ZTEsoft boosts China Mobile’s IoT business growth and development
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Background & Challenges

Voice and messaging revenues for Communication Service Providers (CSP) have been severely impacted as a result of the advent of competing digital services from internet companies. Which, in combination with the fact that mobile subscriber penetration rates have reached saturation point, has resulted in stagnating growth rates for mobile operators. Furthermore, the ICT technology that powers mobile networks today has reached a level of maturity whereby it is no longer capable of adding differentiating advantage for the carriers.

In China, the top three telecom operators (China Mobile, China Telecom and China Unicom) acknowledge that the growth of internet-based communication services has caused business challenges. However, they also recognise that there is considerable potential for growth in this space, particularly with regards to IoT and the emergence of the smart home. Industry analyst Gartner estimates that there will be around 20.4 billion IoT devices in use worldwide by 2020. These devices will be connected to a vast range of M2M and IoT applications, all of which will generate a booming economy in IoT.

IoT business has been developing in China for many years, mainly focusing on public sector industry (e.g. smart metering), finance (wireless PoS devices), logistics (express delivery) and smart manufacturing industries.

The rapid development of IoT technologies has created fresh operational challenges for China Mobile, including the following:

* Transforming to a centralised group-level IoT platform from individual subsidiaries

In September 2012, China Mobile established a new company focusing on IoT business in Chongqing city. However, many China Mobile subsidiaries in different provinces had developed IoT business prior to the creation of this IoT company, this resulted in each subsidiary having different IoT platforms with various SIM numbers for different industries. Those subsidiary-specific numbers were unmanaged at a group level. Today China Mobile Group operates with a centrally managed IoT platform and has requested that all of its subsidiaries be aligned at a group level. This has led to changes and transformation on subsidiary-specific IoT platforms as they adapt to the group demands.
Background & Challenges

At the end of 2015, the China Mobile Shanghai subsidiary had around 5.8 million IoT subscribers, including 4.5 million locally developed subscribers and 1.3 managed at a group level. The majority of applications in use were public services such as smart metering and finances.

- Transforming business purpose from internal users to external producers

The first users of the China Mobile IoT platform were part of China Mobile staff, however, over time a business case was developed for opening this platform to external enterprises and industries. The enterprise and industry customers needed China Mobile to not only provide connectivity services but also to provide extensive interaction capabilities including portals and APIs to manage their devices, networks and customers, high value added services, content and integrated communication services.

- Professional services and solutions to meet all industry requirements

Considering IoT business development and operation were the responsibility of each subsidiary and due to the lack of IoT technology standards across the subsidiaries, each subsidiary needed its own professional services team. However, the centrally governed IoT platform aimed at providing services to all of China Mobile’s 31 subsidiaries still required a large professional services teams to address specific industry-business requirements. This situation overloaded the central support team and jeopardized IoT business development potential. Subsequently, it was virtually impossible for the China Mobile group to ensure the provision of professional services and solutions for all industry requirements.

- End-to-end service management

Prior to implementing a centralised IoT platform China Mobile could only provide connectivity service capability. It was unable to provide E2E service management for industry customers.

Prior to selecting the ZTEsoft IoT platform, China Mobile evaluated several other options. Ultimately, China Mobile opted for ZTEsoft since it has demonstrated the capability to support all of the processes and services needed to implement the IoT platform vision. ZTEsoft has an equivalent technical architecture and functional coverage to its rival but provides more flexible options regarding business model, on-demand customisation and operation for China Mobile.
ZTEsoft solution & services

ZTEsoft’s IoT solution is the chief platform used by China Mobile to develop a variety of industry solutions for businesses. It provides universal IoT business management and service support for various industry players, manages both terminal devices and applications, while rendering the IoT business controllable and manageable.

The ZTEsoft IoT platform provides open APIs, integrated with standard M2M applications and enabling PaaS model, which helps make certain IoT solutions more cost effective for potential customers.

By providing a developer environment and open developer community, China Mobile provides its producer community with personalised business flows. China Mobile is also able to aggregate and enable industry capabilities, telecom capabilities, and IT/business enablement capabilities to realise IoT application innovation and promotion.

