

Case Study

Success Story: T-Mobile

T-Mobile uses Empirix Hammer Test Solutions to test new communications services in an automated, accelerated, and repeatable way. Empirix Hammer Test Solutions enable the company to cut integration time and costs, as well as ensure the quality of each new service.

T-Mobile Germany Chooses Empirix to Ensure Customer Communication

In 1993, T-Mobile started operating as an economically independent subsidiary of the Deutsche Telekom concern. Over 33 million users in Germany now rely on the mobile telecommunication provider's services.

In an industry characterised by ever-increasing competition, T-Mobile's vision is to become the mobile phone sector's most reputable service provider. To achieve this goal, the company not only depends on the high quality of its solutions but also on customer service excellence. Consequently, top priority is given to its voice driven services such as its Customer Care Portal or mailbox products. As the first direct communication interface to the customer, these must always be up and running flawlessly. In addition to this, the development, implementation and operation of these applications must – despite growing complexity – be swift and cost effective. The flawless functionality and performance of complex applications can only be guaranteed if they have been thoroughly tested before commissioning and are monitored regularly during operation.

Customer service as a unique selling proposition (USP)

A few years ago, the mobile network operator industry was far more transparent than it is today. Customers can now choose between multiple providers, all offering essentially the same services. T-Mobile has therefore decided to focus on customer support and communication as USPs.

"Our customers expect first class service and support," say Andreas Watermann, responsible for integration and formal acceptance of voice driven services at T-Mobile. "They are highly demanding and won't accept anything less than 100% service functionality or availability."

T-Online therefore operates a 24/7 hotline with an intelligent upstream voice portal. This voice portal ensures that calls from various customer groups – such as business or consumer customers – are quickly routed to the correct contacts or services for competent assistance.

Challenge: development and operation of voice driven services

The T-Mobile's I&V VMS & IVR (Integration & Validation of Voice Mail Systems & Interactive Voice Response) department in Hanover is responsible for the formal acceptance of these voice

Our goal was to automate the tests constructively and economically. Compared to manual testing, we now save several weeks' development time. On average, only a single technician - as opposed to a 4-strong team - is involved in testing. In the course of developing the mailbox application, Empirix's Hammer solutions allowed us to automate around 95% of our testing. Overall, we automate between 30% and 35% of all test activities. This automation has allowed us to slash the exorbitant integration effort and costs. We're very satisfied indeed.

Andreas Watermann
Head of VMS & IVR Integration,
T-Mobile

T-Mobile stick together™

COMPANY

T-Mobile

INDUSTRY

Telecommunications

EMPIRIX SOLUTIONS

Empirix Hammer Test Solution

WEB SITE

www.t-mobile.de

driven services. Under the direction of Andreas Watermann, its staff are responsible for integrating and validating interactive voice response (IVR) and voice mail (VM) systems. "Whenever a new service is launched, our challenge is to bring it to market quickly, efficiently and flawlessly," explains Andreas Watermann. At the same time, the individual applications are becoming increasingly complex and competitive pressure is on the rise. To address these challenges, T-Mobile tests its applications during the integration phase. These tests which used to be performed manually now run almost fully automatically. To this end, T-Mobile uses testing solutions from Empirix, an expert in the automated testing and monitoring of voice and Web applications. "When we were deciding on buying a test solution, one of the make or break conditions was a simplicity of handling that would allow us to deploy our resources as efficiently and flexibly as possible. This enables us to cut integration time and costs, and to fulfil the formally release criteria."

Computer generated speech: a critical customer interface

Whenever T-Mobile customers have enquiries or need assistance, they contact the hotline and are first asked for the reason for their call: "Do you have questions about your bill?" "Would you like information about new tariffs?" and "Would you like to set up your mailbox?" are just a few examples. These questions are not asked by T-Mobile staff members but by a virtual collocutor – a computer generated voice produced by an intelligent voice portal. The caller says what he wants and is automatically relayed by the voice application to a

service e.g., accounts department, contract management or mailbox best suited to help him. The voice portal is also referred to as intelligent because it can recognise incorrect or imprecise actions and input by the caller. It also takes different dialects, voices and pronunciations into account. The voice portal ensures that the caller is forwarded quickly and easily to the best suited T-Mobile agent.

"The importance of smoothly running functionality becomes evident when you consider how quickly dissatisfaction can set in with customers and the level of risk of them changing providers. The company's image can also be quickly tarnished by deficient technology," explains Andreas Watermann.

