



Declaration of Interest in the Digital Hub Initiative

Smart Infrastructure Hub Leipzig

Leipzig, March 2017



Stadt Leipzig

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'SMART INFRASTRUCTURE HUB LEIPZIG' – THE IDEAL LOCATION FOR THE DIGITAL HUB INITIATIVE

Leipzig is one of the most dynamic cities in Germany. This is reflected not only in its growing population and increasingly young population, but also its significant growth in employment over the past few years. By 2030, Leipzig expects to be home to more than 100,000 additional inhabitants, for whom the presence of smart infrastructure will be crucial. This growth providing the motivation for the expression of interest in the Digital Hub Initiative is accounted for by a number of factors in Leipzig:

- It's broad-based economy
- The successful establishment of industrial cores
- It's lively startup scene
- Widespread digital business models by local companies in the energy and smart city sectors
- Ideal conditions for young people working in digitalization thanks to an outstanding higher education system and relevant active employers
- An ideal city for the application of digital solutions

Located at the heart of a metropolitan area with more than 2.25 million inhabitants, Leipzig is an attractive location for enterprise, research, the arts and above all its population. One important goal enshrined in Leipzig's INSEK Integrated Urban Development Concept for the coming years is to make the city increasingly international. A long-standing centre of commerce with excellent transport links and a vibrant arts scene, Leipzig is a cosmopolitan, dynamic city. These factors have already attracted many startups benefiting from the comparatively low rents and wage costs as well as coworking spaces, incubators and events, resulting in a diverse startup scene. The establishment of a Digital Hub will bolster this startup landscape, especially with regard to international startups and investors. SpinLab – The HHL Accelerator offers such businesses an extremely fertile breeding ground. Leipzig's development will be strengthened by the expansion of SpinLab with additional premises at Baumwollspinnerei (an internationally renowned hotspot for creatives) and a venture capital fund.

Leipzig is undoubtedly an energy metropolis thanks to the presence of prominent corporations such as VNG Verbundnetz Gas AG, European Energy Exchange AG and Leipziger Gruppe. These and other companies intend to participate in the Smart Infrastructure Hub. This will continue the successful cooperation between the City of Leipzig and regional companies within several smart city projects funded by the EU and the German government such as Triangulum and the European Energy Award. Leipzig will be delighted to encourage and support other smart city pilot applications by startups and established local companies.

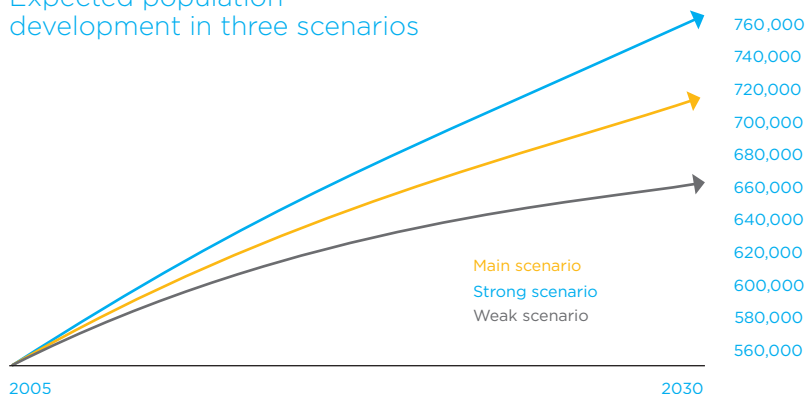
In addition to the expertise of the HHL Leipzig Graduate School of Management in entrepreneurship, cutting-edge research is already established in Leipzig in the areas of energy management, power engineering, environmental research, infrastructure planning and healthcare. This research can be better networked and digital expertise increased with an Inter-University Centre of Excellence for Digital Energy Management and Smart Cities. The Smart Infrastructure Hub Leipzig will be shaped locally by enterprise, research facilities and the startup scene. Supported by the Free State of Saxony and the City of Leipzig, the Hub will enrich the nationwide Digital Hub Initiative.

The City of Leipzig hereby declares its interest in participating in the Digital Hub Initiative.

LEIPZIG'S POPULATION AND ECONOMIC MUSCLE ARE BOTH GROWING BY LEAPS AND BOUNDS

- » *Alongside Munich and Frankfurt, Leipzig is the fastest growing city in Germany with a population increase of 90,195 since 2005*
- » *Leipzig's inhabitants are more satisfied than in any other German city*
- » *63,474 more employees and 29,375 fewer unemployed since 2005: In 2005–16, unemployment plummeted from 21.3% to 7.9%*

Expected population development in three scenarios



Leipzig has been expanding steadily since 2005 and has developed over the past few years into one of the fastest-growing cities in Germany. With the number of inhabitants now rising solely due to the number of people moving to Leipzig, natural population growth has been recorded since 2014. And by 2020, the birth surplus is set to rise to between 1,300 and 1,700 annually.

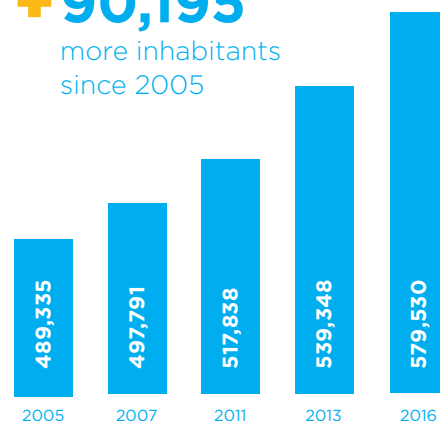
The strong scenario of the population forecast for 2030 compiled in 2016 anticipates that the number of inhabitants will continue to climb sharply by about 140,000 or 25% to around 722,000. This population growth will be accompanied by demographic changes with the numbers of children, young adults aged up to 25, and people aged 35–45 rising especially fast. In recent years, the average age of Leipzig's population has steadily fallen.

In a recent survey conducted by Leipzig's local authority, 79% of the participants (more than ever before) declared they were satisfied or even very satisfied with their lives.

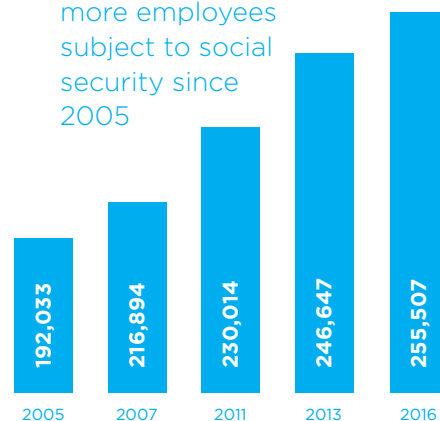
Whereas several years ago, one in five people in Leipzig were unemployed, unemployment in the city is now just 7–9%. Between 2005 and 2016, the number of employees subject to social security rose by more than 61,000 to 255,507, an increase of 18%.

Economic development is buoyed by the establishment and growth of well-known companies from Germany and abroad as well as the many SMEs in the city. Leipzig is the headquarters of many of the largest companies in central Germany and a production stronghold of international industry. Moreover, prestigious institutes such as Max Planck, Leibniz, Helmholtz and Fraunhofer as well as Leipzig University and other universities and colleges have turned Leipzig into an important centre of research.

