

Faster, Better, Cheaper ... But How?

Western Wireless Improves CC&B

Jim Medick

The mantra for cellular phone companies in the fast-growing, but increasingly competitive mobile telecommunications, marketplace continues to be “faster, better, cheaper.” The trick is to do all of these things at the same time – no matter what technical innovations leap out from R&D teams that may automate processes or make a wireless service provider’s infrastructure either more powerful or manageable, the business that matters most is still customer care and billing.

Failure to keep these issues firmly in mind reduces our competitiveness and can encourage customers to shun one network for another, and the industry has known for years just how much more expensive it is to win a new customer than to retain an existing one.

The trouble for providers of cellular services is that the process of keeping customer care and billing (CC&B) operations up-to-date and tuned up for meeting customers’ preferences is a bit like putting a set of new wheels on a moving car.

Nevertheless, carriers, such as Western Wireless, the largest provider of rural cellular services in the United States, have been very successful at keeping up with customers by using open systems and upgrading existing architecture, underpinned by robust hardware that improves the availability and management of storage capacity for CC&B-related data. We have achieved this by using solution partners to enhance

our processes, without back-office turmoil from re-engineering.

Western Wireless provides service to more than 874,000 subscribers under its Cellular One brand to customers in territories covering 19 states in the Western U.S. The company recently bought a CC&B product called Ensemble from AMDOCS. Providing an infrastructure to underpin customer services and the usage of the network by the provider’s 2,800 employees was a key challenge. Part of the purchase involved AMDOCS supplying implementation and support services. The new product replaced an ITDS Tris Product, and company managers believe the Ensemble solution eclipsed billing system solutions from the other major leading providers.

The cellular company, with a predominantly analog network combining TDMA and AMPS technologies, had previously outsourced its billing processes. However, this approach was now being reversed – brought in-house to provide greater control, flexibility and lower costs. This move provided a new model for our billing and, as a result, the company now tests new plans and features in order to make sure that customers get the right bill. Previously, managers simply had to hope for the best on some occasions.

The picture of CC&B, before-and-after the change, is startlingly different in numerous respects.

The information technology group had been looking at cutting the cost of the



billing system for some time, in a background of squeezing margins. The business needs also spelled the need for faster billing cycles, enabling new offerings to move to market faster and with more features. Until recently, when Western Wireless wanted to introduce a new rate plan to spur customer demand or loyalty, it could take up to 30 days to have the network’s billing systems ready to cope with the implementation of the offering. This time lag has now been cut to a matter of a couple of days and, in some cases, a few hours, enabling timely response to calling trends that our sales teams may spot or predict – or to counter competing offerings from other cellular operators.

Under the old system, Western Wireless would collect and package billing data at its operations center in Issaquah, a small town about 20 miles east of Seattle, and send the data to a facility in Illinois. It took five days to produce a bill. The new in-house procedure, together with the Ensemble solution, has reduced this turn-around time to between eight and 16 hours. It has also made the process more visible to our IT department in Issaquah than it was when handled over in Illinois.

We can also now offer aggregated, convergent billing for the different services, such as cellular, fixed wireless, paging and data services, and can blend rates that discount across multiple features and services. The previous billing system's limitations prevented this.

This sort of convergent billing is of special importance to high-value customers, typically businesses or high-worth individuals, who account for around 30 percent of the carrier's customer base. They want one bill so that they can manage their communications expenditure efficiently.

Bringing our billing capability in-house meant having to integrate our existing network architecture with the Ensemble platform, which is designed to handle customer care, billing and order management for both voice and data in a convergent, multi-service operation which includes local, cellular, paging, long distance, Internet and IP services. For a carrier, such a system needs to be scalable and utilize a multi-tier, client-server UNIX/NT platform to handle high-volume call traffic and meet the consequent performance targets and requirements.

However, Ensemble needed to be underpinned by a high-performance, mass storage system that was more manageable than Western Wireless' existing architecture. In the company's NT world, some machines had 300 gigabytes of free space, while others had 200 gigabytes, and so on. Obviously, these disparities made it difficult to manage and exploit the availability and capacity of various storage devices. The infrastructure also included HP K-Class, N-Class and HP 4000 servers to support functions, such as message processing that underpinned the billing system.

By comparison, the storage system selected to underpin the Ensemble solution has the capacity to store up to nine terabytes of data and provides a single, highly reliable repository of CDRs, customer information and referential data for system operations. It also holds a full business backup of all network data in case of system failures. The storage device also had to operate at speeds that matched or were comparable with the fastest machines of a similar specification that were available on the market, be highly scalable, and, of course, have "five-nines," or 99.999 percent reliability with a reasonably sized IT staff.

We looked closely at both HP and EMC as providers for the infrastructure, servers and data storage devices, and selected HP's new HP XP256 disk array storage machines because it fit all of these requirements. It offered five-nines reliability, plus battery backups, dual power supplies and SCSI channels. In short, the Western Wireless infrastructure just doesn't fail.

The HP XP256 storage device, with a list price of \$1 million, uses storage area network technology, which enables it to work with UNIX and NT data. The device also has open plugs to UNIX and NT machines, offering it greater flexibility and the ability to act as a storage device for many different needs and applications.

We are using one such device for dedicated billing and the other to enable support of the PeopleSoft ERP financial and human resources systems, fraud detection and other supporting financial applications. These applications include sales commissions, electronic document handling and substantial ad hoc reporting capability. The IT team at Western Wireless recently completed its integration of PeopleSoft with Ensemble in order to automatically extract financial data from the billing system for financial reporting.

The particular selection of data storage device effectively centralized storage capacity in one location on a realtime basis. This allows the company to copy or backup data smoothly and quickly, instead of having the data stored across 61 individual NT servers. The alternative would have been to purchase more and more of our existing computers and their storage disks.

Running Ensemble together with the HP XP256 has produced a CC&B solution with considerable costs savings. We conservatively estimate this saving to be in the region of \$500,000 per month through lower costs, and maybe more. Another improvement on previous procedures is that Western Wireless used to take its CC&B system down every night for five hours for backups and nightly batch processing. With the HP XP256, the backups can be done in under 10 minutes through an online business copy and, with the AMDOCS Ensemble system, batch processing can be done while customer service reps use the system.

This successful joint implementation of the Ensemble and HP XP256 products is also a proof-of-concept illustration of the collaborative work that AMDOCS and HP have undertaken through their joint sponsorship of the Silicon Valley World Internet Center, a dynamic think-tank, showcase and collaboration facility for the advancement of e-Markets and Internet-related technologies. The Center is a place where vendors are developing new solutions for the advance of Web-enabled business systems for e-commerce, billing and customer care, plus a range of other IT products. It provides not only a physical location, but also a virtual infrastructure for networking with other technology and research groups, as well as thought leaders, in the areas of e-business, e-services and portals. ♦

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