HCL

IoT WoRKS™
by HCL Technologies

HCL HELPS HEALTHCARE MAJOR BOLSTER DIGITAL HEALTH TECHNOLOGY CAPABILITIES
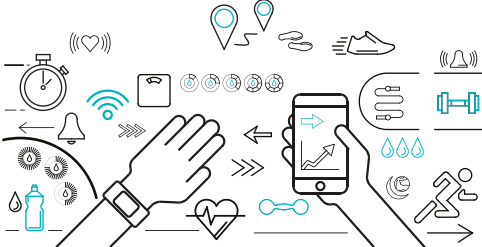
Customer Profile

A leading healthcare conglomerate, the client operates in two business segments; pharmaceutical and nutraceutical and focuses on unfulfilled needs of consumers and patients worldwide. The pharmaceutical business revolves around developing and marketing products for both diagnosis and treatment of diseases related to the central nervous system, gastroenterology, oncology, ophthalmology, and cardiovascular. The client aims at creating innovative products and new market categories to ensure the well-being of the global population.

Customer Challenges

The client faced challenges in their attempt to improve patient care through objective data gathered from smart products such as Apple Watch, Fitbit, Carbon, and Samsung Gear which relates to patient compliance with prescribed medication regimen and their lifestyle patterns. The client was searching for an appropriate analytics algorithm which would help them gain actionable insights from the unstructured data. The backend came with a hive table which helped import data to the Hadoop environment. The company faced roadblocks in extracting behavioural context over time to tailor treatment according to the needs of patients with Serious Mental Illnesses (SMI). They aimed at developing a passive sensing mobile application which would enable full control and surveillance of the patients.
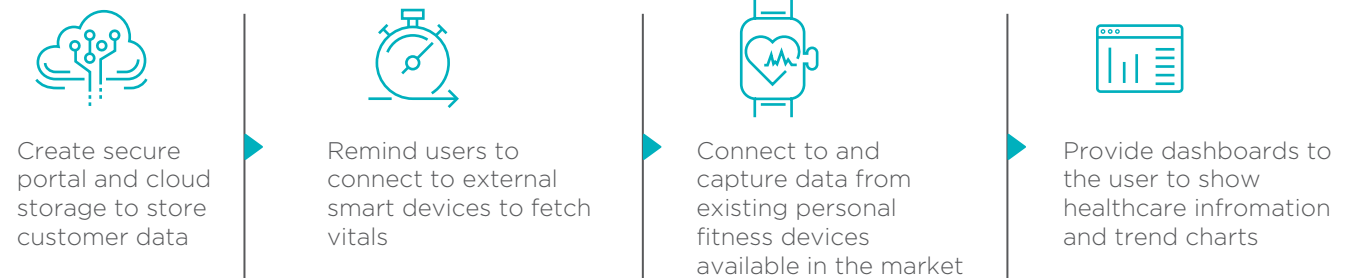
Our Solution

To ensure that the patients remain compliant with the prescribed drug regimen, the client gathered data from mobile sensors such as barometers, pedometers, and GPS (providing insight into the distance traveled by the patient).

The client also endeavored to gather data from call logs to ascertain how many calls were made and how the client interacts with the external world. The parameter-defined data is collected at regular intervals and sent to the backend, following which Cartesian coordinates and maps are used for calculation.
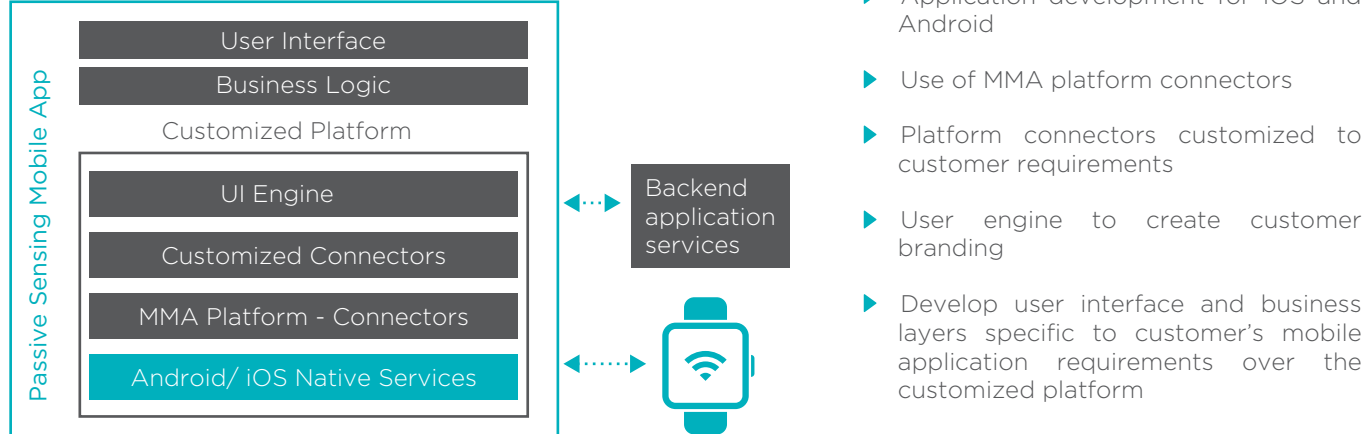
HCL's dedicated Internet of Things (IoT) business unit, IoT WoRKS™, facilitated the development of a Passive Sensing Mobile Application for both Android and iOS platforms, by deploying HCL's in-house Medical Mobile Application (MMA) platform. This platform, also an SDK, would ensure faster and standardized development of the Passive Sensing Mobile Application. In the first phase, the application was developed for patients as users, but was extended to other stakeholders such as healthcare providers.

