

Thinking About

Enabling Convergence

Taking Advantage of Services Over IP

AT&T's Four Points of Convergence

Business leaders are quickly recognizing that a converged environment strategy can enhance performance across all of their operations. Converged communications can help strengthen organizational performance, increase the speed and agility of the enterprise, increase management's ability to control operations and enhance the organization's resilience while maintaining security.

No wonder that in a 2005 global survey of business executives, 45 percent of respondents considered convergence "important" or "critical" to achieving their strategic IT and business objectives, and 60 percent said they would deploy converged networks across most or all of their organizations by 2008.¹

As organizations extend convergence into new areas, the value grows. Four distinct but interrelated opportunities for convergence are:

- *Integrating on-net options for mobile and fixed access*
- *Enabling networks with multi-protocol label switching (MPLS) and virtual private networks*
- *Optimizing their applications infrastructure to create a more integrated operating environment*
- *Utilizing IP-enabled services, such as voice, video, conferencing and messaging services*

Each convergence area holds both opportunity and challenge. To maximize the benefits and overcome the challenges, you must know how to use convergence in your organization, understand the steps required to make convergence a success, and carefully choose a partner to help plan and carry out the move to convergence.

This is one in a series of five papers AT&T has developed to help – to provide insight into the "how to" of convergence and examine the practical issues your organization must overcome as you integrate converged communications into your business operations. Of the Four Points of Convergence, this paper will explore the transition to Services over IP in detail.

Introduction to Converged Services Over IP

A growing number of companies now see network convergence as a vital step towards achieving their strategic business goals. Executives see convergence not only as a way to reduce their networking expenses, but also as a means to create value by improving the communications and collaboration productivity of their employees, partners and customers.

Take the case of Byram Healthcare, a leading provider of disposable medical supplies. Using IP-based services such as VoIP, IP Telephony (IPT) services, an Integrated Voice Response (IVR) system and telnet applications, Byram has enhanced its customer experiences with shorter response times, delivering a 282 percent return on investment (see sidebar).

There is no denying that IP-based communication applications are at the forefront of unlocking business value. By converging today's

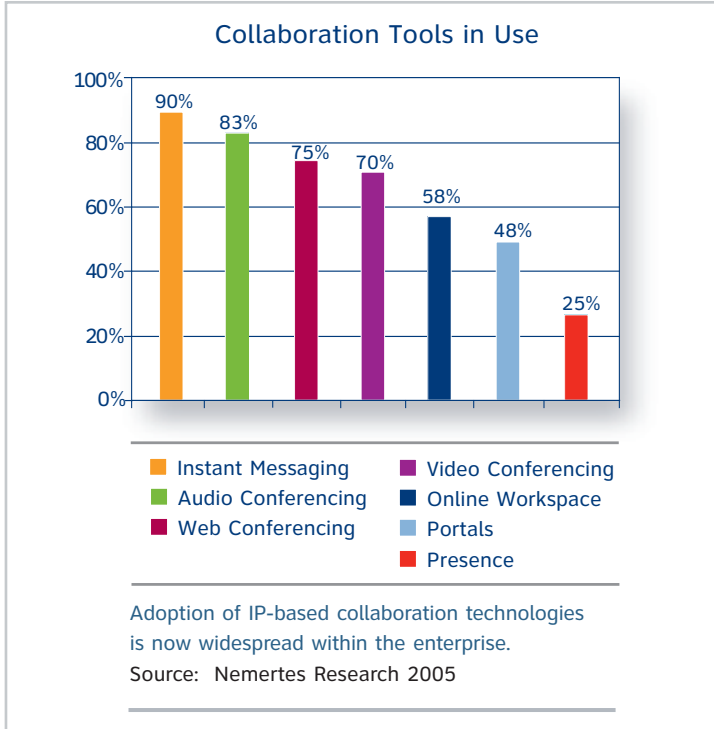
disparate modes of communications – voice, video, conferencing and messaging – into an integrated suite of applications, we are building a foundation for a new era of real-time collaborative communication.

Converged Services Over IP Today

It's no secret that many of these unified, "next generation" communications applications have been around for quite awhile. What is unique about them now is that they are finally out of the "proof of concept stage" and have crossed into the commercial mainstream. Nemertes research shows that on average, 90% of employees work away from headquarters and as many as 70% of employees work in a location separate from their manager and/or immediate co-workers. "That's creating a virtual workplace," says Melanie Turek, Nemertes principal analyst. "And that virtual workplace requires real-time communications tools to enable effective collaboration."

