



Digital infrastructure as a driver of competitiveness

Future of connected infrastructure

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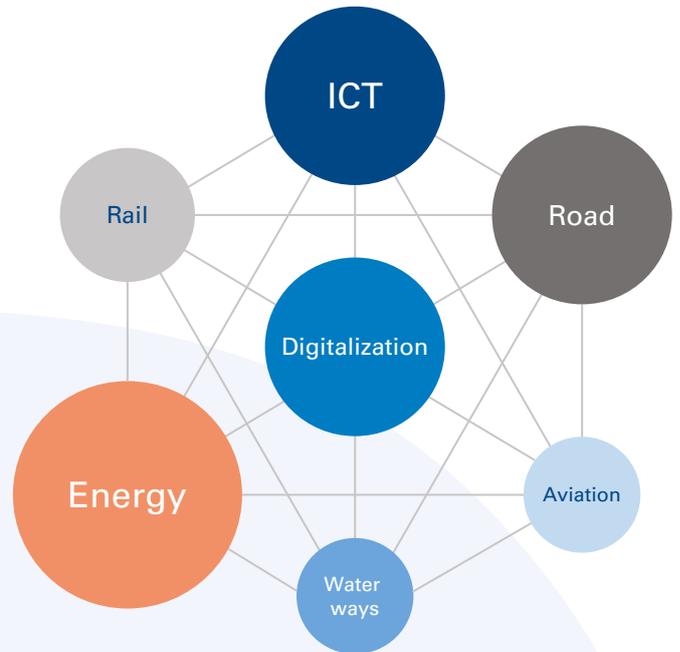
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Executive summary

The importance of infrastructure for any country is without a doubt a major driver for any country's competitiveness. So far, countries have focused on gradually improving their respective infrastructures for traffic, communication and energy. By contrast, Arthur D. Little argues for a paradigm shift: Only intelligently and maximally connected infrastructures can serve as the basis for future growth; Only an interconnected ecosystem can serve as the basis for new business models – both benefitting a country's citizens and boosting the sustainable development of the economy.



1. The future belongs to connected infrastructure

In this report, Arthur D. Little analyses the status of infrastructure from a strategic perspective regarding the competitiveness of a country – using the example of Austria. The findings focus on the necessary networking of infrastructure enabled by digitization. Understanding these processes is essential, as Austria’s competitiveness heavily depends on its infrastructure and synergies in this area must be used efficiently. Both the FBA Infrastructure Report 2019 and the reports of earlier years come to a clear conclusion: there will be no opportunities to build the infrastructure of the future without a well-developed and modern information and communications technology (ICT) and energy infrastructure. In the following location strategic findings, Arthur D. Little examines this thesis more closely.

In this context, the question arises of what is to be understood today as infrastructure. It is clear that the term no longer covers only transport routes – above all, road and rail, followed by aviation and shipping. First, energy supply moved into focus,

and then ICT recently took a central place in the understanding of infrastructure. This is especially evident from the point of view of digitization, which increasingly positions ICT as central and connecting infrastructure. As Arthur D. Little has been observing for years, not only is this trend continuing, but the levels of convergence between individual infrastructure sectors and ICT are steadily increasing. In addition, interaction between ICT infrastructure and energy technologies plays a key role, as climate-friendly energy supplies must be ensured for broad-impact applications beyond digital networks (e.g., 5G). The need for modern and comprehensive ICT and energy infrastructure is thus already apparent at first glance. However, not only are convergence levels of individual infrastructure areas increasing, but infrastructure itself is becoming an important factor in Austria’s competitiveness. For example, when the Hajek Institute asked domestic managers about the most important factors for Austria’s competitiveness, infrastructure ranked second only to well-educated workers.

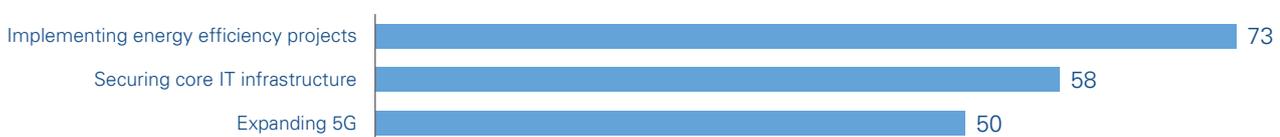
Figure 1: Requirements for Austria’s competitiveness (top 5)



Source: Future Business Austria

As the importance of infrastructure to the Austrian position is clear, we turn now to the question of which infrastructure projects should have high priority. At the top of that list are implementing energy efficiency projects, securing core IT infrastructure, and expanding 5G.

