

Making money from over-the-top traffic

Although much real-time entertainment is delivered over-the-top and is thus unbillable for operators, **there is no need for them to throw in the towel**. Building on the realization that poor quality simply won't do, here's how operators can profit from the mobile-internet revolution by **improving the user experience**.

THE MOBILE-INTERNET revolution took more than 10 years to take off – but when it did, it did so with a vengeance. Tablets and smartphones achieved critical mass a long time ago. In emerging economies, the mobile phone is – for many people – the only means of accessing the internet. Young people in more developed countries, meanwhile, see connectivity as their birthright. Operators are now struggling to catch up with the explosion in demand, with customers expecting 24/7 connectivity anywhere, high data speeds, and the use of smart mobile devices to consume internet content.

The only question for operators to address is how to make money in this wonderful new world of mobile internet.

The dream scenario for operators has become reality: data traffic in their networks has increased dramatically. In the early days

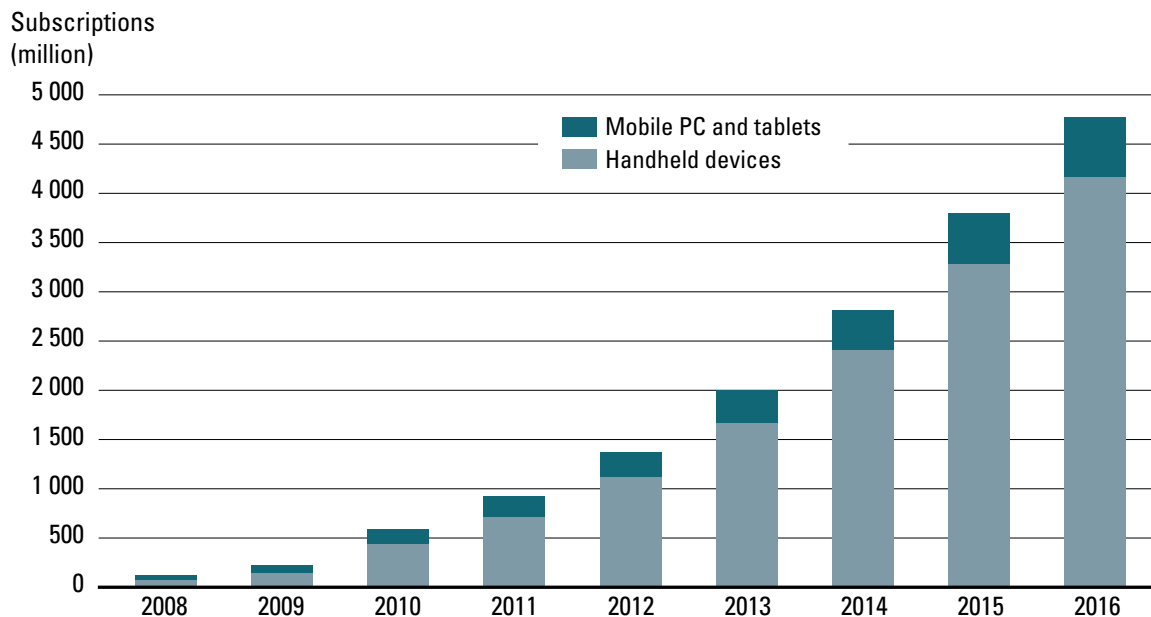
of mobile-broadband services, operators rightly understood that it was imperative to encourage service uptake in order to achieve critical mass. The formula was simple: introduce flat-rate tariffs that made the charges for such services predictable and easy to understand for consumers. And it worked – in fact, it worked so well that uptake exceeded even operators' wildest dreams.

THE SUPPLY SQUEEZE

Service providers loved this approach too, and a wide range of services, applications, and content are driving increased mobile data usage.

The natural effect of an unexpected surge in demand for mobile services is easy enough to understand: supply shortage. Suddenly, network capacity has become a scarce resource for operators, and basic ►

Mobile broadband subscriptions by type



Source: Ericsson

Mobile Broadband includes: CDMA2000 EV-DO, HSPA, LTE, Mobile WiMAX & TDSCDMA.

