



MONETIZING MAINSTREAM LTE

IS THE PRICE RIGHT YET?

A WHITE PAPER



WHAT CHARGING AND PRICING MODELS WILL MAXIMIZE THE OPERATOR RETURN ON CONSIDERABLE LTE INVESTMENT?

LTE WILL SOON BE THE DOMINANT MOBILE TECHNOLOGY WORLDWIDE.

LTE is now sufficiently well-established worldwide that we can ask: are we turning this popular and revolutionary technology into business success? Where are we seeing the highest monetization, what pricing and charging strategies are proving most effective, and are traditional BSS systems capable of supporting the industry's efforts to gain a viable return on its technology investment?

LTE is now a firmly-established mobile technology that has gained substantial penetration worldwide over the last two to three years. Despite this, a 2016 telecoms.com survey found that 83% of respondents believe that LTE still hasn't reached maturity. Perhaps this is because many continue to seek an economic return on 4G, and wonder what billing, charging and customer management functionality would help them realize profitable charging policy—questions this white paper seeks to answer.

The success of LTE and mobile broadband is no longer a matter for speculation—in terms of users, it became the dominant mobile technology in developed Asia in 2015, and other regions are following quickly behind. Customers clearly like what LTE brings—wherever the technology is rolled out, data usage quickly doubles and continues on an upward trajectory.



In terms of revenue generation, however, results are more mixed. In the US (a trailblazer in LTE rollout) mobile data revenues increased 16% YoY in 2015, and continue to climb, sustaining overall ARPU and to a large extent compensating for the continuing fall in traditional revenues. In much of Europe, by contrast, the rollout of LTE has made very little difference to data spend, which continues to plateau. This is not all about pricing policy of course—the competitive and regulatory context is very different in European markets, and factors such as average incomes, and the price of smartphones and other data devices also has a bearing on 4G profitability.

That said, the charging and pricing policy applied to telecom services has always made a significant difference to uptake of any new service, and there is no reason to suppose that 4G is an exception to this rule. This paper will look specifically at charging and pricing and ask:

- Which charging and pricing models are enjoying success in terms of revenue generation and profitability, helping operators to maximize the return on their considerable LTE investment?
- What BSS capabilities are needed to support these charging approaches and how far do they diverge from typical traditional billing functionality?



TOGETHER, YOU WIN.



ARE CUSTOMERS WILLING TO SIMPLY PAY MORE FOR HIGH SPEED ACCESS?

WHAT APPROACHES WORK: RESULTS FROM AROUND THE GLOBE

THE PERCEIVED VALUE OF SPEED

The first question which operators wrestle with is ‘will customers pay an upfront premium for 4G access, in terms of higher subscriptions’? In other words, leaving aside any change in charging models or approaches, are customers willing to simply pay more for high speed 4G access than they were willing to pay for 3G?

The answer to that seems to be a guarded ‘yes’—in the short term at least and depending on where

you live. In the UK, for example, the first operator to market (**EE**) charged a significant premium over its 3G plans and found that customers were willing to pay this for the improved quality of service.

EE was in a quasi-monopoly situation at that time and addressing an early-adopter market, but they successfully maintained their premium pricing even as **Telefonica (O2)** and **Vodafone** entered the market, neither of whom presumably felt it would benefit them to start a price war – until **3UK** came to market promising no premium over 3G charging. However, **EE** have subsequently introduced premium pricing for their LTE-A offering, presumably thinking they were on to a good thing.

In the rest of Europe, differential pricing for 4G has not been the norm, and operators have typically charged little or no additional premium for LTE. This is attributable to the highly competitive nature of many European countries, where four or even five operators are often competing for the customer’s dollar (often against at least one disruptive low-cost provider, the most notable of which is **Iliad/Free** in France). In these markets, customers have become extremely price-aware, and 4G connectivity has been used primarily to attract and retain customers rather than provide premium revenue in its own right.



'SIMPLE' DATA BUCKETS REQUIRE SIGNIFICANT FLEXIBILITY FROM THE BUSINESS SUPPORT SYSTEMS THAT SUPPORT THEM.

