

# Changes in the Australian VoIP market

DECEMBER 2009

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# Executive summary

The Voice over Internet Protocol (VoIP) market is a dynamic market with a steady increase in the number of service providers offering services. In June 2009 there were 268 service providers operating in the VoIP market in Australia, up from 215 VoIP providers in the previous year. This increase in service providers has led to growing diversity and ongoing innovation in business models and in the service offerings made available to consumers.

This innovation in business models has occurred as an increasing number of VoIP providers are diversifying their services and offering VoIP as well as broadband services. There is also a trend for internet service providers (ISPs) to include VoIP services as a part of a bundled package, especially when providing services over Naked DSL, a broadband connection which does not require a fixed line telephone.

With new forms of service packages becoming available, consumers are able to choose VoIP as a complimentary service, particularly for international calls, or as a telephone substitute with competitive local and national pricing.

Consumers are showing a growing interest in VoIP services, although there is still moderate growth in use of VoIP. Fourteen per cent of the Australian population aged 14 years and over have access to a VoIP service at home and 12 per cent of the Australian population without access to a VoIP service in the home indicate they are likely or very likely to take up VoIP in the next 12 months. International calls are the main type of VoIP call, but half of VoIP users also make national calls using VoIP.

There have been a number of recent and upcoming developments which are likely to affect the use and provision of VoIP services for consumers and small and medium enterprises (SMEs). The introduction of Naked DSL in late 2007 has corresponded with a growth in the number of service providers offering VoIP services and has provided consumers with the option to use VoIP as a complimentary or a substitute service for the traditional fixed line telephone. Other developments include the development of Mobile VoIP offering consumers more options to access VoIP services.

# Introduction

## Overview

This report provides an update of the Australian Communications and Media Authority's (the ACMA) *The Australian VoIP Market* report published in April 2008.

VoIP services represent one of the areas of innovation in voice communications and offer a potential substitute for the traditional public switch telephone network (PSTN).

The ACMA has undertaken an examination of the supply and demand of VoIP services. This report is designed to assist the ACMA in its role as industry regulator and is consistent with its regulatory responsibilities to provide information about the telecommunications industry. As VoIP services are a potential substitute for the PSTN fixed-line voice service, the ACMA is monitoring their development.

The purpose of this report is to:

- > provide an update to the ACMA report, *The Australian VoIP Market*
- > identify the size of the VoIP market, both in terms of overall take-up and the suppliers of the service
- > review consumer use and attitudes towards VoIP service
- > review market changes which have had an impact on the business models of VoIP providers.

## Methodology

Third-party research has been used to inform this report including information from the following sources:

- > Nielsen's Online Netview, June 2009
- > IDC reports:
  - > *Residential VoIP: Lets Get Naked*, July 2008
  - > *Australia Broadband and IP Services Enterprise Usage and Preferences IDC 2008 Telecommunications Survey*, September 2008
  - > *The Development of Mobile IP Voice in Australia*, October 2008
- > Ovum report; *Consumer VoIP Forecasts*, March 2008
- > Market Clarity Voice Service Provider database, June 2009
- > Individual company annual reports and Australian Stock Exchange filings from 2008-09.

## Consumer survey

In addition, the ACMA commissioned Ipsos MediaCT to undertake a national telephone survey of communications users in March–April 2009. This survey examined consumer attitudes and take-up and use of telecommunication services in Australia including consumer use and attitudes towards VoIP services. The sample for the survey was 1,604 respondents, aged 18 and over.

# An introduction to VoIP

## What is VoIP?

Voice over Internet Protocol (VoIP) is the name for technologies which allow for transmitting voice telephony over packet-switched data networks. VoIP is a catch-all term used to describe a range of services, including computer-to-computer voice communications and services that interconnect to traditional Public Switch Telephone, (PSTN) fixed-line telephone and mobile phone services. Internet Protocol (IP) is increasingly used to provide voice services due to the growth in broadband penetration, the accelerating use of IP applications in data networks, and the greater availability and decreasing cost of suitable equipment.

