



White Paper

The Game Has Changed: Play to Win Through Service Innovation



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January 2012

Introduction

Several factors are affecting a communications service provider's (CSP's) role in the changing services value chain but the transformation in its competitive landscape over the past five years is among the most significant. CSPs no longer face competition for core telecom services only from their traditional rivals. New and agile internet players with strategies to marginalize CSPs, richly-featured over-the-top (OTT) services and a culture of rapid service innovation are threatening the long-term prospects of CSPs' core telecom service revenues.

A CSP's telecom services – voice, messaging and, increasingly, video – are critical to its revenue mix, brand visibility and customer relationships. Regardless of whether a CSP branches out into value-added services, its core services are worth fighting for. *Heavy Reading's* sister company, Pyramid Research, estimates that in 2011, global fixed and mobile voice revenues alone amounted to just under \$1 trillion at \$957,404 million.

To compete effectively with the Internet players, a *Heavy Reading* survey finds that the majority of CSPs must rethink their service innovation organization, culture and capability. They must be able to innovate their core services in four dimensions to retain and attract customers: creating new service features, strengthening the customer experience of services, personalizing the billing relationship and applying distinctive new business models to services. And they must decrease the cost and accelerate the rate of innovation across all four dimensions.

This requires organizational and cultural change across the fragmented lines of business currently responsible for core services. Such change will help push CSPs further and faster up the service innovation curve, providing them with a rich source of service components that can quickly be recombined into innovative new products while cutting the cost associated with multiple, duplicated service platforms.

Organizational change must be underpinned with a modern service layer platform that supports all current and future revenue-generating service intelligence in the CSP's business, whatever network technology runs beneath it. Such a service layer platform needs to put the CSP in the driving seat when it comes to innovating in any or all of the four dimensions. It should provide a key set of capabilities that enable CSPs to innovate like a retailer, rapidly bringing new features to the market and creating rapidly, and at low cost, promotions, personalized offers, brand match services and other loyalty programs that drive ARPU/AMPU.

Section II looks at the competitive pressures facing a CSP's core telecom service business. It discusses the drivers for telecom service innovation and the barriers currently facing CSPs that wish to improve their innovation capability across the four dimensions.

Section III describes the changes to organizational culture CSPs need to make to support service innovation more effectively. It identifies the features a modern service layer platform needs to enable rapid and cost-effective innovation in service function, customer experience of services, the subscriber billing relationship and the application of new business models to services.

The Operator Service Opportunity in a Changing World

Rethinking Telecom Services in the Face of New Competition

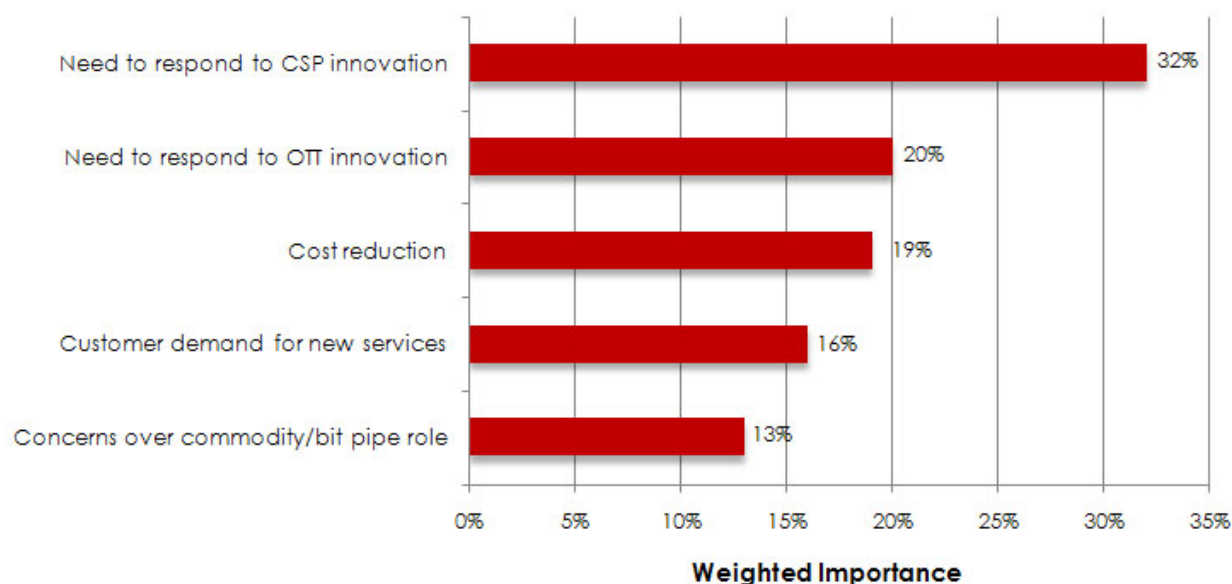
The economic situation, the competitive landscape and the way consumer and business markets have been developing over the past decade have had a huge impact on the role of CSPs. A *Heavy Reading* global survey of CSPs confirms that most operators feel their place in the services value chain is under pressure.

