Networking and Business Strategy

An AT&T survey and white paper in cooperation with the Economist Intelligence Unit
Executive summary

A majority of senior executives think that their existing IT networks are not well-equipped to meet the array of business challenges they face over the next two years. That’s one major conclusion of a new global survey conducted by the Economist Intelligence Unit for AT&T on networking and business strategy.

Hardly surprising, given the demands companies are making of their IT infrastructure. Our survey group places a premium on reliability, security and interoperability, at the same time as they want ever greater connectivity — the ability for partners, employees and customers to access and input data into the network at any time and from any location.

It’s a daunting agenda, and one that won’t be realised by patching together multiple and parallel networks. The ever-increasing cost and complexity of today’s typical corporate networks compel an examination of network design from the ground up. The good news is that the network of the future is already with us. It’s IP-based, it’s intelligent and secure, and it doesn’t cost the earth.

This is the first in a series of four thought-leadership articles written by AT&T in co-operation with the Economist Intelligence Unit on the future of networking. The Economist Intelligence Unit conducted the survey and held a series of interviews with analysts and executives. The next paper will look at the topic of remote working.

...the network of the future is already with us. It’s IP-based, it’s intelligent and secure, and it’s cost effective.
Business = Technology

Business processes and IT systems are mirror images – both reflect how a company really works. Since most major business decisions have an IT component, the corporate network is a crucial enabler of a company's strategic goals. This white paper examines how networking needs to change in order to fulfill that role successfully.

What then are the challenges that businesses, and by implication the network, face? In recent research conducted by the Economist Intelligence Unit in co-operation with AT&T and others, over 680 senior executives identified the main challenges and opportunities facing the corporate world in 2003. Respondents selected increased customer satisfaction as their company's leading strategic priority, followed closely by improved productivity and an increased focus on core competencies.

From serving customers more effectively to outsourcing non-core activities more easily, these strategic priorities depend heavily on technology to be effective. That conclusion is reinforced by follow-up research conducted for AT&T by the Economist Intelligence Unit for this paper. In a special survey of 237 senior executives worldwide on the future of corporate networking, respondents identified a series of key business goals that depend on technology. From customer information through financial reporting to supply-chain data, a common theme emerged – senior managers want an unimpeded flow of information inside and outside their business. In a word, they want connectivity.

Which of the following technology-related goals does your company have?

![Bar chart showing percentage of companies with specific technology-related goals]

Source: AT&T/Economist Intelligence Unit survey, March-April 2003

1 CEO Agenda 2003, an Economist Intelligence Unit white paper in co-operation with AT&T, Deloitte Touche Tohmatsu, Dimension Data, HP and Oracle
Ready for the future?

How does networking need to change to enable this goal? According to survey respondents, topping the list of challenges are the need to share information easily with partners and customers and the need to achieve efficiencies by integrating multiple systems and applications. But executives don’t want connectivity at any price. They also said that their networks needed to be able to ensure better reliability and availability levels. Asked to define the network performance attributes that are most important to their business, network availability and security came top.

What are the main challenges that your network will need to meet over the next two years in order to realise your company’s business objectives?

Put these demands together and a picture starts to emerge of the critical attributes of future business networking. They include:

- **Openness.** Open standards are crucial in a world in which businesses want to enable customers, employees and suppliers to connect quickly and seamlessly across different applications with their networks and with each other.

- **Security.** Security is vital to the frequency and success of these multiple interactions: Networks of the future will offer security without compromising application integration or user-friendliness.

- **Smartness.** Squaring the circle of more data, higher speed and greater reliability requires networks to identify and prioritise types of traffic and to reroute data automatically when faults occur. Smart networking delivers greater efficiency and better relationships with growing numbers of customers and business partners.

- **Efficiency.** Collapsing multiple networks into one more easily managed network to carry different types of data and voice significantly reduces integration costs and complexity.

- **Reliability.** Network outages were a nuisance 25 years ago; now they can be a business disaster. At the New York Stock Exchange, for instance, one second of trading interruption equals $500m of delayed transactions. The network of the future must be utterly stable and reliable.
Today’s networks fall well short of this blueprint. In the 1990s, hardware and software exploded across organisations, creating a rat’s nest of incompatible applications. According to a recent Forrester Research survey of large firms, the average company now spends $6.3m a year on integration of applications, and this figure is increasing as a percentage of IT budgets.

“Adding layers of applications to parallel and increasingly complex underlying networks that do not talk to each other has brought many corporate networks to the brink of collapse” says Lars Godell, a senior analyst at Forrester. For example, the move toward B2B commerce requires opening up the links between customers and suppliers, but traditional networks such as Frame Relay and ATM are designed for tight control and are rarely scalable. In an environment where more information needs to be shared with more people, the old architecture just does not make sense. According to Mr Godell, “while the business world becomes less centralised, legacy point-to-point networks essentially lag behind.”