VoIP is often marketed to consumers as offering cost savings on voice calls. Other benefits are additional features that can include voicemail, electronic notification of voicemails, call blocking, conference calling, rerouting to a selected phone number, instant messaging, video calls, the ability to send text, visual information or files during a conversation, and the ability to use a VoIP number regardless of geographic location.

## Types of VoIP

VoIP can be categorised into four main service types. These are summarised in Table 1.

**Table 1: VoIP classifications**

	<b>Classification</b>	<b>Services</b>
Type 1	On-net services	This service enables users to make and receive calls on the VoIP network only and is isolated from the PSTN.
Type 2	Outbound only	This service enables users to make outgoing calls, including to the PSTN, but do not enable users to receive calls from the PSTN.
Type 3	Inbound only	This service enables users to receive calls from the PSTN, but do not enable users to make calls to the PSTN.
Type 4	Inbound and outbound	This service enables users to make calls to and receive calls from the PSTN.

Source: The ACMA , *The Australian VoIP Market, April 2008*

The most common type of VoIP provision in Australia is through on-net services (Type 1). However, as Naked DSL has become more widely available, a number of VoIP providers are changing elements of their business models and are increasingly offering Type 4 VoIP. Naked DSL is a broadband connection which does not require a fixed-line telephone service. VoIP over Naked DSL offers both inbound and outbound voice calls, similar to a traditional fixed-line service.

# Provision of VoIP

## Overview

Innovation in the VoIP market is continuing with new market entrants and changes in the business models and pricing plans used by service providers to offer VoIP services.

## Providers

There were 268 service providers operating in the VoIP market in Australia at June 2009 including service providers, resellers and system integrators.<sup>1</sup> This is an increase on the 215 VoIP providers identified a year ago by Market Clarity.

Over the past year many VoIP providers have diversified elements of their business models and are now offering broadband services in addition to VoIP services. As outlined in the *Australian VoIP report*, there are several business models for VoIP provision and not all VoIP services are provided by ISPs. Of the 268 providers in Australia, two thirds were ISPs—a change on the previous year when just under a half of the total number of VoIP providers were classified as ISPs. Figures from the Australian Bureau of Statistics at December 2008 indicated over half of ISPs (52 per cent) offered VoIP as part of a bundled package to residential and small medium enterprises (SMEs), an increase from 42 per cent in December 2007.<sup>2</sup>

One of the key differences on the previous year is the availability of Naked DSL which has enabled ISPs to offer VoIP as part of a bundled package with broadband access.

As outlined in the previous report, the different business models include:

- > **Internet based providers:** With these services; the VoIP service provider (VSP) will only supply the VoIP service. Customers are required to source their own broadband connection. Skype and Freshtel are examples of this business model.
- > **ISP offering VoIP and broadband bundle:** These ISPs offer VoIP and broadband bundles so will only provide VoIP services to their existing customer base, iiNet is an example of this business model.
- > **ISP offering hybrid approach:** These providers offer VoIP services to their own broadband customers as well as to customers of other broadband services. GoTalk and MyNetFone are examples of this business model.

In general, there are a number of differences between the VSP and the ISP bundled or hybrid model. ISP bundled or hybrid offerings can potentially differentiate on quality of service, as well as offer one bill and a more streamlined approach to provisioning. With current changes to VoIP provider business models, it is likely the VSP model will be challenged by the ISP bundled or hybrid offers over the next couple of years as VoIP providers start taking advantage of new service offerings such as Naked DSL and start to bundle broadband and VoIP services. These differences are outlined in Table 2.

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<sup>1</sup> Market Clarity database, June 2009.

<sup>2</sup> Australian Bureau of Statistics, *8153.0 - Internet Activity, Australia, Dec 2008*, April 2009.



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**Table 2: Typical differences between VoIP providers**

<b>Internet based providers</b>	<b>ISP bundled or hybrid offerings</b>
No local number portability	Local number portability
Best effort approach to service quality	Quality of service parameters specified
Network agnostic can choose own ISP	Need to bundle broadband and VoIP
Separate bill for broadband and VoIP	One bill for broadband and VoIP
Consumer to provision VoIP service	Streamlined provision through Naked DSL, ISP implements service

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## VoIP pricing

The pricing of VoIP varies between plans. Many VoIP providers offer free on-net calls, that is, calls made between customers on the same VoIP network. As highlighted in the *Australian VoIP report*, other VoIP pricing structures, depending on package type, can include:

- > a one-off charge per connection
- > connection flagfall plus charges for time connected
- > charges per second or minute connected
- > a subscription that offers a set amount of minutes of calls per month.

