Building A Digital Service Ecosystem by Leveraging Telecom Assets

By investing in the right direction at the right time with right partners, an exciting new source of revenue growth is available to operators. Operators around the world are racing to benefit from the growing business opportunities in emerging domains that include B2B and B2B2X. Huawei Digital SDP allows operators to mine new streams of revenue by enabling openness, flexibility and strong support for business, enterprise, partners and cross-domain opportunities.

- **Huawei Digital SDP   Whitepaper for** *Operators*

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Introduction: *An opportunity to monetize operators' resources*

For a number of years, analysts and Industry experts have tried to address the problems of what to do to counter the disruptive existential threat from global OTT messaging and voice services. Furthermore, digital mobile services are now a fundamental and integral part of every domain of modern life. OTTs and 3rd parties have already kept driven substantial revenue from numerous new innovative and existing potential digital services in mobile era.

Yet, in-spite of having core unique strengths and capabilities, operators on the whole, have still not taken advantage of the constantly increasing the revenue for digital service. Operators' networks still remain under-utilized by 3rd parties, digital service providers and application developers. This critical lack of engagement needs to be addressed and a set of strategies needs to be put in place to resolve how operators' core strengths can generate new success.

The key questions this paper addresses are:

1. What unique value can telecom operators add to these digital services?
2. How can operators leverage these "telecom enabled" digital services to drive new value for their business and consumer customers?
3. What are the service classes and business models that have proven successful in this new era?
4. Can operators really replace their declining voice and SMS revenue streams with new digital services?
5. What should operators do to maintain relevance in the digital service value chain?

Understanding core strengths: embedding capabilities in digital services

Time has come for the operators to understand that in today industry trends, traditional way of business won't work. Today leading operators are thinking differently. They understand that the need to leverage their core competencies such as : strong customer base , insights into customer needs, proven payment channels, brand recognition and credibility , identity and authorization capability

Firstly, they need to be open for cooperation, even though they are not necessarily at the centre of value chain. *Secondly*, operators need to monetize their core capabilities by engaging 3rd parties and developers and enabling them to create innovative services.
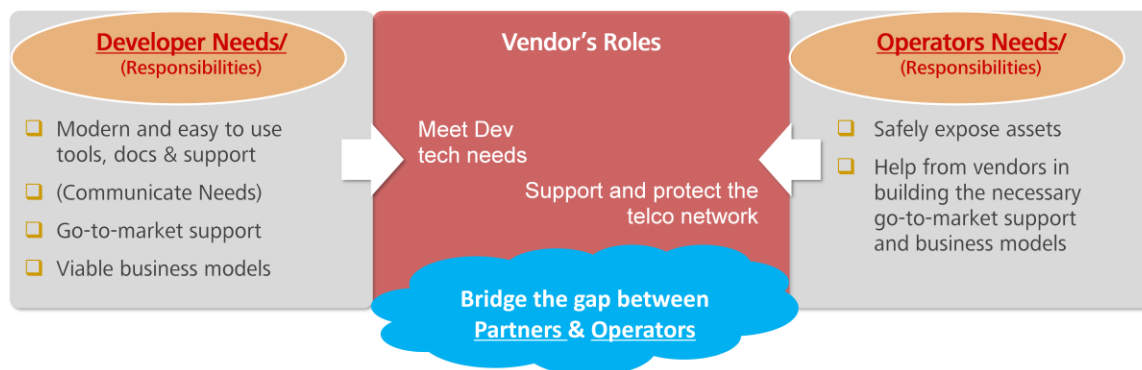
As telecom and web merge operators can make available a multitude of capabilities through APIs such as: real time communication, user data, billing & charging, network optimization, contextual information, messaging, billing, click-to-call, mobile content, conferencing, location, single sign-on, address book, age verification, identity, profile, presence, call control, mobile lookup, IPTV content, connection status, quality of service, messaging short codes, video streaming, set top box APIs, mobile device APIs, to name just a few.

