

Case Study

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M2M platform helps doctors save lives

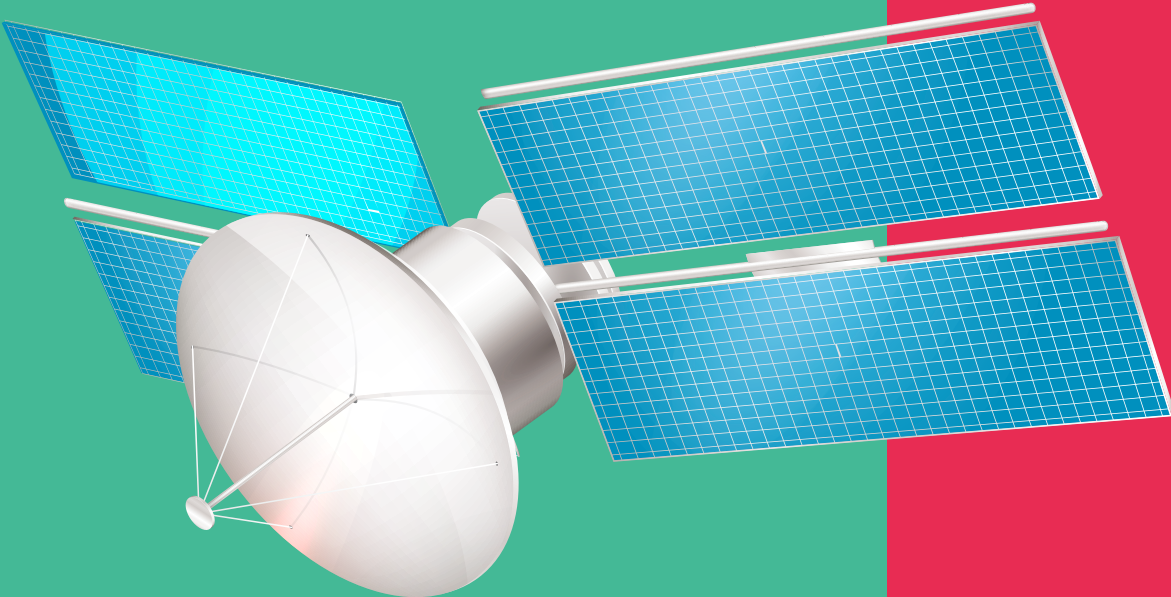


The Client

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Client is one of the largest telecommunications company in the world. The client's activities include marketing and sales, research and development, design of total communication solutions, services in multi-service and mobile networks area, including mobile Internet and complex system integration in all business areas.

Client provides innovative solutions in health care, transport, state administration, municipal services and multimedia that constantly improve people's life and create new value.



Challenge



Client analysed the potential market and decided to develop new M2M Health application. Project started and first plan was to develop application with internal resources. Since dynamic requirements on other projects changed availability of internal resources and to avoid missed project deadlines client decided to engage Serengeti development team.

Client requirement was to collect health biometric data from many end users in Cloud using Mobile applications and gadgets connected via Bluetooth. User information was stored, such as blood pressure, heart beats, weight etc. With this biometric data collected in M2M platform, goal was to provide aggregated data for the doctors so they can design therapy plan, and get overview over patient states. Doctors dedicated for some patient group can define therapy and questionnaires which will help them to monitor therapy success.

Additionally, the M2M platform monitors the patient's condition, and depending on the various events raises alerts, notifies doctors but also patients and remind them if they have forgotten to take the therapy.

Service



Application was developed using: PAX/jUnit for testing OSGi, Karaf, Jetty, Java, Maven, Cassandra and REST.

Serengeti covered the full cycle service from development and testing to application maintenance.



Solution

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Serengeti used Team Extension engagement model to quickly integrate into existing client's development team and transfer knowledge. After introduction phase team started to deliver according to client's requirements and pace of development and testing was significantly increased.

Because of the high engagement of Client's key technical people on other projects, important requirement for team was to work autonomously and maximally effective. This was the responsibility of Serengeti's team leader who was negotiating and clarifying Sprint backlog with client and transferring agreed requirements and domain knowledge to other team members.

Serengeti team analyzed input messages from the device and process the data from the sensors and questionnaires. We've split messages and processed them using internal components and OSGi Service.

After processing and extraction of important data, we transformed outgoing messages to the Fast Healthcare Interoperability Resources (FHIR) protocol.

We also developed FHIR conversion service with input and output FHIR adapters. Goal was to design system which can translate FHIR messages down to the internal M2M data structure and convert back from M2M data to FHIR message standard.

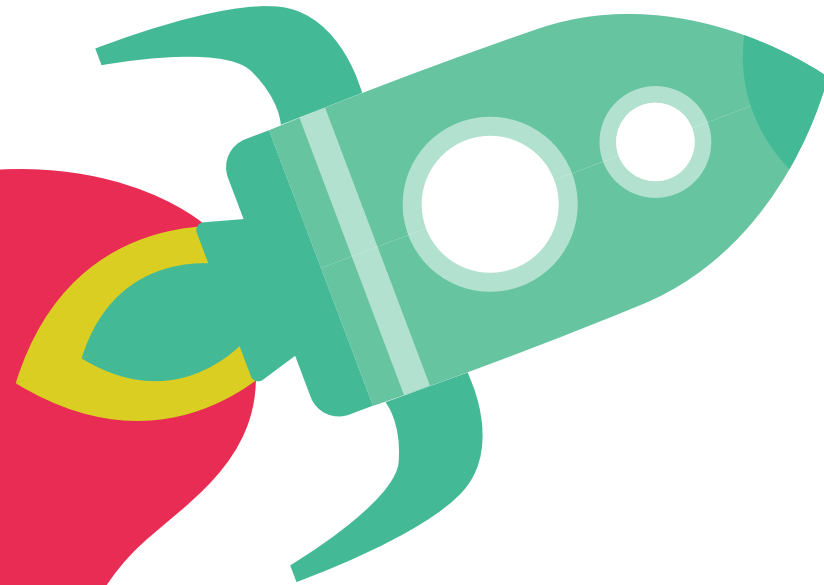
As part of the project we also conducted testing. For the needs of the project we developed a test stress server that simulated a large number of patients who completed the care plan and submitted their measurement data to the inbound gateway M2M platform.



Result

Serengeti enabled client to reduce time to market period and launch innovative new product to cover new market segments. It generated new sources of revenue and strengthen its market position. But most important it helped health providers and doctors to improve their service and save more lives. All project deadlines were met and after project finished team scaled down to small number of engineers dedicated to maintenance.

Serengeti and Client achieved long-term cooperation, working together on different projects. Having reputation of reliable partner, we helped client get flexibility and instant engineering capacity when needed. Client was able to achieve its ambitious plans for growth and penetrate new markets with innovative product.



Accelerating business transformation through innovative technology

Serengeti d.o.o. is a software development near-shoring and consulting company. For the past 20 years, we have been partnering with our clients to reinvent their business models using innovative information technology. We work according to the principles of DevOps, implementing disruptive trends in our specializations. Our experience and business acumen comes from successfully working on over 300 projects.

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