VoIP today is no longer a “fringe” technology. It’s well into the mainstream, largely due to substitution cost savings and the flexibility provided by IP-based communications.

VoIP solutions today are typically deployed from the “edge of the enterprise” inward. Remote offices and off-shore locations are the typically the first to convert, with “greenfield” locations and the main corporate business offices following.



AT&T, in its own adoption of VoIP, is following this evolutionary path. For offices outside the U.S., the implementation of VoIP cut AT&T’s long distance bill by 20 percent to 50 percent, depending on local conditions and tariffs. “The flexibility of an IP platform enables me to keep my customer service agents in Bratislava fully integrated into AT&T’s global operation,” comments Steve Coffey, AT&T director, managed services delivery, worldwide customer service.

Emerging Capabilities

But beyond being used by an ever-increasing number of businesses, there is still some uncertainty on how the technologies of VoIP and Services over IP will evolve. While there’s no denying the complexity and difficulty in forecasting the future, a number of key trends are already impacting the marketplace today.

With baseline VoIP calling embedded within the enterprise, the next phase of evolution is when the “wow” starts. This is when the traditional way of making calls gets “turbocharged” with new levels of intelligence and richer application functionality.

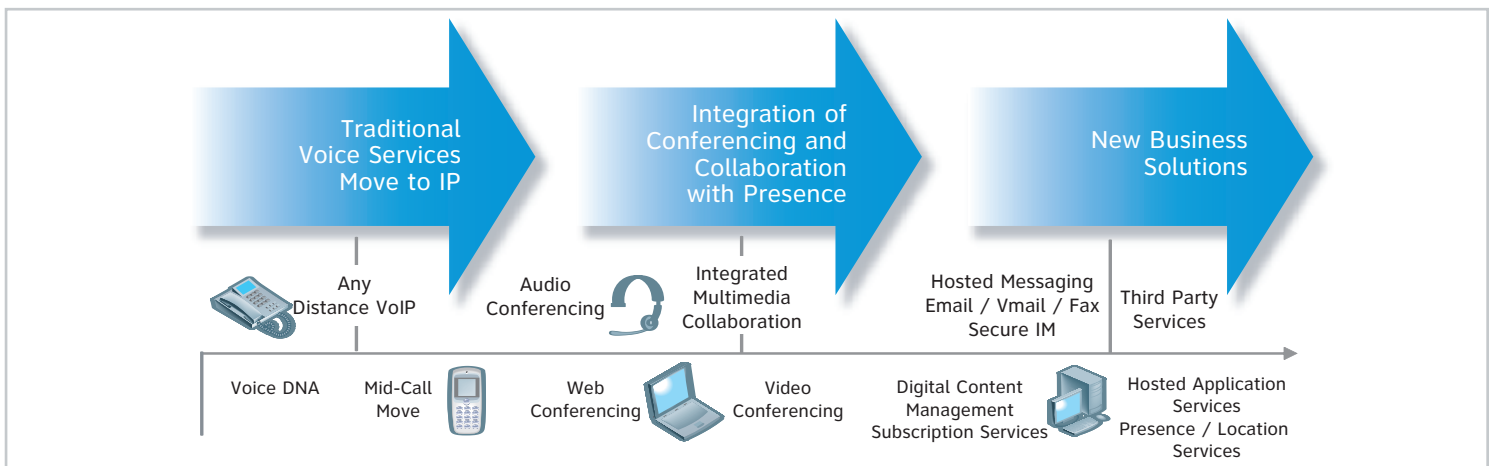
The new levels of intelligence will be driven by the increasing adoption of presence technologies (delivering real-time information on the availability of someone, their preferred method of being contacted and even what they are currently doing). The richer application functionality will be driven by the wide-spread adoption of open, standards-based protocols such as Session Initiation Protocol (SIP) and Voice XML. With the continued adoption of these protocols, end-users will benefit with tighter and tighter integration of their collaboration applications. Moreover, these converged and dynamic communications applications will function over a wide range of devices, some of which may resemble “PDAs on steroids” that can handle voice, video, IM and multi-media across multiple wireline and wireless access technologies.

