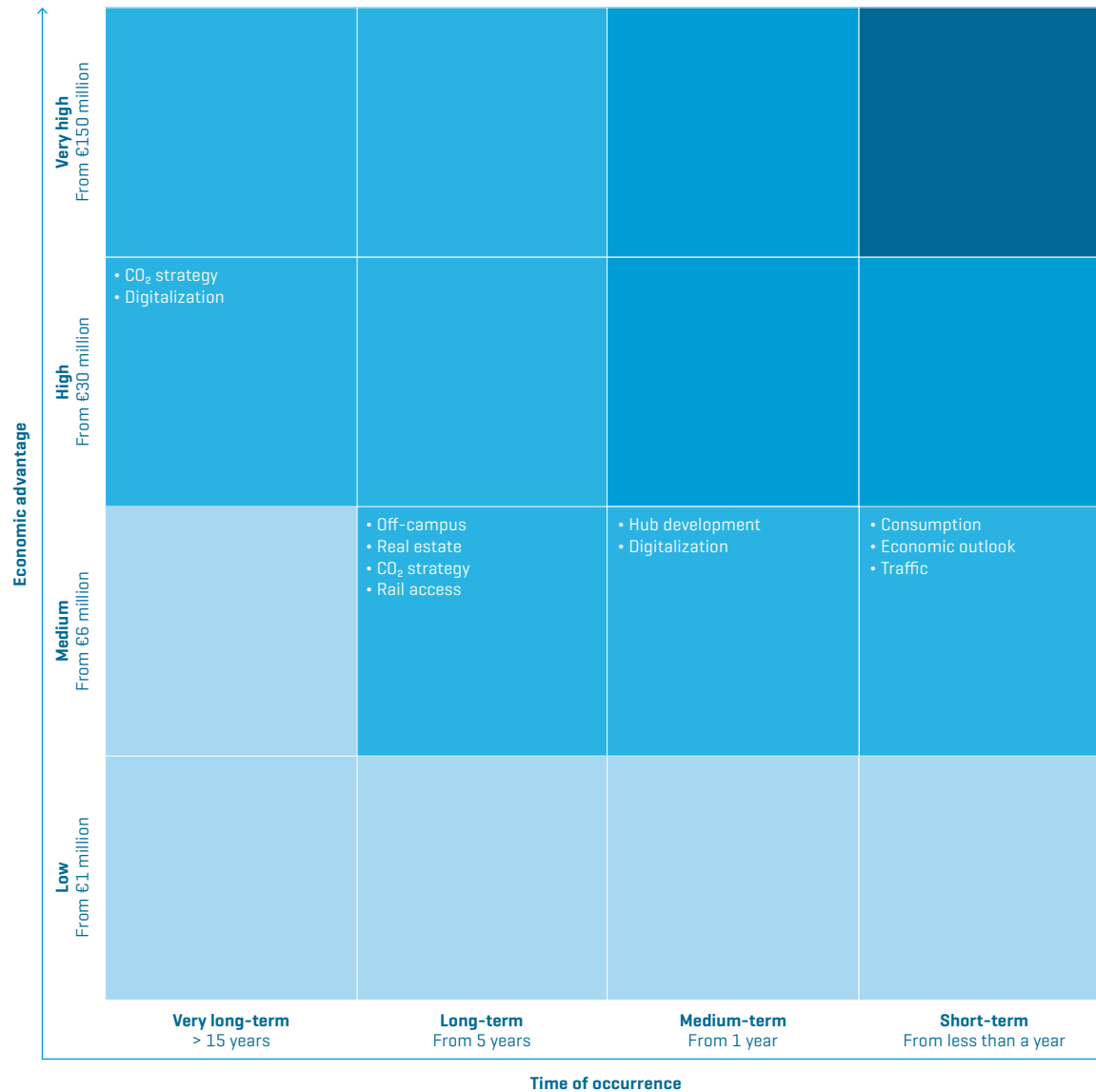
**Overview of net risks**

Fig. 27



Overview of opportunities

Fig. 28



Opportunities

The divisions and investments identify, assess, and manage opportunities on a decentralized basis with support from Corporate Development, Corporate Controlling, and Investment Management.

The report shows below the developments and events that could lead to a positive deviation from planning. The presentation is based on the risk report with the difference that the horizontal axis shows the time of occurrence – that is the time until opportunities are expected to occur – and not the frequency with which they occur. Opportunities are not mentioned more than once where their influence remains constant in the period of time. In the event of a changed economic advantage, multiple mentions are made. The economic advantage takes effect in the short, medium, long or very long term, and is considered periodically.

