The Liberation of Services

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From Eve's proclivity for apples to today's deeply insightful "HAVE IT YOUR WAY®" Burger King® slogan, it seems there has always been a challenge meeting the demand for personal choice. The common truth is that people fundamentally want what they want, when they want it, regardless of where they are. This poses several unique challenges for operators and meeting those challenges is what separates those that thrive from those that die on the vine.

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Challenge #1: Variety

Customers want choices and, even when presented with the bounty of The Garden of Eden, chances are customers will still want the apples. Customers crave

"what's next" and are willing to risk change and, quite often, pay more to get it. To operators, this means two things: 1) you will lose customers if you can't keep up and 2) the operators who can continually provide innovative, new services will attract customers from all the operators that don't. This has three critical and very tangible business impacts: the loss of new service revenue, loss of existing customers, and the lost opportunity of gaining new customers. To avoid these pitfalls, operators must ensure their OSS is capable of efficiently creating, delivering, and managing multiple next-generation services.

Challenge #2: Location

Most services, even today, follow a rather antiquated service blueprint whereby the service, for all intents and purposes, "is" the service address. These roots go back as far as to the advent of the telephone and remain fairly consistent to today. This relationship was born out of an inherent dependency between the service and the physical location where the primary, quality connection resides. In many cases the physical connectivity was, in fact, the service; but that is changing today. While location is still important, seemlessly delivering services to multiple devices as the customer's location changes is the challenge.

Today, more and more services are being liberated from their physical location and are being created independent of their underlying access technologies. Customers are leveraging multiple fixed and wireless access technologies with increased bandwidth, improved quality of service, and a decreased dependency upon a physical location. Homes are being equipped which residential gateways that enable multiple, fixed and mobile customer devices. Customer devices are supporting multiple access technologies, services, and are enabling advanced service applications. Other customers have abandoned fixed-line services altogether and have no dependency upon a physical location whatsoever – and the customer has become the primary, common element associated to their services. Services, and the customers' service experience, now need to be delivered consistently, accurately, and seamlessly over any access technology to myriad of customer devices – wherever and whenever the customers wants them.

Viewing the subscriber as the center of all services opens new doors for operators. Subscriber-centric services present operators with the opportunity to leverage any and all services over any access technology – and to deliver services to the end-devices of the customer's choice when they want them and on-demand. Next Generation Operators (NGOs) are capitalizing on this opportunity by providing a wide variety of services and creating

innovative new offerings that provide customers with access to services over multiple access technologies and devices. These subscriber-centric services include advanced service features, value-added service applications, rich multimedia content, convergence, personalization, and mobility. NGOs are able to provide their customers with what they want, when and where they want it.

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Challenge #3: Personalization

The cornerstones of personalization are preference and control. Customers want a service experience that fits their lifestyle and they want the ability to tailor their services to their specific preferences. From channel-package selection, phone features, ring-tones, to their privacy settings and the advertisements they see; customers want the ability to customize their service experience. They want services and applications that complement their lives. What falls outside of that creates noise, confusion, and irritation – and tarnishes the customers' service experience.

The ability to easily create custom service offerings that are tailored to customers' personal preferences truly distinguishes the NGOs from other operators. NGOs are able to quickly tailor service features to customers' preferences, provide customer self-service, personalize the customers advertising experience, and seamlessly deliver all services to the customer while providing them the ability to control their service and tailor it to their lifestyle.

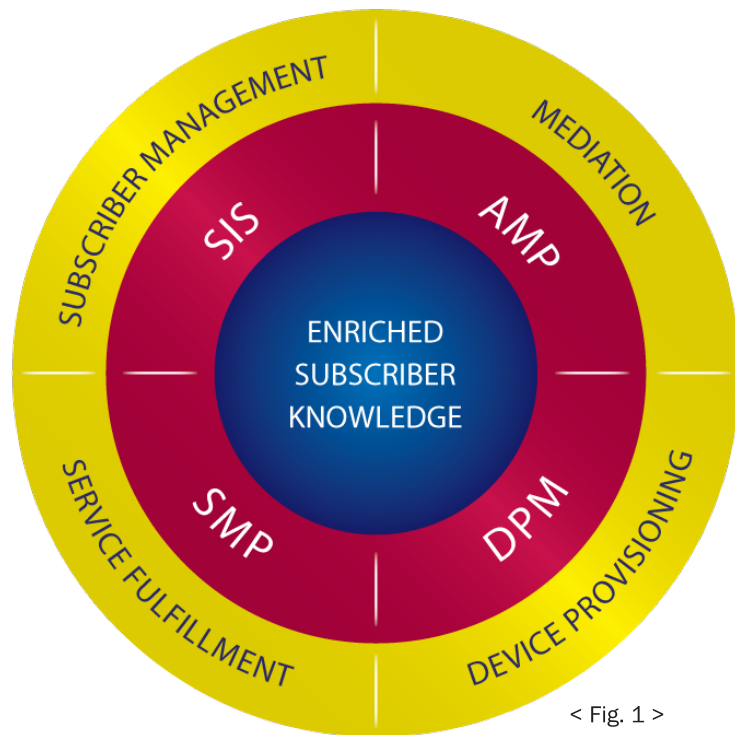## Subscriber-centric OSS: The Future of Personalized Services

Today's services are just the beginning. We are at the threshold of a new realm where personalized, interactive, and subscriber-centric services can provide a rich, consistent, and interactive customer experience across multiple access technologies and devices. NGOs are leveraging subscriber-centric OSS platforms to meet the rising importance of service variety, freedom, and personalization. They are using these platforms to create compelling, new, and innovative offerings that keep and attract customers.

