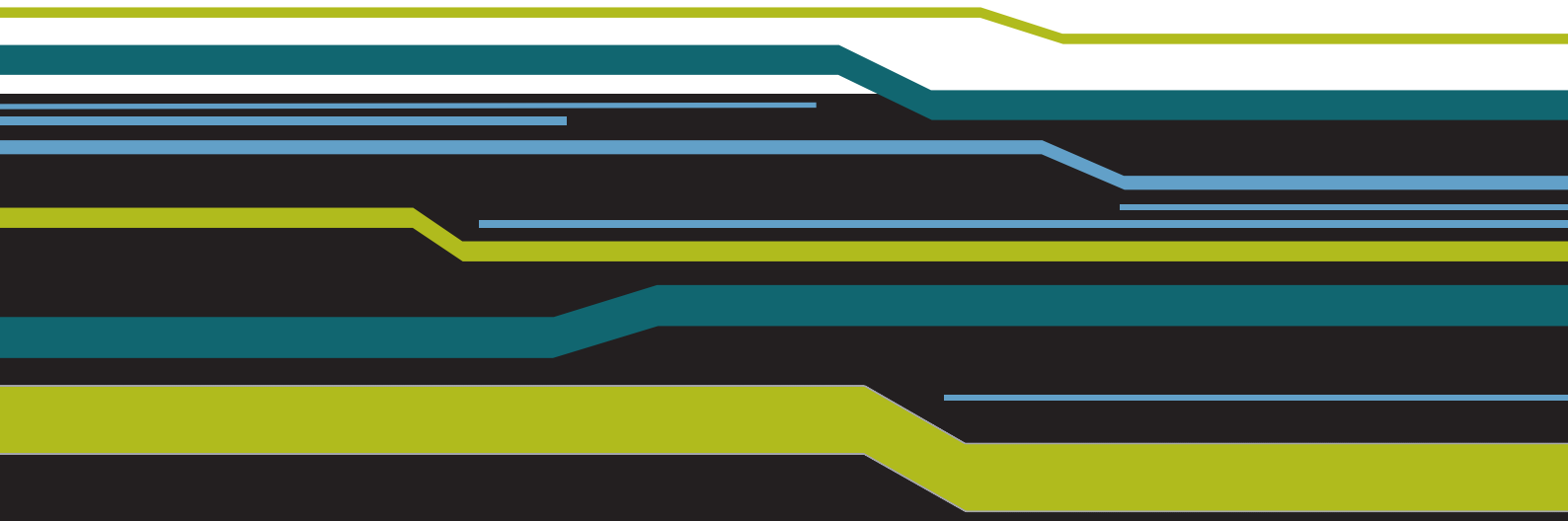
White Paper

Closing the Mobile Data Revenue Gap



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Closing the Mobile Data Revenue Gap

The demand for mobile data is exploding, presenting operators with a unique opportunity to generate new revenue streams and grow their business. Mobile data traffic is growing 3.2 times faster than fixed data traffic and is forecast to grow 39 fold from 2009 to 2014 globally, driven by mobile video, P2P, gaming, and VoIP (Figure 1). In June 2010, it was announced that Vodafone Spain users who browsed the Internet on their mobile phone were spending 30 per cent more than the average Spanish mobile users. In Q2 2010, Verizon Wireless reported an increase of over 23% in data revenue; and mobile data represented over 30% of the ARPU for AT&T, Verizon, and Sprint. And this is only the beginning of the trend...