Fig. 28/29

## Opportunities

Fig. 29

Opportunities	Description and analysis
Consumption	Overcoming the current geopolitical and economic crises could lead to an increase in the propensity to consume of passengers from regions outside Europe above the planned level.
Economic cycle	Global economic growth above planned levels could boost revenues further.
Traffic	An increase in air traffic growth above the expected level could increase revenues in all corporate divisions.
Hub development	The important partner airline, Deutsche Lufthansa could strengthen the expansion of the hub at the Munich Airport location on the basis of a further improvement of its market position, which would lead to passenger development exceeding the plans.
Digitalization	Munich Airport is pursuing a strategy of better adapting its business model to the structural change resulting from digitalization. From this strategy, medium to very long-term growth effects could occur, which are not completely taken into consideration in the previous plans.
Off-campus	The off-campus business of Munich Airport (services and retail) might develop better than expected, with corresponding growth in the company results.
Real Estate	The innovative real estate concept being implemented within the framework of LabCampus, could lead to a greater demand for real estate in the long term than assumed in the plan. This would result in an increase in revenue in this and, potentially, in other business units.
CO <sub>2</sub> strategy	The continuing increase in efficiency in energy-saving technologies and an associated improvement in the price-performance ratio of low emissions energy generation could lead to the costs of Munich Airport's new CO <sub>2</sub> strategy being lower than expected.
Rail access	Better than expected improvements to rail access could lead to an expansion in the passenger catchment area and consequently to increased revenue in all business units.

### Overall assessment of the opportunities and risk situation

For Munich Airport as the second largest passenger airport in Germany and one of the largest airports in Europe, it is important to actively exploit any opportunities that arise and to improve its position on the market still further through constant growth. However, it is also a key objective of Munich Airport to recognize risks in good time and to counter them systematically.

Accordingly, the currently anticipated impact of possible events and developments is taken into consideration in business planning every year. The reported opportunities and risks are defined as potential deviations going beyond the forecast corporate result. Munich Airport consolidates and aggregates the risks reported by the corporate divisions and Group companies, and reports quarterly to the Executive Board and shareholders. Opportunities are identified and managed with the involvement of the corporate divisions, Corporate Development as well as Corporate Controlling and Investment Management.

Taking account of the current business plan, the opportunities and risk situation has scarcely changed year on year. No new risks were identified that might potentially have a critical impact on income.

No risks were foreseeable from the Group-wide risk management system or in the assessment of the Executive Board during the current forecast period, which individually or in their entirety could jeopardize the continued existence of Munich Airport.

Munich Airport points out that various known or unknown risks, uncertainties and other factors may lead to actual events, the financial position, the business development or the performance of the company deviating significantly from the estimates provided here.

Munich, April 11, 2019

**Dr. Michael Kerkloh    Andrea Gebbeken    Thomas Weyer**



# Abridged consolidated financial statements

## Consolidated statement of profit or loss

T€	Disclosure	2018	2017
Revenue <sup>1)</sup>	VI.1	1,508,817	1,468,735
Changes in inventories and work in progress		-672	672
Own work capitalized	VI.2	15,835	13,017
Other income	VI.3	29,731	30,368
<b>Total income</b>		<b>1,553,711</b>	<b>1,512,792</b>
Cost of materials	VI.4	-393,602	-398,988
Personnel expenses	VI.5	-507,713	-482,081
Other expenses	VI.6	-114,318	-111,736
<b>Earnings before interest, taxes, depreciation, and amortization (EBITDA)</b>		<b>538,078</b>	<b>519,987</b>
Depreciation and amortization	VI.7	-215,862	-217,617
<b>Operating result (EBIT)</b>		<b>322,216</b>	<b>302,370</b>
Interest result	VI.8	-84,257	-83,605
Other financial result	VI.8	-17,813	8,843
<b>Financial result</b>		<b>-102,070</b>	<b>-74,762</b>
Result from companies accounted for using the equity method	VII.4	1,173	1,632
<b>Earnings before taxes (EBT)</b>		<b>221,319</b>	<b>229,240</b>
Income taxes	VI.9	-72,586	-70,440
<b>Group profit/loss for the year (EAT)</b>		<b>148,733</b>	<b>158,800</b>
of which assignable to owners of the company		148,732	158,800
of which assignable to non-controlling interests		1	0

<sup>1)</sup> Due to the application of the cumulated retrospective method as part of the first-time application of IFRS 15, the previous year's figures have not been adjusted.

