

# Précis

Thoughts on IT in Business



Networked Life

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# Networked Life

What happens when the network goes down? Does business come to a grinding halt? Or can you limp along for a while?

With the inexorable spread of connectivity and a growing dependence of business on online data and applications, we've come to operate in a networked world. Unified communications, virtualisation and cloud computing have all highlighted a dependence on connectivity and a shift to a world where networks form a "fourth utility". Life without the network has come to be slow, hampered and, for many, unacceptable.

In this issue of *Précis*, we explore aspects of this 'always on', networked environment. We look at applications of pervasive connectivity across industries, enabling the mobile worker, and addressing security and support needs. We feature the new Green Point Stadium – a networked facility built for the FIFA Soccer World Cup in 2010 – as well as an interview with Padmasree Warrior, CTO of Cisco Systems.

We conclude that networks are shaping how we work and live today. They're almost everywhere, and connecting almost everything.

Welcome to Networked Life.

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# Networked Life

## Living in a Networked World

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We are entering an age of intelligence and connectivity that is enabling improvements in everyday life that once may have seemed impossible. With technology advancing at a rapid rate, our world is becoming more of a global village through networking – and the reality of having access to services, from wherever we are, is set to continue.

Feature: Green Point Stadium

The vision of an intelligent stadium – that merges building management and IT systems across a common network infrastructure – is realised in Cape Town, South Africa. As South Africa gears up to host the 2010 FIFA World Cup, Cape Town's multi-purpose Green Point Stadium is rapidly nearing completion. Boasting a world-first roof design, the 15-floor high, 68,000-seater stadium is also the most intelligent building of its kind in Southern Africa.

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# Living in a networked world

We are entering an age of intelligence and connectivity that is enabling improvements in everyday life that once may have seemed impossible. With technology advancing at a rapid rate, our world is becoming more of a global village through networking – and the reality of having access to services, from wherever we are, is set to continue.

Networking is changing the way we work, live, play and learn. Today we find ourselves in an increasingly connected world where advances in technology are enabling more sophisticated devices and increased computing power. Faster broadband speeds mean more real-time communication from anywhere in the world across a huge variety of devices. This connectivity – the fact that we are ‘always on’ – enhances our ability to access the world around us ... and opens up exciting new opportunities across every facet of our lives.

Dimension Data’s chief technical officer for the Middle East and Africa, Mayan Mathen, says this ‘connected’ life

The fact that we are ‘always on’ enhances our ability to access to the world around us.

brings with it the convergence of consumer and corporate lifestyles. “Today we see these two very different worlds coming together on the same device. Mobile phones have become the platform to communicate, browse the web and access and share multimedia content dynamically. The quality of displays is rapidly improving and mass application and consumerisation means devices are becoming more affordable to a broader population.” Increased accessibility translates into more productivity and intelligent decision-making through real-time communications. For example, through presence technology, we can monitor the status and availability of people which in turn enables quicker decision-making and flexible working from just about anywhere in the world. Put simply, increased accessibility equates to increased efficiencies.

From a business perspective, the benefits of a more connected lifestyle include improved employee productivity, higher quality customer experience, increased agility and faster decision making through more flexible access to technology and increased computing power. Moreover, for organisations, improved networking can mean the automation of entire business processes, such as supply chain automation which manages invoicing and stock, thus minimising errors and enabling efficiencies and profitability gains.

## How we live

When it comes to everyday life, our networked world begins at home. IP networks are delivering a safer, more efficient existence to citizens around the world, offering them greater access to an increased choice of services and information. And, as people become more comfortable with online systems, they will come to expect more from governments in terms of service delivery. According to Mathen, this is why states and municipalities the world over are focusing their investment on converged communications infrastructures. "Governments across the globe are embarking on huge modernisation drives and countries are driving efficiencies across all shared services, concentrating on better information sharing to support improved service delivery for citizens. Municipal councils are upgrading their fibre networks to support next generation developments and cities are automating functions needed to support better service delivery. Through converging utilities using IP technology, the cost of service delivery is also being reduced, allowing for more development and ultimately an enhanced services catalogue."

Looking ahead, 'digital cities' are set to offer full telecommunications services and improved services to residents. Already, in many cities around the globe, CCTV networks have spawned significant improvements in safety and security. Wireless networks are delivering value-added services such as Internet access, VOIP and video, remote management, e-commerce and e-security to citizens.

Mathen explains that in emerging markets particularly, enhanced communications infrastructures are enabling new generation converged services. "In areas in the Middle East for example, residents are able to enjoy immediate services such as Internet access, television and other communication services, when moving into their homes. Through converged technologies, instead of waiting for multiple suppliers to install new services, they are delivered remotely at a lower cost, providing more convenience and a richer experience to the consumer." Elsewhere in more mature markets, where much of the infrastructure is already embedded, there is more competition amongst providers in the service delivery context, which is driving better access and lower cost for citizens.

The very buildings we live in are moving beyond physical bricks and mortar. Today we see the convergence of

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facilities and IT. Through a common management platform underpinned by an IP infrastructure, building systems are being networked into a single control interface. By integrating previously disparate building systems, these high performance structures deliver huge benefits to owners, property management companies and end-users alike. Access control is centrally managed and intruder and fire alarm systems, CCTV-based video surveillance and IP-based intercom and public address solutions allow for voice and video across the network. The central user interface is accessible through secure web browsers and enables control and security over buildings, staff and assets, either from one location or remotely. Operational efficiencies are achieved by reducing the complexity inherent in many, disparate building systems and by improving overall performance through real time information. And there are a host of 'green' benefits – increased efficiency means less energy waste and emissions thanks to proactive and automated management.

Transport infrastructures are also being revolutionised via the power of networking. Airports across the world are implementing multi-service networks to support operations, communications, security and maintenance. By future-proofing these new IT infrastructures, they are able to offer a range of additional services to airlines, travellers, freight forwarders and government agencies. Bus networks

# Green Point Stadium

As South Africa gears up to host the 2010 FIFA World Cup, Cape Town's multi-purpose Green Point Stadium is rapidly nearing completion. Boasting a world-first roof design, the 15-floor high, 68,000-seater stadium is also the most intelligent building of its kind in Southern Africa.

The intelligence of the Green Point Stadium centres on the convergence of all communications onto a single core infrastructure – that of the IP network. A common, structured communications infrastructure goes beyond catering for the traditional IT services of voice video and data ... instead, it links all the stadium's disparate building services to a single interface to create a central building management system (BMS). The BMS connects all the stadium's electronic functions and 'third-party' services via a single cabling backbone to a single human machine interface (HMI), which essentially acts as the building's 'brain'.

