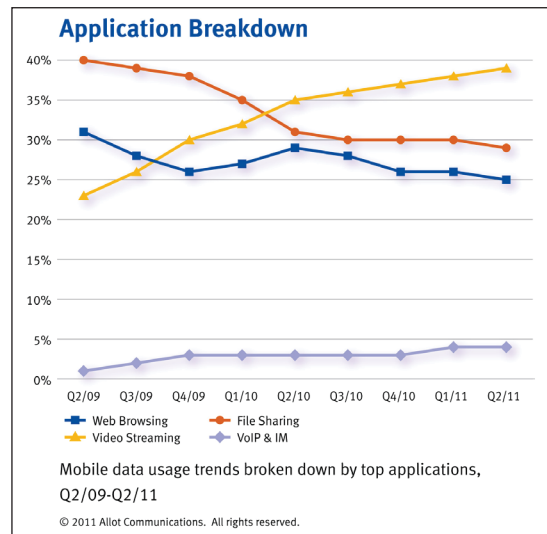


Billing for Next Gen Mobile Networks

By Becky Bracken and Jesse Cryderman

At CSPs around the world, money is literally slipping through the cracks, bit by bit. Why? Because mobile data usage has evolved much faster than the models used to charge and bill for it.

In the early days of mobile, billing systems charged for minutes and messages—there wasn't much more



available. Now, there are few data services that aren't mobile, and it's not just how consumers use their devices, but where. As we uncovered last month,

consumers are on their smart devices from the time they wake up to the time they go to bed, and even in bed.

If we look at the two top mobile platforms for smartphones (which consume the heaviest amount of data and incur the most billable charges), we see the sheer volume of data-hungry devices coming online daily. On the Android platform, which has a predominant market share, over 700,000 Android devices are activated daily. For Apple, the number is around 250,000 devices daily.

Video is consuming the lion's share of mobile data, and the trend will continue. Take a look at mobile data consumption patterns in figure 1.

A Challenging Proposition

CSPs face serious challenges in mobile billing today. They must rapidly create models that generate value from mobile broadband, and they must meet flexibility and customization demands.

Monica L. Ricci, Director, Product Marketing, CSG International, summed up the billing dilemma: "The single biggest billing challenge facing mobile operators around the world today is rapidly adapting to change. The specific changes that must be adopted vary significantly depending upon the market conditions of each operator."

In mature post-paid markets, this means creating more revenue from mobile data services in a transparent manner, explained Ricci. In markets that are dominated by pre-paid billing, the challenge is developing real-time policy controls, better loyalty programs, and greater flexibility. In both cases, the question is the same: how do we create parity between the cost of supporting increased data services and revenue?



Defining value is an important part of the equation because it's a dynamic variable. Allot Communications says, "As users favor data over voice minutes, the challenge for operators is around generating value from broadband. The key challenge is defining new billable values for customers that will serve as basis for new billing plans."

Miguel Carrero, Director, Communications and Media, HP Enterprise Services, agrees, and notes that current billing systems don't offer the flexibility and customization that today's mobile customers desire. "The main challenge in charging systems is their limited granularity for differentiated pricing," said Carrero. "This has driven operators to offer a 'quick and dirty' solution of 'flat rates'. Over time this has developed into a situation of 'all you can eat' consumption, resulting in an unstable situation of growing network costs without a way to charge for their use."

So what types of billing models are available, and which are poised to address the needs of the future?

Unlimited Billing

Unlimited is the so-called "all-you-can-eat" billing model. Pay one price and have access to everything. The Old Country Buffet of mobile data.

While customers love the unlimited model, carriers are increasingly moving away from them. Revenue doesn't scale to match bandwidth demand. A recent survey from Allot Communications found that only 13.5% of operators currently offer a "true unlimited" plan. This trend is likely to continue, until very few CSPs offer an unlimited billing model for mobile

New pricing models are necessary for telcos to avoid becoming dumb-pipe providers.

broadband.

There's a good reason for this. Unlimited models are "unsustainable without a Fair Usage policy, which in effect renders them nothing but a marketing ploy," explained Jonathon Gordon. This has played out numerous times in the press over the past two years, where the carriers' definition of the word "unlimited" sometimes generates more negative press than positive. Additionally, "as the price of data units (Mbps) erodes, unlimited plans only lead into price wars." continued Gordon.

Volume-Based Billing

The next trend in mobile billing is volume-based billing—buy a 5Gb bucket, and do what you want until it's full. It's like the U-Pick Blueberry Farm of data.

Monica Ricci, CSG International, sees the value-based model enabling savvy customers to select the right size bucket based on consumption and then, "the operator can more closely align revenue and profit margins to network load." The keyword is "savvy." "The downside is that this model necessitates



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that the consumer has some awareness of what it costs, in terms of data volume, for his average activity levels; he must think in terms of megabytes.” cautions Ricci.

Volume-based plans will be more equitable across the board, says Jonathon Gordon, but he shares Ricci’s concerns around customers’ understanding of a data bucket. “Volume based plans provide a more ‘fair’ way of charging for usage. However, studies show that over 60% of users don’t know what their usage cap is, 75% don’t know how much bandwidth they use, and 40% don’t know what happens if they exceed the cap.”

We’ve already seen many carriers moving to this model, but how long will we be purchasing buckets?

Miguel Carrero of HP feels that volume-based models will stick around for awhile, but like everyone else I interviewed for this article, believes they are not without faults. “A volume-based pricing model can exist for longer than the unlimited one,” commented Carrero. “The concern here is that it translates communications to commodity. With a volume-based model, competition between operators is going to be purely on price. That means eroding margins in a capital intensive business.”

