

I D C V E N D O R S P O T L I G H T

Gearing Up for Rapid Telecom Innovation with Flexible Billing and Services

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Today, communications service providers (CSPs) face a business environment that is radically different from the business environment of five years ago. Consumers and businesses are rapidly adopting the latest smartphones, tablets, and other mobile devices and incorporating applications, digital media, and a new generation of services and software for their computing and communications needs. To keep up with customer demands, CSPs have to support the new application services that customers want, as well as engage in effective internal and external business partnering. Legacy billing systems were not designed or optimized to seamlessly link together key business processes such as financial management, customer relationship management, and business operations management or to support expectations for real-time information and the need to scale these processes across customer and partner interactions. Maintaining good relationships with customers and external partners who use and enable these services and solutions requires accurate, transparent, and timely management of the inflow and outflow of money. Meanwhile, CSPs are hampered by legacy billing infrastructures that constrain innovation and hinder programs targeted at improving customer experience. New billing infrastructures and solutions are emerging that do a better job of servicing customers who are actively utilizing multiple devices and being invoiced by multiple billing systems. Deploying best-in-class, end-to-end billing systems with their converged processes creates new revenue opportunities for CSPs while supporting customers regardless of their billing scenario. In addition, using this new generation of billing functionality also enables CSPs to take advantage of the large business opportunities that exist in emerging markets and the lucrative technology models of cloud, mobile applications, and more. This Vendor Spotlight examines the issues facing the communications industry today and discusses the role that SAP plays in offering a new generation of billing software and services specifically tailored to address the needs of this important market.

Forces Driving the Need for Rapid Innovation in CSPs

As more demanding customers, increased competition, shrinking margins, and new technology and regulatory drivers transform the telecommunications industry, most CSPs are struggling to stay solvent while finding ways to deploy and monetize next-generation service offerings. Empowered customers demand universal access to a wide range of digital applications as the use of mobile devices multiplies exponentially. Mobile customers want location-based services that deliver the content they require to their preferred devices at the precise time it is needed.

Meanwhile, traditional telecom services are being commoditized. Emerging companies in a deregulated market without the legacy or inertia of large incumbents are launching innovative and more flexible services and aggressively priced bundles across traditional operator boundaries. Their dynamic, customer-centric, IT-based services are providing a fundamental change in business strategies, creating new revenue streams, and allowing them to profit from closer relationships with

their customers. These new entrants are reforming or redesigning traditional business models and creating new ecosystems. They are also generating an explosion in billing transaction volumes that are still predominantly handled by complex, cumbersome, and often woefully inadequate payment processes.

The pace of change and the introduction of innovative services will likely only accelerate in the coming years. To keep up, CSPs need to innovate faster, which requires creating leaner, more adaptive, modular, multifaceted, and increasingly complex business models. CSPs can increase revenue by providing a broad range of innovative services, including cloud services, digital media entertainment, applications, and more. They need to consider flexible ways to bundle these services to make them more attractive to customers. They also need to align internal operations with customer needs while finding ways to improve the margins associated with their investments in new technologies.

To deliver more value to their customers and ensure that their new business models succeed, CSPs must invest in specific process, organizational, and new systems capabilities, including:

- **Process orientation with a focus around the customer.** Because so many of today's processes revolve around sophisticated business transactions based on consumer experiences with the Internet and real-time mobile services, customers expect immediate delivery of personalized services. CSPs (particularly those with complex organizations and entrenched systems) must automate business processes that support closed-loop decision making and revise their business processes to respond faster and more efficiently to customer demands and dramatic changes in the communications industry.
- **Focus on growth in profits and revenue.** Financial pressures for attractive profit margins are greater than ever before, prompting CSPs to acquire and provide innovative business solutions that will help them improve and expand their top-line revenue growth.
- **Greater analysis and insight from customer interactions.** Deep customer knowledge is essential for CSPs to market new services, maintain customer relationships, and develop an intrinsic understanding of their subscribers' preferences and use patterns. Analytics need to support real-time, closed-loop decision making. They allow CSPs to understand emerging market opportunities and recognize threats in time to take appropriate business action, thus improving customer care and retention. Analysis of customer interactions and consumption facilitates the creation of new targeted service offerings tailored to the specific needs of segmented customers.
- **Flexible, scalable billing infrastructure.** One of the most critical components needed by CSPs to support these new services, get to market rapidly, and maintain a competitive edge entails the implementation of an updated billing system infrastructure. This system should support increased service innovation to enhance customer experiences and include customer-centric features such as a single invoice encompassing all the various providers and containing integrated customer data. Essential features also include support for real-time charging, convergent charging (across mobile, fixed; prepaid and postpaid), and real-time bundles.

