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How Australian organisations can leverage the Internet to support their business in the digital era

Content

Opportunities and Challenges

Organisations of all sizes are looking to use digital technologies for developing new business models to disrupt other companies, create new market opportunities and serve customers better.

In recent years, the rise in adoption of cloud computing, mobility and now digital technologies, from AI to robotics process automation and 3D printing, has created the perfect storm for the next wave of disruption across industries, such as retail, manufacturing and healthcare.

Companies like Lemonade in the insurance sector and Uber in transportation and food delivery are challenging traditional business models and demonstrating ease in targeting adjacent markets. In China, social media application WeChat has become a mobile payments platform for nearly 300 million users, supporting over 300,000 retailers and attracting up to 1,000 third-party developers per month to its platform.

Key trends of the digital era include:

Flexibility and mobility are becoming increasingly critical to improving productivity. The expanding mobile workforce is met with growing demand for knowledge sharing, virtual teams, near real-time collaboration and faster feedback loops. As the pace of business accelerates, it becomes vital for employees to communicate in real time, sharing information and content with colleagues spread across locations, countries and time zones. Traditional platforms like e-mail are too static to cater for tomorrow's workplace. Messaging and video conferencing apps are becoming the norm for internal collaboration as well as for enhanced partner, supplier or customer engagements.

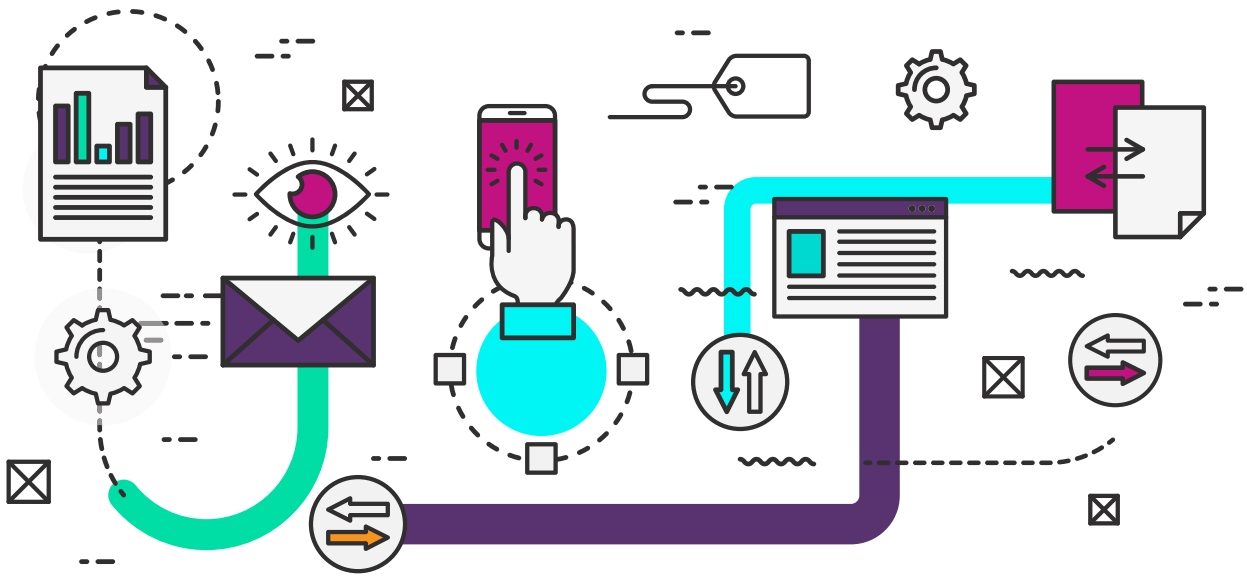
The **Internet of Things (IoT)** is yet another factor driving enterprises to reimagine their operational processes. As the market for advanced sensors and modules rapidly matures, organisations are beginning to deploy IoT devices, managed by automated management platforms, with a view to realising cost savings and greater efficiencies. Businesses of all sizes can also look to drive greater automation across a range of use cases, spanning IoT solutions that require low-bandwidth connectivity across wide areas and others that require high-bandwidth, 'real-time' connectivity.

Cloud services are enabling consumption-based IT models and driving the move to more applications off-premises. While this shift enables businesses to achieve cost efficiencies and agility, it is also creating new workloads and networking requirements. Businesses are increasingly comfortable with moving their applications to the cloud and shifting to the 'as-a-service (aaS)' model as opposed to making upfront investments and 'sweating assets' over long periods.

