# USING INTELLIGENT IP NETWORK TECHNOLOGIES TO DRIVE BETTER BUSINESS OUTCOMES

'yes' OPTUS

BUSINESS

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# EXECUTIVE SUMMARY

To satisfy the changing demands of customers and the rapidly shifting nature of the workplace, businesses need fast, flexible voice and data services that are easy to deploy and manage.

Bandwidth demands are increasing with the growth of voice over IP, videoconferencing and other converged applications. Businesses are expected to open their networks to external partners, customers and staff working outside the office, while meeting increasingly stringent security requirements.

The older generation of networks combined internet protocol and technologies such as Asynchronous Transfer Mode (ATM) and Frame Relay. These hybrid networks do not scale easily to meet the demands of bandwidth-hungry applications. They can be slow and difficult to provision, with complicated pricing structures and confusing service level agreements.

Recognising these shortcomings, Optus has taken a new approach to delivering networking services based on world's best practice. At the core of this offering is a new end-to-end Internet Protocol (IP) network that utilises multi-protocol label switching technology and a streamlined set of processes.

This combination allows customers to simply select a network speed that meets their requirements, and then pick from a variety of modular value-added services. Services can be provisioned, modified and removed quickly and easily with guaranteed delivery dates. Price quotations and bills are easy to understand and service level agreements are sensible and meaningful.

Through a series of examples, this whitepaper discusses businesses' changing telecommunications needs and how the new Optus IP-based network addresses these requirements with low-cost, high-speed and reliable connections that deliver powerful capabilities with simple choices.

# BUSINESS NEEDS BETTER NETWORKS

The way business is conducted is changing rapidly. To satisfy customers and retain an edge over competitors, businesses are demanding rapid, inexpensive delivery of voice and data services across geographically distributed operations.
This whitepaper uses hypothetical customer examples, based on real-world scenarios, to illustrate how telecommunications carriers are responding to these changing needs and some of the solutions available to help businesses achieve their goals.

## CONNECTIVITY FOR THE PROGRESSIVE WORKPLACE

Australian businesses are changing the nature of work. Staff are no longer tied to the office when they need to access crucial business resources such as sales support systems. Also, the old nine-to-five ethos no longer exists at many progressive companies - some staff may work longer hours during large projects and a few hours a day from home when the load is lighter. Businesses need this flexibility to retain their best employees.

Businesses are also facing an explosion in data, resulting from growing email and HTML traffic and new applications such as Voice over Internet Protocol (VoIP) and Videoconferencing. This demand is placing burdens on network managers to ensure the performance of high-bandwidth applications, such as voice or streaming video are prioritised over services such as email that can be delivered after a short delay without compromising the user experience.

Many companies are extending their networks to remote sites with minimal on-site information technology expertise and then having to spend substantial amounts of money sending qualified staff out to undertake tasks such as software upgrades. Businesses are demanding the ability to deploy upgrades and administer networks from a central location to reduce costs and minimise the resources required to manage information technology across a geographically distributed operation.

## MORE CAPABILITIES, LESS COMPLEXITY

Businesses want simpler quoting and billing of managed networking solutions. As the type and number of solutions have proliferated over recent years, the complexity of accompanying documentation has increased. This in turn has required businesses to devote more time and resources to managing service providers and solutions.

This complexity has become unworkable and customers now want easy-to-understand documentation from trusted suppliers so they can get on with running their business. Where possible, businesses want to manage their own products and services, with supplier contact required only for high-level issues.

Businesses also want less complex networking products. Until now, provisioning new services often required replacement of an existing connection with a new one that provided more bandwidth or improved capabilities. Businesses now want these services to be modular and not require forklift upgrades or reprovisioning.

Customers need networks that enable and support these demands. The complexity and inflexibility or older networking technologies and solutions make them ill-equipped to support the application-rich bandwidth-hungry requirements of modern businesses.

## THE MOVE TO IP

Many business and carrier networks were built using a combination of legacy data access networks and IP, delivering an incremental performance improvement over older networks but not fully exploiting the potential of IP. These hybrid networks are causing businesses problems. They cannot scale easily and cost-effectively or meet users' demand for bandwidth-hungry applications. They also lead to network management problems, limits on flexibility, restrictions on visibility and reporting and an inability to easily manage networks.

However, the picture is changing. Telecommunications carriers globally are building new IP networks that can deliver better reliability and redundancy, more bandwidth and improved value. These networks allow businesses to run applications today and provide a roadmap for tomorrow. Using this model, Optus has built a new network and suite of products and services that will help customers:

> Understand the services they are receiving and when they will be delivered

> Make sense of their quotes and bills

> Gain a comprehensive and consolidated view of all their network services

> Add and remove services without rebuilding their networks

> Build networks without having to become electrical engineers.

# ISSUES BUSINESSES FACE

Faced with challenges such as attracting and retaining good staff and increasing competition.  Australian businesses are looking for ways of boosting productivity while cutting costs.  The business community's embracement of IP as the networking protocol of choice, combined with widespread use of the Ethernet delivery is paving the way for networks that enable growth.