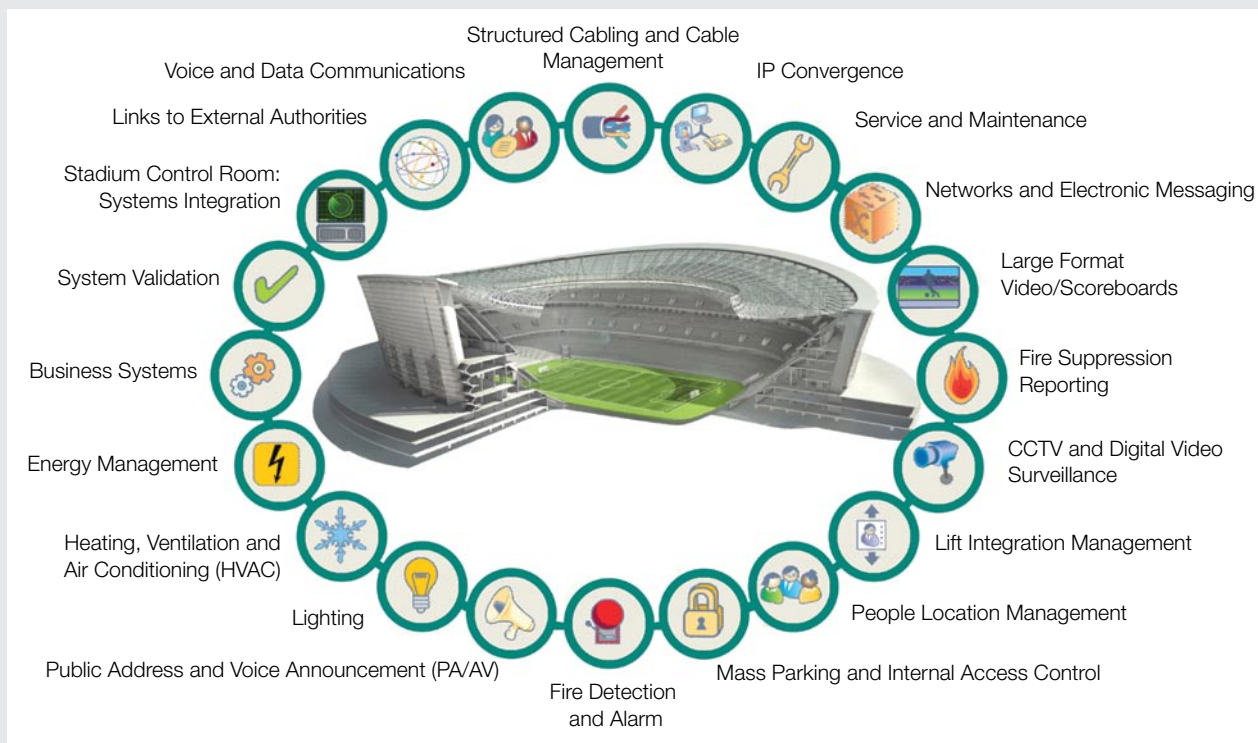
The stadium's 10 Gigabit Ethernet network (which features in excess of 600 kilometres of structured cabling) ensures all voice, data and television signals (a world first) can be

run over a single cabling backbone. By joining all stadium sub-systems and technologies onto a single IP platform, each system can be controlled remotely from a central point. This level of integration results in better intelligence through simpler facility operations.

"The scale of a FIFA World Cup event demands a venue that conforms to best practice standards and, in fact, FIFA's requirements are considered the most onerous of any sporting event. What's more, in 2007, the FIFA technical committee 'raised the bar' with respect to its ICT requirements to build on the experiences of 2006," explains Wolf Stinnes, Dimension Data's solutions architect on the Green Point Stadium project. "Dimension Data's track record as a leading integrator of advanced network infrastructures was a key driver in the company being awarded the contract to build the entire IT infrastructure for the stadium."

## The beauty's in the brain

To host major events of this kind, event management teams need to be able to make informed decisions with



**Figure 1: The Green Point Stadium represents the first fully integrated system of its kind in Southern Africa.**

all the information they need at their fingertips, supported by automated controls. The beauty of such an intelligent stadium lies in its single interface giving event managers control over the entire environment. Acting as a window to the building management system, the Green Point Stadium's HMI 'brain' is a single portal that provides central control to all third-party services such as heating, ventilation and air conditioning, plumbing and drainage, irrigation, fire protection (sprinklers), lighting control and lifts.

In addition to controlling all audio visual installations (such as digital screens, displays, speakers etc.) and telephone and data networks, the HMI also links to a number of electronic services such as:

- Access control – including mass access (turnstiles), parking areas, back-of-house areas and VIP and hospitality suites;
- CCTV – including all internal cameras and outside perimeter cameras (combining static, dome and thermal imaging cameras). All CCTV footage is encoded and streamed over the cabling network to distributed network storage devices;
- Fire detection and automatic voice alarm functions which include automated evacuation procedures.

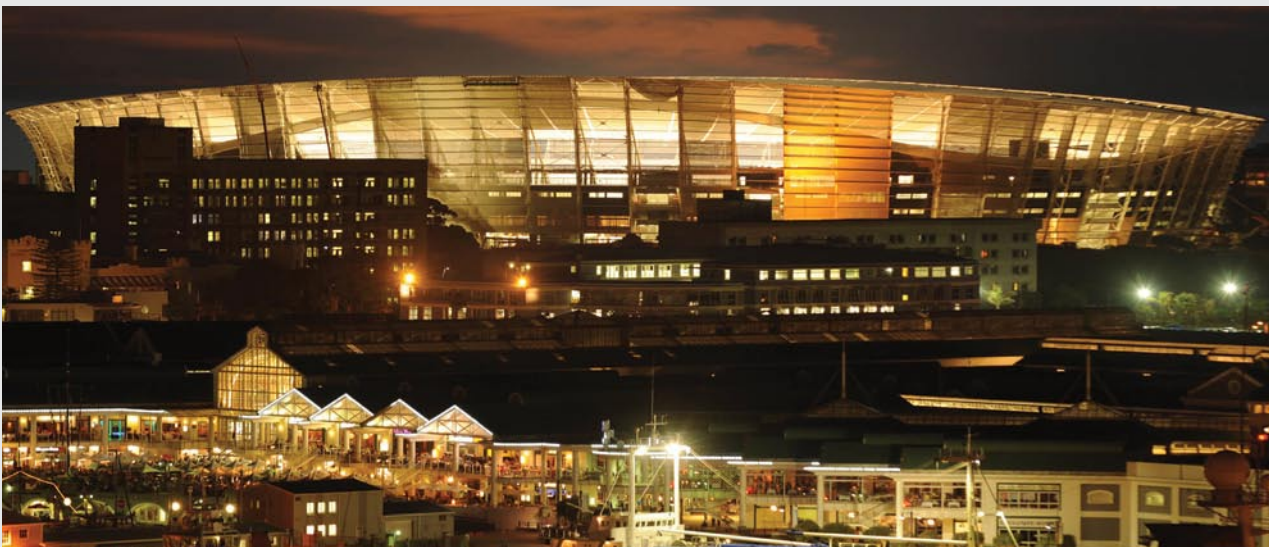
From the moment they set foot in the stadium to the time they leave, the safety of fans is a top priority. And once they have taken their seats, fans' enjoyment of the event

becomes equally important ... and is achieved via quality entertainment and announcements, effective signage and context-aware content. "Today's global sports fans expect access to real time information and a rich multimedia experience. This means flooding the stadium area in WiFi, displaying a range of digital signage, delivering context messaging to fans' mobile devices, offering information on refreshments and where to buy team memorabilia and enabling fans to follow the game from wherever they are," explains Stinnes.

### 2010 and beyond

Throughout the Green Point Stadium project, there has been an awareness of its future beyond the FIFA World Cup. Situated near the ocean with a panoramic view of the mountains of Cape Town, this multi-purpose venue will also be used to stage major events and concerts for many years to come.

