A NEW APPROACH TO MOBILE BROADBAND DATA CHARGING

USING ALCATEL-LUCENT SUREPAY TO GENERATE A PROFITABLE RETURN ON MOBILE DATA AND SERVICES

APPLICATION NOTE

Alcatel·Lucent

ABSTRACT

As data traffic continues to grow, mobile service providers are shifting to data-centric business models to attract and retain subscribers. The market is highly competitive and subscribers are demanding. To survive and thrive, mobile service providers must provide a variety of personalized offers and innovative pricing plans.

This application note explains how Alcatel-Lucent SurePay® data charging capabilities enable mobile service providers to reap the rewards of the expanding broadband market.

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LTE HAS BECOME A MAINSTREAM TECHNOLOGY

Market trends

LTE has become a mainstream technology for mobile broadband. Network deployments are steadily increasing, with 424 mobile service providers now investing in LTE networks in 126 countries.[1] Rapid global expansion is expected to continue.

Average LTE daily data volume per user is 168 percent higher than 3G data volume (see Figure 1) — which may be one reason why leading mobile service providers recognize that now is the time to invest in LTE. Data is king, thanks to the mass adoption of smart phones, the increase in users with multiple devices, and the ever-growing volume of data applications and services. An LTE network can help drive mobile data usage, to ensure continuous revenue streams and help mobile service providers stay competitive.

Figure 1. 3G and LTE daily data volume per user

3G

17 Mb
per user
per day

LTE

46 Mb
per user
per day

LTE daily data volume per user is **168% higher than 3G**

■ Video ■ Data
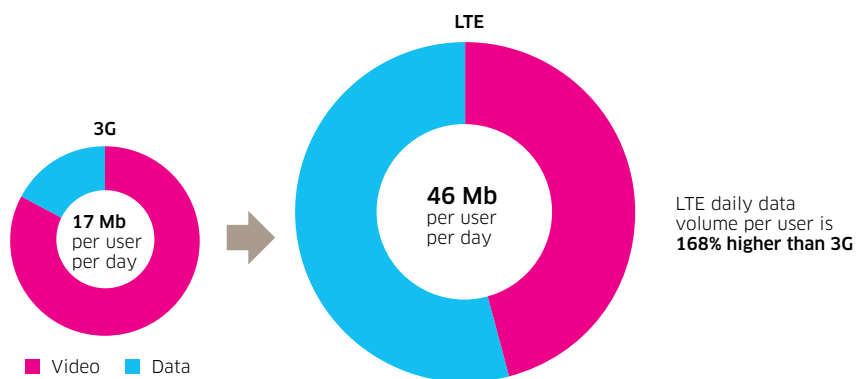
Source: Alcatel-Lucent, 2013

Effect on business models

In the current environment, data charging solutions built for the voice and 2G might deem to be inadequate to handle the types and amounts of projected mobile broadband traffic. In addition, mobile service providers are looking for better ways to segment, target and charge for their offers. Increasingly, they also recognize the value of using demographics and psychographics to identify and tailor offers to a variety of market micro-segments.

Leading mobile service providers are developing data-centric business models that increase mobile data use, so they can move the massive number of users and devices onto their 4G LTE network. New pricing strategies provide opportunities to inspire early adopters to use more mobile data.

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1 GSA Evolution to LTE report: 175 commercial LTE networks launched in 70 countries; 100 launched in past year, http://www.gsacom.com/news/gsa_376.php

RE-THINKING POLICY AND CHARGING CONTROLS

Alcatel-Lucent innovations

Re-thinking policy and charging controls can bring new ways to engage with customers and encourage service use, especially in LTE networks. At Mobile World Congress 2013, Alcatel-Lucent launched the Smart Plan solution to provide mobile service providers greater flexibility in offering data plans and services to subscribers. With this solution, subscribers can easily discover, purchase and manage their mobile data and services from their mobile devices.

As a pre-integrated component of the Alcatel-Lucent Smart Plan solution, Alcatel-Lucent SurePay® enables real-time charging, rating and usage reporting for multiple networks and services. Mobile service providers can simultaneously offer prepaid, postpaid and hybrid offers across fixed and mobile networks. Convergent offers and micro offers appeal to subscribers, and mobile data charging features increase revenues for service providers.

Surepay is field proven in the largest live commercial lte network, handling massive amounts of prepaid and postpaid LTE data with various tariffs, including unlimited, capped and shared data plans.

Alcatel-Lucent SurePay features and benefits

Table 1 shows the key features and benefits of SurePay.

Table 1. SurePay features and benefits

| FEATURE	BENEFIT
Flexibility	• Enables service providers to target various market segments with convergent offers and micro offers, for improved revenues • Appeals to subscribers, reducing churn and increasing customer lifetime value • Enables subscribers to control spending in real time by defining, managing and enforcing restrictions on mobile data usage
Modular architecture and web service APIs	• Enables service providers to easily launch and manage new offers • Enables feature growth based on operational strategy • Simplify integration with OSS/BSS including provisioning and customer care
Reliability and scalability	• Provides the level of service that service providers require and subscribers demand • Allows networks to evolve while minimizing impact to end-user applications
Centralized management of multiple networks and services	• Reduces OPEX • Simplifies network management

NEW BUSINESS MODELS AND DATA PLANS

New data-driven business models

To leverage the benefits of LTE and capture market share, mobile service providers need new, data-driven business models. It's not enough to add yet more discreet, one-size-fits-all offers to the data store.