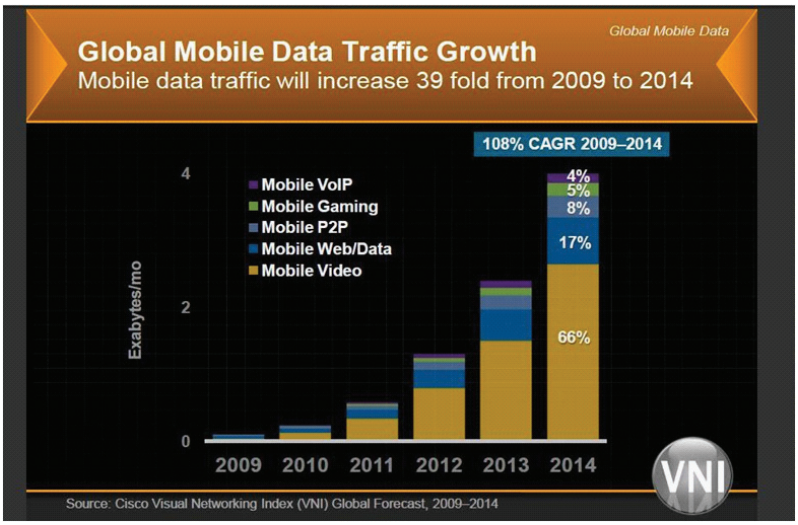

Figure 1: Global Mobile Data Traffic Growth

The fast growth of the mobile data market is driven by 3 main factors: new devices, next generation networks, and new applications.

New mobile Internet devices, including smartphones, tablet PCs, and netbooks, make the use of mobile data more convenient and more pleasant. For instance, most of them support over-the-air provisioning, enabling subscribers to access data when and where they need it. As these devices proliferate and rise in popularity, they highly stimulate the consumption of mobile data, representing a critical revenue driver for operators: AT&T stated that the net present value of an iPhone subscriber is more than twice that of a typical postpaid subscriber; many other operators have reported ARPU uplift of 25% to 40% (Telenor Norway has reported 60%) and increased loyalty when a user migrates to a smartphone, according to Informa Telecoms & Media.

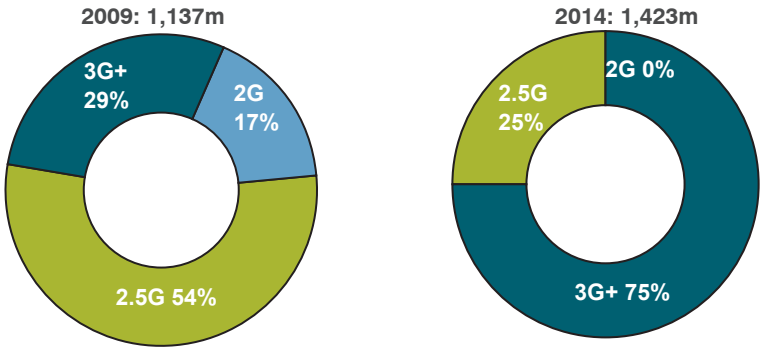

Figure 2: Handset sales by generation (Source: Pyramid Research, Smartphone Forecast)

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Furthermore, the new mobile device market is growing fast and sales of 3G+ handsets will grow from 29% of total handset sales in 2009 to 75% in 2014; with smartphone penetration due to rise from 16% in 2009 to 37% in 2014 (Figure 2).

It is important to note that whilst increasingly sophisticated smartphones supporting advanced applications are being launched, there is also a growing market for less expensive, less advanced devices, especially in developing countries. Operators need to be able to support both markets in order to maximize their revenue potential.

As mobile Internet devices proliferate, so do mobile applications, driving further the consumption of mobile data and contributing to the explosion of data traffic. Even greater growth is expected in this area with the multiplication of application stores, social networking applications such as Facebook, gaming, and many more.

As high speed, high bandwidth networks such as 3G, WiMAX, and LTE are being deployed, they contribute to the growth of mobile data as they enable a mobile broadband experience similar to the home broadband experience.

Whilst these three key factors are driving mobile data growth, operators are confronted with a gap between the revenue generated and the increasing cost of the traffic. This major challenge must be resolved to capitalize on the mobile data opportunity and make it profitable.

I - CHALLENGE: MOBILE DATA TRAFFIC IS GROWING FASTER THAN REVENUES

The growth of mobile data revenues is undisputed. However revenue is not growing fast enough to ensure profitability. Not only is the mobile data traffic growing much faster than revenues (Figure 3), but the revenue growth rate also tends to decline over the years (Figure 4).

