# Monetizing the Mobile Internet

The phenomenal growth of mobile networking is presenting mobile operators with corresponding challenges as they race to add capacity and services to meet accelerating demands. They are concerned with optimizing their networks cost-effectively as well as generating revenue beyond basic mobile subscriptions. Now, with the intelligence and performance provided by Cisco's end-to-end mobile Internet architecture, platforms, and technologies, mobile operators can promote unique service differentiation to increase revenue opportunities. Real-time subscriber and network intelligence together with policy and charging control in the Cisco® infrastructure can be the basis for mobile operators to enhance services to existing customers, forge new business partnerships with over-the-top providers and other service or application providers, and create new higher-margin services.

## Challenge: Capitalizing on Dramatic Mobile Market Growth

Mobile operators worldwide are seeing tremendous growth in mobile data subscriptions and bandwidth usage. The widespread popularity of IP-enabled smartphones, netbooks, e-readers, tablets, and other devices is fueling this growth. According to research by the Nielsen Company, in the United States during July 2009, 56.9 million people accessed the web through a mobile device. This is a 34 percent increase over the same period in 2008. The 2010 Cisco Visual Networking Index Mobile Data Forecast found that global mobile data traffic increased 160 percent between 2008 and 2009. The forecast predicts that global mobile data traffic will grow 39 fold between 2009 and 2014, for a compound annual growth rate (CAGR) of 108 percent. In 2014, more than five billion existing and newer consumer mobile data devices will be in use, plus billions more machine-to-machine (M2M) devices to support a myriad of evolving applications.

While mobile operators can reap the benefits of a growing market, they are also faced with maintaining and enhancing their access and backhaul capabilities on 2G, 3G, and 4G networks. The radio network - from radio towers and base stations to aggregation points - constitutes 80 to 90 percent of capital expenditures for mobile operators. Yet beyond sustaining or enhancing the user experience with dependable network performance, this part of mobile operators' infrastructure expenditures does little to help them add new revenue.

Another challenge that is impacting the return on investment (ROI) of mobile operators is the emergence of free, "over-the-top" and off-net applications and services (such as those from Skype, gaming vendors, and applications stores from Apple, RIM, Nokia, and LG). Consumers can utilize these applications and services, which use the operator's network, without providing even an incremental usage fee to the mobile operator.

To take advantage of the mobile Internet explosion, get a percentage of revenue from third-party service providers, and avoid functioning as merely a bandwidth "bit pipe," mobile operators must invest strategically in network assets and launch new business models that go beyond current flat-rate business-to-consumer data plans. Optimizing the network to streamline capital and operational expenditures as new capabilities and capacity are added is one area of focus. Monetizing the mobile Internet to cash in on new, intelligent technologies and applications is another area of focus and the subject of this paper.

## Solution: New Capabilities, New Business Models, New Revenues

To raise ARPU beyond basic subscription revenue, mobile operators now have an opportunity to differentiate themselves from over-the-top providers and other third-party vendors by deploying intelligent, IP-based network solutions. These solutions are based on industry-leading mobile packet core platforms from Cisco.

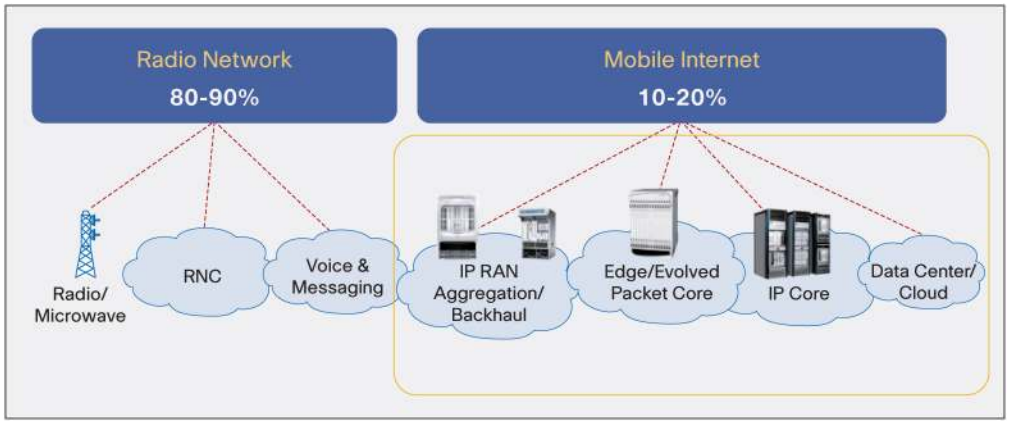
Using the intelligent features of these platforms, mobile operators can integrate subscriber information with network and application intelligence, in real time, to deliver personalized experiences. Such real-time session- and subscriber-state intelligence is not available through the cookies in a web browser interaction but only through the intelligent capabilities of the operator's mobile Internet core. This intelligence includes correlation of subscriber subscription plans and preferences with awareness of time of day, location, usage pattern, type of application running, available bandwidth, roaming status, and other factors to enable features such as:

