No. 41 / 2024

Focus

Technology, Talent, and Tolerance

Major European Cities with Future Agendas

Quantum

Editorial

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Ladies and gentlemen,

“access to talented and creative people is to modern business what access to coal and iron ore was to steel-making” (Richard Florida).

In today's knowledge-based society, human capital is the key to success for businesses, cities, and regions. The most successful cities in the global competition for capital and expertise include major European cities with future-focused strategies that attract businesses and workers in the knowledge economy. But what exactly are these cities and regions planning, and what role does the real estate industry have in these plans?

The current Quantum Focus no. 41, “Technologies, Talent, and Tolerance – Major European Cities with a Future Agenda” focuses on Richard Florida's concept of the Creative Class. His argument is that the decisive factor for economic growth and a region's prospects is a combination of technology, talent, and tolerance. The real estate industry provides the necessary modern office buildings, data centers, housing options, and spaces for innovative uses.

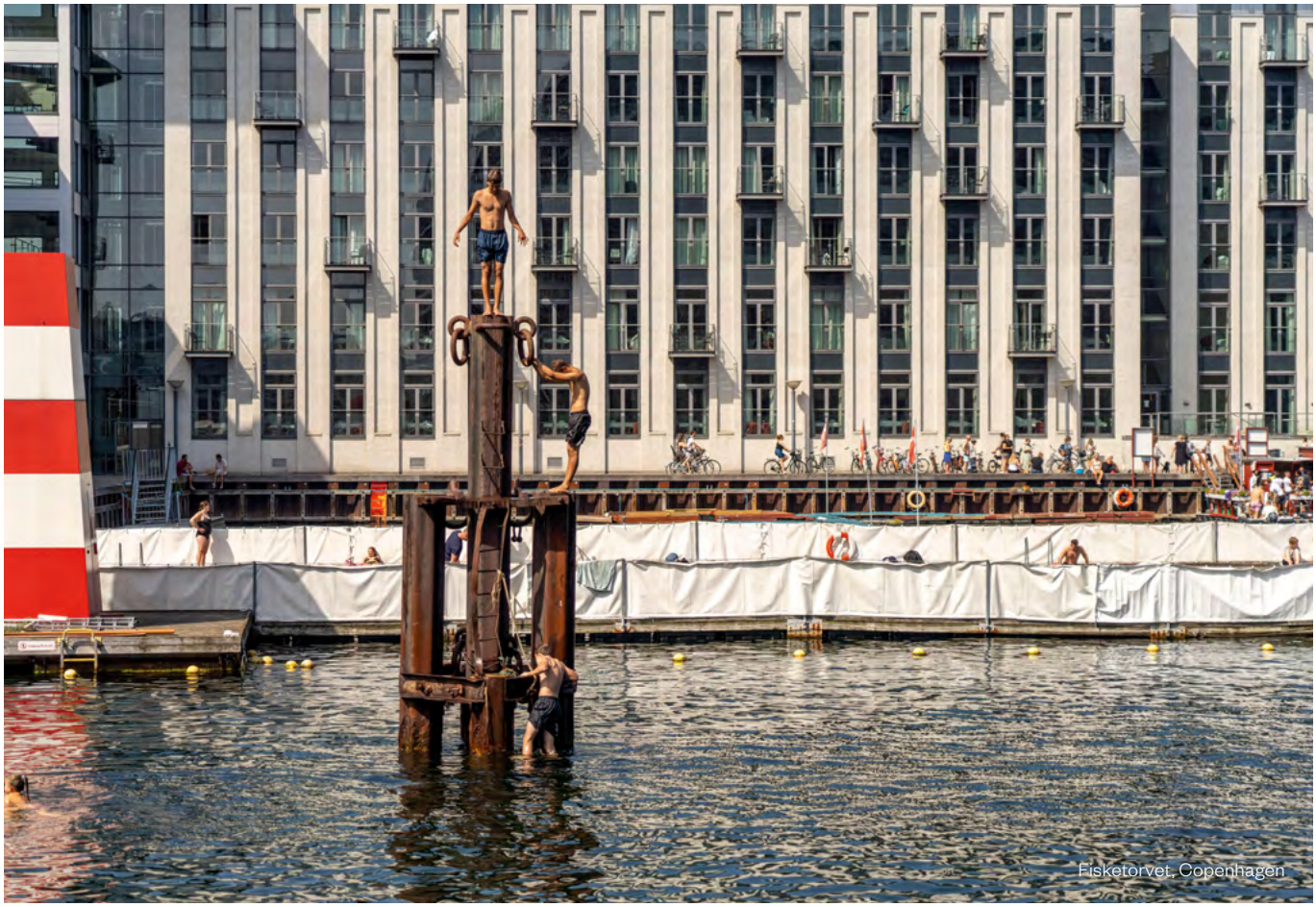
We hope you find this Focus edition interesting and wish you an informative and interesting read!

Dr. André Scharmanski

Inhalt

Global City Competition

Some major European cities have been more successful than others in positioning themselves in the competition for capital, know-how, and skilled workers. They are benefiting from sustainable growth and are particularly resilient in times of economic, social, and political change. What do cities and regions that are successful in attracting investment and human capital, and which offer a high quality of life, have on their future agendas?



Fisketorvet, Copenhagen

Knowledge makes the world go round

One major challenge affecting all cities and regions is the transition to a knowledge-based society. Knowledge is the key resource of the 21st century and the decisive driver of economic success. US tech giants are an example of the transition to the knowledge economy; their success and innovations being based on comprehensive knowledge and applying information. Apple, Alphabet, Microsoft, Meta, etc. have transformed the traditional economy and now top the global list of most valuable companies (Fig. 1).

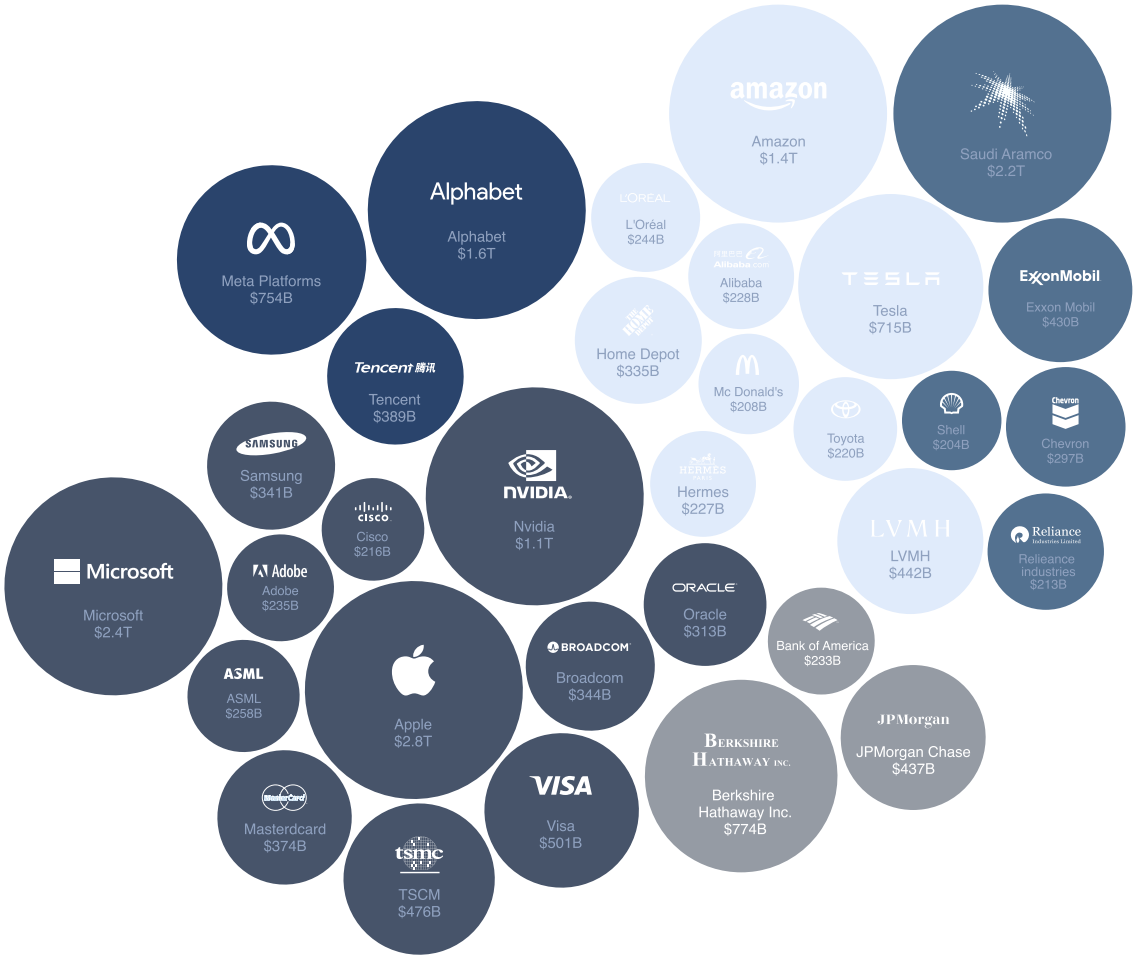
Transitioning to a knowledge economy involves not only changing economic structures and market shares, but also significantly shapes the development prospects and competitiveness of certain areas, and, ultimately, real estate markets. For the transition to a knowledge economy to succeed and ensure long-term success and prosperity for a city or region, targeted future strategies are needed that create incentives for knowledge-based enterprises.

Recent scientific explanatory models emphasize the importance of knowledge and creativity for accessing urban and regional development potential. One of the key works in urban growth theories is the theoretical approach to the creative class developed by US economist Richard Florida. His book on the rise of the creative class is a global bestseller.

The core thesis is that companies no longer make decisions regarding location based solely on traditional location factors (such as financial incentives or existing infrastructure), but primarily choose locations that offer a high potential for attracting highly qualified employees. Therefore, to increase its prosperity a city needs to try to attract the right residents; Namely, people working in the knowledge field who generate creative innovations, which are in turn a prerequisite for sustainable growth.