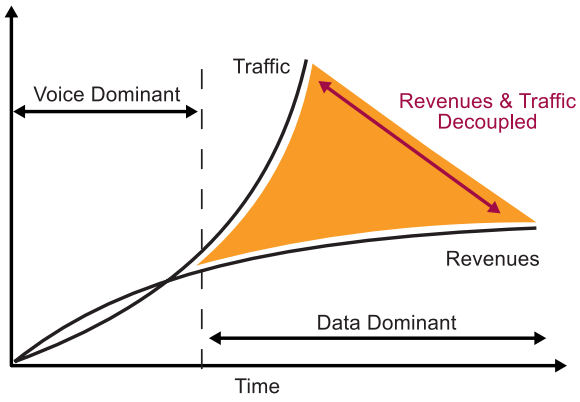

Figure 3: Traffic & Revenue (Sources: Unstrung Pyramid Research 2010)

Initially, operators launched unlimited, flat rate plans to drive adoption of mobile data. This approach worked but causes two key issues: firstly, flat rate plans present a limited potential for growth; subscribers initially drive some growth by purchasing new data plans but with time, there are fewer and fewer subscribers left to adopt the plan, thus slowing growth (exhibit 4). Secondly, the explosion of mobile data traffic is causing capacity issues, driving operators to increase their investment in network resources to support such growth. The related cost is high but without an acceptable quality of service, operators would only drive customers away and would not be able to profit from this lucrative opportunity.

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Figure 4: Mobile data service revenue & annual growth rates 2007 - 2014
Source : Pyramid Research Mobile Data Forecasts, Global, Q1 2010

For instance, video represents the fastest growing traffic, expected to account for 66% of mobile data traffic by 2014 (Figure 1). Increasingly more operators are planning to capitalize on the popularity of video and offer services such as “TV Everywhere” which enables subscribers to watch TV programming on multiple devices. However, video consumes a lot of bandwidth and requires a high quality of service. The increased popularity of such services tends to accelerate the gap between the mobile data traffic and revenue growth.

This gap between revenue and demand is significant and expected to widen with time if operators don’t take action now. This is a critical challenge that must be addressed to capitalize on the mobile data opportunity and increase profitability.

II - GOAL: CLOSE THE REVENUE GAP TO MAKE MOBILE DATA PROFITABLE

Overall, operators need to resolve the following equation to close the revenue gap and make mobile data more profitable:

- **Increase mobile data revenues:** create new revenue models, capture new customers, make purchases easy, increase customer lifetime value
- **Minimize costs:** optimize network resource utilization, minimize costly customer service resources
- **Keep customer happy:** Put the focus on customers; offer a compelling experience and a quality of service that drive loyalty. This also means providing the flexibility, personalization, control, simple pricing, and transparency/visibility that they expect.

Most operators are not yet fully equipped to resolve this equation, but solutions are already available for them to put in place.

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III - SOLUTION: SUBSCRIBER CENTRICITY, NEW CHARGING MODELS, COMBINING MONETIZATION WITH CONTROL

The following models and capabilities will help operators to optimize their subscriber potential, differentiate themselves from the competition, and achieve their mobile data revenue maximization goals:

- **Integrated Policy and Charging Controls** – Innovative business models that optimize network resource utilization whilst creating new revenue streams
- **Charging plans beyond traditional pre/post-paid models** – New revenue models, extended market reach, and more flexibility to customers
- **Charging models incorporating third parties** – New revenue streams from multiple parties
- **Subscriber Centric Approach** – Extended customer lifetime value, personalized experience controlled by subscribers, easy purchases, and reduced OpEx

INTEGRATED POLICY AND CHARGING CONTROLS

Policy and Charging Controls (PCC) enable operators to combine monetization with real-time subscriber and network control. By integrating these real-time charging and policy management capabilities, operators will be able to create innovative business models that optimize network resource utilization whilst creating new revenue streams and providing a personalized experience.