To give customers the freedom, choice, and personalization they desire, the OSS must understand much more than the network and even the service layer. It must understand who the customer is, their preferences, feature selections, usage, devices capabilities, and enable a level of control over them. Subscriber-centric OSS platforms provide NGOs with a comprehensive, real-time understanding of the relationship between the subscriber, the network, the service, and the end-user device. This "enriched subscriber knowledge" needs to be collected, aggregated, stored, and then exposed by their Operational Support Systems (OSS) to automatically fulfill feature-rich services over any access technology and enable a truly personalized customer experience. To achieve this, a subscriber-centric OSS is needed that provides seamless integration between service fulfillment, device provisioning, mediation, and subscriber management (fig. 1).

A service fulfillment system that understands all the facets of the service order including service features, levels, packages, applications, and preferences is the foundation of any subscriber-centric OSS. It must provide a platform from which innovative, new services can be easily created, quickly introduced, accurately delivered, and efficiently managed. It also must be capable of providing a real-time, dynamic fulfillment work-flow that understands the changes in location so that services can be accurately delivered to any end-user device, regardless of access technology. It must be able to provide customers with access to and control of their services, feature, and applications. It also must be able to make the enriched subscriber information available to other business and support systems (B/OSS) so that their service experience is personalized and NGOs can capitalize on new revenue opportunities.

Device provisioning plays an important role in freeing services from the customers' physical location by unlocking the full potential of today's customers' multiple access devices. It also must be able to automatically configure new devices as customers' location, devices, and access technologies change. To do this, the device provisioning system must possess a detailed understanding of the latest end-user devices, device capabilities, and protocols. It must be able to completely leverage each device to maximize

ENRICHED SUBSCRIBER KNOWLEDGE

SUBSCRIBER MANAGEMENT · SIS · MEDIATION · AMP · SERVICE FULFILLMENT · SMP · DPM · DEVICE PROVISIONING

< Fig. 1 >

customers' adoption of revenue-generating services, features, and applications across network domains.

An active mediation system is also an essential component of a subscriber-centric OSS. It is used to expose the enriched subscriber knowledge throughout the OSS so that NGOs can benefit from

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offering personalized services and capturing new forms of service revenue. It is used to collect and share customer, service, and usage information throughout B/OSS and is necessary to capitalize upon event-based and consumption-based services.

A subscriber information system is used to aggregate the enriched subscriber information from the mediation, fulfillment, and third-party demographic systems and provide an intuitive interface to quickly create personalized advertising and up-sell campaigns. It also needs to give the customer the ability to tailor and control their advertising experience to their specific personal preferences. The subscriber information system provides the NGOs with a more compelling advertising offering and helps identify additional revenue opportunities through internal campaigns.

The value of subscriber-centric OSS environment goes well beyond customer satisfaction. NGOs benefit by increased customer loyalty, attracting new customers, increasing revenue per subscriber, decreased costs, and by tapping into new revenue opportunities from personalized adverting; usage-based services; and monetized service features, service applications, and multi-device service access.

Sigma Systems provides NGOs with a portfolio of integrated, subscriber-centric OSS products to help enable personalized, multi-service offerings. These products include Sigma Systems' Service Management Platform (SMP), Device Provisioning Manager (DPM), Active Mediation Platform (AMP), and Subscriber Information Service (SIS).

• **Service Management Platform** - An award-winning multi-service fulfillment platform that possesses a real-time understanding of the subscriber-service-network-device relationship for the automated fulfillment of feature-rich, personalized services. SMP possesses a deep understanding of the subscribers and their services including: usages, rights, privileges, selections, features, and applications. SMP ensures services are accurately delivered to end-user devices, irrespective of the access technology and can be used to enable multi-device service access. SMP can also be used with Sigma Systems or third party customer-self-service portals to provide customer with the ability to tailor their services and service features.

• **Device Provisioning Manager** - An automated provisioning system that understands the end-users' devices and device capabilities to seamlessly provision services, features, and service applications. DPM includes support for both the latest protocols and end-user devices, including phones, modems, multimedia terminals, set-top boxes, residential gateways, and much more.

• **Active Mediation Platform** - A real-time mediation platform that NGOs can use to easily extract usage information from the network in order to enable real-time billing for event-based and usage-based services, bandwidth management, and to identify up-sell opportunities.

• **Subscriber Information Service** – SIS is used to aggregate and expose subscriber information from customers' services, feature selections, and usage to identify audience qualifiers in order to enable a personalized and interactive advertising experience.

Sigma Systems' products have helped its customers around the world transform into NGOs by providing

OSS products that enable them to create, deliver, and monetize personalized service offerings. Sigma Systems provides integrated, subscriber-centric OSS products that empower NGOs to deliver any service, to any device, anywhere, and at anytime. Sigma Systems provides the necessary components required to create, deliver and manage personalized service offerings today and provides the foundation to capitalize on the opportunities of the future. To find out how Sigma Systems can help you deliver personalize service experience go to

www.sigma-systems.com or contact Sigma Systems at delivered@sigma-systems.com.