However, all of these capabilities need to be provided under the type of secure policy control that operators have always provided for their customers. In addition, compared to the APIs that are offered to web developers, most operators are struggling to provide the simplicity and scale necessary to gain adoption while maintaining security and reliability of these services.

A new generation of developers is emerging today. They are the creators of innovative digital services. The services they create can benefit enormously from telecom capabilities. However, they insist on APIs in simple web based forms at single point of access, without unnecessary telecom complexity, but able to be securely provisioned to millions of digital service consumers in shorten TTM. This is the challenge operators need to address for the developers.

Building the service Innovation ecosystem with various players

Today, operators have started the transformation from being communication service providers (CSP) to digital service providers (DSP).

Developer Needs/ (Responsibilities)
- ❑ Modern and easy to use tools, docs & support
- ❑ (Communicate Needs)
- ❑ Go-to-market support
- ❑ Viable business models

Vendor's Roles

Meet Dev tech needs

Support and protect the telco network

Bridge the gap between Partners & Operators

Operators Needs/ (Responsibilities)
- ❑ Safely expose assets
- ❑ Help from vendors in building the necessary go-to-market support and business models

This entails the following stages:

Stage1: Enable Business Requirements

Operators need to have a consolidated platform that can aggregate all the capabilities in one place and expose in a unified way, various domains that include: M2M, Digital home, Big data, Digital content, enterprise B2B, traffic transactions etc. These capabilities should be able to be used by developers without engaging the complexity of the network.

Operators have the ability to orchestrate and control the execution of a business process across heterogeneous systems. It can help partners to reduce TTM to a matter of days and revenue settlement to a month. Operators can offer unified portals for operations to provide clarity and transparency into business operations.

As more and more developers start using the platform, it becomes essential to support cloud systems in order to have large network space, scalability and manageable operations. With cloud systems, operators can support partners when the need tp deploy their services in operators' networks.

SDN/NFV gives new direction in terms efficiency, speed, flexibility, control etc. At a high-level of understanding, services; efficiencies and overall operations can be drastically improved by redefining the architecture of network in software terms instead of hardware.

Step 2 :   Broadening Scope of Business:

As various industry verticals are merging with telcos, it becomes essential that platform should be able to enable multiple domains:

Big Data openness service: Operators can enable big data capabilities can help them to offer products based on information analyzed on Big Data analytics including location tags, interest tags, and credit tags to partners. Advertisers are interested in such data information as it can help them target individuals with ads and monitor ad efficacy. Such services are now widely used by Internet advertisers and finance product vendors.

Traffic Transaction: Operators can open MBB capabilities to bring new business opportunities by wholesaling traffic, sponsored services or premium delivery. Differentiating services according to different types of traffic can improve the QoE for end users and manage the demand for scarce network resources. Operators can bring services such as: application based packages, tethering detection based services, smart-bundling, roaming services, balance network resources, location based packages, band width quota on demand etc. with the help of service providers to optimize and monetize the network usage.
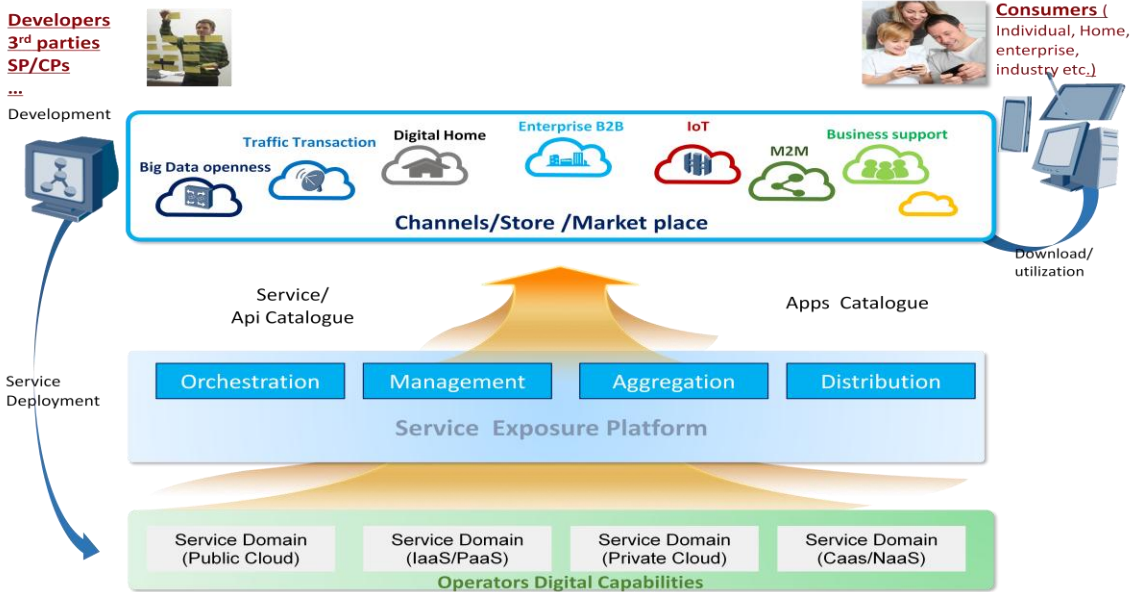
Fig: Service Exposure platform model