## Consolidated statement of comprehensive income

T€	Disclosure	2018	2017
<b>Group profit/loss for the year</b>		<b>148,733</b>	<b>158,800</b>
Cash flow hedging	VII.16	10,742	18,464
Deferred taxes not affecting profit or loss	VII.6	-2,149	-3,691
Items to be reclassified to the statement of profit or loss		8,593	14,773
Actuarial gains/losses	VII.17	811	-314
Deferred taxes not affecting profit or loss	VII.6	-225	88
Items not to be reclassified to the statement of profit or loss		586	-226
<b>Other comprehensive income net of tax</b>		<b>9,179</b>	<b>14,547</b>
<b>Total comprehensive income</b>		<b>157,912</b>	<b>173,347</b>
of which assignable to owners of the company		157,911	173,347
of which assignable to non-controlling interests		1	0

## Consolidated statement of financial position

### Assets

TE	Disclosure	Dec. 31, 2018	Dec. 31, 2017
Intangible assets	VII.1	19,572	17,477
Property, plant, and equipment	VII.2	4,804,150	4,821,038
Investment property	VII.3	150,889	151,872
Investments in companies accounted for using the equity method	VII.4	3,657	4,116
Receivables <sup>1)</sup>	VII.5	3,539	53
Other financial assets	VII.5	183	290
Deferred tax assets	VII.6	4,864	4,148
Other assets <sup>1)</sup>	VII.9	6,631	774
<b>Non-current assets</b>		<b>4,993,485</b>	<b>4,999,768</b>
Inventories	VII.7	39,193	41,567
Receivables <sup>1)</sup>	VII.8	76,057	86,545
Contract assets <sup>1)</sup>	VII.23	4,617	-
Other financial assets	VII.8	0	202
Current income tax assets		4,899	5,496
Other assets <sup>1)</sup>	VII.9	9,243	7,066
Short-term deposits	VII.10	209,446	158,000
Cash and cash equivalents	VII.10	12,377	6,625
<b>Current assets</b>		<b>355,832</b>	<b>305,501</b>
<b>Assets held for sale</b>	<b>VII.11</b>	<b>1,495</b>	<b>1,015</b>
<b>Assets</b>		<b>5,350,812</b>	<b>5,306,284</b>

<sup>1)</sup> Due to the application of the cumulated retrospective method as part of the first-time application of IFRS 15, the previous year's figures have not been adjusted.

## Equity and Liabilities

T€	Disclosure	Dec. 31, 2018	Dec. 31, 2017
Subscribed capital	VII.12	306,776	306,776
Reserves	VII.12	151,353	150,767
Other equity	VII.12	1,754,388	1,628,698
Non-controlling interests		14	13
<b>Equity</b>		<b>2,212,531</b>	<b>2,086,254</b>
<b>Financial liabilities from interests in partnerships</b>	<b>VII.14</b>	<b>346,058</b>	<b>315,375</b>
Payables <sup>1)</sup>	VII.15	12,365	12,498
Other financial liabilities	VII.15	1,314,692	1,393,047
Employee benefits	VII.17	50,864	50,163
Other provisions	VII.18	89,769	91,300
Deferred tax liabilities	VII.6	427,140	435,540
Other liabilities <sup>1)</sup>	VII.20	16,886	17,305
<b>Non-current liabilities</b>		<b>1,911,716</b>	<b>1,999,853</b>
Payables <sup>1)</sup>	VII.19	162,502	159,303
Contract liabilities <sup>1)</sup>	VII.23	2,045	-
Other financial liabilities	VII.19	640,442	677,649
Employee benefits	VII.17	43,485	40,887
Other provisions	VII.18	14,131	9,924
Current income tax liabilities		5,227	5,623
Other liabilities <sup>1)</sup>	VII.20	12,675	11,416
<b>Current liabilities</b>		<b>880,507</b>	<b>904,802</b>
<b>Equity and liabilities</b>		<b>5,350,812</b>	<b>5,306,284</b>

<sup>1)</sup> Due to the application of the cumulated retrospective method as part of the first-time application of IFRS 15, the previous year's figures have not been adjusted.