Pricing structures differ between different providers and according to the type of call made. For example, local area and national calls may incur a one-off untimed charge per call while international are charged on a per-minute basis.

Since the ACMA's report published in April 2008, there has been little change in the pricing structures of VoIP products which generally continue to offer a combination of free and charged calls, although limits on call volumes or fair use policies have been implemented by many VoIP providers. ISP VoIP providers are also offering discounts through bundling incentives when customers add VoIP to their broadband service.

In general there are two types of VoIP call plans. These include:

- > Pay As You Go (PAYG)—This model is where consumers pay no monthly fee and local and national calls are charged either on a per minute basis or per call. Features on these plans include:
  - > the cost of local and national calls are generally the same price and untimed
  - > mobile calls are generally charged in 30 or 60 second increment
  - > international calls are charged at a range of per minute costs depending on destination.
- > Bundled plans—This model is where consumers pay a fixed monthly fee and receive a number of free calls to landlines (either local or national). Features of these plans include:
  - > additional local and national calls are generally the same price and untimed
  - > mobile calls are generally charged in 30 or 60 second increments
  - > international calls are charged at a range of per minute costs depending on destination.

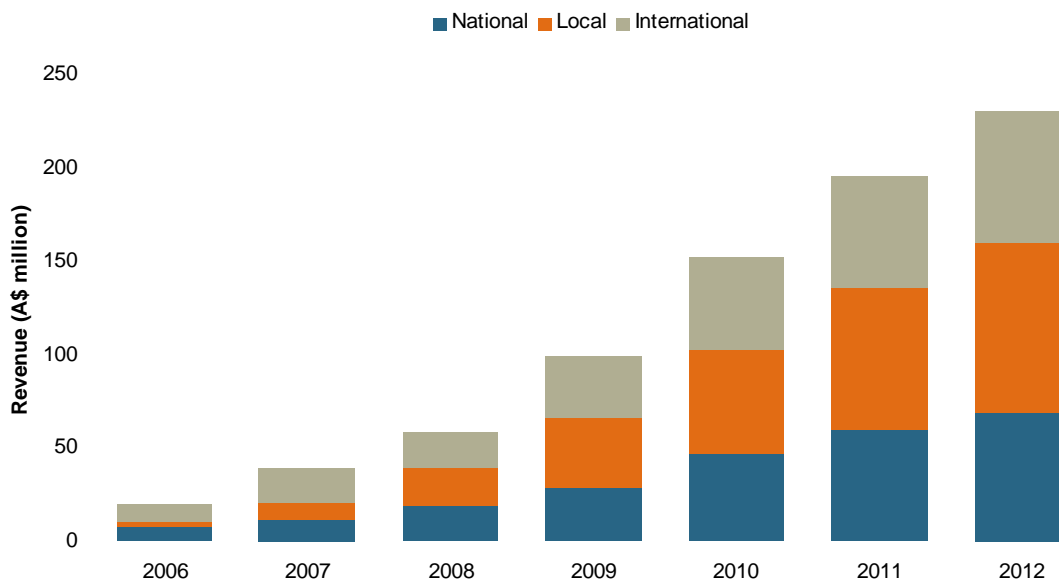
The other components of VoIP call costs include the cost of an internet connection and in Australia most broadband plans are metered. Although this may have a minimal impact on most fixed broadband plans, it can have larger implications for mobile plans, and especially 3G plans where data bundles tend to offer lower data limits and more expensive excess charges.

## VoIP revenue

Although there has been an increase in VoIP users from both consumer and business markets, at present revenue derived from these services is small as many subscribers utilise free services. However, research consultancies are forecasting increases in revenues as consumers start to utilise these services as a complementary service or substitute for their fixed-line telephone service. The increase in revenue is expected to be driven by a move away from using VoIP as a complimentary free service or using VoIP mainly for cheap international calls, to a subscription service where the consumer uses VoIP for all calls.