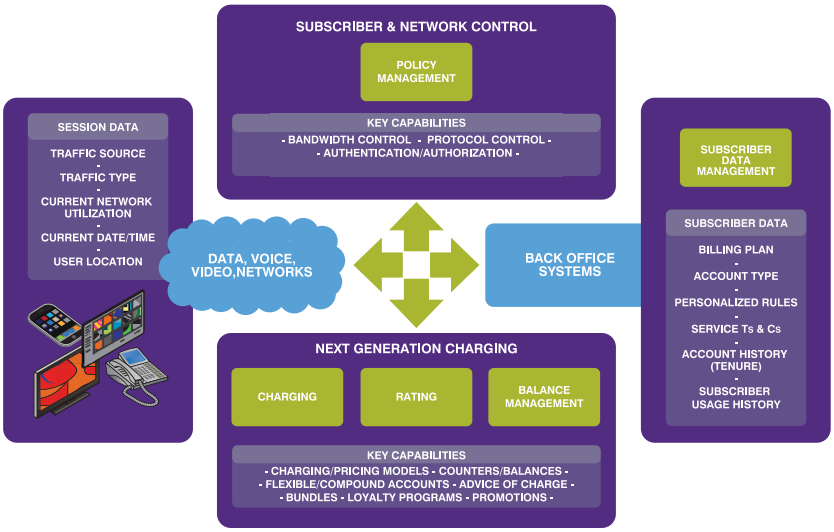

Figure 5: Policy and Charging Controls

New business models enabled by Policy and Charging Controls are based on 3 key elements:

- **Context:** Under what context is the service being accessed? Is the subscriber in a usage tier? Roaming? In a congested area? Using a particular device? Accessing premium content? Etc.
- **Resources:** Given the context, what network resources is the subscriber attempting to consume? For instance, a video session would require different network resources versus a simple e-mail service. PCC enables operators to allocate resources in real time as appropriate to the context.
- **Price:** Given the context, resources used, and related cost, what is the appropriate price to charge for the service or application? How is the consumption being paid for, by whom? Is the subscriber enjoying a promotion in which the first 15 minutes of a movie is received at high quality for free? Is the network resource included in the cost of the application? PCC enables operators to manage costs in real time and charge users appropriately depending on the resources consumed and the context.

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Examples of PCC based business models include: Tiered services allowing segmentation of users to offer differentiated services depending on usage patterns; Service passes mentioned above; Application-specific pricing which represents a critical path towards mobile data profitability as discussed above; Dynamic, personalized promotions; Spending limits; Partner service controls; Device controls; and Roaming controls to better enable operators to interconnect with their oversea counterparts so users can access their services when away from home.

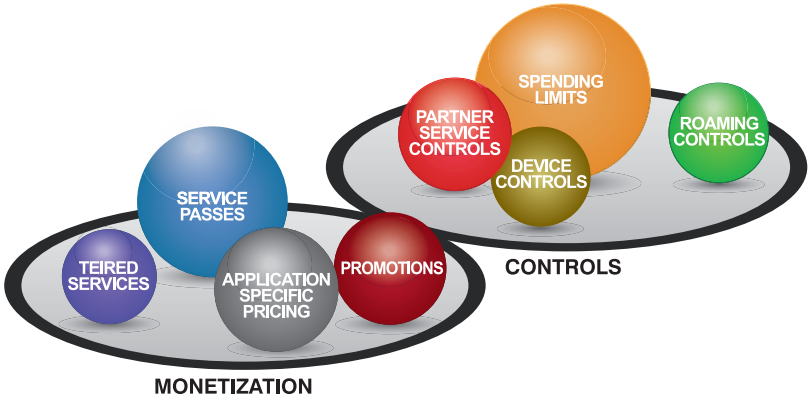

Figure 6: PCC based business models

CHARGING MODELS BEYOND TRADITIONAL PRE-PAID AND POST-PAID

Charging models that have traditionally dominated the mobile market have been exclusively either pre-paid or post-paid. Whilst they are still valid, sticking to these two models only limits operators' scope for innovation and differentiation. New charging models need to be introduced to provide more choice, flexibility, and personalization to customers; and stimulate new revenue creation.