It includes handsets, USB dongles, embedded modules etc. The vast majority is handsets. M2M traffic not included.

Please note that mobile broadband access could be used for fixed applications

Over the top (OTT)

► Over the top (OTT) refers to content, applications, video, and other services delivered over the internet instead of via a service provider's dedicated network or installed on the customer's device.

OTT content is delivered directly from the provider to the customer using an open internet/broadband connection, independently of the internet service provider (ISP) or operator, without any infrastructure investment on the part of the content provider.

It is normally a "best effort", unmanaged method of delivering content via the internet that suits providers of content without the network assets of operators or an ISP.

What is quality of experience (QoE) and why is it important?

► QoE, also known as quality of user experience, is a subjective measure of a customer's experiences with a service – for example, web browsing. Definition from ISO 9241-210: "[...] a person's perceptions and responses that result from the use or anticipated use of a product, system or service."

QoE systems try to measure metrics that customers directly perceive as a quality parameter – for example, the time it takes for a website to load. It is a product of multiple factors, including:

- utility** – the right content and features
- usability** – easy to navigate, user control and feedback, efficient use
- aesthetics** – look and feel
- availability** – device capability, network capability
- offline issues** – price, branding, trustworthiness.

Examples provided by Google show that an extra 0.5-second delay in generating search results would worsen the user experience and, in effect, **reduce traffic to its website by 20 percent.**

► economics teaches us that a scarce resource can be monetized.

Imagine a consumer – let's call her Saada – who is using a video-on-demand service on her tablet, which is connected to the internet via a mobile-broadband subscription. She had been looking forward to watching her favorite movie with her boyfriend, but discovers that the service quality is extremely poor. It's so bad, in fact, that they reluctantly abandon their cozy sofa and freshly made popcorn, and decide to catch a movie downtown instead. In this case, if the quality of the experience isn't good enough, the service isn't worth anything. On the other hand, Saada would most likely be willing to pay a marginal additional fee to receive a higher quality of service. The added benefit for Saada is huge, and the added cost is low. Quality of experience (QoE) means everything.

For operators, the solution is price differentiation. Most of their mobile-broadband offerings have achieved critical mass, and it is time to evolve their pricing schemes in order to monetize their scarce resources.