DATA CHARGING

Simple data charging, often described in terms of tiered data plans, volume-based charging or even 'data buckets', seems a simple and unsophisticated mechanism, and at face value it is. The subscription includes an allowance, or bucket of data—maybe 1GB, 3GB or even 5GB, 10GB or more (perhaps even a 'bottomless bucket', though unlimited allowances are rare in the context of LTE)—for the customer to use as required. The service provider simply provides the connection.

For many carriers this is where mobile broadband charging begins. Early **Verizon** LTE tariffs, for example, offered 5GB/month for \$50 or 10GB/month for \$80, while **AT&T** similarly offered DataPlus at US\$15/month for 200MB of data or DataPro for US\$25/month and 2GB of data.

Simple data buckets can have unexpected benefits for service providers. Many customers fail to 'empty' their bucket—so the return per MB used can actually be relatively high, while the headline price remains low. Others burn through their allowances quickly and can be moved on to more remunerative plans.

'Simple' data plans can hide other levels of sophistication too, that help to retain customers. For example:

- Customers can buy more buckets as the charging period goes on, often at a higher price than taking a big bucket initially, encouraging them to change to a plan they can stay comfortably within.
- Certain services can be provided free ('off-cap')—accessing a popular social network, for example, or watching ads, or maybe there will be a music or TV subscription wrapped into the deal.

- Other non-data services can be bundled with the data allowance—free calling, texts and roaming services are increasingly common, particularly as the return on these services continues to diminish.
- The price of the data bucket can be varied according to line speed and Quality of Service, such as **Swisscom's** 'Infinity' where line speed—and charges—vary between a basic 200KB/s, sufficient for occasional short mails and a super-premium 100MB/s that might be used by a mobile media professional.
- Increasingly buckets are shared—across a number of devices, between family members or across a social or business group. In the US, the principle of shared data plans has been highly successful; to the extent that in April 2014 **AT&T** disclosed that 45% of its subscribers are now on shared data plans. While this might look overly generous, it has many benefits: not only does it encourage higher data consumption per user, but it encourages more users and devices to come to the network and creates stickiness in the same way that multi-vehicle motor insurance deals do, not to mention the previous generation's 'Friends and Family' deals. It also encourages retention and increased data usage without having to push down on headline prices, and so sustains market value.
- Free usage or discounted usage is offered at off-peak times, or for certain periods (e.g. double allowance in the early part of a subscription).



PREMIUM SERVICES PROMISE A DISCRETE ADDITIONAL REVENUE STREAM OVER AND ABOVE CONNECTIVITY.

In reality, selling simple data buckets can be a much more sophisticated approach than it first appears and hence carries real marketing advantage—something that sounds straightforward to the customer can still afford the operator considerable flexibility. It also shifts the customer’s focus away from megabyte counting—which many people still find understandably confusing—towards criteria that are more intuitive, such as line speed and bundled services.

It can also demand significant flexibility in the supporting business systems, however: to check customer entitlements, restrictions and status in real time, for example, to map these against defined policy, and to apply appropriate charges.

PREMIUM SERVICES

Premium services that the customer is willing to pay for in addition to their data plan are the holy grail for operators, promising a discrete additional revenue stream over and above connectivity.

Premium services have been delivered with some success in fixed network environments—**BT Vision** in the UK, for example, has invested heavily in sports broadcasting. And it has been followed in the mobile space, with **Optus** in Australia gaining the rights to the English Premier League football (from under the noses of their cable TV rivals) and offering a cricket package including live streamed matches.

In truth, however, these are not so much new communications services as completely diversified offerings, intended to both make revenue and indirectly to drive up usage of the network. As far as the BSS is concerned, they require charging and management capabilities which are aligned with customer’s expectation of how such services will be sold and purchased—and typically no-one pays for a film on the basis of its size.

QUALITY CHARGING

LTE makes charging based on quality of service, such as an agreed download speed, viable. At **Vodafone Germany**, for example, tariffs vary depending on whether the customer receives 7, 21 or 50 MB/s download speed—an easier concept for the customer to grasp than volumes of data. We hear a lot about ‘turbo boost’ offerings, and with LTE and guaranteed end-to-end QoS, these are possible, but automated ‘context-aware’ delivery, where the carrier will commit to provide line speeds appropriate to the service—slow for messaging, fast for media streaming, for example—is the likely to be the next iteration in ‘quality charging’.