Application-aware charging models – Linking revenue to related traffic and cost: offerings allowing subscribers to pay for some applications on a usage basis; e.g. pay per movie, gaming session, video conference etc. This type of models enable operators to better link the price of using specific applications to the actual traffic generated and related cost. They will be able to charge a higher price for high bandwidth applications for instance.

As a result, the current gap between traffic and revenue would naturally be reduced, and possibly be reversed. This model is also based on a simple, easy to understand pricing that drives subscribers' acceptance and adoption. Furthermore this model allows operators to supply an appropriate, uncompromised quality of service that protects customer satisfaction.

Service Passes – New revenue stream, extended market reach, personalized experience: No long-term contracts, offering a one-time or recurring purchase of data services for a limited period of time, volume of data, number of events, or specific services; e.g. unlimited data access for a day, 300 MB for a month with automatic renewal unless cancelled, access to webmail only five times, unlimited access to Facebook only.

When combined with Subscriber Initiated Provisioning, Service Passes offer a highly personalized experience, giving customers access to data services when they need it, wherever they need it, in the amount they need.

This model creates a new revenue stream for operators, allowing them to move beyond the concept of long-term subscriptions to offer subscribers another purchase option. It also enables them to extend market reach to increase revenue potential, capitalising on customers who are less likely to commit to contracts, including travellers and vacationers.

Flexible payment options – Easy purchase, personalized experience: Ability to provide subscribers with the capability to pay for the service as they want it, using various payment types, including credit cards, Paypal, e-wallet, and loyalty points. This enables subscribers to easily purchase service at their own convenience and drives more revenue to operators.

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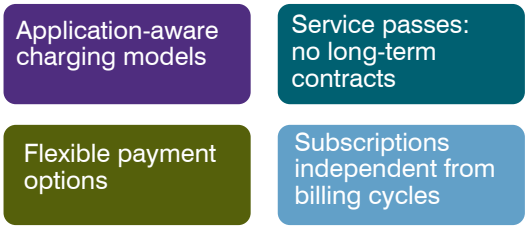
Subscriptions independent from billing cycles – More flexibility and customer satisfaction: Subscribers don't have to pay until they actually use the service and subscriptions are managed independently from billing cycles as per the date when the service has been active. For example, if a customer activates their iPad on the 10th of the month, they would be charged a full month subscription of $20 running from 10th of the month until the 10th of the next month, regardless of the normal billing cycle which starts on the 20th of each month.

CHARGING MODELS INCORPORATING THIRD PARTIES



For a long time, operators have considered third parties, in particular Over-The-Top service providers (OTT), a threat. However, they continue to multiply and grow, nurturing customers' eagerness for new services and applications that no operator can entirely deliver on its own. Therefore, the question is how can operators make the most of this situation and turn it into an opportunity. Operators can actually make money from third party service and application providers, including OTT, by developing business models that integrate them.

For example, they can monetize OTT with service passes: a monthly VoIP pass or an application-specific pass to access Facebook for 24h. They can also integrate a partner's offering into their package, and generate an additional revenue stream as the partner pays a fee to the operator for promoting and selling its service.

To sum up, operators can partner with third parties to enhance their own offerings and exploit another source of revenue.

SUBSCRIBER CENTRIC APPROACH

Putting the focus on the subscriber is what will drive spend, competitive differentiation, and loyalty. A subscriber centric business model, enabling operators to optimize their subscriber potential, includes:

- Giving control to subscribers and making purchases easy with Subscriber Initiated Provisioning and self-care - This also drives lower OpEx for the operator
- Better target subscribers with differentiated offerings through effective Customer Segmentation – This enables the operators to optimize its market and revenue potential
- Transparency and personalization through Real-time Customer Interactions – This also gives an opportunity for the operator to up-sell, and drives trust, and loyalty

Subscriber Initiated Provisioning and Self Care

Customers want the freedom to activate their services at their own convenience, to select the plans that fit their specific needs, and to have the service delivered now – without needing further assistance from the operator's customer service staff. Subscriber initiated provisioning is made possible with new mobile devices, enabling real-time, over-the-air service activation. It allows operators to make purchases very easy and at a low cost, giving their customers easy and convenient access to the Internet.