## Consolidated statement of changes in equity

T€	Disclosure	Subscribed capital	Reserves		Other equity	Non-controlling interests	Equity
			Capital reserve	Revenue reserve			
<b>As of Dec. 31, 2016</b>	<b>VII.12</b>	<b>306,776</b>	<b>102,258</b>	<b>48,735</b>	<b>1,485,125</b>	<b>13</b>	<b>1,942,907</b>
Group profit/loss for the year		0	0	0	158,800	0	158,800
Other comprehensive income		0	0	-226	14,773	0	14,547
<b>Total comprehensive income</b>		<b>0</b>	<b>0</b>	<b>-226</b>	<b>173,573</b>	<b>0</b>	<b>173,347</b>
Distributions		0	0	0	-30,000	0	-30,000
Deconsolidation		0	0	0	0	0	0
<b>Transactions with shareholders</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>-30,000</b>	<b>0</b>	<b>-30,000</b>
Allocation to reserves		0	0	0	0	0	0
<b>Change in reserves</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>As of Dec. 31, 2017</b>	<b>VII.12</b>	<b>306,776</b>	<b>102,258</b>	<b>48,509</b>	<b>1,628,698</b>	<b>13</b>	<b>2,086,254</b>
Impact arising from first-time application of IFRS 9	II.2	0	0	0	-1,635	0	-1,635
<b>As of Jan. 1, 2018</b>		<b>306,776</b>	<b>102,258</b>	<b>48,509</b>	<b>1,627,063</b>	<b>13</b>	<b>2,084,619</b>
Group profit/loss for the year		0	0	0	148,732	1	148,733
Other comprehensive income		0	0	586	8,593	0	9,179
<b>Total comprehensive income</b>		<b>0</b>	<b>0</b>	<b>586</b>	<b>157,325</b>	<b>1</b>	<b>157,912</b>
Distributions		0	0	0	-30,000	0	-30,000
<b>Transactions with shareholders</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>-30,000</b>	<b>0</b>	<b>-30,000</b>
<b>As of Dec. 31, 2018</b>	<b>VII.12</b>	<b>306,776</b>	<b>102,258</b>	<b>49,095</b>	<b>1,754,388</b>	<b>14</b>	<b>2,212,531</b>



## Consolidated statement of cash flow

T€	Disclosure	2018	2017
<b>Total comprehensive income</b>		<b>157,912</b>	<b>173,347</b>
Deferred taxes not affecting profit or loss		2,374	3,603
Actuarial gains/losses		-811	314
Cash flow hedging		-10,742	-18,464
<b>Group profit/loss for the year (EAT)</b>		<b>148,733</b>	<b>158,800</b>
Result from companies accounted for using the equity method		-1,173	-1,632
Income taxes		72,586	70,440
Financial result		102,070	74,762
<b>Operating result (EBIT)</b>		<b>322,216</b>	<b>302,370</b>
Depreciation and amortization		215,862	217,617
Gains/losses from disposal of fixed assets		3,104	1,553
Increase/decrease in inventories		2,374	1,198
Increase/decrease in current receivables		10,487	-20,732
Increase/decrease in liabilities		3,234	-23,800
Increase/decrease in employee benefits		3,393	7,160
Increase/decrease in other provisions		4,451	-6,314
Increase/decrease in other assets/liabilities not related to investing and financing activities		-12,950	7,019
Gross cash flow from operating activities		552,171	486,071
Net income taxes paid/received		-83,875	-104,150
<b>Cash flow from operating activities</b>		<b>468,296</b>	<b>381,921</b>
Proceeds from sale of owner-occupied property, plant, and equipment		5,853	18,016
Proceeds from sale of intangible assets		404	590
Proceeds from sale of investment property		117	106

T€	Disclosure	2018	2017
Proceeds of distributions from associated companies		1,632	931
Payments for investments in owner-occupied property, plant, and equipment		-191,146	-125,851
Payments for investments in intangible assets		-8,328	-7,279
Payments for investments in investment property		-5,174	-3,200
Interest received		275	325
Changes in connection with companies not fully consolidated		96	
Changes in short-term deposits		-52,000	-146,000
<b>Cash flow from investing activities</b>		<b>-248,271</b>	<b>-262,362</b>
Payments for distributions to shareholders	IX	-30,000	-30,000
Proceeds from borrowings	IX	13,200	33,184
Repayments of borrowings from banks	IX	-125,713	-69,175
Repayments of financial liabilities from interests in partnerships	IX	-22,330	0
Cash flows from Group-wide cash management with associates and shareholdings	IX	-572	-2,832
Interest paid (excluding borrowing costs for qualifying assets)	IX	-43,942	-45,549
Payments for borrowing costs for qualifying assets	IX	-4,916	-4,596
<b>Cash flow from financing activities</b>	<b>IX</b>	<b>-214,273</b>	<b>-118,968</b>
<b>Change in cash and cash equivalents</b>		<b>5,752</b>	<b>591</b>
<b>Cash and cash equivalents at the beginning of the year</b>		<b>6,625</b>	<b>6,034</b>
<b>Cash and cash equivalents at the end of the year</b>		<b>12,377</b>	<b>6,625</b>