COLLABORATIVE REVENUE

Customer charging will only be one side of many future business models. For many operators, profitability will also depend on revenue from third parties, including:

- Sponsored data—where a third party, perhaps the content provider, pays for all or part of the data transport, partly to incentivize use and partly for branding and promotion—is arguably the most visible example to date of the much discussed ‘two-sided business model’ for next-generation telecoms. The introduction of guaranteed QoS and the possibility, where net-neutrality legislation allows, of prioritized and superior quality delivery make such agreements much more viable.
- Advertising and/or promotions, including subscriber-specific or location-based initiatives, which are overlaid on the service and paid for by the advertiser are becoming more viable as smartphone size and screen real-estate grows (but are now suffering badly from the prevalence of ad-blocking software).
- Data bundled with devices will become even more common. An early and successful example of this approach was early-generation Kindles and other e-Readers. And we see a similar approach with ‘connected devices’ in the home and the vehicle, as well as in ‘wearable’ devices such as sports and health bands.
- Revenue share with selected content partners, perhaps in return for billing and customer care, analytics, reporting, location and other services. This is likely to be a part of any premium services model.
- Wholesale bandwidth provision to MVNOs and ‘connected service providers’, including large enterprises, industry verticals and digital economy players. This kind of engagement may open the door to further revenue from added-value services such as reporting, notifications, charging and other more bespoke contributions to the customer’s proposition.
- Resale of customer and usage data to third parties—in most instances anonymized to avoid infringing data privacy regulation.

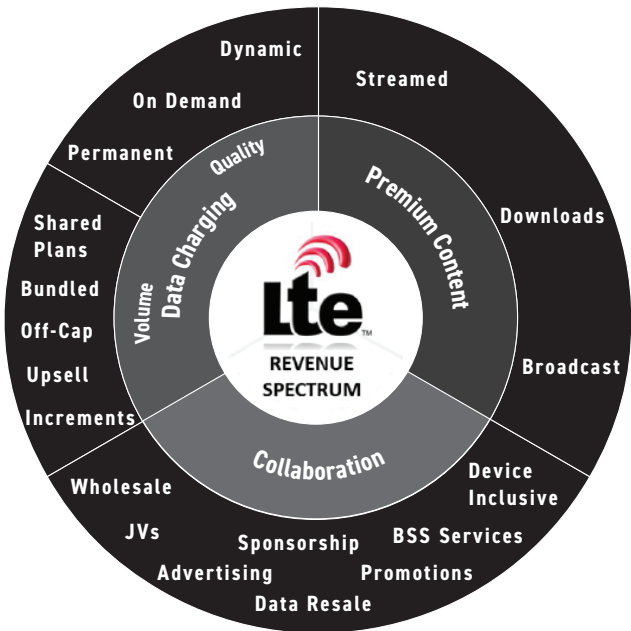
PROFITABILITY WILL ALSO DEPEND ON REVENUE FROM THIRD PARTIES.



BSS CAPABILITIES: REQUIREMENTS AND CHALLENGES

Different charging models will make a variety of demands on the BSS environment. Some of these are summarized in the tables on the following pages.

The major impact on the BSS concerns flexibility of response. Charging will be based less on standardized service criteria (as with GSM voice or SMS, for example) and much more on recognizing the service type and responding according to its (possibly unique) charging model—being able, as a service provider, to understand: “Am I applying a retail charge as a result of this transaction? Am I charging a sponsoring partner? Am I charging an advertiser? Am I paying a content provider? Do customers and partners need to be charged? Is the customer still in a promotional period? Are charges involved at all—or just notifications to a partner, or a partner’s customers, or simply a report on this transaction?”... and possibly very much more.



DIFFERENT CHARGING MODELS WILL MAKE A VARIETY OF DEMANDS ON THE BSS ENVIRONMENT.



THE MAJOR IMPACT ON THE BSS REVOLVES AROUND THE FLEXIBILITY OF RESPONSE.

