FTI CONSULTING | Andersch

THE COMPETITIVE CITY OF THE FUTURE

Urban mega trends and note-worthy (inter)national city projects

Study series Future Cities 6

SUMMARY

TIME TO ACT

1. The structural change of urban living spaces was accelerated by COVID-19. It is additionally driven by new habits and demands of locals and visitors.

2. Cities compete with one another on national as well as international level – for example, as a location for companies, trade fairs, holidays or studies.

3. Each city has an individual profile of strengths and weaknesses, which makes it more or less interesting for different target groups; strengths must be promoted, and weaknesses minimized.

4. We identified six influences that will shape the city of the future to be more competitive and more resilient to crisis situations. In many places, initiatives that reflect these trends can already be observed.

5. Each city must examine individually which conflicts of objectives arise and which measures can be implemented locally in which prioritization. However, it is certain that all cities need to act now.

HIGHER REQUIREMENTS
6 TRENDS SHAPE THE CITY OF THE FUTURE

CONTENTS

ABOUT FTI-ANDERSCH: FTI-Andersch is the leading restructuring consultancy in the German-speaking region. FTI-Andersch supports its clients in the development and implementation of sustainable future/performance and restructuring concepts. FTI-Andersch becomes active in situations in which companies have to deal with operational or financial challenges – or even well before that, in order to align business model, organisation and processes for the future at an early stage. A special focus is the preparation of independent decision-making bases for intended (re-)financing.

The client base comprises SMEs as well as corporations with international activities. FTI-Andersch is part of the global FTI Consulting Group (NYSE: FCN) with more than 6,400 employees.

1 THE INITIAL SITUATION
STRUCTURAL CHANGE – BUT ACCELERATED

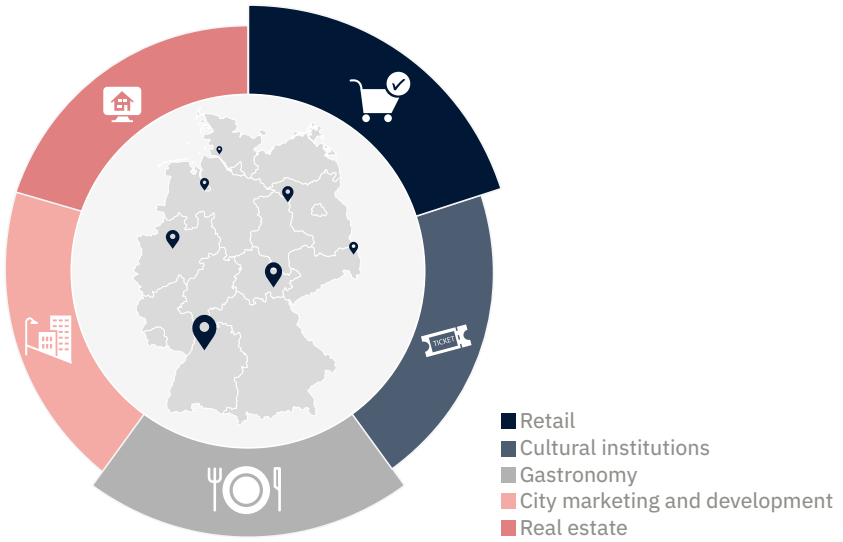
1. The city centre ecosystem

The consequences of the COVID-19 pandemic represent urgent challenges for city centres. The slump in tourism and trade fairs, nationwide lockdown measures and the spread of home-office solutions led to empty city centres resembling ghost towns in many places. But even before the pandemic hit, structural change, especially driven by digitalization, brought about challenges to downtown institutions. E-commerce cannibalizes brick-and-mortar shopping while streaming services replace going to the movies while driving food delivery. Home office Fridays additionally reduce leisure visits and the number of commuters present in the city.

COVID-19 therefore amplified trends, which have been visible long before.

On top, increased climate protection requirements (including the reduction of CO_2 and nitrogen oxides), changes in the way we work and shifts in demographic patterns call for action.

Our conclusion today: Cities must meet multiple new expectations of residents as well as visitors. They must therefore create new incentives for a visit to the city center and in doing so implement new concepts which reflect the changed habits of people. By starting to implement certain macroeconomic trends today cities can build the foundation for the “city of the future”.



he inner-city ecosystem can only flourish if participating actors (such as local retail, gastronomy, hotels, cultural institutions, city marketing/development and administration (incl. the transport department) and real estate industry) work together on the development of a consistent image of the future city. Therefore, regular interaction will be necessary, especially since existing challenges increase while new ones arise – a situation which can no longer be solved by individual actors.

How are the largest German cities performing today? Read part 1 of the series "Future Cities":

→ **Future Cities 1**

The COVID-19 pandemic affected cities all over the world in varying degrees but confront them with similar problems.

One thing is certain: The city as it exists today will have to change fundamentally in order to meet new demands. Cities need to emphasize their positioning within the (inter)national competition for residents, businesses, tourists, trade fairs and students.

Even if different subtrends prevail globally, it is possible to identify six main directions that will shape cities in the future. Although international project examples can only serve as a roadmap to a certain point (due to heterogeneous environments), they can be an inspiration. Therefore, we would like to present selected initiatives and global approaches.

We raise the following questions:

Which **city trends** do we see in the short-, medium- and long-term?

How will they shape the **inner city of the future**?

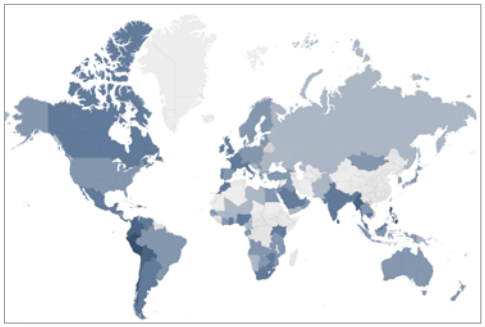
Where do we see pioneering **urban projects**?

What can **German cities learn for their own implementation of macroeconomic trends**?

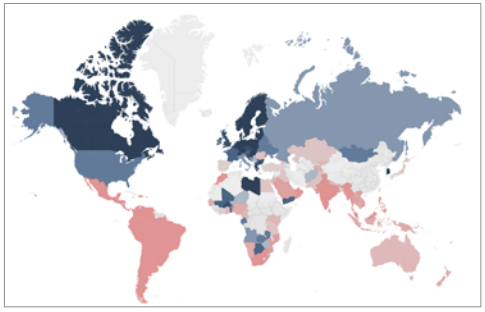
More on the following pages. →

HABITUAL SHIFTS MADE VISIBLE

The fact that our habits have changed significantly in the last year can be clearly seen at a global scale. On the following maps the average percentage change in whereabouts of the population is shown from February 2020 to June 2021. The maps are based on Google mobility data compared to a reference period before the pandemic. Clearly a significant shift has occurred that will continue to have an impact – although on lower levels in the future.

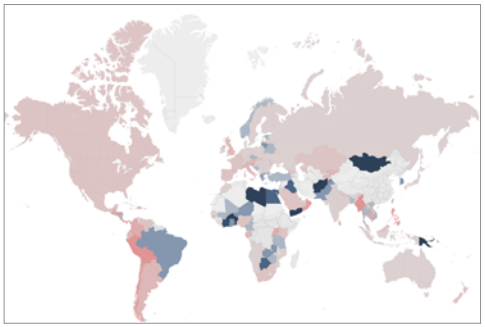


Living space
During lockdown periods people refurnished their homes and gardens in the context of the "cocooning" trend.



Parks
Parks, especially in Europe, Russia and North America became popular places of encounter with a reduced risk of infection due to fresh air.

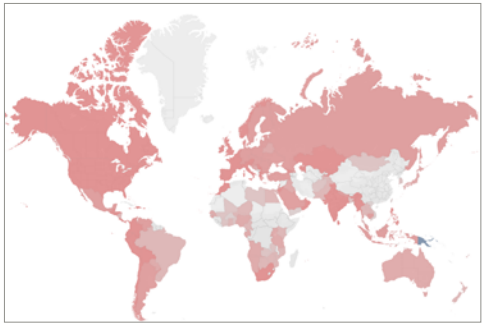
Supermarkets and pharmacies
The closure of restaurants led to an increase of cooking activity at home. In addition, supermarkets were able to profit from the closure of other traders and used new selling opportunities.



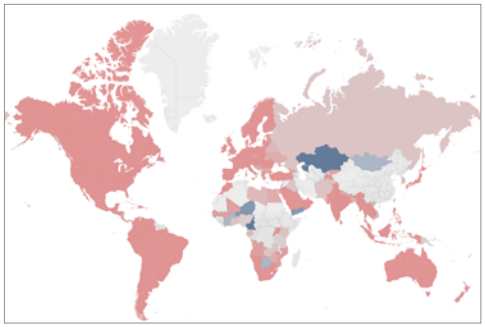
-30% +30%

"Winners" of the pandemic

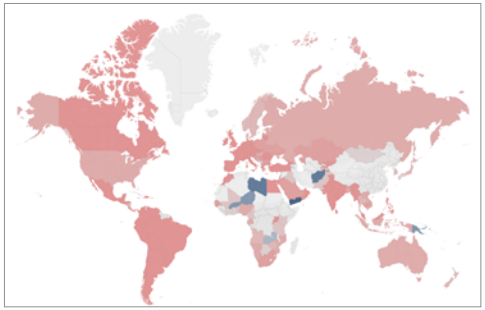
Everyday life has changed radically around the world. Homes have become the center of life and during leisure time parks, forests and local recreation areas served as places of refuge. Errands for daily needs continued despite the pandemic which led to rising supermarket sales.