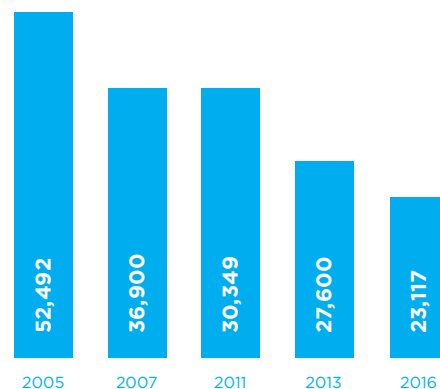
+ 90,195
more inhabitants
since 2005



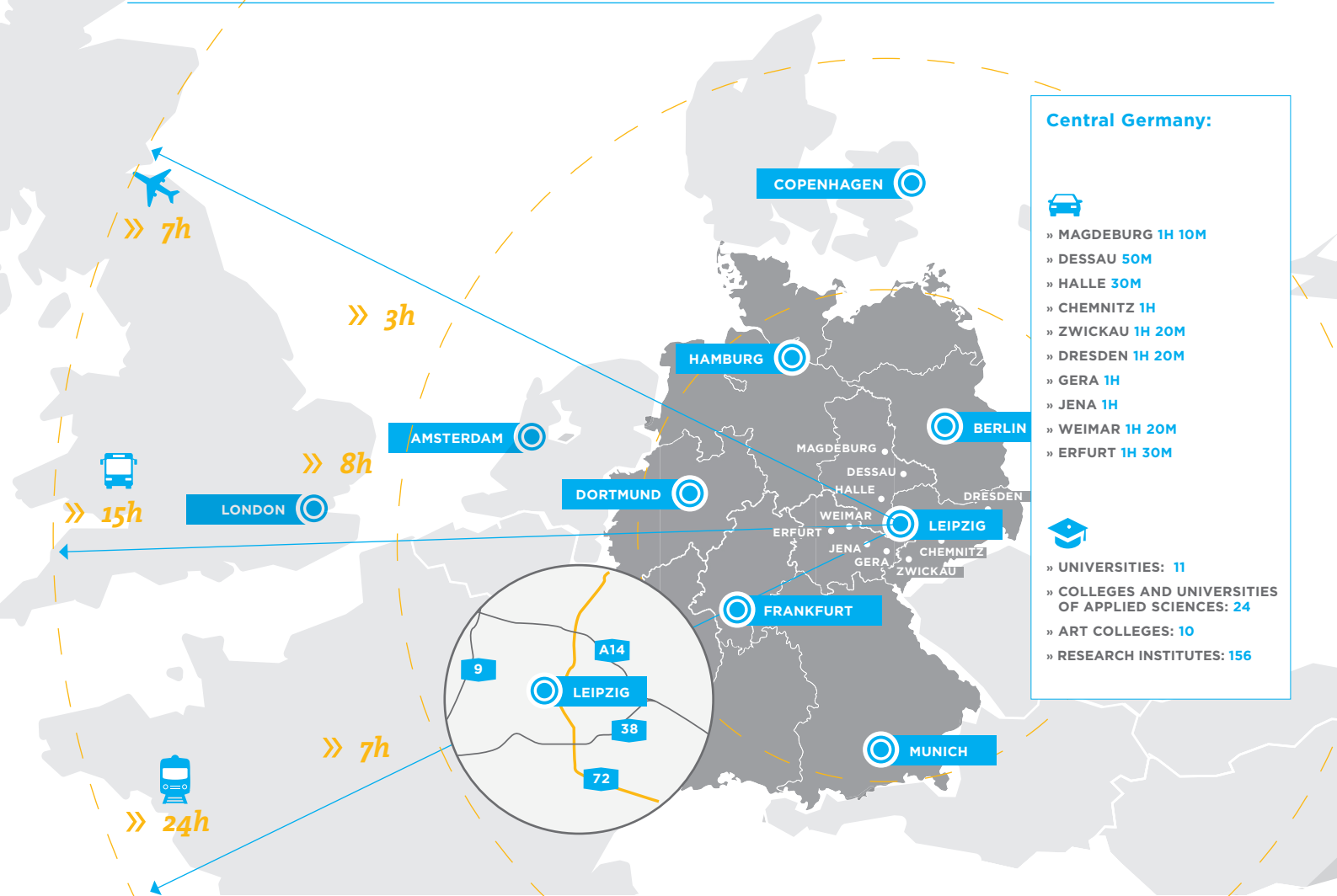
+ 63,474
more employees
subject to social
security since
2005



- 29,375
fewer unemployed
since 2005



LEIPZIG IS THE CENTRE OF THE EUROPEAN METROPOLITAN REGION OF CENTRAL GERMANY WITH A POPULATION OF OVER 2.25 MILLION



» *Leipzig is at the heart of central Germany*

» *City-centre tunnel offers state-of-the-art infrastructure for 25,000 passengers in the metropolitan region daily*

» *Research is coordinated within the Halle–Jena–Leipzig University Network*

The European Metropolitan Region of Central Germany brings together key corporations, local authorities, business chambers and professional associations from Saxony, Saxony-Anhalt and Thuringia with the shared aim of promoting the successful development and marketing of central Germany. The traditional economic, scientific and cultural region of central Germany is home to about 2.25 million people and includes the cities of Halle, Jena, Chemnitz and Magdeburg, all of which are no more than an hour away from Leipzig.

The Metropolitan Region of Central Germany is involved in several collaborative projects set up to sustainably boost innovation and competitiveness. This means additional points of contact for the Smart Infrastructure Hub Leipzig, such as the IMWS Fraunhofer Institute for Microstructure of Materials and Systems, the BioEconomy Top-Level Cluster and the Central German Chemical/Plastics Cluster as well as the project Hypos Hydrogen Power Storage & Solutions East Germany.

In July 1995, a cooperation agreement was signed between the University of Halle–Wittenberg, the University of Jena and Leipzig University with the aim of stepping up existing cooperation and strengthening joint projects in postgraduate training. This **University Network** supports interdisciplinary collaboration between the three universities. It also means that students can tailor their studies to their interests by providing for joint courses, the use of libraries and other institutions at partner universities, and the crediting of coursework and exams taken elsewhere.

LEIPZIG'S INTERNATIONAL CHARACTER IS SHAPED BY COMMERCE, LOGISTICS, SCIENCE, EDUCATION AND THE ARTS

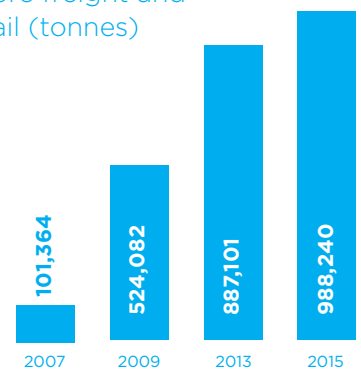
» *Logistics hub with European markets*

» *Active contacts throughout the world*

» *Schkeuditzer Kreuz interchange: Trimodal hub on the A9 and A14 motorways with intercontinental 24/7 airport*



+886,876
more freight and
mail (tonnes)



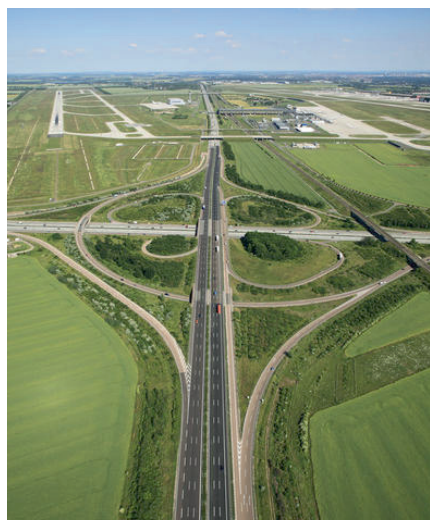
Leipzig's welcoming spirit is rooted in its heritage of commerce and trade fairs dating back to 1165. The city regularly hosts many international conventions, including OTWorld (International Trade Fair for Orthopaedics and Rehabilitation Technology), LINC – Leipzig Interventional Course (interdisciplinary conference for international experts on endovascular procedures) and MUTEK (International Trade Fair for Museum and Exhibition Technology). The annual Leipzig Book Fair is Germany's and Europe's foremost spring meeting place for the publishing and media sector with 260,000 visitors, 2,250 exhibitors from all over the world, and 3,200 events.

Leipzig is a logistics hub for international corporations such as DHL, AeroLogic, Lufthansa Cargo and Future Electronics. And thanks in particular to the 24/7 freight services at Leipzig/Halle Airport, Leipzig's highly motivated, well-trained labour pool, and the flourishing cooperation between higher education and industry, the local industrial sector benefits from first-class logistics and value-added services.

The transport ministers of the 52 member states of the International Transport Forum have met up in Leipzig with key figures from business and industry, international

organizations, civil society and research since 2008. Under the banner of 'Green and Inclusive Transport', ITF 2016 was attended by over 1,000 participants from around 70 countries.

Leipzig University (where about a fifth of the students are from abroad), HHL Leipzig Graduate School of Management (Germany's most international place of higher education, according to the DAAD German Academic Exchange Service), and Leipzig International School (with around 750 pupils from 60 nations) provide yet more examples of Leipzig's internationality.



Leipzig's international character is also demonstrated by its thriving arts scene. Several galleries and many artists from more than 20 nations including Neo Rauch (probably the most famous representative of the New Leipzig School) have set up shop at Baumwollspinnerei, a repurposed cotton mill. With its blend of art and industrial architecture, Baumwollspinnerei quickly rose to fame in the international art scene as one of the most interesting centres of studios and galleries of contemporary art in Europe. Its regular open days attract several thousand visitors. Aside from art, Baumwollspinnerei is also home to designers (including fashion designers), theatres, a cinema, and also several startups.

A COSMOPOLITAN, INTERNATIONALLY NETWORKED CITY

Leipzig has more than 20 city and project partnerships across the world, and is home to consulates general representing the Russian Federation and the United States of America as well as 15 honorary consulates. In addition, there are three international cultural institutes in the city.

International investors and skilled workers are addressed by business development agency Invest Region Leipzig GmbH (IRL), Leipzig Chamber of Industry and Commerce, and the district authorities of Greater Leipzig and North Saxony. The goal is to directly approach businesses, incubators and start-ups. IRL showcases the Leipzig region and its strengths in Germany and abroad and could ideally market the 'Digital Hub' seal of quality in close cooperation with the National Hub Agency.

