

Deutsche Telekom rolls out fiber-optic connectivity at record speed

Using distributed agile methodologies, Capgemini and Deutsche Telekom swiftly launched a new full-service platform to plan, sell, and install fiber-optic connectivity

Transition to a new era

Deutsche Telekom is one of the world's largest telecommunication companies, present in over 50 countries worldwide. Within Germany, the network covers 13.6 million broadband lines and provides internet products and services to individual consumers as well as corporations.

Following ISDN, mobile, and DSL, the telecommunications industry is currently transitioning to gigabit connectivity. High speed internet has fundamentally changed communication in everyday life and consumers expect even faster network speeds no matter where they are. Keeping pace with social and political demand, no other provider is investing more in the initiative than Deutsche Telekom. Over 500,000 km of fiber-optic cabling has been rolled out to date, incrementally replacing 50 years' worth of copper wiring.

Project overview

Customer Name: Deutsche Telekom AG

Industry: Telecommunications

Location: Germany

Client Challenges/Business Need: To increase satisfaction with its services, Deutsche Telekom wanted to focus its processes on the customer and support the rollout of fiber-optic broadband within a short timeframe via a digital platform.

Solution: Telekom partnered with Capgemini to redesign the architecture of its Operations Support System (OSS) fiber-optic platform. Open sourced DevOps and cloud technology were used to support a microservice architecture and an agile Minimum Viable Product (MVP) approach that enables high delivery speed

Results (Benefits):

- New user-friendly infrastructure allows Deutsche Telekom to serve its customers even more effectively
- A fully digitalized process significantly reduces the time required for ordering and installation
- High level of platform scalability paves the way for roll out across Germany
- Complex network of stakeholders is integrated into streamlined process





The fiber-optic cable service provides Fiber to the Home (FTTH) connections that bundle all kinds of digital applications, such as 3D video, tele-medicine and smart home, into one simple package.

As part of the switchover, Deutsche Telekom has also recognized a unique opportunity to simultaneously introduce an improved customer experience. In line with enhanced connectivity, the organization wanted to optimize fiber-optic installation, focusing on the customer experience, with landlords and property owners becoming more closely integrated. The aim was to reduce the number of necessary interactions with the customer through end-to-end digitalization. To do so, Deutsche Telekom re-examined its internal processes so that it could integrate DevOps and agile processes throughout its delivery models.

A sparring partner in IT and business innovation

Such an extensive project required a remarkable IT infrastructure that could extend the fiber-optic network in Germany by managing the crucial balance between supply and demand. This would make it easier for customers to place orders with the knowledge that their high-speed connection would be promptly installed without complications. To fit this vision, the IT system needed to manage and distribute data in an agile operating model that could easily scale to meet an increasing number of requests.

Deutsche Telekom decided to identify a partner with an in-depth understanding of security, data protection, usability, and backend integration. Based on these criteria and a record of joint successful projects that delivered additional value beyond the initial request, Telekom selected Capgemini as a transformation partner.

Agile teams for design and implementation

The partners quickly launched a collaborative effort to design a fiber-optic platform for Operations and Business Support Systems (OSS/BSS) and a state-of-the-art infrastructure to accelerate order processing. Through this project, Telekom transitioned to an agile model under the guidance of a Scaled Agile Framework (SAFe)

that incorporated domain-driven design and DevOps methodology. Applying open-source and open standards – including the interface of the TM Forum API-based standard solution – ensured interoperability and growth, while the MVP approach further encouraged delivery speed. Together, the teams designed a micro-service architecture with RedHat cloud technology as the basis to completely reconfigure the set-up of the entire delivery chain.

A close integration of the suppliers and property owners into the solution planning allowed more accurate prediction of the timeframes for the installation of high-speed internet. As a result, appointments are easier to schedule with the customer and the property owner if needed, reducing the number of contact points and need for direct communication.

Previously, an initial visit to a building required using a pdf plan of the property to find a suitable connection. Now that the platform is available as a mobile app, technicians can quickly decide upon an installation plan once they are inside the building. As a result, the switch from a paper-based process to a digitalized workflow has notably increased data accuracy and optimized protocol support. The information gathered is fed back into the app, leading to the automated re-planning of the whole Passive Optical Network (PON) infrastructure and enabling immediate installation without losing time on process turnarounds. Following installation, customers can simply “plug and play” within a matter of minutes.

Top platform scalability enables extensive rollout

In order to continue expanding its fiber-optic services, Deutsche Telekom will be reaching out to a variety of other providers to ensure optimal broadband coverage. As part of their ongoing digital transformation journey, Capgemini and Deutsche Telekom have begun to implement the new core system infrastructure. The high level of platform scalability will ensure that the partners continue to achieve their objectives for an optimal digital customer journey and extensive fiber-optic connectivity in Germany.



About Capgemini

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About Deutsche Telekom

Deutsche Telekom AG, headquartered in Bonn, Germany, is one of the world's leading integrated telecommunications companies. With a presence in over 50 countries, it generated revenue of 80.5 billion Euros in the 2019 financial year.

People matter, results count.

For more information on this project, please contact:

references.ce@capgemini.com

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