Alcatel·Lucent

# Optimizing Payment Infrastructure to Maximize Subscriber Yield

## Transforming the payment chain

By T. DeWitt

### Introduction

If service providers are to extract the highest value from their subscriber base, it is imperative that they begin to think more like retailers and develop a real-time, 360-degree view of their subscribers. It is only by developing different perspectives about customers' needs and desires that service providers will be able to roll out the right offer for the right segment at the right time. Such offers may include pure prepaid voice, presence-based voice, data and video services, or full prepaid/postpaid family accounts supplemented by home zone rates designed to retain a customer. Keeping track of all of these offers is going to be tough for traditional service providers that have legacy customer management and payment processing systems in place.

As a result, service providers are expressing increasing interest in how to define and support service offers quickly and efficiently.

It is the position of this article that service providers will only be able to meet this requirement if they can dynamically change their product mix by having the ability to "drag and drop" new service packages or make changes to existing services for current and prospective subscribers. And this can only be done if a modular, comprehensive, convergent payment solution is in place that allows service providers to:

- Tailor each customer's quality of experience (QoE) and quality of service (QoS)
- Apply unique pricing models that differentiate and define the service provider's brand to each market segment served

### Hyper-market Fluidity and Communications

Service providers today must address a subscriber base that is more fluid than ever before in the history of telecom-munications. Not only do different users have different communications needs (for example, teenagers place different demands on service providers than business executives), but also users themselves have evolving needs as they progress through different stages of their own lives (such as, singles become couples who then grow their families). In short, not only must service providers keep track of different segments, they must also manage and monitor changes within their segments to ensure that new services are provisioned – and old services retired – as subscribers' circumstances change.

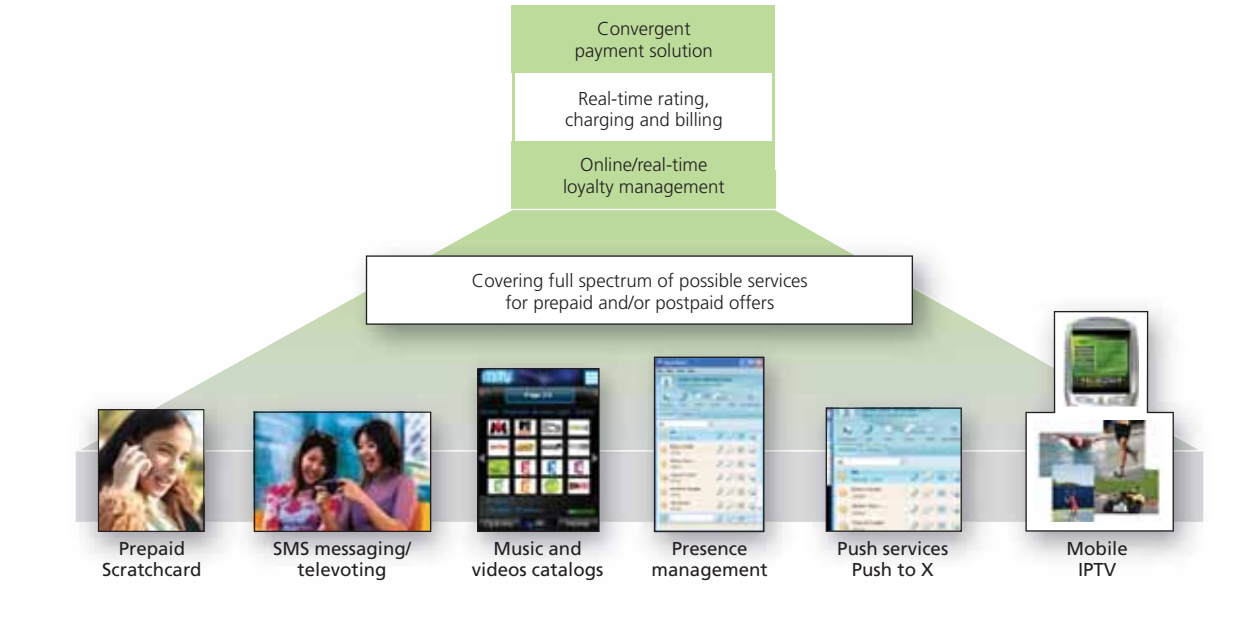
This market fluidity is complicated by a constantly changing technology landscape that creates new revenue challenges and opportunities. For example, the emergence of social networking through communications has created an increase in the use of messaging services. But the same phenomenon has also lowered barriers to entry and introduced new competitors into the communications arena. Service providers, therefore, need to know the trends that are influencing their subscribers and adjust service offers to meet their needs. This creates a need to correlate shifting market demands to new technology trends.