» *Leipzig is home to 2 consulates general and 15 honorary consulates*

» *Invest Region Leipzig actively contacts international startups and investors and augments the National Hub Agency*



CONSULATES GENERAL

Russian Federation
United States of America

Workforce. Welcome.

www.work-in-leipzig.de

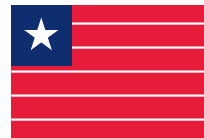
HONORARY CONSULATES

Bosnia and Herzegovina
Costa Rica
Democratic Republic of Congo
France

Italy
Kosovo
Liberia
Mongolia
Norway

Poland
Romania
Slovakia
Sri Lanka

Sweden
Ukraine



LEIPZIG HAS A LIVELY STARTUP ECOSYSTEM ATTRACTING FOUNDERS FROM ALL OVER GERMANY

Leipzig is experiencing a new wave of startups with an estimated 150–200 currently operating in the city. Whereas initially, startups in Leipzig focused on eCommerce – examples being **Spreadshirt** (now 500-strong) and **Unister** (which despite recent problems still has over 800 employees) – later on, they spread to areas like big data (e.g. **Data Virtuality**, **Webdata Solutions**, **Apiomat**) as well as areas of infrastructure such as energy (e.g. **energy-zmarkets**, **Rhebo**, **Senec/Deutsche Energieversorgung**) and mobility (**nextbike**, **ekoio**, **busnetworx**). Leipzig is better than anywhere else in eastern Germany at attracting startups from elsewhere. They either open branches there (e.g. **trivago**, **check24**, **verivox**) or even relocate lock, stock and barrel to Leipzig (e.g. **DIPAT**, **QLX**, **Sensape**, **food.de**, **Wundercurves**). Marketing as a Digital Hub could further increase the influx of international startups.

The regional startup scene benefits from a large number of different actors in Leipzig. There are currently 15–20 coworking spaces and incubators large and small in the city. Of the coworking spaces offering premises to freelancers, developers and startups, special mention should be made of **Basislager Coworking** with total floorspace of 1,700 sqm and **Delta Studios** with a size of 800 sqm. Others include Raumstation, Chaos Coworking, Contorhaus, Sekretär, South LE,

» *Leipzig has a host of successful startups, founder-relevant actors and event formats*

» *Leipzig currently attracts many founders from elsewhere because of its high quality of life and relatively low costs*

» *Numerous incubators and coworking spaces offer founders business premises, expertise and dialogue on floorspace totalling several hectares*

Rockzipfel and PlugandWork. In addition, there is a good selection of incubators for all types of founders such as the **BIC Business Innovation Centre** for technology companies (total area approx. 5,000 sqm), **Bio City Leipzig** serving the life sciences (about 20,000 sqm), the **Social Impact Lab** for social entrepreneurs (260 sqm), **SpinLab – The HHL Accelerator** for technology founders (currently about 1,600 sqm) and others (including InfAI and 2b ahead). **Makerspace Leipzig** offers an open-plan workshop on 420 sqm. In addition to consulting services, the **SMILE higher education network** provides space for university spin-offs. In March, **Starter Space** – a retail outlet for

startup products – was opened at the biggest shopping centre in central Leipzig. All in all, Leipzig offers premises for innovation with a total floorspace of several hectares.

Many of the widespread event formats for founders in Germany and abroad such as the **FuckUp Nights**, **Startup Weekend**, **Startup Safary**, hackathons, founders' breakfasts and discussion forums are held regularly in Leipzig. In addition, there is a variety of events devoted to startups such as **HHL International Investors Day** and the **accelerate@HHL** conference.

Successful startups and digital businesses in various sectors (selection)



- > 45 employees
- Founded in 2012
- Sector: Big data



- > 70 employees
- Founded in 2012
- Sector: Big data



- > 85 employees
- Founded in 2009
- Sector: Energy



- > 500 employees
- Founded in 2002
- Sector: eCommerce



- > 20 employees
- Founded in 2014
- Sector: Infrastructure



- > 40 employees
- Founded in 2013
- Sector: Big data

Leipzig is the city in eastern Germany with a positive relocation balance, including most recently:



- From Berlin
- Sector: eHealth



- From Zwickau
- Sector: Infrastructure



- From Munich
- Sector: Smart retail



- From Berlin
- Sector: eCommerce



- From Augsburg
- Sector: eCommerce

A healthy infrastructure is provided by numerous coworking space and activators, e.g.:



- 1,700 sqm
- Coworking
- Startups, freelancers



- 20,000 sqm
- Incubator
- Life sciences



- 5,000 sqm
- Incubator
- Tech companies



- 800 sqm
- Coworking
- Startups, freelancers



- 250 sqm
- Incubator
- Social entrepreneurship

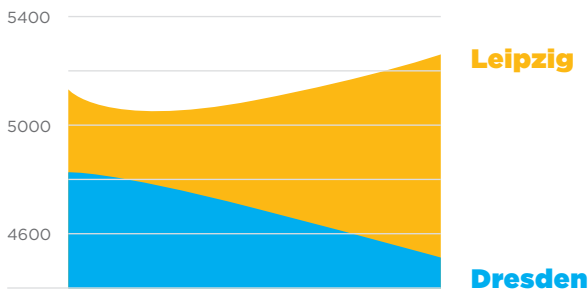
Events (selection)



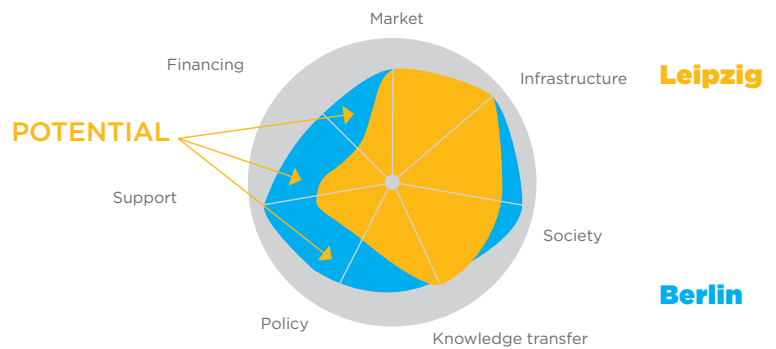
- Numerous events with 10–500 participants

DATA AND MEDIA COVERAGE VERIFY THE POSITIVE TREND AND THE POTENTIAL OF LEIPZIG'S STARTUP SCENE

Business registrations



Analysis



Generally speaking, the number of business registrations declines whenever an economy's doing well – a trend which is currently reflected in Germany as a whole. Strikingly, the number of new businesses in Leipzig has been rising since 2013, despite its recent rapid economic growth. Leipzig is profiting from its proximity to Berlin, Europe's foremost startup location. This trend will continue (partly due to rising overheads in Berlin) and looks set to intensify. To quote Frank Schmiechen, editor-in-chief of startup website Gründerszene: "Perhaps Leipzig is an alternative for entrepreneurs. Berlin is only an hour and nine minutes from Berlin by rail."

Mind you, it's not just the quantity of startups that's important, but also their quality. Despite the lack of objective metrics, expert opinions and media reports indicate a positive trend. Recently, there has been extensive coverage of entrepreneurship in Leipzig, all reporting that a major startup centre has emerged there. This is confirmed by articles in for instance **WirtschaftsWoche**, **Die Welt**, **Manager Magazin**, **Focus**, **Absatzwirtschaft**, **BrandEins**, **FAZ** and **Gründerszene** as well as on **deutsche-startups.de**.

An extensive empirical study of the startup scenes in Saxony by Assistant Professor Mario Geissler (Chemnitz University of Technology) shows that in four of the seven categories analysed (market, infrastructure, society and knowledge transfer), Leipzig isn't just in pole position in Saxony but also rivals other startup centres on a national level. However, the study also points out room for improvement in categories which could be addressed within the Digital Hub Initiative. The biggest deficit lies in the financing of startups, for nearly thirty years after German reunification, the capital stock of private individuals and SMEs is still far smaller than in other regions. Officially declaring Leipzig a Digital Hub would boost the interest of national and international investors in the city.

» **The number of business registrations is rising in Leipzig, bucking the German trend**

» **The study 'Founding in Saxony' (Chemnitz University of Technology) reveals several strengths in the ecosystem but also room for improvement**

» **Frequent media coverage about the flourishing startup scene in Leipzig**

FIVE POWERFUL CLUSTERS WHICH ARE BECOMING INCREASINGLY DIGITALIZED AND INTERCONNECTED

Under the motto 'strengthening the strengths', particular support is given to well-developed high-growth sectors. Leipzig's economic strategy is to back selected sunrise industries. The Office for Economic Development bundles a wide range of cluster development activities in order to boost Leipzig's economy in the medium term as effectively as possible. The Smart Infrastructure Hub has a positive impact on all these clusters and so superbly augments Leipzig's successful economic policy.



Energy & Environment
1,358 businesses
12,345 employees; 2015/2016 **+3.3%**



Automotive & Suppliers
766 businesses
16,655 employees; 2015/2016 **+15.3%**



Healthcare & Biotech
2,465 businesses
41,187 employees; 2015/2016 **+6.6%**



Logistics
1,706 businesses
35,015 employees; 2015/2016 **+5.5%**



Media & Creative Industries
4,515 businesses
30,013 employees; 2015/2016 **+1.7%**

» *Leipzig's economy is characterized by five clusters: Energy & Environment, Automotive & Suppliers, Healthcare & Biotech, Logistics, and Media & Creative Industries (including ICT)*

» *What they have in common is the provision of a modern social and urban infrastructure for Leipzig's residents and businesses*

Leipzig has a long history as an energy metropolis which began with the use of water power and logging. Lignite mining began back in 1704, and later on the gas and electric eras began. Since 1990, the use of renewable energies such as wind turbines and solar parks has steadily increased. With new business models enabled by digitalization, the energy sector in Leipzig is constantly evolving. Energy trading and the operation of virtual power plants form the basis for successful national and international business models. The experience gained from this multiple structural change is to be incorporated into the Smart Infrastructure Hub. The businesses and research centres in the Energy & Environment Cluster are becoming a major growth driver for Leipzig's economy (energiemetropole-leipzig.de). The NEU Energy & Environment Network was founded in January 2011 by regional actors and brings together more than 75 members.