The new generation of IP networks eliminates many of the problems arising from legacy networks and helps businesses achieve their productivity and cost goals.

## OVERCOMING THE BANDWIDTH BOTTLENECK

John Anderson* is the Chief Executive Officer of a fast-growing mortgage lending business headquartered in Melbourne. John, whose business operates on a 512Kbps private network based on a combination of IP and legacy technologies, wants his travelling salespeople to be able to access email, calendars and order forms as quickly and easily on the road as in the office. However, high demand for bandwidth during peak usage periods means salespeople may not gain timely access to an online form after a customer has agreed to sign up, which could threaten those deals.

John's case is typical of hundreds of businesses across Australia. Email and HTML traffic is continuing to surge over IP networks while newer converged applications such as VoIP and videoconferencing are adding more pressure. According to an Optus survey[1], one third of businesses plan to increase their bandwidth requirements by 50 percent or more over coming years. Improved speeds and the increasing cost-effectiveness of high-bandwidth access technologies such as DSL and Metro Ethernet are expected to further drive demand for bandwidth.

> **Optus' new network provides more bandwidth per dollar, lower cost of ownership and the ability to grow as bandwidth requirements increase.**

## RELIABLE CONNECTIONS AND SERVICE LEVELS THAT STICK

Sharon Howard* heads an online shopping business servicing both Australian and overseas markets. Since starting her business, Sharon has had to deal with planned and unplanned network outages, which have been damaging to the reputation of her company's business. However, a complicated service level agreement with her existing carrier is of little practical help.

For a business like Sharon's, downtime can equate to damaged reputation and lost business. Reliability is crucial to companies, particularly those using a Web-based sales and distribution model. Businesses are demanding simplicity in their agreements and greater levels of redundancy in their networks to reduce outages.

> **Optus' new generation network design includes greater levels of network redundancy backed by sensible and realistic service level agreements to protect your business.**

## FAST AND EFFECTIVE TRANSITIONS

Adam Papageorgiou* is the IT Manager for a national law firm that is looking to consolidate multiple legacy networks to a converged IP network. It wants to deal with a single provider and a single bill every month. This project would see all voice, data and multimedia applications converged onto one platform and get rid of legacy network protocols such as ATM and Frame Relay.

With senior partners' attention diverted by the pending acquisition of a rival firm, Adam has been forced to wait several months to secure budget for the project. His firm's existing networks are reaching saturation point and critical data is being delayed or lost. Flexibility to make moves, adds and changes (MACs) is essential as the firm is expanding quickly and exploring new opportunities for growth. He also needs reporting functionality that will allow him to manage the network effectively.

Adam has thoroughly researched the opportunities made available by transitioning to a new-generation converged IP network. Over 90 percent of businesses with an IP network say they have plans to embrace converged solutions or have already started implementing them[2]. One in five businesses expect their infrastructure budget to increase in the next 12 months.[3]

1, 2 and 3  Optus Business IP Index, 2009.
* All names and businesses used in this white paper are fictitious.

However, when Adam starts calling service providers, it would almost seem that nobody really wants his business. Quotes are slow, incomplete, hard to understand and sometimes incorrect. They say it will take months to provision new services. When the services are finally provisioned, the first bill bears no resemblance to the quote.

> **Optus' new network uses DSL and fibre accesses, simplifying setup and management requirements, as well as reducing costs. the network is supported by new quoting systems that significantly reduce the time taken for an account executive to prepare an accurate quote and contract.**
>
> **Enhanced automation and better processes ensure that provisioning times and moves, adds and changes (MACs) are cut to a minimum, with an option in the future for simple MACs to be managed online through a Web portal.**
>
> **Consistent and comprehensive reporting is available across all products. Transparent billing and control information will be accessible from a central location and customers will be able to directly control many services and functions over the Web.**

### EXPLOITING A MODULAR APPROACH

Kevin Wu* has administered information technology at a geographically distributed management consulting firm for several years. He is looking to deploy videoconferencing and online collaboration tools to improve productivity and reduce travel costs.

In order to deploy these services, he requires the ability to centrally manage remote sites and monitor the bandwidth usage of each application. Kevin asks customer service staff at several providers how he can cost-effectively deploy such offerings.

However, all tell him deploying these services would require him to undertake an expensive and disruptive network upgrade.

> **Optus' new network treats value-added services as modular, meaning they can easily be added or removed to meet changing customer requirements.**

# POWERFUL CAPABILITIES, SIMPLE CHOICES

Progressive telecommuications carriers worldwide are meeting customer demand by deploying next-generation networks that provide high levels of availability and resilience.  Customers can now access lower-cost services delivered over a scalable, low-latency communications platform.

These networks are based on multi-protocol label switching (MPLS), a technology that enables complexity to be removed from the customers' and service provider's core network. MPLS enables carriers to offer customers quality of service for bandwidth throughput, latency and availability.