# Boards of the Company

Data as of: December 31, 2018

## Executive Board

	Period
<b>Dr. Michael Kerkloh</b> President and Chief Executive Officer, Personnel Industrial Relations Director	Since September 2002
<b>Andrea Gebbeken</b> Chief Commercial and Security Officer	Since October 2016
<b>Thomas Weyer</b> Chief Financial Officer, Chief Infrastructure Officer	Since September 2008

## General representatives

<b>Dr. Robert Scharpf</b> Authorized representative and Senior Vice President HR	Since July 2016
<b>Dr. Josef Schwendner</b> Authorized representative and Senior Vice President Legal Affairs, Committees, Compliance and Environment	Since July 2016

## Supervisory Board

	Additional mandates
<b>Free State of Bavaria</b>	
<b>Dr. Markus Söder</b> (Chairman, until 3/16/2018) Bavarian State Ministry of Finance, Regional Development, and Regional Identity	<ul style="list-style-type: none"> <li>NürnbergMesse GmbH [Deputy Chairman of the Supervisory Board until 3/16/2018]</li> <li>Flughafen Nürnberg GmbH [Chairman of the Supervisory Board until 3/16/2018]</li> <li>Bayerische Landesstiftung [Chairman of the Foundation Council since 3/16/2018, previously Deputy Chairman of the Foundation Council]</li> <li>Bavarian Research Foundation [Chairman of the Foundation Council since 3/16/2018, previously member of the Foundation Council]</li> <li>Staatstheater Nürnberg [member of the Foundation Council until 3/16/2018]</li> <li>Deutsches Museum [participation in the Board of Trustees]</li> </ul>
<b>Albert Füracker</b> (since 5/3/2018, Chairman since 5/15/2018) Bavarian State Ministry of Finance and Regional Identity	<ul style="list-style-type: none"> <li>Flughafen Nürnberg GmbH [Chairman of the Supervisory Board since 7/27/2018, previously member of the Supervisory Board since 6/21/2018]</li> <li>Messe München GmbH [member of the Supervisory Board]</li> <li>NürnbergMesse GmbH [Chairman of the Supervisory Board since 10/1/2018, previously Deputy Chairman of the Supervisory Board since 5/23/2018, previously member of the Supervisory Board]</li> <li>Bayerische Landesstiftung [Deputy Chairman of the Foundation Council since 3/21/2018]</li> <li>Bavarian Research Foundation [member of the Foundation Council since 3/21/2018]</li> <li>Stiftung Bayerische Gedenkstätten [member of the Foundation Council]</li> <li>Deutsches Museum [member of the Board of Trustees since 3/21/2018]</li> <li>Dokumentationsstelle Obersalzberg [member of the Board of Trustees]</li> <li>ifo Institute – Leibniz Institute for Economic Research at the University of Munich e.V. [member of the Board of Trustees since 7/1/2018]</li> <li>RCI Regensburg Center for Interventional Immunology [member of the Board of Trustees]</li> </ul>

## Supervisory Board

	Additional mandates
<b>Free State of Bavaria</b>	
<b>Wolfgang Lazik</b> (until 3/20/2018) Bavarian State Ministry of Finance, Regional Development, and Regional Identity	<ul style="list-style-type: none"> <li>Bayerische Landesbank [member of the Supervisory Board until 4/12/2018]</li> <li>BayernLB Holding AG [Deputy Chairman of the Supervisory Board until 4/12/2018]</li> </ul>
<b>Harald Hübner</b> (since 5/3/2018) Bavarian State Ministry of Finance and Regional Identity	<ul style="list-style-type: none"> <li>Bayerische Landesbank [member of the Supervisory Board since 4/12/2018]</li> <li>BayernLB Holding AG [Deputy Chairman of the Supervisory Board since 5/15/2018, previously member of the Supervisory Board since 4/12/2018]</li> <li>LFA Förderbank [member of the Board of Directors until 5/9/2018]</li> <li>Bayern International – Bayerische Gesellschaft für Internationale Wirtschaftsbeziehungen mbH [Deputy Chairman of the Supervisory Board until 5/29/2018]</li> <li>Wittelsbacher Ausgleichsfonds [State Commissioner]</li> </ul>
<b>Helmut Schütz</b> Bavarian State Ministry of Housing, Construction, and Traffic	<ul style="list-style-type: none"> <li>Bayerische Eisenbahngesellschaft mbH [BEG] [Deputy Chairman of the Supervisory Board]</li> <li>Rhein-Main-Donau Wasserstraßen GmbH [RMD Wasserstraßen GmbH] [member of the Supervisory Board]</li> <li>Deutsches Museum [member of the Board of Trustees]</li> </ul>
<b>Dr. Bernhard Schwab</b> (until 4/30/2018) Bavarian State Ministry of Economic Affairs and Media, Energy and Technology	<ul style="list-style-type: none"> <li>Bayern Kapital GmbH [member of the Supervisory Board]</li> <li>Bayern Innovativ GmbH [member of the Supervisory Board]</li> <li>Bayern International – Bayerische Gesellschaft für Internationale Wirtschaftsbeziehungen mbH [member of the Supervisory Board]</li> <li>Zentrum Digitalisierung.Bayern [ZD.B] state-owned enterprise [Chairman of the Board of Directors]</li> <li>Bayernwerk AG [member of the Advisory Board]</li> <li>Leibniz Institute for Foodstuff System Biology at the Technical University of Munich [Leibniz-LSB@TUM] [Chairman of the Foundation Council]</li> <li>ifo Institute – Leibniz Institute for Economic Research at the University of Munich e.V. [member of the Board of Directors]</li> <li>Bavarian Research Foundation [Deputy member on Foundation Council]</li> </ul>
<b>Ernst Weidenbusch</b> (since 5/3/2018) Representative of the Bavarian State Government for State Investments, retired	<ul style="list-style-type: none"> <li>Kreissparkasse München Starnberg Ebersberg [member of the Board of Directors]</li> <li>businessforce AG [member of the Supervisory Board]</li> </ul>