The Automotive & Suppliers Cluster may be one of the youngest in Leipzig, yet it's also been one of the most influential ever since Porsche and BMW decided to build car plants in Leipzig, a move which also attracted suppliers. Both plants are the main development centres for electric cars within their corporations, which are also testing self-driving vehicles in Leipzig.

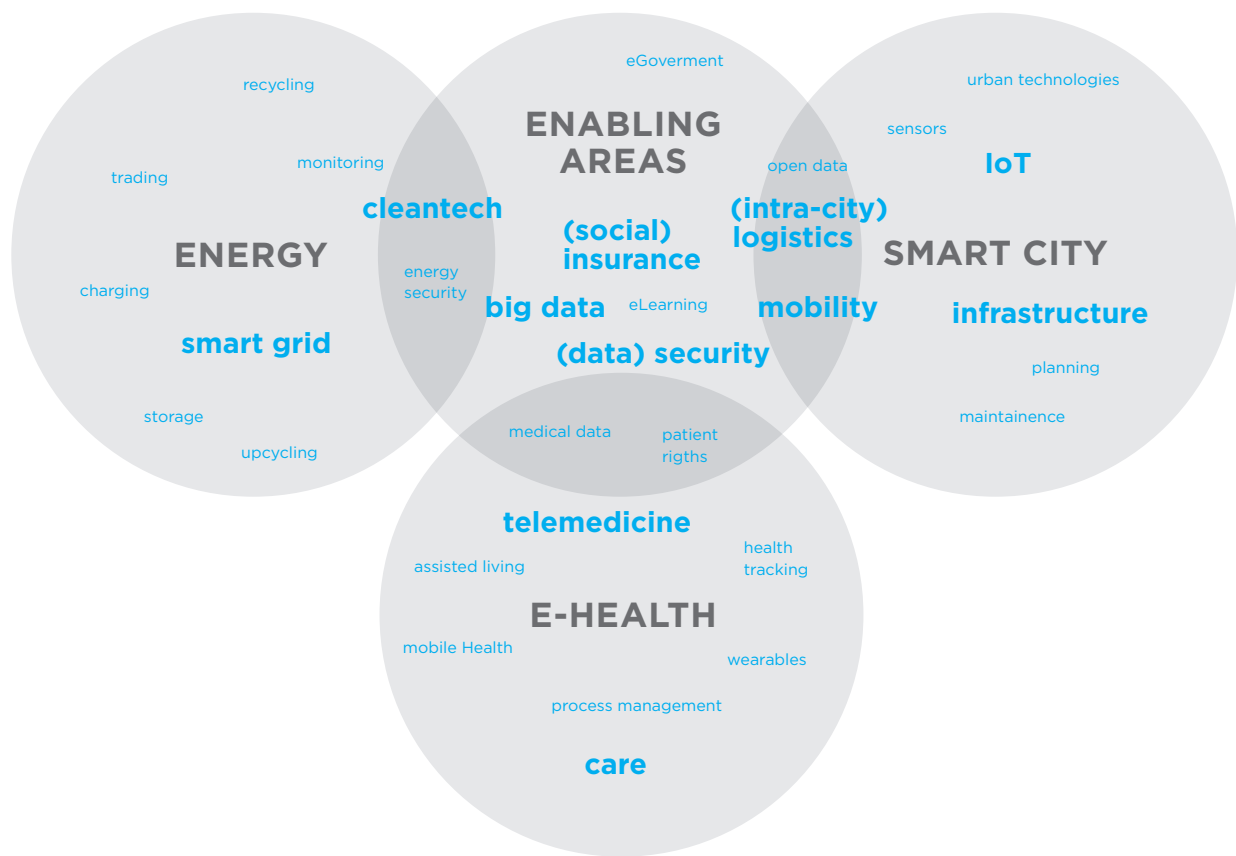
Leipzig is home to a wide range of advanced university medicine and research as well as regenerative medicine and biotechnology. Leipzig University, Leipzig University Hospital, Heart Centre Leipzig and the IZI Fraunhofer Institute for Cell Therapy and Immunology are just four of the many scientific institutes, hospitals and businesses making up the Healthcare & Biotech Cluster with over 38,000 employees. Not far away, research centres at the life science location

Bio-City Leipzig successfully collaborate with the biotech firms based there, benefiting from the area's compact size and abundance of synergy.

The Leipzig-Halle Logistics Network has represented the sector's interests in central Germany since 2008. With currently 124 members, it fronts the main players in the region – not just logistics providers but also research centres, universities, business chambers and local authorities. The Logistics Network's goals are to promote the members' joint business development and to provide strategic stimulus by means of innovation and know-how transfer.

The Media & Creative Industries Cluster is one of the driving forces behind Leipzig's economic success and is a cross-cutting industry connecting all the other clusters. With its seven sub-sectors – information and communication technologies, printing and publishing, broadcasting and film, arts and music, advertising and PR, architecture and design, and trade shows and services – it's closely linked to the rest of the economy and acts as a creative catalyst dominated by SMEs. Businesses in ICT have developed especially dynamically, with over 1,000 firms employing nearly 12,000 people.

VISION: 'SMART INFRASTRUCTURE HUB' – THE DIGITALIZATION OF SECTORS WITH A STRONG SOCIAL INTEREST



Smart infrastructure refers to the digitalization and smart networking of sectors with high social interest harnessing innovative technologies. In the past, supply infrastructure of this nature received heavy investment in Germany. Now, as digitalization gathers pace, this infrastructure can either be modernized – or could on the other hand be made obsolete by disruptive changes. Furthermore, in a democracy, the success of such technological developments depends on public acceptance. These are challenges which are particularly evident in the City of Leipzig. Although modern infrastructure was built in Leipzig after German reunification, nowadays it needs to keep up with the fastest population growth anywhere in Germany. Being a Smart Infrastructure Hub, Leipzig with its well-developed infrastructure and established actors could become a showcase for the use of innovative technologies in rapidly growing cities.

Key areas include the generation and usage of **renewable energy**, **smart city** approaches in networked smart cities, and **digital**

» *The Smart Infrastructure Hub Leipzig focuses on the digitalization and networking of industries with high social interest*

» *In Leipzig, there is special emphasis on energy supply, smart city approaches and digital healthcare (eHealth)*

» *In addition, enabling technologies supporting these sectors are addressed*

healthcare (eHealth). But it must be borne in mind that digital energy, smart city and eHealth applications depend on fundamental technological developments in many other areas such as **big data**, **(data) security**, **networked mobility**, **inner-city logistics and transport**, **cleantech** and the **IoT**. These cross-cutting areas are also addressed in Leipzig. Once dealt with separately, they are now becoming increasingly networked in a digital corporate world. One example is street lighting. In addition to providing weather-dependent lighting, state-of-the-

art street lamps can also recharge electric vehicles, compensate for power fluctuations via smart control, and help asthma sufferers by measuring air quality.

One of Leipzig's special strengths is that international corporations and young startups work hand in hand in the city's economic clusters, ensuring a breadth matching that of the key topic 'Smart Infrastructure'.

LEIPZIG IS INVOLVED IN MANY OTHER EU AND GERMAN INFRASTRUCTURE PROJECTS

The City of Leipzig is a partner in the project consortium **Triangulum** – an international Horizon 2020 consortium for smart cities in the EU. Technical, economic and social innovations are combined in sustainable concepts. The aim of the project is to develop and conclude smart city strategies that can be applied throughout Europe. Under the ongoing smart city project Triangulum, an intensive participation process on various aspects of the smart city has been underway since 2015 in the form of future labs and discussion forums with local actors and companies. In international dialogue, the City of Leipzig is developing a practical strategy paper taking into account pilot projects carried out in Leipzig as a whole or restricted to West Leipzig, which is where the Baumwollspinnerei arts centre is located.

In spring 2017, a follow-up application was submitted under the EU programme Horizon 2020 as a Lighthouse City, which is expected to provide additional funding. The focus area is Baumwollspinnerei and the adjoining district of West Leipzig. This area represents the challenges of integrated urban development in Leipzig and is to be a test lab for smart applications with the aid of a system of Smart City District Management. The main topics are energy management and ICT, including smart energy supplies, smart metering, the local use of waste heat for cooling and heating, neighbourhood electricity storage, electric fleets, and a neighbourhood management app.

In its concept paper '**Leipzig – City of Smart Mobility**', the City of Leipzig has undertaken

to promote electric vehicles. More than 40 individual schemes have come about thanks to the close involvement of the private sector and local actors. Apart from organizing the necessary infrastructure and concrete business models, one important aspect being addressed is the impact of electromobility on infrastructure networks. Under the slogan "Leipzig's charging ahead!", Leipzig actors have been involved in about 50 projects at the interfaces of electric vehicles, energy systems and transport concepts within the **Bavaria-Saxony Electric Vehicle Showcase**. Expertise from Leipzig is also a cornerstone of the **WindNode** project – platform for smart energy from north-east Germany.