IDC believes that in the short term most VoIP revenue will be generated from international traffic, but over the course of the forecast period, revenue from local calls will become the dominant VoIP traffic revenue generator. National and international traffic revenues will be become relatively even by 2012 (as shown in Figure 1).<sup>3</sup>

**Figure 1: Residential VoIP revenue, 2006–2012**



Source: Replicated from IDC, *Residential VoIP: Lets get Naked*, July 2008.

<sup>3</sup> IDC, *Residential VoIP: Lets Get Naked*, July 2008.

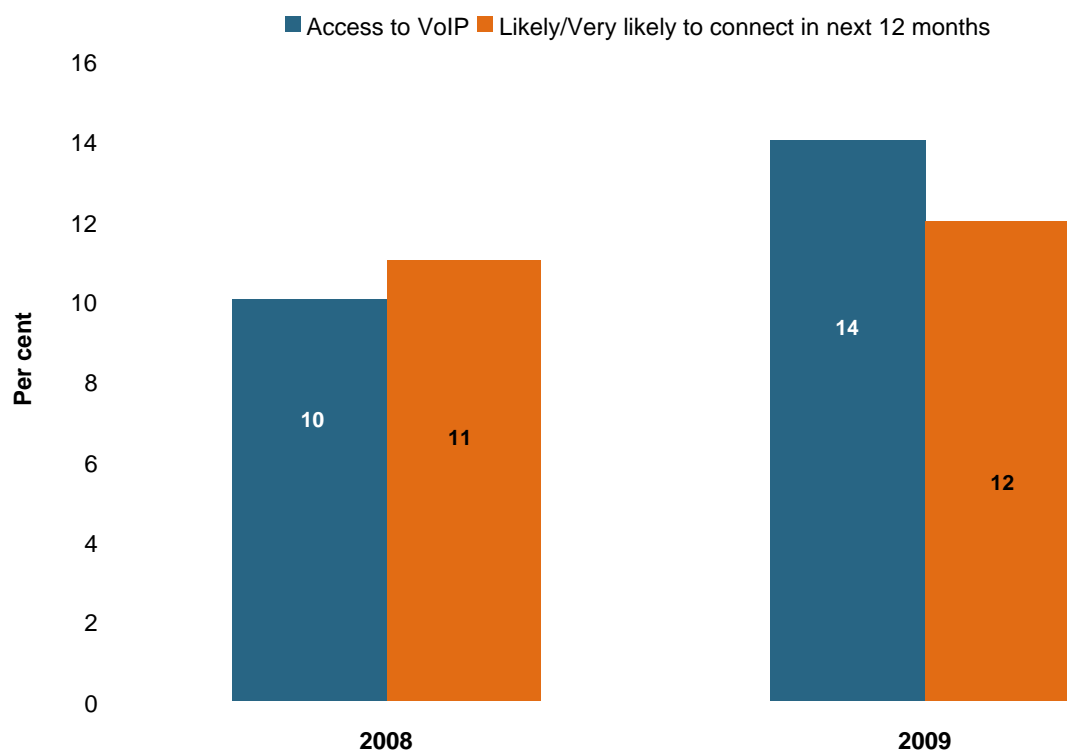
# Consumer take-up and use of VoIP

## VoIP take-up

It is difficult to quantify the number of VoIP users, however data collected by Roy Morgan indicates that 14 per cent of the Australian population aged 14 years and over had access to a VoIP service at home as at June 2009. This has increased from June 2008 when only 10 per cent of the population had access to a VoIP service in the home (shown in Figure 2).

The ACMA's commissioned survey at April 2009 found that the main reasons for the non-use of VoIP include lack of awareness (48 per cent), satisfaction with current voice communications (16 per cent) and too hard or too much of a hassle to set up (15 per cent).<sup>4</sup> Data collected by Roy Morgan indicates that, as at June 2009, 12 per cent of the Australian population are likely or very likely to take up VoIP in the next twelve months. This is a slight increase from 11 per cent in June 2008.

