



Internet Phone Service

## VoIP Services for SMB & Residential



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### Putting Applications at the Heart of Service Providers' Next Generation Networks

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The future of business networks lies in a move from frame-relay to all-IP, known in the industry as “next generation networks.” This means businesses only need one network to transport all their information and services, including both voice and data traffic, which offers them a number of cost and resource savings. These benefits are generating a high level of demand for converged networks among businesses of all sizes, placing pressure on service providers to deliver them.

As the technology underpinning these networks has improved, more and more businesses have adopted an entirely or partially centralized infrastructure, introducing a wide-area network (WAN) to enable access to applications and exchange of information over far greater distances than was previously possible. This has seen the reliance on the network grow, and at the same time the increasing variety and volume of traffic types is placing considerable strain on the network. End-users are experiencing degradation of the performance of key applications, and are looking to network managers to address this issue. They, in turn, are now starting to expect some kind of application delivery service or guarantee from the service providers.

Consolidating the function of two existing separate lines into one next generation network has a clear cost benefit, and this is increased by additional savings on resources such as equipment and staff. The improved network architecture allows users to work remotely, both from home and on the move, something which is increasingly popular with business, highlighting a move from a LAN environment to a WAN. Other benefits revolve around the technology that a business can use: next generation networks bring support for emerging applications, such as unified communications (VoIP, video conferencing, etc.) as well as enabling all applications to be delivered across the network as a service. Fast, reliable access to applications is often business-critical, so it is extremely important that they are delivered as they were intended. However, many applications were not specifically designed to travel over the long distances involved in WANs and will often perform poorly or slowly as a result.

In addition, new traffic types such as real-time voice and video applications present a whole new set of sensitivities of which network managers need to be aware. During peak periods there is more traffic travelling over the network, causing congestion. This can cause serious problems for end users, depending on what kind of applications they need to use.

For example, if congestion on the network causes file transfers or e-mails to slow, there may be some mild frustration from one or two end users, but the majority will

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not even notice there's a problem. In contrast, if network congestion impacts a video conference call, the result may be jitter, or even lost packets of data, and this will be considerably more noticeable to the end-user.

All of these application performance issues must be addressed by the network manager, who is accountable to the business. Commonly, they address poor application performance with bandwidth upgrades. Research commissioned by Ipanema Technologies suggests that the majority of businesses currently take that approach; though 75 percent of respondents complained that bandwidth upgrades rarely solve the application performance issues they were experiencing, and in some cases the problems are masked.

This approach is often taken, though, as network managers often do not see a clear, viable alternative. In fact, according to Forrester and IDC, the number one issue for infrastructure managers is guaranteeing the performance of critical applications running over their WANs. At a time when the networking market is becoming increasingly commoditized, this presents an opportunity for service providers to move up the value chain by offering application-centric services. As businesses are migrating to the less costly TCP/IP-based next generation networks, service providers are looking for ways to build their revenue and differentiate themselves in the market.

If these service providers can offer a managed service to complement the new network structure and solve the problem of network degradations for customers, they will be able to really increase the opportunities for revenue growth presented by next-generation networks. An application-centric offering could be the perfect solution for all concerned. In essence, they need to make the network manager's job easier — and application delivery is at the heart of this. By taking responsibility for this challenge through a built-in managed service offering, service providers can really meet the demands of a market where, according to Ipanema's research, 93 percent of network managers are looking for greater visibility and control of the traffic over the WAN.

At present, service providers have to commit to Service Level Agreements (SLAs) as part of the contract when they provide a network. These are a basic set of terms that focus on the performance of the network itself (for example uptime), as well as the support the service provider will provide in the event of problems such as downtime. These parameters are fine as far as they go, but revolve heavily around the commoditized product they are selling, rather than the objectives and needs of the network manager and, more importantly, the business as a whole. With great importance being placed on applications, service providers may be missing a real opportunity to increase their value proposition, and therefore their margins, by not incorporating application delivery and performance into their SLAs.

Addressing this would enable them to offer something that network managers are really looking for, though this needs to be tied to some kind of application delivery service. There is no hard and fast rule on what guarantees to offer and how to go about it; however, it is clear it cannot be made to work without some mechanism for managing key traffic and demonstrating the impact for users of the network.

As businesses are becoming wise to the limited success of continually increasing bandwidth capacity, the answer appears to lie in providing a service based on prioritizing traffic and optimizing the existing network resources. This represents a very significant opportunity for service providers that are able to offer a service based upon technology that directly and automatically links application performance objectives and WAN behavior. Such a system would need to adapt in real-time to the supply and demand interplay between user activities, application performance objectives and network resources. It would also need to provide thorough information about the WAN's contribution to application performance, and right-size bandwidth according to application performance objectives.

In addition, the system or tool needs to recognize applications that were designed

for use over a LAN and thus perform poorly over the WAN, for example, due to the distance they travel or limitations of their design (e.g., HTTP, CIFS). The system would respond accordingly, “accelerating” the applications to improve their performance over longer distances. More and more, businesses have come to expect network providers to offer this service. In fact, they are now getting to the point of asking for SLAs that will guarantee the performance of all kinds of business-critical applications, regardless of whether they are delay-sensitive, bandwidth-hungry or were designed for a different kind of network.

By meeting this demand, service providers can enhance the opportunities presented by next-generation networks for both themselves and their enterprise customers, and can move up the value chain. Customers will be more likely to pay a premium for an offering that includes services to make the network manager’s life easier by providing the level of performance end-users need, and reporting that enables them to demonstrate this to the business. Tying this to specific application-centric SLAs will be the greatest differentiator though, demonstrating the belief the service provider has in its service, and the importance it places on application performance, mirroring the network manager’s own priorities. With this in mind, it can not be too long before application-aware networks become the real “next generation networks.”

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