Office space
Home office initiatives had a significant impact on office space utilization – even in countries where requirements were not binding.



Transit
Along with shutting down large parts of public life, the need to travel diminished.



Retail and leisure
Closures of stores and recreational facilities permanently accelerated the e-commerce boom during the pandemic.

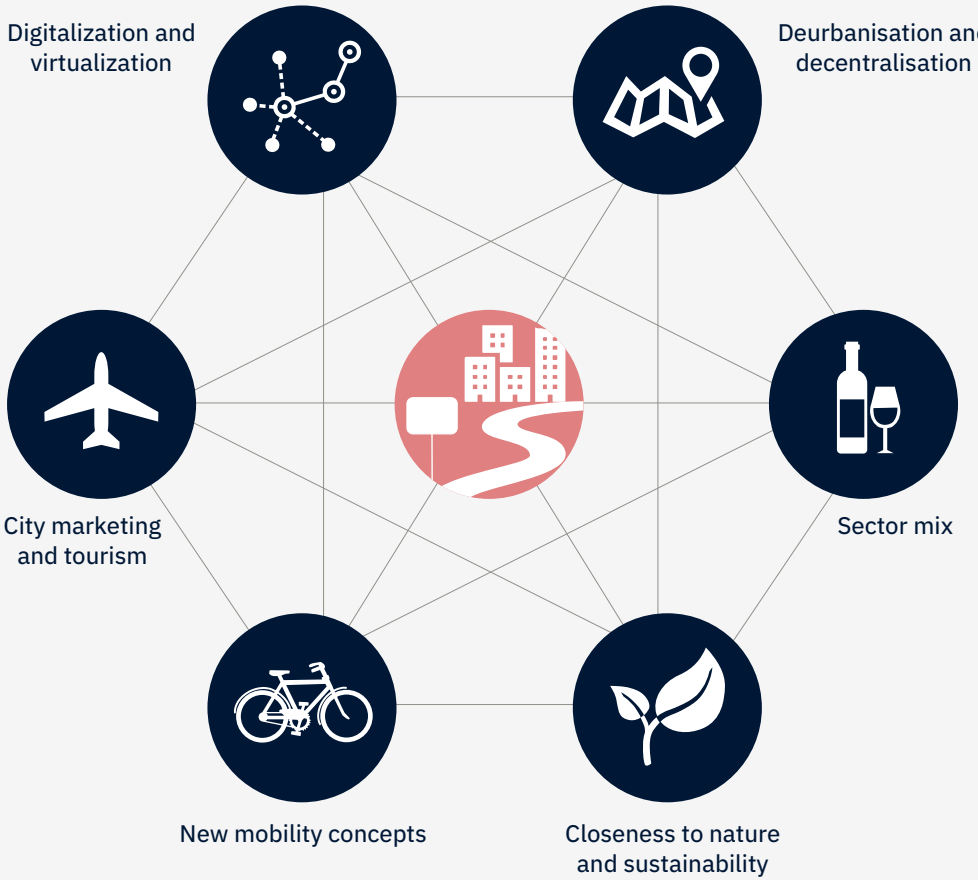
"Losers" of the pandemic

Time spent in office and retail spaces as well as leisure facilities has plummeted while mobility has been temporarily downsized. These areas of life are experiencing a comparatively slow ramp-up and are also affected by lasting changes in the behavior of inhabitants (such as new hygienic awareness).

Source: Google mobility data 2021; own analysis

2 NEW HABITS AND REQUIREMENTS

6 TRENDS DRIVE STRUCTURAL CHANGE



The structural change accelerated by the pandemic is shaping our daily lives, habits as well as factors in our decision-making. Some examples include:

- The opportunity to more home office has encouraged a trend towards rural migration
- Hygiene has gained lasting relevance and raises awareness regarding risk of infection in mass gatherings and public transport
- Cycling has become more popular during the pandemic, especially e-bikes are becoming the go-to alternative for individual transport
- Even “convinced city dwellers” have discovered parks, community gardens and nearby forests for themselves to spend leisure time and regain energy.

Globally cities as living spaces need to address the changing needs of citizens in order to remain attractive. This includes the consideration of six macroeconomic trends which are shaping the cities of the future.

New habits and claims
Social distancing and technological advances are changing what downtown residents and external visitors value and how they act as consumers.

Digitalization and virtualization of interaction
Platforms have made working and shopping remotely possible. Major events and trade shows are increasingly taking place virtually. At the same time, COVID-19 has increased data usage for instance driven by increased streaming activities.

Deurbanisation and decentralisation
Due to more remote work and home office demographic shifts occur which favor decentralized urban planning. The radius of movement is increasingly limited to the surrounding neighborhood.

New mobility concepts
As a result of newly gained hygiene awareness, overcrowded public transportation is currently being avoided to a great extent. Additionally, there is an increasing reliance on non-motorized or small-motorized transport.

Closeness to nature and sustainability
Having a strong focus on sustainability and decarbonization is an integral part of future urban planning. Nature enhances the quality of life and can be brought into city centres by utilizing new green architectural and urban planning concepts.

Sector mix through reallocation of areas
Vacancies allow a reorientation towards mixed use concepts-incl. housing space, educational facilities, logistical mini-hubs. This revitalizes shopping streets beyond typical store closing time.

City marketing and tourism
Travel restrictions lead to a temporary distortion of tourism flows. New requirements set by visitors will play an increasing role in city marketing in the medium-term.

THE INNER-CITY TRENDLANDSCAPE

Megatrends are shaped and driven by multiple subordinate trends.
These can be combined to shape the inner-city trend landscape.

1 DIGITALIZATION AND VIRTUALIZATION – SMART CITIES ON THE RISE

Digitalization and virtualization

Traditionally, visitors are drawn to city centers by professional or educational offers. The increased shift of working and learning via virtual channels means that the above-mentioned reasons for a visit to the city center apply to a lesser extent. At the same time, digital offers for changing needs have generated a wave of innovations

IMPLICATIONS:

The city as a meeting place increased focus on social interaction; expansion of public spaces with seating areas and free amenities ("pocket parks," playgrounds, water features, skate parks, cultural spaces)

Actively develop and market themed events to enhance the city's image and strengthen the local community

Make stationary retail attractive by implementing a mix of industries (shopping, entertainment) and experience-oriented events (open Sundays)

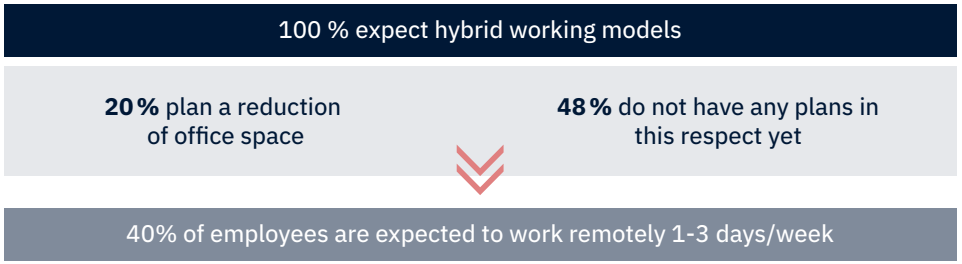
Promote research on digital technologies. Actively introduce urban use cases and offer testing opportunities in the city e. g. for university projects

Offer an attractive working environment for companies and employees, incl. development of digital infrastructure

Remote work

Contact restrictions forced employers to expand or create home office options. In Germany for example, the share of home office employees rose to 57% within the service sector – which is strongly represented in city offices. As a result of the increased acceptance of remote working, a lasting reduction in the number of commuting days can be assumed. This will lead to a drop in sales and will primarily affect large cities with wealthy surrounding areas.

Expected home office activity after the pandemic according to 25 DAX companies (%)

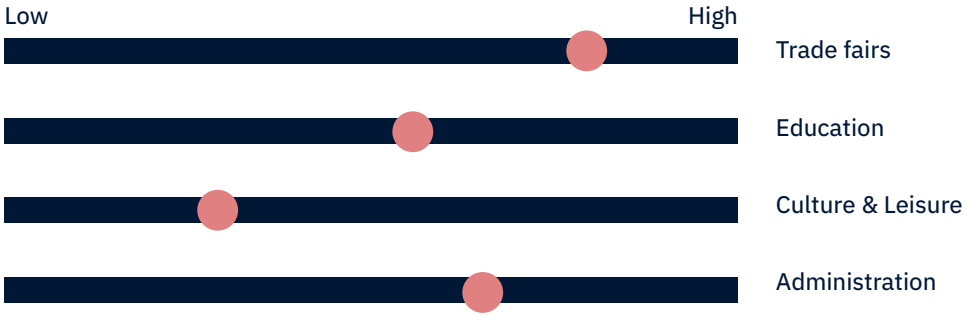


Source: Handelsblatt

Digital/hybrid events

In the future organizers expect a greater differentiation of existing trade show events into physical and hybrid or pure online events, which can be an improvement – especially for visitors who would otherwise travel a long way. Additionally, to this we see a regional shift of important international trade fairs towards the Asian region. The number of trade fair visitors from overseas will therefore likely decline in the future. In the areas of education, culture, and leisure additional digital offerings can increase visibility among the relevant target groups in the future.