- Service-aware charging
- Access control
- Policy control
- Content filtering
- Quality of service (QoS)
- Application detection and control
- Filtering, caching, and ad-insertion
- Security

The intelligence provided by the network can be used to create new next-generation business architectures and new business models. Operators can benefit from a two-sided business-to-business-to-consumer market, creating value for both the producers and consumers while benefitting from both. With these capabilities in place, mobile operators can enter promising new markets, including M2M, cloud services, and targeted advertising. For example, mobile content and service owners can potentially pay the mobile operator for quality access and delivery of locally cached premium content to multiple screens. Consumers pay the mobile operator for premium, personal multimedia services on multiple screens.

The intelligent Cisco features can be enabled in the end-to-end mobile IP network, otherwise known as the mobile Internet, where today only a fraction of mobile operators' investments are being made, Figure 1.

**Figure 1.** Percentage of Capital Expenditures in Mobile Network Topologies Today




Investment in the intelligent, Cisco mobile Internet architecture enables operators to quickly roll out new services, forge lucrative relationships with third-party providers, and support 2G, 3G, 4G, Long Term Evolution (LTE), WiMAX, Wi-Fi, and other specifications. The architecture is based on advanced platforms and solutions for the IP Radio Access Network (RAN), IP edge, evolved packet core (EPC), mobile packet core, and data center.

## Profits Through Monetization

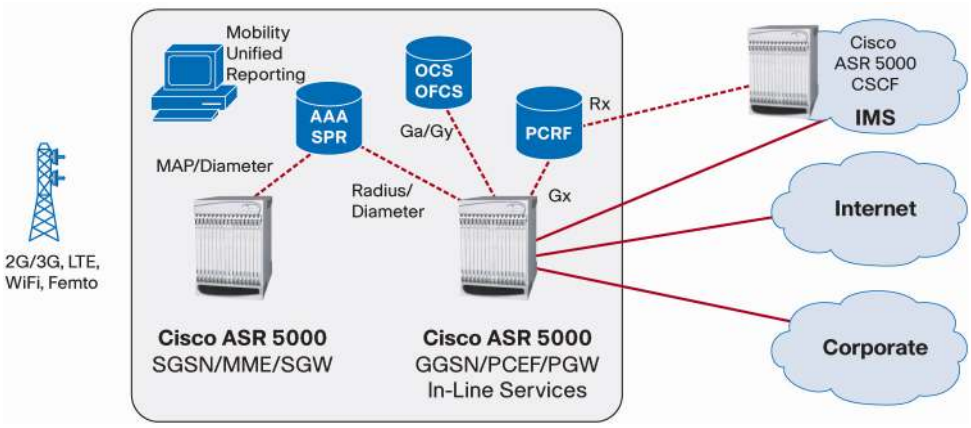
Cisco sees three general areas of opportunity for increased revenue generation within the evolving mobile Internet marketplace. With an intelligent mobile Internet architecture in place, operators should consider focusing strategic efforts on:

- Protecting, controlling, and growing the existing services base
- Developing revenue-sharing business models with third-party providers
- Increasing revenues by launching new services

## Protecting, Controlling, and Growing the Services Base

Today's subscribers represent a wide variety of users with diverse needs. Operators are looking for ways to protect, control, and grow this subscriber base. An intelligent policy infrastructure is the baseline to monetization of the network, efficiently enabling all three general areas of monetization. Intelligent features such as policy and charging control - which assure the proper allocation of network resources based on what the subscriber has purchased and what the network can deliver - and the ability to quickly deploy and manage services make it possible to monetize existing and enhanced service offerings.