Enterprise B2B: The ubiquitous Internet-based, unified communications world has opened the door for significant B2B activity in the ICT industry. The Operators can offer enterprise business by offering wholesale capabilities such as messaging, voice, virtual number etc. These capabilities are essential for enterprises e.g. : fasten their business process such as authentication by SMS or phone, offering them consolidated IT and CT resources etc ..

Digital Home: Operators can open digital home capabilities to 3rd parties to provide a novel seamless services chain of home automation, multimedia and communications services in the digital home environment. Services such as Cloud photo album, Instant message and Video call on TVs are names that have blurred boundaries between TVs and mobiles.

IoT service: Telcos can open SIM card capabilities for Internet of Vehicles (IoV) vendors such as VW and BMW. Such capabilities can add value to enterprise (e.g. insurance) that can offer instant help. IoT ecosystems are going to emerge, similar to today's internet, which will allow billions of devices to connect, communicate, and interact as we do on the web today. To reach this point, increased collaboration and governance across value chains will be necessary, in addition to standardization and secure methods for ensuring interoperability.

M2M: M2M is able to connect machines, devices and objects to the internet, turning them into 'intelligent' assets that communicate with the world around them. M2M capabilities open up a new range of possibilities for businesses - how they operate, how they grow and how they keep customers happy. Based on growing demand of M2M services, operators are combining their capabilities with M2M capabilities by offering various APIs and SDKs embedded in their devices.

Business support service: Customer relationship management, billing capabilities and user authentication and charging capabilities are offered by telcos to third-party partners. Charging capabilities are popular with gaming vendors and online retailers because they require a quick payment function. What's more, operators have high credibility and provide reliable network facilities.

Step 3: Attract Developers and Support Flexible Partnerships

Operators need to know what developers think and how operators can bridge the gap for their requirements. Usually Developers do not react well to email marketing, webinars, white papers etc. Instead, developers like blogs, videos and forums and they attend tech conferences, hack-athons and

meet-ups. Operators need to make sure that they have active developer community that provide them with testing tools and prompt technical support with real people. The community should be active providing complete sample apps that developers can use as templates. Operators need to simplify these capabilities along with dynamic and interactive API documentation.

What developers are looking for is service reach and they know that operators have strong relationship with their customers.

Successful operators understand that same pricing model may not be suitable for each player. They have developed flexible business models and different pricing models for their offerings: , Free, Simple mode , Grade mode, Charging by TPS package, Charging by usage package, Charging by monthly rental etc. They support various business models such as: (B2B2C, B2B, B2C etc.) for a complete product or service transactions.

For B2C type of business model can bring direct revenue to operators as capabilities can be sold as product with direct billing based on different pricing models.