Executives know it. Only 6% of the survey respondents thought their network is well-equipped for all of the business challenges they face over the next two years; fewer than half thought their network was primed to handle most of these challenges.

How well equipped is your network for the business challenges you face over the next two years?

Source: AT&T/Economist Intelligence Unit survey, March-April 2003

IP grows up

The message is clear. In a fast-moving business environment, networking also has to change and adapt. So too does the role of the CIO. “The CIO has become an essential lynchpin linking the business strategy of an organisation and the technical building blocks at its disposal,” says Chris Lewis, EMEA vice-president for the Yankee Group, an IT consulting company. “It isn’t the building blocks themselves, but how the CIO manipulates them to fit the company’s needs.”
According to Mr Lewis, the CIO must become central to redefining a business model, examining an acquisition, or transforming culture change within a company. Jaak Aendekerk, the CIO of Belgium’s Aviapartner group, which provides services such as passenger and baggage handling, ticketing, and aircraft servicing to over 200 airlines, agrees: “The real question for CIO’s is what do we want the company to look like in the future and how and which technologies will get us there.”

The answer to Mr Aendekerk’s last question is increasingly clear. The Internet Protocol (IP) is the method by which data is sent from one computer to another on the Internet. IP is a connectionless protocol, which means that there is no continuing connection between the end points that are communicating. It’s been clear for years that IP-based networks offered the benefits of cost, flexibility, and reliability. “IP Virtual Private Networks have scope and cost advantages over point-to-point data networks. They are more pervasive, distributed across many users and partners, redundant and are very difficult to bring down—particularly in terms of disasters,” says Glen Macdonald, vice-president of the consultancy Adventis.

But despite these clear advantages, many tech managers have been reluctant—or unable—to switch away from alternatives. They already have sunk costs in Frame or ATM networks, and they have critical applications working reliably over those systems. What’s more, many managers have had a nagging sense that IP wasn’t quite ready for prime time.

Thanks to two recent technology breakthroughs, however, IP has grown up. The introduction of MPLS, or Multi Protocol Label Switching, has at last given IP networks the ability to differentiate between different types of data. MPLS is a software enhancement, resident in network routers and switches, which marks
groups of data packets with “labels” that describe how they should be handled. Some, such as critical database updates, voice, or streams of live video, can be awarded a higher priority, while others, such as e-mail or routine backups, can be transmitted for lower cost on an as-available basis.

This seemingly innocuous improvement to IP – some five years in gestation – allows network providers to offer “class of service” prioritised performance and finally puts IP on an even footing with pure ATM networks, which have supported this kind of data prioritization for years. For Hossein Eslambolchi, AT&T CTO, CIO and President of AT&T Labs, MPLS is “a fundamental protocol that’s going to be used for the next ten to twenty years because it’s the first complete and stable convergence protocol for data, voice and video infrastructure.”

Meanwhile, another key technology breakthrough has gone much of the way to erasing nagging worries about IP’s security and robustness, especially for remote access. In an IP-based world, which allows any-point-to-any-point connectivity, security becomes a major concern. Denial of service attacks, hacking, and viruses are real threats. But with the introduction of Virtual Private Network (VPN) software, IP connections can now be made to resemble secure point-to-point links. Software on both ends of the connection encrypts packages and sends them, in effect, through a secure tunnel—even as they are, in fact, bouncing across the connectionless fabric of IP networks. Suddenly, with a dial-up or broadband connection, a remote office or individual teleworker can be a secure part of the extended enterprise.

The combination of MPLS and VPNs brings together the best of both worlds. Enjoying the manifest advantages of IP – its scalability, low cost, flexibility, and wide support—doesn’t require giving up the performance and security customers have come to expect from private, point-to-point connections on leased private lines. Growth in the technology is forecast to be striking (see chart).

**Total IPVPN Server Sites**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>362,862</td>
</tr>
<tr>
<td>2003</td>
<td>544,840</td>
</tr>
<tr>
<td>2004</td>
<td>793,479</td>
</tr>
<tr>
<td>2005</td>
<td>1,110,953</td>
</tr>
<tr>
<td>2006</td>
<td>1,468,867</td>
</tr>
<tr>
<td>2007</td>
<td>1,881,347</td>
</tr>
</tbody>
</table>

Source: Ovum
Not another big ticket IT Project

At this point, most CEOs are likely to be getting suspicious. Sure, they recognise that their network has to evolve and many are planning to invest money - 48% of respondents to the survey say they plan significant or very significant new investments in networking over the next two years. But burned by blue-sky promises during the heat of the tech boom, companies are adopting a more sceptical attitude towards the purported benefits and payback of new solutions, especially when they already have a network in place.