In Leipzig, smooth electric driving is enabled by a recharging infrastructure comprising 140 charge points at 60 electric vehicle charging stations. In the research project **Streetlight Parking**, a charging system has been developed in which street lamps can be converted into charging points for electric cars. Since March 2016, four LED street lights with EV charge points have been installed.

Since 2011, Leipzig has entered the **European Energy Award**, a European certification process for practical climate protection and energy efficiency policy in towns and cities. Every three years, an external energy auditor checks whether local authorities still comply with the requirements to keep the title '**European Energy and Climate Protection City**'. Being made a Digital Hub would support the further development of existing endeavours.

Leipzig took the lead in the implementation of the R&D project **LOGICAL**, under which the establishment of a logistics cloud for the Leipzig-Halle region was taken forward.

» *Strong synergies are generated by numerous EU and German infrastructure projects (both implemented and pending)*

» *Some of the project partners for the Smart Infrastructure Hub already know each other from successful projects*



LEADING CORPORATIONS IN LEIPZIG ARE ADDRESSING FUTURE INFRASTRUCTURE

The rise of Leipzig in recent years is inextricably linked to the activities of leading international corporations in the city. First of all, mention should be made of the energy and utilities sector. Leipzig is home to **VerbundnetzGas AG**, the single biggest corporation in eastern Germany. With an annual turnover of around €8 billion, it covers the entire value chain of the gas industry. The **European Energy Exchange** was founded in Leipzig in 2002, now operates in 37 countries around the world, and has 12 branches worldwide. **Leipziger Gruppe** is one of Germany's largest municipal companies and supplies electricity, water, mobility services and more besides. The **enviaM Group** (whose majority shareholder is Innogy SE) generates revenue of about €5 billion in sales of electricity and gas as well as the operation of the related networks. French company **Veolia** manages its east German water, sewage and regional transport arm in Leipzig. Founded in 2006, **VERBIO AG** is almost still a startup and one of the largest biomass recyclers in Europe. IT group **Arvato Bertelsmann** employs around 1,000 people in Leipzig to develop software for the energy sector, and **Siemens** produces switchgear and compactors in Leipzig.

» *Many leading international businesses operate in Leipzig and central Germany – and are shaping tomorrow's infrastructure*

» *Particular importance is currently attached to the energy sector*

» *A key role is played by numerous startups with innovative digital solutions to infrastructure problems such as energy2market and Clean Energy Sourcing*

The advent of electric vehicles has created synergy in Leipzig with both **BMW** (which builds its electric cars in Leipzig) and **Porsche** (which produces two-thirds of all its vehicles in Leipzig). Moreover, automotive manufacturers are increasingly becoming mobility providers in connection with smart cities. Such approaches are also relevant to logistics contractors in Leipzig such as **DHL** (Germany's second-largest freight airport and European hub in the global logistics network) and **Amazon**.

Regarding healthcare infrastructure, **Leipzig University Hospital**, one of Germany's top five in terms of patient numbers, and **Heart Center Leipzig**, the biggest of its kind in the world, should be emphasized. **Haema** is Germany's largest blood donation service. Numerous health insurance companies such as **AOK Plus** and **Barmer GEK** have large branches in Leipzig.

In addition, there are numerous startups in Leipzig working in areas such as infrastructure planning (e.g. **QLX**), infrastructure management (e.g. **energy2market**, **Clean Energy Sourcing**, **Eigenheim Manager**), the protection of critical infrastructure (e.g. **Rhebo**) and its optimization (e.g. **Expli-cates**, **Senec/Deutsche Energieversorgung**) as well as mobility (e.g. **nextbike**, **busnet-worx**, **ekoio**) and eHealth (e.g. **Sonovum**, **VivoSensMedical**). The companies **Clean Energy Sourcing** and **energy2market** founded in 2008 and 2009 are now among the businesses with the highest sales in central Germany.

Opportunity: Better networking with startups

ESTABLISHED



Opportunity: Number rising, sharpening their profile

STARTUPS



LEADING CENTRES OF RESEARCH AND EDUCATION FOR INFRASTRUCTURE AND ENTREPRENEURSHIP IN LEIPZIG

Leipzig's higher education sector trains excellent junior staff and founders. Intensive, internationally acclaimed research is conducted in fields such as power engineering and energy management, infrastructure management, environmental research and healthcare management. Prominent scholars there include Professor Thomas Bruckner (holder of the Vattenfall Europe Chair of Energy Management and Sustainability at Leipzig University and a member of the World Climate Forum) and John E. Morton (Mercator Foundation Senior Fellow at HHL and former environmental and energy policy adviser to Barrack Obama). HHL Leipzig Graduate School of Management is also one of the top business schools in Europe and places emphasis on entrepreneurship. HHL has two important aspects of a Digital Hub

by being declared both the best university for founders (according to the Stifterverband initiative and the Financial Times Entrepreneurship Ranking) and the most international university in Germany (according to the DAAD German Academic Exchange Service).

In addition to the universities, relevant research in the Smart Infrastructure Hub is carried out at the Helmholtz Centre for Environmental Research (UFZ) with 1,100 members of staff, the German Biomass Research Centre with 150 employees, the Fraunhofer Centre for International Management and Knowledge Economy, and the Leibniz Institute for Tropospheric Research. One special feature is the **Halle-Jena-Leipzig University Network**, which enables

liaison and cooperation between these institutions and is a good example of Leipzig's leadership role in the Metropolitan Region of Central Germany. The networking of researchers between different institutions also harbours other opportunities. One of the network's most successful research projects is the iDiv German Centre for Integrative Biodiversity Research, which is run in conjunction with UFZ as well as four other non-university research institutes. In just four years since its foundation, iDiv has grown to become one of the world's leading research centres. In 2016, its funding was confirmed for another four years by the DFG German Research Foundation.

» *Leipzig has an outstanding research sector specializing in infrastructure, environmental and energy research as well as entrepreneurship*

» *Apart from the universities, it includes UFZ, DBFZ, Fraunhofer IMW and TROPOS as well as iDiV all dealing with infrastructure matters and environmental issues*

» *Halle-Jena-Leipzig University Network*

EXISTING INSTITUTIONS:

Leipzig University

Institute for Infrastructure and Resource Management

- Vattenfall Europe Chair of Energy Management and Sustainability
- Chair of Political Economics (especially environmental research in institutional economics)
- Chair of Environmental Engineering in Water Management/Environmental Management in SMEs
- Chair of Bioenergy Systems

Institute of Urban Development and Construction Management

- Chair of Urban Management
- Chair of Construction and Redevelopment
- Chair of Construction Management
- Chair of National and European Spatial Development

Leipzig University Hospital

Institute for Applied Informatics (adjunct institute)

HTWK Leipzig University of Applied Sciences

Faculty of Faculty of Mechanical and Energy Engineering

- 20 chairs, including Power Plant Engineering/Energy Management, Building Services Engineering, Environmental Protection/Recycling, Simulation of Energy and Technical Systems, Fluid Energy Machines/Regenerative Energy

HHL Leipzig Graduate School of Management

- Mercator Foundation Senior Research Fellow
- Ludwig Fresenius Centre for Health Care Management and Regulation

Helmholtz Centre for Environmental Research - UFZ

- Basic and applied research in the areas of Earth and the Environment, Energy and Health; around 1,100 members of staff

German Biomass Research Centre

- Applied research into bioenergy systems, biochemical and thermochemical conversion and biorefineries; about 140 members of staff

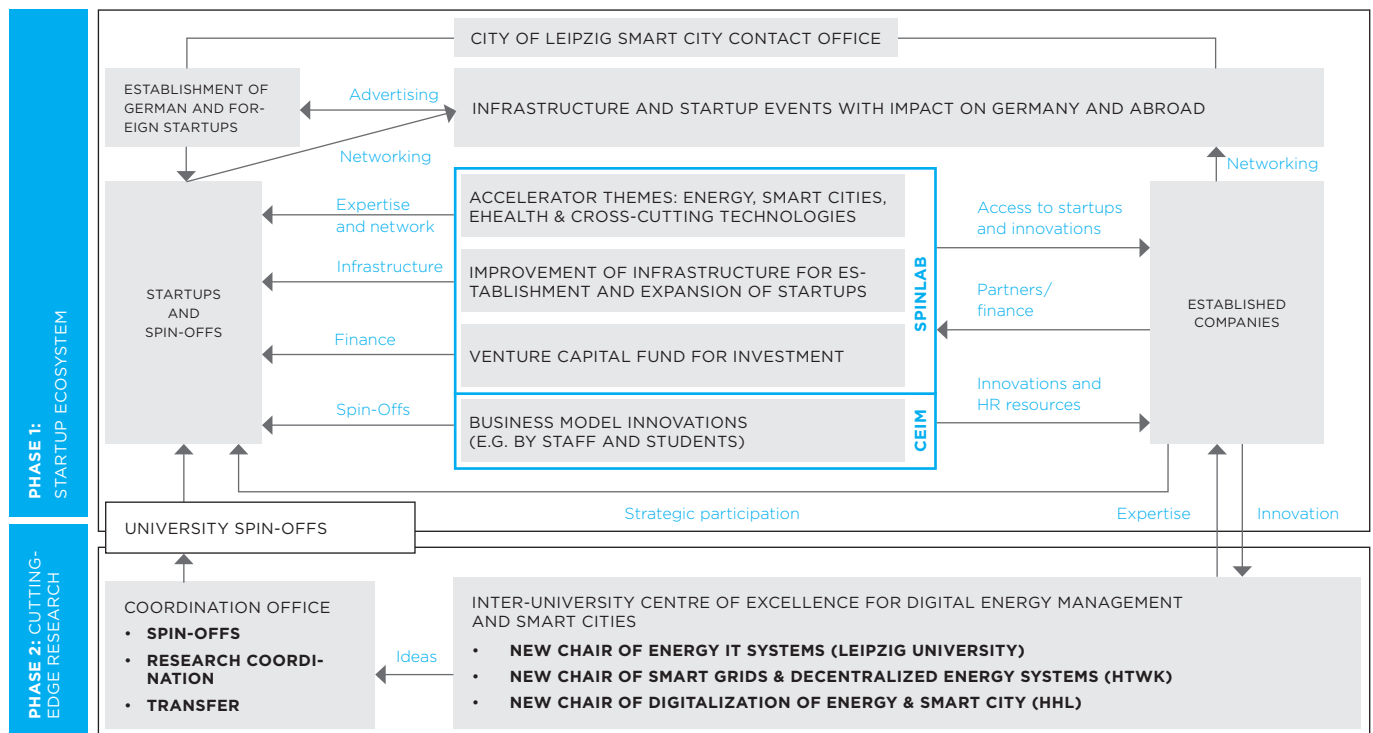
IMW Fraunhofer Centre for International Management and Knowledge Economy

