



T-Systems company profile

With a footprint in more than 20 countries, 43,700 employees, and external revenue of 7.9 billion euros (2016), T-Systems is one of the world's leading vendor independent providers of digital services headquartered in Europe.

T-Systems is partnering its customers as they address the digital transformation. The company offers integrated solutions for business customers. The Deutsche Telekom subsidiary offers one-stop shopping: from the secure operation of legacy systems and classical ICT services, the transition to cloud-based services (including international networks, tailored infrastructure, platforms and software) as well as new business models and innovation projects in the Internet of Things. T-Systems can provide all this thanks to its global reach in fixed-network and mobile communications, its highly secure data centers, a comprehensive cloud ecosystem built around standardized platforms and global partnerships, and the ability to offer top levels of security.

The [Internet of Things](#) (IoT) is making its presence felt in the business world – the real-time world has reached the engine room. Sensors can measure the current state of different factors with virtually no delay time and immediately pass on data such as location, temperature, vibrations or any deviations from predefined normal ranges. This is the basis for new business models and depends crucially on fast networks for the transmission of data and a high-performance cloud to transport the data to where it is stored and analyzed. In addition, the transmission channels and data pools must be secured against unauthorized access. Deutsche Telekom and T-Systems have spent billions on connectivity, cloud, IoT and security to ready themselves for the connected world.

A cloud made in Germany

[Cloud solutions](#) transport the data from myriad sources and sensors safely to T-Systems' data centers, where our corporate customers can use the



accumulated information for analysis. That provides a firm foundation for both new and existing business models. "For whatever reason, customers want to use the secure German cloud. It may be that it's a reaction to current political events, scandals over eavesdropping or Internet crime," says Reinhard Clemens, T-Systems CEO and member of the Board of Management of Deutsche Telekom. "That's why Deutsche Telekom has developed a cloud ecosystem over the years that conforms to Germany's strict data privacy laws."

This cloud ecosystem already comprises as many as 150 partner solutions. Deutsche Telekom achieved revenues of about 1.6 billion euros in cloud business in 2016. That represents an increase of 12 percent, and more than two-thirds of that figure was accounted for by T-Systems. The business has long achieved its cloud revenues through its private cloud sales alone (that is through specialized solutions provided especially for a single customer). Now, however, proprietary public-cloud applications such as the Open Telekom Cloud are making headway.

Many T-Systems' cloud products are available from the [House of Clouds](#), the by-name for the company's high-performance data center in Biere, near the German city of Magdeburg. In the House of Clouds, all major cloud providers can be found side by side. Customers benefit from being able to process and analyze data swiftly – under one roof as it were. The data center in Biere provides customers with a "high-density cloud" service. It is considered to be the Fort Knox among data centers and has grown to become a European data hub. As Biere 1 has already reached its capacity limits, Biere 2 is currently under construction. After the latter's completion in 2018, the data center's performance will be double what it is today.

New networks, new partners

Deutsche Telekom is constantly refining its net infrastructure as the motor of digitization and invests billions of euros for this purpose every year. The Internet Protocol (IP) is increasingly becoming the technical basis. Next-generation networks (NGN) and all-IP networks make it possible for companies to offer their services and applications over the Internet using new business models. A series of innovations for fixed-network and mobile communications form the basis of this integrated network strategy:

- (1) The creation of a [NarrowBand IoT network](#) in eight European countries. This network provides excellent building penetration and provides coverage in locations usually inaccessible to radio waves, such as basements and underground parking lots.
- (2) Investments in [5G](#), the core prerequisite for real-time communication. Such cutting-edge network technology is set to come into its own at industrial and business facilities, or airports for example, before it becomes available nationwide at the beginning of the next decade. It promises capacities a thousand time greater, transfer speeds ten times faster and ten times shorter latencies than the technology available in today's networks. With 5G, telecommunications service providers can guarantee their business customers the quality of service they need.
- (3) A new [partnership with BT](#) will allow T-Systems to connect its own networks with the latter's, thus expanding T-Systems' global reach by more than 60 percent and offering seamless connectivity.
- (4) [Developing ngena](#), a worldwide network to make IoT applications available at the push of a button (software-defined network). With 15 partners, already on board, the initiative already spans the globe – from North and South America to Australia and large parts of Europe, Africa and Asia.
- (5) T-Systems is also going global when it comes to mobile networks. Via Freemove (in Europe), Bridge Alliance (in Asia) and T-Mobile US, the company can provide its customers with reliable mobile coverage in 100 countries across the globe – giving it the best 4G network worldwide.

The Internet of Things: connecting everything

Market researchers surpass each other with estimates of how many "things" will be connected to the Internet by 2020. As a matter of fact, millions of new things are already being connected every day. Most of them are products that had nothing to do with the Internet until now, from baby monitors, parking spaces and electricity meters to whole production systems. All these things not only send data via the cloud to the storage pools for later analysis, they also communicate among themselves. No wonder, then, that companies from SMEs to multinationals want to mine the "gold of digitization" and advance their digital business models together with partners. To this end, T-Systems offers its customers easy and fast access to public and private clouds, to the best network – be it mobile or fixed-line networks – and to tailored platforms in highly secure data centers that comply with Germany's strict data privacy laws. Additionally, the services include also systems integration across all technologies. Thus, new applications for [industry](#) and the public sector are generated with the help of one key contact.

Example: [Digital parking space management](#)

Smart parking is one example of how the interplay of the cloud and networks is making the IoT capable of real-time operation. The system is about to be introduced by the city of Hamburg to simplify the search for parking spaces in the city. By 2018, motorists there should be able to use a T-Systems app to find, reserve and pay for vacant parking spaces, and the city council and its service providers are digitizing a total of 11,000 public parking spaces to achieve that. On-street sensors will then send information to motorists' smartphones on where vacant parking spaces can be found. As Reinhard Clemens underscores: "What makes digitization projects live and breathe is scalability, so we intend to offer this smart parking solution across the entire country." Numerous city councils across Germany have expressed interest in the new parking solution and cities such as Dortmund, Darmstadt, Merzig and Moers already intend to introduce it.



Security and quality in the Internet of Things

Cloud computing, mobile solutions and [big data](#) all pose entirely new challenges for IT security. What is more, cyberattacks on corporate networks and IT systems are getting ever more sophisticated and have become a huge threat to the economy. Data privacy and data security are thus crucial criteria for success in all technical developments. That is why Deutsche Telekom established the new “Telekom Security” business unit under the umbrella of T-Systems. Telekom Security concentrates all the company’s security activities, and channels the experience of its some 1,200 security experts. The Group is doing everything it can to protect its own ICT systems and networks from Internet-based attacks. Furthermore, it offers customers – from citizen to corporation – new security solutions. To this end, Deutsche Telekom continuously adapt its Magenta Security portfolio to changing requirements. In addition, five years ago T-Systems launched the zero-outage quality program to ensure the uninterrupted availability of its systems and infrastructure. It also began establishing an ecosystem of partners who are all committed to the zero-outage principle and comply with shared quality management standards. "Industries are readying themselves for the digital future – it goes without saying that their efforts have to be underpinned by broad-based quality precautions," says Reinhard Clemens.

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