The solution lies in another breakthrough, not in technology but in the business model of networking service providers. IP-based systems are increasingly being offered under the umbrella of so-called “managed services,” which essentially means companies can outsource the running of their networks and let experts sweat about the details such as security, maintenance and monitoring. Instead of focusing on specific products, in other words, service providers are starting to focus on providing solutions that will have a measurable impact on ROI and productivity. According to Jeff Ace, AT&T’s EMEA vice president of business operations and business development, the mindset of telecom companies has to change. “We need to learn what drives a business,” he says. “It’s not the pipe that matters – it’s the continual provision of solutions, coupled with a strong trust in our reliability that will help us meet our customers’ goals.”

Why would anybody want to hand over something as vital and strategic as networking to an outsider? It comes down to a question of focus, skills, and resource allocation. Managed services providers can remove a significant cost burden and allow IT departments to focus on their core areas of expertise. “In tight economies,” says Mr. Macdonald of Adventis, “most enterprises will continue to move non-core activities to service providers and networks are a hot contender for outsourcing. It is just not a core competency for many firms.”

Outsourcing doesn’t only move salaries and equipment off the balance sheet. R&D costs are also transferred. That’s because a managed services model allows a company to leverage the ever increasing skills of a service provider. For Mr Aendeker of Aviapartner group, managed services are “just a logical reaction to the dilemma of reinventing, rediscovering and keeping pace with technology change.” For instance, when Aviapartner integrates a new airport or airline into their network, they can do so rapidly, and with the same full range of services they offer their established customers and sites.

Aviapartner’s decision to move to a managed service provider was based not just on costs, service level agreements and quality - Mr Aendeker was also looking at the evolution of their network. “When I signed a long-term contract, I did not buy one static long-term technology solution,” he says. “Since I want to maximise use of the network and stay on top of the technology, I am really buying the competency of a strategic partner, which means that I can have state-of-the-art technology when I need it. I am paying a provider to look into the future with me.”
Appendix: Survey results

237 executives worldwide participated in an online survey on networking and business strategy for this white paper. Our thanks are due to everyone who participated.

Respondent demographics

**Job Title**

![Job Title Pie Chart]

**Geographical Region**

![Geographical Region Pie Chart]
Industry

Annual Revenues (US$, 2001)
Survey Questions

Which of the following technology-related goals does your company have? Check as many as apply.

Detailed customer data are held, analysed and acted upon electronically: 64%
Products and services are delivered electronically: 49%
Partners and suppliers have access to real-time supply-chain data: 40%
Customers’ financial details are held online: 35%
Financial and operational data about the business are accessible online to managers in virtually real time: 58%

Need to send and receive multimedia content: 4%
Need to have integrated voice and data services for, ie, CRM or e-mail applications: 15%
Need to identify and prioritise transmission of different types of data traffic: 27%
Need to enable easy sharing of information with outside partners and customers: 44%
Need to achieve efficiencies by integrating multiple systems and applications: 44%
Need to ensure better reliability and availability levels: 38%
Need for greater speed in delivery of data: 34%
Need to cope with more points of access to the network globally: 43%
Need to handle greater volumes of data traffic: 43%

What are the main challenges that your network will need to meet over the next two years in order to realise your company's business objectives? Please check the top three challenges.

Need to cope with more points of access to the network globally: 34%
Need to handle greater volumes of data traffic: 43%
Need for greater speed in delivery of data: 38%
Need to ensure better reliability and availability levels: 43%
Need to enable easy sharing of information with outside partners and customers: 44%
Need to achieve efficiencies by integrating multiple systems and applications: 44%
Need to identify and prioritise transmission of different types of data traffic: 14%
Need to have integrated voice and data services for, ie, CRM or e-mail applications: 27%
Need to send and receive multimedia content: 15%
Other: 4%
How well equipped is your network for the business challenges you face over the next two years? Check the statement with which you most agree.

![Bar chart showing response ratios for network equipment](image)

What level of new investment in your network do you expect to make over the next two years?

![Pie chart showing response ratios for investment levels](image)
What type of applications are you running over your network? Choose all that apply.

- E-mail: 99%
- Videoconferencing: 29%
- Corporate intranet/extranet: 89%
- CRM: 41%
- ERP: 40%
- Web services: 76%
- Library systems/portals: 48%
- Don't know: 1%
- Other: 6%

What network performance attribute is most important to your business?

- Network availability/downtime: 35%
- Security: 29%
- Speed of Network: 12%
- Reliability of connections: 16%
- Scalability: 4%
- Capacity utilisation: 3%
- Other: 1%
To learn more about AT&T Services, contact your local AT&T representative, or visit our web site at www.att.com/emea