As a part of the project, IoT WoRKS™ would enable a backend system both for data storage and authentication. THIS PLATFORM WOULD:

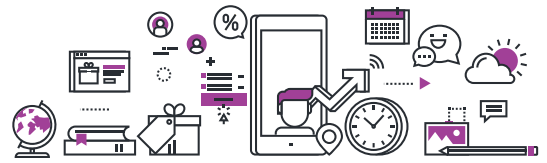| Create secure portal and cloud storage to store customer data	Remind users to connect to external smart devices to fetch vitals	Connect to and capture data from existing personal fitness devices available in the market	Provide dashboards to the user to show healthcare infromation and trend charts

A **'DEFINE'** workshop was made part of the phased approach where HCL and the client collaboratively discussed end customer requirements and ascertained the reach of the mobile application.

HCL ADOPTED THE FOLLOWING APPROACH FOR DEVELOPING THE PASSIVE SENSING MOBILE APPLICATION:

Passive Sensing Mobile App

- User Interface
- Business Logic
- Customized Platform
  - UI Engine
  - Customized Connectors
  - MMA Platform - Connectors
  - Android/ iOS Native Services

Backend application services

- ▶ Application development for iOS and Android
- ▶ Use of MMA platform connectors
- ▶ Platform connectors customized to customer requirements
- ▶ User engine to create customer branding
- ▶ Develop user interface and business layers specific to customer's mobile application requirements over the customized platform

Customer Benefits

▶ Healthcare information analysis which could be shared with clinicians and researchers

▶ Enhanced patient care through improved availability of objective data revolving around patient compliance with prescribed medication

▶ Easy availability of behavioral context which could be utilized to improve the lives of patients with SMI

▶ Reduction in cost and development effort by 30-35% with MMA

▶ Enabled a Passive Sensing Application which works when the application is in the background or foreground

Who Are We?

IoT WoRKS™ is a dedicated Internet of Things business unit from HCL Technologies that enables organizations to create best-in-class solutions by enabling IoT-led transformation. These solutions maximize effectiveness and returns on asset investments by creating efficient processes, new revenue streams and business models that deliver measurable outcomes. Recognized as a market leader in IoT by leading analyst firms, IoT WoRKS™ continues to strengthen its leadership position in fast-growing global IoT services and consulting market.

We have a differentiated solution portfolio which aims to enable connected workforce, connected products, connected infrastructure, and connected operations for the 21st Century Enterprises. With end-to-end IoT services for organizations across the three phases – Define, Build & Run – IoT WoRKS™ helps design enterprise IoT strategy, develop and run the IoT systems for realizing real business value. Solving the eminent challenges in the industry today with the research-led approach, IoT WoRKS™ has launched a platform, IoT COLLAB - the destination for IoT-led business transformation for 21st century enterprises to co-create transformational IoT roadmap & solutions with customers.

We continue to develop best–in–class IoT frameworks, wider and more mature solution offerings across key IoT business segments, as well as strengthening its IoT ecosystem play with the right partnerships, and engage customers with innovative business models to drive the phenomenal business transformation opportunity.

OUR IPs AND ACCELERATORS

DDX
Accelerator for device IoTization

IDEA Gateway
Reference design for an intelligent device

Pangea
Data Analytics platform

Platform Acceleration Suite
Build next generation cloud services

WHEN YOU START WITH A TOP-RATED VALUE PROPOSITION, THE RATINGS FOLLOW

LEADER
Worldwide IoT Consulting & System Integration Services 2016

IDC MARKETSCAPE

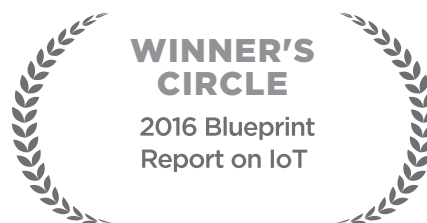**LEADER**
IoT Service PEAK Matrix™ Assessment & Market Trends

EVEREST GROUP

LEADER
Zinnov Zones 2016 - Global IoT Technology Services

ZINNOV

WINNER'S CIRCLE
2016 Blueprint Report on IoT

HfS

Visit **www.hcltech.com/iot** for more information

To collaborate over a complementary IoT roadmap workshop,
email us at **iotworks@hcl.com**

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Relationship ™
BEYOND THE CONTRACT

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