## Supervisory Board

	Additional mandates
<b>Federal Republic of Germany</b>	
<b>Dr. Martina Hinricher</b> (until 3/31/2018) Federal Ministry of Transport and Digital Infrastructure	<ul style="list-style-type: none"> <li>• DFS Deutsche Flugsicherung GmbH [Chairman of the Supervisory Board]</li> <li>• Flughafen Köln/Bonn GmbH [3rd Deputy Chairman of the Supervisory Board]</li> </ul>
<b>Guido Beermann</b> (since 8/29/2018) Federal Ministry of Transport and Digital Infrastructure	<ul style="list-style-type: none"> <li>• Deutsche Bahn AG [Member of the Supervisory Board]</li> </ul>
<b>Christiane Wietgrefe-Peckmann</b> Federal Ministry of Finance	None
<b>City of Munich</b>	
<b>Dieter Reiter</b> Lord Mayor	<ul style="list-style-type: none"> <li>• Stadtparkasse München [Chairman of the Board of Directors]</li> <li>• Stadtwerke München GmbH [Chairman of the Supervisory Board]</li> <li>• SWM Services GmbH [Chairman of the Supervisory Board]</li> <li>• Münchner Verkehrsgesellschaft mbH [Chairman of the Supervisory Board]</li> <li>• Münchner Verkehrs- und Tarifverbund GmbH [Chairman of the Group Council and the Annual General Meeting]</li> <li>• GWG Städtische Wohnungsgesellschaft mbH [Chairman of the Supervisory Board]</li> <li>• GEWOFAG Holding GmbH [Chairman of the Supervisory Board]</li> <li>• München Klinik GmbH [Chairman of the Supervisory Board]</li> <li>• Messe München GmbH [Chairman of the Supervisory Board]</li> <li>• Sparkassenverband Bayern, public corporation [representative in the association meeting]</li> <li>• Sparkassen-Bezirksverband Oberbayern, public corporation [representative in the association meeting]</li> <li>• Bayerischer Städtetag, public corporation [member of the plenary assembly]</li> <li>• Mathias-Pschorr-Stiftung, Hackerbräu [Chairman of the Foundation Advisory Board]</li> <li>• Planungsverband Äußerer Wirtschaftsraum München, public corporation [representative in the association meeting and the association committee]</li> <li>• Master Schools at Ostbahnhof, Zweckverband der LHM und der Handwerkskammer für München und Oberbayern [Chairman of the Association]</li> <li>• Regional Planning Association, public corporation [Deputy Assembly Chairman]</li> <li>• Administrative Union, Freiamt [representative in the association meeting]</li> </ul>