From its high quality cabling to its spectacular roof, the Green Point Stadium has raised the bar in terms of the design for event venues of the future. With all eyes on South Africa in 2010, Green Point Stadium has immersed itself into a global networked world and promises a spectacular experience for every fan of this spectacular world sporting event.



are supporting increased productivity for commuters by providing them with convenient and instant access to WiFi networks while travelling, thus reducing traffic on the roads at the same time. Subway networks are also using wireless systems to support better customer service. Through handheld devices, commuters are given instant access to up-to-the-minute timetables and are able to issue instant security alerts, wherever they are.

### A way of life

Education has also seen incredible benefits through improved networking. Bridging the ubiquitous problem of insufficient teaching staff, Mathen explains, IT is helping tertiary and secondary education through mobile teaching and learning. “Online distance learning now offers access to education to people in far-flung areas, where previously there were simply no opportunities. Paper-based learning is shifting to online learning and net books are becoming commonplace.” Collaboration between academic specialists is being supported through network technologies, transcending time zones and geographical boundaries.

And the same applies to healthcare across the world. Today, we already see video collaboration in the surgical environment, with specialist surgeons offering real-time guidance in operating rooms. Telemedicine is supporting remote diagnostics in rural areas where there are shortages of specialist staff. In this dynamic environment, physicians are using mobile phones to take pictures of specific disorders and sending them to clinical specialists and pathologists for diagnosis.

Converged health networks are supporting single portable communications devices for clinical staff, e-health services, virtual consultations and emergency room consultations using IP video conferencing. Better networking has also enabled centralised patient information archives which can be accessed real-time and assist with improved diagnostics. “In parts of the world where there are not enough doctors and hospital beds, networking is freeing up critical resources through tracking and monitoring systems”, adds Mathen. “These solutions enable cardiac patients, for example, to go home and be continuously monitored remotely. Healthcare devices send real time monitoring data to health care staff in hospitals and alert them to any anomalies or irregularities immediately.”

Even the concept of entertainment and hospitality is undergoing a metamorphosis, thanks to the power of technology. For example, today’s stadia leverage standard IT networking components to enhance the guest experience through video on demand, integrated high quality video and telephony and improved mobility, tracking and loyalty services. At sporting events (see the special feature on Green Point Stadium on the previous two pages) fans now have a broader range of services available to them – they can watch the main event and access real-time content, such as game replays, on their mobile devices. With the emphasis on creating a holistic ‘event experience’, fans can access information throughout the stadium including details on where to buy supporter memorabilia, where and what refreshments are available and information on post-match events. From a safety point of view, digital signage provides clear guides to emergency exits and fans can rest assured that their safety and security is intelligently managed through effective access control, CCTV monitoring and automated detection and evacuation systems.

Whichever way you turn, networking is driving change across business and society. Process and capacity utilisation is improving and converged networks are delivering improved services to people all over the world. Looking beyond the traditional view of IT, we are entering an age of intelligence – the more connected we are and become, the more access to real-time information we will need. With resources under pressure from an expanding world population, a networked world promises more efficient use of those resources. Exciting times lie ahead and as we enter the next information rich decade, our online, networked life will see the world evolve in ways only thought possible in science-fiction visions of the future.

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# Connecting the mobile workforce

Tactics for achieving a quality user experience and ensuring business continuity ... across internal networks and beyond

Today's employees are more mobile than ever before. They're spending more time away from their desks to collaborate with stakeholders and be closer to their customers. And as more people work remotely, organisations are faced with the mammoth challenge of supporting mobile access to company resources and real-time communication while maintaining security and a good quality user experience.

According to a recent IDC report<sup>1</sup>, the worldwide mobile worker population is set to increase to 1 billion in 2011, accounting for 30.4% of the total workforce. These mobile workers operate across multiple industries and could be working from home, on the road, from customer premises or out at meetings. The concept of mobility has moved away from being a 'nice-to-have' to an essential tool in today's competitive business environment. Flexible working requires real-time networking and failure is simply not an option when sales may depend on it. To access the benefits of improved productivity, real-time communications and delivery of better

customer service, businesses have to keep their people, data and devices connected all the time.

IT departments are already managing a host of new services, protocols and a proliferation of devices across the business. If that wasn't enough, they now face the task of ensuring a good quality user experience across internal networks and beyond. As more people require remote access, IT operations have had to build bespoke tools to enable different groups to access company networks. Tele-workers, remote executives and mobile salespeople all have different access needs and there have been numerous issues around how these different customised tools work together.

Dimension Data's global business development manager for unified communications, Gavin Hill, says: "Delayed communications reduce productivity and impact the bottom line. This is why mobility needs to be seen as an integral part of an organisation's technology infrastructure

<sup>1</sup> IDC Worldwide Mobile Worker Population 2007-2011 Forecast, 2008

and processes. However, enabling a mobile workforce is no mean feat. Deployment of solutions can disrupt existing IT infrastructures, devices and applications may be incompatible, employees may not know how to use their new tools and security of mobile devices and data may be a major issue.”

Hill points out that an organisation’s mobile IT infrastructure should be carefully planned to manage potential issues around identification (of devices in a global context), transport (tracking and routing of IT services to mobile devices) and security (ensuring the safe and secure delivery of IT services to devices).

Access strategies need to be worked out thoroughly and IT teams should make a conscious decision to look at remote access within and beyond the organisation and not simply react to each request. There is no ‘one size fits all’ solution and this means looking at all the different groups of people, devices and ways of working.

And what about the host of networking issues that can arise beyond the corporate network? According to Hill, as mobile workers use different networks, they will come across different quality experiences. “While you can control the quality of applications and performance on your company network, the picture is quite different when you step out beyond it. On public networks, be it the internet, WiFi or 3G, organisations have no control over the shape, quality and priority given to network traffic and this presents challenges to providing a good quality user experience.”

Although users may be prepared to sacrifice some quality for convenience, Hill advises taking a holistic approach to quality across different networks. “Organisations should aim to use the appropriate tools to control what they can within their own networks and give their traffic the best chance across other networks, using adaptive codecs<sup>2</sup> and other available tools.”

Let’s take a closer look at the tactics and technologies available to help ensure a mobile workforce is enabled – across internal networks and beyond:

### Control what you can

Once you have assessed who the mobile workers are, what they are accessing on the network, what devices they are using and where they are connecting from, Hill explains you can look at ways of controlling performance and security. This may include securing remote access using virtual private networks or locking down devices through strong user authentication, encryption of data on devices and authentication before connecting to the network.

Desktop virtualisation is helping IT teams by creating secure corporate ‘worlds’ for people who are accessing company networks remotely. In the context of a consultant who may be working for an organisation on a project, it allows for easy toggling between their own desktop and that of the organisation’s on their own laptop. By ‘cocooning’ the business desktop (applications, files and data) from the physical machine, system administrators can securely host these virtual desktops while giving users a full PC desktop experience.

Forward-thinking organisations are increasingly recognising that moving to a unified communications (UC) infrastructure can go a long way to enabling mobile workers to communicate more easily and effectively while also allowing the business to achieve significant cost savings. Through a mix of voice, video, texting, instant messaging (IM), data and application sharing, UC can also enhance communication by choosing the right device for the job – be it phone, video or PC. But take heed: UC success lies in the planning. “Poorly planned and deployed UC infrastructure can expose the enterprise to a host of security threats and deliver lacklustre quality of service,” cautions Hill.