Has the game changed for CSPs over the past few years, or is it over? Should CSPs accept the voices of doom that predict a rapid, sharp and inevitable decline in their core revenue-generating services, such as voice and messaging and resign themselves to becoming merely providers of bandwidth for third-party services, with their networks relegated to bit-pipes?

The *Heavy Reading* survey shows that this is a real fear for CSPs globally and one of the top five issues respondents say they are grappling with today, as shown in **Figure 1**.

Figure 1: Top Five Issues Influencing CSP Approach to Service Innovation

Which are the three most important issues influencing service innovation today? (Weighted on a scale of 1-5, where 5 is most important; n=117)



Source: Heavy Reading

Figure 1 also highlights that while CSPs keep a close watch on their traditional rivals – fellow CSPs – they recognize that new competition is increasingly coming from new quarters. OTT players with Internet-based services, like Skype or Google, are directly targeting traditional telecom services but others, like Facebook or Ama-

zon, are more insidious. The latter aim to become dominant brands, owning the customer interface, billing relationship and the service experience, completely disassociating any part of their services from the CSPs that enable them.

Core voice and messaging services are crucial to revenue. Pyramid Research finds that mobile voice revenues account for at least two-thirds of an average operator's income. They are also the foundations for CSP brand awareness and value-added services. And they are not yet doomed to oblivion.

Market evidence suggests that demand for core CSP services remains high, with voice minutes representing a significant and still-growing portion of many CSPs' traffic volumes. CSPs report that Skype is adding incremental minutes to their voice businesses rather than replacing them. Nor are trillions of text messages – straightforward and easy to send – being rendered obsolete by Internet-based services like Twitter. The 50 billion Tweets sent daily augment mobile messaging. So far, they are not a substitute.

The world continues to communicate more, not less, as a result of service innovation. And there remains a powerful link in most customers' minds between CSP services and high quality compared to Internet-based services. CSPs are trusted providers and this is a powerful customer relationship bond which a CSP can leverage in a changing world.

It is important that CSPs maintain strong core service offers as more than their revenues are at stake. By providing such services, CSPs benefit from the ability to:

- Retain the highly valuable and sought-after connectivity relationship with customers
- Maintain a visible brand
- Leverage brand loyalty to cross and upsell further services

CSPs participating in the *Heavy Reading* survey ranked building and maintaining subscriber numbers and ARPU/AMPU as top business concerns, well above other business issues such as cost reduction or maximizing their return on existing assets.

Doing Service Innovation Differently

CSPs cannot afford to be complacent about their core services. They may be best at delivering these unsurpassed means of communication today but in the future, they face a broader set of competitors and customer expectations heightened by experience of Internet-based services. The Internet players have on their side agility and a proven ability to enrich the traditional telecom service experience. What they lack in quality of service (QoS), they make up for innovative, transformational features, including support for interactive video, presence and address books.

Core CSP services like voice, messaging and video represent a hugely valuable, but often overlooked opportunity for innovation. CSPs need to rethink their core services so that they are more feature rich and competitive than those offered by Internet players. But CSPs also have to play the same game as the Internet companies and innovate faster, ahead of the market.

Internet players compete on features: they vie with each other to come out with compelling new functionality. The market decides which features live – and are quickly adopted by other players – and which die. This rapid innovation cycle, where feature innovation is quickly replicated until it becomes a ubiquitous industry "standard," arguably leads to faster and more robust standardization as the fittest features survive.