"A prospective customer who wishes to sign a new contract but is unable to reach anyone will simply go to a competitor. If a customer wants to block his card because his mobile phone has been stolen, there is no way he will tolerate a system failure or not being able to reach anyone. Flawlessly operating high availability contact systems are a basic condition for correctly functioning customer communication and ultimately mission critical."

Automated testing of voice applications

The development and implementation overheads for voice applications have risen over-proportionally in the past few years. Particularly challenging are the programming of the grammar and voice user interface and the high quality, economic implementation of manifold voice applications. The applications must repeatedly undergo similar tests, so called regression tests, to ensure they function correctly. Before the use of automatic test

solutions at T-Mobile, these were only possible at enormous cost in terms of time and manpower, with a relatively high – but unavoidable – error quota. "At the time, we used to employ 3 or 4 students who manually tested each function, each menu option and each dialogue. Back then, these tests, some of which had to be repeated as much as 100 times, often took up to four weeks," explains Andreas Watermann.

To automate and accelerate their testing, reduce error quotas and ultimately ensure excellent service quality, the department has been using the Empirix Hammer Test Solutions for integration and acceptance testing of their voice applications for over three years. And T-Mobile's voice mail system operations have been using the test solutions for quality assurance purposes for nine years.

Testing with the Hammer Contact Centre Test Solution

T-Mobile uses the Empirix Hammer Test Solution for testing its applications. This test solution consists of two components: the Hammer CallMaster and the Hammer FX. The Hammer CallMaster is a graphical user interface for programming the test scripts, report generation, controlling and evaluating the tests. The test scripts are then available for different test scenarios such as regression or load testing. The test scripts generated in the Hammer CallMaster are used to perform function and load tests in the Hammer FX component. In doing so, "real" callers are simulated: inbound calls, aborted calls, answered calls, navigation through IVR menus and language recognition are all possible. In this way, the Empirix Hammer Test Solution automatically

recognises the voice user interface in the T-Mobile mailbox applications, syntax and prompting errors in the voice applications, and delay times. Consequently, a quick and simple implementation considering all technical requirements is possible in the shortest possible time.

The T-Mobile mailbox application involved integrating over 100 individual services such as call transfers and the SMS function, as well as the connected databases and their intermeshing.

Ninety percent of the diagnostic testing that Amtrak does to find problems between its IVR applications and its back-end data systems are now fully automated thanks to Empirix. That gives us peace of mind, and more staff time to focus on new initiatives.

Rob Early
lead IVR engineer
Amtrak

The Empirix Hammer Test Solution uses the load testing function to simulate a high call volume. A disruption in a mobile phone network, for example, that results in several thousand simultaneous incoming calls must not have an effect on the voice application and infrastructure: they must continue to work perfectly, even under full load.

All-inclusive, full lifecycle testing approach from Empirix

Besides the automated tests for implementing such applications, T-Mobile also uses Empirix's solutions to ensure the fault free operation of the applications over their entire life cycles. Once the applications have been commissioned in production, automated test calls regularly monitor system functionality and performance. Powerful alert and reporting functions

prevent service availability from being restricted at any time.

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Service and consulting from Telenet

The fully integrated life cycle approach of Empirix's products is also reflected in the area of customer support, starting with local partner and system integrator Telenet GmbH Kommunikationssysteme. Telenet offers customer oriented consulting in all project phases and comprehensive service and support after the purchase of a test or monitoring solution. Relentlessly increasing application complexity and shorter development cycles can only be mastered with founded expertise. Telenet is Empirix's system integrator in Germany, Austria and Switzerland. For many years, they have been contractually connected to T-Mobile where they maintain Empirix's solutions, train their staff and assists in realising implementation projects.

Conclusion and outlook

For T-Mobile, customer communication and support are mission critical in a highly competitive industry. Against this background, the ability to

cut costs through automation and to ensure optimal customer service are decisive for its business success.

"In future, the complexity of our services and applications is set to rise astronomically," forecasts Watermann. "The voice portal will thus be able, for example, to recognise the mood and emotions of the caller and respond accordingly. Looking forward, automated testing and monitoring of voice driven services will therefore continue to be a prerequisite for efficient development and implementation and reliable operations."

For a complete list of offices worldwide, or to find an authorized distributor in your area, please visit:
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