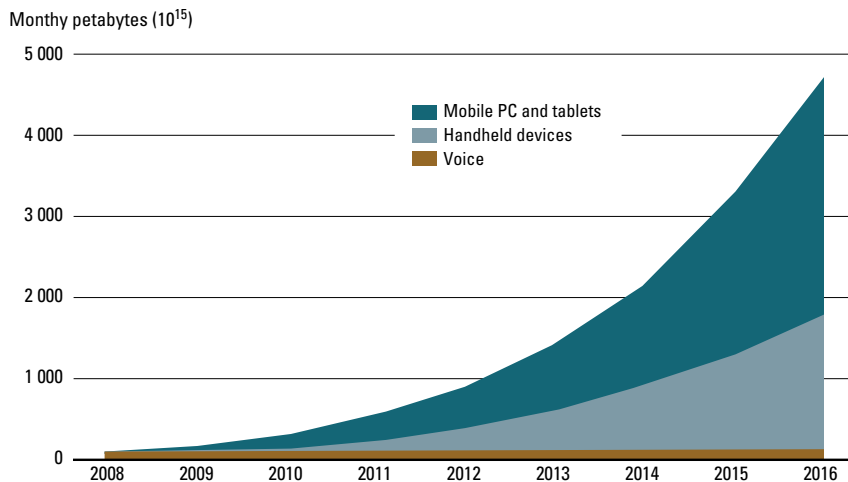
MONETIZING YOUR NETWORK ASSET

The natural way for operators to differenti-

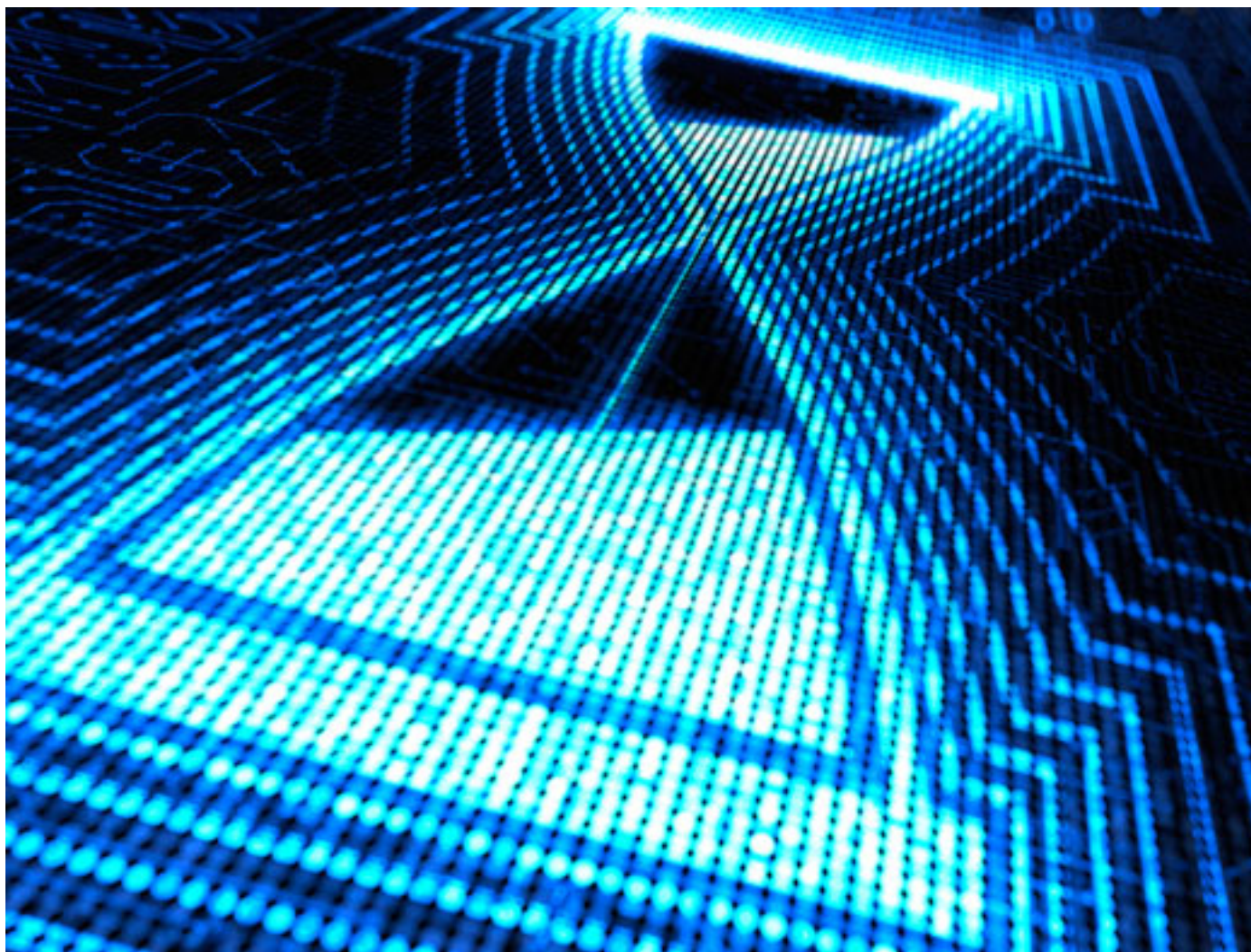
ate their service offerings is to give consumers the ability to choose between various levels of service quality. Operators are starting to explore this option. Remember Saada and her disappointing video-on-demand service? The video-on-demand service provider faces the same dilemma as Saada, as the service is worthless if the quality is poor. Like Saada, the service provider would be willing to pay a marginal additional fee to secure a better quality of service.