The third phase in the evolution of IP-based communications is less about what gets brought to market but more about how these services are brought to market. This is the phase where the world of “on demand” service delivery becomes pervasive. In essence, this is where personalized real-time collaboration (person-to-person, person-to-machine and machine-to-machine) is delivered at scale in a high performing, agile, consistent and secure manner. In the end, the promise of advanced Services over IP is about delivering high quality communications services that are powerful, adaptable and easy to use.

Key Considerations for IT Managers

For those evaluating VoIP and IP communications solutions, careful attention should be paid to all the available options in order to choose the best solution fit. Some of the primary options include premises-based systems (such as IP-PBXs) or network-based solutions delivered by a service provider who hosts the solution on their IP network.

Utilize Services Over IP



Feature Functionality Assessment

You must determine your current communications needs as well as your future requirements to create a long-term services over IP implementation plan. The trick is to target these implementations when and where they can deliver the most value. Often times these roadmaps can operate as “self-funding” initiatives where the savings derived from the initial phases serve to fund the latter phases. Key areas of initial opportunity include branch offices with high international calling volumes, greenfield projects with no installed base of equipment and legacy equipment that has reached the end of its lifecycle.

Key Considerations for CIOs

- Feature functionality assessment
- Interoperability
- Ensuring centralized management and monitoring control
- Consistent global performance

Interoperability

Another key to success is to ensure that your solutions are interoperable and standards compliant. As emerging technologies, it is absolutely essential that all of the various elements that comprise your solution be tested/certified and operate with bullet-proof reliability. With rigorous testing and certification processes in place (done by you or your service provider), you can take advantage of this expertise to reduce time-to-market as your communications environment converges over time. In addition, by understanding and driving true interoperability amongst the standards-based technologies, you can free yourself from “vendor lock-in” and choose best-of-breed technologies that meet your particular business objectives.

Ensuring Centralized Management and Monitoring Control

Creating an integrated management system that interfaces with existing technologies is not a simple task. Because it must work with a diverse array of equipment and applications, these systems are typically custom-built and expensive. A unique advantage of network-based solutions is that the service provider takes over management and eliminates the need for ongoing maintenance and front-end customization, while providing interfaces that allow customers to control services themselves.

An integrated management and monitoring system provides a foundation for you to proactively manage the performance of your integrated communications applications. With so many moving parts, having end-to-end visibility across your networks, systems and applications is essential.

Additionally, with robust management and monitoring capabilities, many routine tasks can be automated. A great benefit from this is that it allows highly skilled communications specialists to be focused on higher value-added activities beyond routine “moves, adds and changes.”

From an end-user perspective, it is also critical that individuals utilizing these advanced communications solutions have a compelling, intuitive and consistent user interface. The transformative nature of these applications is deeply tied to their ability to be easily understood and

used. If the apps are too tough to understand, it’s safe to say that their adoption will be suboptimal.

Consistent Global Performance

In today’s world of real-time, global commerce, it is absolutely imperative that the underlying technology foundation (access, networking fabric and application infrastructure) operate with the highest levels of performance and reliability. IP communication applications utilize complex routing schemes that send packets literally anywhere in the world, each with separate bandwidth requirements. The task of maintaining consistent quality and performance for even the savviest voice network manager is becoming increasingly challenging.

Naturally this requires a global MPLS-based networking fabric, but it also demands that all of the communications networking elements (gateways, call-control elements, media servers, directories, storage, firewalls, etc.) operate in a highly reliable and “well tuned” manner. Additionally, it is essential to have a fully-redundant, global hosting infrastructure to ensure that advanced communications applications are operating 24/7.

Along with the infrastructure requirements, it is also critical that the application software be deployed, patched and managed in a globally consistent manner. Absent this global focus, there is a significant security and performance risk.

Planning and Implementation: Q&A

Q: How do I know if I can benefit from convergence?

A: The process starts with a thorough analysis of your network infrastructure, services and applications, including the potential for immediate converged services, as well as the technology required to support a transition to future services. Other considerations include a projected return-on-investment analysis, needs for redundancy and security and anticipated services to serve your customers’ evolving needs.

Q: What are the differences between network-based and premises-based solutions?