CSPs such as Telefónica, with its BlueVia program, are already adopting an Internet innovation paradigm. They recognize that the traditional way of developing telecom services, based on extended cycles of design, industry-wide standardization and implementation, take too long in a changed market. If CSPs persist with their traditional model of service development, they continue to put their core telecom services, and all the business benefits associated with such services, at risk.

Innovating Core Telecom Services in Four Dimensions

Innovative developments such as HD voice, Voice over LTE (VoLTE) and Rich Communications Services (RCS) may help CSPs take their core voice and messaging services to new levels of usability and desirability – providing they are implemented using the Internet players' rapid innovation model.

However, feature innovation is not the only weapon in a CSP's service innovation armory. There are four dimensions to core telecom service innovation that a CSP can leverage:

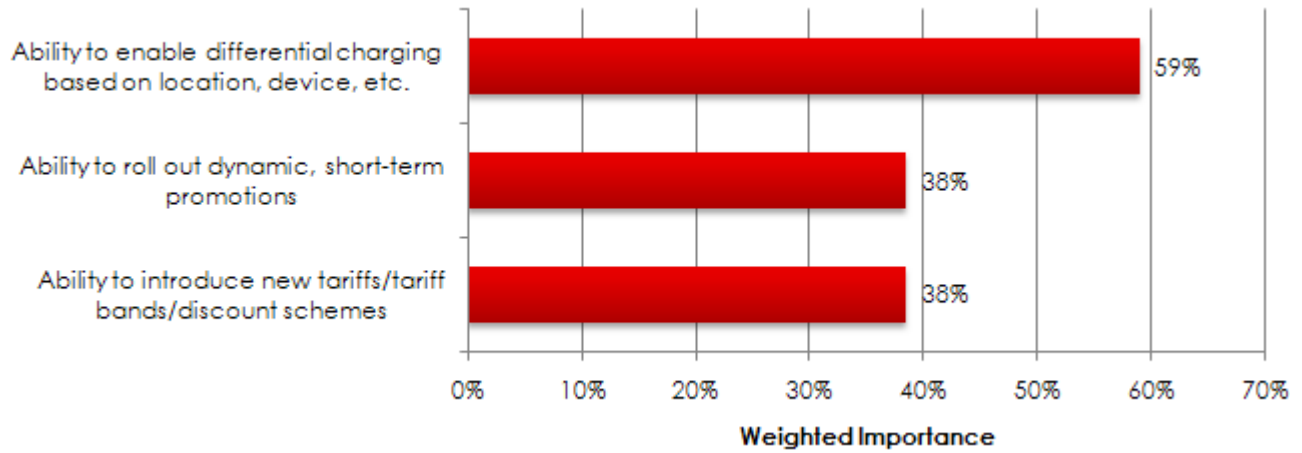
- Feature innovation (extending and enriching the capabilities of the service)
- Customer experience innovation (providing subscriber-centric, rather than device-centric, experience of telecom services, for example, preventing bill shock when using telecom services)
- Billing relationship innovation (differentiated, personalized charging for telecom services, for example, tariffs, promotions and discounts based on context/services/preferences)
- Business model innovation (applying new payment models to telecom services to drive new revenue streams, for example, advertising/sponsored services, split billing, hybrid charging, in-app payments).

CSPs surveyed expressed a very high level of interest in being able to introduce differentiated charging and dynamic short-term promotions, as well as tariff plans, discounts and promotions in a timely manner, as **Figure 2** shows. In fact, customer experience innovation, billing relationship innovation and business model innovation apply to any new service, not just a CSP's core telecom services, so they are becoming a must-have capability for any CSP intent on offering value-added services beyond the bit-pipe.

The survey suggests that while CSPs want to take an agile and innovative approach to service development, they lack both an appropriate culture and a viable strategy for the four dimensions of service innovation. Respondents ranked their current organizational culture and lack of strategy as key barriers to telecom service innovation.