Lasting shift to digital formats through COVID-19(1)

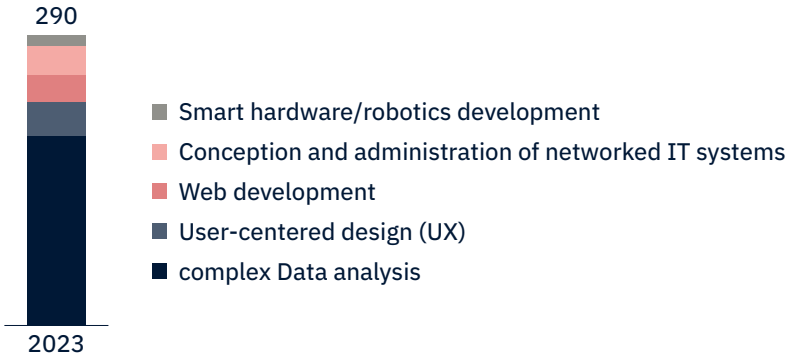


(1) Indicative

Digital Offerings

Greater (price) transparency and higher convenience levels are making a lasting contribution to increased usage of online offerings – across all age groups. Older people, in particular, who are less mobile and want to avoid contacts due to the pandemic, discovered the digital world for themselves. This has an impact both on shopping behavior (increase in e-commerce, greater use of delivery services) and on the public sector. Here, cities can offer added value through "digital visits to the authorities". However, there is currently a lack of trained personnel for implementation.

Forecast on the future skills gap in 2023 for the public sector (in thousand people)

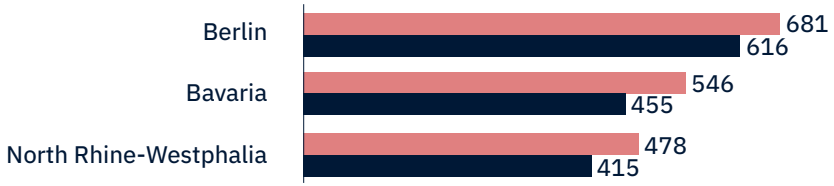


Source: Stifterverband/McKinsey

Scaled data usage

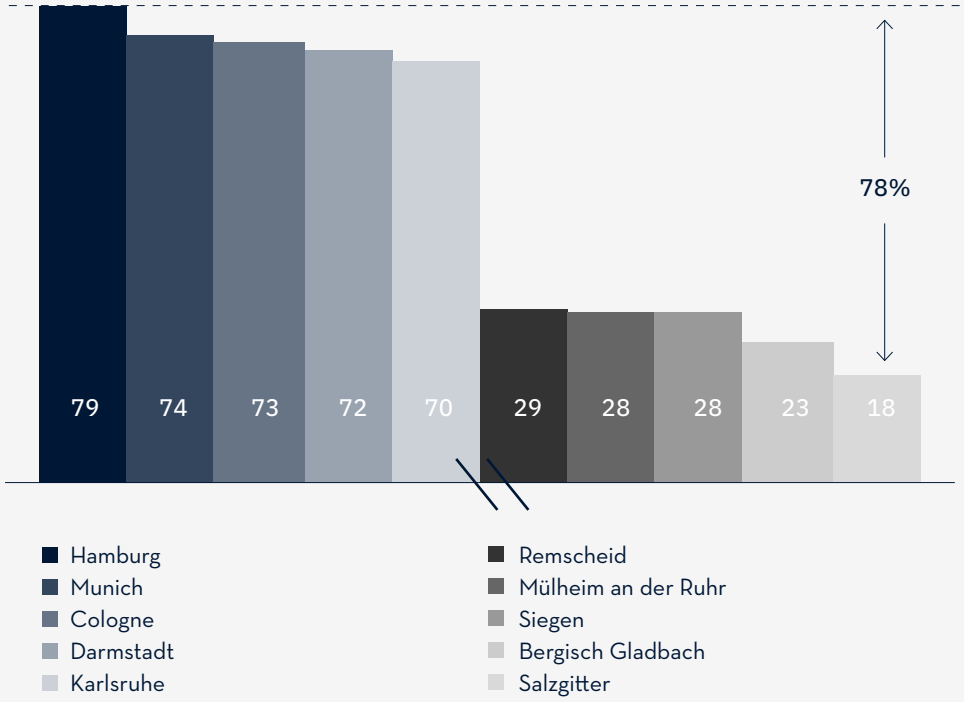
During lockdowns, the number of startups increased. These were often digital business models. Numerous Hackathons were organized for example due to a lack in functioning homeschooling resources. Thus, a large number of digital solutions was created that remains in place even after the pandemic. Scaled data usage, particularly in the public sector, has been driven by tracking infection events and has sustained a willingness to release private data for future use amongst residents. Cities can leverage the willingness to collect data and the increased number of digital products to make internal processes more efficient and offer more self-service-solutions to citizens.

Startup foundations 2020 compared to 2019 in the top-3 states by number of startups



Source: Startupdetector report 2020

Top 5/bottom 5 German cities according to the Smart City Index 2020 (0-100 points)
The Smart City Index compares cities based on 136 parameters analyzing the fields administration, IT- and communication, energy and environment, mobility and society.



Source: Smart City Index 2020, Bitkom Resarch

Smart City – Santander, Spain

- Europe's prime example of the smart city: Efficiency and quality improvements are created through data generation and use, especially in energy/traffic management.
- For example, trash cans initiate collection when full and streetlamps light up only on registered movement.
- Data from 20,000 sensors in the city area are centrally processed.

Lübeck, Germany

- Expansion and densification of a low power wide area network as a basis for the use of sensors. The radio network is a cost-effective, efficient supplement to telephone and Wifi networks.
- IoT pilot projects are developed on the basis of the installed network

Bamberg, Germany

- "Model Projects Smart Cities" Program, which is funded by the Federal Ministry. Strategy development will take place by 2022, implementation by 2027
- Clusters of measures include data-supported mobility and a smart city research center among others

TODAY'S APPROACHES TO THE SMART CITY

Songdo City – Seoul, Korea

- 40 km west of Seoul a model city is being built on a heap of stray land.
- The planned city is optimized by its thorough networking and innovative data usage (e.g., energy production depends on real-time consumption)
- Homes and streets with smart meters and sensors measure resource consumption, air quality, and traffic movements.

Amazon Go – Seattle, US (among other locations)

- Amazon Go stores without checkouts have already been implemented in several larger cities around the world
- The shopping cart is recorded by cameras, sensors and scales
- The concept is exemplary for integrating the physical and digital world as well as for hybrid retail models
- The starting point was the low availability of space in city centers and the need for longer opening hours

2 DEURBANISATION AND DECENTRALISATION – DEVELOPMENT OF NEIGHBOURHOOD QUARTERS

Deurbanisation and decentralisation

According to the World Economic Forum, 95% of infection events took place within cities. COVID-19 slowed global urbanization considerably in some places by intensifying urban migration. At the same time, the center of life was shifted to residential areas and its immediate vicinity. This is reflected in the trend towards the formation of quarters.

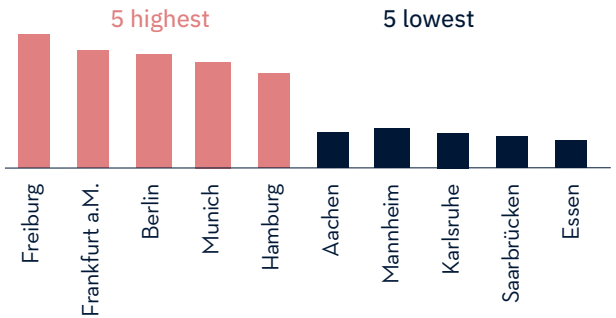
IMPLICATIONS:

- Promote attractive and affordable housing within the city
- Increased focus on mixed neighborhoods, taking into account residential structures (couples, singles, elderly). Ensure the development of ESG (Environmental, Social, Governmental) appropriate development and neighborhood certification
- Apply settlement policy to also serve decentralized structures with sufficient supply; cover medical care, childcare and daily needs even in peripheral areas
- Create new traffic concepts to improve utilization of transport infrastructure and even out traffic during peak times
- Promote housing concepts for flexible temporary living to attract more visitors as well as short-term residents

Deurbanization

Central incentives of large cities (including a thriving cultural, pub and club scene) were temporarily suspended due to the pandemic. The advantages of rural life – safety, nature and open space have gained importance along with cheaper rents/housing prices. Two aspects play a central role in determining how attractive a city will be as a place to live in the future. On the one hand, the price of housing (or the availability of affordable housing) and on the other hand the cultural offering and local supply situation within the city.

