

Enterprise VoIP Industry Analysis

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Abstract

As a reputable and lower-cost methodology for wireline communication networks, Voice over Internet Protocol (VoIP) has attracted considerable commercial interest in recent years. By allowing analog voice to be converted into packets and transported over a converged IP-based network, the consolidated network serves as a foundation for enterprises to reduce operating expenses. As such, VoIP can be utilized in three distinct applications: Toll bypass and Internet offload, Enterprise, and Consumer. With the maturation of the toll bypass and Internet offload market, and an existing study on the consumer market, the focus of the report is on the Enterprise VoIP market. The major conclusion reached from the consumer VoIP study is that the cable operators will lead.

The notion of VoIP was propelled along with the Internet bubble, and also suffered during the bust years ñ closely following the trajectory of the technology adoption cycle. With the initial excitement around VoIP in 1999, followed by a large delay before much news again in 2004, the major focus of the report is to assess whether VoIP (in the enterprise) will reach the main market.

Enterprise VoIP Market Dynamics

Enterprise VoIP solutions can be classified into premise-based and network-based solutions. With the earliest IP PBXs launched by new vendors such as Selsius Systems and NBX (acquired by Cisco and 3Com, respectively) in the late 1990s, the IP PBX has evolved through many product cycles into a solution supporting advanced applications meeting the needs of corporations today. As such, IP PBXs are mature and stable products manufactured primarily by traditional PBX vendors and data communication vendors. As most service providers offer two or more IP PBX solutions, and select vendors announcing more IP port shipments than TDM, **the IP PBX has reached the main market and will continue to achieve higher global penetration.**

In comparison to IP PBX, network-based VoIP services (IP Centrex) are much newer. With the majority of service providers announcing their preferred softswitch vendors in 2004, the product launches of IP Centrex vary among the service providers. Short-term results indicated that the IP Centrex market is small and its success is limited. A survey conducted by Distributed Networking Associates show that 55% of surveyed enterprises do not plan to subscribe to an IP Centrex service. On the other hand, service providers are not willing to cannibalize their existing profitable Centrex business as operations and maintenance costs are limited. This is witnessed by observing enterprises that desire to upgrade to IP Centrex from legacy Centrex, but are unable to as their service provider is unwilling to terminate the Centrex contract due to high profit margins. Therefore, **IP Centrex (or network-based VoIP solutions) is distant from the main market.**

Enterprise VoIP Equipment Market

The requirement for VoIP deployment is a developed IP-based enterprise LAN and WAN,

as well as a resilient service provider WAN for network-based services. **Cisco is the primary beneficiary of VoIP** as it is the leader in IP infrastructure. Thus, Cisco's strategy is to utilize VoIP to drive the sales of LAN and WAN equipment.

In both the enterprise and carrier VoIP equipment market, the new or **emerging players are niche players** sell equipment in one or two segments of the industry supply chain. For example, in the carrier VoIP market, Sonus only competes in the softswitch and high-density media gateway markets. Also, in the application server market, every player is a new entrant. The emerging vendors do not have sufficient resources to expand its product line, as some vendors are competing with traditional telecom vendors and Cisco.

Given the high complexity of VoIP deployment, both enterprises and service providers have a tendency to select a single equipment vendor responsible for providing a complete VoIP solution. This common mindset from the service provider industry heavily **favours the incumbent vendors** which have multiple products across the industry supply chain. Furthermore, with more than thirty competitors in both the softswitch and application server markets, and the carrier VoIP equipment market being relatively small, the market is due for industry consolidation by means of mergers and acquisitions, or bankruptcy. As such, **the future of the emerging vendors (in carrier VoIP) depends on the speed at which IP Centrex reaches the mass markets**. If the adoption of IP Centrex is fast, a number of the emerging vendors will be acquired. Otherwise, many emerging vendors will face bankruptcy.

VoIP Service Provider Market

The US service provider market is unique because of the existence of the interexchange carriers (IXC) such as AT&T, MCI, etc. The **IXC is the major competitor that is able to push the incumbent local exchange carriers (ILECs) to rollout IP Centrex at a faster pace**. The IXCs are suffering from an attack by the ILECs as they have entered the business market by being able to offer long distance services, attempting to take away market share from the IXCs' dominance over the US business market.

In consumer VoIP, the ILECs are defending their residential customers from the multiple system operators (MSOs). To accelerate the offering of voice services, MSOs have partnered up with IXCs to accelerate VoIP deployment, as well as partnering with wireless carriers to pursue a quadruple play offering. As US ILECs are able to bundle their local services division with other higher growth segments, this makes the consumer market more competitive.

The IXCs will be providing a large amount of IP infrastructure for the deployment of VoIP services allowing for greater innovation to be achieved in VoIP services. Hence, the **US market is the most competitive market worldwide in VoIP** due to the existence of struggling IXCs, which result in innovation of the VoIP market.

In Canada, Bell and Telus are the only competitors with an IP Centrex. Intermediate results in the launch of **IP Centrex by both Bell and Telus indicate that results are comparable to the US**. In the enterprise segment, the greatest challenger to the ILECs is Allstream, and it is the only competitor that is able to push the ILECs to accelerate the deployment of VoIP.

Similar to the US market, the MSOs will emerge as a strong contender to the ILECs in

the consumer VoIP market. With Rogers and Bell able to offer the same set of services, competition will continue to be intense in the consumer market between the two companies. As Allstream does not own the last mile to the consumer, it provides wholesale services to VoIP service providers to have a stake in the market. Aside from **the reduced competition, the dynamics in the enterprise VoIP market are similar**, but not identical, to the US.

The major differences between the US and Canada include the absence of the IXC, the ability for US ILECs to bundle their local services segment with other segments, and higher tariffs for telecom services in the US. The existence of the IXC and the ability to bundle local services together make the US market more competitive than the Canadian market. As Canadians pay less than Americans in tariffs, **US consumers and enterprises realize greater cost savings, thereby having greater incentive to migrate to VoIP**. In Canada, the incentive of cost savings exists - but savings are much smaller. The reduced competition among Canadian service providers implies that **Canada will lag the US**.

Although the US market is expected to lead, the **rollout of IP Centrex is different in other countries** because the US has a large number of Centrex lines. Thus, IP Centrex is more appropriate in countries where legacy Centrex does not exist, tariffs for telecom services are much higher, softswitches have already been deployed for toll bypass and Internet offload applications, limited TDM infrastructure exists or greenfield markets exist. Countries with these properties will leapfrog the US in main market IP Centrex adoption.

In deploying enterprise and consumer VoIP, service providers are able to realize synergies. Given the deployment of either consumer or enterprise VoIP, the incremental difference in the rollout of the other is limited due to the common softswitch architecture. Also, the experience of network management among employees of the service provider organization is very similar among both consumer and enterprise VoIP.

Summary

The enterprise VoIP market is comprised of premise-based solutions which are reaching the main market and network-based solutions which have not. As VoIP deployment is complex, customers prefer single vendor solutions, favouring the incumbent vendors due to a complete product line. The emerging vendors will continue to consolidate by means of mergers and acquisitions, or bankruptcy. In the service provider market, the US market continues to be the most competitive, as the IXCs are challenging the ILECs. As US consumers and enterprises are able to realize greater cost savings and have more incentive to migrate to VoIP, it is expected that the Canadian VoIP market will lag the US market. In non-North American markets, IP Centrex in other countries with specific characteristics will reach the mass market faster than the US.