Whatever the choice of solution, an infrastructure and risk assessment should be done as a matter of course to determine if the existing infrastructure, first, has the capacity to support mobile technologies and, second, is resilient enough to avoid leaving the company network exposed. Such an assessment should include taking an inventory of current equipment and networks, looking at traffic patterns on the existing infrastructure and considering policies and

<sup>2</sup> A codec is a device or computer program capable of encoding and / or decoding a digital data stream or signal. Codecs can adapt to changing network conditions and manage the output of voice, and video.

Beyond the confines of their own networks, companies need to overcome inconsistencies in quality over uncontrollable networks.

procedures. Once you have established that your network environment is ready to incorporate mobile technologies, the next step is to put in place a comprehensive plan that covers migration from your existing infrastructure, integration with other systems in the back office and the provision of ongoing support.

“Careful planning is critical to the success of controlling network performance and security from beginning to end,” notes Hill. “A thorough assessment of risk and the overall infrastructure and its traffic should be coupled with a clear training plan and good support for end-users. Bear in mind that establishing upfront exactly who uses which technology in your organisation and applying a strong focus on training and change management will go a long way to improving acceptance rates. Last but not least, don’t forget security, which should be incorporated in your plan from the start and involve a multi-layered approach.”

### Manage what you can’t

Once organisations find themselves in the realm of the public network, managing security performance and overall quality of experience becomes a lot more difficult. Hill explains that in the context of an IP network, privacy is a big issue. “IP networks operate on well-documented open standards and, consequently, the risk of eavesdropping, denial of service and theft of service attacks are very high. For this reason, it’s imperative that businesses ensure their network, devices and applications are encrypted.”

Beyond the confines of their own networks, companies need to overcome inconsistencies in quality over uncontrollable

networks. “People are far more forgiving of consistently poor quality than inconsistent, patchy quality. An appropriate codec can go a long way to achieving a more consistent quality of experience by adapting to changing network conditions and managing the output of voice and video.” One example could be in a video conference where more focus is placed on the foreground and less on the background or by boosting the audio and reducing the frame rate of the video.

Managing unexpected events forms part of this planning approach. Every day, companies could be faced with a number of planned or unexpected events that could interrupt business life. Organisations must, as part of their disaster recovery strategy, be able to operate through remote access despite planned events such as global economic conferences, sports events and visits by heads of states as well as the unexpected fires, floods or even terrorist attacks.

Businesses should ask themselves whether they will be able to continue to work or be rendered paralysed by such events. This translates into working out how to support remote access by all staff and being able to deal with them all dialling in at the same time. From an environmental perspective, it’s worth ensuring you have the systems and full support for workers who may be accessing the network at any time because of flexible working.

### And the future

Hill predicts a future where Internet-type networks will begin to offer better classes of service to their users. “Through superior connectivity which will include higher priority for real time communication and better quality, network operators will be able to offer a broader portfolio of services to their users at a fee.”

The lines between corporate and public networks are already blurring and companies are under more pressure than ever before to effectively enable a mobile workforce. To reap the benefits of greater productivity and access to highly skilled remote workers, business and IT decision makers need to adopt a proactive and structured approach to extending their resources, data and connectivity to people, wherever they are.

# The future of work, the future of connected life



*Précis* recently spoke to Padmasree Warrior, CTO at Cisco Systems about her perspectives and views on what it means to be living and working in today's "networked world".

Increasingly, the distinctions between our business lives and personal lives are not only blurring, but in some cases rapidly disappearing altogether.

**To kick off, tell us a bit more about your role at Cisco.**

As the Chief Technology Officer, I spend a great deal of my time externally, meeting customers and partners. Internally, I work very closely with our Sales team, Development Council, CIO and Advanced Services organisations. Together, we identify the early signs of market transitions. Based on these precursors, we build a vision and develop differentiated strategies to focus on execution.

**Considering that the past 30 years of the IT industry have been built on the premise that most successful suppliers specialise in either business or consumer markets, does the blurring of the line between business and personal life present a profound challenge to most of today's IT leaders?**

Increasingly, the distinctions between our business lives and personal lives are not only blurring, but in some cases rapidly disappearing altogether. We are at the intersection

of two major market transitions, the Future of Work and the Future of Connected Life.

While at work, we want access to all our personal information – email, voice, text messages, social networking, etc. While at home or on the go, we expect full access to our secure, enterprise applications and data. Why? Because in many respects, we no longer go to work, we simply do work.

This has fundamental ramifications for the network in terms of security, authentication, policy, management, etc. Whereas in the past IT leaders had full control of their networks and their data, now they must contend with enterprise data being diverted off the enterprise network to personal devices, and unknown personal devices and unsecured content being brought onto the enterprise network for both business and private use. Without a doubt, IT leaders need to think differently and build borderless networks in this new era.

**Increased accessibility translates into more productivity and faster decision-making through real-time communications. Put simply, increased accessibility = increased efficiencies. Would you say that this is a fair statement?**

Absolutely. Enterprise collaboration platforms facilitate interactions and foster teamwork by making interactions effortless and timely. It's an online community where communication is instant and responses are generally highly relevant as contributors self-select and provide information in areas in which they are subject matter experts. Presence information encourages the right form of communication. In other words: online community = collaboration.

Social networking solutions such as Twitter give me the opportunity to reach far more people than I would normally – both inside and outside of Cisco. Twitter enables me to work directly with a global community in a way that is real-time, collaborative and fun! I'm often asked what I get in return and my response is that I feel my work is more informed and richer as a result of the collective contributions of my online community. Ideas get stronger when they are shared. The quality and speed of decision-making improves dramatically when people with diverse view points and expertise come together rapidly with shared goals.

The interconnected business and technology architectures become the enablers of innovation in all its forms – people, process, technology – new business models, new management models and new customer engagement models.

**How would you describe the interplay of “networked” business models and “networked” IT infrastructure? How do you see this changing over time?**

A technology architecture alone is no longer sufficient. In order for companies to be agile and stay ahead of the competition, they really need to have technology architectures which are tightly coupled with the business architectures. The two must be completely aligned with the company's long term strategy and goals. If so, the interconnected business and technology architectures become the enablers of innovation in all its forms – people, process, technology – new business models, new management models and new customer engagement models.

**What strategies and technologies can organisations adopt to ensure that their mobile and dispersed workforce communicate and collaborate more easily and productively without incurring vast expenses? What about potential technology-specific challenges?**

It all comes down to culture and process. First and foremost, your workforce must voluntarily embrace a culture of frugality. Once that is ingrained into a company's DNA, it naturally lends itself to processes that encourage and facilitate appropriate action.

The mobile Internet is expected to outstrip the Internet in virtually every way – scope, scale, and adoption. In fact, the concept of “mobile Internet” will be redundant. In the same way that we don't say “mobile email” any more – it's just email – whether we access it while we are mobile or not. Internet access will be pervasive. The mobile Internet will eliminate time, geography and distance so that a mobile and dispersed workforce can collaborate together as one.