## Thinking like a Retailer

A few decades ago, voice calls were the only form of communication. A few years later, e-mail and short message service (SMS) became common. Now, with all the services that are available, and based on the reality that at any point in time subscribers are at different stages of life with different communication and entertainment needs, one size does not fit all for communications. Therefore, service providers must begin to think like retailers.

Just as retail shops offer a wide variety of products to appeal to consumer preferences, service providers must have the ability to support a full spectrum of services and the flexibility to address the market with any and all combinations of service packages (Figure 1).

Figure 1: **Service providers need to support a full spectrum of services**




With this level of diversity at their disposal, service providers can think like retailers, define their key segments, target those segments with the right product mix and establish an environment that dynamically adapts to the needs of each market segment. If a service provider doesn't adapt, subscribers will go where their needs are met. But given the right mix, subscribers will stay and use the offered services to their fullest potential.

## Maximizing Yield with Convergent Payment

The challenge then revolves around how to develop a manageable set of segments with targeted application packages that enable service providers to maximize revenue opportunities. While this challenge can seem daunting, the good news is that this can be accomplished by leveraging existing assets.

Specifically, service providers have an opportunity to match the right offerings with the right subscribers by capturing and correlating real-time data about customer behavior. The data can come from such sources as:

- E-mail logs
- SMS logs

- TV logs with channel selection
- Current location
- Presence and availability data from network reporting tools

When this information is mapped against historical information about content purchases – such as genre and media-type – service providers can develop a more complete view of each individual subscriber. In addition, by applying business intelligence techniques – such as data analytics and scoring – service providers can:

- Develop a composite real-time, 360-degree view of each subscriber
- Create a more detailed segmentation analysis of their current subscriber base
- Begin to establish subscriber intimacy

## Creating the Right Payment Infrastructure

To fully implement programs that target specific segments – and individual subscribers as they move from segment to segment – service providers must be able to make nimble adjustments to their payment systems, including:

- Rating and charging solutions
- Loyalty management capabilities
- Provisioning systems
- Billing and CRM systems

A convergent payment solution – one that simultaneously supports real-time rating, charging and billing for multiple networks, services, devices and applications for prepaid, postpaid and hybrid accounts – delivers that ability. Establishing a convergent payment ecosystem to address these needs within a real-time environment is clearly very complex. Critical decisions need to be made based on an understanding of existing prepaid capabilities, postpaid services, databases, back-office and billing systems, as well as the network elements that must be integrated to create a single ecosystem. Key considerations for defining the infrastructure going forward include:

- Does the current infrastructure environment allow the service provider to extend prepaid voice services to any service and any network type?
- Does the current billing system support the ability for dynamic service changes, product catalog adjustments and the flexibility to drag-and-drop new offers and product mix?
- Does the current infrastructure support a modular software architecture that can be flexibly configured to support multiple services, networks, service offers and loyalty programs in real time?

When service providers opt to ignore these requirements, the end result is an environment that may have multiple rating and charging engines originating from multiple resources. This can require the administration of multiple touch points when generating new offers. The ensuing complexity hinders market responsiveness.

## Implementing the Ideal Solution

It is critical for service providers to leverage a highly modular architecture that streamlines the integration and offers management process when launching new service packages, as well as supporting and modifying existing services.