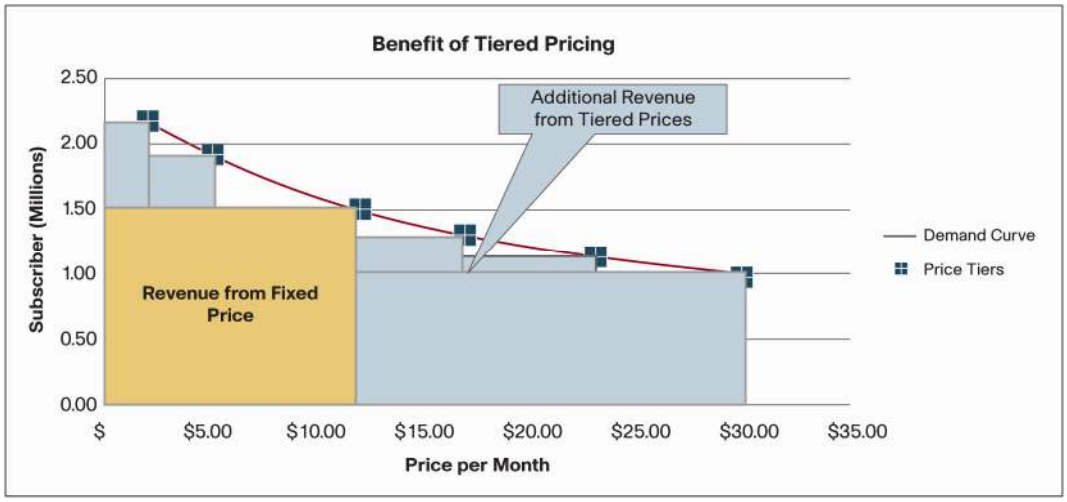
**Figure 2.** Policy and Charging Control Inline Services - the Baseline to Monetization




Applying policy with network and subscriber intelligence allows mobile operators to earn new revenue from the following services.

- **Tiered services:** Policy and charging control can be used to define gold, silver, and bronze service tiers. Each plan can include QoS that is superior to the best-effort service that customers are currently receiving from over-the-top providers. Customers can receive a proactive notification when they are nearing 75 percent of their monthly usage quota. Differentiated billing can be based on usage volume, duration, time of day, or other factors. Even per-event billing and billing based on minutes of usage for push-to-talk services are possible, along with prepaid or postpaid options. Tiered services can increase customer satisfaction levels, helping to ensure that each customer has a plan best suited to their needs. A 2010 study by Network Strategy Partners LLC found that pricing tiers that offer specific content for a flat monthly fee can produce a significant revenue boost as compared to a single pricing plan for flat-rate service, Figure 3.

**Figure 3.** Tiered Pricing Example




Source: Network Strategy Partners, LLC, 2010

The figure shows that as prices increase, the number of subscribers declines. In this example, a single flat-rate plan of US$12 per month attracts 1.5 million subscribers and produces revenue of $18 million per month. However, the demand curve shows that many subscribers are willing to pay more for a higher-tier service. This is premium revenue that can be captured through premium pricing plans. Additionally, the demand curve also shows that some additional subscribers would subscribe to a service if it were priced below $12 per month. The study found that the introduction of service tiers added $22.9 million per month in additional revenue and a net increase in total subscribers from 1.5 million to 2.2 million with an ARPU increase of $6.85 per month.