**Can you provide some specific examples of how Cisco is embracing and embedding concept of “networked life” in your own business environment? What kinds of initiatives are you putting in place?**

We showcase our own technology by utilising, then sharing, our best practices. We call it Cisco on Cisco.

A few examples include the adoption of a comprehensive, enterprise collaboration platform called Integrated Workforce Experience (IWE); WebEx capability on the iPhone and the Linksys Media Hub. Additionally, we make our Cisco Virtual Office (CVO) available to employees. This replicates a virtual office capable of handling data, voice, and video in a soho router configuration.

**What would your advice be to CIOs who are looking to bring the benefits of “networked life” to bear on both their businesses and employees, through the use of IT?**

The intersection of two major market transitions that I mentioned earlier – the Future of Work and the Future of Connected Life – is happening today and will only gain momentum. Our work lives and our personal lives continue to converge. More and more we expect to have all of our

applications and data – regardless if it's business or personal – at our fingertips, regardless if we're at work, at home or on the go. Building a borderless network infrastructure is an investment in your company and employees which will go a long way in facilitating collaboration, increasing productivity and ultimately reducing costs.

**On a personal level, how do you cope with the ever-increasing demands – as a key IT decision-maker – to remain in control and on top of things in a world where the pace of business is always on the upward curve?**

The key is to surround yourself with smart people. With a good team, every day is an adventure filled with possibilities and opportunities for everyone to make a meaningful contribution.

Speaking from nearly 25 years of experience in the technology industry, here are my observations on leadership:

- 1: The best way to earn recognition is to give it away
- 2: Opportunity is a mould waiting to be reshaped
- 3: Leaders blur boundaries

The mobile Internet is expected to outstrip the Internet in virtually every way – scope, scale, and adoption.

# Securing the borderless enterprise

## New business demands require a strategic and structured approach to security

Gone are the days when company networks had clear borders and users were either 'in' or 'out'. To compete in today's dispersed and multinational economic environment, organisations are changing the way they do business by extending access to their networks to mobile workforces, partners and consultants, wherever they are. But what are the security implications of this increased integration and access?

Businesses can no longer afford to simply refuse access to internal networks from beyond company premises. However, providing this increased integration and access to company data and resources can leave enterprise networks open to significant security risks and threats on a daily basis. The knock-on effect of extending the internal network to trusted partners and remote workers translates into increased risk from hackers, cyberthieves, disgruntled employees and others who might misuse network resources.

Organisations need to manage different access levels and what was once the outer perimeter of the network is now only one layer in a multi-layered security approach. Today's CIO faces the unenviable task of controlling a host of audiences, devices and applications being used both within the network and beyond. This new landscape calls for a strategic and structured approach to the management of inbound and outbound traffic to minimise enterprise risk.



### The change constant

Added to this, are the dual drivers of consumerisation and socialisation of IT. Organisations are dealing with a new generation of IT users who are driving change from within the workplace. These consumers are adopting and using new technologies at a rapid rate and expecting to use them in their corporate networks. Leading industry analysts and research suggest that more than half of all network traffic is not business related and most companies have very little visibility of this<sup>1</sup>.

Social networking is being used by half of all IT users, while one fifth say they use it for work purposes<sup>1</sup>. Social networking sites such as Facebook, LinkedIn, YouTube, My Space etc. are now commonly being accessed from the workplace for personal and business use. Companies are posting corporate videos on YouTube and managing their own Facebook sites. These graphic-intensive sites consume large amounts of

<sup>1</sup> Dimension Data's Network Performance Frustration Report 2008

bandwidth and with video streaming traffic on the rise, the result is a huge impact on network performance and the generation of rogue traffic.

With end-users demanding access to information from anywhere, on any device and at any time, organisations find themselves having to manage different user groups, access needs and a proliferation of devices in the workplace such as Apple iPhones, Blackberries, memory sticks, to name a few. Indeed, companies are recognising that facilitating access to and use of such devices and technologies can open doors to gains in terms of productivity and competitiveness ... and that if it's done right, everybody is a winner.

Dimension Data's global general manager for security solutions, Neil Campbell, believes the mobile revolution is well and truly upon us and companies should take a proactive stance to network access. "Organisations can no longer simply ignore new business models and technology and refuse to offer extended access to employees. The result might be that individuals try to circumvent the controls and cause more security issues. Instead, companies should think intelligently about how to control personal and corporate issued devices through effective policies and tighter integration between internal departments such as human resources and IT to enforce them."

Campbell suggests that organisations draw up agreements that allow employees to use their personal devices, but give the company control over the identity and security of those devices to ensure they are not a threat to the corporate network. "Quite simply, employees don't always think about security when they are out of the office environment. To manage this, businesses have to actively deploy prevention strategies and security policies and, most importantly, communicate them to their staff." These efforts should not be limited to internal users only, consideration should also be given to establishing security agreements and service level agreements between the organisation's business-to-business (B2B) partners too.

### **Tackle security head on**

While end users are changing their behaviour, business models have not remained static. At the same time, the threat landscape continues to evolve and is becoming more

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challenging. This combination of pressures is what makes IT security extremely tricky.

The central challenge for organisations is how to remain light on their feet in addressing new threats and old risks, while managing other compliance requirements and regulations. Targeted attacks include unwelcome access by imposters to company networks, manipulation of devices, 'man-in-the middle' and denial of service attacks and flooding the network with illegitimate requests, with the intent to disrupt services. While businesses have to be prepared to deal with such attacks, the greatest risks are unintentional mistakes made by employees.

Dimension Data's national practice director for security in the Americas, John Addeo, advises getting the security fundamentals right. "Companies should look at the purpose of IT security and how it is protecting information through processes, people and technology and how they are protecting the assets and information they store. Above all, consider security across the whole network architecture and never put security measures in place as an afterthought. It should be simple to administer, transparent to the user, standards-based and consistent from end-to-end."

Campbell agrees and advises a layered approach to security: "An enterprise network should be segmented for security

and efficiency, with controls between different segments. As well as protecting the core network layer, security should cover communications, the outer perimeter and extend to each end-point or device connecting to the network.”

Managing a variety of users will involve classifying users into groups based on their access rights, their connection type, role in the organisation and the security level of their device. In the case of mobile workers, this may include enforcing encryption of data on devices, quarantining devices that are not on the latest patch levels and requiring strong authentication before connecting to the network.

Given the increase in wireless access ports to support mobility, adds Addeo, the risk of serious security breaches is growing. “To limit exposure, organisations should stay up to date with the complex and emerging world of security standards and ensure they continually review controls. As a basic measure, wireless ports should be segmented in the broader context of the network design architecture.”

Staying up to date with current security standards means being proactive about new developments in encryption, network authentication, network access control and device-based security. To determine the appropriate technologies, it’s a good idea to take a step-by-step approach to each different aspect of your architecture:

- Step 1: Protect your internal network infrastructure through segregation, network access control and intrusion detection and prevention.
- Step 2: Protect client devices and servers through limiting ports, implementing anti-virus protection and thorough authentication procedures and processes.
- Step 3: Protect the integrity of sensitive multimedia traffic, such as voice over IP calls and video conferencing, through encryption.
- Step 4: Secure remote access by mobile workers through virtual private networks.
- Step 5: Protect network management systems through authentication, logging and encryption.