Figure 2: Which infrastructure expansion projects are high priorities for competitiveness? (Top 3)



Source: Future Business Austria

Development in recent years strongly indicates the need to engage intensively with digitization, critical infrastructure and new energy technologies. Austria has a lot of catching up to do in these areas compared to European and international benchmarks. A large-scale fiber optic network supported by fixed wireless access (FWA), 5G and a sustainable energy supply is the basic prerequisite for ensuring that Austria can continue to compete internationally. A technically and digitally knowledgeable population is also required – one that takes advantage of digitization and develops new business models before competitors from other countries do so. This knowledge is especially important for Austria's many small and medium-sized companies.

The opportunities created by ICT are especially evident with the so-called Internet of Things (IoT). This trend will further accelerate networking of individual industries and infrastructure sectors. By 2020, the IoT market volume in the EU is expected to exceed €1 trillion. Best-practice examples include: Barcelona's smart street lights, which analyze required brightness via the IoT and have contributed to a 30 percent energy reduction; a networked and intelligent transport system on the M42 motorway in the UK, which has decreased travel time by 25 percent and accident frequency by 50 percent; and IoT-based health monitoring of patients with multiple chronic diseases in the Netherlands, which has led to a 20 percent increase in efficiency.

The European Union has acknowledged the importance of ICT for years, e.g., by promoting development of critical IT infrastructure with the European Cloud Strategy of 2012. Its growing importance is also evident in the Digital Single Market (DSM) initiative, one of the Commission's 10 core programs. The initiative is based on three pillars: better online access for consumers, high-performance infrastructure and clear policies, and development of ICT and related technologies such as big data and cloud computing. The importance of the DSM becomes readily evident when seen in light of the EU's own calculations; a networked and digital single market in the EU could create an added-value contribution of up to €415 billion a year, in addition to hundreds of thousands of jobs. Within the EU, there are other important digitization projects, such as the Smart Village initiative, adopted in 2016 as part of the Cork

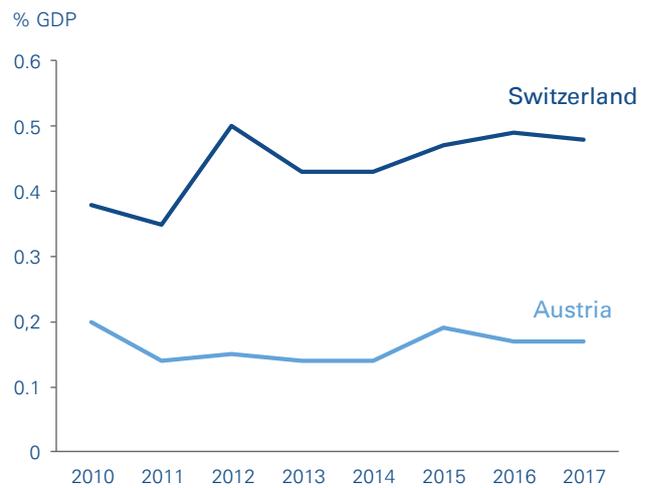
Strategy 2.0. The initiative will help to better connect rural areas (notably e-health, e-education, and e-governance) to counteract urban migration and increase the competitiveness of those rural areas. Finally, the Commission proposed another initiative in June 2018, the Connecting Europe Facility, for the next long-term budget (2021–2027), with €42.3 billion attached – an increase of 47 percent.

The Southeast European states, especially the EU accession candidates, have also recognized the need to invest in core infrastructure areas, not just to catch up with the member states of the EU, but, if necessary, to overtake them in key areas. The EU-backed Regional Cooperation Council (RCC) has made digitization a top priority, especially with its West Balkan Six (WB6) strategy. Expansion and networking of digital infrastructures is thus high on the agenda. The other states in the region, including EU members, are also increasing their competitiveness in this area – Romania's and Bulgaria's internet speeds are currently faster than Austria's.