Furthermore, customers want to be able to have more control over their services and budget. A self-care portal would allow them to view up-to-date usage of their services and to undertake a number of tasks (e.g. upgrade, select another plan) without having to involve a customer service representative.

These two capabilities enable operators to accelerate revenue creation and offer a compelling, personalised experience controlled by the customer; and further, operators would be able to save costs related to expensive customer service resources that would be otherwise commonly consumed.

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Customer Segmentation
Subscribers in the telecom industry have different behaviours, needs, and spending patterns. An effective segmentation will allow operators to group subscribers in order to develop differentiated offerings and target them with the most appropriate services. By doing so, operators would not only be able to better satisfy their customers, but also to optimize their market potential. For instance, operators can use data Service Passes to target customers who would not commit to a long-term contract as well as travellers. They represent a segment which would have remained unexploited if this type of offerings wasn't developed with them in mind. Another example involves Tiered Services allowing operators to provide different level of services depending on customers' behaviours and needs.

Effective customer segmentation enables operators to better differentiate themselves from the competition and to maximize their revenue potential.

Real-time Customer Interactions
Operators can build customer loyalty and increase spend through real-time interactions that provide subscribers with visibility and transparency, and operators with the opportunity to up-sell. Examples of real-time notifications include:

- Advise that a service or promotional balance is about to expire, and prompt a refill
- Send spent limit notifications at given thresholds
- Advertize the availability of a service promotion
- Confirm a charge or a change of rate plan
- Verify a successful bundle subscription

This added to personalized, differentiated, and flexible services, contribute to gaining customers' trust and building loyalty. As a result, operators will be able to lengthen customers' lifetime value and increase profitability

SUMMARY

Mobile data growth, stimulated by the proliferation of new mobile devices, new mobile applications, and the advent of next generation networks, present operators with a lucrative monetization opportunity. However, they are not yet equipped with the tools they need to capture maximum revenue from this opportunity. As a result, mobile data traffic is growing much faster than revenues, requiring more capacity and generating high costs. This leaves operators with a substantial revenue gap that they need to close to ensure profitability. To achieve this, not only do they need to increase revenue, but also to minimize costs and keep customers happy. The following models and capabilities will help them to address this situation:

- Integrated Policy and Charging Controls
- Charging plans beyond traditional pre/post-paid models
- Charging models incorporating third parties
- Subscriber Centric Approach

These capabilities will enable operators to better address their customers' needs, develop effective revenue models and combine monetization with control. As a result, they will be able to optimize their revenue potential, reduce costs, better differentiate themselves from the competition, and increase their customer lifetime value.

About OPENET

Attract subscribers, provide them a great experience, maximize revenue from them, and minimize the cost to serve them. Sounds simple until you try to do it with millions of subscribers supported by inflexible legacy infrastructure amidst an ever-changing set of business requirements. To succeed in this environment, you must first know your subscribers and how they use your services, be capable of deploying innovative business models that maximize revenue, and be able to control the allocation of your network resources intelligently and efficiently. This is making the most of every subscriber. And Openet can help with our Subscriber Optimization Software. We provide this today for operators such as Vodafone, Orange, AT&T, Verizon and dozens of others across the globe.

At the core of our solutions is the Openet Framework, a convergent, modular, real-time event processing and transaction management platform. This Framework enables operators to transform their BSS/OSS environments to capitalize on new services, business models and network investments. A global company, Openet is used by the world's largest and most innovative service providers including AT&T, BT, Orange, Telstra, Time Warner Cable, and Verizon Wireless. Learn more at www.openet.com.

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