New business models must first remove barriers to usage, then address individual needs, and finally create new revenue in a rapidly changing industry (see Figure 2).

Figure 2. New business models

MEET DEMAND WITH NEW BUSINESS MODELS
- Remove barriers to usage
- Address individual needs
- Create new revenue in a rapidly changing industry
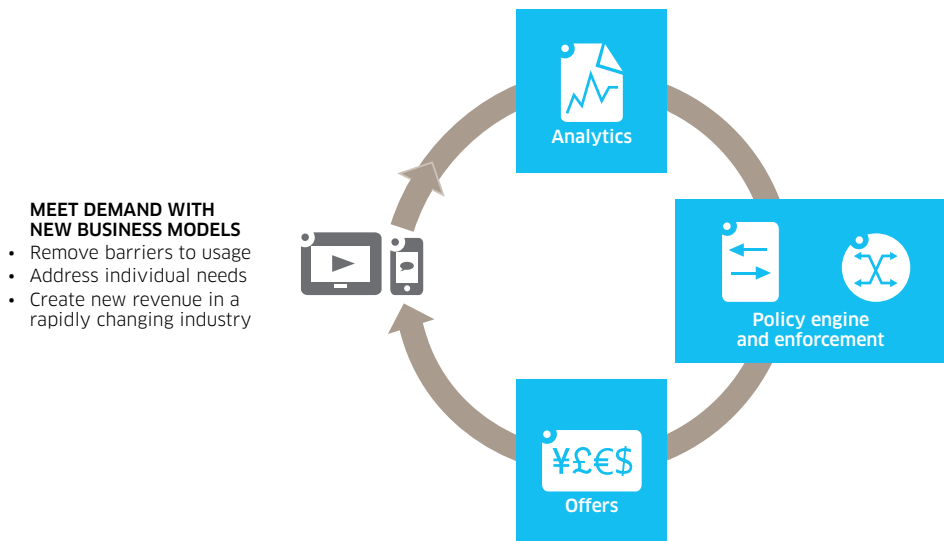
- **Remove barriers to usage**: In the UK, 48 % of mobile broadband users do not know how much bandwidth they use per month, and 84 % do not know how much it will cost to go above their allowance.[2]
- **Address individual needs**: Sixty percent of smartphone owners want to monitor real-time data use on the device, and over 50 percent want customized plans.[3]
- **Create new revenue in a rapidly changing industry**: Only 16 percent of 250 global marketers surveyed have a mobile strategy for building customer engagement.[4]

New data plans

New business models require new data plan offers beyond unlimited and basic tiered data plans. Subscribers want options — lots of them. Incentives and personalized service also appeal to subscribers, increase customer lifetime value and reduce churn.

Alcatel-Lucent SurePay enables support for the following examples of data plans, which can be customized based on market needs.

- **Shared**: Multiple users or devices share a common data plan. This encourages subscribers to purchase more data and, more important, connect more devices and users to the network. SurePay has a multi-level group hierarchical architecture that can support:
  - ¬ Individual users with multiple devices
  - ¬ Multiple users with multiple devices (for example, families)
  - ¬ Small office/home office (SoHo)
  - ¬ Small and medium businesses (SMBs)
  - ¬ Large enterprises that have many users with many devices

- **Loyalty rewards**: Also called reward programs. With an optional module called Loyalty Management and Campaign Management, subscribers receive rewards for reaching spending or length-of-service thresholds. Rewards provide subscribers with a feeling of personalized service and can encourage loyalty, thereby increasing revenues. New business opportunities are also created for mobile service providers through retailer rewards such as coupons or free data that encourage business for the retailer.

- **Service level-based**: Quality of service (QoS)-based offers in real time. Subscribers pay more on a monthly or per-use basis to receive a higher QoS or better speed than the average user. Typical services could include premium subscriptions, turbo boost (whereby a subscriber requests, and potentially pays for, additional speed for a certain amount of time) or application-based QoS. Service level-based plans can also be offered to over-the-top (OTT) providers who want to provide different service levels to their own subscribers.

- **Capacity-based**: With SurePay's context-aware data flow charging, mobile service providers can create tariffs to optimize network utilization. Subscribers are offered incentives, such as better QoS or discounts, when they use mobile data at specific times or locations when the network is typically underutilized. The mobile service provider benefits by subscribers using capacity that would otherwise be wasted. This network optimization might also slow a provider's need to grow network capacity.

- **Application-based**: Another example that leverages SurePay's context-aware data flow charging capabilities. Subscribers pay a one-time or monthly fee for any of:
  - ¬ Telecom applications such as Voice over LTE (VoLTE) or Rich Communication Services (RCS)
  - ¬ Third-party applications such as social media apps or Internet radio
  - ¬ Specific activities such as voice calling, file transfer, video sharing and instant messaging (IM)

    Data usage for the application or activity is subsequently not counted against the subscriber's data plan. This type of data plan can be used to attract new subscribers to mobile data and to introduce new business models.