Arthur D. Little has identified key levers in the infrastructure sector, which Austria and its companies should address to remain competitive in the future. In addition, ADL is continuously monitoring and highlighting the potential of this sector, such as in its recently published study, "The Future of Mobility 3.0," in another report, published in 2017, on possible scenarios of 5G expansion in Austria and many other publications. The potential is not just limited to high-tech sectors such as autonomous driving. Fundamental service infrastructures such as health and education, even agriculture, will need comprehensive digital supply in order to survive and thrive. Among key levers is the expansion of fiber-optic networks, which is indispensable if the country is to connect and further develop individual infrastructure areas and thus have modern infrastructure ready to compete internationally in the future. ICT, especially fiber expansion, must be considered the backbone of Austrian infrastructure. Finally, the term "infrastructure" must be expanded and modernized, convergences identified, and synergies optimized. Here, too, Austrian managers agree: 77 percent of respondents saw great or large synergy effects from use of new technologies.

In principle, Austria has also recognized the imperatives mentioned in this report, and, in recent years, the Federal Ministry of Transport, Innovation and Technology (BMVIT) has presented several initiatives and strategies that address broadband deployment and introduction of 5G, such as the 2020 broadband strategy published in 2014. The plan of the strategy was to position Austria as the leading nation in ICT among EU countries by 2020. Unfortunately, the country has not lived up to this target; with the current expansion of high-speed, high-performance access, Austria is only in 24th place. According to the latest figures from the Computer Measurement Group (2018), the share of fiber-to-the-home (FTTH) fiber optic connections in Austria is only 1.1 percent. By comparison, the European benchmark is over 50 percent and the EU average is 13.9 percent. The BMVIT 5G study also acknowledges the need to catch up on the availability of high-speed internet. This is also confirmed in the 2018 Hayek Institute management study commissioned by Future Business Austria, in that IT, telecommunications and energy were recognized as the areas with the greatest potential for improvement.

Figure 3: Investment in Telecommunication



Source: IMD world competitiveness center

2. A long-term strategy guarantees success

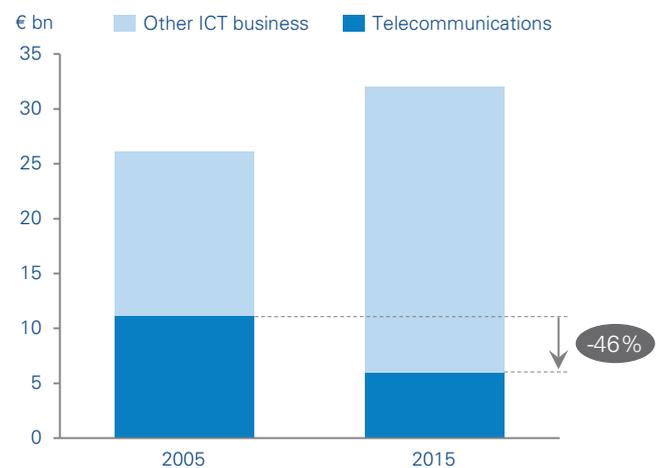
The main hurdle of the broadband strategy has proved to be its financing plan: „Investments in this sector will, in principle, have to be borne by the private sector.“ This view is also shared by leading scientists. University Professor Dr. Felderer pointed out in 2017 that digitization was „one of the most powerful processes of change in our life and business world.“ University Professor Dr. Kummer described ICT and digitization as so influential that it was possible to speak of a new phase of infrastructure in a 2017 analysis. The latest results from the management survey support the views on this trend. In this area, a clear, long-term strategy is needed to counter Austria’s negative trend in ICT. Former Finance Minister and Vice-Chancellor Hannes Androsch (SPÖ) had already in 2009 recognized the need for a report on the „Future of National Infrastructure in Austria“ with a time horizon up to 2030. In stark contrast to this need, there is currently no such plan in Austria.

Switzerland provides a positive example of a long-term infrastructure strategy – more precisely, the strategy devised by the Swiss Federal Department for the Environment, Energy, Technology and Communications (UVEK). In 2010, this department developed a comprehensive, integrated plan for Swiss infrastructure to 2030, thereby strengthening Switzerland’s competitiveness considerably. With a strategy stretching two decades, UVEK underlines the importance of reliable infrastructure networks and transparent long-term strategies. This report on the future of national infrastructure networks not only enumerates potential and risks over 92 pages, but also provides detailed information on the projected investment requirements to 2030. Notable among these are the predicted telecommunications expenses of 40 billion CHF – almost as high as for expansion of the road network.