Given the requirement for implementing these four capabilities, one of the greatest obstacles for CSPs lies with their existing billing infrastructure. Legacy billing systems were never designed to handle the real-time complexities of current business models, such as those found in prepaid fixed mobile convergence or revenue share businesses. However, new best-in-class billing infrastructures are now available and offer an opportunity to achieve key elements of all four capabilities within one solution.

Role of Billing Infrastructure in Enabling Rapid Innovation

Why Legacy Billing Systems Can't Support Innovation

Billing systems that track and manage revenue and profits are the lifeblood of telecom carriers. Originally developed in-house, telecom billing systems became the most powerful transaction processing systems in the world. Changes in technology and increasing competition hastened the emergence of a vendor community dedicated to delivering largely custom-built platforms.

Traditionally, billing has been aligned with collecting call detail records (CDRs) from network switches with a focus on extracting information and data records from the network, processing them on an IT platform, and then sending the bill to the customer. Over time, billing evolved to include customer care, ordering, and provisioning until it became an entire back-office platform. This approach was an efficient way to share billing knowledge across multiple carriers, but the ongoing costs to support these custom systems are expensive, with little value-add: Most telecom billing vendors offer pure services or, at best, a product framework. These solutions were developed when telecom had both large revenue streams and large margins. They are based on code developed long ago that has not been appreciably modified to accommodate a world that has changed significantly. In addition, they cannot compensate for shrinking margins that are under increasing pressure from many emerging business models.

Telecom convergence has been the holy grail of billing — always a goal, but rarely, if ever, achieved. This is because traditional billing vendors built solutions with a custom/customer orientation instead of a product/market orientation. In addition, these solutions were built for a specific line of business, such as local, long distance, or wireless calling. Worse, with a finite market, these vendors were not incentivized to productize — they demanded payment for each and every modification.

Previous attempts to transform legacy billing systems for the purpose of migrating all customers and rate plans to a newer, single billing system can take five years and be prohibitively expensive. Projects to change the billing infrastructure or to support new services and today's hyperconnected customers have historically been costly and risky and taken too long to put into operation. Many of these challenges are due to the myriad of custom interfaces that are required to support the change(s) that have to be applied to legacy code. Furthermore, incomplete implementations often impose limitations on the launch of new business models or new products and services.

Despite the crucial role that billing plays in supporting key processes, extensive modifications to existing billing infrastructures to support newer technologies, as well as emerging business and service models, would require CSPs to invest millions of dollars. Unfortunately, the costs and the complexity of modifying a legacy billing infrastructure also mean that less money is available for investing in or improving products or the customer experience. Additionally, most minor or partial modifications don't change the underlying complexity and resulting cost model where the majority of most money spent on billing is primarily targeted toward keeping the infrastructure running.

Key Trends in Telecom Billing

Over time, billing has progressed from being a key touch point to the customer to becoming the financial engine of the business. It is transitioning from a monolithic, back-office, after-the-fact process to a front-office monetization and market interaction platform that facilitates real-time market interactions, such as low-cost market trials and real-time changes to value chains (suppliers, partners, etc.). Completion of this transition requires a complete retooling of billing capabilities and underlying architecture.

As billing becomes more of a front-office monetization platform, and as product portfolios grow, so does the need for the real-time processing of and the ability to view various charges. This means billing documents become interactive, letting customers see current usage, charges, and all relevant facts directly related to them in real time. Linkages to powerful real-time analytics and business intelligence (BI) tools also become more essential to help CSPs understand the usage and needs of various customer segments. CSPs will be more effective if they can market and upsell customers while they're using the service — not after they receive the invoice.

