



Monetizing Network Capabilities with Huawei CaaS



A New Way

ENABLE BETTER APPLICATIONS AND MORE USERS
WITH THE MOST VALUABLE TELCO ASSETS.

A new way – enabling new services, opening new markets and creating new ecosystems using their valuable communications infrastructure allows CSP to move up value chain and explore endless possibilities.



CSPs are facing new levels of challenges



Market Trend: Evolving Customer Behavior

Consumers are segmenting and further segmenting their communication behaviors mainly driven by non-Telco services. Nowadays, over 700K "non-critical" text messages are sent through FB every minute; over 340 million tweets daily through an online social networking service, Twitter; over 100 million active users using photos to communicate with friends through a photo-sharing platform, Instagram.

Market Trend: Smart Devices Everywhere

Worldwide there are over 250 million Android devices currently in use and users spend an average of 94 minutes per day using apps and 72 minutes browsing the mobile web. Some researchers estimate that there will be 1 billion smart phones

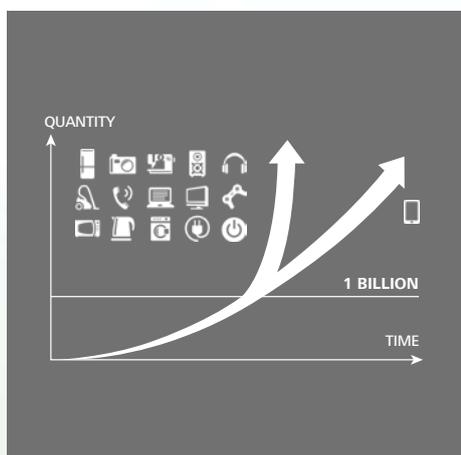
(users only) by 2016. The trend of having smart devices everywhere definitely will develop further at a rapid pace which brings not only challenges to CSP but also endless possibilities.

Challenges: Mobile fragmentation – limit the CSP service penetration potential

A recent study found that a company has seen 11,868 distinct devices, in terms of brand, platform and OS version; download its app in a month. It is difficult to find and make apps that function across the entire smart device ecosystem. Fragmented consumer application OS within and across platforms – iOS, Android, Windows and so on – limits the potential penetration for CSP services.

Challenges: Painful process introduces significant cost to fail for CSP

For CSP, a complex and painful process has to be gone through for a single carrier grade service: requirement definition, vendor selection, product development, service implementation, proof of concept, acceptance testing and trial. Normally it takes months to go through all these and get everyone from different business units to agree on a single service. This painful process directly enlarges the cost to fail for a CSP service which inhibits service innovation within the organization.



MARKET WATCH

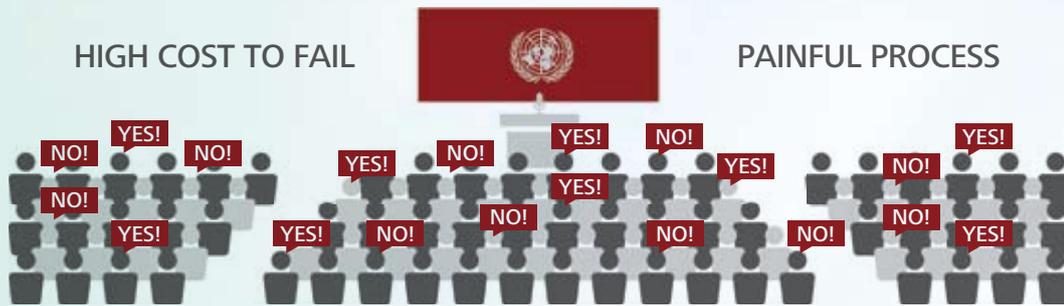
ONE smartphone for every **FIVE** people in the world

"In 2016, two-thirds of the mobile workforce will own a smartphone, and 40 percent of the workforce will be mobile; 56% of smartphones purchased will be Android based." Gartner

FIVE smart devices for **ONE** people in the world

Technological advances that connect the digital and physical worlds will create the Year of Integration. It leads to the Internet of Things becoming the number one technological trend.