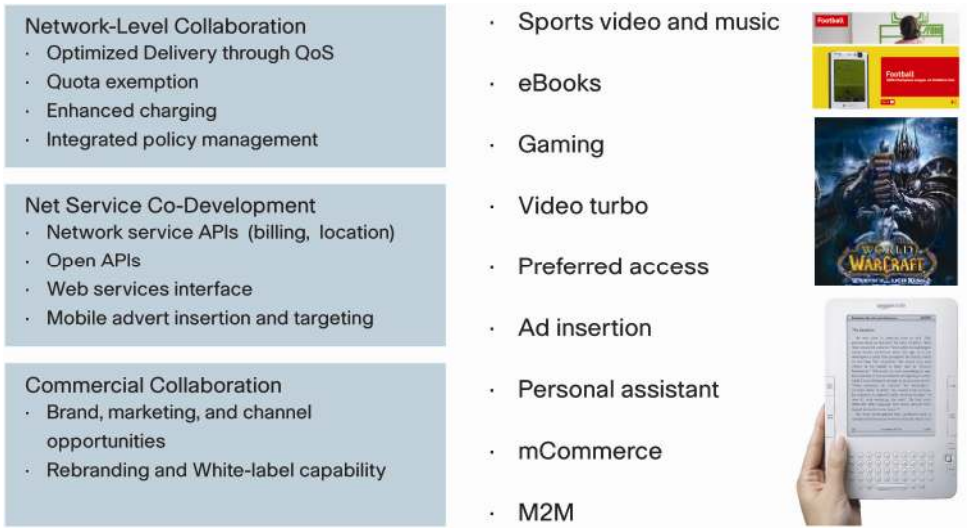
- **Roaming:** While most roaming solutions are designed to prevent bill shock, frequent roamers can be offered a premium plan or tier that allows access to all services at any time. Other subscribers can be provided with limited access to data services when roaming, but can dynamically opt for higher-bandwidth access as needed for an additional fee.
- **Day plans and pre-pay:** The proliferation of laptops and netbooks with mobile broadband connectivity has led to a growing number of users who want temporary access when visiting areas not served by their home provider. These mobile users can be given the option to purchase mobile broadband access for a limited duration or for a fixed amount of capacity, similar to the wireless LAN services and pre-pay schemes.
- **Parental controls and family quota plan:** Adding a charge for network-based parental controls and even a family quota plan for mobile devices can be a popular and lucrative add-on service. Parents can limit access to specific applications, such as phone service and peer-to-peer gaming, or remove privileges or even bandwidth if a child is neglecting schoolwork or otherwise misbehaving. Currently, PC-based parental controls require special software that must be purchased, loaded on each machine, and configured. Mobile parental controls have been virtually nonexistent. Now, however, content filtering and usage controls can tell parents how much bandwidth is being used by which family member on which device and for how long. Parents can block specific applications during the school day or by user or enforce a specific bandwidth ceiling per user per day. These controls can be made available to a parent through a portal, where service limits can be dynamically set and notifications on usage by each family member monitored.
- **Turbo service:** Requirements for voice and email on a mobile device are much less network-intensive than for multimedia applications such as video and gaming. With turbo service, customers can opt to pay for additional bandwidth on-demand. If a user wants to play a multimedia game or download a movie, for example, a turbo button can enhance the service while the application is in use, providing a higher-quality experience and delivering incremental revenue to the operator.

- **Special promotions using enhanced charging:** The ability to zero-rate specific application traffic, as desired, gives operators the option of promoting "free" access (also known as "Freemium"). For example, Vodafone Australia designed a promotion for new subscribers tied to a specific device that offered a discounted price plus free access to Facebook. The same concept could be applied to any application traffic, thanks to Cisco's policy solution with deep packet inspection and enhanced charging.

### Developing Revenue-sharing Business Models with Third Party Providers

With the intelligent mobile Internet architecture from Cisco, operators can collaborate instead of compete with third-party content, device, and service providers. New, innovative business models and strategies can be forged for business-to-business-to-consumer services. Revenue leakage to third parties and content fair-use infringement can finally be contained, as consumers enjoy the convenience, superior service, and volume discounting possible with mobile operator and third-party partnerships, Figure 4.

**Figure 4.** Collaboration with Third-Party Companies for Added Revenue, New Business Models




Source: Cisco Internet Services Business Unit, 2009

- **eBook service:** Given the growth of eBooks, an exciting opportunity exists for mobile operators to partner with device vendors and content owners to get a percentage of revenue from eBook downloads. An example of such a collaborative agreement was reached by AT&T with Amazon.com and Borders Books. Amazon sells the Kindle eBook reader and has a content agreement with Borders Books. The consumer is only charged for content purchased, not for network access. AT&T receives a revenue share of each book delivered, providing one-touch, 30-second guaranteed downloads of books. The AT&T and Amazon collaboration also provides customer and network intelligence that allows for data mining that can be used to promote content specials and cross-selling opportunities based on location, time of day, customer preferences, and other factors.
- **Sports, music, and other specialty content subscriptions:** The ability to identify and differentiate applications on the mobile network can also be applied to special subscriptions for access to sports and music on mobile devices. Vodafone UK has partnered with Sky Broadcasting, for example, to provide subscribers with an all-the-football-you-can-watch-per-month premium streaming service for £5 per month or 50p per highlight. Vodafone and Sky Broadcasting split the revenue. The service also includes score and game alerts and is much like the addition of a premium channel in a cable TV subscription plan. Another service available through Vodafone UK is an unlimited music option for £1.99 per week that includes full track downloads and occasional free streaming video. Both of these services are billed based on flat rates instead

of bandwidth (zero-rated on their subscription) and these and other bundled service packages have proven very popular with football and musical fans alike.

