Chapter 3

Automating the Internet Infrastructure Supply Chain

Service delivery depends on the supply chain that supports it. IICs depend upon one another as buyers and suppliers of each other's products and services. How well IICs can deliver services to each other and to end users depends on how well integrated and automated are their OSS platforms. In this competitive/cooperative environment, an IICs ability to effectively manage relationships with its suppliers and deliver tailored service packages to its customers is a critical factor for success. Therefore, automating the IIC supply chain has become a critical goal for the IIC industry. Time to market factors, increasing price pressure and competition for customers all make an automated supply chain, and thus an integrated eOSS environment, a necessity.

However, automating the IIC supply chain is no simple task. It requires cooperation among the players involved, as well as some consensus on the best way for IICs to integrate their systems and processes. This in an industry not known, at least in the United States, for conscientious collaboration. There currently are a number of key challenges that stand in the way, including a lack of OSS integration standards, contention over LEC interconnection, and a lack of integration within IIC operations.

1. WHAT STANDS IN THE WAY?

1.1 Interconnection as a Choke Point

Perhaps the most critical element of the IIC supply chain, particularly for businesses, is the last mile — the piece of the network that touches the customer. For most IICs, gaining access to the last mile network means
interconnecting with one or more ILECs, sometimes through interconnected partners. Thus, the first mountain to climb in supply chain automation is LEC interconnection. Like any chain, the IIC supply chain is only as strong as its weakest link. In this case, LEC interconnection is a fundamental link, and potentially the weak one. LEC interconnection is a fundamental link because it encompasses the technologies and processes IICs use to order products and services from each other. It's a weak link because even though ILECs provide various automated interfaces for key processes, the level of integration supporting them is inconsistent, as are the interface technologies they employ. Many of the supporting processes remain manual and/or based on older, obsolete systems. A lack of interface standards or even common guidelines has made interconnecting with multiple ILECs extremely complicated, requiring custom development with very little reuse from provider to provider or region to region.

Interconnection was bound to be a problem from the very beginning. The initial interconnection orders, subsequent to deregulation, ordered ILECs to open their OSSs and provide electronic access to pre-ordering, ordering, trouble ticketing, provisioning and billing functions. The FCC did not, however, propose any models or appoint any industry forum to spearhead an interface standards process, determine any technical guidelines or benchmarks, or set any minimums for what ILECs would have to provide. They were told they would be tested, but tests were administered on a state-by-state basis, differing greatly from place to place. The interconnection orders called for parity, where CLECs would be guaranteed equal access to data and equal fulfillment timeframes to what ILECs provided for themselves. The problem with parity is that the service ILECs provide to themselves is often not very good.

Although interconnection interface standards are troublesome, standards have been developed for local and access service requests. Local service requests (LSRs) are basically the order forms IICs submit to ILECs; for example, to switch an ILEC local service customer to a CLEC’s local services. Small differences do occur in the forms among ILECs and in various regions, but the LSR form is relatively standardized and continues to be developed in the Ordering and Billing Forum (OBF) part of the Alliance for Telecommunications Industry Solutions (ATIS). The access service request (ASR) form is used for ordering wholesale facility circuits, such as T-1s and T-3s. The ASR is generally recognized as a true standard, and has been developed over the course of about a dozen years in the OBF. Since