FIG. 1: THE MOST VALUABLE COMPANIES GLOBALLY (MARKET VALUE BASED ON MARKET CAPITALIZATION)

SOURCE: COMPANIESMARKETCAP.COM



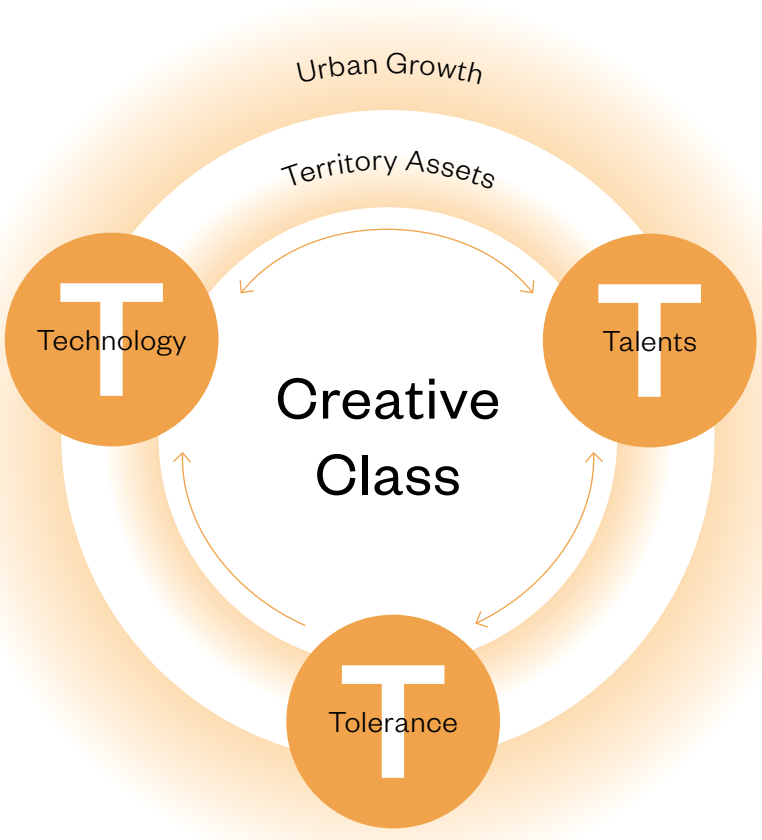
Richard Florida's Model of the Creative Class

Richard Florida combines his ideas into an economic growth theory: "Technology, Talent, and Tolerance". These three Ts define the arena in which regions and cities compete for a successful economic future. Technology refers in particular to innovations and future technologies. The second T (for Talent) refers to the existing human capital, while Tolerance refers to the diversity and openness of a city or region.

The decisive factor for Florida's hypothesis is that only the regions where the three Ts occur in a favorable ratio can expect economic growth. Each of the three Ts is important, but a single factor is insufficient on its own. It is the interaction between the three Ts that determines a region's prospects (Fig. 2). For example, a tolerant atmosphere makes a city attractive to highly qualified talent. Businesses in future technologies or knowledge-based services sectors settle in areas where many creative talents already reside, attracting additional talent with the jobs they offer. This makes the city even more attractive and diverse. This can lead to a lasting upward spiral.

According to Florida, "territory assets", which encompass local and socio-spatial location characteristics, are crucial for the development of the three Ts. This includes buildings. To attract technology and talent, you need adequate residential, industrial and office buildings. On the other hand, what is known as "place-making" is also particularly important – i.e. the existence of meeting spaces and locations offering experiences that create a sense of identity.

FIG. 2: GLOBAL COMPETITIVE LANDSCAPE OF THE THREE TS
SOURCE: OWN ILLUSTRATION BASED ON FLORIDA 2002/2004/2019



TAB. 1: GEOGRAPHY OF CREATIVITY RANKING – TOP 15 EUROPEAN METROPOLITAN AREAS

SOURCE: FLORIDA ET AL 2023

Rank global	European Top 15
1	London
5	Copenhagen
7	Vienna
8	Amsterdam
9	Warsaw
12	Stockholm
13	Madrid
14	München
15	Zurich
16	Oslo
19	Hamburg
25	Düsseldorf
30	Berlin
31	Dublin
32	Frankfurt

"Geography of Creativity" Ranking

Which metropolitan areas meet the requirements of Richard Florida's three Ts model, thereby representing some of the regions with the best development prospects? Florida has created a ranking system to answer just this question. It empirically measures and compares the three T's using a range of individual indicators. As they currently stand, the results show two interesting trends from a European and German perspective: mega cities such as London and New York continue to set the standards in this competition and lead the ranking. But their lead is growing narrower. Both cities rank low in their ability to adapt to the speed of change. In contrast, in smaller European cities such as Copenhagen, Vienna, Amsterdam, Warsaw, Stockholm and Munich in particular, an optimal combination of the three Ts has led to success in recent years and has generated strong growth momentum (Florida et al. 2023). These cities now occupy the top spots in the global rankings and are leaders in Europe (Tab. 1). It is interesting to note that five German cities – Munich, Hamburg, Düsseldorf, Berlin, and Frankfurt – have been ranked in the top 15 in Europe.

So, what exactly do these three Ts mean, and why are they so important for urban growth and sustainability? What are these 15 European cities doing better than others and how does their success affect real estate markets?

Technology

"A high technology base is both a necessary condition for and a result of a region having a strong creative economy."

Richard Florida

The first T (for Technology) in Richard Florida's model refers specifically to innovative future technologies that are crucial for regional growth in a knowledge-based world. Thus, the emergence of new professions due to technological innovations significantly contributes to long-term economic growth. According to a study by economist David Autor, more than 85% of employment growth in the USA over the past 80 years can be attributed solely to new jobs created by innovation and new technologies (Autor et al. 2022).

The adoption of AI and other automated technologies will also create new opportunities and professions which simply did not exist previously. The creation of jobs in areas such as AI development, maintenance of AI systems, data protection and AI ethics is seen as a decisive factor for future regional economic development (Briggs/Kodnani 2023).

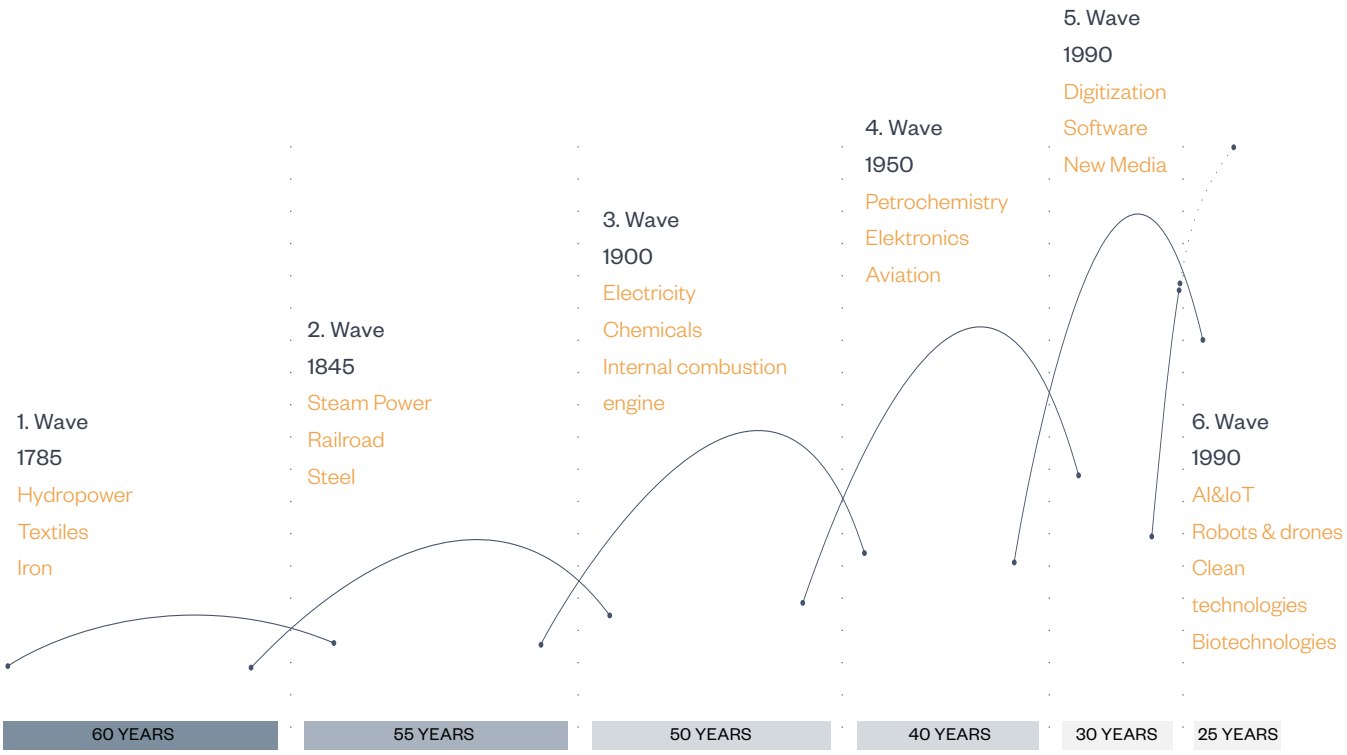
The Long Wave Theory

Since industrialization began in the 18th century, there have been five long waves which have decisively shaped the global economy (Fig. 3). The first long wave (ca. 1785-1845) was driven by the invention of steam power and innovations in the steel industry. The second wave in the middle of the 19th century led to significant progress in the rail, steam and steel sectors. In the third wave, the economic upswing was brought about by the introduction of gasoline and electric engines, and in the fourth wave by the introduction of electronics and petrochemicals in production processes. The fifth wave in the 1990s was shaped by information and communication technologies which ushered in a new era of globalization. And now, we are at the beginning of a new innovation cycle which will likely be dominated by artificial intelligence, the Internet of Things, robotics and biotechnology.

With each new long wave, the geographical focus of economic activities also shifted. While England (Manchester) was the dominant locus of economic growth and innovation in the first wave, the Ruhr region in Germany and the east coast of the United States the second cycle, the third and fourth waves were concentrated in the US, Japan, and Germany. Not all regions have benefited equally from these waves. The effectiveness of each wave of innovation was very strongly tied to locations that offered sufficient human capital, technology-focused institutions and, above all, research and development activities. As each wave progressed, the gravitational pull of the new center increased, leading to an influx of labor and capital.

