The new world of convergent billing

By Wang Wei

Nascent and rapidly emerging mobile services based on innovative business model like mobile Internet, mobile advertising, M-payment, etc., have created a maelstrom of new challenges for operators, especially for their BSS/OSS systems. IDC notes that, “It’s likely that Telco 2.0 will be the engine to drive the industry’s growth over the next several years, but without the right BSS (front and back office systems) to support these initiatives, service providers may stall right out of the gate.”

New business models beckon

Telco 2.0 defines new business model and a new role for operators in which customer value is maximized. It embodies an open service environment where network capabilities are open to third party developers to create new applications and services more easily. In this sense, it is not a lack of service development that is troubling operators, nor is it insufficient network or content resources. Wang Jianzhou, President of China Mobile, reinforced this view recently, “While we’re faced with numerous challenges, the most pressing comes neither from technology nor from the market, but from the business model.”

From the perspective of charging and billing, a new business model may involve many charging requirements, which are inevitably complex due to the number of variables involved, different parties being charged, and the speed at which they change. One of the major reasons hindering the launch of new services is the lack of an agile BSS. This necessitates the parallel development of new services and their corresponding charging and billing mechanisms in order to expedite the time to market (TTM).

Operators play to their strengths

Given the interplay of telecom networks and the Internet, operators must fully exploit their unique advantages: network access control, user data, and billing & operation relations. It is difficult for many Internet enterprises to identify a steady profit-making model as most lack a mature and convenient billing relation. On the other hand, both network access control and user data can underpin the charging strategies; the former can do so by controlling network resource allocation as a part of the charging policy, and the latter can offer price plans according to precise marketing segmentation.

As an imaginary example, let’s use a mobile advertisement for the new Google G1 mobile phone to describe the flexible charging scenarios. An operator can transmit the G1 ads when users access mobile broadband services. The service charge for users can be reduced, and the operator can bill the G1 advertiser for the shortfall. The advertiser can benefit by learning exactly how many people have clicked the mobile ads in real time. Should online statistics show that the G1 ads has been particularly effective, the advertiser may subscribe more service channels for the ads and offer, say, 10 minutes free talk-time to ads watchers, or buy exclusive rights for naming a particular service. The operator can then embed an interactive operation into the ad, enabling users to order the G1 mobile phone or inquire about product information online. In turn, the operator can gain a 5‰ commission of the total sales value gained from the advertiser at each successful sale.

This type of business model requires the charging and billing systems to be sufficiently flexible. More importantly, the basic system architecture needs to be highly adaptable and online extendable to meet dynamic business needs.

Creating new customer value

Charging systems can affect end user experience actively, especially in terms of mash-up of multiple services, real-time charging notification, real-time promotions, and payment modes. MTN, a South African operator, and China Telecom provide two apt examples of innovative charging mechanisms.

A new service promoted by MTN covers its subsidiaries in a number of countries to offer user discounts according to the dynamic network traffic based on cell location and time. Specific preferential entitlements can be sent directly to the screens of users’ mobile phones whenever and wherever they want to make a call, which not only considerably
**Collapse of the traditional models**

Today, over half of the world’s population uses a mobile phone. Despite huge regional differences in communications development and penetration rates, even operators in emerging markets are feeling a slowdown in new subscribers. It is noteworthy that the emergence of various broadband access networks, new services, and new models from Web 2.0 have opened up a panoramic horizon for operators’ future development. Thus, convergent operation, charging and billing, and services based on multiple networks have become an inevitable developmental trend.

**Internal TCO reduction:** To radically reduce OPEX and to maximize the return on investment (ROI), operators must move away from the network-specific and traditional dedicated charging and billing system model. They need to construct a horizontal operation set that maximizes platform sharing and unified operations to reduce TCO. According to Mr. Andrew Macleod, Vodafone senior management, “The convergent billing solution will really bring down huge amount of operating cost in the long run comparing with energy-oriented cost-saving solutions.”

**External user focus:** Existing network-centric and service-centric operation models will transit to a new model of customer-centric. The major problems with the traditional BSS system are its vertical architecture and the separation of user and product data based on different networks, services, and payment methods. This complicates both obtaining unified user information and also realizing the unified management of cross-product services. During the dominance of voice services this was not an issue, but it is rapidly becoming one with increased service types and complexity. Convergent billing solution can meaningfully focus on users, get unified data anytime, and provide multi-directional products and services quickly.

It is inevitable that the collapse of the traditional, vertical, and isolated charging and billing architecture will be mirrored by the rise of the convergent billing and operation model.

**Exploring construction**

Since the beginning of 2008, the planning and construction of the convergent billing solution has been prioritized by operators globally. For new networks, an end-to-end convergent billing system is generally in-built, which reflects the accelerated rate of change in the general industry environment.

Evolution to the new generation solutions, including broadband-based wireless access, IP-based core networks, and SDP reconstruction, are all time-consuming. The evolution of convergent billing is no exception, and requires a unified planning mechanism that can be implemented stage by stage and based on local conditions.

If existing prepaid systems fail to respond to new requirements and become developmental bottlenecks, the best way is to begin from existing IN reconstruction, followed by introduction of online charging system (OCS), and then gradually cover the postpaid area. If the traditional postpaid billing system proves to be inadequate or becomes obsolete, the existing billing system can shift to a new OCS, which can then be combined with the prepaid service. For networks with a weak data/broadband service charging capability, it’s better to exploit broadband network construction to deploy an additional local new online charging system dedicated to all non-voice services. This will reduce the impact on current mainstream voice services, and converge mainstream voice service charging when the local system matures.

In the long run, BSS system transition is inevitable and a vital part of operators’ strategic transformation. Its potential should be constantly explored during new operations, and its internal operation models should be correspondingly optimized and improved in actual practice. The long-term planning and advance deployment of new generation convergent billing solution will guide operators to success in a rapidly changing market and communications arena.

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