Monthly rent differences outside vs. inside the city centers for a 3-room apartment (€), selected cities

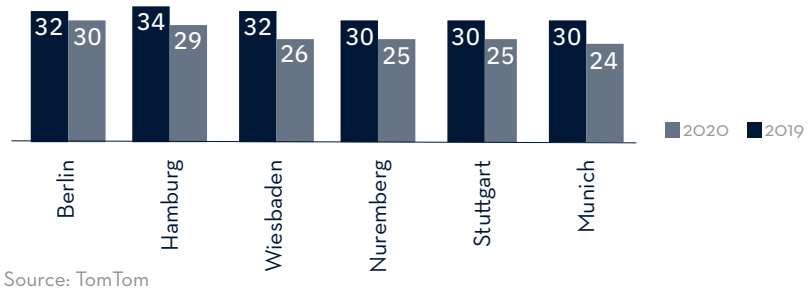


Source: Numbeo (data 06/2020); own analysis

Decentralization

In historically grown cities new residential areas are often built on the outskirts. Due to the increase in rents, living has shifted to the surrounding areas. The results are longer commuting times, which are accompanied by increased rush-hour traffic. These congestion peaks often surpass the urban street's maximum capacity. As residents narrowed their movement in the wake of curfews and remote work the commuting time saved noticeably increased the quality of life. In this context concepts for route and traffic optimization must provide positive incentives for a visit to the city center in the future. This could include commuter hubs and more active 5G supported traffic guidance systems.

Most congested cities in Germany (longer travel time vs. congestion-free traffic in %)



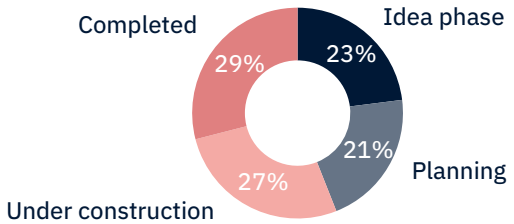
Source: TomTom

Living in quarters

Especially in metropolitan areas a purely monofunctional use of commercial, office or residential buildings will be avoided in the future. Instead, diversity and to a certain extent self-sustaining models such as living quarters can create synergies that combine the concepts of supply, work and social services. In high-density centers this is also achieved through greater diversity within the buildings ("vertical cities"), an example for this is the FOUR Frankfurt project. At present, neighborhoods in Germany are still largely limited to the seven metropolitan regions. However, there is also potential in medium-sized cities with a focus on improving local supply. Greater diversity should actively counteract empty shopping streets after closing time.

Living quarters in Germany

Currently there are 616 quarters in Germany. These are in different stages of development:



Source: Corestate Capital

Micro-living concepts

Micro-living refers to concepts that offer furnished apartments with various service levels and shared spaces in attractive urban locations. They offer a solution to housing shortages and address the changing attitude towards property.

Target groups are primarily students, young professionals, singles and increasingly also senior citizens – groups, who value flexibility, community as well as urban connections and high supply. The relevance of these target groups will increase in the future (demographic change, rising number of single households and academics), also due to more remote work.

Cities can promote micro living concepts to position themselves as a more attractive location for temporary residents and actively counteract housing shortages through sharing concepts.

QUARTERS WITH OWN IDENTITY FROM ALL WORLD

Xiong An – Beijing, China

- In the Chinese city Xiong'an a planned city is being built on 2,000 squkm.
- The city shows a stark contrast to air pollution, noise and lack of nature in the nearby capital Beijing.
- Housing is planned to take place in self-sufficient quar ters, in which all areas of life are covered within walking distance.
- Greenhouses, co-working spaces and 3D printing enable flexible self-sufficient solutions for residents.

Nantes, France

- One of the districts in Nantes has already successfully implemented the concept of the "quarter-hour-city" as well as a sector- diverse neighborhood.
- This is made possible by a municipal rent policy: Smaller shops pay less rent than big corporations such as banks.
- A large part of the inhabitants moves by foot or by bicycle and does not need to rely on passenger car transport due to the local supply and transport system.

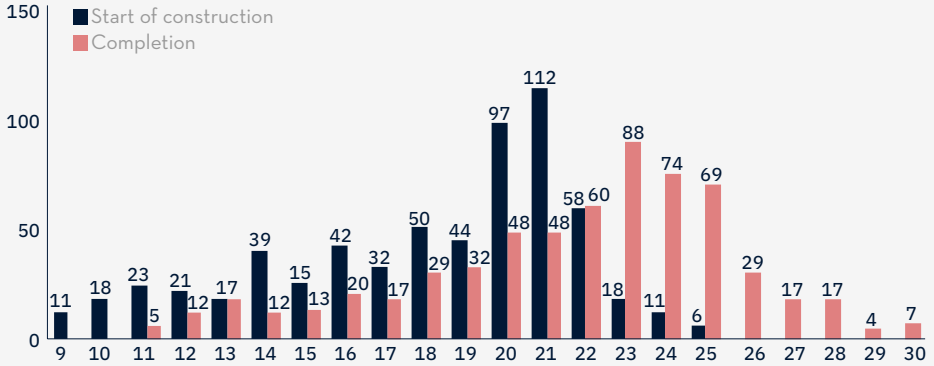
Ville-de-quart-heure – Paris, France

- The “quarter-hour-city” is a concept developed by the Sorbonne professor Carlos Moreno.
- The basic idea involves localities of everyday life such as shops or doctors to be reachable within fifteen minutes on foot.
- The mayor of Paris plans to implement the concept while Milan is also currently considering an implementation.
- When applied to Germany a 5-to-10-minute city concept appears to be both more desirable and also achievable.

Werksviertel – Munich, Germany

- The “Werksviertel” is a new living quarter that is being built in the east of Munich and will accommodate 3,000 new residents.
- The quarter integrates different areas such as living, working, recreation and commerce by connecting buildings and numerous public places.
- The plan includes the construction of housing, offices, restaurants, green spaces, a hotel, a concert hall and a school.
- Traffic will not be banned but will rather be actively avoided through road design to minimize noise and poor air quality.

Increasing importance of living quarters: number of started and completed quarters in Germany, p. a.



Source: Corestate Capital Group

3 NEW MOBILITY CONCEPTS AND INFRASTRUCTURE – MULTIMODALITY AND SHORT DISTANCES

New mobility concepts

Political guidelines on decarbonization and a socio-cultural shift towards higher sustainability are driving e-mobility. Digitalization enables new business models and the optimization of capacity utilization. Cities face the challenge of integrating the increased diversity of transportation options into their infrastructure.

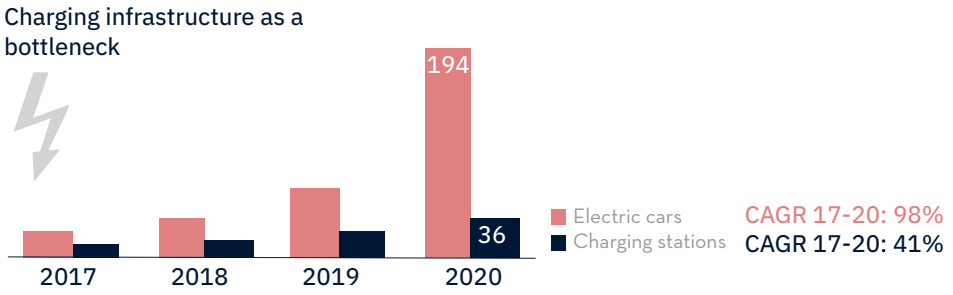
IMPLICATIONS:

- Rethink street planning and emphasize the role of alternative modes of transportation. In doing so, use the positive effects of lockdowns calming traffic in congested cities as an incentive for future change.
- Develop concepts for the provision of charging infrastructure to promote the shift to e-mobility.
- Offer different, interlinked mobility concepts and thus reduce car traffic
- Strengthening shared mobility concepts in order to use capacities in urban areas more effectively
- Enable expansion of 5G networks and equip infrastructure such as traffic lights for connected driving (availability and use of data)

E-mobility

E-mobility plays a decisive role in the context of emission targets. The charging infrastructure is critical for widespread success in urban areas. However, current developments regarding manufacturer-exclusive networks stand in the way of this. Cities can help promote e-mobility through public charging stations and campaigns. This is particularly relevant for the high number of parked cars in streets within large cities. It is also important to take hybrid vehicles into account as well as the actual amount of electricity purchased. At present, flat-rate pricing (based on purely electric vehicles) still stands in the way of widespread use of public charging stations.