## Supervisory Board

	Additional mandates
<b>City of Munich</b>	
<b>Josef Schmid</b> Deputy Mayor, retired	<ul style="list-style-type: none"> <li>• MGH-Münchner Gewerbehof- und Technologiezentrumsgesellschaft mbH [Chairman of the Supervisory Board]</li> <li>• Internationale Münchner Filmwochen GmbH [Chairman of the Supervisory Board]</li> <li>• Münchner Verkehrs- und Tarifverbund GmbH [member of the Group Council]</li> <li>• Ströer Deutsche Städte Medien GmbH [member of the Advisory Board]</li> <li>• Deutsches Museum [member of the Board of Trustees]</li> <li>• Stiftung Buch-, Medien- und Literaturhaus Munich [Chairman of the Foundation Advisory Board]</li> <li>• Stiftung Lebendige Stadt [member of the Foundation Council]</li> <li>• FC Bayern München [member of the Board of Directors]</li> <li>• ESV Sportfreunde München-Neuaußing [member of the Economic and Administrative Advisory Board]</li> <li>• Stars &amp; Rising Stars [member of the Board of Trustees]</li> <li>• Catholic Council [Member]</li> <li>• IG Initiativ-Gruppe [member of the Board of Trustees]</li> </ul>
<b>Labor union</b>	
<b>Thomas Bihler</b> Clerical employee	<ul style="list-style-type: none"> <li>• Stiftung Ambulantes Kinderhospiz München [AKM] [member of the Board of Trustees]</li> </ul>
<b>Heinrich Birner</b> (Deputy Chairman) Director of the ver.di labour union Munich region	<ul style="list-style-type: none"> <li>• Stadtwerke München GmbH [member of the Supervisory Board]</li> <li>• SWM Services GmbH [member of the Supervisory Board]</li> <li>• Stadtparkasse München [member of the Board of Directors]</li> </ul>
<b>Employees (no additional mandates)</b>	
<b>Hans-Joachim Bues</b> Senior Vice President Corporate Communications, representative of the senior managers	<b>Irena Castello</b> Clerk, substitute workers' councilor
<b>Anna Müller</b> Clerical employee, full-time workers' councilor	<b>Bernhard Plath</b> Business economist, full-time workers' councilor
	<b>Orhan Kurtulan</b> Certified aircraft handler, full-time workers' councilor
	<b>Renate Siedentopf</b> Insurance agent, full-time workers' councilor

# Supervisory Board report

The Supervisory Board was informed regularly and in detail by the Executive Board in written reports and at meetings about the Company's situation, its development, and important business events. In its meetings and the meetings of its committees, the Supervisory Board discussed all major company matters and made such decisions as it was called upon to make in accordance with its statutory responsibilities. The Supervisory Board met for three meetings during the fiscal year. The working committee held four meetings. The HR committee convened twice. In the fiscal year, Minister of State Dr. Markus Söder resigned his mandate as Chairman of the Supervisory Board on March 16, 2018. Minister of State Albert Füracker was elected as his successor on May 3, 2018 as member of the Supervisory Board, and on May 15, 2018 as Chairman of the Supervisory Board.

The financial statements as of December 31, 2018, and the Management Report of Flughafen München GmbH and of the Group presented by the Executive Board have been audited and issued with an unqualified opinion by KPMG AG Wirtschaftsprüfungsgesellschaft, Munich, the appointed auditor.

Having conducted its own review, the Supervisory Board acknowledges the auditor's findings and raises no objections.

In accordance with Section 52[1] of Germany's Limited Liability Companies Act (GmbHG) and Section 171[2] of Germany's Stock Corporations Act (AktG), the Board approves the financial statements of FMG and the consolidated financial statements. It proposes that the shareholders endorse the financial statements of FMG and approve the consolidated financial statements.

The Supervisory Board wishes to express its gratitude and respect for the work carried out and the successes achieved by the company's Executive Board and employees in fiscal year 2018.

Munich, June 6, 2019

For the Supervisory Board



**Minister of State Albert Füracker**  
Chairman of the Supervisory Board  
of Flughafen München GmbH

# Note on the audit opinion

## **Disclosures on the result of the audit of the consolidated financial statements and the Group management report for fiscal year 2018**

The notes to the consolidated financial statements are not included in the above, abridged consolidated financial statements for the fiscal year 2018, which are designed to be included in the printed Integrated Report. The full consolidated financial statements – including the notes – and the Group management report for the fiscal year from January 1 through December 31, 2018 were audited by KPMG AG Wirtschaftsprüfungsgesellschaft, who came to the overall conclusion that the audit raised no objections and issued an unqualified independent auditor's report. In addition to the unqualified independent auditor's report, the full consolidated financial statements and the Group management report for the fiscal year from January 1 through December 31, 2018 are generally accessible on the Flughafen München GmbH website.



# Glossary

## Airports Council International (ACI)

An international organization, headquartered in Geneva, which represents airport operators. More than 1,900 airports in almost all of the countries in the world are ACI members, including 500 airports in 45 European countries.

## Auxiliary Power Units (APU)

In addition to their two or four main engines, today's commercial aircraft have a smaller auxiliary power unit. The APU is used to start the main engines and to generate electrical power when the plane is on the ground.

## Cash flow from operating activities

A business parameter describing the net cash inflow obtained from the business activities during an accounting period.