The success of a long-term strategy shows itself in the comparison between Switzerland and Austria. Since the adoption of the UVEK strategy, diverging infrastructure development can be distinguished between the two neighboring countries. In terms of energy, health and distribution infrastructure, the two countries were approximately equally strong in 2009, according to IMD. About 10 years later, Switzerland could note slight improvements in those areas, while Austria suffered significant setbacks across the board. Investments in technological infrastructure show the same tendency.

Arthur D. Little makes the argument that digitization requires the state to adopt a national economic view of ICT, since the necessary investments in comprehensive fiber expansion are currently not economically profitable for telecommunications providers. A glance at Arthur D. Little’s 5G expansion study from 2017 will confirm this. Arthur D. Little shows here that in recent years, this industry has been under pressure from massive declines in sales, coupled with constant investment requirements. Between 2005 and 2015, telecommunications providers’ revenues almost halved (a 46 percent drop), while gross capital formation fell by only 13 percent in the same period. Due to this development, the telecommunications industry – which is the supporting pillar of the 5G expansion – cannot be expected to independently raise the financial resources needed for large-scale fiber expansion in the near future.

Figure 4: Revenues in ICT



Arthur D. Little noted in 2017 that Austria – assuming it would take on the position of pioneer in this area – could expect an increase in GDP of up to €4 billion per year and 35,000 new employees after implementation. However, only if Austria succeeds in ensuring a well-developed 5G network for its population by the end of 2022 and, above all, for resident companies, can its competitiveness be decisively improved. This finding is also confirmed by the national managers: More

than three-quarters of the respondents believed the Austrian infrastructure would quickly lose ground without the use of digitization. Similarly, more than half of respondents believed the government should focus on expanding digitization over the next three to five years, even at the cost of reducing investment in road and rail development. To carry out the 5G expansion as planned by BMVIT, additional government funds must be invested in the expansion. Importantly, telecommunications providers will only have stronger business incentives to invest in further network expansions and 5G services once the economically necessary technology infrastructure foundation has been laid and consumer demand for the new technologies has increased.

There are several ways for the Austrian federal government to stimulate fiber and 5G expansion, in addition to direct investment. The Swedish Post and Telecommunications Authority provides a relevant example. The Authority allocates radio frequencies explicitly for grid expansion – especially in rural areas – to promote further development of 5G infrastructure. In the same manner, the Austrian Broadcasting and Telecommunications Regulatory Commission should also condition its frequency allocations more strongly on network expansions; however, in return, the Commission will have to give up part of the licensing fees to give the telecommunications providers the financial scope for expansion. In addition, the two factors of 5G consumer demand stimulation and effective transfer of knowledge of the new technical possibilities should not be neglected. The 5G demand could, for example, be boosted by showcasing them at large-scale events such as the Hahnenkamm ski race, which would position the technology prominently in the public eye. Such actions would increase the approval of government investments in 5G and motivate telecoms to act more quickly. Meanwhile, Huawei has already announced its first 5G-enabled smartphone for 2019, which will give the Austrian public the chance to directly experience the advantages of the new technology.

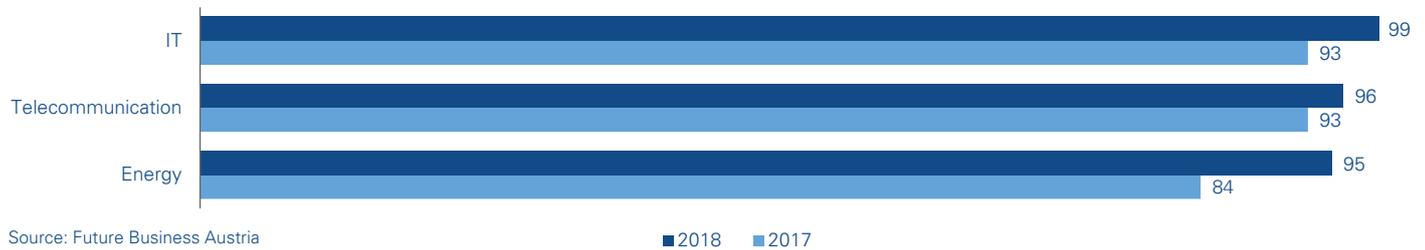
As already mentioned, Austria's progress in digitization depends not only on fiber and 5G expansion, but also on the ability of Austrian consumers to use these new technologies, which will mainly be developed through the Internet of Things. The study of digital transformation of small- and medium-sized enterprises