Number of new registered electric cars and charging stations in Germany (thousand)

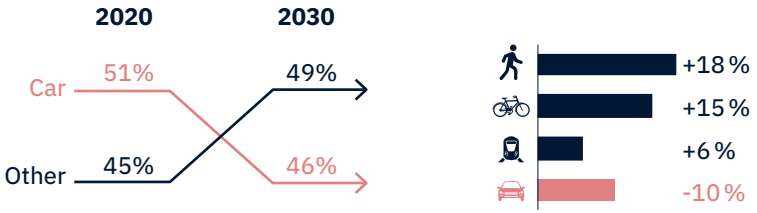


Source: kba; BDEW

Multimodality

Multimodality describes the interlinked use of different means of transport, which makes travel easier, especially over the first and last mile. In the urban environment local public transport and micromobility solutions are gaining importance. Mobility hubs ensure the fusion of different means of transport. These can be attractively designed to invite people to linger at nodes. The dynamics towards bicycles, scooters, and pedestrians are evident in the short-term establishment of “pop-up bike-lanes” in various cities, some of which have been permanently adopted. Cities can see this demand as an opportunity for traffic calming and realize it by expanding bike lanes or enhancing compatibility of transport.

Global development of use different means of transport in cities

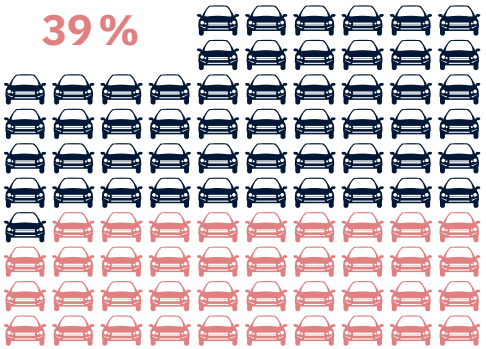


Source: Vattenfall

Mobility-as-a-service

In addition, car-sharing, ride-pooling and ride-hailing concepts offer affordable mobility on demand, thus complementing the classic cab. The so-called shared mobility models are very popular in Germany, with today 3 million car-sharing users and relieve the pressure on city centers because vehicles can be better utilized and parking spaces can be reallocated. Despite these advantages, providers of shared mobility solutions in Germany are increasingly experiencing legal obstacles, which is hampering the spread of new concepts.

Market potential of car-sharing approaches (2020)



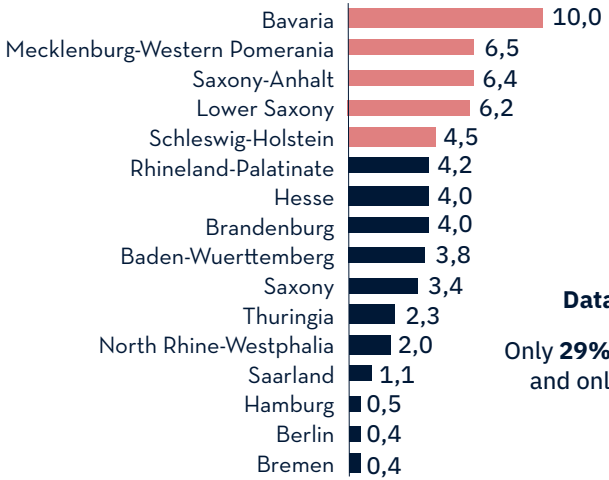
..most urban commuters drive without additional passengers

Source: Kantar

Smart integration

Connected mobility will fundamentally change cities and their infrastructure in the coming years. Use cases for connected driving are diverse and range from accident risk reduction and predictive maintenance to autonomous mobility. Key challenges in this context are, above all, data availability, the expansion of the 5G network, and the implementation of IT security concepts for physical and data security.

Forecast 5G household coverage in 2022 (%)



Data availability for networked driving

Only **29%** of traffic data is open license today and only about half of it is readable for machines, which is a requirement for autonomous driving

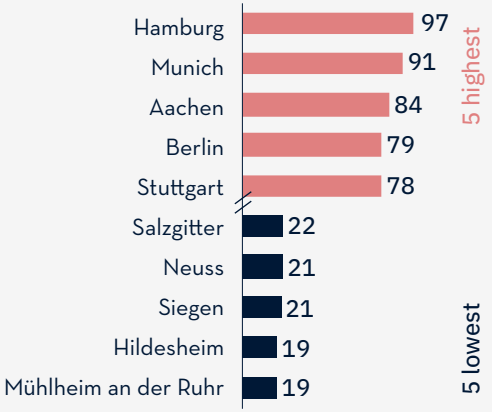
Source: Ericsson; Open Data Barometer; LSPdigital

Smart City Index 2020 – Mobility

As part of the Smart City Index, the mobility of German cities is examined:

- Parking
- Smart traffic management
- Networked public transport
- Sharing offers
- Multimodality
- Last mile logic
- Further pilot projects

Source: Bitkom



Autonomous shuttle – Passau, Germany

- Passau plans to use autonomous e-bus shuttles starting in 2023.
- A route plan is to be developed in cooperation with the firms ZF Friedrichshafen and DB Regio.
- Passau's challenging topography makes traffic with conventional vehicles such as coaches difficult. Shuttles are smaller and more maneuverable and thus more compatible with the local streets.
- A shuttle system would reduce noise and air pollution from commuter and tourist traffic and thus relieve residents.

PIONEERS OF MULTIMODALITY AND SMART MOBILITY

Networked mobility in Wuxi, China

- Wuxi is among the first cities in the world to offer a highly networked mobility concept.
- Over 1.7 million vehicles communicate with other road users - even signs and traffic lights.
- The approach enables optimized traffic flow and thus increased safety and efficiency on Wuxi's streets.
- Also, initial tests of autonomous driving systems are permitted and offer valuable data under real conditions.

Mobility hubs in Bergen, Norway

- In Bergen, a network structure is being planned with stations that transition from private transport to public transport in the form of mobility hubs.
- In 2018 Bergen became the first Norwegian city to open the first mobility hub of many to come.
- The project supports the city in its ambition to be emission-free by 2030.
- As part of the SHARE-North program, Bergen collaborates with other cities on the topic of mobility.

Lincoln settlement – Darmstadt, Germany

- As part of a fundamental renewal the Lincoln housing estate in the city of Darmstadt aims to calm traffic.
- The central goal is to reduce the use of private cars. A small number of parking spaces will incentivize the population to make a switch.
- Alternative forms of mobility include public transportation, e-car-sharing, ride-pooling, rental bikes, and on-site e-bikes.
- In addition, bicycle and pedestrian paths are to be expanded. A dedicated mobility center helps residents by providing personalized advice.

Multimodal Transport in Zurich, Switzerland

- Zurich is regarded as a pioneer in the area of multimodal urban mobility.
- The integration of public transport, bicycles and mobility on foot is firmly anchored in the "Stadtverkehr 2025" strategy of the city.
- Initiatives such as restrictive parking regulations or the introduction of nature conservation zones reduce the attractiveness of cars as means of transport in the city.
- Digital tools such as the ZüriMobil app bundle various mobility offers.

4 CLOSENESS TO NATURE AND SUSTAINABILITY – IN HARMONY WITH SURROUNDING NATURE

Closeness to nature and sustainability

Whether it is through vertical planting, raised beds or green spaces and parks, the city of the future is bringing nature back into its centers. Responsible for this dynamic is a variety of drivers, which have been further amplified by the consequences of the pandemic. In addition to sustainable thinking, social, economic and, above all, health concerns are fueling green cities.

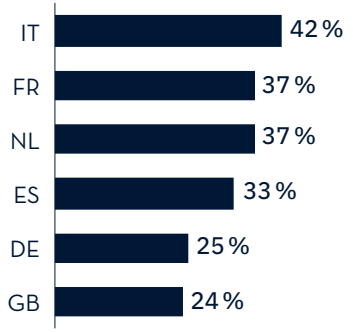
IMPLICATIONS:

- Plan initiatives holistically and leverage synergies between projects, while actively seeking out funding programs at EU, federal and state level.
- Educate builders on benefits of sustainability certifications and promote green projects
- Maintain and expand green spaces to improve urban climate and provide compensation for residents; design vacant lots and fresh-air corridors as “pocket parks”
- Introduce vertical greening to use limited space in large cities effectively
- Engage residents through collaborative concepts such as community gardens

Sustainability

In recent years, the fields of urban planning and construction have developed an increasing focus on sustainability. In construction projects, increased attention is being paid to aspects such as optimal use of daylight, efficient air conditioning and renewable energy generation. Certification systems such as LEED, BREEAM or WELL distinguish sustainable buildings and thus create transparent requirements and standards to which sustainability-conscious citizens can orient themselves.

Is air pollution in your opinion one of the three biggest environmental prob lems in your country? (2020, % share of yes votes)

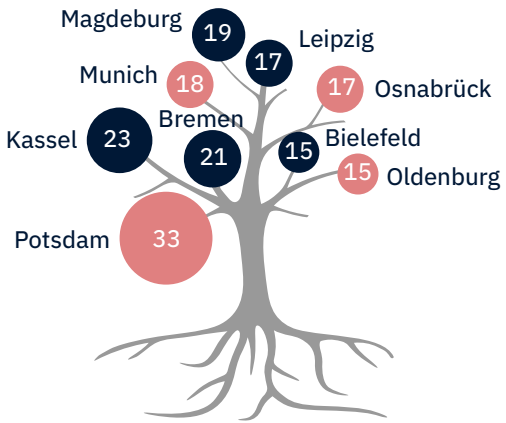


Source: Statista

Green spaces

Green spaces will play a central role in the cities of the future. On the one hand, parks contribute fundamentally to improving air and water quality and protect against extreme weather. On the other hand, they enable residents to engage in physical activity and reduce stress. As places of encounter, green spaces gained importance, especially during the pandemic and with lasting effect.

