

Back-Office Systems Move to the Front Burner

It's not your mother's BSS/OSS anymore.... Ma Bell's, that is.
Here's what to look for and how to choose among many options.

By David McNierney ■ *Highdeal*

The back-office and business systems required of today's broadband properties bear little resemblance to the systems that grew out of the traditional telecommunications industry. Those systems were built for very different challenges in a very different market environment.

Back-office systems lagged behind the development of the telecommunications industry. While telecom deregulation and the Internet boom of the 90s brought us competitive local exchange carriers (CLECs) and application service providers (ASPs) and made telecom a white-hot industry, the systems designed to support those new business models changed very little from their predecessors, which had been originally designed and built by BellCore decades earlier.

But now, in the aftermath of the Internet boom and the convergence of services over IP, providers of all kinds are taking a more practical approach to their business support and operations support systems (BSS/OSS). Without the comfort of guaranteed margins from the "regulated monopoly" era or the wide-eyed expectations of the CLEC generation, providers have become more aware of the challenges involved in profitably delivering a robust suite of triple play services to customers.

A BSS/OSS Primer

The world of BSS/OSS brings with it an entire set of terminology, much of it based on the legacy telecom model. Business support systems (BSS) typically include commercial and customer-

centric systems. Operations support systems (OSS) are the systems that control both the services and the network.

BSS/OSS functions generally fall into three categories:

- Service fulfillment includes provisioning and activation – everything needed to “turn up” services for a customer.
- Service assurance includes network monitoring, performance and fault management to ensure quality of service.
- Billing and customer care (BCC) processes and systems manage the revenue streams and the total customer experience.

The boundaries are somewhat arbitrary and not always clear. For example, should ordering be included in service fulfillment, as the front end of provisioning, or in BCC, as part of the customer experience? As a result, some make more granular definitions of the overlapping capabilities. For example, ordering can be divided into order entry (part of BCC) and order management (part of service fulfillment).

Many Choices for Back-Office Systems

Telcos have developed their own set of BSS/OSS systems, based on the evolution of their core services. So have ca-



Traditional models for BSS/OSS are besieged by the new realities of the telecom industry.

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ble/DBS companies, wireless operators and so on. Even bundled services like home and building security have their own systems, which are used by companies like ADT and Brinks. Each set of systems has its own functional priorities and even its own terminology. For example, cable BSS/OSS systems, often called Subscriber Management Systems (SMS), focus on truck rolls, headend provisioning and tiered video offers.

Which of these models is right for today's broadband properties seeking to deliver all of these services and more? This is a difficult question that requires a fresh approach and a healthy dose of objectivity.

When building a back-office infrastructure, it is important to focus first on the company's specific priorities. For example, a provider addressing the commercial segment may require more robust contract management capabilities, including the automation of terms and conditions, than a residential-only provider would require. Similarly, a service provider that is directly charging end users will have different needs from one that is acting as a wholesale service to a third party, and a service provider negotiating video deals with broadcasters will have different needs from one that is simply reselling an existing service. All of these business requirements have

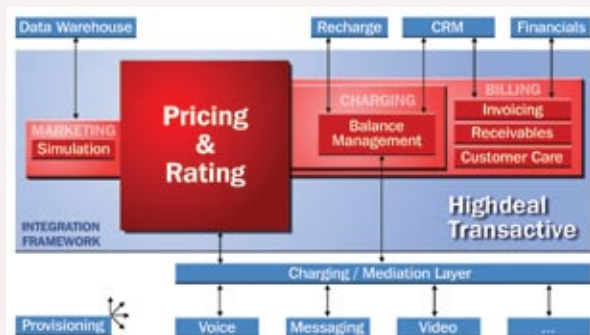
a direct impact on the supporting BSS/OSS systems.

A second consideration is company differentiation. If a company defines itself by providing excellent customer service, then a suite of robust customer management systems should be a priority. Similarly, a company offering customers market-leading choice should ensure that its BSS and OSS deliver exceptional bundling capabilities.

Competition is another important consideration. Broadband properties are no longer simply competing with the incumbent telcos and cable companies. They are now competing with the likes of eBay's Skype and Google's YouTube, not to mention the host of broadband-delivered applications like social networking and mash-ups. While the larger telcos and franchise cable companies (MSOs) have encumbered themselves with big, expensive BSS/OSS systems, eBay, Google and MySpace have not.

Homegrown/Third-Party, End-to-End/Best-of-Breed, In-House/Hosted?

As technology companies, many providers believe they can save money by building their BSS/OSS infrastructure themselves, especially since there are some low-cost, even free, open source packages to get them started. This is an acceptable strategy for those who are willing to live with its constraints: limited flexibility and the diversion from tasks that could add more value, such as negotiating deals with property owners or content providers. But the number and breadth of third-party products available often makes the DIY approach DOA.



Highdeal's pricing and rating solution is based on real-time transaction management.

B/OSS SUCCESS STORIES

Bandwidth.com, a nationwide provider offering businesses advanced Internet, VoIP, network and wireless services, has taken a progressive approach to its BSS/OSS infrastructure. Its back office was powered by a combination of homegrown systems and Salesforce.com for sales force automation, customer care and trouble ticketing. Named to the Inc. 500 list of fastest-growing private companies in the US, its extraordinary growth led to significant BSS/OSS challenges.