(SMEs) in Austria – conducted by Arthur D. Little in partnership with the Austrian Chamber of Commerce and Hutchison 3 – found that many Austrian companies were dedicated to catching up with digitization. However, support was difficult to come by, as both the management and SME studies found. For example, less than one-third of all managers believed Austria offered enough incentives for innovative, digital businesses, while nearly half of surveyed SMEs reported needing advice for implementing digital transformation. A particular challenge for many entrepreneurs was lack of knowhow, coupled with unclear legal conditions. To enable the digital development of SMEs in particular, the government and other stakeholders must offer individual transformation approaches and comprehensive training courses, as well as create a clear legal framework. The public support of SMEs in dealing with digitization challenges is a must-have; otherwise these companies will find themselves falling behind due to failing to fully exploit the possibilities of digitization – which will hurt their competitiveness, as well as that of Austria in general.

On a positive note, it is worth pointing out that Austria's competitiveness has improved significantly for the first time in years. In the latest IMD Competitiveness Ranking, Austria came 18th of 63 analyzed countries in 2018. Meanwhile, in the more narrowly scoped Digital Competitiveness Ranking by the same firm, the republic even ranked as high as 15th. All in all, apart from ICT and aviation, Austria's infrastructure is solid by European standards. This is especially true for the energy sector. Here, the republic couples the fourth-largest share of renewable energies with decreasing dependence on energy imports – a strong position that can and should be expanded upon.

A look at the management survey clearly shows that Austria's top management regards the energy sector, as well as its road network, as extremely positive compared to those of other European countries. The rail network is also well developed in the EU comparison, in which, for example, Austria is among the top five countries within the EU for electrification of railway lines. However, the importance of these sectors is clearly shifting. When asked about very important infrastructures for the future, only two-thirds of respondents answered rail, while there was almost unanimous agreement on the importance of IT, telecommunications and energy.

Figure 5: Which infrastructure sectors will play important roles in the future? (Top 3)



Source: Future Business Austria

In Austrian aviation, the third runway at Vienna International Airport is currently the dominant project. Prioritizing this project would contribute positively to the country’s competitiveness. This view is also shared by companies’ top management, with a majority having stated that Austrian aviation was doing poorly in comparison to the whole of Europe. In order to strengthen the position of Austria and improve its connection to foreign countries, air connections need expanding to and from Austria urgently. In addition, to ensure the attractiveness of the airport, the processes of ground, particularly passport and security controls, and baggage handling must be optimized. It is important to exploit all opportunities digitization brings and maximize customer benefit with innovative technological innovations. In connection with the expansion of Vienna International Airport Schwechat, mention should also be made of the new bill from the Ministry of Economic Affairs. This bill would allow faster approval procedures for infrastructure projects if they were in the public interest. According to the WKO, a lot of time is spent on debates surrounding infrastructure, as evidenced by the third runway, which had a „negative effect on the attractiveness of the position“

Beyond the third runway, which will have a major impact on the greater Vienna area, a strategy is needed for Austrian regional airports – In particular Klagenfurt and Linz – as a result of the EU’s tightening of the aid directive in the event of insufficient profitability; this threatens airport closures after 2024. Therefore, in addition to improving the domestic connections of the regional airports to the Vienna hub, great efforts are needed to create new routes, combined with a comprehensive and multimodal mobility concept for Austria.

3. Strategic priorities for the future

Arthur D. Little has identified three core areas that will be fundamentally transformed by a modern and integrated infrastructure. These areas are essential for greatly improving the quality of life of Austrians and increasing the competitiveness of the country, so they must be met with a comprehensive strategy and a sustainable implementation.



Future strategic priority 1: Smart Austria

A networked and digitized infrastructure will fundamentally change our lives in the future. Fast grids will simplify life in the city in rural areas and increase the quality of life; that is, if synergy effects are optimized efficiently. Furthermore, smart cities seek to constantly improve the lives of their citizens and visitors, as well as conditions for successful businesses, by becoming more efficient, technologically advanced, environmentally friendly and socially inclusive.