- Department of Sustainability Management and Infrastructure Economics

Leibniz Institute of Troposphere Research

German Centre for Integrative Biodiversity Research

THE SMART INFRASTRUCTURE HUB STRENGTHENS THE STRENGTHS OF EXISTING ACTORS AND ADDS USEFUL MODULES



» **Phase 1: SpinLab Accelerator, an intermediary between startups and established companies in the field of infrastructure, also offers support, premises and financing**

» **This will be supplemented by the expansion of the City of Leipzig's existing Smart City Contact Office as well as modifications of existing event formats**

» **The concept hence addresses the potential for improvement in the areas of funding, support and policy identified in the 'Founding in Saxony' study**

» **Phase 2 provides for an Inter-University Centre of Excellence to supplement existing research activities**

Under the Smart Infrastructure Hub Leipzig, the strengths of key players in Leipzig are to be bundled and expanded in order to **strengthen existing strengths** and address the potential for improvement identified in the study 'Founding in Saxony', i.e. support, funding and policy.

The central actor in Phase 1 of the concept is the successfully established **SpinLab – The HHL Accelerator** tackling relevant themes in the areas of energy, smart cities, eHealth

and cross-cutting technology. This will enable valuable support services to be made available to startups in these areas. Additional **office space** (including **makerspace** and co-living space) will be created for growing startups. A **venture capital fund** currently being set up will provide capital for seed-phase startups. An important aspect is networking established enterprises in Leipzig with young entrepreneurs, especially in order to implement **pilot projects**. The **CEIM** Centre for Entrepreneur-

ial and Innovative Management at HHL, for instance, holds creative workshops with established companies and students to encourage additional spin-offs and business model innovations (intrapreneurship). Existing event formats in the startup sector will be augmented by tracks in the areas of energy, smart cities and eHealth, while events in the field of infrastructure will be supplemented by startup modules. In order to secure municipal support for infrastructure projects, the activities of the City of Leipzig's existing **Smart City Contact Office** will be extended, including the addition of a planned budget for pilot projects. By being declared a Digital Hub, **business development agency Invest Region Leipzig** would have another strong advertising message and would be able to supplement the activities of the central Hub Agency.

In the second phase, the existing research activities will be strengthened and their coordination improved by an Inter-University Centre of Excellence for Digital Energy Management and Smart Cities, in particular by means of additional digital competencies (ICT).

The main modules are explained below.

SPINLAB – THE HHL ACCELERATOR: AN ESTABLISHED STARTUP PROGRAMME WHICH CAN ACT AS THE HUB AGENCY

SpinLab – The HHL Accelerator (www.spin-lab.co), a cooperation project by the internationally renowned creative space Baumwollspinnerei with the world-famous HHL Leipzig Graduate School of Management, is a unique combination of a creative atmosphere, entrepreneurial expertise and network. A six-strong international team is currently working full-time and part-time at SpinLab, which will be supplemented as a local Hub Agency by a local event management centre. Apart from a startup bonus of €6,000 (from the city of Leipzig), the six-month support programme for early-phase startups offers intensive consulting (including 70 well-known mentors), networking (with established companies and investors), coworking, technology access, a recruiting network, and an international exchange programme with partner accelerators in California, Israel and Chile. The carefully selected participants (3–5% of applicants) have so far come from Berlin, Munich, Hamburg, Cologne, Düsseldorf and Dresden, and have during the course of the programme relocated to Leipzig – in some

» *As a Hub Agency, SpinLab – The HHL Accelerator would act as a successful, established support programme (consulting/mentoring, network with investors and businesses, access to technology, recruitment network, international exchange programme) for seed-phase startups*

» *Figures show that SpinLab's startups have done extremely well and are nationally and internationally very competitive*

» *SpinLab is already supported by numerous partner companies, mentors and investors – which in future will increasingly come from energy, smart city, eHealth and cross-cutting technologies*

22 / 24
SUPPORTED STARTUPS
OPERATIONAL, 1 MERGED

€10.9m
IN FUNDING HAS
BEEN MOBILIZED

>100
NEW JOBS CREATED

#22
AWARDS WON



cases for the long haul. SpinLab also operates a coworking space for alumni startups. As a Digital Hub, international startups can be increasingly included in the programme (currently about a third of applicants are from abroad) and be based in Leipzig.

SpinLab brings startups together with the established companies funding SpinLab. The current partners include Porsche, Deutsche Postbank, DELL, Dürr AG, the Madsack Group, KPMG, Grazia Equity, TGFS and MBG Sachsen. Corresponding to a Digital Hub, a new partner model for companies will be established in the areas of energy, smart city and eHealth, with industry experts actively involved as mentors.

With a survival rate of currently just under 90%, approximately €11 million of acquired capital, more than 100 jobs created and 22

awards won, SpinLab startups are very successful compared to similar projects in Europe. Its healthy reputation is also evident from the arrival of delegations and guests from all over the world (including Russia, Korea, China, the UK, the USA and Israel), above all King Willem-Alexander and Queen Maxima of the Netherlands, as well as the 70–80 million press and media contacts achieved (including ZDF, Handelsblatt, Wirtschaftswoche, Bild, Focus and FAZ). Over the past two years, SpinLab has conducted more than 140 internal workshops and events (e.g. Startup Safari Leipzig, Demo Days, Community Parties) and hosted over 110 events (including b-to-v, German Accelerator and FuckUp Night).



The Dutch royal couple and the Prime Minister of Saxony visiting SpinLab

SPINLAB WILL BECOME A LEADING ACCELERATOR PROGRAMME FOR STARTUPS AND ESTABLISHED BUSINESSES IN SMART INFRASTRUCTURE

SpinLab's existing partnership model will be further developed towards smart infrastructure. Each class (eight startups for six months) will include two startups from the fields of energy, smart cities, eHealth and enabling technologies (e.g. big data, data security, mobility, logistics and IoT). To this end, Gold Partners will be signed up for the areas of energy (VNG), smart cities (Leipziger Gruppe) and eHealth (AOK Plus), which will also be involved in the selection process and be given a seat on the advisory board (as well as all the benefits of Silver and Bronze partners). Letters of intent have been received from these corporations. In addition, Silver Partners will be involved from relevant sectors who will launch **pilot projects** with the startups, attend joint innovation roundtables, and be given access to a sector-specific international startup database (as well as all the benefits enjoyed by the Bronze Partners). Companies with cross-cutting interests, such as consultants and investors, will be given Bronze

Partnership, which includes access to all startups via workshops and mentoring, our trend report and external communication as partners of SpinLab. High importance will be attached to networking startups with established companies, which is already very successful at SpinLab (several current partners use products from alumni startups and some have invested).