In the near term (1 year), "virtual billing" trends such as electronic statement delivery and alternative third-party payment platforms will continue to become the standard, as will integration with third-party invoice payment tools. Smartphones will become increasingly important as the delivery of billing information to the device and the ability to pay through a simple smartphone interface will be expected. More customers will want to see and track their accrued charges to mitigate unpleasant experiences such as bill shock.

In the medium term (5 years), "on demand" capability becomes the norm. Bill cycles will become less relevant as telecom operators calculate charges on a continual basis, and customers will always know what they owe at any point in time. In addition, the ability to set self-imposed consumption limits via ewallets will begin to take hold, blurring the line between postpaid and prepaid.

Also in the medium term, telecom operators will continue searching for new revenue opportunities. There is a need among CSPs to connect billing processes to the specific financial management strategies and tactics of the service provider. Services will move up the stack, requiring additional billing flexibility. With more complex value chains, billing will evolve from a pure revenue management function to a revenue/expense (i.e., profitability) management function. Operators will also process directly variable expenses, which are closely aligned with the core services. In some cases, such as partnerships among CSPs, energy providers, and IT/cloud providers, the partner is likely to have a robust billing system in place that governs the business processes of the supplier of the service to the ultimate customer.

In the longer term (10+ years), CSPs will not only envision the future of telecom but also plan for it and possibly reshape it. CSPs may find their services embedded in other services delivered by technology vendors (e.g., Google, Amazon, and even SAP) and companies in other verticals, such as retail. This will require billing to become much more focused on channel or VAR sales rather than retail.

Capabilities Needed in Next-Generation Billing Infrastructures

To succeed against competitors outside of telecom that are building their billing architectures without the telecom legacy, and to meet the needs of the new revenue structure, CSPs need to consider a completely new type of billing infrastructure if they expect to get more value from the money they invest in billing systems. They need best-in-class, end-to-end billing systems with converged processes capable of supporting current and rapidly changing business environments. A billing infrastructure that can take full advantage of opportunities available with the ever-changing nature of the telecom industry includes the following capabilities:

- Real-time processing of events and requests to view balances
- Single invoice across multiple providers of services and products
- Business flexibility through simple product configuration with architecture options and modular deployment to allow the current system to evolve incrementally
- Low risk and rapid time to value
- Support for consume-to-cash business processes, billing and invoicing processes, and receivables/payables management

- Ability to enforce or assist in compliance with applicable regulations and with full transparency
- Scalability to support very large volumes of transactions and data
- Gain new insight from the massive volume of data accumulated within and outside the billing platforms effectively for all stakeholders via in-memory computing

With advanced networks such as 4G and innovative services such as IPTV, the billing platform for most CSPs also needs to reorient from telephony/data to any product/service. Most CSPs will want to facilitate some type of application store or application commerce, which makes capabilities such as third-party pricing important to CSPs. Billing systems have to accommodate other pricing set by business partners and other third parties and facilitate commerce through a smartphone using capabilities such as on-device charging (e.g., managing an ewallet).

Considering SAP

SAP is a Walldorf, Germany–based provider of business software and services. Founded in 1972, SAP now has customers of all sizes and in all industries in more than 120 countries worldwide. Both existing SAP technology and the technology from recent SAP acquisitions are now combined in an integrated, end-to-end billing platform for telecommunications called SAP Billing for Telecommunications. According to SAP, SAP Billing for Telecommunications is designed to enable CSPs to achieve the following benefits:

- Accelerate time to market to decrease time to profit and launch services before the competition
- Configure new services and/or connect separate rating engines into the invoicing engine to accommodate third-party billing, accounting, and service requirements from a common platform
- Reduce operational costs by configuring changes to service definitions and business processes instead of coding new processing routines
- Save on administrative costs by streamlining invoice creation/processing
- Increase customer satisfaction by providing a single view of the customer and enabling converged operations across service, network, and payment types

SAP Billing for Telecommunications comprises the following SAP software and capabilities that support consume-to-cash business processes for service monetization.