Companies and cities will have to pursue clear strategies and cooperate to transform cities into smart cities. Fast, secure, high-performance internet and a secure energy supply form the basis of this transformation process. In the medium term, edge computing will play a greater and greater role as distributed data processing relieves networks. Once the framework conditions have been established, product solutions and services related to the Internet of Things will become increasingly important in an urban context. Moreover, the smart city platform, the ICT infrastructure and the cross-segment smart city ecosystem will be integral parts of any smart city strategy. In addition, fast communication services and network security will play a key role in the cities of tomorrow. This will require public 5G and WLAN networks, a seamless fiber infrastructure, and high-availability, low-power, wide-area networks to facilitate stable and cost-effective data traffic.

In this environment, the importance of a secure IT infrastructure, resilient against cyber-attacks, is ever increasing. Smart also means serving people in their everyday needs, such as healthcare and education. In the city, as well as in the countryside (smart villages), the quality of such care needs

to show constant improvement. Digitized healthcare will enable efficiency through digital patient records and seamless communication between hospitals, pharmacies and patients. Innovations such as telemedicine and mobile health create new treatment methods that massively reduce long journey times to the doctor, especially in rural areas. Smart education could become a reality soon, especially as a result of the digitization of educational institutions, and will sustainably improve the learning opportunities available to students.

The smart city study by eco, the association of the internet industry, and Arthur D. Little (2018) also provides evidence that smart cities are gaining in importance and value. By 2022, this market is expected to grow to around €4.5 billion and nearly double from 2018. A key condition to make efficient use of the opportunities that arise and rapidly grow in this market is comprehensive expansion of information and communication technologies, especially in development of fiber optic networks – also in rural areas.



Future strategic priority 2: Smart mobility

Arthur D. Little sees the future of mobility in offerings that are sustainable, autonomous and shared, but the future will not appear overnight. In the foreseeable, conventional car-sharing deals and electric-powered cars will remain niche products due to their limited customer benefits. In addition, cars that drive exclusively „autonomously“ would only increase the number of kilometers driven with their increased benefits – for example, by eliminating the search for a parking space. However, when electric cars, autonomous driving technologies and shared business models are integrated („easi-mobility“), the number of vehicles per city decreases and the environment is less affected by realistic peak consumption. „Easi“ mobility offers maximized benefits for mobility customers, because it allows them to travel door to door at all times, without changing the environment and with minimum latency. This area is very competitive and attractive, with multiple companies vying for the space.

The demands on an ecosystem to enable such business models are not to be underestimated; they require complex, networked infrastructure. Traffic flows have to be controlled in real time, vehicle problems must be detected in fractions of a second and communicated to all surrounding units, and cars must be able to charge nationwide. To enable these functions, the road infrastructure needs to change; in the short term it will have to make extensive use of sensors, providing real-time information about surface condition and use, and in the long term it will need to integrate charging infrastructure, such as induction plates.

To make such “easi-mobility” a reality in the future, a nationwide 5G network, as well as a dedicated, highly secure data center for traffic control are needed, with cyber security playing a crucial role. In addition, the power grid must adapt to the new requirements through central charging points with high peak capacities or flexible, widely branched, decentralized charging infrastructure with central control options.

The rail sector is also undergoing major changes as ICT evolves. Above all, the Internet of Things will change rail infrastructure. Rail is also expected to converge and cooperate more with other transportation services in the future, offering customers multimodal, door-to-door service. The classic train ticket will be made obsolete by modern, cross-mobility accounting systems, and customers will be able to seamlessly switch between different modes of travel (bus, train, car-sharing services, etc.). This integration reduces travel time and booking efforts, creates comprehensive transparency for the customer, and enables automated optimization of the connections used. With increasing interconnection of trains and rail, trains can be automated to a greater degree, which allows tighter timing of trips and reduces costs. Train users also benefit from autonomous systems through increased punctuality. In the future, trains and rail will be constantly exchanging data, which will make the network self-optimizing and enable it to respond to events in real time. In the event of a train outage, travelers will be informed promptly and in detail about the expected delay, and directed to alternative mobility services with minimal loss of time.