Figure 2: The use of VoIP services 2008 and 2009



Source: Roy Morgan Single Source Survey, Australians aged 14+, April 2009-June 2009 and April 2008-June 2008.

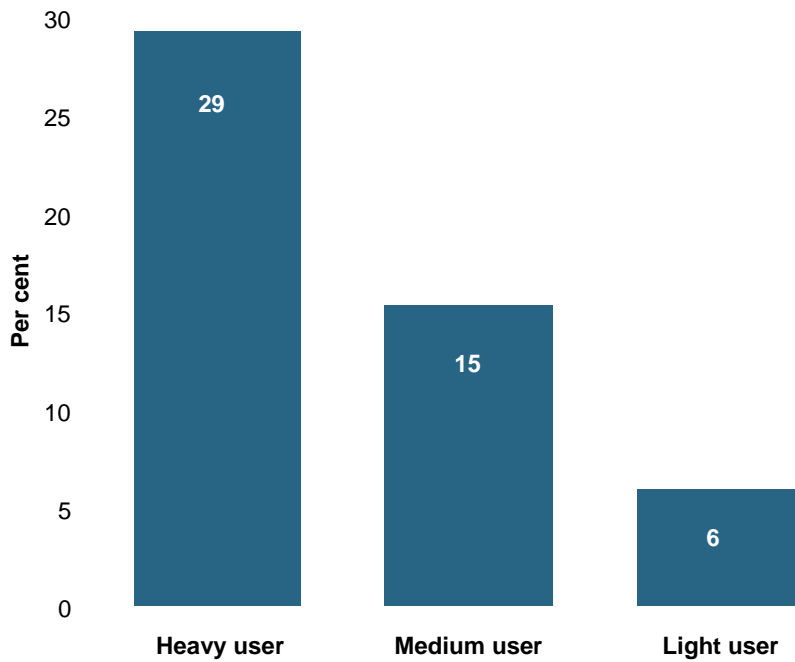
VoIP adoption is widely diffused and there are only small variations in usage across demographics.

<sup>4</sup> ACMA commissioned survey, April 2009, respondents not using VoIP, n=964.

## Consumers using VoIP

The frequency of internet use and perceived internet skills are the biggest drivers of VoIP use. As shown in Figure 3, heavy internet users (those who use the internet more than eight times a week) are more likely to use VoIP. Twenty-nine per cent of heavy users have used VoIP services compared with only six per cent of light users (use the internet less than once a week).