Figure 2: Customer Experience, Billing Relationship & Business Model Innovation: Top Three Capabilities

Which are the three most critical charging capabilities that would help your company support service innovation? (Weighted on a scale of 1-3, where 3 is most important; n=112)



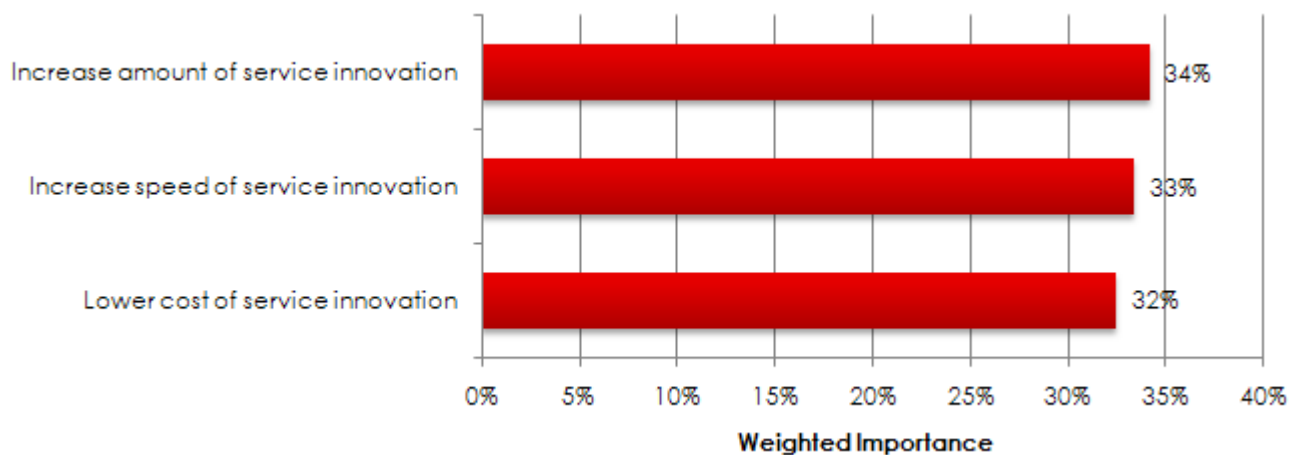
Source: Heavy Reading

Changing the Cost Base & Innovation Curve for Telco Services

CSPs also recognize that they need to become faster and more cost-effective at innovating in all four dimensions in their core service development function. The *Heavy Reading* survey identified increased speed and reduced cost of service innovation as top improvement goals for CSPs worldwide.

Figure 3: Top Three Drivers for Improving Service Innovation

Please rate the following goals for improving service innovation. (Weighted on a scale of 1-3, where 3 is most important; n=105)



Source: Heavy Reading

Historically, CSPs have benchmarked themselves against each other in terms of service time to market, functionality and cost. Now that they must factor in nimble, fast-moving Internet rivals, they need to move more quickly along the innovation curve, being able to bring new features and capabilities to market as, if not more rapidly, than a competitor like Google.

At the same time, they must drive as much cost as possible out of their core service development platforms and processes. Customers still want the quality of service that CSPs provide – the security, regulatory compliance and reliability of a carrier-grade service – but their tolerance for paying a large premium over free, OTT services is diminishing. This is true even of enterprise customers. This means that CSPs must dramatically lower the cost base of developing and maintaining core services.

However, survey respondents say that implementing customer experience, billing relationship and business model innovation is an expensive and time-consuming activity for them. In a pre-paid voice or mobile data service environment, CSPs typically rely on platform vendors to make the system changes that enable new business models and tariff plans. Nearly half (48 percent) of survey respondents ranked dependence on vendors to make change requests as one of their top three barriers to service innovation.

In today's fast-moving, highly competitive market, a vendor-led approach takes too long and costs too much. A CSP that takes six months to innovate a new set of personalized charges or to introduce support for a new business model is going to be out-competed by a rival CSP and certainly by an agile OTT player, that can adjust a subscriber's service experience in a matter of days using in-house resources.

As CSPs move toward an online charging model for all services, the challenges associated with customer experience, billing relationship and business model innovation will intensify.

CSPs will increasingly need to adopt a real-time charging model to support a next-generation service environment where they will deliver more services using different combinations of business models to multiple devices per subscriber, where more parties will be involved in delivering services and will require real-time settlement and where groups of subscribers will share accounts and balances. The real-time Web payment experience is also driving CSPs toward real-time charging for services beyond pre-paid voice, messaging and mobile data.