In the medium term, there is even a need to go one step further in terms of mobility. The use of drones will change the aviation industry and its associated infrastructure. Arthur D. Little sees widespread use of unmanned aircraft systems (UASs) for non-military purposes in the near future, especially agriculture (such as for distributing fertilizers and ripening planted food), monitoring infrastructure facilities (especially pipelines and power lines), and early detection of impending disturbances in the rail infrastructure (predictive maintenance). Drones offer great opportunities, from potential cost savings to lowered risk of personal injury. In a few years, they will even be used in passenger transport, as the state of Bavaria currently shows through media-effective investments in the development and construction of airline taxis. The autonomous CityAirbus, from the aircraft manufacturer of the same name, is slated to be operational by 2023, able to transport up to four passengers in inner-city airspace. Already, infrastructure projects in aviation include new transport opportunities to minimize costs of adapting to new technologies in the medium term.

Austria has the opportunity to become one of the pioneers in this field, not only through innovative mobility concepts on road and rail, but also in aviation. To achieve this status, dense, ultra-fast internet connection is a requirement. In addition, basic regulation of the European Aviation Safety Agency (EASA) plays an important role as it sets union-wide framework conditions in the field of UASs. Austria should define and optimize the legal framework established by the EASA to respond to changing market conditions optimally. For this purpose, appropriate zones must be created for free or restricted traffic of drones.



Future strategic priority 3: Smart utilities

Austria's utilities infrastructure is solid compared to those of other European countries, especially in energy. However, challenges remain, such as expansion of high-voltage lines, which is time-consuming and cost-intensive. The same applies to expansion of fiber optic networks in the telecommunications sector. If the energy supply of the future is planned smartly and synergies are optimized, utilities and telecommunications providers will be able to jointly promote development and networking of infrastructures.

One goal is to sustainably secure the Austrian high-voltage grid, especially with the 380 kV ring, which includes all major consumer centers and power plant locations, as well as the transmission grids of neighboring states. This expansion is necessary to ensure long-term security of supply for the country. However, this process is proving difficult, since the Austrian Power Grid must involve many stakeholders and is confronted with different licensing regimes in the individual federal states. In addition, the process is extremely expensive. Through cooperation with telecommunications providers, the electricity and telecommunications networks could be expanded

in parallel, which would lead to reduced and shared investment costs. Laying idle lines is another viable option that would open up the possibility of cost-effectively expanding networks in the future.

Arthur D. Little believes that electric mobility will also enhance the convergence between ICT and the energy sector. Joint infrastructure development and comprehensive data management will be important in this segment to efficiently monitor resource consumption and delivery. The electricity consumption of cars will be measurable and calculated intelligently and fully automatically at charging points using the IoT. In addition, the widespread use of intelligent metering – called smart meters, or iMsys – has the potential to bring ICT and energy closer together. Data generated by these systems could be handled and monetized by telecommunications providers. In addition, more information about real-time power consumption could be gathered, and bottlenecks avoided. As has been evident for years, the number of virtual power plants will also increase. The interconnection of small, decentralized power plants – for example, solar systems of private households – will make an important contribution to the energy supply of Austria and further reduce dependence on foreign energy sources. It thus becomes clear that the energy supply of the future will, in all probability, converge more with information and communication technology, and cost savings can be realized, at least in the medium term, through joint infrastructure development.