FIG. 3: KONDRATIEFF CYCLES

SOURCE: OWN ILLUSTRATION ACCORDING TO NEUFELD 2021



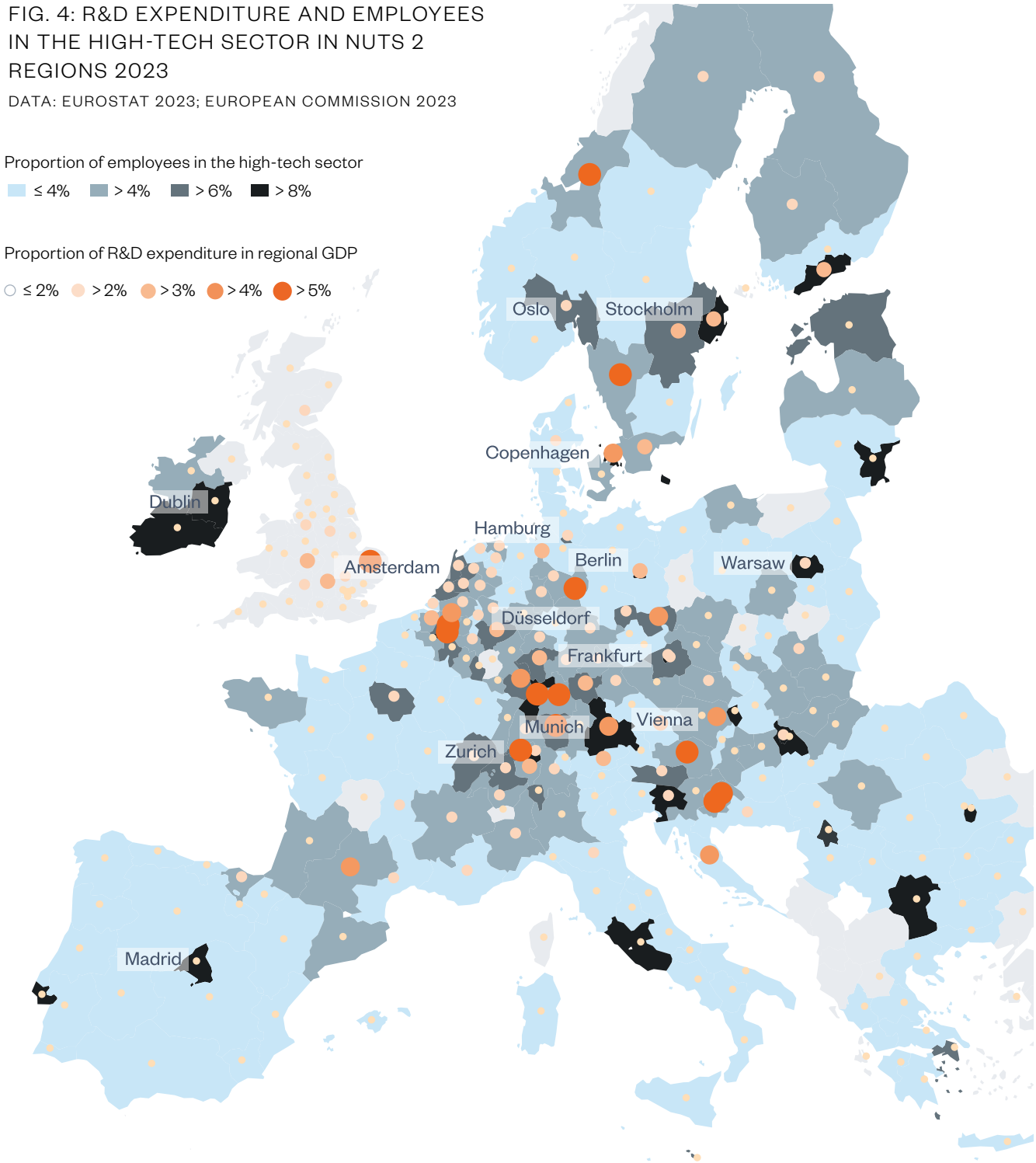
Regional Contributions to Innovation

New technologies are considered a driver of change in territorial economic structures. Research and development (R&D) activities, which determine the medium to long-term adaptability and transformation capacity of business locations, are essential in their contributions to this.

The EU growth strategy "Europe 2020" (known as the Lisbon Strategy) set the target of spending at least 3 percent of GDP on research and development. However, only around one in ten EU regions is exceeding this target. Fig. 4 shows the regional distribution of R&D intensity in NUTS 2 regions and the concentration of research activities in a small number of regions. The leading German regions include Braunschweig (incl.

FIG. 4: R&D EXPENDITURE AND EMPLOYEES IN THE HIGH-TECH SECTOR IN NUTS 2 REGIONS 2023

DATA: EUROSTAT 2023; EUROPEAN COMMISSION 2023



[1] The territories of the European Union are divided into three hierarchical levels. NUTS 2 regions usually hold between 800,000 and 3 million inhabitants. In Germany, this generally corresponds to the level of the administrative districts.

Wolfsburg), Stuttgart, and Karlsruhe, each with a share of over five percent. The automotive industry in these regions has significantly increased its R&D expenditure during the transition to electromobility. Additionally, in Europe the locations with the highest levels of R&D activity are primarily concentrated in or around each country's capital region and the top 15 cities from Florida's ranking (including Copenhagen, Stockholm, Munich, and Berlin).

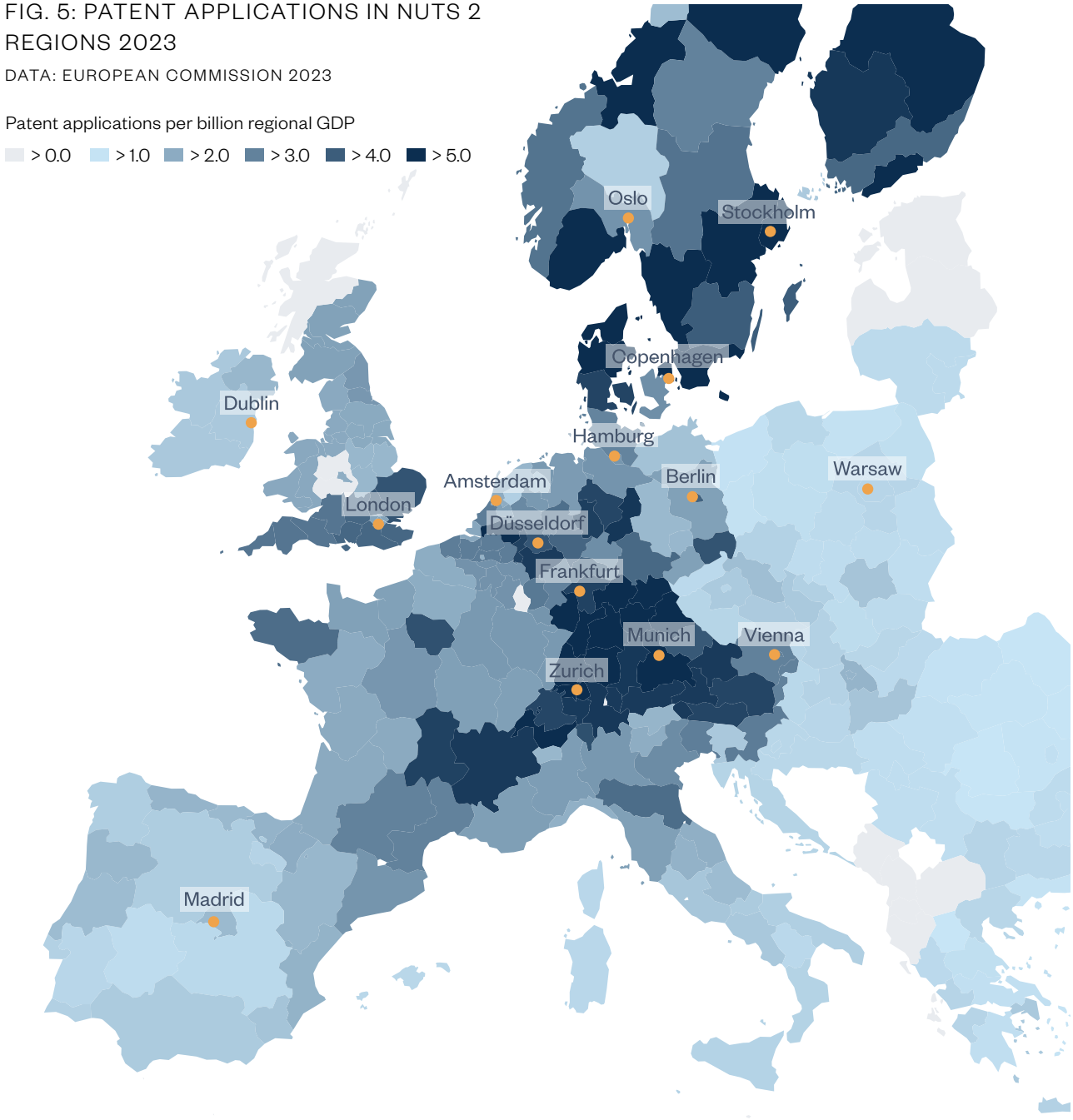
In addition to investment in R&D, the number of employees in high-tech sectors such as mechanical engineering, chemical industry, biotechnology, and IT serves as another measure of a region's future competitiveness. There is also a clear geographical divide in the EU in this regard, with a high proportion in regions in Central Europe (Munich, Berlin, Zurich) and Scandinavia (Stockholm, Oslo).

Output: Patents and Start-ups

Patent applications mark the transition from R&D to a market-oriented application and capitalization of new inventions (Schmidt-Seiwert 2009). Of the 193,000 applications filed with the European Patent Office in 2023, 43% were from EU member states. One third came from Germany. As can be seen in Fig. 5, technological activity in the form of patent applications is strongly concentrated in just a few regions, such as the south of the United Kingdom, Denmark, the capital regions of

FIG. 5: PATENT APPLICATIONS IN NUTS 2 REGIONS 2023

DATA: EUROPEAN COMMISSION 2023



the Scandinavian countries, Upper Bavaria and Baden-Württemberg, Switzerland and the southern part of the Netherlands.

The number of start-ups is also a significant indicator of the innovative strength of an economic region. Start-ups are generally considered important contributors to the overall economic development of a region, as they drive innovation, create jobs and contribute to the gross domestic product. Analysis of the geographical distribution of venture capital and start-ups reveals two trends (Tab. 2):

1. Increasing urbanization: startups and venture capital are increasingly concentrated in large, globally networked major cities. Five cities – London, Berlin, Stockholm, Munich, and Amsterdam – account for almost half of European venture capital. Forty percent of all start-ups in Europe originate from Florida's top 15 cities.

2. Winner-Takes-All-Effekt: The winner-takes-all effect: start-ups and venture capital follow a national geographical pattern where one location, the "winner", gains nearly everything. London accounts for 67 percent of national venture capital and 76 percent of start-ups in the UK. Similar clusters can be found in Sweden with Stockholm, Denmark with Copenhagen, and Austria with Vienna. By contrast, in Germany, venture capital and start-ups are spread across several metropolitan areas and hotspots with different characteristics and focuses (e.g. in Berlin FinTech and eCommerce, in Munich the mobility sector).