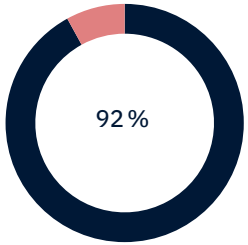
The greenest cities in Germany (sqm of park area per inhabitant)



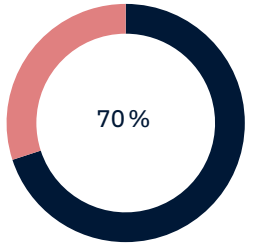
Source: Holidu 2021 based on Open Street Maps (2019); comparison 50 German cities with at least 155T inhabitants

Green architecture

The concept of green architecture promotes sustainability initiatives by integrating greenery into the building. This may include vertical vegetation on house facades. Green architecture reduces emissions in urban air, has noise-reducing properties and adds visual value. By increasing the attractiveness, green building elements can also increase real estate prices and potentially promote tourism.



...of the population feels more comfortable in green cities



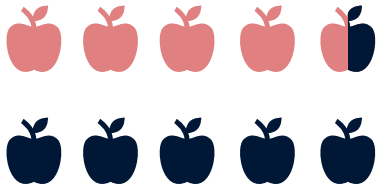
...of the population lingers in green cities

Source: forsa.Ominet

Community gardens

In community gardens the influence of the general access-over-ownership trend is increasingly evident. Community gardens lie at the intersection of sustainability, social engagement, and self-sustaining concepts. Participation in community gardens allow members to actively engage in urban planning and promotes the general mental and physical wellbeing of the population.

Demand for allotments in major cities (2019)



45 % of local authorities in large cities report balanced or high demand for allotments and 28% see a continuing or even growing bottleneck in the future.

In 2012 **80 %** of surveyed small- gardeners' associations estimated the demand as rather low.

Source: BBSR

NATURE AND CITY IN HARMONY

Green Towers – Nanjing, China

- The first vertically planted building in Asia integrates over 800 trees into its facades and increases the biodiversity of the city of Nanjing.
- The greening also reduces the city's CO_2 emissions by an estimated 18 tons every year

The Helix – Arlington, US

- Currently under construction.
- The Helix is part of the new Amazon Headquarters and LEED Platinum certified.
- The building's air conditioning is powered by 100% renewable energy.
- The planted double helix provides green space for employees and will also be accessible to residents.

Infinity Loop – Hangzhou, China

- The new Oppo R&D headquarters is located next to a natural lake and a city park.
- A planted courtyard allows recreation for staff and residents; green spaces scattered among the building provide meeting places.

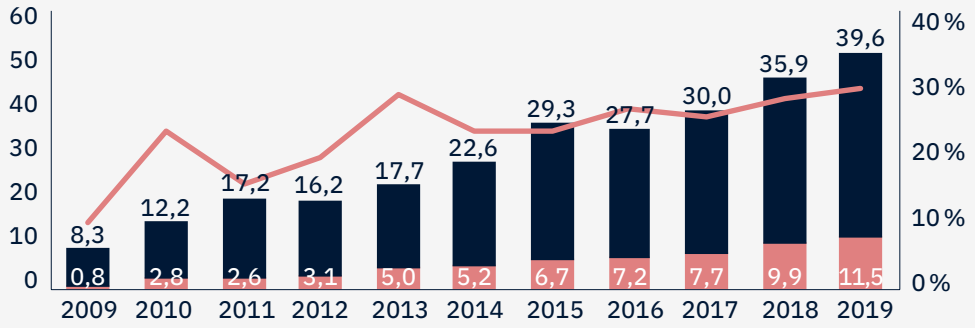
Super Islands – Barcelona, Spain

- Extensive traffic calming in the Eixample district.
- Barcelona is converting 21 street intersections into green squares, the so-called “Superilles” (Super Islands).
- Residents will be able to find a public park or square within 200 meters of the intersection.
- In addition to reduced pollution, the initiative brings higher sales for surrounding businesses; places to linger promote nearby places of consumption.

HafenCity – Hamburg, Germany

- The HafenCity is regarded as Europe‘s largest ongoing inner-city urban development project.
- The HafenCity Ecolabel encourages building owners to more sustainability.
- Numerous green spaces increase the attractiveness of the location.

Investments in commercial green buildings vs. non-certified commercial building in Germany (€ bn)



Source: Statista

The Edge East Side – Berlin, Germany

- Currently under construction.
- The green architecture of the office building enables climate friendliness and received the preliminary DGNB Platinum certificate.
- Green balconies and a roof terrace offer a break from daily work routines and offer places to meet people.

5 INDUSTRY AND SECTOR MIX – HOW DIVERSITY CREATES RESILIENCE

Sector mix

An aging society as well as the growing income gap wake the need for a stronger social mix. Diverse sectors are also essential to create an experience-oriented offering in the city landscape that goes beyond store opening hours. Overall, cities are striving for greater diversity in the future in order to increase their resilience to crises and structural change.

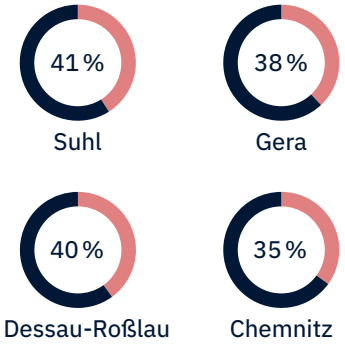
IMPLICATIONS:

- Make legislation and guidelines more flexible and strengthen municipal pre-emption rights; actively manage and shape real estate policy and urban development
- Make cities accessible to older citizens at an early stage through appropriate structural planning and create age-appropriate offerings.
- Introduce initiatives to ensure social stability and mixed use-concepts
- Ensure a diversified city landscape especially in shopping streets and neighborhood planning
- Implement experience concepts with adequate safety

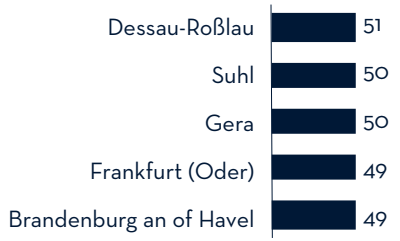
Silver cities

Falling birth rates and rising life expectancies are driving demographic change (aging population). While this dynamic has so far hardly been noticeable in large metropolitan areas, the proportion of people aged over 65 will rise significantly in urban areas in the future. Senior citizens mostly appreciate better medical care in cities as well as the greater cultural offerings. It is important to take demographic changes into account by providing a barrier-free urban environment and a well-developed public transport network (including flexible transport services for small groups).

The cities with the highest share of over-65s (%, 2019)



Städte mit höchstem Durchschnittsalter 2040 (Jahre)

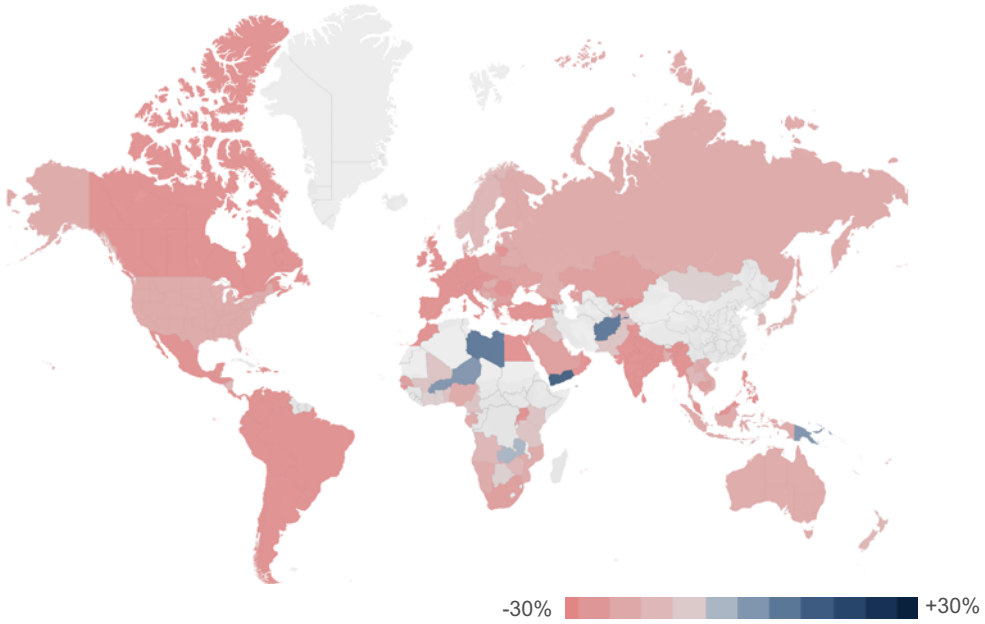


Source: Destatis; Federal Institute for Building, Urban and Spatial Research

Social mix

Preventing the emergence of social hotspots is becoming increasingly important in light of the growing diversity in cities. Vienna, for example, has succeeded in counteracting the formation of social hotspots to a large extent through its housing policy. Initiatives and support programs focus on investments in places designed for gathering such as sports facilities or youth centers. In addition to construction initiatives, accompanying measures such as the deployment of integration managers can help.