A: Network-based IP communications solutions provide a host of key benefits, including: lower costs, improved Quality of Service (QoS), scalability, higher availability and enhanced security.

Additionally, they shift the technology risk from the enterprise to the carrier, eliminating the challenges associated with deploying premises-based configurations. The service provider is responsible for ensuring seamless interoperability

Q: Do I need to change how my business operates?

A: You don’t have to, but you’ll want to. To take full advantage of convergence, you’ll want to fully take advantage of new customer services and business capabilities that the technology opens up. For instance, you’ll want to become more effective at integrating information among disparate customer channels, and your employees will need to be trained to exploit the new network effectively. Convergence helps deliver a consistent customer experience, but only if it is accompanied by business process changes. From the top of your business on down, you’ll need to come to terms with an environment where customers dictate when and how they interact with the company, rather than the other way around.

Case Study: Byram Healthcare Centers

Network-based IP call center solution cuts costs, while improving productivity and customer service.

Byram Healthcare, a leading provider of disposable medical supplies and services to the home, operates call centers and distribution centers around the country. It has grown over the years primarily through acquisitions, which resulted in an infrastructure that was a patchwork of technologies and networks. The company headquartered in Milford, Connecticut needed to be able to adapt to their continued growth and support a distributed call center environment and take advantage of the benefits IP provides, such as data and voice convergence on one network.

Because of its acquisition strategy, it had call centers throughout the country, but no effective way of tying them together or to its billing center. Without an easy way to route calls between them, some centers might be overloaded, while others had customer service representatives sitting idle. The company also did not have an efficient way of transferring customers from its call center to its billing center to resolve billing issues.

The company places a priority on efficiently routing calls between call centers and on cutting costs. It wanted to create an infrastructure to employ future technologies and take advantage of voice and data convergence.

Byram Healthcare turned to AT&T for a network-based IP VPN solution with Multi-Protocol Label Switching (MPLS) at its core. It has enabled the company to create a distributed call center, lay the foundations for an integrated voice response (IVR) system, and will cut costs through the use of VoIP and IPT, leading to a projected five-year net benefit of just over \$5 million.

Byram will now be able to easily route customer calls between locations from the busier centers to those without a backlog. This has improved the customer experience by decreasing waiting times and made more effective use of existing staff. The ability to re-route calls to different centers is particularly important in cases of crises and failovers. For example, when a hurricane struck the Tampa call center, Byram Healthcare shifted calls to other centers and was able to keep taking orders, without losing revenue.

Q: What's the biggest barrier I'll face during the transition?

A: The barriers vary according to the needs of your business. But costs will always be a concern, so you must be sure that convergence delivers a return on investment in real dollars. During the changeover, you'll also want to assure your ongoing communications and network security parameters are maintained. You can't afford

a major disruption of your business. Maybe the biggest barrier will be lack of in-house skill sets in the new technology. As an alternative to recruiting more specialists or retaining in-house teams, some companies find it easier to employ managed service providers to support their converged networks.

AT&T Portfolio Highlights

- Robust portfolio of network- and premises-based VoIP solutions
- Wide array of conferencing capabilities (Audio/Video/Web)
- Interoperability agreements with leading technology vendors
- Point-and-click network administration via the award winning AT&T BusinessDirect® web portal

The AT&T Difference

Performance

Industry-leading VoIP SLAs delivered over AT&T's global IP-MPLS backbone

Agility

On-demand flexibility for incorporating a rich array of communications applications into your business processes

Control

Intuitive and powerful portal for administrators and end-users

Security

Robust infrastructure ensuring the confidentiality, integrity and availability of IP communications

Conclusion

Convergence is proving its value every day. For many IT leaders, the question is not whether convergence is a sound investment, but where to start and how fast to proceed.

As you set directions for your organization, consider the four vectors of convergence. Think of them not as sequential steps, but as headings on a compass of opportunity.

This series of papers is written to help you with your convergence decisions, provide insight into the "how to" of convergence and examine the practical questions you will encounter as you build converged communications into your business operations.

We hope that these perspectives will help you guide your organization toward the opportunities of the future, as you seize the power of convergence.

References

1. "Competing through Convergence," AT&T survey and white paper in cooperation with the Economist Intelligence Unit, Page 1, ©2005 AT&T

For more information contact an AT&T Representative or visit www.att.com/convergence.