TAB. 2: START-UPS IN MAJOR EUROPEAN CITIES – VENTURE CAPITAL AND START-UPS FOUNDATIONS

DATA: EY 2023; EU-STARTUPS 2023

City	Venture capital for start-ups in EUR million 2021-22		Start-up foundations 2021-23 absolute	
	absolute	in national %	absolute	in national %
London	37,002	67%	885	76%
Berlin	15,377	57%	325	44%
Stockholm	7,028	82%	95	69%
Munich	6,043	22%	88	12%
Amsterdam	4,235	62%	135	53%
Copenhagen	2,297	75%	66	63%
Vienna	1,902	85%	84	62%
Dublin	1,875	64%	74	69%
Zurich	1,619	29%	79	38%
Madrid	1,481	26%	205	27%
Hamburg	998	4%	58	8%
Oslo	n/a	n/a	37	73%
Warsaw	n/a	n/a	45	41%
Frankfurt	n/a	n/a	27	4%
Düsseldorf	n/a	n/a	15	2%
Europe total	**162,859**		**5,487**	

AI as a New Foundation for Innovation

Artificial intelligence (AI) is regarded as a cornerstone technology of the emerging sixth long wave. Between 2021 and 2023, annual venture capital for the AI sector in Europe amounted to an average of EUR 12.4 billion. This is still a relatively low amount compared to the United States (around EUR 80 billion p.a.) and China (EUR 28 billion p.a.). However, the largest share of venture capital in Europe was directed into software start-ups. In Germany, between 2021 and 2023, an annual average of EUR 3.6 billion in venture capital was invested in AI start-ups, putting them second in Europe after the UK, with EUR 6.3 billion. Germany hosts approximately 3,000 companies, contributing to a notable AI startup scene (BMWK 2023). This is largely due to the local legal certainty, the proximity to millions of users and customers, the availability of

FIG. 6: INTERNET EXCHANGE POINTS AND DATA CENTER FACILITIES IN THE TOP 15 EUROPEAN CITIES

DATA: INFRAPEDIA.COM; OWN RESEARCH 2024

skilled workers and a well-developed and powerful computing infrastructure, all of which are decisive factors in the AI industry's choice of location.

Fig. 6 shows the major internet backbones that serve the majority of the top 15 cities in the Florida ranking with extremely high data transfer rates. Many cities have a robust data center infrastructure, particularly at internet exchange points. The world's largest commercial internet exchange is DE-CIX in Frankfurt, with a maximum data transfer rate of 16.6 terabits per second (GDA 2022). Frankfurt is one of the largest data center locations in Europe after London and Amsterdam.

Future technologies and territory assets

For the establishment of future technologies, a suitable real estate offering is also required, known as the territory assets from Richard Florida's concept. The rapidly expanding AI ecosystem and its supporting infrastructure will drive demand for suitable real estate in various markets worldwide. This is not only relevant to AI developers, but also upstream and downstream economic services, such as chip manufacturers and cloud providers. In the USA, the real estate required by AI companies doubled between the end of 2020 and the end of 2023 (JLL 2024). Future growth is expected to center around tech locations where AI talent (universities, tech hubs and innovation centers), an adequate energy supply, and a powerful fiber-optic network are available. These include the top 15 cities from Richard Florida's ranking. Demand in these locations is primarily focused on inner-city, integrated office spaces designed with "New Work" and ESG compliance in mind. The choices made by Apple and Google for their current locations are a successful example of this. As part of the KARL project, Apple recently opened its European center for chip design in the middle of Munich. Google has been located there since 2006 and is currently renovating the historic Arnulfpost building (JLL 2023).

At the same time, the data center market is poised for exponential growth, driven by the substantial computing power essential for AI. Data centers are the backbone of the digital infrastructure, requiring a lot of space in real estate. The high legal and social requirements for data protection, data security and data sovereignty mean that data from Germany must be processed and stored in Germany. This is also an important driver for the rapidly growing project pipeline. The facilities needed range from small data centers to co-location centers managed by operators (where users deploy their own servers) to mega data centers (hyperscalers primarily used by a single large cloud provider like Google). Meanwhile, leading tech companies have also recognized that the lack of computing capacity is a problem. Microsoft recently announced investments of EUR 3.2 billion to double its computing capacity in Germany. The German Datacenter Association (GDA 2024) predicts that by 2029, more than EUR 28 billion will have to be invested in the expansion of co-location centers and hyperscalers. Due to the Energy Efficiency Act (energy savings, waste heat requirements), the investment focus is primarily on new construction projects and newer existing properties.

Cities With a Future Agenda – Technology

In summary, Europe is experiencing a clear geographical polarization of innovative strength due to the first of the three Ts – Technology. Only a small number of regions have a strong position in this regard. The top 15 cities under review are among the leaders for innovation. Cities such as Munich and Copenhagen are explicitly addressing this issue with various programs in their future agendas.

With its Hightech Agenda Bayern and Hightech Agenda Plus, Bavaria is investing a total of ca. EUR 5.5 billion in a technology campaign which will create over 100 AI professorships, among other things. The funds will also be used to support Munich Quantum Valley, which combines research capacities and the transfer of technology between research, education, and industry in the field of quantum technologies. In its digitalization strategy, Munich is pushing ahead with strategies including the necessary expansion of broadband coverage and IoT infrastructures.

Copenhagen is also set to further raise its profile as an attractive knowledge location by 2036. The focus is on the expansion of its knowledge and innovation district –"Copenhagen Science City"– with a focus on medicine, health and natural sciences comprising 40,000 researchers, students, and employees as well as 500 innovative companies. This will require over 200,000 m² of office space.

Talents

“Access to talented and creative people is to modern business what access to coal and iron ore was to steel-making.”

Richard Florida

Highly qualified employees are the cornerstone of innovation and competitiveness. Regions and cities must therefore be active now more than ever in their attempts to attract the sought-after workforce, the Talent (the second T in Richard Florida's model). Where they choose to live or work can have an impact on the rise or fall of companies and even entire cities. While in the past cities concentrated on attracting large manufacturing companies or establishing themselves as a commercial location, today they are competing for the new human resource of the talented creative class.

The Creative Class According to Richard Florida

According to Florida, this type of talent is the most important prerequisite for urban growth today. Modern cities can only flourish economically if large numbers of creative people live and work there. They have creative potential, which Florida defines as follows: "intrinsically human ability to create new ideas, new technologies, new business models, new cultural forms, and whole new industries that really [matter]" (Florida 2005). Florida distinguishes between three types of human creativity that influence and reinforce each other and, as a result, drive regional economic development:

- A **highly creative core** generates knowledge, is innovative, and drives economic and technical development. Scientists, engineers, university professors, architects, IT specialists, and high-tech experts, for example, fulfil this role.

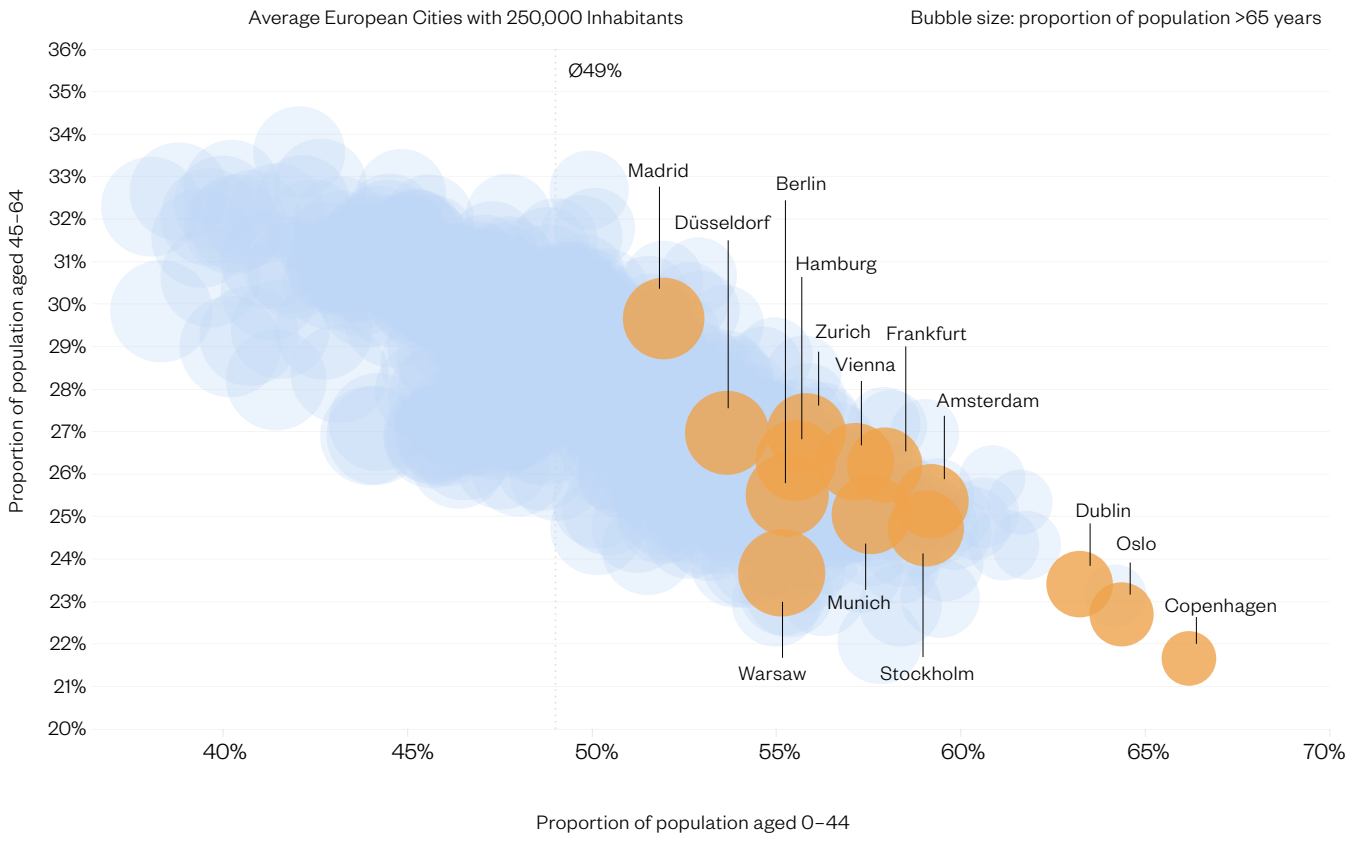
- **Creative professions** such as lawyers, doctors, financial experts, and managers support economic development by applying their knowledge in ever new contexts. They find and solve problems.

- Finally, the third subgroup, the **Bohemians** (comprising artists, musicians, actors, writers) are artistically active. Although this group does not solve any economic problems, it is essential for the cultural development and quality of life of a region or city.