Addeo suggests looking at each of the ‘big five’ security technologies: firewalls, system security, intrusion prevention, web content security and email content security. “Many organisations are tackling threats reactively, on an ad-hoc basis, without putting some basic security controls in place. In our experience, it really doesn’t matter how sophisticated point solutions are. If companies haven’t implemented these five major categories of security control then they’re focusing on 20% of the risk, but leaving themselves exposed to the other 80%. Superficially, each of these security solutions looks both obvious and simplistic. However, taken together, they form a solid security foundation. Furthermore, each one is a mature security control and, when integrated, they provide a mature security position.”

Campbell goes on to advise that organisations view network security within the context of an overall risk management programme. “Understand the different levels of risk – where you are exposed and how this adds to your overall risk. Without taking a more strategic view to security, you may end up putting expensive half measures in place that don’t do what’s required.”

The fact remains that at some point in time, every organisation will face some sort of failure in its security and an incident will occur. Addeo adds that IT risk is just one of many business risks. “IT risk management should take a standard risk management approach and incorporate good understanding and planning, following the international security framework as laid out in SO27001 and IS27002 security controls.”

### **Secure your future**

Organisations need to proactively manage the risks associated with staying competitive in the marketplace and many choose to enlist the expertise of a third-party such as Dimension Data to tackle specific security challenges.

Getting the security fundamentals right at the beginning and getting commitment from key stakeholders in the organisation will mean you are future-proofed and ready to cope with the increasing demands on the network. By widening access to company information and resources, businesses will benefit from improved productivity and more efficient business processes and ultimately secure their place in an already fiercely competitive marketplace.

It appeals to reason that anywhere, anytime access and information transfer between a business and its resources – be they staff, clients or key business applications – will facilitate productivity, efficiency and service.

# The Mobility Matrix

## Building an enterprise mobility profile and path for your organisation

Mobility is as much a prerequisite for the 21st century business as it is for the 21st century way of life. While its benefits seem obvious — the challenge, very often, is how to introduce mobility into your enterprise.

With increasing numbers of employees either working off-site or collaborating with others who work at a distance, it's not surprising that organisations are actively searching for new ways to enable employees become more productive while away from the office. Alongside this, finding ways to automate or speed up business processes are always welcome differentiators for businesses that need to reduce costs and improve their agility.

This is where enterprise mobility comes into play. The benefits of mobility technologies are well documented and regularly expounded. It appeals to reason that anywhere, anytime access and information transfer between a business and its resources – be they staff, clients or key business applications – will facilitate productivity, efficiency and service.

### **It makes commercial sense**

Pervasive mobility reflects a shift in consumer and social behaviour. Businesses that ignore the opportunities to leverage mobility are missing an opportunity to come up with creative new ways of doing business that could radically shift their cost and value base. A more permanent setback will occur when they inevitably find themselves outpaced by competitors who are leveraging mobility to the benefit of their business. Not only will they lose the opportunity to attract skilled employees and meet the needs of a now mobile customer base, they may even find it impossible to operate productively if their employees are tied to 'fixed' connectivity with data and applications.

The vast majority of organisations are already aware of the business benefits that mobility affords, and have consequently made some investments into it. However, as with all technology investments, it is crucial to have a clear vision of where the technology can take your business. If investments are made in an ad-hoc or reactive fashion, the likelihood is that these investments will become redundant further down the line. In the public sector particularly, it's an imperative and fiduciary responsibility to make the best use of funds and deliver the most return for stakeholders and citizens. Thus, if the intention is to embark on mobility initiatives, it makes commercial sense to have a plan and a sense of direction. Furthermore, when viewed in isolation, mobility technologies are very much 'point solutions' and will not realise their full business benefits. Organisations that opt for trying out a number of isolated solutions, with no plan of how or where to integrate them, will find themselves constrained further down the line when they need to roll out something more extensive.

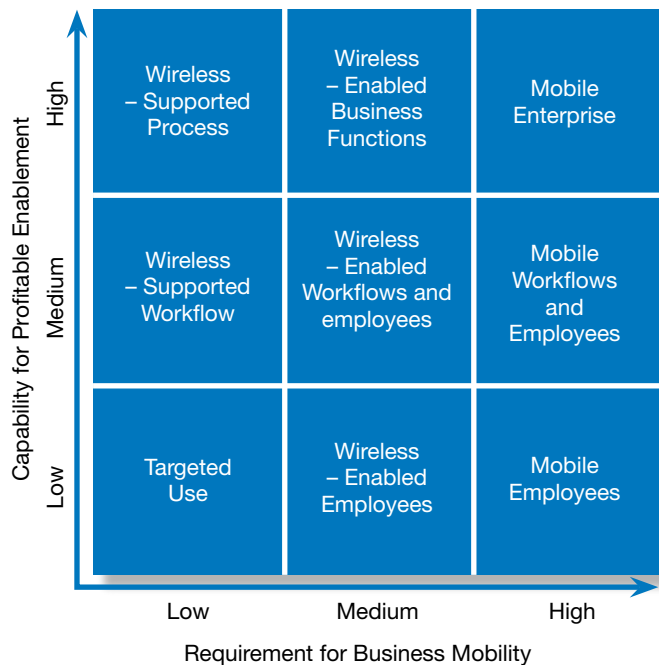
The crux of the matter is that mobility technologies have matured and reached business applicability; organisations can now enjoy real business improvement and process innovation from mobility applications. Businesses must ask themselves whether they want the way their operations change to be purely technically driven and to occur while they're looking the other way, or whether they want to adopt a more directed, controlled approach. If it's the latter, it's essential that they identify where they, and their competitors, are positioned on the Organisational Wireless and Mobility Matrix.

### The Organisational Wireless and Mobility Matrix

To maintain a competitive advantage, organisations need to consider how mobility can add value to their business, both today and in the future. With this in mind, the Organisational Wireless and Mobility Matrix gives organisations a starting point from which to initiate the discussion on where they are now, where they need to be, and where they want to be, on a mobility roadmap. The horizontal axis of the Mobility Matrix illustrates the degree to which an organisation needs to support mobile users, while the vertical axis plots the capacity for process enablement, or process reengineering, that business mobility could enable.

The case has already been made for the productivity and efficacy boons that supporting a mobile workforce can realise, but how can wireless technology enable organisations to improve and re-engineer their operational processes?

Business process reengineering (BPR) is about organisations re-thinking – from end-to-end – how they could amend or change processes in order to dramatically improve customer



**Figure 1: The Organisational Wireless and Mobility Matrix helps map current mobility requirements and demonstrate the paths to new levels of enterprise mobility.**

To maintain a competitive advantage, organisations need to consider how mobility can add value to their business, both today and in the future.

service, cut operational costs and accentuate competitive advantage. Fundamental to successful BPR is shifting business from being functionally organised, i.e. looking at individual business silos and their individual functions, to being organised against an end-to-end process. This is where the wireless component of enterprise mobility has the ability to make a real difference; by analysing how wireless infrastructure and mobility applications can automate tasks and take responsibility for various processes, organisations can redistribute skill where it is most needed, improve the machinations of the business and streamline processes. It provides an opportunity that goes beyond incremental productivity gains by notably sharpening a competitive edge.

### Where is your business on the Mobility Matrix?

The questions in the tables on the right have been specifically designed to help organisations locate their position on the mobility matrix by determining their requirement to (1) support a mobile workforce and (2) enable business processes with mobility.