This gives customers the ability to prioritise delivery of time-sensitive applications such as voice and video over less time-critical services such as email, browsing and file transfer. Network administrators can prevent bottlenecks and optimise the performance of bandwidth-hungry, low-latency applications.

Optus has recently built a new fast and reliable core network using these world's best practice methodologies. The network is designed to transport one kind of vehicle: an IP packet that can carry voice, data or video.

For customers, this means better value, reliability and redundancy and more bandwidth to run applications such as video without slowing or stopping.

Optus Evolve™ is Optus' new generation converged core IP network and business communications product suite. It's a simple proposition for business owners and decision makers. Choose a product, then a speed, and your choice from a range of  value-added extras if required.

Optus Evolve has been designed to be modular and easy to understand. The greater simplicity and reliability of the new Optus network means the company can deliver on its service level agreements. The network is delivered as Ethernet, eliminating clunky serial interfaces and forklift upgrades. It is also application-aware so Optus can deliver intelligent performance management and reporting which means that you can have confidence your applications will perform the way you want them to.

# OPTUS EVOLVE: MEETING CUSTOMER NEEDS

To demonstrate how Optus is meeting the needs of business, take the example of Richard Jones*.

Richard is a smart businessman who operates a thriving import business for a large manufacturer of cars, with warehouses in Sydney, Melbourne and Brisbane. Like most successful businesspeople, Richard is constantly looking to gain an edge over his competition. He is looking to expand by opening a new office and wants to take advantage of the opportunity to introduce more flexible and efficient ways of working. He wants to:

> **Retain the best staff.** Richard wants his top-performing salespeople and support staff to be able to work flexible hours, sometimes from out of the office. Achieving this requires remote access to the company's information technology systems.

> **Generate new business.** Sales leads need to be managed by an external telemarketing agency but traceable in his customer relationship management system.

> **Reduce costs.** Richard needs visibility of his network to view traffic sources and bottlenecks. This enables him to manage traffic flows and curtail non-work usage.

> **Introduce new systems and applications.** Information technology staff need to spend time on projects that add value to the business rather than on routine network maintenance.

> **Take advantage of new technologies and stay ahead of competitors.** Richard needs a clear upgrade path to converged applications such as voice over IP (VoIP) when the time is right.

The new Optus network architecture can deliver greater bandwidth between sites, making it easier for Richard to connect showrooms, staff and trusted partners. Removing unnecessary complexity from its IP products means Optus can quickly and accurately determine a price and give Richard an easy to understand quote. Optus has combined access and port services into a single price that can easily be calculated and understood at each site.

As the new connections are provisioned, Optus will be able to give Richard accurate updates on the progress of orders. Information about a customer's network is immediately available to support staff in a single view.

Richard will be able to subscribe to a Managed Router Service (MRS) as an additional module to the IP VPN product. Not only will Richard be able to sleep peacefully at night, he can view the application usage across the network, understand how remote sites are using their networks and tailor network quality of service and applications to the way he wants to conduct business.

Richard also wants his staff and business partners to access corporate systems while on the move. Optus now also provides a remote access module using Secure Socket Layer (SSL) that allows access to the network securely from any device with an Internet connection. His mobile service technicians can use their mobile phones, partner companies can interact using a standard Web browser and his managers can stay in contact using Optus wireless broadband on their laptops. SSL supports dual-factor authentication for added security and to manage user accounts. Richard's team can simply connect to a centralised Web portal.

Twelve months on, Richard wants to upgrade to a new IP-PBX. Using Optus Evolve Voice, he can remove his redundant PSTN connections and move from a hybrid network to an end-to-end VoIP system. This will allow him to reduce costs and improve monitoring and management of voice traffic.

# CONCLUSION

The way business works is changing and service providers are adapting to this new environment. Telecommunications carriers worldwide are being asked to benchmark themselves against the best practices of trusted suppliers rather than past ways of doing business.

Optus is responding to customer demand by investing heavily in a new IP network and changing the way it provides networking services. This transformation will enable Optus to cement its position as a trusted partner of businesses across Australia,

# ABOUT OPTUS

Optus is an Australian leader in integrated communications that serves more than 6 million customers each day. As part of the SingTel Group, Optus is at the heart of Asia's leading communications company which has the largest IP network footprint in the Asia-Pacific. Throughout Australia, Optus provides business-grade IP network connectivity to hundreds of corporate and government customers.

For more information please visit **www.optus.com.au**

Optus was the first telecommunications provider to launch IP Virtual Private Network (VPN) services in Australia and was first to market with technologies that make IP VPNs more secure, accessible and cost-effective. SingTel and Optus are investing more than A$150 million in IP VPN services across the Asia-Pacific.

# ABOUT OPTUS BUSINESS

Optus Business is a leading provider of telecommunications and information and communications technology (ICT) solutions to businesses across the spectrum. Our solutions are suitable for organisations with 200 or more employees and include mobile, IP converged solutions, voice and data and IP.

For more information please visit **www.optusbusiness.com.au** or call **1800 555 937**