Mono-functional town centres are not crisis-proof. The following map shows changes in the occupancy of leisure facilities and retail between February 2020 and June 2021 compared to pre-pandemic levels (%)



Source: Google

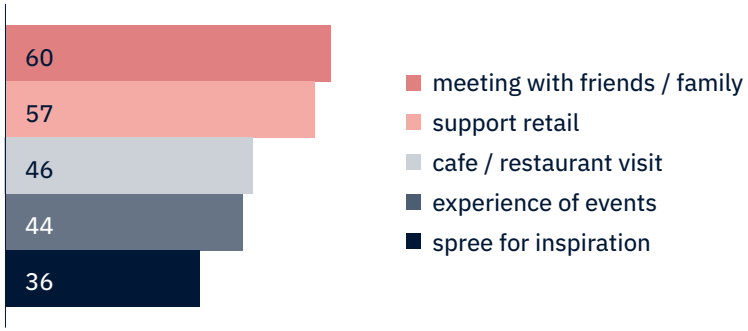
Sector mix

A city landscape with a balanced mix of industries increases competitiveness. In particular, current vacancies offer opportunities for repurposing. Bringing handicraft businesses back into the city and emphasizing it as an element of entertainment can help revitalize shopping streets. The concept of managed neighborhoods, which actively promotes a diverse (shopping) experience is thus promising for achieving much needed mix of industries in the city.

Experience concepts

By creating unique experiences, cities can set new incentives for visitors. Potential initiatives include developing places to gather and linger, promoting cultural facilities or organizing recreational events. Initiatives must however meet new safety requirements. In this respect, experience concepts should be continuously developed and adapted to the environment.

Which occasion for downtown visits has become more important? (2021, %)



Source: Simon-Kucher

VACANCY AS AN OPPORTUNITY TO IMPLEMENT SECTOR-MIX

"Seestadt Aspern" – Vienna, Austria

- The partly completed urban lakeside area Aspern is the first shopping street in Austria which is actively managed.
- It is one of the largest urban development projects in Europe.
- An area marketing concept provides optimal local supply as well as a mix of trade, gastronomy, and services in line with demand.

Government housing – Singapore

- About 80% of Singapore's residents live in government subsidized housing.
- Ethnicities and income groups are distributed locally according to defined parameters.
- Thus, the social and economic integration is promoted while separation is prevented

High Line – New York, US

- The revitalization of an old elevated railway line as a mile-long park in 2019 created a central green space.
- The park is based on an initiative of local residents and is freely accessible.
- This created a tourist attraction with about 7 million visitors per year while offering space for residents to gather.

Römerhof – Frankfurt, Germany

- Currently in the planning phase.
- The vision is a crisis-resistant, vibrant district with social and functional diversity
- Neighborhoods build to have a historic touch serve as a model with avenues, squares, courtyards and functional mix.

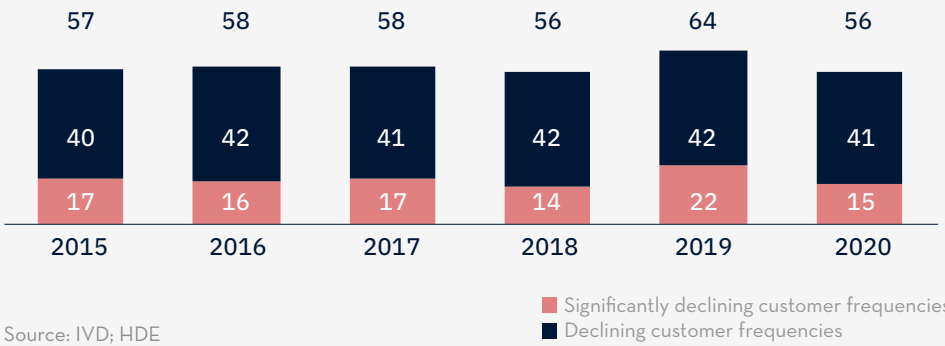
University – Siegen, Germany

- The city moves individual faculties of the university, which is mainly located on the outskirts back into the city center.
- This is intended to attract students, who commute from the surrounding areas to the city center.
- This way, downtown trade and gastronomy also benefits from the young target group's presence.

Rising vacancy rates in retail spaces

The vacancy rate for commercial real estate is increasing significantly – in medium-sized towns by almost 27%, in small towns by 25.4% (since the beginning of the COVID-19 pandemic).

How have customer frequencies developed at your location over the last 2 years? (%)



Source: IVD; HDE

6 CITY MARKETING AND TOURISM – THE INCREASING IMPORTANCE OF A STRONG BRAND

City marketing and tourism

The competition for companies, qualified employees, students and tourists has cities increasingly applying initiatives that were previously mainly found in the marketing departments of multinational companies. With concepts such as place branding a wide variety of approaches are currently being developed which can help those responsible for city marketing to increase the attractiveness of their location

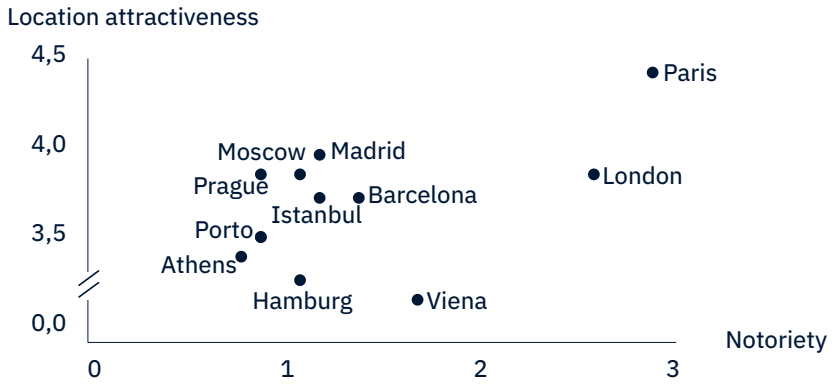
IMPLICATIONS:

- Identify key location advantages and clearly emphasize them in public communications
- Use branding to present a uniform image to the outside world and create recognition value
- IInclude the visiting quality as a key figure in urban planning and actively manage it
- Define target groups of for city marketing activities and address them adequately
- Acknowledge heightened hygiene concerns of tourists and implement new safety concepts

Place branding

To increase the attractiveness of their location, cities increasingly have to engage in place branding – the introduction of a city-specific brand. This should be underlined by cultural offerings. A strong brand can trigger positive associations with the location and emphasize unique selling points within the city. One example is Paris, anchored in people's minds worldwide as the "city of lovers," while Santorini, for example, has established itself as the "wedding island." Some German cities already have started their branding initiatives – for example, Darmstadt is called "the city of science".

Location attractiveness and "Brand" awareness of European cities (2020)



Source: Saffron

Visiting quality

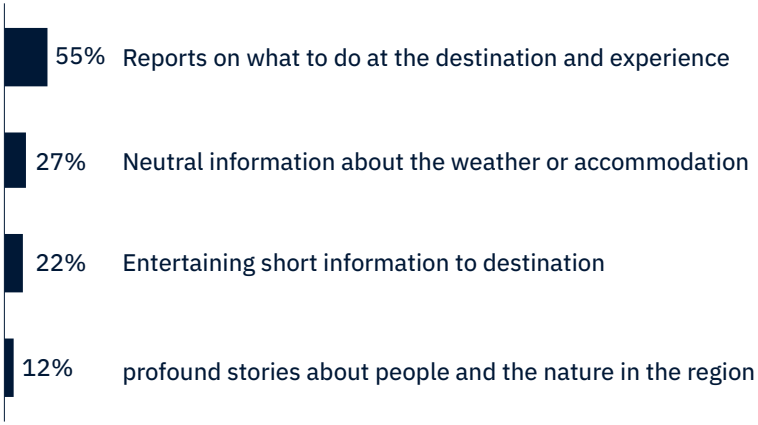
Increasing visiting quality in cities is an important starting point. Visitors want opportunities to linger in stimulating surroundings which are free of charge. Since soft location factors are also important for companies, they can have a strong influence on the economic performance of a city. Examples of factors are building density, mix of uses, and open and green spaces, but also accessible sights or the general city landscape.

Superilles increase the quality of stay for residents and visitors in Barcelona (Picture: Ajuntament de Barcelona)

Target groups

In order to remain competitive cities will strengthen their marketing initiatives in the future to cater specific groups. Relevant target groups are potential employers/ employees, tourists and residents. Similar to the customer journey when buying a product, cities need to be aware of the multiple visitor journeys - from visiting cities with children to trips for groups of senior citizens.