Effective converged payment solutions must therefore be able to:

- Separate call control from rating, charging and mediation capabilities to support multiple network types simultaneously. This also provides the ability to manage call control capacity independent of other elements of the solution. This is beneficial for two reasons: 1) it allows the same rating, charging and mediation capabilities to be used for both the current network as well as future evolutions (for example, GSM/UMTS and IMS); 2) only the call control elements will need to be expanded/contracted to support traffic requirements without impact to the rating, charging and mediation capabilities themselves.
- Enable deployment of capabilities when they are needed through a modular and software-based architecture. This allows the service provider to enable and deploy only the features and capabilities required, as opposed to having to purchase and deploy the entire solution at once.
- Allow dynamic changes to the software suite to be easily configured to expedite time-to-market for new offers or adjustments to existing ones. Many solutions on the market today require code changes with an extensive requirements, development, test and release cycle for new changes. A configurable software suite eliminates this requirement and allows changes to take effect immediately upon activation in a production environment.
- Support multiple channels for prepaid top-ups in addition to postpaid account updates in real time. Subscriber self-service and convenience are key factors in defining personalization. Allowing multiple channels for top-ups – such as scratch cards, credit/debit cards, ATM and point-of-sale terminals – creates subscriber convenience. Providing self-service access from the Web, by allowing subscribers to manage feature activation, deactivation, top-ups and account payments empowers a subscriber.
- Reside on IT platforms and support a number of open interfaces such as Java, simple object access protocol (SOAP) and extensible markup language (XML) that allow it to easily integrate with third-party systems such as OSS/BSS, ERP and CRM systems. As the term "transformation" implies, deploying a new end-to-end rating, charging, mediation and billing system does not happen all at once. In fact, a service provider may be completely satisfied with some of the existing components and will want to preserve those capital investments. By utilizing IT platforms and open interfaces and connectors, new rating and charging capabilities can be deployed while preserving existing investments.
- Allow the consolidation of multiple legacy rating and charging engines into a single, virtual, centrally-managed and administered solution. This optimizes the operating expenses and simplifies the infrastructure of a service provider as it eliminates the number of touch points required to support a set of service provider offers.
- Allow the consolidation of Call Data Records/Event Data Records (CDR/EDRs) into a centrally-managed solution. By centralizing the management of calls and events produced by the different applications within a service provider network, operators can simplify the integration complexities that would otherwise have to be managed by the billing systems.
- Grow data transaction capacity independent of call control. New offers created by the service provider may require expanded mediation capabilities or additional data capabilities. These should be deployable without affecting call control requirements.

## Conclusion

The depth and breadth of service packages a service provider could offer, from pure prepaid voice to fully converged prepaid/postpaid accounts, creates an endless number of service combinations that can be impractical to deliver. However, developing a manageable set of segments, with a targeted set of personalized application packages, enables service providers to maximize revenue opportunities.

By combining those service segments with a modular, comprehensive, convergent payment solution, service providers can individualize customer QoE and QoS and apply unique pricing models that differentiate and define a service provider's brand. With this type of solution, service providers can maintain existing customers, attract new subscribers and maximize the available revenue yield from their subscriber base.

Tim DeWitt is a member of Applications Solutions Marketing, Carrier Business Group, Alcatel-Lucent, Phoenix, Arizona, USA.

To contact the author or request additional information, please send e-mail to enrich.editor@alcatel-lucent.com.

## The Alcatel-Lucent approach to converged payment solutions

The Alcatel-Lucent Convergent Payment solution is a software-based solution that runs on an IT platform. The solution uses a modular software architecture that is designed to support the management of hyper-segmented service packages. It simultaneously supports new offers through:

- A "drag-and-drop" graphical user interface (GUI) and centralized product catalog
- Usage counters to keep track of key subscriber behaviors to monitor when certain thresholds are met in support of tailored, real-time loyalty management programs
- Separation of call control from the rating, charging, mediation and billing functions to support multiple networks concurrently
- Simultaneous support prepaid/postpaid convergence ranging from pure prepaid voice to highly complex fixed/mobile voice, data, video packages. These packages are enhanced with home/office/campus zone rating schemes, parent/enterprise usage controls and content settlement/revenue assurance.
- Centralization of EDR/CDR collection to simplify the service provider BSS integration requirements for network applications
- Ease of integration with third-party OSS/BSS, CRM and ERP systems leveraging open APIs and connectors that include XML, SOAP, HTTP, Radius and Diameter

Alcatel-Lucent's Convergent Payment solution can integrate call control, rating and provisioning with existing investments in legacy systems (Figure 2).

Figure 2: **Alcatel-Lucent Convergent Payment solution**