Deutsche Bahn and T-Mobile Deutschland Transform German Rail Travel

Executive Summary

CUSTOMER NAME
Deutsche Bahn and
T-Mobile Deutschland

INDUSTRY
Transportation/Service Provider

BUSINESS CHALLENGES
T-Mobile Deutschland:

- Ensure continued leadership within the German mobile data-services market
- Develop new strategies for customer retention and acquisition

Deutsche Bahn:

- Drive growth through next-generation travel services and new customer experiences
- Develop capability to deploy future pervasive services

SOLUTIONS

- Project Railnet—a strategic partnership between Deutsche Bahn (DB) and T-Mobile Deutschland to provide wireless Internet access aboard high-speed trains in Germany
- A business model that optimizes dual strengths, skills, and assets
- Innovative design based on advanced Cisco technologies

BUSINESS RESULTS

- Differentiated and enhanced travel experience of DB customers
- Increased footprint and service availability for T-Mobile customers
- Business model can be replicated across other train services and markets

Two European giants, Deutsche Bahn (DB) and T-Mobile Deutschland, have joined forces to transport German train services into the future. Project Railnet is a pioneering new initiative to provide wireless Internet access aboard DB's fleet of high-speed ICE trains. A blueprint for next-generation transportation services, this innovative business model and system design transform the customer travel experience and unlock new strategic value and competitive advantage to both companies.

Business Challenges

Europe's biggest railway, Deutsche Bahn, is meeting the twin challenges of European integration and deregulation of its markets through innovative use of technology to transform rail services in Germany. One such initiative is Project Railnet—an ambitious concept to provide wireless Internet access aboard the company's high-speed InterCity Express (ICE) trains.

Dr. Eberhard Kurz, CIO, Passenger Transport Division for Deutsche Bahn, explains the rationale behind Railnet: "We are committed to delivering the very best travel experience possible to our customers. The key to achieving this is to optimize technology to create new services and drive further improvements in quality, performance, and efficiency. This also provides us with differentiation in the marketplace."

The project, however, was highly complex and pushed the boundaries of public wireless network engineering. DB's ICE trains traveled at speeds of up to 300 kilometers per hour, significantly faster, for example, than those in the United Kingdom. There were also many more tunnels, and potential wireless 'blind spots,' compared to countries such as the Netherlands.

Railnet also proposed a major change to the way DB had operated before. The specific knowledge and skills necessary for designing and implementing the technical solution lay outside of its core competencies. The company, therefore, needed to develop an ecosystem of strategic partners, backed with a new outsourced model and robust commercial framework.

Solutions

As part of its response to these challenges, DB enlisted the support of the Cisco® Internet Business Solutions Group (IBSG). Having collaborated together successfully in the past on other innovative IT projects, DB was able to draw on IBSG's combination of industry experience, business knowledge, and technical knowledge.

Unlocking the Power of Connected Vertical Markets

There were many similarities between the strategic goals of Deutsche Bahn and those of T-Mobile Deutschland.

T-Mobile is the undisputed leader in the public wireless LAN market in Germany, as well as worldwide. The foundation for this success is a constant focus on developing new and innovative offerings that capture the imagination of customers, combined with seeking out new opportunities to increase service availability. T-Mobile has executed this strategy to good effect, with an extensive network footprint that includes more than 10,000 hotspots in Europe and 17,000 worldwide.

Dr. Werner Clas, head of the Railnet project at DB, says, "Railnet is a classic example of how added value can be created by bringing together cross-functional groups and developing new business models."

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Passenger Transport Division
Deutsche Bahn

Building Strategic Partnerships

To cement this strategic fit, T-Mobile Deutschland was invited to consult with the Railnet project team. The starting point of these discussions was to develop a shared vision and to establish a common set of objectives.