B2B2B and B2B2C business model can bring indirect revenue to operators by offering API as a tool. The end-users pay to operators and operators can share flat or flexible revenue share with the developers based on negotiation or business scenarios. Business models such as: Pay as you use, or Pay as you grow etc. are extensions of revenue share business models in which a bonus can be provided to 3rd parties if they deliver revenue beyond expectations .
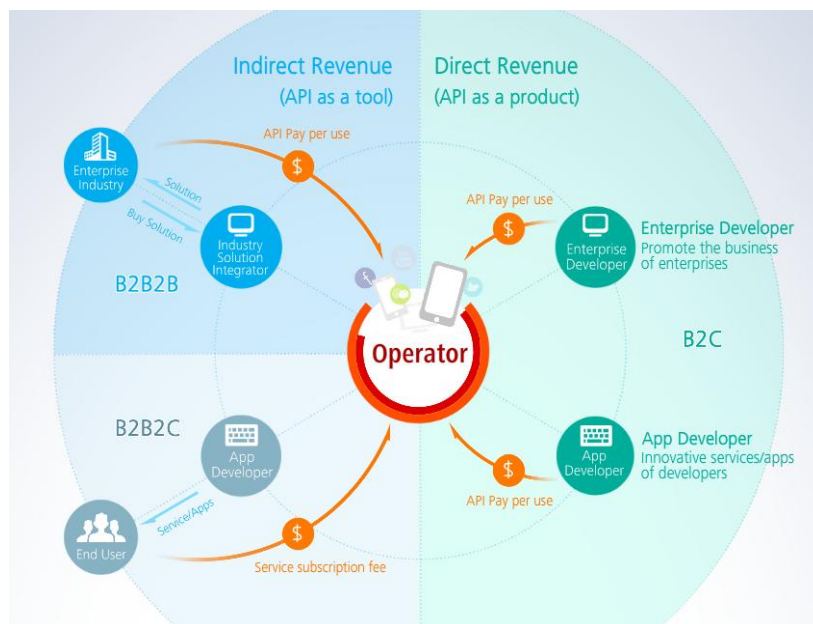

Fig: Business Models with partners

This helps operators' to engage in new partnerships that allow them to reach new markets and customers by partnering with consumer-oriented product and service businesses.

Step 4: Ready to deliver

Operators should focus on building a new go-to-market strategy that delivers these digital services to every sector of the emerging digital economy from travel to healthcare to financial services and beyond.

Once the business is initiated, the operators keep on exploring new business opportunities with their partners moving towards the same goal with win-win partnerships. They should be at one point of contact for any issue or concerns for its partners for smooth business operations. The operators make sure to offer unified self-care portals for transparency and quick settlement of business.

How Huawei Digital SDP efforts fulfilling industry needs?

Huawei Digital SDP Solution

As there is a competitive demand, traditional vendors may not be able to cope up with the fast industry changing demand from operators. Vendors also need to transform themselves from traditional vendor to DSVs (Digital Services vendors) that can bring solution to operators offering equal business stake in the stack beyond just providing technical competence and maintenance.

Huawei Digital SDP solution is such an E2E ICT solution that aims to help operators to create successful partnerships to build a digital ecosystem that enables a culture of innovation, by exposing their core digital assets.