The company's preference was to find an end-to-end solution, but when it was unable to find a suitable end-to-end solution, it decided to keep Salesforce.com, along with some high-value homegrown components such as provisioning, mediation and quotations, while upgrading its billing system. A technology-savvy company, it pulled these components together using open APIs.

Videotron, a leading Canadian cable operator serving more than a million homes, was faced with upgrading its existing BSS/OSS to support the introduction of a new mobile offering and also to pull together its quad play offer. Rather than "rip and replace," the company's CIO, Andre Gascon, decided to take a phased approach to upgrading the BSS/OSS infrastructure by focusing on high-priority functions.

This strategy was enabled by an existing middleware framework that facilitated the integration of the existing BSS/OSS with new best-of-breed components for pricing/rating and ordering. The result was a customized solution that combined legacy systems with best-of-breed components to successfully meet the company's needs.

Cypress Communications is one of the nation's largest providers of end-to-end managed communication solutions for mid-sized businesses. Having experienced growing pains with its existing billing infrastructure, it was faced with either choosing a traditional telecom billing system or a more multiservice-oriented solution. It opted for the multiservice option and accelerated the launch of more market-leading managed services to its 6,500 business customers.

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Buying an end-to-end (E2E) solution from a single vendor naturally seems like a better strategy than combining multiple systems from multiple vendors, (the best-of-breed or BoB approach). However, the E2E option presents its own set of challenges. First, is there a single vendor that can provide all the modules, capabilities and level of flexibility the business requires? Big vendors like SAP and Oracle offer many of the required modules but fall short with many vertical-focused capabilities. Only recently have these vendors begun to focus on the growing service provider marketplace.

Where an end-to-end solution does exist, it can often lead to a dead end. Vendors that offer end-to-end solutions typically fall into the "jack of all trades, master of none" syndrome. They perform most or all of the required functions, but they do not provide any differentiation in terms of business models or processes. With new IT integration technologies such as service-oriented architectures (SOA) best-of-breed is increasingly becoming the preferred approach. For most IT departments, SOA is both an important architectural consideration and a desired goal.

Legacy BSS/OSS systems and products were typically built with fixed definitions of scope and hard-coded integration. For example, traditional billing systems contain product catalogs, to which many billing functions require access. However, ordering and provisioning systems also require product catalogs, leading to overlapping capabilities and redundant data results. With SOA and newer BSS/OSS products, providers can leverage a single product catalog for both ordering/provisioning and billing, eliminating overlaps and redundancy.

Hosted applications have been around for a long time, but the software offered as a hosted solution is often proprietary and

provides limited functionality. The recent success of software-as-a-service (SaaS) offerings like Salesforce.com has introduced another increasingly accepted means of delivering BSS/OSS capabilities.

Industry Standards

A valued industry resource for keeping abreast of the changing world of BSS/OSS is the TeleManagement Forum, or TM Forum. One of the TM Forum's major initiatives is NGOSS: New Generation Operation Systems and Software. The purpose of NGOSS is to bring both operators and vendors together around a common set of standards to facilitate interoperability while addressing the needs of the new world of telecom. While it is more focused on OSS – that is, service fulfillment and service assurance – than on BSS, NGOSS provides an excellent framework, which includes eTOM (enhanced Telecom Operations Map), SID (Shared Information/Data Model) and CBE (Core Business Entities). With these three components, operators and vendors can develop and implement both technology-neutral and technology-specific application programming interfaces (APIs).

The OSS Through Java (OSS/J) standards are examples of technology-specific APIs. As a subgroup within the TM Forum, OSS/J publishes Java-based APIs for many BSS/OSS functions ranging from service activation to mediation and network inventory, using the Java Community Process (JCP). Their APIs are downloadable from the TM Forum Web site (www.tmforum.org).

The NGOSS perspective has two major drawbacks, however: First, it is still very derivative of the old telecom world, and, second, it may amount to overkill for many small- to mid-sized providers. For many providers, it will be sufficient

to determine if their suppliers follow any open industry standards that will make third-party products easier to interoperate and, over time, upgrade and replace.

Four (Not-so-Easy) Steps to BSS/OSS

These systems activate new customers, deliver the services, and manage the revenue streams. Without a robust BSS/OSS infrastructure, service providers' businesses cannot survive, much less thrive. But for next-generation service providers like digital communities, building owners and others where the services, business models and customer expectations are rapidly changing, the BSS/OSS priorities are also changing.

Unfortunately, there is no one easy solution. Finding the right combination of BSS/OSS systems requires the following steps:

1. Prioritize the needs of the business, both short-term and long-term.
2. Carefully examine the existing infrastructure and systems (including property management systems) to see what can be leveraged.
3. Build operating and capital budgets that reflect both upkeep and ongoing capital investment.
4. Find suppliers such as systems integrators and BSS/OSS vendors that fit the priorities identified in steps 1 through 3.

By following these steps, service providers can find the right combination of back-office and business systems that will allow them to profitably deliver a rich suite of multi-play services to their customers.

It would make Ma Bell proud to see how BSS/OSS systems have grown up. **BBP**

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