## Chapter 2/3 aircraft

These aircraft get their name from the ICAO Noise Standards, Annex 16, Volume 1. They have been banned from use within the EU since April 1, 2002, on account of their noise levels. The German Federal Ministry of Transport records particularly quiet Chapter 3 aircraft in its «bonus list». Aircraft approved after January 1, 2006, now have to comply with the limit values according to ICAO, Annex 16, Chapter 4.

## Continuous sound level Leq3

Underlying evaluation measurement for the new German Air Traffic Noise Act. It is a measure of the sound energy at the point of observation and is also referred to as the energy-equivalent continuous sound level. Leq3 is measured over 16 hours during the day, from 6 a.m. to 10 p.m. (daytime Leq3), and 8 hours during the night, from 10 p.m. to 6 a.m. (night-time Leq3). The six busiest months of the year are taken as the reference baseline.

## Covenants

Specific clauses or [additional] agreements in credit contracts or bond conditions. These are contractually binding guarantees made by the borrower or the bond debtor for the duration of the credit agreement.

## DIN EN ISO 14001

DIN EN ISO 14001 stipulates the fundamental structures and requirements for an environmental management system, with which an organization can improve its environmental performance, fulfill its legal and voluntary obligations, and achieve environmental objectives. At the same time, ISO 14001 also acts as the basis for the certification of environmental management systems.

## Earnings Before Interest and Taxes (EBIT)

Earnings before interest and taxes [and extraordinary profit/loss, where applicable] is commonly also referred to as operating result or pre-tax profit.

## Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA)

Earnings before interest, taxes, depreciation, and amortization

## Eco-Management and Audit Scheme (EMAS)

The joint system for voluntary environmental management and audits is an instrument developed by the European Commission for companies that wish to improve their environmental performance. EMAS expands the requirements of DIN EN ISO 14001 more stringently, for example in terms of external environmental audits, the continuous improvement of environmental performance, and transparent communications about environment-related developments.

## European Aviation Safety Agency (EASA)

The European Aviation Safety Agency is the European Union's flight safety body for civil aviation and is based in Cologne.

## German Airports Association (ADV)

The umbrella organization of all passenger airports in Germany, Switzerland, and Austria. The organization works to promote Germany as a strong and competitive center of aviation.

## Global Reporting Initiative (GRI)

An independent institution that publishes globally recognized guidelines on sustainability reporting. The GRI standards create a shared language for organizations and stakeholders which can be used to communicate and understand the economic, environmental, and social impacts of organizations. Its aim is to establish a common baseline for communication and to ensure the comparability of sustainability reports.

### Greenhouse Gas Protocol (GHG Protocol)

Globally recognized instrument used to quantify and manage greenhouse gas emissions. The GHG Protocol defines requirements governing the calculation of greenhouse gas emissions on an organization-wide scale and the implementation of projects to reduce emissions.

### International Civil Aviation Organization (ICAO)

Headquartered in Montreal, the International Civil Aviation Organization is an agency of the United Nations. It has a total of 192 contracting states. The goal of the ICAO and its members is to ensure the safe and sustainable development of civil aviation.

### Landing and take-off cycle (LTO cycle)

The landing and take-off cycle refers to an aircraft's CO<sub>2</sub> emissions on the ground and during take-off and landing below an altitude of 3,000 feet (914 meters). Up to this internationally defined height, any greenhouse gases associated with aircraft turbines are attributed to the airport concerned and distances from the airport of about 8 kilometers in the case of departing aircraft, depending on the climbout, and 17 kilometers in the case of arriving aircraft.

The LTO cycle is made up of four phases:

- Airport approach (up to landing)
- Taxi-in from the runway to the aircraft stand and taxi-in from the aircraft stand to the runway
- Take-off
- Climbout

### Particulate matter

The variable PM<sub>10</sub> (particulate matter < 10 µm) describes the proportion of particulate matter with a particle diameter of up to 10 µm. As a subset of PM<sub>10</sub>, PM<sub>2.5</sub> contains even smaller particles.

### Schengen/non-Schengen

Departures and arrivals areas for passengers from member states that have signed up to the Schengen Agreement; these passengers have either arrived directly from one of these states or want to travel to one. No border or passport controls are needed. Non-Schengen refers to areas for passengers who have arrived from countries that are not party to the Schengen Agreement. Passports and customs checks are required in this case.

### Traffic unit (TU)

A measurement unit used to track all commercial passenger and cargo traffic. One TU is equivalent to one passenger arriving at or departing from an airport with hand luggage (a total of 100 kilograms) or 100 kilograms of airfreight or airmail turned over or a combination of passenger volumes (arrivals and departures) and the local airfreight and airmail volumes (unloaded and loaded).

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The online report with additional content is available at:

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