From the survey, it is clear that CSPs expect enterprise communications services (with real-time visibility of spend and control), cloud services, M2M, mobile payments and multiple connections to subscribers to be important sources of revenue over the next three years. All of these services will drive CSPs toward an online charging model.

CSPs that put in place a cost-effective, timely way of applying customer experience, billing relationship and business model innovation to their core telecom services will be in a strong position to extend these dimensions to new features and services as these appear.

A Strategy for Service Innovation Success

Changing the Organizational Mindset

Most CSPs have a fragmented services landscape in which their various core services are developed and maintained by different lines of business on their own platforms supported by siloed charging and other operational systems. Fragmentation is a large drag on a CSP's service innovation capability. It prevents a CSP from easily combining services from separate lines of business in new and innovative products and applying customer experience, billing relationship and/or business model innovation across all the products' component parts.

Attempting to improve innovation in a single line of business silo is therefore unlikely to produce the order of magnitude improvement needed to drive a CSP up the innovation curve, where it can compete with OTT players' cost and time-to-market capabilities. Instead, CSPs must take a holistic view across their entire service layer, identifying what is needed to transform it. Most CSPs are making large investments in increasing network capacity and/or new networks, such as LTE. But networks in themselves do not generate revenue; the right service layer intelligence does.

Advanced CSPs are already developing organizational strategies for service-layer change that cuts across all their service platforms and operational system silos. Their strategies involve changing the mindset of their core service development functions so that engineers understand the relevance of flexible, timely and joined-up service innovation to higher-level business goals. This includes helping core service developers adopt an Internet approach to rapid feature innovation. Culture change is critical to winning developer hearts and minds for platform, system and process change. Such CSPs are thus seeing large benefits in the speed with which they can drive service feature innovation and lower cost of implementing customer experience, billing relationship and business model innovation.

But our survey highlights the gulf within most CSPs between senior management and fragmented service engineering functions. Corporate management wants to improve AMPU/ARPU and increase their overall competitiveness, but it routinely prioritizes network investment over service innovation, and particularly innovation around core telecom services – even though telecom services make the most significant contribution to a CSP's brand awareness and customer stickiness and produce the lion's share of the revenues on which its company valuation depend.

Equally, a high proportion of survey respondents are close to service development and charging platforms but have little concept of how such platforms contribute to business goals. Such respondents rated brand value and company valuation issues of very low importance compared to investment in increasing network capacity, for example. This business/service layer knowledge gap contrasts with the thinking of Internet competitors and the most enlightened of their CSP competitors. Such companies view brand value and company valuation as measures of success that are the direct result of their service innovation capability.

There are several steps a CSP can take to create the right mindset around core service innovation across its organization:

- Make the links between service innovation and the organization's business goals explicit and widely promote the importance of service innovation across senior management and engineering functions in the organization

- Define a holistic strategy for the service layer that cuts across the lines of business silos that support core services
- Encourage a service innovation mindset and culture in functions that contribute to the service layer by introducing best practices from IT/Internet service development, including the use of a standards-based open service development platform and appropriate application framework, encouraging service function composition and reuse, and rewarding rapid feature innovation ahead of the market and industry standardization processes.
- Develop a "perpetual beta" approach that enables service developers to trial new features quickly and easily before a mass-market launch and to "kill" those that don't appeal to trialers, without waiting for an exhaustive business case and/or a complete and perfect service implementation.

Dismantling Service Layer Barriers to Service Innovation

By addressing organizational issues, CSPs will also help dismantle the technological barriers to service innovation, namely the costly and complex proliferation of different service development and execution platforms, charging functions and operational systems, across their various lines of business.

The diversity of technologies most CSPs have in their service layer represents considerable cost as the same functionality is duplicated in different ways across multiple platforms. A key way of reducing this cost is to base the core service layer on a single service platform that can support the development and execution of all the core services a CSP wants to deliver. This platform should be based on open standards to ensure that:

- There are competitive suppliers for the platform itself, driving down cost
- No single vendor owns the roadmap for the platform or has a monopoly on service changes, preventing expensive lock-in
- The CSP benefits from an extensive developer community with knowledge of the platform and the ability to provide a competitive supply of services, encouraging lower-cost, rapid feature innovation.

