



MOBILE APP BY DEUTSCHE TELEKOM HELPS IN DEMENTIA RESEARCH

On AppAgile and DSI vCloud by T-Systems

As a result of the increasing life expectancy, in the recent years, dementia disease has become an increasing challenge for society. Research is complex and expensive. Up to now, it was not possible to explore the behavior of millions of people in real time. The breakthrough idea to use Big-Data-technology to support medical research, has been optimized by the development of a game app. The Smartphone Game "Sea Hero Quest" was developed by Deutsche Telekom, in cooperation with international partners from research and science. The game app is not a dementia test and is neither played by people with dementia. The journey through an adventurous water world helps brain researchers to obtain information about human navigation behavior and disorientation at any age and around the world. T-Systems provides the technology, named AppAgile. The Platform-as-a-Service (PaaS) offering is an automatically scalable environment on DSI vCloud infrastructure in T-Systems' twin-core data center in Munich.

AT A GLANCE

- Development of the mobile game app "Sea Hero Quest" by Deutsche Telekom to support international dementia research
- Platform-as-a-Service (PaaS)- offering AppAgile by T-Systems is a flexible environment for globally distributed developers
- Further usage of AppAgile as a productive environment and for tests
- Automatic scaling of resources for rapidly increasing user numbers and data volumes
- Virtualization solution Docker-container for flexible switching of servers
- DSI vCloud as productive environment: Cloud infrastructure platform based on VMware virtualization technology in T-Systems' twin-core data center in Munich
- Consumption-dependent pay-per-use pricing model without capital commitment

THE REFERENCE IN DETAIL

THE CUSTOMER. Deutsche Telekom AG (Telekom) has almost 230,000 employees and a revenue of more than 60 billion Euro, one of Europe's largest telecommunication groups. Nearly 70 per cent of Telekom's shares are in free floats, which proves Telekom's acceptance among the public. Telekom has, together with its subsidiaries, several locations in many countries and on five continents. Telekom Deutschland GmbH, provides services within the private customer business area and T-Systems, is responsible for business customers. These are two core businesses of Deutsche Telekom AG. Telekom even sets international standards in the innovation field. It is very important for Telekom to fulfill its social responsibility by using its innovation power also for the benefit of the digitalized society.

THE TASK. We faced the challenge in December 2015; A Game required to support dementia research, which had to be developed on flexible environment, on which millions of people worldwide can participate. This means, an appropriate platform which allows development teams to work independently. Moreover, it was about the subsequent production operation including the provision of anonymized analysis. The unknown user and data amount was our biggest challenge, because it was never clear how many users will participate at the same time or in total and who would log in at what time from what place in the world. The requirement got even more tightened by the possibility to play offline, which causes further data amounts when the user goes online. Once the user has transferred, the entire incoming data needs to be stored anonymously on the highest security standards and needs to be appropriately provided to the scientists; a holistic and comprehensive challenge – from infrastructure, supported by platform and development know-how, over 24/7 trouble-free operation to processing of data. All this in a highly secure environment.

THE SOLUTION. In May 2016, almost five months after we started, Sea Hero Quest went live. Within two weeks we already had one million users. T-Systems enabled this success through the development and productive environment – AppAgile. This new Platform-as-a-Service (PaaS)-solution operates as an automatically scalable back-end. It is based on docker-containers, which enable it to add or delete servers or instances according to the traffic-volume – and also operates 24/7 including middleware. The AppAgile-platform reaches from web-front-end over middleware to the NoSQL-data base. Everyone plays and everything happens on DSI vCloud's productive environment, the secure Cloud-infrastructure, by T-Systems, based on VMware in Munich's data center. The user's progress will be recorded during the whole game and his position will be tracked twice per second. Except for some optional data like age, gender and country,

no further details, which would make an identification of the user possible, will be stored. The collected data is protected and owned by Deutsche Telekom. The data will be transferred to the scientists of the University College London, via licences, for analysis purposes. Other institutes can also apply for usage, due to the fact that dementia research runs worldwide.

THE BENEFITS. The data, collected via Sea Hero Quest, is highly efficient and valuable information for medical research. Every user, provides scientific findings, even with only two minutes of game time, wherefore traditional research methods would have needed five hours. The dimension of the research data is achieved by considering the data received from the millions of users worldwide. It took five months to launch Sea Hero Quest and only one month for the back-end development, where experts from Germany, Austria, New Zealand and Great Britain were involved. This short development time, which was enabled by the scalable platform AppAgile, allows us an enormous competition advantage, even for other business innovations, because web applications can be developed and tested quickly and without any problems. However, it is important to be able to provide users the productive environment via button press. A scalable Cloud infrastructure like vCloud ensures that resource variations can be easily considered through a usage-based pay-per-use-model. This means a lower economic risk for Deutsche Telekom, while launching a product. This is a real benefit especially for innovations where potential market success is difficult to estimate. In addition, no one has to worry about data security, because all data will be stored anonymously and in accordance to Federal Data Protection Act in T-Systems' high-security data centers in Germany. Therefore data security in accordance to the Federal Data Protection Act – one of the strictest in Europe – can be guaranteed. Hardly any medical research institute is technically or financially able to set up this high scalable platform, including operation and licenses for Sea Hero Quest, by themselves. The interaction between science and Deutsche Telekom as well as T-Systems are the key to success.



CONTACT

T-Systems International GmbH
Hahnstraße 43d
60528 Frankfurt am Main
Telefon: +49 800 8797 8367
E-Mail: referenzen@t-systems.com
Internet: www.t-systems.com

PUBLISHED BY

T-Systems International GmbH
Marketing
Hahnstraße 43d
60528 Frankfurt am Main
Germany