The solution provides a unified open digital platform; aggregation and distribution of ready-to-go global digital services and contents of various domains (individual, home, enterprise, industry), and management of agile digital business operations in cloud. It, supports user-centric, on-demand resource allocation, all online, decoupling digital operation, and agile digital service innovation
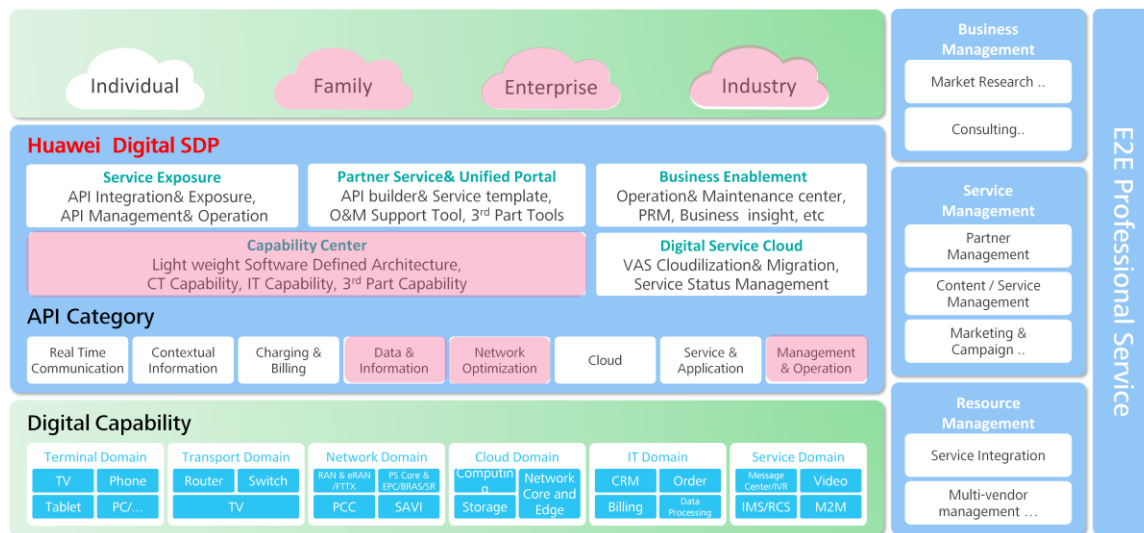

Fig: Huawei Digital SDP architecture (Pink represents new features in solution)

Huawei Digital SDP has become more-open with agile application innovation, more-cross-domain with enriched business experience and more-flexible with extended support to business operations. It has proven track record in helping mobile operators to increase digital service revenue and the odds of success in digital service transformation.

Huawei Digital SDP understands the business needs of operators and partners, and offers multiple business models between operator and partners: Direct billing, Revenue Share, Pay as you use, Pay as you grow etc. that can smoothly build the service Innovation ecosystem.
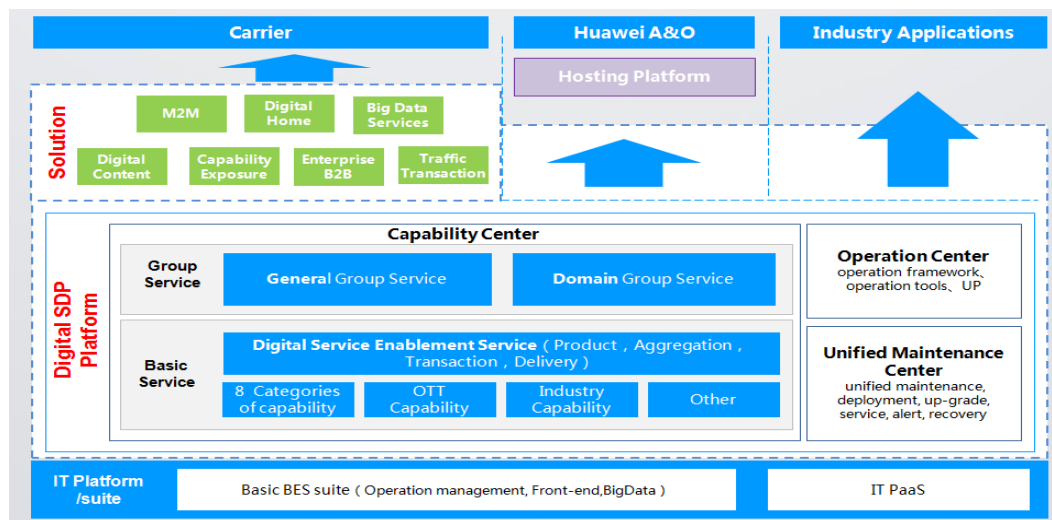
Fig: One solution supporting multiple domain

Huawei Offers Global in-Touch Partnership Program

As Hosting is one of the best ways to build the digital ecosystem, by growing the business at a lower cost. Huawei already has 8 hosting centers around the world that have aggregated most of the key industry players. It can help operators to bring vast digital services related to video, M2M, music, game, etc. in a very short time bridging the gap with partners.

