Pipeline
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Telcordia's 'Elementive Strategy'
By Anindo Bagchi. Telcordia Technologies

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Carriers face many challenges in offering new carrier-class IP services that are as robust and reliable as traditional telephone services. The difficulty is in making a smooth migration from traditional services to economical, next-generation broadband systems. This transition will depend heavily on how well carriers augment their OSS environments to support on-demand services. Telcordia Technologies is working to help carriers make this transition, and has made significant changes to its own solution approaches as a result of its Elementive program.

Recovering to Broadband
The telecom industry continues to suffer from its recent legacy of quick network deployment at any cost. New applications were almost haphazardly architected into the system. Interoperability and standardization, because of once deep pockets, were often overlooked in an effort to have the hottest, fastest and most cutting-edge technologies.

Through 2000, the telecommunication industry was thriving, but it was also fragmente. Time-to-market was king and the focus was on building fast networks and creating new IP applications to traverse them. Throughout that time, Telcordia argued for carrier-class deployments and maintained that carriers' emphasis should be on how to manage and operate the network. A reliable, well-managed network seemed more sensible than fragmented technology mixes that may not work together easily. Consistent with this thinking, most large carriers chose to wait for carrier-class solutions for next-generation services.

In 2002, when the industry had slowed to a crawl, people began to look at networks from a long-term perspective. Adding voice to the service mix through voice-over-IP (VoIP) became popular, but despite its additional efficiency and effectiveness, it was considered "table stakes" at best. VoIP was and is not a significant leap beyond the status quo of traditional service networks. The real challenge rests in driving toward an overall application environment where voice, data, video and multi-media applications ride a common network infrastructure and are accessible through a real-time OSS environment.

Fiber is the Option
Whether at the network edge or network driven, applications must be supported within every carrier's environment – and the environment has to be broadband. A recent joint report from Telcordia and Sanford Bernstein concludes that every carrier must move toward fiber-to-the-premise (FTTP), not just to enable new applications, but for basic network survival. This joint Bernstein-Telcordia study has determined that for ILEC deployments, xDSL may not be sufficient moving forward and carriers must eventually move toward FTTP to remain competitive.

Carriers cannot continue to compete strictly on the basis of pricing. History shows a downward spiral will result and growth will diminish. Instead, growth remains steady or increases by seeking and securing new revenue sources. This means continuously evolving the network infrastructure to provide customers with new and improved services, features, and applications – and, again, broadband is the key.

The Broadband Network Vision
Well before most carriers accepted it, Telcordia envisioned a network where broadband would be delivered to every home and business with a common-core network, such as IP at Layer 3. Below that, the optical network provides the larger pipes for providing enough bandwidth for any service. On top of all this lies numerous application servers to enable VoIP, video, streaming media, mass market video, and other available and emerging services. Network and application management tools are also necessary to support and enable cutting-edge applications, and to complete the network vision.

In the ideal, networks will achieve open connectivity to third-party application providers, and offer the ability to provision their services only to the customers who want and are willing to pay for them. This third-party connectivity provides additional revenues from the application providers for access to customers, while opening up a range of options for customers.

As a result of this more open broadband environment, connectivity, manageability and security are at a premium, but they also must be transparent to the customer. This ideally will be an on-demand environment that requires a high level of automation in basic operations, and it will have to be rock solid from the beginning. If carriers are to maintain their reputation for reliability and quality, their migration to new networks and modes of services must be achieved without affecting existing services and customers, and without a drop-off in quality after the migration.

Although TDM services now seem limited, they seldom break down. Moving to the new, flexible broadband network infrastructure must be accomplished without any degradation in service quality, or customers will have a reason to backtrack or seek alternatives. A customer's perception of service quality is tied to how quickly and efficiently they can be added to the network, and how easily they can choose from a range of services. Unlike the TDM network where adding a new service took a long time, in the new environment customers demand additions and changes rapidly. The carrier with the fastest and most accessible service provisioning will outpace its competition.

Whereas the TDM network was essentially closed, broadband IP networks are exposed to the Internet and all of its security challenges, including viruses and data manipulation. Security is already a chief concern for most users, particularly in terms of personal identity and privacy protection. Carriers will also need to protect themselves from vulnerabilities that threaten service, be they natural or man-made.

Elementive Strategy
Meeting all these challenges by integrating individual solutions into existing systems in an attempt to solve one problem at a time is an expensive proposition – both in effort

and economics. But there is no one-size-fits-all answer to building an OSS environment for broadband applications. Though the capabilities that need to be enabled are common, no two carriers will deliver them the same way. Existing OSS environments will bear much of the responsibility for service delivery and management, so whatever solution is designed has to utilize them for everything they can contribute in the new service environment.

Facing these facts, Telcordia developed its Elementive strategy as an alternative to piece-meal approaches that only fix small problems, or replace strategies that are not realistic for large carriers. The purpose of Elementive is to enable service providers to choose from a selection of solution elements that best fit their operational environments. This approach is meant to allow carriers to continue using their existing systems, though it can also provide green field architectures. Elementive is a move away from providing solutions for which every component is a product of one particular supplier. A new approach for Telcordia, Elementive offers multiple solutions based on combinations of components from one or many suppliers that interoperate over an open, flexible, configurable environment.

Dr. Anindo Bagchi is Principal Consultant, Telcordia Technologies, Inc. (www.telcordia.com), headquartered in Piscataway, NJ. He can be reached at abagchi@telcordia.com.