Imagine an online retailer the night before Christmas. Now imagine that millions of consumers are trying to access the retailer's website to purchase its products, but abandon their efforts because the purchasing process is sluggish and the QoE is poor. Think about how much the online retailer would benefit from being able to improve the QoE for people accessing its site or app using a mobile device. In the content industry, examples provided by Google show that an extra 0.5-second delay in generating search results would worsen the user experience and, in effect, reduce traffic to its website by 20 percent. And, for Amazon, every 100 milliseconds of latency reportedly reduces sales by approximately 1 percent. Clearly, there is untapped potential for operators to offer to

Subscriber traffic in mobile access networks



Source: Ericsson
DVB-H, Mobile WiMax, M2M and WiFi traffic not included



improve the quality of end-user experience on behalf of content providers.

The key thing to understand is that service providers don't need to guarantee a certain average level of performance. Rather, they need to reduce the "tail" of bad performance. They can do this by resolving any issues that lead directly to consumers not completing online purchases, or abandoning video-on-demand services.

CAPITALIZING ON THE QoE OPPORTUNITY

QoE is important for end users, valuable for content providers and an opportunity for mobile operators. But how can mobile operators capitalize on it?

QoE depends on many factors, such as the type of device used, the user-friendliness of the application, price and branding, content quality, as well as look and feel. The good news for operators, however, is that network performance and availability of the service also play a critical role. Operators can therefore improve QoE by boosting network performance and reducing latency as well as

load times for the end user. A smart solution to improve network performance for a specific end user is to use network functionality to prioritize traffic in the radio access network.

The difference between fixed and mobile broadband naturally lies in the "last mile". For fixed broadband the "last mile" typically has no bandwidth limitations, meaning that it does not play a decisive role in determining overall network performance and QoE. In the world of mobile broadband, however, the "last mile" is the radio access network and this plays a critical role in determining access speeds and QoE.

The key to improving QoE in the mobile internet is to increase the speed of the radio access network. And that's where priority functionality comes into the picture, as operators can use it to prioritize users and content providers who will then benefit from, and be willing to pay for, improved QoE.

THE OPPORTUNITY TO DIFFERENTIATE

Mobile operators potentially have many ►

Every millisecond counts. Latency reduces sales, offering an opportunity for operators to offer improved quality to content providers.

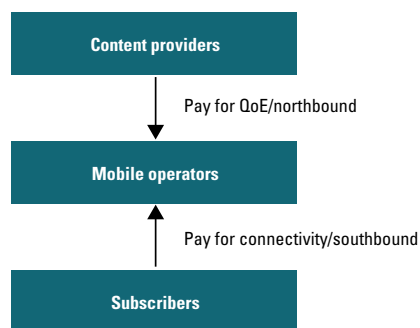
Selling priority or increased speed as a premium service

► Indonesia's Indosat has a mobile-broadband service called Broom Unlimited which offers regular speeds of 256kbps, and the option of paying for an increased speed of 3.6mbps for a limited time of no less than one hour

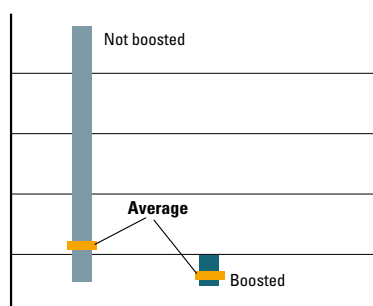
A European tier 1 operator launched a "gold plan" for enterprise mobile-broadband users in 2009. Business customers could buy a premium plan that guaranteed prioritized access during periods of heavy network load, although there was no guaranteed minimum access speed.

[Source: Operator websites]

A two-sided business



Time until user sees page



Priority (boost) of a user or content improve average load times but more importantly reduce the "tail" of bad performance, such as the worst cases of load times.
Source: Ericsson

The key to revenue generation:

1. Opportunity to tap into OTT content revenues
2. OTT content can be monetized through leveraging the needs of content providers and creating value for them, using quality of experience (QoE)
3. Use your network assets to improve QoE and create value for content providers
4. Use prioritization to increase both southbound and northbound revenues

Priority needs to be offered to a limited group of subscribers or services – perhaps 10–20 percent – to limit the impact on the network.