The platform should provide an application framework to support the composition and reuse of service components developed internally and/or by trusted third parties. This also reduces the cost of, and accelerates, service feature innovation.

Supporting Services Through Network Technology Change

CSPs already have significant investment in services, including charging services, that run on their multiple legacy platforms. These services represent a rich source of features and capabilities that developers will want to reuse in a new, single service platform when innovating new services. Recreating and duplicating such features in a next-generation environment is often expensive and wasteful.

In order to dismantle the service silos that exist in different lines of business and to consolidate all services on a single platform, CSPs will need the platform to support multiple legacy and next-generation network protocols and to provide seamless interworking between different combinations of protocols. The protocol mediation function in the platform should be extensible so that new protocols, variants and versions, can easily be added as they evolve. CSPs can then migrate at their own

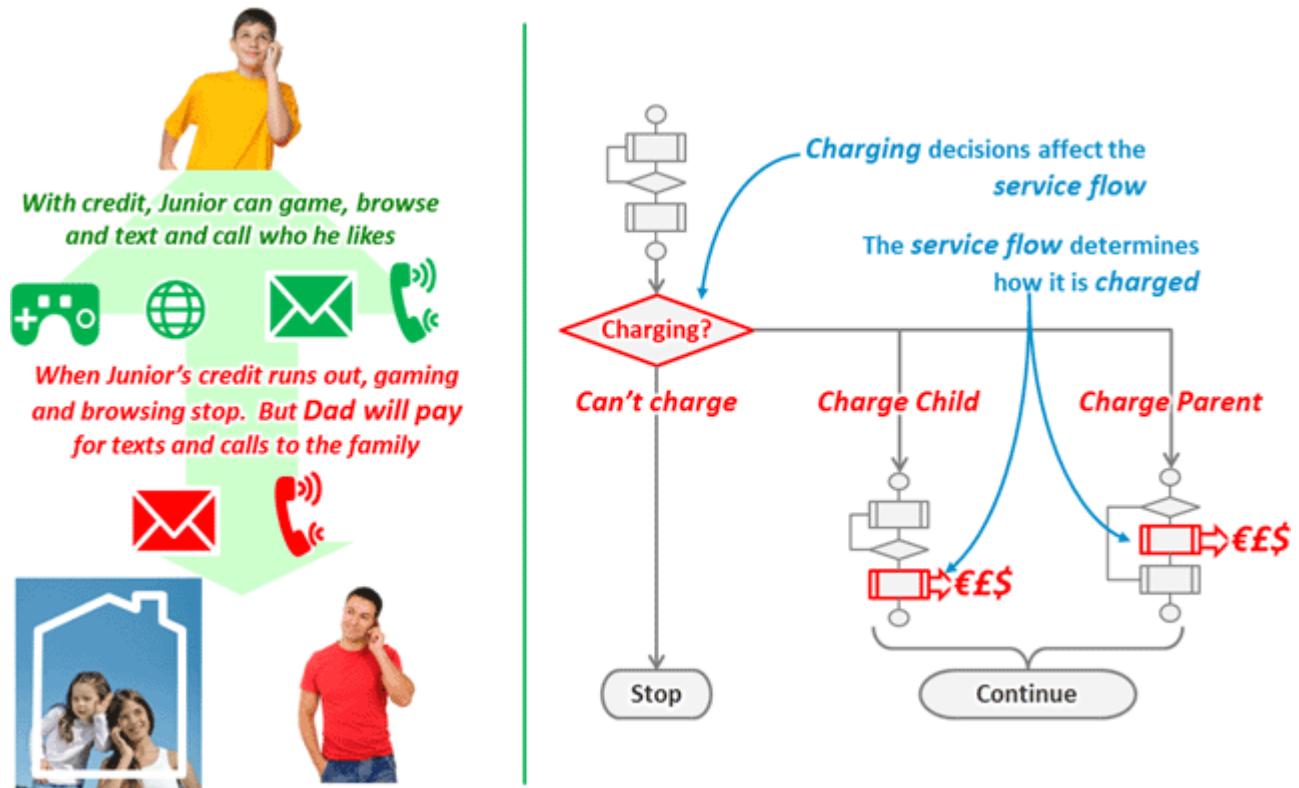
pace to new network technologies while preserving their service investment. Service development using the current next generation of network protocols will similarly be protected and future-proof.