**Figure 3: Internet frequency and use of VoIP**

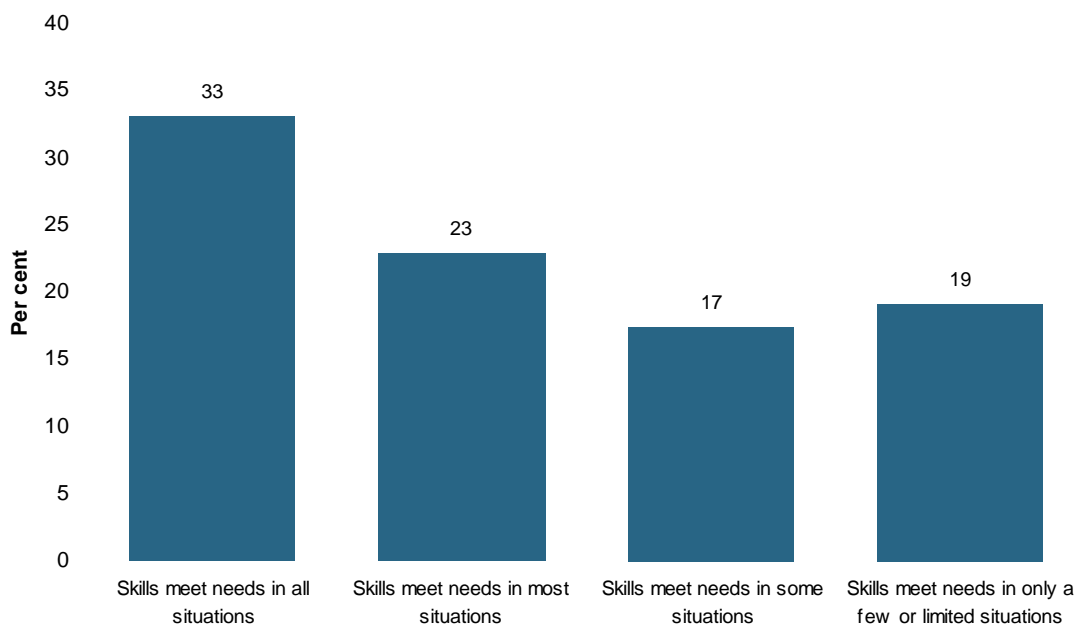


Source: ACMA commissioned survey, personal internet users, n=1,195, excludes 'don't knows'.

Australians who believe their internet skills are sufficient in all situations are more likely to use VoIP, 33 per cent compared with only 19 per cent for those who feel their internet skills are sufficient in only a few of limited situations (as shown in Figure 4).

This indicates that VoIP users are more established internet users that use the internet frequently and have the skill level to meet their needs.

**Figure 4: Level of internet skill and use of VoIP**



Source: ACMA commissioned survey, personal internet users, n=1,195, excludes 'don't knows'.

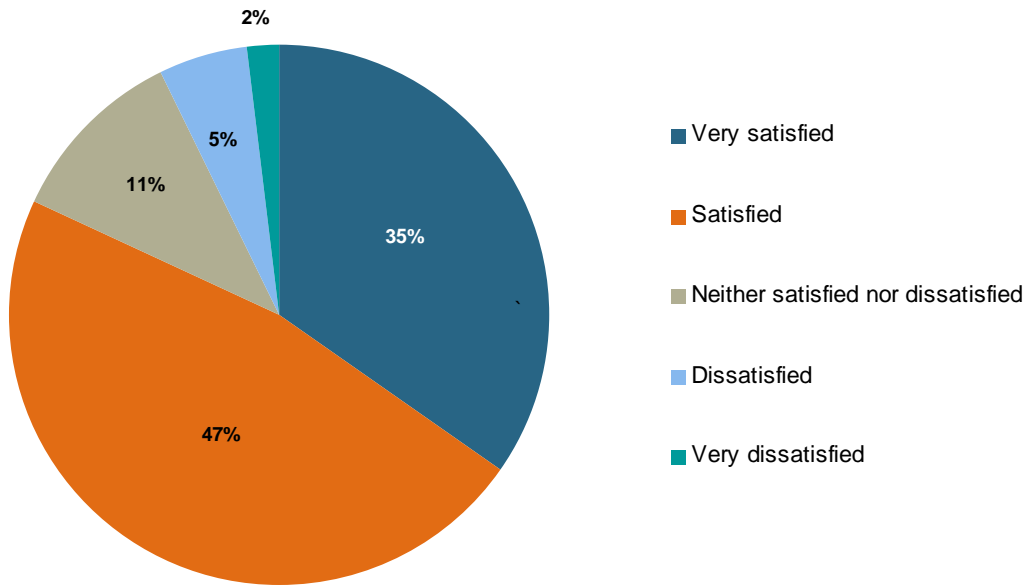
International calls are the most popular VoIP call type (71 per cent of users), followed by long distance (50 per cent) and local calls (38 per cent).

According to Roy Morgan Single Source, the majority of consumers access VoIP via their PC or laptop (76 per cent) and 17 per cent access it via a home phone; only six per cent access VoIP via their mobile phone. Those accessing VoIP via their home phone are likely to be using VoIP as a substitute for their landline.<sup>5</sup> This equates to approximately two per cent of households and is consistent with the ACMA survey which found that three per cent of households use VoIP as their main form of communication.

VoIP users claim to be very satisfied with their VoIP services. Nearly 80 per cent indicated they were either satisfied or very satisfied, as outlined in Figure 5. Only nine per cent were either dissatisfied or very dissatisfied with their VoIP service.

<sup>5</sup> Roy Morgan Single Source Survey, April 2009-June 2009, those that access VoIP (n=566).