### Moving ahead

Organisations that fetter their communication capabilities with cable and wire are literally restricting the potential of their business. Pervasive connectivity is no longer the future, it's the present. Organisations now need to look at how they can harness wireless and mobility technologies to enhance and improve the processes on which their business relies – or else find themselves trailing their competition. Plotting where your organisation presently falls in the Organisational Wireless and Mobility Matrix is an essential starting point for a dialogue on the direction that enterprise mobility will take your business. Without such a dialogue, the danger is that your business will not be going anywhere at all.

Mobility is as much a prerequisite for the 21st century business as it is for the 21st century way of life.

### How to determine your requirement to support a mobile workforce:

	Low	High
What proportion of your workforce is mobile: – Now? – In three years?	< 10%	> 70%
How quickly should your employees be able respond to customer and business imperatives: – Now? – In three years?	Within 48 hours	Within 2 hours
How dependent is employee/user decision-making and task execution on access to central applications and data: – Now? – In three years?	For less than 10% of decisions and tasks	For more than 70% of decisions and tasks
How important is it that you are able to communicate with employees immediately? – Now? – In three years?	Not a key requirement for running the business	Critical to running the business

### How to determine your requirement to enable business processes with mobility:

	Low	High
To what degree is your means of production (i.e. production lines) fixed: – Now? – In three years?	More than 70% of work needs to take place in a fixed location	Less than 10% of work needs to take place in a fixed location
What is your requirement to support dynamic moves, adds and changes in your workforce? – Now? – In three years?	Not much, employee base is relatively static	Significant, employee base is dynamic
How dependent is the organisation's fulfilment on mobile access to applications and data (such as product inventory)? – Now? – In three years?	< 10% of workflows have this dependency	> 70% of workflows have this requirement
How important is it that you are able to locate movable assets immediately? – Now? – In three years?	Not a key requirement for running the business	Critical to running the business

# Your network: proactive enabler or passive resource?



As business dependence on IT infrastructure increases, organisations become more consumer-centric and operations switch to 24x7 mode, effective network management demands far more than elementary troubleshooting and device configuration.

Today, network management best practice is all about predictive and pre-emptive management rather than fault finding or troubleshooting after an event has occurred. It's no wonder therefore, that more and more forward-thinking CIOs are investing in remote infrastructure management (RIM) services.

Today network management is not just about knowing whether your network link is up or down. Users are now more IT savvy and CEOs are a lot more demanding. And the complexity of today's networks makes management a sophisticated affair. Network management now takes into account items such as bandwidth utilisation and the establishment of different thresholds and alarms. Enterprise network environments typically involve multiple media types, multiple protocols and different platforms. They interconnect with public networks via ISPs or telecommunications companies. More complex network environments mean the potential for connectivity and performance problems in networks is high, and the source of problems is often elusive.

Assigning a team of skilled network consultants to keep an eye on your network, around the clock, would be neither feasible from a cost perspective, nor would it guarantee

ultimate performance and availability. Fortunately, thanks to technology advances, with the help of specialist service providers, today it is possible to empower your network to 'self diagnose' and 'self-remediate', before performance is affected.

## RIM – a next generation approach to IT infrastructure management

In today's distributed business world, it's not essential – nor necessarily desirable – that your infrastructure be physically located within the walls of your organisation. Now, it's possible for critical information and communication devices to be located, monitored and managed anywhere in the world. Technology advances in recent years mean that around 90 to 95 per cent of infrastructure issues can now be resolved remotely. RIM represents a pioneering, next generation approach to IT infrastructure management by providing effective, end-to-end support and management of IT assets, regardless of their location.

From a monitoring perspective, RIM services include built-in root cause analysis, which helps to identify and automatically fix potential problems before performance is affected. "Historically, managing IT environments has to a large extent

been a very reactive endeavour. RIM, on the other hand, enables the collection of health and performance information on an organisation's infrastructure and the automation of a number of infrastructure management tasks, which enables proactive handling of issues in that environment," explains Mark van Bavel, senior global services consultant at Dimension Data.

RIM technology will automatically carry out pre-specified instructions to fix problems such as restarting sluggish servers and the applications that reside on them without human intervention. It can also automatically dispatch on-site personnel to address high priority issues. By automating corrective actions, IT organisations decrease problem resolution time and improve system availability.

"Because RIM emphasises greater levels of automation and reduced human intervention, many operations are 'people-independent' – which translates into less risk of human error and which lowers the cost of delivering on a 24x7 basis. What's more, sensing and fixing problems before they happen paves the way to less downtime and frustration and also facilitates business continuity," adds van Bavel.

Flexibility is another advantage associated with RIM. These services can support multiple monitoring processes and tools and enable service providers to manage a host of different applications, databases, servers and devices remotely. RIM services are typically based on sophisticated architectures that are open and scalable and which enable the integration of vendor or client-supplied tools. From the CIO's perspective, RIM introduces new options – one can implement a complete remote service desk solution or simply start with remote monitoring for a portion of the network, a select site, or a group of servers. Additional RIM services can easily be added as needs change. RIM is also attractive to many organisations from a cost perspective. The current economic slump has resulted in IT budgets being cut down to their bare bones. RIM provides companies with greater flexibility and control over their IT infrastructures at a much lower cost. "RIM services usually feature more advanced tools, leverage better skills sets (in the form of Centre of Excellence teams) and offer more comprehensive coverage than typical mid-size organisations could afford if they were to provide these services internally," explains van Bavel.

## The reasons for adopting RIM are compelling:

### **Proactive Support**

RIM services goes beyond 24x7 monitoring to include proactive problem identification and resolution. Built-in root cause analysis enables service providers to identify and automatically fix potential problems, before performance is affected.

### **Risk Mitigation**

RIM services automatically carry out pre-specified instructions to fix problems without human intervention. Thus, the risk of human-error creeping in is significantly reduced.

### **Flexibility**

RIM services are typically multi-tenanted and allow for regionalisation and client customisation as needed. The solutions are modular and scalable to support a variety of technologies and products which facilitates the seamless integration of new technologies.

Recent years have seen IT service providers taking a keen interest in RIM. The proactive and preventive support tools and utilities it offers enable them to provide the high-value support services required to avoid costly downtime situations within client environments. What's more, if deployed correctly, RIM can improve the efficiency of current IT support staff, thus reducing the amount of time and resources that need to be dedicated to supporting an organisation's environment. RIM therefore represents a truly 'win-win' solution for clients and service providers alike.

### **Prevention is better than cure**

RIM services provide a single window that caters to all IT infrastructure monitoring needs. They not only ensure well managed support services, but also provide organisations with a competitive advantage by delivering more value to the end-user. By leveraging RIM technology, CIOs are equipped to make sure problems don't happen within their IT operations in the first place ... and when incidents do occur, accurate identification of root causes and restoration of service will be effected more swiftly than ever. The end result? Optimised performance, productivity and end-user experience.

## Case Study

# A proactive technology refresh enables a Western European retailer to shape a better retail experience for the future

Within the retail industry, exciting possibilities abound to drive sales and improve customer satisfaction and profitability by harnessing the power of the network. Dimension Data recently assisted a Western European retailer to ensure its network is equipped to support the longer term strategic goals of the business, offer increased value to stakeholders and gain competitive edge and business agility.