Although creatives have always played an important role in economic dynamics, their influence has increased significantly in recent decades. According to Richard Florida, they now make up around 30 percent of the USA's working population. These creative knowledge workers are sought after by technology and knowledge-intensive companies. According to Florida, companies are increasingly following creative talent (Florida 2004).

FIG. 7: DISTRIBUTION OF AGE GROUPS IN EUROPEAN CITIES WITH 250,000 INHABITANTS OR MORE

DATA: EUROSTAT 2024



Regional Supply of Human Capital

An initial indication of the varying talent pools of cities is first provided by the age structure. The higher the proportion of younger people in the overall population, the greater a region's growth prospects are expected to be. Europe's young population is increasingly concentrated in metropolitan areas. In the almost 1,200 European NUTS 3 regions (equivalent to district level in Germany), on average, 49 percent of the population is under 45 years old. In the top 15 metropolitan areas in the Florida ranking, the proportion is significantly higher at 58 percent. Particularly high proportions are recorded in Copenhagen (with 66 percent), Oslo, and Dublin (with 64 and 63 percent, respectively). (Fig. 7).

The age pyramids of these metropolitan areas also differ significantly from the European average. In Copenhagen, for example, the typical concentration of the population in the baby boomer generation (50-60-year-olds) is absent. Instead, there is a significant bulge in the 20–30 age group (Fig. 8). There is also a large number of people aged 20–30 in Berlin, but also a large group of people aged 50–60. London is one of the youngest capitals in Europe with an average age of 37. However the age distribution is more even here. The differing age structure in these cities affects politics, urban society and the real estate industry. This is evident, for example, in the search for daycare places, retirement provisions, dating in the same age group, and suitable types of housing.

The higher the proportion of younger people in the overall population, the greater a region's growth prospects are expected to be.

FIG. 8: AGE PYRAMIDS

DATA: EUROSTAT 2024

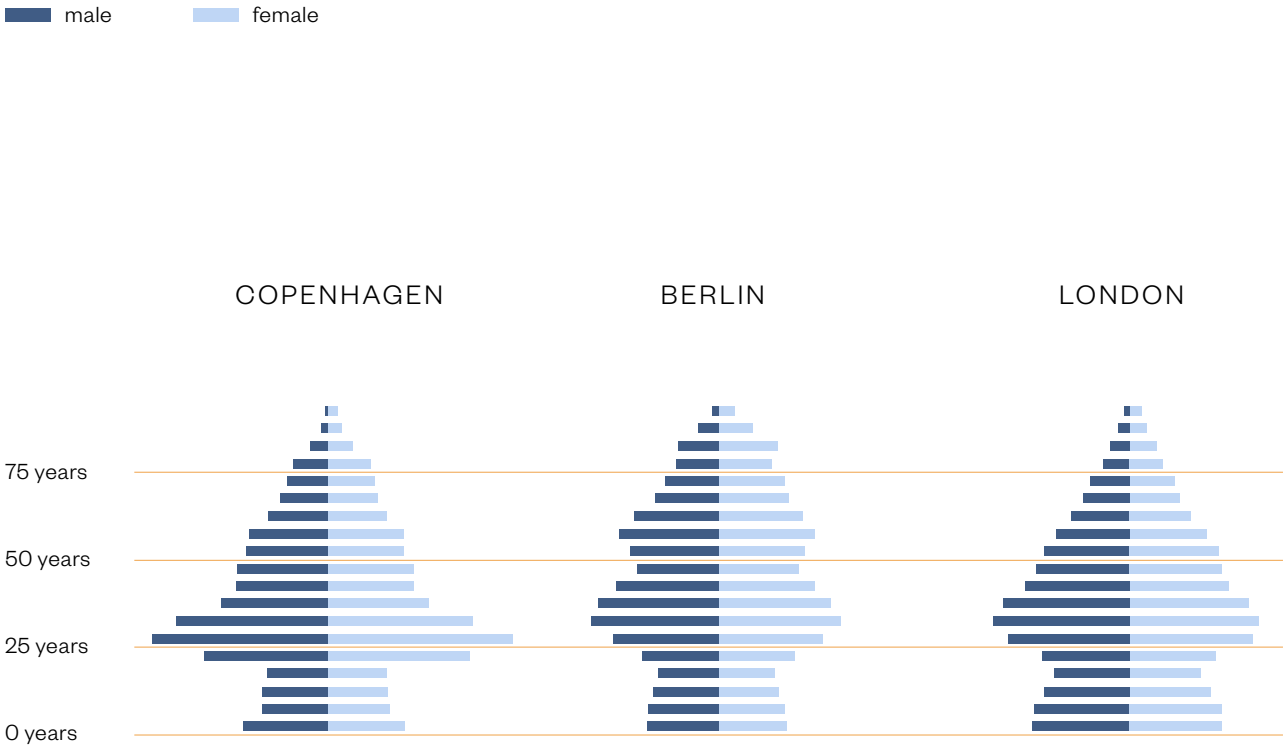
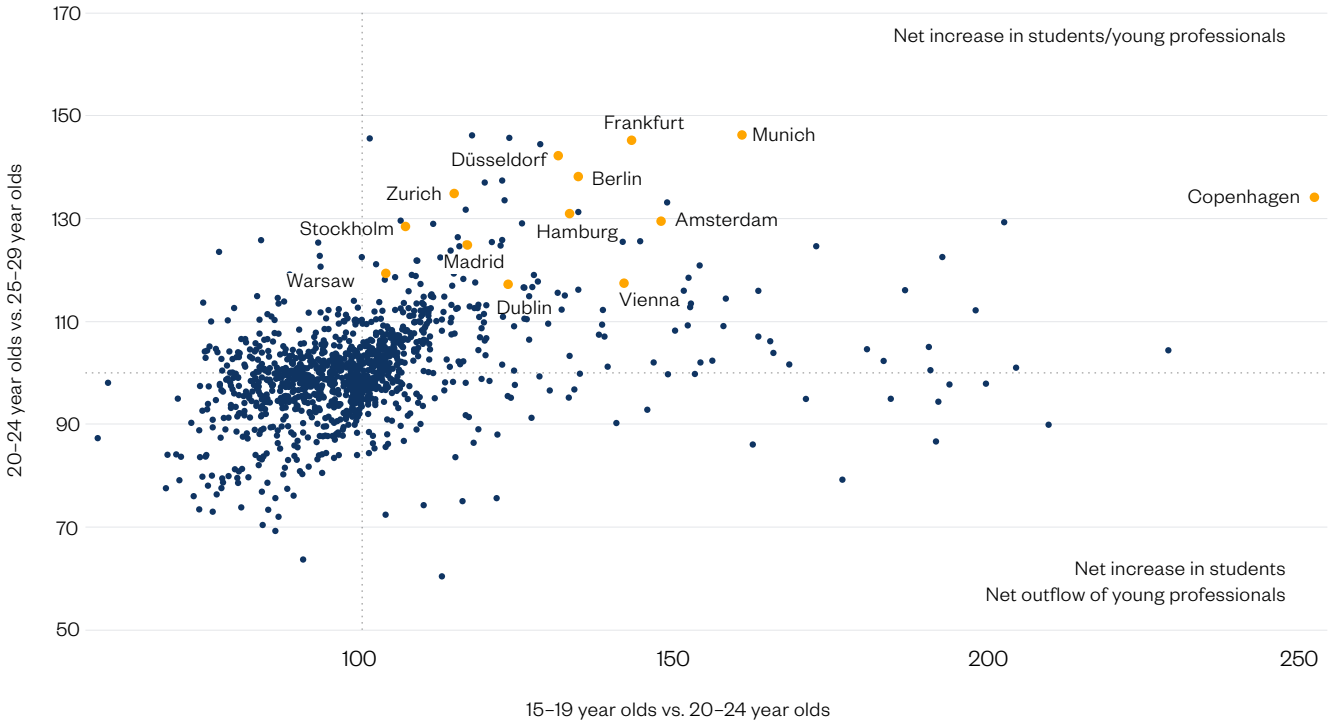


FIG. 9: COHORT GROWTH OF STUDENTS/WORKFORCE ENTRANTS (COMPARISON 2017 TO 2022)

DATA: EUROSTAT 2024



The migration patterns of young talent

Cohort analyses can be used to assess the extent to which cities have attracted young people for education or studies. To this end, in 2017, the number of adolescents aged 15–19 in cities with more than 250,000 inhabitants was compared with those aged 20–24 five years later, in 2022. During this time in Copenhagen, 100 adolescents aged 15–19 were joined by more than 250 individuals aged 20–24 as a result of migration. This means that this age cohort, which is the most relevant for the labor market, more than doubled in five years. The other top 15 cities under review are included in the upper right-hand segment (Fig. 9) and see net increases of 10 to 70 percent in these age groups.

This method can also be used to estimate how attractive a city is for young professionals and how many graduates "stick" to the respective city after finishing their training or studies. To assess this, the number of 20-24-year-olds in 2017 was compared with the number of 25–29–year–olds in 2022. Here too, all the top 15 cities considered have net migration gains exceeding 100 in this age cohort. It is striking that metropolitan areas in Germany are particularly successful in this category (Fig. 8).

This migration of young talent means that European cities, in particular, have a stronger human capital base. Once again, Florida's top 15 cities distinguish themselves with a disproportionately high share of young, highly educated population compared nationally (including Copenhagen, Munich, Berlin, Zurich, Stockholm). A strong human capital base is a competitive advantage for businesses, as they can find a large number of workers with the specific qualifications they need. At the same time, skilled workers are more likely to move to cities or regions where they can find a wide range of employment opportunities that match their qualifications. This demonstrates once more the self-perpetuating process and the close link between the three Ts from Richard Florida's model.

Eisbach surfer, Munich

Universities as Talent Magnets

Universities are a major factor in the migration patterns of young people and are often decisive in the global competition among regions and cities. Universities are also drivers of innovation, generating employment and new developments in high-tech and knowledge-intensive sectors. This creates new networks which act as an ecosystem, giving a region a decisive economic advantage. Berlin, for example, with its three excellent universities (FU, TU, and Humboldt) is considered the capital of start-ups. A cluster of biotech, IT, and other high-tech companies has also formed around the Technical University of Munich (TUM). TUM produces more than 70 start-ups every year, which is more than any other German university.

These stimuli from the academic world are increasingly important to the economic success of major cities. This effect is reinforced by the fact that these internationally renowned universities attract people from all over the world – they are talent magnets. International students are an ideal source of additional skilled workers, as they have already lived in the respective country for several years after graduating, know the culture, often speak the local language, and are already integrated.