Figure 5: Level of satisfaction with VoIP service

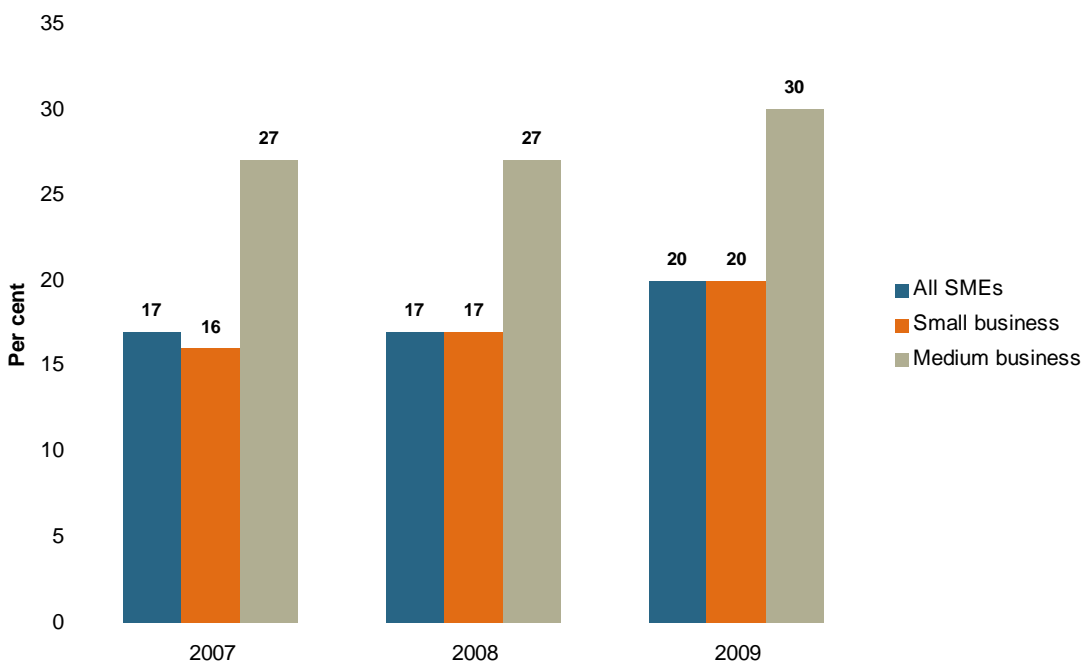


Source: ACMA commissioned survey 2009, VoIP users, n=300, excludes 'don't knows'.

### SME use of VoIP services

SMEs are also embracing VoIP. At the end of June 2009, Sensis reported that 20 per cent of SMEs had used VoIP services. VoIP usage was more prominent among medium sized SMEs (30 per cent). This compares to 17 per cent of SMEs who had used a VoIP service in June 2008 and 27 per cent of medium sized SMEs, as shown in Figure 6.

Figure 6: SME VoIP take-up



Source: Sensis, Sensis e-business report, July 2009

Information from IDC supports this increased use of VoIP services by businesses. The *IDC Broadband and IP Services Enterprise Usage and Preference Telecommunications Survey* indicates that 25 per cent of companies had moved to an IP telephone/IP PBX solution. As expected, this was more prominent with medium-sized businesses.

This same survey showed that the main reason businesses are using IP telephony is for cost savings on phone calls (46 per cent), this was by far the most popular reason and was followed by 'IP PBX hardware cost is cheaper' and 'lower maintenance and support costs'; both at around 10 per cent. The main reason businesses do not use IP telephony or enterprise VoIP solutions was that mobile phones were used more often than the office phones (22 per cent), followed by 'current telephone system works just fine' (21 per cent).<sup>6</sup>

## **VoIP traffic**

Data from Telegeography indicates that Skype is the largest provider of cross-border voice communications in the world. Telegeography shows Skype's international traffic grew significantly in 2008, with cross-border traffic growing by approximately 41 per cent to 33 billion minutes.<sup>7</sup>

Data from Nielsen's Online Netview indicates that the number of Australian Skype users has increased significantly, and at June 2008 there were 876,000 unique users to Skype during that month compared with 1.01 million unique users in the month of June 2009. Time per session has also increased from around an hour in June 2008, to an hour and a half in June 2009.