### Client Overview

The client is a well known German hypermarket chain and one of the leading – and fastest expanding – grocery retailers in Europe. The company currently operates approximately 750 hypermarkets in seven European countries, with the majority of stores (550) situated in Germany.

### Business Challenge

Like many other industries, the retail sector is undergoing a large-scale move to integrate disparate enterprise systems. Retailers have woken up to the fact that converging voice and data systems with billing, inventory, pricing and customer-preference data can solve a host of business issues. Companies can benefit from information about the impact of merchandising decisions on inventory, logistics, and cash flow ... customer relationship management (CRM) activities, such as product promotions, can be guided by converged system data ... associates can be granted secure access to business information systems from anywhere in the world.

### Quick Overview

- **Industry:** Retail
- **Country:** Western Europe
- **Challenge:** Burdened with legacy infrastructure, the company needed to upgrade its installed network assets, which were fast-approaching End-of-Sale (EoS) and / or End-of-Life (EoL).
- **Results:** After undertaking a Technology Lifecycle Management (TLM) Assessment, which gave the client visibility regarding the IT infrastructure and assets on its network, Dimension Data co-ordinated the deployment of a new LAN infrastructure. The enhanced network performance, reliability and capabilities will enable the retailer to deliver maximum value to its customers and stakeholders. Furthermore, the client is now in a position to implement a range of new business initiatives and applications that promise a myriad of business benefits and differentiators.

For several years, our client – a forward thinking enterprise and an early adopter of pioneering retail technologies – has been successfully leveraging its network to manage a range of business-critical operational and logistical functions,

including stock levels, deliveries, dispatch, cash registers, refrigerator and freezer temperatures, as well as to collate marketing and customer service information.

With so many components 'talking IP' and a high volume of essential information being consolidated in the company's central data centre, it is essential that the lines of communication are fully operational at all times. Our client is mindful that just as an optimally functioning network can prove the life force of a business – driving increased store sales and improving efficiencies and customer satisfaction ... a malfunctioning one can seriously impair it. Specifically, the hypermarket chain was conscious that should any of its switches fall out of manufacturer support, a breakdown would compromise its business continuity and could lead to revenue loss, inefficient operations and irate customers. These concerns prompted the company to approach Dimension Data for guidance on how to go about ensuring that its network infrastructure was geared to cope with current and anticipated future demands.

### **Our Solution**

Dimension Data recommended that the company undertake a Technology Lifecycle Management (TLM) Assessment. This infrastructure and network asset assessment service discovers installed network assets, identifies their lifecycle status and determines maintenance coverage. It provides organisations with a holistic view of their IT infrastructure and all the assets on their network, as well as insights and prioritised recommendations. This empowers companies to make informed, timely decisions that can enhance their business operations.

Conducting the TLM Assessment enabled Dimension Data to identify the End-of-Sale (EoS) and End-of-Life (EoL) dates for all of the hypermarket chain's network switches. We presented the client with the business and technical implications of these issues, as well as recommendations and a road map. These insights gave the company the information needed to successfully motivate to upgrade the relevant aging switches.

### **Adding Value**

The new LAN infrastructure provides the hypermarket chain with a robust yet highly flexible foundation. Enhanced operational and customer services, as well as an improved

availability of goods and produce, have had a profoundly positive effect on customer satisfaction, and in turn customer loyalty and sales.

Importantly, the new LAN infrastructure will enable the company to implement a range of new applications and technologies that will promise a range of business benefits going forward. For example, the company is considering leveraging the new network to enhance application delivery, for example, new commercials could be transmitted via the network to a digital media signage (DMS) station in the hypermarkets, for faster, targeted in-store advertising. The new LAN network could also help the client retain customers by enabling the provision of additional services, such as an ATM, and a bottle recycling / refund station. Real-time online customer surveys could be developed to further enhance the shopping experience. The use of location based services (LBS) via radio frequency identification (RFID) would also enable the client to enjoy up-to-date information about the goods inventory or breaks in the cold chain.

Simply put, the client's network is now equipped to support the longer term strategic goals of the business, allowing the company to offer increased value to stakeholders in addition to improved competitive edge and business agility, both now and in the future.

The new LAN infrastructure will enable the company to implement a range of new technologies that will promise a range of business benefits going forward.

# Research Notes

## INTERNET PROTOCOL AND ENHANCED CUSTOMER SERVICE ARE THE KEY TRENDS INFLUENCING CONTACT CENTRES

Companies are looking to technology to support better customer service and retain customers. Latest research from Dimension Data's Global Contact Centre Benchmarking Report 2009\*, shows that consolidation and better integration across different communications channels are receiving the most attention by organisations across the world.

This year's research shows that Internet Protocol (IP) is the most important technology factor for contact centres across the board. Six out of ten contact centres have implemented IP and, this year, the report reveals that the adoption of IP is the number one trend influencing contact centres. This represents a shift away from questioning the validity of IP, as was the case a few years ago.

The report, which surveyed over 550 contact centres in 36 countries across five continents, also lifted the lid on how the economic slowdown is impacting the contact centre domain. The results suggest that the recession is forcing companies to focus on providing more choices and quality service to keep customers.

*\*To read more on Dimension Data's Global Contact Centre Benchmarking Report please visit [www.ccbenchmarking.com](http://www.ccbenchmarking.com)*

## GET SELF-SERVICE RIGHT OR RISK LOSING CUSTOMERS

According to the 2009 Alignment Index for Speech Self-Service report recently released by Dimension Data, in conjunction with Cisco, and Microsoft subsidiary Tellme Networks Inc., many consumers avoid using speech automated systems when calling customer call centres and prefer to use the Internet as their first port of call. In fact, one third of consumers surveyed struggle to see any benefits to using an automated contact centre service. Most consumers also believe companies only use automated services in their

contact centres to save money. Furthermore, two in five people claim they are unhappy with the automated systems' ability to deal with queries.

The report, which compares and measures consumer, vendor and enterprise perceptions of speech systems, reveals that of 2000 consumers polled across six countries some 40% – up from 36% in 2008 – said they avoid using speech systems “whenever possible”, while 50% said they use the Internet as their first choice for interacting with a business or organisation. And with only 25% of consumers saying they would be happy to use speech solutions again, organisations are not winning their hearts and minds.

## ORGANISATIONS SET TO SPEND MORE TO PREVENT IDENTITY THEFT

Organisations expect their highest future security technology investments to be in the prevention of identity theft and abuse, followed by incidents resulting from an external cause, unintentional privacy breaches, remote access abuse, and spam attacks.

That's according to primary research\*\* about IT security commissioned by Dimension Data and carried out by IDC during 2009. The research which covered 407 companies of 500+ employees in 18 countries in Western Europe, the Americas, the Middle East and Africa, and Asia and Pacific, revealed that identity theft tops organisations' biggest security concerns.

According to Dimension Data's global general manager, security solutions, Neil Campbell, a large portion of the respondents view PC theft or loss (54%), spam attack (45%), misuse or hacking (45%), and spying tools (45%) as the most likely security incidents they'd have to tackle.

*\*\*To read more on the Security research commissioned by Dimension Data please visit [www.dimensiondata.com/securityresearch](http://www.dimensiondata.com/securityresearch)*

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