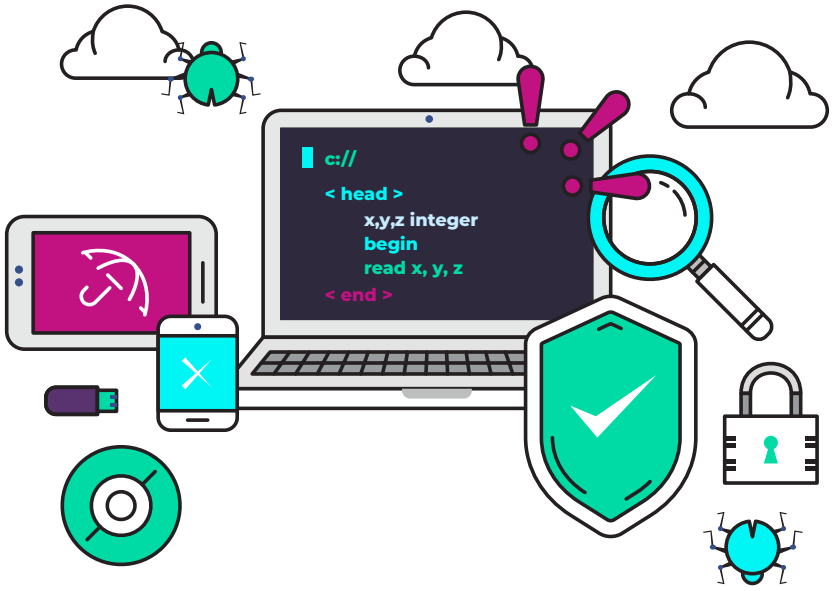
As organisations around the world face up to digital disruption, Australian businesses are also increasingly keen to embrace digital transformation, striving to link their technology investments to positive business outcomes. Digital transformation is not a theme only for large enterprises and global MNCs. There are plenty of cloud-based applications for collaboration, accounting, customer relationship management and backup/recovery activities that businesses of varying sizes are adopting, to improve their business operations. As organisations embark on this journey, the role of technology as a business enabler has also changed, and is now central for those seeking to become digital businesses.

While there are exciting opportunities in the digital era, the challenge for mid-sized businesses is to find the right mix of options and manage these technologies effectively with often limited IT resources, while meeting the business objectives of speed and agility. The emerging business landscape requires a more fluid approach for IT that stresses the need to react quickly to changes in the digital landscape.

Many businesses have seen individual departments deploying applications, without considering the infrastructure requirements across the company. The result is typically the procurement of point solutions that have varying requirements which put strain on the network, leading to service degradation and a poor user experience (e.g., delays in backing up critical data, business applications lagging, video services dropping out or long buffering). Without a coordinated approach between applications and infrastructure, enterprises will continue to see their demand for bandwidth increase and their IT and network fail to keep pace with accelerating requirements. The result will be a deteriorating application performance affecting employee and customer experience.



Internet – A Business Driver



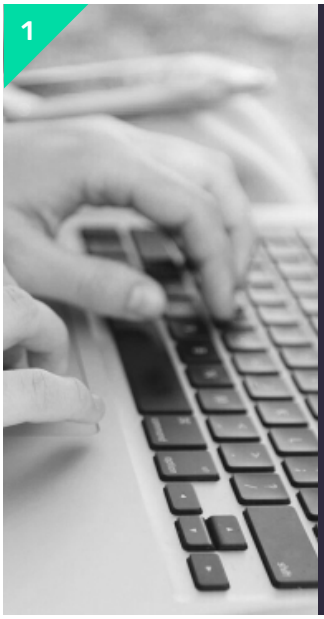
Businesses are rapidly adopting cloud-based applications to take advantage of the pay-as-you-go model. The Internet is often the conduit to access these applications, and it is therefore the lifeline to many businesses. Mid-sized businesses are also dealing with an increasing number of remote and mobile workers, who need access to the corporate network and applications from a variety of work scenarios. These businesses may also look at non-traditional sources of talent including the gig workers – the new wave of permanent freelancers – who can be located around the world. However, remote access also causes a fundamental change in the way that enterprises deploy their IT resources as well as how access to corporate applications is managed. These trends have profound implications on connectivity requirements.

Applications are increasingly hosted in the public cloud, and companies need **scalable**, **secure** and **reliable network connections** to meet their business and growth objectives.