APPROACH	KEY CAPACITY	COMMON BSS GAP	IMPACT
Premium charging	→ Normal charging, higher tariffs	→ None, legacy prepaid and postpaid can handle this	25%
Data resale	→ Transactional analysis, extract and format for anonymized resale	→ Flexible mediation → High volume analytics	50%
Data charging, including tiered and volume-based charging	→ Real-time allowance and entitlement management → Customer notifications → Upsell and charging redirects → Recognize user and device inclusions and exclusions → QoS recognition, control and assurance → Integrated data and service charging	→ Real-time processing for contract customers → Notifications engine → Convergent real-time payment processing → Fully-integrated access and charging policy management	75%
Bandwidth/line speed options	→ Guaranteed line speed end-to-end → Dispute and rebate management → Real time line speed/bandwidth adjustment	→ Real-time QoS monitoring → Activation/deactivation of bandwidth boosts → Rebate processing	75%



NEW CHARGING MODELS WILL BE BASED FAR MORE ON 'CONTEXT' THAN SET CRITERIA, WITH THE RESPONSE BASED ON RECOGNITION OF THE SPECIFIC SERVICE AND CHARGING CONTEXT.

APPROACH	KEY CAPACITY	COMMON BSS GAP	IMPACT
Premium services	<ul style="list-style-type: none"> → Partner management → Recognition of highly varied business models 	<ul style="list-style-type: none"> → Automated partner management → Flexible revenue share and settlement capability 	<p>100%</p> <p>May require separate stack and approach to achieve diverse offer</p>
Sponsored data	<ul style="list-style-type: none"> → Third party collaboration capability including charging, reconciliation, reporting, credit management 	<ul style="list-style-type: none"> → Real-time mediation → Flexible policy management and charging for service and the charging split 	<p>100%</p>
Advertising	<ul style="list-style-type: none"> → Third party collaboration capability 	<ul style="list-style-type: none"> → Flexible policy management and charging for advertising element and charging split 	<p>100%</p>
Wholesale bandwidth provision	<ul style="list-style-type: none"> → Third party collaboration capability → Support for varied business models driven by other industries 	<ul style="list-style-type: none"> → Real-time mediation → Flexible policy to recognize and apply partner-specific special processing 	<p>100%</p> <p>May require separate stack and approach</p>
Self-configurable charging plans	<ul style="list-style-type: none"> → Sophisticated CRM and product catalog to handle flexible bundles, exclusions, inclusions 	<ul style="list-style-type: none"> → Advanced and integrated policy control and charging to recognize customer device and user context 	<p>100%</p>



FUTURE BUSINESS MODELS WON'T BE FIXED; BEHAVING LIKE A DIGITAL BUSINESS MEANS MOVING FROM FIXED MODEL TO 'NO MODEL'.

WHERE NOW FOR LTE CHARGING?

Increasingly, it seems that the traditional separation of B2C (customer charging) platforms and B2B or wholesale (for inter-carrier charging and partner settlement) will dissolve. It no longer makes sense to silo retail billing away from either B2B charging and settlements or from prepaid charging. This approach worked in the boom years of mobile telephony rollout when the relationships between key entities in the business model such as operators, their customers and other licensed operators were well understood and relatively fixed, so systems could be comparatively rigid. Then, performance and scalability mattered more than flexibility.

Many of the new roles and opportunities that LTE is opening up for operators demand a much more flexible response that can vary depending on who is involved in the creation and delivery of the service and what commercial model has been agreed between the operator, a content provider, an advertiser, a data sponsor (noting that one

business entity might take many of these roles), or an enterprise to whom the operator is providing a dedicated proposition. This is less about wholesale and retail charging and much more about systems that will support flexible collaboration within the burgeoning LTE ecosystem.

Future business models won't be fixed; behaving like a digital business means moving from fixed model to 'no model'. Operators are trying to develop genuinely innovative propositions that will persuade consumers and enterprises to make spending decisions which are much more discretionary. A fixed framework is far too rudimentary and inflexible. As a consumer, I know I need voice and data connections, but do I need a mobile music streaming service? Well... maybe, if the price is right, and if I recognize and like the streaming service you're offering me. And even then, I think I'd like to try it out for a while before I decide—with no commitment, of course. And maybe I could be persuaded if you wrapped it in with something else, like a roaming deal, or a Wi-Fi package.