- **Third-party-pays**: Also called toll-free data. An application provider or other business pays for subscriber data consumed by the specific application or service. For example, a subscription video streaming service could pay the mobile service provider a negotiated rate so the subscriber can use the video service without worrying about data usage and overages. Toll-free data supported by advertising is a variation of this type of data plan. Depending on the use cases with third parties, SurePay can ensure accurate charges to the sponsoring accounts rather than to subscriber accounts.

PERSONALIZED SUBSCRIBER EXPERIENCE

In addition to providing a variety of data plans, Alcatel-Lucent SurePay can also fine-tune these offers with additional features to efficiently personalize the subscriber experience in real time.

- **Convergent charging**: SurePay supports real-time rating, reporting and charging with re-rating processing capabilities for prepaid, postpaid and hybrid subscriptions, all in one convergent system. The product provides mobile service providers with a flexible mediation layer, a convergent rating engine, unified subscriber management, a common product catalog for rating of various traffic types, and service delivery to any subscriber with different payment methods across multiple network types.

- **Quota management**: Subscribers can set up different stoppage limits and alerts per data flow category or for parameters based on location, date or time. This capability can be used in conjunction with individual data plans or shared plans for multi-device owners, families, SoHo, SMB and large enterprises. When used in shared accounts, SurePay allows mobile service providers to configure the proper quota size to optimize exchanges with the packet gateway. Smaller quota allocations provide more opportunities for fair sharing of data chunks but also generate more signaling traffic for the network.

- **Regulatory spending control**: Mobile service providers can use regulatory spending control to avoid the revenue leakage that results if subscribers experience bill shock from overages. With real-time spending limit control and a usage report enabled, subscribers can monitor their data usage across multiple types of networks at the same time.

- **Fair usage**: Spending-limit data plans with a fair usage model enable data access with improved QoS up to a defined threshold. When the limit is exceeded, bandwidth is downgraded until the end of a billing cycle or until a subscriber tops up spending. Subscribers are kept informed, through real-time notification, about QoS throttling and de-throttling. They can choose to increase bandwidth by using a top-up (generally for prepaid subscriptions) or an online bucket purchase.

- **Alternative roaming provider and local breakout**: SurePay can support local breakout standards and EU regulations on selecting alternative roaming providers to provide roaming customers with mobile data offers from the visited networks and charge them in the visited networks for their data access.

HIGH RELIABILITY AND AVAILABILITY

A highly reliable and available online charging system not only improves a mobile service provider's brand image, it also ensures continuous revenue streams.

Alcatel-Lucent SurePay provides industry-leading availability – 99.9999 Percent. That's 6 9's.

With smartphones' always-on devices, a subscriber's data session can last for a long period. To ensure session continuity requires a new approach to data session handling. SurePay enables subscribers to keep their data sessions active for a long holding time and to keep a call in progress without service interruption — even during failover sessions.

Availability is also assured through the use of multiple servers, which provides local or geographic redundancy with fewer managed nodes and an optimized footprint. Load balancing distributes data transactions across the multiple deployed servers, increasing the overall processing capacity and optimizing usage of the deployed resources. Overload control enables handling of significant traffic peaks.

High scalability allows networks to evolve while minimizing the impact to end-user applications. Revenue interruption is prevented by enabling the scalable deployment of an online charging system in multiple nodes. This helps to ensure optimized real time processing of high volume of data transactions and sufficient data storage capacity.

TOOLS FOR CHANGE

Change drives innovation, and innovation is vital for assured revenue streams. Alcatel-Lucent SurePay helps mobile service providers to respond quickly to competition, market trends and customer needs with its tariff administration and simulation tools.

The Tariff Administration tool enables mobile service providers to design new tariff plans faster and to browse and update existing ones more easily. Service providers can quickly adapt to changing market and subscriber needs by offering new services and tariff plans that attract new subscribers and retain existing ones.

The Tariff Tester tool enables tariff plan simulation and validation before exporting the plans to a live production platform. Testing before deployment increases efficiency and reduces OPEX while improving time-to-market.

EVOLVED DATA CHARGING CAPABILITIES

Alcatel-Lucent SurePay supplies mobile service providers with evolved data charging capabilities to turn the data explosion into revenue growth. Its flexibility encourages innovation and accelerates setup of new business models to meet changing customer requirements and new market trends. Its features and tools are differentiators that enable mobile service providers to attract and retain subscribers and generate additional revenues.

For more information about SurePay, go to http://www.alcatel-lucent.com/products/surepay

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ACRONYMS

API	Application Programming Interface
EU	European Union
IM	Instant Messaging
LTE	Long Term Evolution
OPEX	operating expenditures
OTT	over the top
SoHo	small office/home office
SMB	small and medium businesses
QoS	Quality of Service
RCS	Rich Communication Services
VoLTE	Voice over LTE

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