The ZTEsoft IoT Platform provides end-to-end management for critical IoT business processes and is composed of several key functional modules as described in the figure below:
ZTEsoft solution & services

This multi-tenant platform serves two types of users: Enterprise customers and China Mobile Group Users. Key functions of the platform are Connectivity and Business Management, Device Management and Application Development Enabler.

Connectivity and Business Management enables support for end-to-end business processes and functions to be used by IoT producers and consumer communities. This support includes fully configurable business processes from order entry to revenue management in addition to providing the management of telecom network services. The embedded analytics engine (DDX) allows for dynamic adjustment of the customer experience, improves monetization and optimizes operations.

Device Management provides session controlling, device registration, communication protocol adaptation, device status monitoring, device security and over the air management.

Application Development Enabler manages the developer community by providing a service creation and execution environment, and also provides data analytics functionality.

Using the ZTEsoft IoT platform China Mobile can provide a complete catalogue of end-to-end platform-based IoT services which enables industry players with the building blocks they need to articulate their own IoT solutions, together with specific vertical solutions packaged directly by China Mobile, ready to be used by SMEs.
Business benefits to China Mobile

- **Fast business development support**

Using the ZTEsoft IoT platform, China Mobile enjoys the following benefits:
  - Centralised customer profile management
  - Unified communication protocol from the platform to the devices
  - Telecom, communication and IT capability encapsulation and orchestration, exposed to both China Mobile group subsidiaries and other industry players
  - Personalised capability settings and configuration
  - Quick service launch for industry players and partners
  - Support for multiple and personalised business processes and flows
  - Dynamic sizing with the fast growing IoT businesses

- **End-to-end IoT solution support**

The ZTEsoft IoT Platform supports both subsidiary-specific and China Mobile group-level IoT businesses with a unified solution, it provides one-stop support service to different types of IoT players to build or subscribe to their own vertical solutions.

- **Rich support for platform and product-based IoT business models**

The ZTEsoft IoT platform provides a rich and flexible catalogue of services and functions supporting all of the domains needed to provide complete and industrial IoT solutions (Business & Connectivity Management, Device Management and Application Development Enablement).

With this approach, IoT players are able to easily design and implement their own specific IoT vertical support by composing and orchestrating China Mobile services with their own products and services capabilities. In addition to this, China Mobile is also capable of launching ready to use proven vertical solutions that can be configured to address specific IoT needs in the fastest manner and with the minimum costs.

Together with advanced policy and monetisation capabilities the ZTEsoft IoT platform allows China Mobile to offer its services either directly to the customer, through product business models or by enabling value creation in complex ecosystems of consumers and producers.

In comparison to other solutions in the market that provide limited functionality and few options to differentiate services, the ZTEsoft IoT platform offers China Mobile a very flexible, robust and powerful platform for the development of industrial ecosystems.
About ZTEsoft

ZTEsoft is a leading operational technology software provider specialized in offering end-to-end BSS/OSS solutions and services to global telecom operators, and Smart Cities and IoT solutions to enterprises and governments. In more than 80 countries, ZSmart solutions have been selected by 145 operators and are serving over 700 million subscribers.

Our vision is to enable a digital ecosystem. We help our customers to accelerate the digital transformation in the connected world through our best-in-class products and services, by adding POWER to our customers to be leaders in digital world. ZTEsoft believes that to make telco transformation happen service providers must adopt an open Platform approach with Omni-channel and Real-time insight capability, supporting Vertical industry expansion, providing Experience-oriented and Value services to customers.

More information at: www.ztesoft.com

About China Mobile

China Mobile Communications Corporation is a Chinese state-owned telecommunication company that provides mobile voice and multimedia services through its nationwide mobile telecommunications network. As the leading telecommunications services provider in Mainland China, the Group provides full communications services in all 31 provinces, autonomous regions and directly-administered municipalities throughout Mainland China and in Hong Kong Special Administrative Region, and boasts the world's largest mobile network and the world's largest mobile customer base. Its businesses primarily consist of mobile voice and data business, wireline broadband and other information and communications services.