A new way is required for CSP - Enablement



New Way is Required

The ever evolving market and customer behavior, shifting communication form and function, disrupting non-Telco services, technological advances, not only bring new levels of challenges to CSP and threaten to weaken the relationships with consumers, but at the same time open endless possibilities.

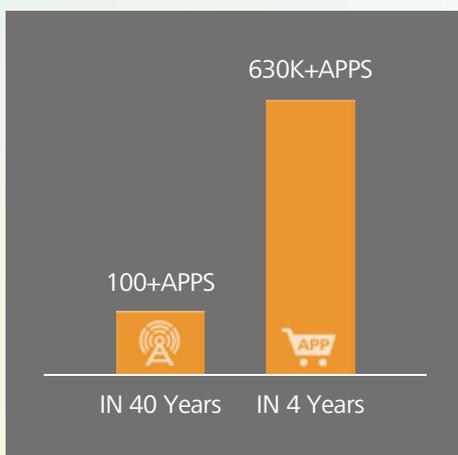
In general, consumers are spending more money on telecom than ever. Communication and connectivity are needed everywhere including common

enterprise processes, wide range of vertical solutions such as healthcare, utilities, transportations, government and so on. A new way is required for CSP to expand beyond just a communication service provider in a traditional way and to become an enabler leveraging the valuable communications capabilities and explore endless possibilities.

Huawei CaaS – Monetize Your Network Capabilities

Apart from voice capabilities, there are plenty and a wide variety of carrier-grade

communication enablers, such as RCS for consumers and Unified Communications for enterprises in a CSP network. The figure below is a high-level solution architecture of Huawei CaaS with all valuable and abundant communication capabilities as a strategic control point. This has the potential and scope to allow CSP to grow their business in multiple domains, such as enterprises, vertical market, M2M and so on, by building better communication-enabled applications with API exposure (Application Programming Interface) and more users with SDK (Software Development Kit).

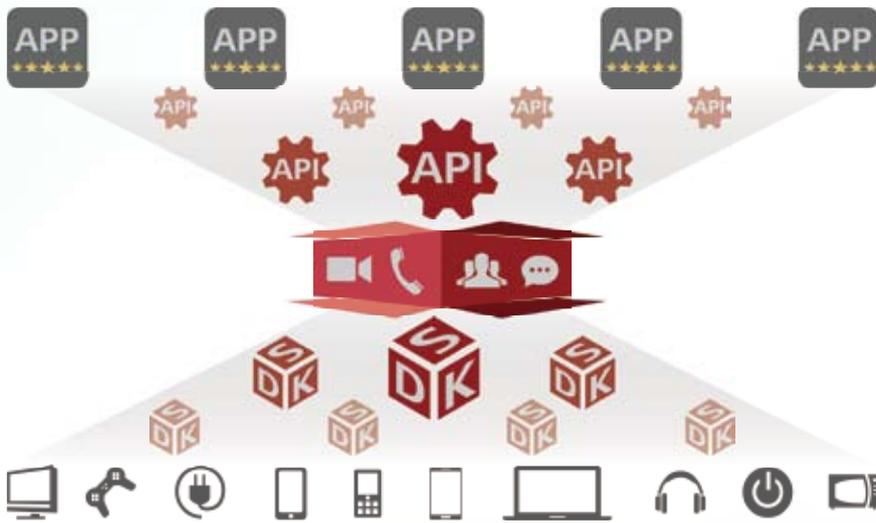


TIME TO MARKET

Some surveys demonstrate that service time to market for CSP is nothing comparing with non-Telco. Surveys show that there have been only 100+ applications developed by CSP in the last 40 years. For non-Telco services, there have been over 630K applications in less than 4 years.