The Global Employability University Ranking (Tab. 3) shows which universities are preferred by recruiters globally. The approximately 11,000 HR professionals from 21 countries rated the California Institute of Technology (MIT) the highest. Imperial College London ranks first among the selected European cities and 11th internationally. Among German universities, the Technical University of Munich (TUM) is in 13th place worldwide. Ludwig Maximilian University (LMU) in Munich, Humboldt University (HU) Berlin and Technical University (TU) Berlin are also among the German favorites.

The high level of interest shown by international students in German universities is illustrated by statistics from TUM. In the winter semester of 2023/2024, 44 percent of first-year students were international, with the percentage rising to 56 percent in master's programs. In total, students originated from 140 countries, and only a third were European. The "sticking" effect we referred to earlier, is also very pronounced in the Munich example. According to a survey conducted by the university, four out of five EU foreigners found work in the region after graduating. For non-EU foreigners, this figure was 68 percent (WiWo 2023).

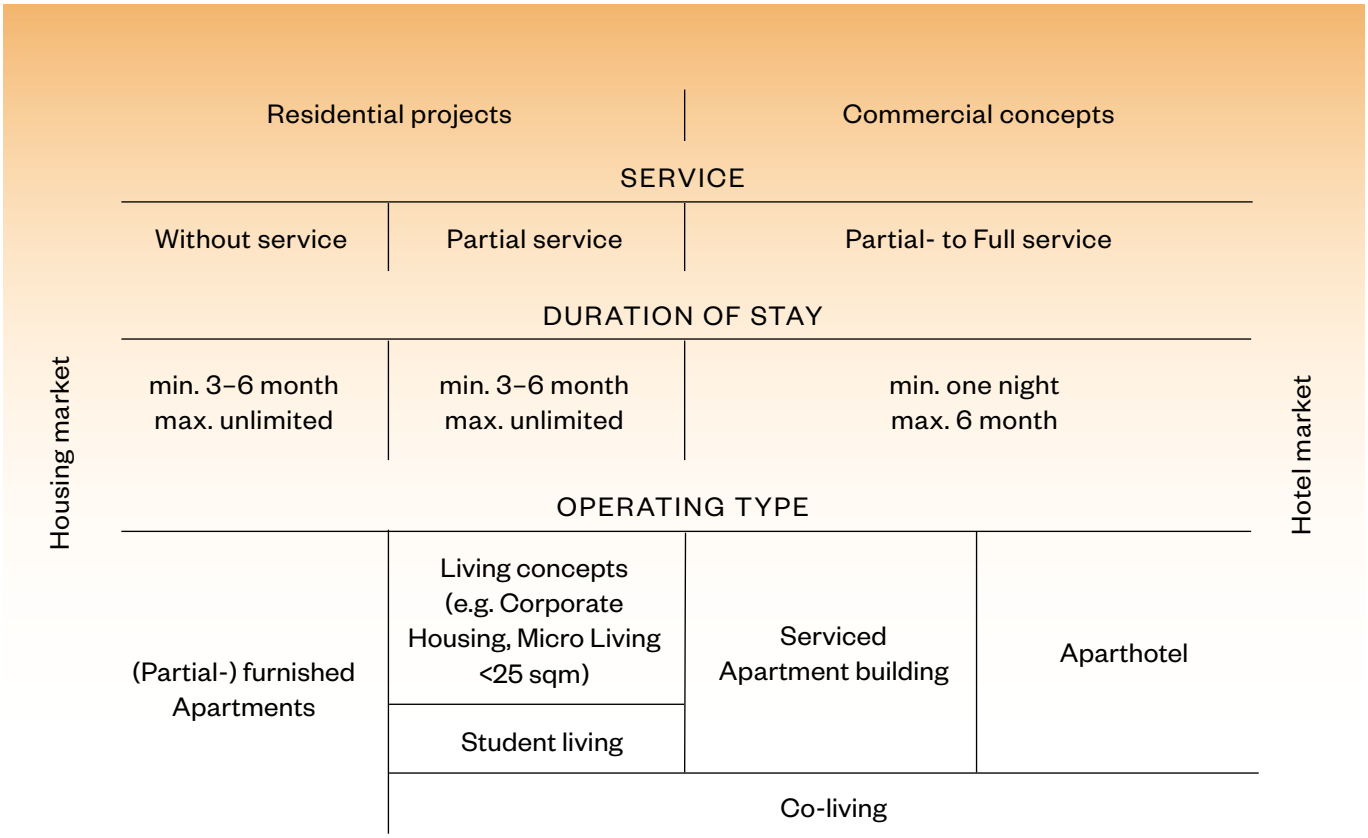
TAB. 3: TOP 100 OF THE GLOBAL EMPLOYABILITY UNIVERSITY RANKINGS 2024

DATA: EMERGING 2024; OWN RESEARCH 2024

Rank (Global)	University	Urban region	Proportion of foreign students
11	Imperial College London	London	60%
13	Technische Universität München	Munich	44%
15	ETH Zürich	Zürich	28%
18	IE University	Madrid	75%
24	London School of Economics and Political Science	London	70%
41	London Business School	London	50%
46	Humboldt University of Berlin	Berlin	15%
53	Ludwig-Maximilians-University	München	20%
56	Technical University Berlin	Berlin	29%
66	University of Zürich	Zurich	19%
68	King's College London	London	47%
73	KTH Royal Institute of Technology	Stockholm	30%
76	Stockholm University	Stockholm	13%
79	Frankfurt School of Finance & Management	Frankfurt	50%
91	Technical University of Denmark - DTU	Copenhagen	49%
96	Freie Universität Berlin	Berlin	22%
97	University of Vienna	Vienna	30%

FIG. 10: TEMPORARY FORMS OF HOUSING

SOURCE: APARTMENTSERVICE/UNION INVESTMENT 2023



How and where do talented people live?

To attract and retain talent, cities need to have suitable housing options as part of their territory assets. Representatives of the creative class often prefer inner-city, urban locations near to social meeting places such as cafés, restaurants, and entertainment venues. Their housing profile is strongly focused on small and high-quality apartments. It also includes flexible, temporary housing options, such as short-term rental contracts or the option to move easily. This reflects the dynamic nature of their careers and lifestyles. Permanent and stable employment relationships are the exception rather than the rule. Students and apprentices have similar housing preferences. Various studies see significant growth potential for temporary housing in many major European cities as a result of the growing flexibility of life plans and the increase in (international) job mobility (Fig. 10). Flexible services and amenities such as high-speed internet, cleaning and fitness facilities, and a variety of communal areas are also very popular.

In locations with large or numerous companies and universities, there is a high demand for corporate housing, micro-living, and serviced apartments with corresponding services and amenities. These can be used as an outlet to relieve pressure on the often tight housing markets in metropolitan areas with rapidly increasing rental rates (Fig. 11). These options are quickly accessible, varied, and increasingly expand the range of traditional housing for different target groups.

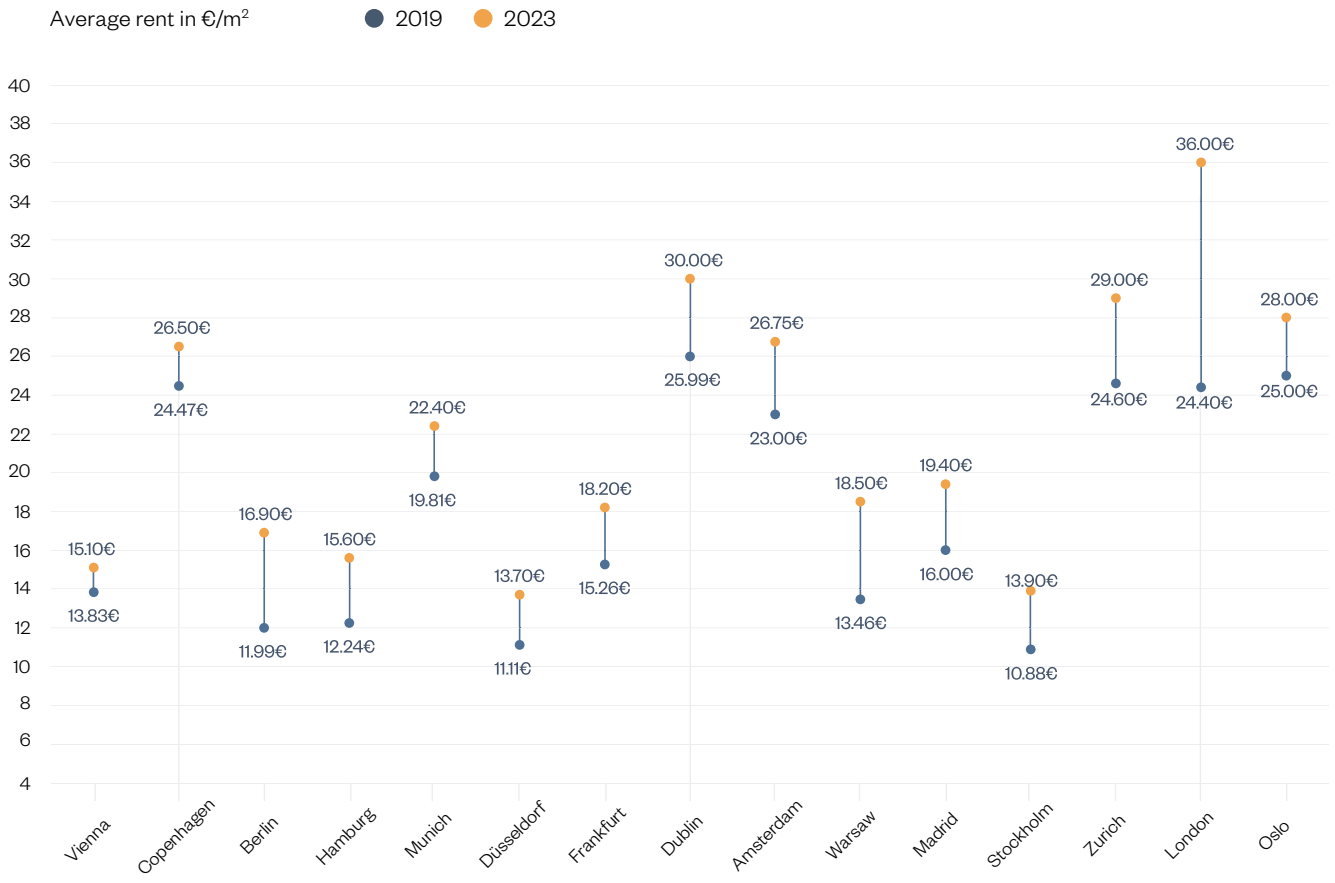
European cities with a future agenda – Talent

Many European cities and regions, especially Florida's top 15, see attracting and retaining talent as one of the key factors for sustaining high innovative capacity and economic strength. To that end, they have incorporated relevant goals and programs in their future agendas.