» *SpinLab programme to focus on key topic of smart infrastructure with emphasis on energy, smart energy and eHealth*

» *Potential partners include numerous leading companies in the region*

» *Private sector to finance overheads and be granted access to startups and pilot projects*

SECTOR FOCUS:

ENERGY

SMART CITY

eHEALTH

Gold Partners

- Aim: 'Own accelerator' (lead)
- Defining key areas/sectors for future classes
- Involved in selection process
- Chair of advisory committee for strategic further development
- Plus all benefits of Silver Partners

**Verbundnetz
Gas AG**

L
Leipziger

**AOK
PLUS**

Silver Partners

- Aim: 'Innovation network' (follow)
- Innovation roundtables
- Pilot projects with startups
- Access to industry-specific startup database
- Plus all benefits of Bronze Partners

eeX

verbio
Biofuel and Technology

DELL EMC

arvato
BERTELSMANN

Under
discussion

Bronze Partners

- Aim: 'Meeting startups' (various sectors)
- Access to trend report
- External communication
- Workshops/mentoring
- Invitation to all SpinLab events

Deutsche Bank

DZ BANK

KPMG

Heinz DÜRR Invest GmbH

MADSACK

C/M'S
Law, Tax

quarton

GRAZIA

taskforce
Management on Demand AG

**MITTELSTÄNDISCHE
BETRIEBSUNTERSTÜTZUNG
SACHSEN**

Stadt Leipzig
Amt für Wirtschaftsförderung

PORSCHE

TGFS
Technologie-Unterfonds Sachsen

FOUNDER CENTRE AT BAUMWOLLSPINNEREI TO BE EXPANDED

Baumwollspinnerei, an internationally known art hotspot featured on the front pages of *The Guardian* and *The New York Times*, is home to a large number of creatives from diverse areas. One prominent crowd-puller is the gallery Eigen + Art featuring artist Neo Rauch. Baumwollspinnerei's profile will be strengthened by the relocation of two theatres and the Museum of Natural History. Startups have been based here ever since Baumwollspinnerei was reopened in its current form, including online furniture dealer SMOW, Green Heritage Wasserkraft (a developer of small-scale



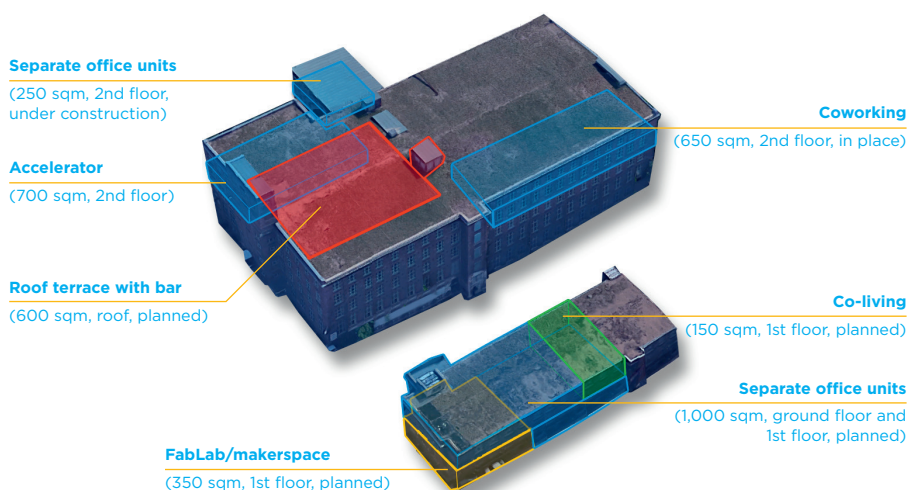
» *SpinLab operates an area of 1,600 sqm at Baumwollspinnerei, a world-famous creative zone*

» *This can be quickly expanded to 3,700 sqm in connection with the Digital Hub while planned offerings such as makerspace, Co-Living-Lab and roof terrace will also be available to local artists and the Museum of Natural History*

» *Central facilities such as a café and the lounge are already open*

Integration into existing buildings

- Catering and event rooms already in place
- 3,000 sqm hub



water turbines), Rhebo (protection for critical infrastructures) and EPAK (maritime satellite antennae).

The SpinLab, established on the grounds of Baumwollspinnerei in 2015, currently has around 1,600 square metres of space for the accelerator programme as well as a coworking space for alumni startups with its own gigabit fibre-optic connection. Plans are in place to expand this area with additional offices for startups, a roof terrace, a makerspace, and the Co-Living-Lab, for which further options exist apart from the refurbishment of Unit 11. (Letters of intent have already been received from the owner and the management team.) The government of Saxony has signalled that it will fund the project. This expansion programme will also benefit existing tenants, who can use the shared roof terrace and house guests in the Co-Living-Lab. As well as rooms for short-term guests, the Co-Living-Lab offers accommodation for several months to startup founders and visiting artists from abroad. Before its completion, there are already four guest apartments on the premises. In the makerspace, startups can get down to work and artists can stretch their own canvases and work on sculptures, while the Museum of Natural History and the Halle 14 Art Club develop educational, interactive concepts for school students.

Central facilities such as a café with a beer garden and a conference lounge are already available. Baumwollspinnerei's grounds cover an area of about 100,000 square metres and are to be transformed into a smart neighbourhood under the EU smart city project InnoLever with its own energy supply.

EARLY-PHASE STARTUPS TO BE FINANCED BY A PRIVATE VC FUND



The study 'Founding in Saxony' highlights potential for improvement in the financing of startups. For this reason, a private venture capital fund (working title: 'SpinCap') with a **volume of €10–20 million** is to complement the very active semi-state funds in the region. The investment fund will largely be financed by employers, family offices, large corporations from central Germany, and state actors as limited partners. Together with lead investors, the fund will invest tickets ranging from €100,000 to €500,000 mainly in early-phase technology startups from central Germany.

This co-investment strategy will enable the partner model and SpinLab's investor network to be leveraged and financing rounds to be concluded as quickly as possible. SpinLab currently has contacts among well over 300 investors in Germany (business angels and venture capital funds) and addresses them as lead investors for startups. Being a Digital Hub will make even more international investors aware of Leipzig and the startups there.

» **Private VC fund ('SpinCap') with a volume of €10–20m to co-finance early-phase startups in central Germany**

» **Good ties with German and international investors to be leveraged**

» **Implementation already begun**

The implementation of the VC fund has already begun. Two active business angels and investment fund experts with over ten investments have come on board as partners: Dirk Frohnert (who spent eleven years with J.P. Morgan) and Björn Bauermeister (ten years with BNP Paribas). In addition, Dr Frank Stummer – a serial entrepreneur with two successful exits, an active business angel, and an expert on VC and industrial software – has also been signed up as a venture partner. Meetings currently underway are expected to result in the addition of two or three more venture partners.

€10–20m
PLANNED VOLUME

€100–500k
INITIAL INVESTMENT

SEED/TECH
TARGET GROUP STARTUPS

CEIM AT HHL CONDUCTS INNOVATION PROJECTS WITH CORPORATE EMPLOYEES AND STUDENTS



The CEIM Centre for Entrepreneurial and Innovative Management at HHL Leipzig Graduate School of Management conducts various creative formats. Its **Open Innovation Labs** are innovation projects lasting a period of months with existing corporations in which new business models are jointly developed and implemented by mixed teams comprising HHL students and members of staff. They have already been successfully carried out with Porsche, E.ON, the top-level cluster BioEconomy and Deutsche Postbank. The somewhat shorter **Co-Creation Labs** are public business plan seminars in which HHL students develop completely new startup concepts. However, ideas can also be introduced and worked up by external partners.

In addition, **Startup Boot Camps** are held over a period of a few days with students (mainly of technical subjects) from various partner universities in the region. So far, students from HTWK Leipzig University of Applied Sciences, the Hasso Plattner Institute in Potsdam and Leipzig University have taken part. CEIM also organizes the HHL International Investors Day – a leading conference for investors in central Germany.

As part of the Smart Infrastructure Hub, CEIM's various formats will be increasingly focused on energy, smart cities and eHealth.

» *CEIM at HHL offers various formats to encourage foundations, spin-offs and business model innovations by students and corporate employees such as Open Innovation Labs, Co-Creation Labs and Boot Camps*

» *Reference projects with Porsche, E.ON, BioEconomy Cluster, the Hasso Plattner Institute and Leipzig University*

» *Increasing focus on infrastructure topics, especially energy, smart city and eHealth*

Open Innovation Lab testimonials:

- Deutsche Postbank
- E.ON
- BioEconomy Cluster
- Porsche

Boot camp testimonials

- Hasso Plattner Institute
- HTWK Leipzig University of Applied Sciences
- Leipzig University

NUMEROUS EVENTS PROVIDE OPPORTUNITIES FOR NETWORKING AND DIALOGUE

EXAMPLES OF EXISTING FORMATS

HHL International Investors Day

- About 200 visitors, including founders, investors and established companies
- Previous speakers include Lukasz Gadowski (TargetGlobal), Michael Otto (Otto Group), Heinz Dürr (formerly Deutsche Bahn AG, Dürr AG), Stefan Groschupf (Datameer Inc.), Detlef Riesner (Qiagen)
- Several founder awards (including financial prizes)
- Opportunity: Integration of energy, smart cities and eHealth

East German Energy Form

- Congress for the energy sector with distinguished participants
- Previous speakers include Sigmar Gabriel (German Ministry for Economic Affairs and Energy), Stanislav Tillich (Prime Minister of Saxony), Günther Oettinger (former European Commissioner for Energy), Tuomo Hatakka (Vattenfall), Mike Winkel (E.ON)
- Opportunity: Integration of Startups (energy, smart city)

INTEC

- International trade fair for machine tools, manufacturing and automation
- Opportunity: Integration of startups (energy, smart cities, big data, data security); integration of creative industries

Leipzig Healthcare Forum

- Congress for the healthcare sector
- Opportunity: Integration of startups (eHealth)

bionection

- Partnering conference for technology transfer in the life sciences
- Opportunity: Integration of eHealth

OTWorld

- International trade fair and congress for orthopaedic and rehabilitation technology
- Opportunity: Integration of startups (eHealth)