Value-Based Billing

This brings us to value-based billing, which Carrero unabashedly calls, “probably the only long-term viable direction for telcos.” He is not alone. Consensus in the industry is that value-based is the final word in mobile billing.

Users are willing to pay more for value—the key is understanding what individual customers value, creating plans and bundles that reflect their unique preferences and then provision services accordingly. It’s not enough to just create customer classes and manage accordingly; value-based billing done right is much more granular.

Value-based charging models make it possible to charge subscribers based on the variable value of a used service, rather than on time, volume or speed. A good example of the challenge this model attempts to solve was presented by Jonathon Gordon. “A businessman on the move, waiting for critical email from his client during the business hours compared with a teenager rushing to see his favorite ‘Glee’ episode in HD - both hit a shared resource - which traffic usage has precedence in this case? Both of

Value-based pricing is probably the only long-term viable direction for telcos.

them? - If operators do not manage it, both users’ experience will be less than adequate.”

A value-based model, says Miguel Carrero, can be built on three elements:

- Creating a holistic view of a customer’s profile and preferences
- Analyzing it for real time insights on trends and preferences
- Acting on it in real time via service policy management, real-time charging and service promotions

With value-based billing, both the consumer and the operator win, as both supply and demand become more transparent to both parties. In most other realms, consumers are very aware of their cost of service; for instance, a gallon of milk (or gas), costs \$3.50. No one expects to get all the gas they can pump for a flat price, because they understand that there is a finite supply.

When billed by value, “the consumer thinks about his data services in terms of monetary value,” says Monica Ricci. “Sending an email costs 2 cents, for example, while streaming a 30-minute television show costs 50 cents...the operator can set prices based upon both the bandwidth and QoS required to optimally deliver each type of content services.”

A Pre-Paid Future

Whatever charging model is employed, pre-paid billing is increasingly a part of the discussion, as its inherent real-time response enables many of the very advantages that value-based billing attempts to enable. Additionally, in many parts of Europe, Asia, and in developing countries, pre-paid is the most popular game in town. In fact, many analysts and telecom insiders feel the days of traditional billing are numbered. Aside from the real-time advantages of pre-paid, how can traditional billing scale, and why maintain two disparate systems?

Miguel Carrero says, “traditional billing can’t survive for two main reasons: As bandwidth demand

continues to grow, current pricing models cannot cover the investment costs; and with LTE becoming a reality in most markets, competition from OTT players is intensifying.”

Customers—even post-paid—expect near-real-time updates from their carrier, and legislation passed in several countries will soon mandate it. Jonathon Gordon agrees that, “real-time charging is definitely the direction in which the industry is headed.”

I spoke with Dmitri Lozdernik, Industry Director, Telecommunications, Worldwide Communications Industries, about Microsoft’s involvement in pre-paid billing, an area in which he says Microsoft sees enormous growth. As in other areas that touch telecom, Microsoft is cultivating a vibrant partner ecosystem to leverage its CRM platform for the development of pre-paid billing systems. In a unique twist, says Dmitri, “pre-paid services have recognized that they need to provide first-call resolution.” By building from the Microsoft CRM platform, telecom customers are able to integrate customer care, CRM, and billing, and the reaction to this integration has been overwhelmingly positive.

Laurie Tappel, Billing Product Manager for i-wireless, says the most important element for operators (particularly in the pre-paid space) to monitor in the future is real-time data rating managed within a converged billing platform.

“In the U.S. prepaid world, it’s been a hosted one-size-fits-all service for almost all operators,” Tappel says. “i-wireless chose to break from the strangle hold and invest in our own billing solution. Our Redknee converged billing platform creates new opportunities to launch new services, drive profitability and improve the overall customer experience.”

She adds that her experience has shown that a consistent monthly bill, with competitive rate plans and no hidden charges, is the key for attracting and keeping customers in the prepaid market.

“Outsourcing has its advantages in known costs and economies of scale, however in a competitive market, the hosted (billing) solution must also be able to create and deploy custom pricing plans, promotions and integrations with third-party vendors,” Tappel adds. “Not every operator can afford the expense to implement a converged billing solution i-wireless is open to exploring business opportunities with other MVNO partners, looking for

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a flexible billing platform.”

Net Neutrality?

Whenever the topic of controlling access to the internet comes up, net neutrality enters the discussion. Very often the metaphor of a toll-road comes into play—I paid to access the toll-road, I should be able to do what I want.

“Once traffic management is transparent to users, outcry is meritless,” says Jonathon Gordon.

He continued, offering keen insight around this topic: “As for net neutrality concerns, many use the toll-road metaphor in this context, but even so, can I really decide to have a bicycle race during the day on a toll highway? Not without prearranging and settling with the road owners. Paying for a set fee for the infrastructure does not mean one should be able to use it in such a way that obstructs any other usage.”

Mobile Billing Outlook

Except for the lucky souls who were grandfathered forward under a preceding plan, the days of truly unlimited mobile data are likely over and end users will probably only buy buckets of data for several more years. As Monica L. Ricci, CSG International summarized, “value-based billing models solve the data problem from both the supply and the demand side, and are therefore ideal for both the consumer and the operator.”

We’re also likely to see greater integration of customer care, billing, and CRM, like the Microsoft solution. Additionally, pre-paid, or at least near-real-time billing, is the wave of the future, and will lean heavily on advanced policy control and real-time charging to deliver the services of tomorrow in a transparent and equitable manner that customers understand.