Removing the Vendor Roadblock to Service Innovation

Because most CSPs have siloed platforms, they have found it difficult to establish a single, critical mass of knowledge in-house across all four dimensions of service innovation. This plays into the hands of platform vendors on whom CSPs are forced to depend if they need anything more than the most trivial changes to services. Yet vendor-controlled change is expensive and slow to implement. CSPs that bring control over the service layer in-house can significantly improve their position on the service innovation curve.

A single, open-standards-based service layer platform will help CSPs consolidate service development knowledge and expertise, but this alone may not be enough to address customer experience, billing relationship and business model innovation. Such innovation typically requires complex modifications to core service behavior, including the way the service interacts with the CSP's charging system(s). For example, **Figure 4** shows that if a CSP wants to roll out a family rate plan that prioritizes the children's ability to call home if their balance is running low, service and charging logic need to be modified together to handle the new requirement.

Figure 4: The Way a Service Behaves & the Way It Is Charged Are Inextricably Linked



Source: Heavy Reading

In a post-paid charging environment, it is relatively easy for a CSP to change service behavior to introduce innovation in these three dimensions. In a pre-paid service environment (and in the online charging environments of the future), such innovation is more difficult, since CSPs must make service/charging logic changes directly in live network platforms that operate in real-time.

Not only do CSPs find themselves having to duplicate post-paid innovation effort in the pre-paid environment, rather than being able to innovate once across both environments at the same time, but they find it difficult to make the required changes to service/pre-paid charging interactions without vendor involvement.

Some vendors actively discourage CSPs from making such innovative changes in core service platforms, threatening that the CSPs may bring down the network if they do so. Such vendors enjoy lucrative revenue streams from making changes to service/charging interaction logic on an individual CSP's behalf. Other vendors provide a set of use cases for different service charging scenarios that provide CSPs with a limited amount of innovation over their competitors – at least until those competitors implement the same use cases.

Modern service layer platforms need to address these issues if CSPs are to out-compete both their traditional and their new rivals. A next-generation service layer platform should allow CSPs to create new services and/or add new features to services that can automatically plug once into the charging environment and be charged for using any business model, for example postpaid, prepaid, hybrid charging, split billing and free promotion. It should also provide integrated, user-friendly tooling that enables service developers to modify service and charging logic together, at the same time, while providing automatic safeguards that protect the integrity of real-time network protocols – and without having to revert to the platform vendor.

The ideal is for CSPs to put in place a service layer environment that gives them complete control over all four dimensions of service innovation so that they can cut the time and expense of going to individual platform and system vendors out of the process. The capabilities of a modern service layer platform give CSPs the ability to innovate like a retailer, creating rapidly, and at low cost, promotions, personalized offers, brand match services and other loyalty programs that drive ARPU/AMPU.

Conclusion

In summary, CSPs must overhaul their service innovation capability if they wish to retain the all-important customer relationships and revenues associated with their core voice, video and messaging services. This will require cultural change in the organization and consolidation of currently fragmented service layer platforms.

In addition to the organizational and culture changes needed to adopt an Internet-like rapid innovation model, *Heavy Reading* advocates that CSPs select next-generation service layer solutions that support:

- Open standards to drive down platform and third-party service cost through competitive supply
- An application framework pre-populated with service components and features that can be composed and reused in innovative ways, to support feature innovation
- Tooling that allows the easy creation of new components in the application framework and the integration and orchestration of third-party created components
- The ability to implement services and service features once for use in any business model and by any subscriber/subscriber grouping
- Safe and flexible in-house control over changes to service and charging logic in an online, real-time environment (whether pre-paid or hybrid post/pre-paid) to support business model and billing relationship innovation
- Extensible support for a variety of network protocols and protocol variants to help CSPs migrate services across network technologies.

Such solutions will support service innovation across the four dimensions outlined in this paper and help to drive cost and time out of the service innovation process.