With targeted content marketing, cities can attract tourists to. A survey shows what visitors 2020 are open to (%):

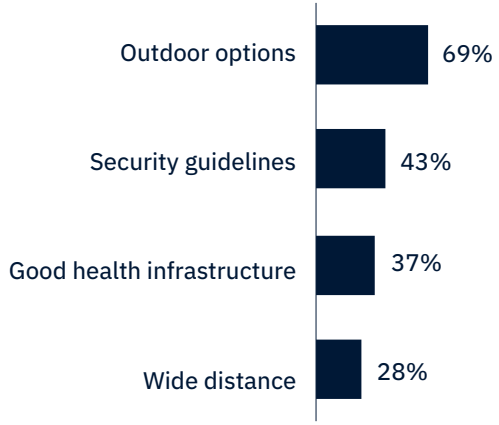


Source: RA 2020

Safe tourism

The tourism industry has undergone lasting changes as a result of the pandemic. With a heightened awareness of the central role of appropriate safety concepts, clear guidelines and a well-developed health infrastructure are of great importance. Increased home office and the 'workation' trend have resulted in new forms of vacation that are designed for long-term stays.

Relevant booking criteria for travelers 2021 (%)

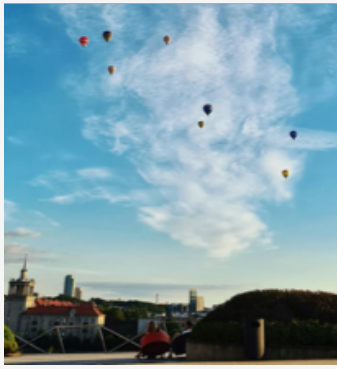


Source: Tourlane

INNOVATIVE PLACE BRANDING

Vilnius: Amazing Wherever You Think It Is

- The humorous campaign from 2020 is based on the realisation that only few potential visitors know where Vilnius is located.
- The perceived weakness was used to though digital marketing and outdoor advertising to generate interest among over 130 million people.
- On the website tourists can guess the location of the city and book a trip.



Project Oslo Region

- The long-term initiative has a focus on acting as a whole region and not "just" the city of Oslo.
- The goal is to reach out to tourists, entrepreneurs, employees, investors and other stakeholders across sectors.
- Municipalities, counties, residents and organizations from 13 sectors have been involved in the conceptualization

State Park Passport – Iowa, US

- The state park passport is a digital stamp card that lists various places of interest for tourists and makes it possible to win prizes.
- The concept is a response to the pandemic and allows for excursions despite various restrictions
- Passport builds on Iowa's location advantages and adapts them to specific needs during the pandemic.

Open City – Tübingen, Germany

- From March to April 2021 retail, gastronomy, and cultural institutions in Tübingen were open under certain conditi-ons.
- Visitors received day tickets provided they had a negative COVID-19 test result.

Cultural space for Creative – Bochum, Germany

- The project offers start-up and cultural initiatives access to otherwise vacant storefronts in the city.
- This makes it possible to increase Bochum's attractiveness by revitalizing the city center.

HANAU aufLADEN – Hanau, Germany

- The initiative takes on the task of supporting pop-up stores by providing store space, subsidies, and advice.
- The aim is to upgrade the city center by introducing new ideas and concepts.

Template: Location advantages using the example of the three German cities of Munich, Karlsruhe and Lübeck(1)

- The presented city profiles are very different in terms of strengths and weaknesses.
- While Lübeck is affordable and offers a lot of local recreation, the city has deficits in the areas of innovation and security in direct comparison.
- Karlsruhe has a very balanced profile with strong digital infrastructure, high affordability of rents and many start-ups.
- Munich is characterized by a high level of education, safety and good digital in-frastructure, but is expensive and offers little recreational space relative to the number of inhabitants.

Source: Bertelsmann Foundation

* The safety index is derived for the respecti-ve city from the number of crimes per 1,000 Inhabitants ab

3 NEOM AND THE WOVEN CITY

SCIENCE FICTION IN A BLUEPRINT

As ecosystems, cities are characterized by interconnectedness of different spheres of life and the effects of macroeconomic trends. Two planned city projects that have already been initiated today show what an integrated, fully comprehensive image of the future city can look like. Whether it is possible to implement the original design remains to be seen in the future. However the ambitions to leverage the benefits of the future can be an inspiration today.

The New Future – NEOM, Saudi Arabia

NEOM is a planned city to be built in northwestern Saudi Arabia on a straight stretch of 170 km. NEOM is supposed to be the home of one million inhabitants and implement ambitious visions in areas such as mobility and energy generation in the near future.

- Connectivity through Smart-City concepts and IoT technologies
- Full digitization of the financial system and of other administrative areas

- Creation of various quarters along the 170 km-long city scape
- Decentralized structure of city enables through underground logistics and infra structure

- Crossing NEOM is possible in only 20 minutes enabled by high-speed trains
- Introduction of new types of mobility through autonomous shuttles and air taxis

- 100% renewable energy supply through solar and wind power plants
- Preservation of 95% of the nature in NEOM and Integration of green spaces as central elements

- Integration of 14 various sectors such as mobility, food production or biotechnology for development of innovative solution approaches
- Clear goal to win a variety of international companies for the project

- Attractiveness as a holiday destination due to proximity to diverse nature
- High accessibility through central geographical location with 80% of the world's population within a 4-hour (flight) distance

The Living Laboratory – The Woven City, Japan
The Woven City is a futuristic city being built at the foot of Mount Fuji. Financed by Toyota, the city will house up to 2,000 inhabitants in the medium term and serve as a "living laboratory" testing the newest technology. The city will allow tests with a variety of innovations in combination under realistic conditions.

- Networking of devices through smart-home and IoT assistance technologies
- Facilitation of everyday tasks through interactions with artificial intelligence

- Neighborhood formation through modular structure of individual city blocks and a networked street system
- Relocation of utilities to the city underground
- Facilitated access to mobility through autonomous vehicles
- Coexistent different mobility approaches including three different road- types

- Sustainable power generation through photovoltaic systems and hydrogen as energy sources
- Strong greening initiatives with native plants, central park to stress reduction

- Dynamic arrangement of shops in the city and autonomous transport solutions for easy access

- Interaction and encounter of different population groups through allocation in the city structure

- Attraction as the "city of the future"
- Media attention through futuristic concepts

4 OPPORTUNITIES FOR GERMAN CITIES

LEARNINGS FOR GERMANY

The 3 biggest hurdles when implementing macrotrends ...

... and what must be done nevertheless

Long-term perspective: Justifying long-term measures, which often initially entail high investments, is at risk of being neglected by budget-sensitive authorities

Brownfield vs. Greenfield – no relevance in historically small towns? Particularly in the case of digitalization topics and mobility, it is often argued that these can only be considered relevant and advantageous in large megacities or planned cities.

Danger of losing focus: The diverse sub-trends offer a dynamic multi-layered trend landscape where clear strategic planning quickly gets lost. Lack of prioritization and loss of overview can jeopardize implementation.

No deferrals – quick commitment: Planning must take place today. By accelerating structural change, COVID-19 shows that sitting out is not an option. This should serve as an argument in communicating action plans.

Accepting difficult conditions as a challenge: There are numerous examples of potentials being realized by implementing trends, especially in smaller cities. Here it is important to pay attention to the synergetic integration into existing structures.

Clear modular strategy programme: After a careful selection of fields of action, form packages of measures broken down into blocks, which are clustered thematically and enable focused implementation.

4 STEPS TO PLANNING OF FUTURE TRENDS

1. Create an understanding based on data	2. Define fields of action	3. Consolidate measures	4. Define responsibilities and milestones
• Create an understanding for the needs of the population and visitors; comparison with the given situation.	• Determine fields of action based on the results of the data-based evaluations.	• Carry out thematic clustering of measures; allocate measures in packages which cater to macro trends; include timeliness, budget and effects.	• Define clear responsibility structures and controlling structures.
• Identify the own individual brand as well as target group(s) and define strategies to address these groups for the future.	• Prioritize and select actions, taking into account restricting conditions (available budget).	• Search for synergy potentials in a targeted manner and integrate them into planning.	• Continuously review implementation levels and milestones.
• Data-driven benchmark with other cities regarding trends, use of indices such as the Smart City Index.	• Plan as interdisciplinary as possible and involve all relevant actors and stakeholders of the (inner) city.	• Create a strategy roadmap and communicate it in a binding manner in order to promote “buy in” of authorities.	• Continuously keep an eye on the dynamic trend landscape in order to be able to react flexibly.

CONTACT PERSON

Dorothée Fritsch
Director
Mobile: +49 160 90658014
fritsch@andersch-ag.de

Mike Zöller
Partner
Mobile: +49 175 5850391
zoeller@andersch-ag.de

The Future Cities series:

Study 1:
Impact of the COVID-19 pandemic on German inner cities

Study 2:
Future store concepts –
new opportunities for stationary retail

Study 3:
Business model transformation in stationary retail

Study 4:
Shopping and eating habits post COVID-19:
What changed, what remains?

Study 5:
Effects of COVID-19 on central property markets

Study 6:
Competitive cities of the future

FTI CONSULTING | Andersch

Frankfurt am Main • Berlin • Düsseldorf • Hamburg