To achieve this, the Internet will play an increasingly critical role, as the opportunity cost of dealing with the consequences of unreliable connectivity is increasing. For example, online retailers will see an increase of cart abandonment rates as a result of slow load times. This is often attributed to poor Internet connections[1] that work on a best-effort basis. As a result, businesses will experience an immediate loss of revenue and frustrated customers who are unlikely to return back to the site. This is problematic because 80% of future revenue for many businesses comes from existing customers. Reliable, business-grade Internet connections are the way forward. These connections offer lower contention ratios, higher throughput and more immediate access to content. Currently the end consumer's online experience may be hampered by their ADSL access, which is outside the control of any business, however with the nbn™ rollout across Australia and migration off copper services, consumers will be provided with alternative access technologies.

[1] *On average, Australian consumers expect a load time of between three to five seconds.*

For some mid-sized businesses there's a tendency to rely on public Internet or broadband to access cloud-based services. While the Internet is more affordable, it has several challenges, particularly if a company relies on a consumer-grade Internet service (even if it is advertised as 'high-speed Internet'):



1

Higher Latency

This has a direct impact on the performance and user experience, from the most basic browsing and e-mail scenarios to more business-critical applications. The variable performance will be particularly detrimental to collaboration applications such as video conferencing and VoIP calling, both of which need low latency and symmetrical bandwidth connections. For example, video connections over Skype for Business or similar applications will suffer from jitter, intermittent disconnections or frozen screens if they are subject to poor network performance. This leads to a poor user experience and loss of productivity. Internet traffic that runs over the public Internet can often run into bottlenecks with congested peering exchanges and slow links in the backbone, as they often work on a principle of best effort. Internet traffic is also routed to meet pricing, not performance objectives, which means that traffic is routed over congested or higher-latency routes. This is due to the fact that routing of traffic will traverse over longer distances. For example, a connection between Singapore and Australia may route through the US due to an emphasis on price over the need for performance.

2

Quality of Service (QoS)

Since the Internet is essentially a 'network of networks,' it is often subject to best-effort routing and delivery of Internet traffic. Businesses require defined service levels for specific applications, especially for business-critical applications, but unfortunately, there is no QoS assurance when using public Internet connections. Many services on the market are not offering a business-class QoS.

3

Security

Public Internet access also suffers from the issue of security, as there are multiple 'points of failure' that attackers can target. An IT department will have to ensure that all terminating equipment (routers and/or firewalls) and VPN are secured and encrypted. Internet connectivity is also vulnerable to distributed denial of service (DDoS) attacks and many other threat vectors.

Internet access, especially contended access over the public Internet, is simply not the most reliable option for cloud-based services, IoT and mobility, especially as the number of use cases increase. Moreover, businesses need to consider how they extend their IT network, apps and services to their branch and remote offices.

In many cases, branch offices also need to be connected to private and public cloud services. This means branch sites also need business-grade Internet connectivity to achieve the balanced mix of throughput levels and affordability that most companies seek. Optimised Internet connectivity, or business-grade Internet, is fast becoming a key enabler for enterprises that are seeking to become digital businesses and achieve the agility that will help them differentiate against their competition. Employees at branch sites need the same level of access to corporate and cloud-based applications for their day-to-day work. For example, enterprises are extending the same levels of e-mail and communication applications like Office 365 to the entire employee base, regardless of their location, as this helps everyone stay connected and increase productivity. This offers a greater level of flexibility in terms of recruiting and pooling talent according to business needs. Business-grade Internet connectivity will also allow companies to offer branch connectivity more cost-effectively, without having to extend their traditional MPLS networks to all sites, and also avail themselves of flexible bandwidth and pricing as per local site requirements. MPLS plus Business-grade Internet at branch sites can be used to support delay-sensitive applications and as part of a Hybrid WAN strategy. With dedicated, uncontended Internet connection, businesses get consistent bandwidth, which means no matter how much traffic there is (e.g., during peak period), it won't impact the performance of the Internet connection.