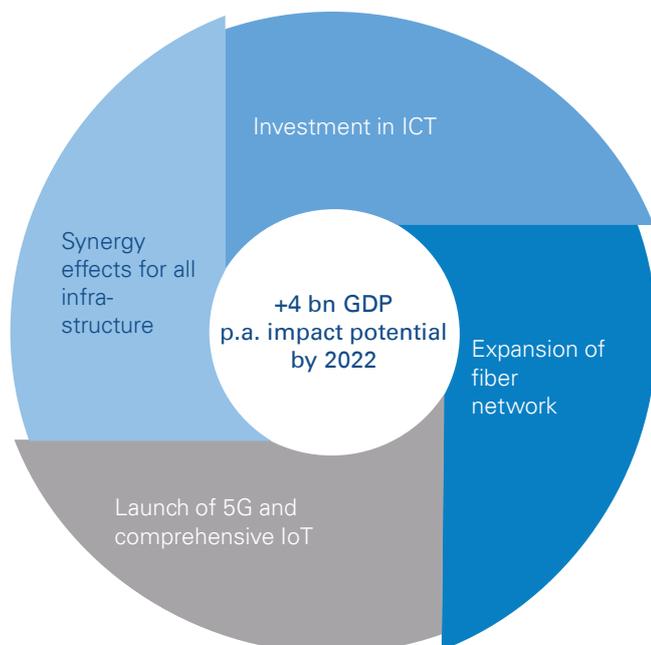
4. Conclusion

To sum up, the European Union considers a comprehensive digital supply central to the competitiveness of the continent, and networking of the various infrastructure sectors indispensable. 5G networks create the basis for integrating the Internet of Things in all areas of life in the near future. Austria should focus even more on ICT and digitization, which, with determined investment, will continue to ensure its competitiveness. In addition, the country needs a clear, long-term infrastructure strategy, as has been evident in Switzerland for almost ten years, and SMEs especially need to be better prepared and supported for the digital transformation. Finally, Austria should further expand its strong position in the energy sector and implement the necessary classic infrastructure projects – particularly the third runway at Vienna International Airport – as quickly as possible.

Arthur D. Little sees Austria at a crossroads. There is an urgent need for targeted implementation of the digital development process to prevent Austria from losing its competitiveness on a massive, long-term basis. On the positive side, the country has the potential to become one of the pioneers of digitization with the right initiatives. It is now a matter of taking the right path.

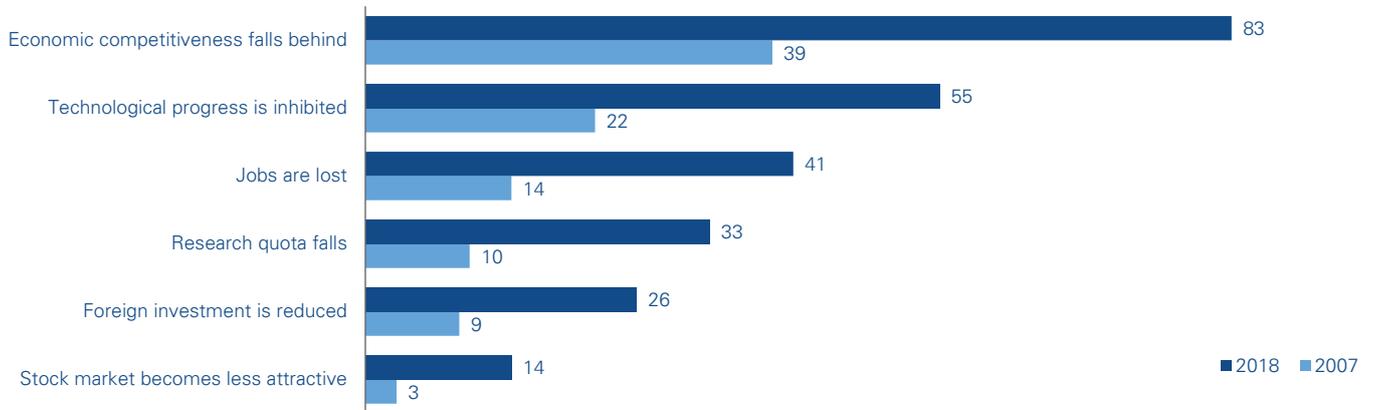
The findings on the Austrian infrastructure are clear: if substantial investments are not made, and urgently needed change processes are not implemented effectively, Austria will fall drastically behind European and international competition in the medium term. In addition, it is well known, and confirmed by Austria’s top management, that many competitors are already working intensely on construction and expansion of networked infrastructures; Austria threatens to lose its business appeal drastically if it is not aggressively positioned for digital readiness.

Figure 6: GDP impact potential of targeted investments



Source: ADL Analysis

Figure 7: Consequences of underinvestment in broadband and digitization



Source: Future Business Austria

At the same time, great potential for the country can be realized if necessary projects are financed quickly and consistently implemented. The benefits are many in the smart Austria of the future. Citizens could benefit from easier access to healthcare, education and public services; „easi“ mobility could sustainably reduce the environmental impact of traffic and expand our understanding of transportation; and drone technology could enable many industries to evolve and reduce the dangers and costs connected with work, which could be sourced from UAS

in a resource-efficient manner. The future of energy production and distribution could also undergo major changes, helping Austria maintain its supply independently of any international crisis. Arthur D. Little is certain that the further development of information and communication technology will have a lasting positive impact on the lives of the Austrian population over the next few years, provided that the necessary measures will be taken to expand and future-proof its essential infrastructure.

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Digital infrastructure as a driver of competitiveness

Future of connected infrastructure

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