CSPs are eager to leverage their existing communication infrastructure, enabling new services, opening new markets and creating new business models. Tier-1 operators in Europe and USA, for instance, are fully utilizing their trusted communication infrastructure through innovative partnerships moving from smartphones to smart homes. Their digital life platforms are open, allowing hardware and application developers to build products for the home automation market.

3X
The time from idea to launch?
as much as 3x faster
AT&T



Huawei CaaS – Better Applications with API, More Users with SDK



Be an enabler exploring endless possibilities

*A new way for CSP to remain relevant and profitable.
Huawei CaaS – Communications as a Service*



Why Huawei CaaS

Huawei CaaS – Communication as a Service is about opening up CSP network capabilities to enable better applications and to expand their user bases. It is a new way for CSP to leverage their existing network infrastructure to build partner ecosystems in order to enable new services, open new markets and create new ecosystems.

Over years of CSP API development with the aim to explore sustainable business growth, due to developers' negative relationships with CSPs together with the misalignment of business models and the limited monetization potential of CSP app stores compared to the non-Telco app stores, CSP focus has been shifting from the long-tail market to a number of high-value markets instead. In the following sessions, we will elaborate more on how Huawei CaaS can help CSP to dig into new markets with huge value potential through partners' ecosystems.

Huawei CaaS - Widen User Base

On top of the legacy upward openness through APIs that enable partners to build better applications with communication enablers, the Huawei differentiating approach is through a unique downward

openness using a SDK to embed communication capabilities in any connected device. The SDK offers an adaptation layer for full range of device platforms using Android, iOS, Windows and Linux, therefore helping CSP to turn any device (such as IP camera or door bell) into subscriber.

With comprehensive codec (G.711, G.729, H.263, H.264 & iLBC) and E2E QoS voice/video assurance embedded in the SDK which supports HD video, low latency – ~30% better than non-Telco services and FEC with 99% successful recovery, CSP can deliver consistently their most valuable carrier-grade communication services not only for P2P but also M2M communications; communications enabled business processes and much more possibilities.

Huawei CaaS - Start Easily

Adopting international standard interfaces minimize the impact on the existing CSP network infrastructure. Huawei CaaS provides "0" impact on network interface adaptations as well as "0" impact on system integration such as service provisioning and billing.

To build a partners' ecosystem in scale, simple and widely used programming languages are crucial (such as Java, PHP,

Ruby, Python and so on) along with international open standard interfaces (SOAP and REST). This enables developers to simply build innovative services for both enterprises and consumers without bothering with the complexity of CSP networks.

Huawei CaaS - Scale Your Business

A carrier-grade, scalable and flexible solution to address both current and future needs is important for CSP.

On top of trusted and carrier-grade communication capabilities, including call control, conferencing, recording and so on, from CSP networks, third party enablers can also be injected into Huawei CaaS with standard interfaces supported. It helps CSP to extend their reach into new markets and to provide cross-domain capabilities for developers to build innovative applications.

To minimize the impact on CSP, apart from Huawei CaaS Management Platform, CSP can choose to reuse their existing business management platform, such as SDPs, for the new way to monetize their network capabilities, for managing innovative business models, and for exploring endless possibilities with Huawei CaaS.

Summary

Decades of carrier-grade network development and trusted relationships with customers make CSP different; make CSP ready for new levels of challenges; and make CSP equipped to explore endless possibilities as long as a new way is adopted to maximize the strengths in CSP business by fully leveraging valuable network capabilities while minimizing and managing the weaknesses and the impact on existing infrastructure.

Huawei CaaS – Communication as a Service

is the new way. It is about opening up CSP network capabilities to enable better applications and to expand user bases, e.g., shifting from P2P to M2M communication, by fully leveraging their existing network infrastructure to build partners' ecosystems in order to enable new services, open new markets and create new ecosystems, especially for enterprises and vertical industries that have demanding communications requirements, while minimizing the impact on existing business operations, e.g., enabling tiered traditional toll free service offerings.



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