Example Applications	Potential issues using best-effort Internet services
CRM (e.g., Salesforce.com)	Long lag, poor performance
Collaboration (e.g., Office365, Skype for Business)	Video services experiencing long buffering and/or dropouts
Backup (e.g., MozyPro)	Long delays and timeouts

Essential Guidance

Organisations should note that there are many business-grade Internet services in the market, but besides comparing prices, it is important to consider the performance of services on offer. Buyers should evaluate the available options for business-grade Internet, with an eye on the following key criteria:

Dedicated, high performance, low contention ratio and symmetrical bandwidth:
It is ideal for any new Internet connection to be uncontended. That is, the available bandwidth is dedicated to your business and is not shared. And a lower contention ratio will ensure better performance, especially during peak time. High-performance Internet connections should also be able to provide clear bandwidth that transparently and verifiably lowers latency and packet loss such that the enterprise can gain comfort with performance levels and achieve higher productivity with cloud-based applications.

Unlike residential connections, performance does not vary as much based on time of the day, i.e., peak or non-peak period. This is particularly important for any business that has a website or an online channel. Moreover, for collaboration tools such as video conferencing, it is important to have the same download and upload speeds. Internet services with symmetrical bandwidth are ideal to support these two-way applications.

Extensive coverage:
Regardless of the size of the business today, coverage is an important consideration when choosing an Internet connection. Given the size of the Australian domestic market, coverage of all major capital cities and regional areas becomes crucial for future expansion and essentially future-proofs your business. For those enterprises that have international operations, coverage becomes even more critical when evaluating potential options, as connectivity costs become even more challenging and unpredictable when forced to deal with multiple international service providers. Enterprises should assess how many points of presence (PoPs) their service provider is offering them, across both domestic and international markets. This wide coverage needs to interconnect with other networks in many locations to deliver better end-to-end performance.

One-stop shop with flexible pricing models:
Businesses who do not have dedicated IT teams should ideally look at a single provider that can provide them with an end-to-end service. In some cases, businesses may choose, depending on their internal IT resources and priorities, for the service to be offered as a managed service with service level agreements (SLAs). Enterprises should also look for flexible, pay-as-you-go models that will allow them to scale their requirements as business requirements evolve. This flexibility is very handy for businesses of all sizes, but particularly so for those that are planning to operate on a nimble and lean IT model.

Single point of contact (POC) for customer service and management:
As enterprises deploy their networks over multiple access links and across geographies, the complexity increases. Management of the network becomes a 24x7 affair and starts to assume greater importance. With limited internal IT resources available to most businesses, it is essential that the service provider offer continuous monitoring and management capabilities for the network. Online portals for customer care and network visibility are also needed as network automation increasingly allows for 'self-serve' planning of network capacity, monitoring of network performance and troubleshooting, generation of usage reports and analytics.

Network redundancy:
Redundancy of the network is another crucial consideration for enterprises to take into account when they evaluate service provider options. Network outages can happen, and they do not discriminate against the size of enterprise. With the network increasingly being at the heart of every business function, every minute of downtime could lead to lost revenue. A digital business is truly 24x7, necessitating high levels of resiliency and redundancy to be built into the network infrastructure (e.g., multiple redundant paths to the Internet).

Security and supplementary services:
Network security is becoming increasingly critical for enterprises as they embrace digital technologies. With more and more vulnerabilities being exposed and exploited by attackers, enterprises often find themselves poorly equipped to protect themselves. Service providers can offer security as a managed service or as a point solution (e.g., malware protection) to supplement internal systems. Some service providers are also able to bundle IP telephony and/or collaboration services to Internet access at a more attractive price point.
It is also worth seeking those that provide options of having enhanced SLA's on Business-grade Internet to help reduce service restoration times, which is important to have if you're running your business on it.

Telstra Internet Direct

Power your business with Telstra Internet Direct:
Telstra Internet Direct (TID) can take your operations to the next level with a business-grade link to Australia's largest internet backbone, with more access points than any other provider. Since the link is not shared with other customers, it's like you're the only one using the internet. You can also connect to more places in Australia, including regional areas, and to the world. The built-in smarts of the network can help improve how you work and engage with your customers.

Our TID network offers market leading service availability targets of 99.995% over the TID core network[2], so your business can stay up and running more of the time. We also employ security at multiple layers with 24/7 monitoring to protect your information and content caching so bandwidth hungry applications perform with less lag.

About Telstra

Telstra is one of the leading telecommunications and technology companies offering a wide range of services globally; from programmable networks to enterprise collaboration tools.

We bring innovative technology, capability and talent from around the world to enable our customers to thrive in a connected world.

Telstra's heritage is proudly Australian, with a longstanding international business and a commitment to the Asia Pacific region.

[2] *TID edge network and access services have separate availability targets which affect your service.*

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