SAP Convergent Charging

- **Pricing and cost modeling.** SAP Convergent Charging is designed to maximize resources while lowering costs by enabling the design of new services and offers with graphical symbols. It supports testing for profitability before launch and enables rapid reaction to competitive offers by launching new services and cross-promotional bundles. It also helps differentiate services by targeting market segments with appropriate bundles and promotions.
- **Advanced rating and online charging engine.** The solution is designed to lower total cost of ownership (TCO) with a rating and charging engine that allows pricing flexibility. It supports the improvement of process quality by handling in real time tens of thousands of transactions per second in highly demanding multiservice networks.
- **Balance management.** The solution supports the ability to attract and retain customers by offering dynamic account charging with spending controls for family and business plans. It can help reduce TCO and operational inefficiency by handling prepaid, postpaid, and hybrid balance management models on the same platform.

SAP Convergent Invoicing

- SAP Convergent Invoicing supports the consolidation of information from multiple billing systems to generate a single invoice for subscribers that includes all products and services received; integrates data with accounts receivable for up-to-date account management; and enables a consolidated and transparent view into each customer. Convergent invoicing functions support discount programs and manage third-party charges.

SAP Customer Financials Management for Telecommunications

- SAP Customer Financials Management for Telecommunications supports revenue management processes, such as receivables and collections management and dunning. Call center agents are supported with financial customer care and dispute management capabilities. Electronic account presentment and payment supports customer self-service. Credit management allows CSPs to manage credit risks and credit limits, based on multiple input factors.

SAP Billing for Telecommunications is preconfigured for billing and telecom processes (see Figure 1). According to the company, SAP Billing for Telecommunications aims to elevate billing within the CSP industry into a strategic business value driver. To this end, the solution has the following characteristics:

- On-premises solution
- Modular architecture; components can be deployed separately or together or integrated with existing legacy financial management and analytics systems
- Scalable, multisite support
- Support for microtransactions/convergent billing
- Analytics
- Support for back-end invoicing/accounts receivables

The foundation for SAP Billing for Telecommunications is both SAP's expertise in business process software and the expertise from the following acquisitions:

- Highdeal, a provider of real-time charging solutions supporting next-generation networks, services, and billing architectures
- Business Objects, a provider of reporting and analytic applications that drive business insight
- Sybase, an SAP company and an industry leader in delivering enterprise and mobile software to manage, analyze, and mobilize information

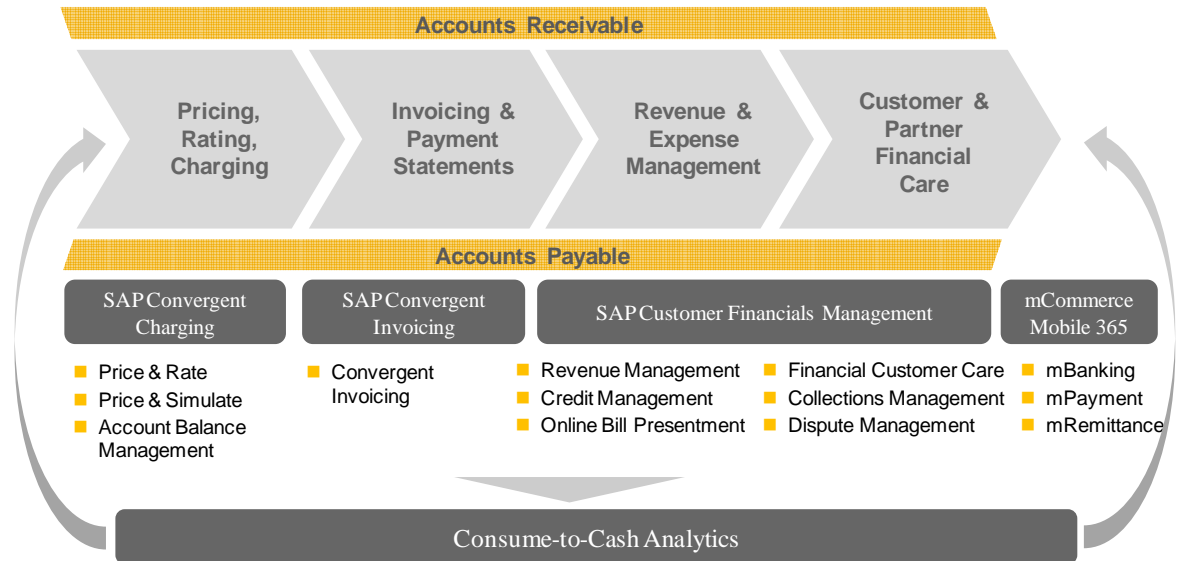
Taken together, the SAP software provides an end-to-end platform that supports accounts receivable for customers and accounts payable for partners. By managing billing and settlement processes on the same configurable software platform, CSPs can achieve the lowest possible TCO while having the scale and flexibility required. It also allows CSPs to offer new and more attractive services from third parties and supports the management of complex value chains for content providers, application developers, partners, suppliers, resellers, or any other third party.