To attract expats, the Netherlands offers attractive tax concessions for skilled workers from non-EU countries. As such, expats can reduce their taxable income by 30 percent for up to five years. Amsterdam has also imple-

FIG. 11: RENTAL PRICE DYNAMICS IN TOP 15 MAJOR CITIES

SOURCE: CATELLA 2024



mented various programs to attract talent. The "Structural Vision for 2040" aims to explicitly target young talent and knowledge workers by creating at least 70,000 additional apartments for different housing needs. Programs such as the "Masterplan Techniek Amsterdam" or the "Action Programme for Knowledge and Innovation" coordinate the supply and demand for skilled workers or support the financing of projects in the technology sector and educational institutions.

The "Integrated Urban Development Concept 2030+" also aims to strengthen Frankfurt's reputation as a location known for science by attracting talent. To achieve this, a pact for affordable housing for students and trainees is being established in collaboration with universities, the Chamber of Industry and Commerce, and public housing companies. The "Campus Mile", along which the Westend Campus of Goethe University, Frankfurt School of Finance & Management and the Frankfurt University of Applied Sciences, among others, will be located, is intended to link important institutions and create a shared geographical identity.


Amsterdam

Tolerance

"...regional economic growth is driven by location choices of creative people – the holders of creative capital – who prefer places that are diverse, tolerant and open to new ideas."

Richard Florida

Talent – the people who bear creative capital – is the key to a location's economic success and resilience. To be attractive to these talented people, cities and regions need more than just internationally renowned universities and innovative companies as potential employers. According to Florida, attracting (and retaining) talent will only succeed if the city has a tolerant and stimulating culture. After all, creative and innovative work is done best in environments where there is an openness to new ideas and influences, and a productive approach to different perspectives and skills. This is the only way in which a creative city can set itself apart from conventional location policies and city marketing and be successful in the long term in the competition for sought-after knowledge workers and creative professionals.

Cosmopolitan Cities

The dynamism and innovative strength of cities have always been largely the result of a continuous influx of ideas, goods, and people. Immigrants not only bring new ideas and skills with them, but also their connections from home. Port cities were so innovative because, even if they did not permanently house their immigrant populations, they were connected to other places and provided a temporary refuge for people and things circulating the globe. The astonishing success of Athens in the 5th century BC was largely

FIG. 12: PROPORTION BORN ABROAD (COUNTRIES & CITIES)

DATA: EUROSTAT 2024; OWN RESEARCH

attributable to its openness to external influences and the fact that over a third of its free population was foreign-born (Wilson 2022).

Even today, immigrants provide significant economic stimulus, such as in the Silicon Valley in California. Around a third of the companies based there were founded by immigrants. Just over half of the US billion-dollar start-ups (unicorns) have at least one immigrant founder, and 80 percent of these companies have an immigrant employee in a key position (Visual Capitalist 2023).

Openness also refers to the proportion of foreign-born residents, known as the Melting Pot Index. Compared to the national average, a high proportion of the population in the metropolitan areas in the Florida ranking are immigrants (Fig. 12). At 31 to 42 percent, Zurich, London, Vienna, Amsterdam, Munich and Frankfurt also sit well above the average for European cities (below 20 percent) (Eurostat 2022).

The statistics on foreigners and immigrants do not provide a complete picture of a city's diversity, however. They do not show what percentage of the population are the children or grandchildren of immigrants. Nor do they provide any information about the diversity of nationalities or their status within the city. The city of Amsterdam is well known for its cosmopolitan character. People from more than 180 countries live here, and there is no single group that is dominant. In addition, 50 percent of residents have at least one parent who was born outside the Netherlands (known as allochthones). These details illustrate the enormous complexity of diversity and integration of different cultures and nationalities within cities.

Tolerance and Openness

As the proportion of migrants in the population of German and European cities will continue to grow in the future, they cannot afford to take a destructive long-term approach to integration and cultural diversity. Following Richard Florida's thesis, in particular the theory that regions will only be economically successful in the future if they appreciate international and social diversity, perspectives need to change in the debate on integration. To date, this has tended to have rather negative connotations. In this sense, the focus should lie far more on social and economic opportunities and potential, and these should be promoted in a targeted manner.

Recent studies show that a structural lack of a welcoming culture can significantly hinder the recruitment of skilled workers from abroad (ZEW, InterNations 2024). In particular, (large) companies with an international focus and international structures refrain from investing in regions with a high level of xenophobia. Xenophobia damages the image and attractiveness of an economic hub and therefore its future viability. For example, the current rise of the AFD threatens to make eastern Germany increasingly unattractive as a business location.

An open and tolerant environment is directly linked to economic development and therefore constitutes a key location factor (not just an optional feature) for business decisions. This also concerns (but is not limited to) the regional ability to include and integrate foreign or ethnic groups into companies and society. Florida also understands tolerance to mean a relaxed and nondiscriminatory coexistence of people of

Xenophobia damages the image and attractiveness of an economic hub and therefore its future viability.

(ZEW, InterNations 2024)

different sexual orientations and a relaxed approach to different lifestyles and ways of working.

To measure these qualities, Florida refers to indicators such as the proportion of gay people in the total population (the “gay index”) or the proportion of writers, musicians, actors, painters, etc., together with the number and diversity of the city's or region's cultural infrastructure (the “bohemian index”). The gay index, in particular, shows an astonishingly high correlation with local creativity and regional growth (Merx 2006). The LGBTQ index (Fig. 13) shows the LGBTQ friendliness of selected European cities. Among other things, the current status of LGBTQ rights, laws and freedoms, public attitudes towards LGBTQ people and the size of the local Pride community were taken into account. The assessment shows that Richard Florida's top 15 cities are among the 50 most LGBTQ-friendly cities in Europe. London, Amsterdam, Madrid, and Berlin, and Manchester are top 5 in the LGBTQ Index, with London distinctly outperforming the other major cities.

Nightlife as a Location Factor

The creative class seeks – and creates – an open and dynamic environment. To attract the best talent, cities need to create an urban ecosystem that is specifically tailored to the needs of the knowledge economy. This includes not only cafés and high-quality restaurants, but also street food stalls, a vibrant (sub) cultural life, a diverse entertainment scene, and a lively nightlife. The availability of restaurants and bars as well as entertainment facilities such as theatres, live music venues, and nightclubs is a tangible location factor when attracting young people in the education and entry-level career phase. It is therefore an integral part of almost every major European city's marketing strategy.

[2] LGBTQ is an abbreviation for Lesbian, Gay, Bisexual, Transgender and Queer. LGBTQ has been established as an abbreviation for all genders, gender identities, and sexual orientations that deviate from binary gender and heterosexual norms

FIG. 13: LGBTQ INDEX

DATEN: HOLIDU LGBTQ INDEX 2022

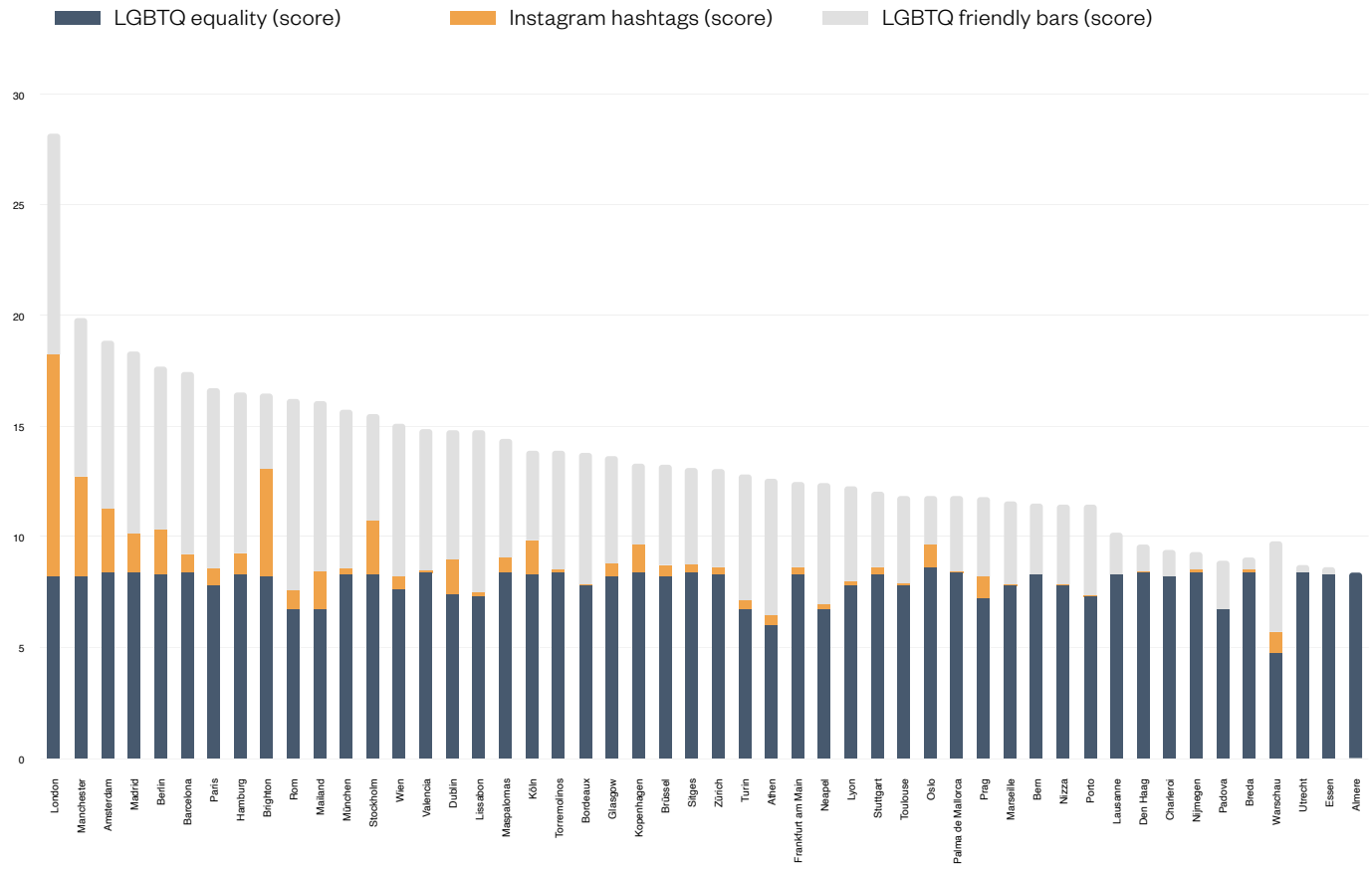
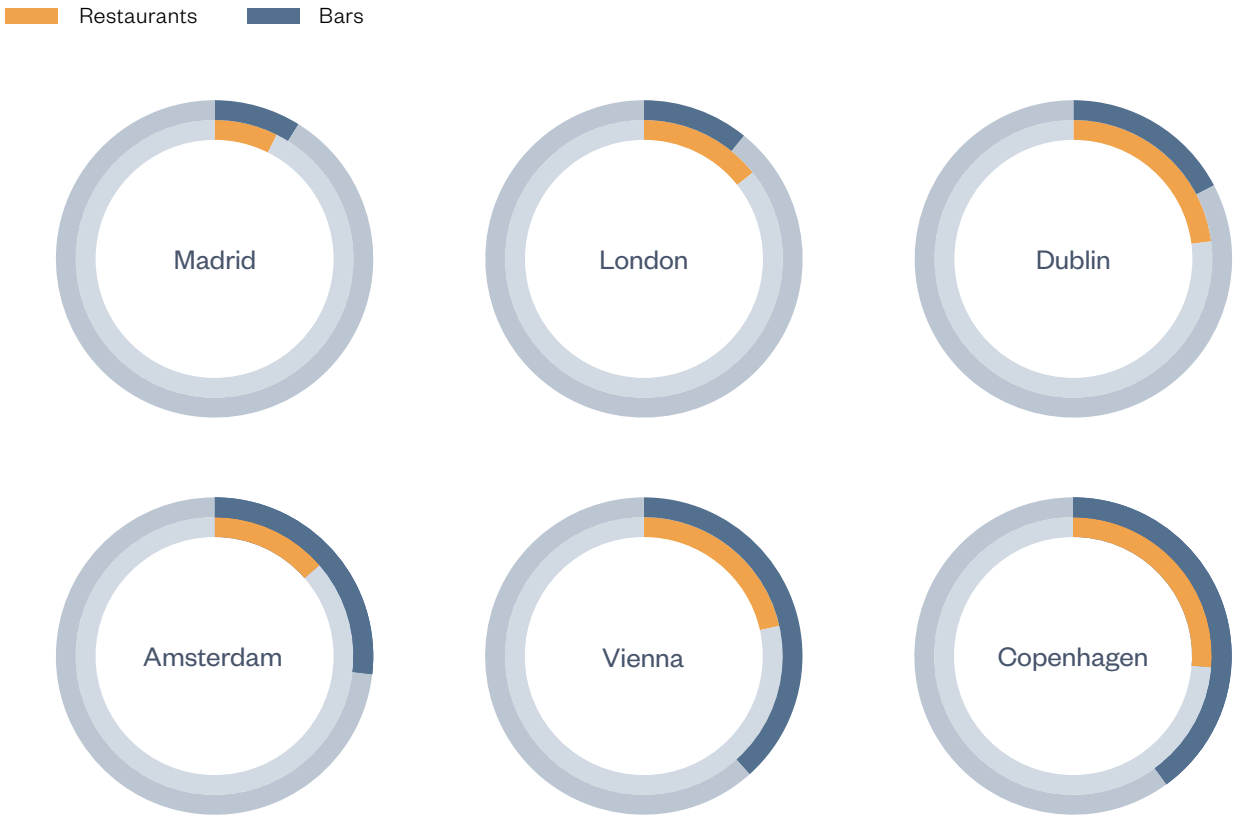