LINC Leipzig Interventional Course

- Interdisciplinary congress for global experts to discuss endovascular surgery
- Opportunity: Integration of startups (eHealth)

ITF International Transport Forum

- Discussion platform for over 1,000 delegates from around 70 countries including transport ministers of 52 states
- Opportunity: Integration of startups (mobility, logistics) and existing companies

HHL Energy Club Conference

- Student-hosted conference with about 200 participants, above all students and energy utilities
- Case study competition
- Opportunity: Integration of startups

accelerate@HHL conference

- Student-hosted conference with about 200 participants, above all students and founders
- Opportunity: Integration of energy, smart city and eHealth

Specialist congresses of the Leipzig Energy Forums

- About 10 thematic congresses (e.g. marketing, management control, etc.) for energy utilities
- Opportunity: Integration of startups

Expert meetings hosted by NEU

- Congress for energy utilities with about 100-150 delegates
- Opportunity: Integration of startups

High-Tech Venture Days

- Meeting for international investors and startups in Dresden
- Focus on energy and smart cities
- Opportunity: Networking with Leipzig startups

Existing events in the field of startups – such as the HHL International Investors Day, the accelerate@HHL conference and the High-Tech Venture Days in Dresden – are to be supplemented by tracks in the fields of energy, smart city and eHealth. Furthermore, events in the field of infrastructure such as the East German Energy Forums, the HHL energy club conference, INTEC and the ITF International Transport Forum stand to benefit from startup-related supplementary formats. This will result in a varied range of events with international relevance for young companies at the intersections between startups and energy, smart cities and eHealth.

» **Numerous event formats for startups and infrastructure companies are already established in Leipzig, especially in energy**

» **Existing formats to be augmented by startup, energy, smart city and eHealth modules**

» **Messe Leipzig willing to collaborate**

In addition, these events could be a suitable occasion for visits by international guests invited by the central Hub Agency. Since

many events are co-organized by Leipziger Messe, the fact that it has indicated its willingness to collaborate is invaluable.

LEIPZIG'S SMART CITY CONTACT OFFICE ENABLES PILOT PROJECTS FOR STARTUPS AND ESTABLISHED COMPANIES

The City of Leipzig is a Follower City in the EU project Triangulum. This Smart City project and the associated process of participation and conceptualization are the responsibility of the Office for Urban Regeneration and Residential Development. As the Smart Infrastructure Hub takes shape, this department can team up with the Office for Economic Development to participate in the networking of startups and established companies with political and administrative actors and help overcome bureaucratic hurdles. International startups in particular will benefit from the coordination of the various statutory directives and regulations without language barriers. Future project consortia for funding applications

can be augmented with suitable startups. An annual local authority budget of around €350,000 is to be set up for the rapid, unbureaucratic implementation of Smart City pilot projects.

» *The existing Smart City Contact Office coordinates projects and applications in Leipzig*

» *Pilot projects can be easily implemented through a municipal project budget*

“Smart City is impossible without the city”



EXISTING CUTTING-EDGE RESEARCH WILL BE EVEN BETTER COORDINATED AND SUPPLEMENTED BY STRONG DIGITAL EXPERTISE

As has already been made clear, just as in in the healthcare sector, enormous research expertise already exists in infrastructure matters such as the energy sector, power engineering, urban planning and environmental research. These actors can be networked through an **Inter-University Centre of Excellence for Digital Energy Management and Smart Cities**. The aims are to bundle the expertise of the various institutions, encourage joint research and projects, and combine network access. This will be facilitated by setting up a Coordination Office which is responsible for managing the Inter-University Centre of Excellence, planning events such as workshops for members, keeping track of members' research projects and activities, identifying potential synergy, and seeking potential start-ups – which could be introduced by CEIM in the form of Boot Camps and Open Innovation Labs. In addition, the Coordination Office will make academic personnel and students aware of the possibilities of start-ups in these areas and draw their attention to relevant EU and national funding programmes. The Coordination Office could be anchored in the SMILE university startup network, the Municipal Energy Sector Research Unit (Leipzig University) or NEU e.V.

In addition, the existing competencies will be supplemented by three new university chairs addressing digital expertise in applied research. For example, a new Chair of



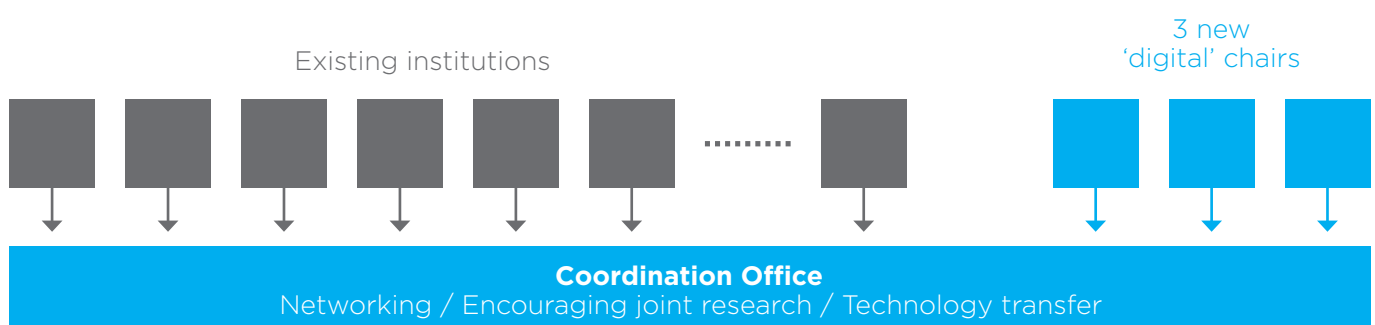
Energy IT Systems (University of Leipzig), a Chair of Smart Grids & Decentralized Energy Systems (HTWK), and a new Junior Chair of Digitalization of Energy & Smart City (HHL) could be set up. The specific teaching and research areas will be autonomously coordinated by the universities in close liaison with the Saxon Ministry of Higher Education and the Arts, which alongside the universities has already demonstrated its fundamental interest in implementation.

In another step, other relevant research actors from central Germany – above all the Halle–Jena–Leipzig University Network as well as the universities of technology in Dresden and Chemnitz – will be involved. The members of the Inter-University Centre of Excellence are also to be deployed as mentors in SpinLab and at diverse event formats. A plentiful supply of specialists will be available thanks to academic training in Leipzig.

» **Creation of an Inter-University Centre of Excellence for Digital Energy Management and Smart Cities**

» **Bundling and coordination of existing expertise there**

» **Bolstering the three IT chairs for digitalization in energy and smart cities**



THE SMART INFRASTRUCTURE HUB PROVIDES CONNECTIVITY FOR OTHER NATIONAL DIGITAL HUBS

The Smart Infrastructure Hub Leipzig offers points of contact with the other potential hubs mentioned earlier. Thanks to Leipzig's favourable transport links, including by rail and air, nearly all hubs dealing with relevant issues can be directly reached non-stop within no more than three hours. This benefits the work of the National Hub Agency, which can organize trips by foreign visitors. The relevant hubs include the IoT Hub in Berlin, the Logistics Hubs in Hamburg and Dortmund, and the Mobility Hub in Munich. IoT technologies can, for example, be applied in the area of infrastructure in Leipzig. The areas of logistics and mobility are connected by Leipzig through interaction with smart inner-city infrastructure (e.g. last mile logistics) and energy aspects (e.g. electric mobility). Potential hubs in the areas of eHealth or energy would complement Leipzig ideally, in particular with regard to interdisciplinary networking and through strong local partners.

Apart from national and international investments and market proximity, Leipzig will primarily rely on pilot projects with established companies and the City of Leipzig. This will also benefit startups from other locations, which can be temporarily accommodated in SpinLab and the Co-Living Lab. The startups in Leipzig can be actively networked with actors and technologies from other relevant hubs. In the medium term, the Smart Infrastructure Hub will have an impact on the wider region of central Germany, especially the cities of Halle, Magdeburg, Jena, Weimar and Chemnitz.

» *There will most likely be multiple hubs in the National Hub Initiative with mutual points of interest*

» *Pilot projects by startups from other hubs can be initiated in Leipzig, especially thanks to its proximity to markets and the active involvement of partners. They can be temporarily accommodated in SpinLab and the Co-Living-Lab*

» *Startups from SpinLab can use technologies from other locations and attract partners there as customers*



FIVE GOOD REASONS FOR THE DIGITAL 'SMART INFRASTRUCTURE HUB LEIPZIG'

1

Leipzig is a rapidly growing cosmopolitan city which is attracting many people and businesses. Being a digital hub will enable it to attract even more international companies.



2

Leipzig is home to powerful, internationally relevant companies, startups and research in the field of smart infrastructures. These will be better networked internationally within the Digital Hub.



3

Leipzig's Smart Infrastructure Hub will inspire startups with an intensive support programme, a thriving startup scene, pilot projects with large corporations, funding and space for growth.



4

Leipzig's Digital Hub can be implemented immediately and quickly expanded. Businesses, science, the city council and the regional government all back the Smart Infrastructure Hub.



5

Leipzig's Smart Infrastructure Hub will be professionally managed with clear responsibilities.



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