- **Gaming subscriptions:** Bandwidth-intensive games such as World of Warcraft can provide consumers with assured quality experiences on mobile devices and operators with new revenue from service agreements with game providers. An existing subscription with a gaming company could be extended by the mobile operator to include use on mobile devices. The mobile subscription could be offered as a standalone add-on or as part of a tiered service. Different price points could be offered based on peak and off-peak usage hours.
- **Application stores:** Many of today's very popular and lucrative mobile application stores provide no monetization for the mobile operator. Instead, revenues flow to the application store owner and the entity that controls the portal. But with the intelligent Cisco mobile Internet infrastructure, mobile operators can partner with application vendors to help them promote their products and services, share associated advertising revenues, and get a percentage of licensing revenues. The application provider gains access to the network resources, gets real estate on the operator's captive portal, and can benefit from bundled pricing and other service offerings. Telenor Norway's Content Provider Access initiative currently generates 6 percent of the operator's revenue.
- **Preferred access:** The ability to provide QoS and dependable access through 2G, 3G, 4G, or other standards instead of best effort is a powerful competitive differentiator. The intelligence provided by Cisco solutions allows content providers to pay for preferred access or QoS while the user enjoys a superior experience when accessing the specific application. This can be an enhancement to the application store model and to any other application as well, such as video delivery.
- **Machine-to-machine (M2M):** Application services can be extended to non-traditional mobile devices, such as M2M connections that link wireless data calls between machines. The rapidly growing M2M market (with traffic between machines forecast to triple by 2014 to 75 million calls between machines, according to ABI Research) includes telemetry and telematics applications in health, automotive, surveillance, fleet logistics, transportation, and shipping industries.

### Increasing Revenues by Launching New Services

With an intelligent mobile Internet infrastructure, mobile operators can bring an array of new services to market that harness the intelligence, manageability, and performance of the end-to-end mobile network. These include services that depend on rich communications, presence, messaging, and social networking content.

- **Rich Communication Suite (RCS) services:** This service and feature set for mobile phones is built around presence and a user's phone address book. The RCS client is built into many handsets and once the service is activated, it can show where your friends and associates are and if they are available. Chat sessions, sharing of video in "See what I see" mode, image or file sharing, SMS, and other services are possible with RCS. The service is growing dramatically, especially in Europe, the Middle East, and Africa (EMEA) and Asia Pacific (APAC).
- **Social networking services:** Mobile operators can utilize their robust, end-to-end networks to promote and monetize high-end social networking environments. One example is Cyworld, a South Korean social networking service. Operated in partnership with South Korea Telecom, the service enables relationships in a virtual world among members who appear as avatars in rooms that they can decorate with objects that they buy. Cyworld encompasses a photo gallery, video, SMS service, and other features. It generated US$200 million in revenue in 2007, the equivalent of US$10 per user (ad-heavy MySpace, by comparison, brings in an estimated US$2.17 per user).
- **Social networking with content services:** Mobile operators can create their own social network environments or offer the service for branding by partners. Vodafone New Zealand created Vodafone Self Central, a social network platform for mobile phones. It lets consumers create mobile spaces and upload

images, video, and audio to these spaces. The content can be downloaded by others within the Vodafone network. Setting up a space is free. Uploading of content is charged based on a standard multimedia message rate (US20 cents to US$1). Others can download content from a subscriber's space for 25 cents per download and the content owner receives a 5-cent credit for each download. The Self Central space can also be used to chat with others and includes unlimited video-streaming services.

## Conclusion

Cisco's comprehensive, end-to-end, intelligent mobile Internet architecture and solutions provide mobile operators with an array of features that will allow them to enhance the existing customer experience, assure premium multimedia services, forge new business-to-business-to-consumer service models with partners, and develop innovative new services themselves. Features to capture and understand customer preferences, network conditions, and content characteristics; to provide differentiated access and QoS; and to enforce subscription policies are all available from Cisco. These capabilities are the building blocks of innovative services, business models, and partnerships that will help mobile operators better monetize the mobile Internet, raise ARPU, and maintain customer loyalty in this explosive market that continues to gather momentum.

## For More Information

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