CREATE A PLATFORM THAT PROVIDES FLEXIBILITY TOWARDS THE BUSINESS WITH THE ABILITY TO SUPPORT AS MANY BUSINESS MODELS AS THERE ARE NEW REVENUE IDEAS...THEN TURN THAT FLEXIBILITY TOWARDS THE MARKET.

RECOMMENDATIONS

The best charging approach for operators is to provide self-configurable plans that will allow customers to mix, match and find the charging model that works best for them from a number of easily-understood elements. This customer-centric approach allows combinations of options such as data allowance with line speed, adding boost options, selecting 'ex-cap' applications, nominating devices and users, taking value-add security options, parental controls, and so on. The effectiveness of this depends on having real-time systems that can apply carefully thought-through charging policy in response to the customer's changing context and situation, as well as a flexible product catalog.

In terms of remuneration, bundling perhaps shows greatest promise—not just bundling of services, but bundling of services with devices and with content, or propositions that encourage the customer to effectively create their own bundles of family devices and, consequently, family members—often referred to as 'shared data'. These approaches create stickiness and inertia and make it less likely that the customer will break away to another provider. More positively, by focusing on non-financial benefits, such initiatives shift attention away from bottom-line pricing and reduce the possibility of a price war.

Finally, operators should assume that there will be as many business models as there will be new revenue ideas and aim to create a platform that provides

that flexibility towards the business—then turn that flexibility towards the market, allowing the customer to self-configure packages of services from a wide variety of components, governed by charging policy.

- Functionality needs to be highly configurable for the 'no-model' business model
- Real-time performance is essential, whether to decrement a balance, check the status of a data bucket, the entitlement of a device of user to use a data allowance, to check the customer's service context, promotional offer or a wide range of other criteria which may, minute-by-minute affect the way a service is delivered and charged
- Charging and access policy need to be fully integrated, to allow timely and successful approaches to the customer
- The BSS framework needs to be more fluid and flexible, reflecting the two-sided model of many digital service businesses

These considerations lead us to question how LTE and the 4G business should be supported by IT. There is a case to be made for a separate approach for the new digital business, at the same time perhaps outsourcing the legacy platform, which is in all likelihood now supporting a decreasingly profitable set of services. This separation could involve the creation of a more flexible stack, to empower a new and much more varied kind of business. Alternatively, the need to apply specialist expertise while minimizing capital investment and risk could point the way to a managed service relationship with an appropriately experienced BSS partner. And a third option is to overlay nimble solutions over legacy systems to create a 'digital platform.'



CSG AND LTE

CSG's billing and charging platform provides the highly configurable functional and charging flexibility that many operators anticipate will help them develop and exploit the new revenue opportunities that LTE brings. It lets operators work with multiple partners and take advantage of real-time responsiveness and customer interactivity. It includes critical capabilities for:

- Flexible consumer charging, allowing discounts, bundles and many other kinds of offers and propositions to be quickly and easily created
- eWallet capabilities to encourage charging and payment via multiple methods
- Wholesale management to collect and settle with partners for bulk transactions
- Revenue sharing between multiple service collaborators
- Real-time rating, charging and balance management
- Integrated access and charging policy management
- Data analytics, including recommendations
- Customer preferences, entitlements, notifications and service activation

This functionality can be utilized in a variety of configurations to support advanced and innovative business and charging models, and can be delivered as licensed software or as a managed service set up and run in collaboration with the service provider.

ABOUT CSG

CSG simplifies the complexity of business transformation in the digital age for the most respected communications, media and entertainment service providers worldwide. With over 35 years of experience, CSG delivers revenue management, customer experience and digital monetization solutions for every stage of the customer lifecycle. The company is the trusted partner driving digital transformation for leading global brands, including Arrow, AT&T, Bharti Airtel, Charter Communications, Comcast, DISH, Eastlink, iFlix, MTN, TalkTalk, Telefonica, Telstra and Verizon.

At CSG, we have one vision: flexible, seamless, limitless communications, information and content services for everyone. For more information, visit our website at csgi.com and follow us on [LinkedIn](#), [Twitter](#) and [Facebook](#).