► ways of tapping into revenues from OTT content, but not all of these lie within their core capabilities. The further you stray from your strategic capabilities, the less likely you are to succeed with the venture. But using traffic prioritization to improve QoE truly builds on the core capabilities and expertise of mobile operators, delivering a quality network service.

How should operators use traffic prioritization? Should they prioritize subscribers who are willing to pay a premium for improved performance or should they prioritize content providers that are willing to pay for improved QoE?

Operators can and should do both.

Our analysis shows that few operators today are prioritizing “southbound traffic” (traffic from the operator to the subscribers) for premium subscribers. And among those that are, few of them market this option as a value-added feature of the subscriber package. As networks become increasingly congested, the value of traffic prioritization will increase.

As the mobile internet matures there is a need to be smarter about packaging and pricing to match the differentiated needs of a range of subscribers. Priority should be part of premium subscriber packages, and it will be an attractive feature.

Priority needs to be offered to a limited group of subscribers or services – perhaps 10–20 percent – to limit the impact on the network. These will be the subscribers who are willing to pay a premium for improved service. Studies from Ericsson ConsumerLab indicate that the top 10 percent of consumers are willing to pay up to 60 percent more for their internet access speeds to double. This indicates that the top five to 10 percent of subscribers are willing to pay a healthy premium for priority. This premium will be on top of their basic subscriber packages, and will be calculated based on factors such as market conditions and network congestion. The key is to hit the right price point that returns a healthy premium with only a minor impact on the network.

THE NORTHBOUND OPPORTUNITY

The good news is that content providers are also willing to pay for priority and improved QoE. In simple terms, the operator will receive a share of the OTT content revenues as compensation for the improved QoE that

will, in turn, give the content provider increased business. Whenever a subscriber accesses content from a content provider that is paying for improved QoE, that content will be prioritized and the subscriber will enjoy an improved experience. That improved experience will boost the business of the content provider – through increased advert views, increased sales and so on – and the operator will receive additional revenues. For every megabyte of prioritized data delivered, the operator will receive revenues from both the subscriber and the content provider. The operator will thus increase not only the content provider’s revenues but also its own.

Managed correctly, this new revenue stream will not affect the southbound opportunity: selling data and priority to subscribers. At the right price point, the northbound opportunity will generate the same revenue per priority gigabyte as the subscriber opportunity. Why sell priority to subscribers alone when there are content providers that value this asset just as highly?

SUCCESSING WITH NORTHBOUND

There are several options open to the operator that wants to explore the northbound opportunity, and these range from trying to reduce costs to trying to increase revenues. Most operators will likely attempt to do both; they will seek to reduce costs by adopting a content-delivery strategy and use improved QoE to gain access to OTT revenues.

The key to realizing the northbound opportunity is to convince content providers to pay for improved QoE. The strategy followed to achieve this goal depends on whether the operator in question is a large tier 1 operator or a smaller operator. Of course, depending on its local situation, the operator may also choose to prioritize either reducing costs or increasing revenue.

- 1 There are three scenarios for an operator:
 - stand-alone aggregator – this involves effort to convince content providers to cooperate. This would likely be a challenge for smaller operators, which have a less significant market share and are therefore unable to offer a substantial base for the content providers. This option could be ideal for cooperation with local content providers.
 - partner with other operators – this can be a way to create a more attractive offer-

ing for content providers. This option is particularly viable for larger operators that have existing relationships with other big operators in various markets.

③ **partner with a broker** – outsource the northbound opportunity to a third party to combine the operator’s strengths in networks with the partner’s relationships with content providers.

The successful creation of a northbound revenue stream for operators will likely lead to the emergence of many more opportunities to create value with content providers. The key to success in this area is cooperation between the content provider and the operator in such a way that they play to their respective strengths. By combining the operator network and subscriber assets with the business models of content providers and the need for QoE, performance and reach, the mobile revolution can lead to value creation for all. ●

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