FIG. 14: PROPORTION OF RESTAURANTS AND BARS PER CITY IN THE NATIONAL TOTAL

SOURCE: OWN ANALYSES ACCORDING TO TRIPADVISOR 2024



An analysis of the bars and restaurants listed on the TripAdvisor website shows that nightlife is concentrated primarily in the selected European cities and is an indication of the appeal of these metropolitan areas (Fig. 14). From German cities, Berlin's nightlife in particular, can hold its own on the international stage. Due to its internationally renowned club scene, the German capital serves as a flagship that is actively utilized in city marketing, appealing not only to tourists but also attracting talent.

Cities and metropolitan areas that embrace contrast tend to be the most successful. According to historian Ben Wilson it is the rawness, contrasts, and conflicts that give a city its exciting flair, its pulsating energy. Dodgy pubs and even dodgier dives on one hand, glamor and wealth on the other – it is precisely these contradictory and unsettling aspects that give big cities their energy.

Vibrant, Contrasting, and Cool Urban Landscapes

Cities need to actively market themselves as desirable and exciting places to live and work – and must provide the space for this. Diversity and tolerance in urban areas are therefore also understood from a geographical perspective as a basic prerequisite for urban knowledge production. It is up to the real estate industry to provide suitable space.

The sought-after talent seeks urban environments that are multifunctional, culturally diverse, and authentic – rather than the quiet suburban life that senior executives traditionally favored. In this context, Florida conjures up a vision of mixed-function neigh-

> “It is the rawness, contrasts, and conflicts that give a city its exciting flair, its pulsating energy”.
>
> Ben Wilson

Expansion to European major cities: Quantum acquires first property in the upcoming Carlsberg City District in Copenhagen. With the acquisition of the state of the art building, Quantum also opens its first office abroad.

Dorte Mandrup A/S, visual: Studio Sang

borhoods in which coffee shops, clubs and consumer services are within walking distance and ideally accessible 24/7. These amenities are the preferred meeting places for members of the creative class and are therefore key locations for motivating the exchange of knowledge. Accordingly, (urban) city districts have once again become the focus of real estate actors as an asset class that meet the requirements of modern and sustainable urban development models, such as the mixed-use city or the 15-minute city.

Bohemians, night culture, subcultures and start-ups in particular need a tolerant environment as well as physical space to develop. This includes, for example, small-scale, flexible locations without predetermined uses. These are particularly rare in economically flourishing cities with tight property markets. Aspects of social sustainability in the real estate industry are also being addressed in this context. Creative professionals and start-ups need affordable spaces, especially in the early stages – both to run their business and to live in. Here, too, the real estate industry can make a decisive impact. This is because the creative class is only able to create an open and dynamic environment, which in turn attracts other creative people, new companies, and fresh capital if there is an existing creative ecosystem for everyone.

European Cities with a Future Agenda – Tolerance

Almost every urban development strategy contains goals and measures to expand the city's draw as an economic location for new technologies and innovations (the first T) as well as programs to increase the attractiveness of the city as a place to live and work for skilled workers (the second T). The third of Florida's three Ts, the promotion of tolerance, openness, and diversity, is only explicitly addressed in some strategies. Two (different) approaches can be seen in Vienna and Stockholm.

For over 100 years, Vienna's cityscape and self-image have been shaped by social democratic urban policy (Red Vienna) with municipal buildings and social housing. This includes extensively involving citizens in relevant urban development projects, which is covered in the Master Plan for Participatory Urban Development. Vienna was selected as the European Capital of Democracy for 2024/25, during which administrative processes will be opened up even further and enriched with democratic innovations. At the district and neighborhood level, the Local Agenda 21 program supports cooperation between citizens and city administration. Vacant buildings and spaces are allocated to cultural workers, creative people, social projects, and other initiatives as part of the strategy for multiple and interim use.

The 2040 Vision for Stockholm explicitly addresses enriching city life and increasing competitiveness through cultural differences and diversity. Equal rights regardless of age, gender, ethnicity, religion or sexual orientation is one of the highlighted objectives. The focus is on urban development shaped by culture, which includes conducting local needs analyses and drawing up geographical cultural maps for Stockholm's cultural life through to 2031. There is also a separate cultural strategy and a strategy for nightclubs and live stages. Efforts are also underway in Stockholm to provide temporary buildings and spaces for creative workers.

The creative class is only able to create an open and dynamic environment, which in turn attracts other creative people, new companies, and fresh capital if there is an existing creative ecosystem for everyone.

Some major European cities have been more successful than others in positioning themselves in the competition for capital, know-how, and skilled workers. They are benefiting from sustainable growth and are particularly resilient in times of economic, social, and political change. The top three priorities on the future agenda for these cities and regions are technology, talent, and tolerance.

Technology

New and innovative technologies have always been essential for regional growth in our knowledge-driven world. The adoption of AI and other automated technologies will also create new opportunities for future economic development. The major European cities that will benefit the most are those that encourage the establishment of businesses and employees (see Talent) in the high-tech sector and promote research and development (R&D) activities. Patent applications and the establishment of new businesses mark the transition from R&D to market-oriented applications and capitalization. In the field of technology, the leading European cities include London, Munich, Berlin, Stockholm, and Amsterdam. The rapid expansion of the AI ecosystem in tech locations and its supporting infrastructure will drive demand for suitable real estate. Above all, this means inner-city, integrated office spaces designed for "New Work" and ESG compliance, and data centers which form the backbone of digital infrastructure.

In brief

Talent

Highly qualified employees are the cornerstone of innovation and competitiveness. Only in places where these employees are abundant (and can be retained) can businesses and economic hubs thrive. A city or region's age structure can indicate the amount of talent there. Attractive major European urban agglomerations tend to be, on average, significantly younger than rural regions and less appealing cities. This can also be seen in the migration patterns of students and graduates who contribute to the high levels of education in cities such as Copenhagen, Munich, Berlin, Zurich, and Stockholm. Areas with such a strong pool of human capital are an advantage for businesses as they can find a large number of workers with the specific qualifications they need. Colleges and universities are key as they not only produce highly qualified talent, but also conduct research and development and create new businesses (see Technology). To attract – and retain – talent, cities need to have suitable housing options. In particular, there is a demand for small, high-quality apartments and flexible, temporary, and affordable forms of housing.

Tolerance

Attractive employers (see Technology) and universities (see Talent) are not the only things required to attract talent – a tolerant and stimulating culture is also essential. After all, creative and innovative work is done best in environments where there is an openness to new ideas and influences, and a productive approach to different perspectives and skills. European cities with a strongly welcoming culture and reputation for tolerance towards people of different origins, sexual orientations, and different lifestyles and ways of working are particularly successful. Cities like London, Amsterdam, Madrid, and Berlin are home to people from all over the world and are particularly LGBTQ-friendly. Attractive nightlife is also a factor that should not be ignored and which plays an important role in major cities with future agendas. These major cities have vibrant, varied, and hip urban landscapes which offer space for creative working and living despite tight real estate markets.

Cities and regions will have the best possible future prospects if all three Ts – Technology, Talent, and Tolerance – come together successfully. The real estate industry makes a key contribution to this as it provides the necessary spaces and areas, and benefits equally from the success of forward-thinking European cities.

Recommended reading

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