The CSP can take advantage of mCommerce Mobile 365, an end-to-end mobile commerce solution that includes the mBanking, mPayments and mRemittance mobile solutions which are designed to enable the use of a mobile phone to pay, buy, bank and remit money. The mCommerce product suite

is designed to enable the introduction of a standard communication and transaction channel that supports anywhere, anytime mobile commerce services.

Figure 1

Consume-to-Cash Solution Overview



Source: SAP, 2011

As an established provider of enterprise business process software deployed in multiple industries, SAP offers the communication services industry a value proposition that encompasses:

- Business process expertise
- Value engineering/value prototyping designed to enable quick time to market/time to value
- Analytics to mine usage data and identify the most profitable customers and services
- Modular approach that gives customers the flexibility to address their most pressing business problems and/or gradually move from a heterogeneous to a homogeneous billing platform

Use Cases

We have seen the effect that changing and improving billing cycles can have on the ecosystem in markets around the world. In step with CSP strategic priorities, one CSP in a small European country has built a reputation for ingenuity, rapid innovation, and close attention to its customers' needs. The provider differentiates its services by combining innovative bundling with real-time controls for its prepaid accounts. Subscribers have a single prepaid account for all their services and can track their spending, allocate their prepaid credit between their different services, and change their pricing package as often as they wish. The CSP has gained 35% of the mobile market share in the past year while maintaining higher price points for many services than the incumbent operator.

In another example, one CSP is implementing a prepaid/postpaid converged rating and charging solution that sits between the network(s) and the legacy billing system, defining offers/services and service bundles across service types, network types, and payment types. Among the CSP's goals are reducing TCO, gaining more flexibility to support new business models, and offering new converged data services.

Challenges

SAP can no longer be known solely as a provider of technology. Instead, it needs to push both its technology and its business process expertise. In effect, SAP will have to educate the market about what it can offer in addition to the technology itself. The acquisition of Highdeal gives SAP credibility in the network charging market, but this heritage needs to be carried through to the updated SAP portfolio as more than a single acquired piece of the puzzle. SAP needs to emphasize its success in pulling together a full billing solution that is relevant to the market opportunities of CSPs and put the full business process in context. In addition, SAP will have to prove to the industry that it can deliver the expected level of performance, availability, and scalability.

Conclusion

To stay competitive and increase revenues in today's rapidly evolving business environment, CSPs need to offer a broad range of new and innovative services. They must be able to grow customer relationships by catering to customers' demands for new services and providing greater value. They need to incorporate essential technology services including cloud-based services and application stores and support the intricacies of revenue share business models, mobile convergence, and more. The complexities of the emerging business models require CSPs to enter into partnerships with vendors and other providers. However, CSPs need to accommodate their partners' business models, billing preferences, and more.

Rapidly supporting the rollout of these services and managing the complexity inherent in the billing process to support them are growing challenges for CSPs. Their legacy billing systems were never designed to handle current business models. CSPs need a completely different type of billing platform that can add real business value and address the operational challenges of today's digital economy. They need a system that enables them to take advantage of new and lucrative business opportunities that exist in emerging markets while easily handling both their legacy and new billing challenges from rating, charging, and invoicing to financial management. Moreover, they need all this capability to reside within one flexible billing platform that also contains additional beneficial business features, including analytics, support for high data volumes, consume-to-cash business models, and more.

IDC believes that the market for these types of agile billing solutions targeting the CSP industry will grow in importance. To the extent that SAP can address the challenges described in this paper, the company has a significant opportunity for success.

A B O U T T H I S P U B L I C A T I O N

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