Thomas Heilen, executive vice president of product management for T-Mobile Deutschland, says, "The opportunity to access trains and stations had obvious attraction in terms of extending the T-Mobile brand and portfolio of public WAN services to business customers and new subscribers. What we quickly discovered also was how well our two core competencies complemented each other—T-Mobile Deutschland's strong customer relationship focus and skills in planning, building, and operating mobile networks together with Deutsche Bahn's understanding of trains, passenger services, and traveler needs."

It is a view echoed by André Storck, project leader for DB: "Our objectives were clear from the start. By providing onboard Internet services, business customers can stay in contact with their companies, customers, and partners and make more productive use of travel time. We also wanted to make additional information and entertainment services available in the future to improve the experience for all passengers. T-Mobile understood this from day one."

Jointly Innovating Business and Technical Architecture

The first step in building the new business model and technical solution was to focus on optimizing capabilities and assets. DB and T-Mobile Deutschland, with support from IBSG, worked through the process of identifying and combining the respective strengths, skills, and resources of the two companies in the most optimal way. The success of the project is based on a clear definition of responsibilities—supporting the end-to-end delivery of T-Mobile Internet connectivity services, as well as DB implementing customer-facing e-portal services and internal applications over a single infrastructure.

These requirements were captured within the innovative system design, which uses a range of advanced Cisco WLAN; Mobile Access Router; Service Selection Gateway; Security Monitoring, Analysis, and Response System; and mobile IP technologies.

The technical solution connects passenger laptops, PDAs, and mobile phones to the nearest wireless hotspot located on a train, which, in turn, connects to T-Mobile Deutschland's broadband mobile network. In addition, each train is equipped with a central server that automatically connects with the WLAN as the train arrives at each station. This data is then relayed to a central communication system to update, for example, travel information to customers waiting further down the line.

With the technical solution identified, both companies were able to evaluate return on investment, based on forecast demand for service, and IT and project costs. The final stage of the process was to develop an ecosystem of local and specialized technology partners that would be required to implement the new business model and public WLAN solution.

Business Results

Creating Competitive Advantage

The strategic partnership has helped both companies develop a shared vision that will deliver a valuable competitive advantage in the future.

For DB, this will provide differentiation against its direct competitors—road transport and regional airlines. The core infrastructure will allow the company to deploy other pervasive services and applications in the future.

With access to trains and stations, T-Mobile Deutschland has the opportunity to significantly increase the footprint of attractive locations and the overall availability of service to its customers. The partnership has also created a business model that can be replicated to expand its portfolio of public WLAN services across other geographical and vertical markets.

Breaking New Ground

Railnet has set new standards in public wireless network engineering within the transportation industry and beyond. Heilen puts this into context: "When you pioneer—which is effectively what has been done here—it is very complex. You need to have the right vision, right strategy, right model, a winning value proposition, and the right partners. Cisco's contribution in all of these areas was invaluable."

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The service is currently being tested by ICE travelers. The pilot involves seven ICE3 trains that operate between Dortmund and Cologne and has proven to be an overwhelming success. The deployment of hotspots within high-speed trains confirmed bandwidth performance—both upstream and downstream—similar to that experienced with fixed networks.

Customer acceptance and satisfaction levels have exceeded expectations. A survey conducted by DB showed that about 90 percent of users who tested the system were either "highly satisfied" or "satisfied" with service, while more than 80 percent of customers expressed interest in using the service. The survey also confirmed that Internet access, e-mail, and improved travel information were the services customers most wanted to see introduced.

Next Steps

The next phase of the Railnet project will be completed shortly with the full rollout of the service across all DB lounges in major train stations and the entire ICE fleet of high-speed trains, providing total coverage in excess of 8,000 kilometers across Germany. Along with this phase, the project will focus on adding further services and applications, such as entertainment and additional travel information, as well as new internal applications for ticketing and other customer service activities. T-Mobile is currently looking at replicating this business model in other countries.

More Information

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco, helps Global Fortune 500 companies and public organizations transform the way they do business—first by designing innovative business processes, and then by integrating advanced technologies into visionary roadmaps that improve customer experience and revenue growth.

For further information about IBSG, visit **http://www.cisco.com/go/ibsg**

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