The Global Partnership Alliance bridges telcos and partners to facilitate operators' business development in the digital business ecosystem. The program provides various services ranging from partner recruitment and service launch to service promotion and operation support. These can drive operator business development in the areas of digital music, traffic monetization, TV and video, open APIs, enterprises, and vertical industries. To date, the inTouch® partnership program has aggregated over 2,000 partners and 146,000 applications, including over 9,000 games, 200,000 songs, and 100 enterprise applications. This program helps telcos build a solid foundation for additional content and partners.

Tailored solutions target different markets. In mature markets where telcos have built their own ecosystems, Huawei provides an end-to-end technical platform and operations consulting services. Moreover, Huawei's partnership program can supplement telcos' digital ecosystems. In emerging markets where the digital ecosystem is not yet formed, Huawei provides a one-stop solution that includes a technical platform, partner aggregation program, and operations services.
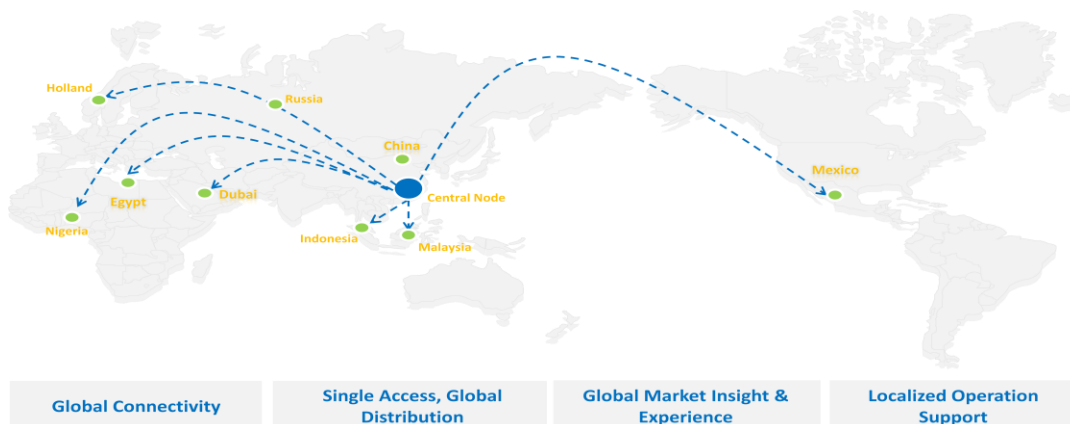

Fig: 8 hosting centres of Huawei

Successful Reference Case studies:

To help operators accelerate business transformation, Huawei Digital SDP finds key pivot points for accelerating business transformation for them. It has deep understanding of the underlying trends and opportunities that have enabled this market success helping operators grow and prosper.

The solution is rated Number One, by Infonetics in *SDP Global Market Share* report. Huawei has held this lead in SDP global market share for last 6 years. According to recently released report in August 2015 on product assessment by Current Analysis on SDP product rating, Huawei Digital SDP maintains its dominance consecutively for the 3rd year by accomplishing as leader in overall assessment and also "Leader" in exposure part.
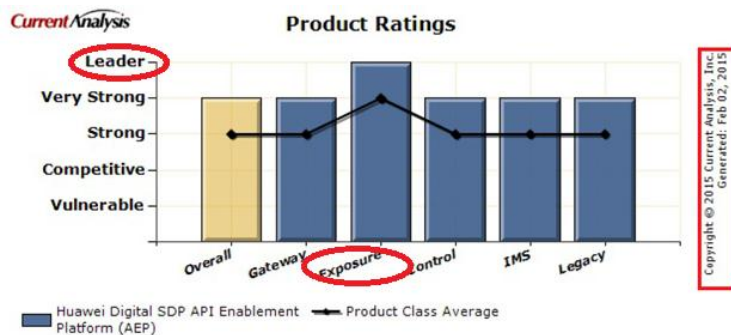
Source: market assessment by Current Analysis on SDP product ratings
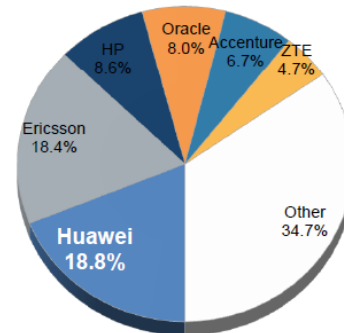
Source: Infonetics Research, SDP software and services, Annual worldwide and regional market share, size and forecasts

The success of Huawei Digital SDP solution is behind the success of operators' successful business stories. Here are some of the recent references:

Case1: Shanghai Unicom: Advertisement Assessment – Enabling Big Data capability

China Unicom, in 2014, launched its WO+ program i.e. capability exposure strategy focusing on monetizing the digital assets enabling launch of innovative partners-services including internet, OTTs apps etc. in order to construct a digital service ecosystem. Within 6 months of launch, the growth of revenue reached over 54% and daily API invocation reaching million times.

A strategy based on the 4 D's is the key to their success: "Diversified Industries and Partners, Digital Services, Data Analytics and Domain Knowledge". Here are few reference cases that show how it works:

Digital services based on "Data and Information" capabilities have been understood for some time. Operators have typically used these capabilities to identify the right targets for promotion of digital services but Huawei Digital SDP helped Unicom to expand this approach and add a new dimension:

Real Service Scenario: **Exploring data analytics to find out precise rental price of advertising hoardings**

Shanghai Unicom *Big Data Service Solution* provided by Huawei Digital SDP created an innovative "Big Data" product for sale online. By exposing *Data Analytics as a Service* to enterprises, SMEs and other service partners, new business models were enabled and a new revenue stream emerged.

For example: The operator provides data analytics to a specialist company that use this information to understand how people are moving around: walking or in vehicles; their age group; where they are located etc. It helps define the price for advertising hoardings in more precise and profitable way.

Case2: TaoBao: Ali pay using Virtual number capabilities of operator

Real Service Scenario: **Virtual no. provided to www.taobao.com (Alibaba) to protect user privacy**
With an objective to build healthier, transparent, openness and credible ecosystem, Alibaba chose to work with Operators and Huawei to protect user privacy. As a result, Alibaba recently launched "Privacy Protection App" whereby a buyer can contact a seller and delivery-boy using the virtual number associated with the real phone number without another SIM card required.

This virtual number can be used to send and receive regular calls and texts including personal configuration such as set as switched off, do-not-disturb etc. This service represents a unique win-win co-operation with leverage of Alibaba's channel and app development, Carrier's number resource and network and Huawei's openness and communication capability.

Case3: China Mobile Gaming – Using Mobile payment capabilities to pay for game services

China mobile has stepped into multi-screen gaming industry by providing joystick SDK. It comes with a built-in encryption chip which is bound with user account supporting one-click payment in a secure way using operators billing account. User authentication is done through exposed openID capability in joystick that makes available to use for subscribers other than China mobile subscribers. Easy payment and easy consumption has driven the sales of games contents achieving the growth rate in ARPU. The game- service was able to bring a traffic of million in minutes. Average daily traffic has reached 90,000 minutes. Games with operators' in-app payment capabilities have contributed 45% of the 2013 revenue.

Conclusion

Operators have a set of unique advantages that can be leveraged to grow their businesses in this new competitive environment. One way to leverage their unique assets and advantages is for operators to work with ecosystem partners to embed capabilities into applications, services and business processes. This approach is not just about exposing APIs, but is focused on delivering relevant and valuable services to customers and businesses.

A focus on a new service ecosystem will enable operators to expand their services to add value to multiple industry verticals by enabling an entirely new set of services, to offset the decline in traditional revenues and deliver innovative value to the emerging digital economy.