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<sup>6</sup> IDC, *Australia Broadband and IP Services Enterprise Usage and Preferences: IDC 2008 Telecommunications Survey*, September 2008.

<sup>7</sup> Telegeography, *Skype's share of the international long-distance pie on the increase*, March 2009, [www.telegeography.com/cu/article.php?article\\_id=27800&email=html](http://www.telegeography.com/cu/article.php?article_id=27800&email=html).

# Technology developments in VoIP

## Overview

There have been a number of recent technology developments that facilitate the use and provision of VoIP services to consumers and SMEs. These include Naked DSL and Mobile Voice over Internet Protocol (Mobile VoIP). In the medium term, Long Term Evolution (LTE) is expected to become the next major standard in mobile broadband and provide another platform for VoIP access.

## Naked DSL

In Australia, Naked DSL services are offered by ISPs using unconditioned local loop service (ULLS). ULLS is an unbundled line which gives an ISP the use of Telstra's copper line without any dial tone or carriage service. This allows ISPs to use the Telstra copper line in conjunction with their own infrastructure equipment in an exchange to provide a range of services including traditional voice services and high speed internet.

One of the benefits of Naked DSL is that there is no need for a fixed-line telephone service to connect to DSL (the most popular broadband connection type in Australia). This means Naked DSL provides consumers with high speed broadband without the additional expense of the monthly subscription fee of a fixed-line telephone service.

## Impacts of Naked DSL

The introduction of Naked DSL in late 2007 has had a positive impact on the provision of VoIP services in Australia. A study by IDC, *Residential VoIP: Let's Get Naked*, found that although residential VoIP services have been available in Australia for the past four years, their uptake was slow compared with Europe and the US, especially for Type 4 two-way VoIP services. However, a key driver to growth in Australia has been the introduction of Naked DSL and the bundled sale of broadband and VoIP as a package.<sup>8</sup>

According to the Australian Bureau of Statistics, at December 2008, 19 per cent of ISPs offered a Naked DSL service.<sup>9</sup> Actual numbers of Naked DSL lines are difficult to quantify; the ACCC reports there were a total of 1.2 million unbundled services in operation by 31 March 2009<sup>10</sup>, of these 648,000 were ULLS, which are used to provide Naked DSL. The rest of these unbundled services are provided using line sharing services (LSS), which are used to provide a broadband and telephone package. Not all of the ULLS line will be Naked DSL; services such as Frame Relay, (VDSL) and SHDSL are also supplied over ULLS. In Australia, Naked DSL services bundled with VoIP are offered by a number of ISPs. Generally Naked DSL and VoIP plans tend to have a monthly charge, with a GB limit (with peak and off-peak differences) and call costs, which can include no charge for certain calls.

## Implications of VoIP over Naked DSL

The availability of Naked DSL is mainly restricted to metropolitan areas. Of the 648,000 ULLS lines, 99 per cent are in metropolitan areas. Services over ULLS are available at 518 exchange service areas (ESAs) and 71 per cent of these ESAs have DSLAMs installed by more than one ISP.<sup>9</sup>

Apart from limited availability, other implications for Naked DSL are related to the lack of a fixed-line service and dial tone. Naked DSL with VoIP does not replace a fixed-line in all circumstances; for example Naked DSL and VoIP can limit the use of fax machines and some ancillary subscription services which may operate better over telephone services based on traditional PSTN connections.

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<sup>8</sup> IDC, *Residential VoIP: Lets Get Naked*, July 2008.

<sup>9</sup> ABS, *Internet Activity, Australia, December 2008*, April 6 2009, Cat: 8153.0.

<sup>10</sup> ACCC, *Snapshot of Telstra's customer access network as at 31 March 2009*. Note - metropolitan areas are made up of Band 1 and Band 2.



There are also implications with access to emergency call numbers for some VoIP services. However, Type 4 VoIP services using Naked DSL must provide emergency call access.

## **Mobile VoIP**

With the increasing roll-out of mobile networks, the upgrade of existing networks with faster data rates, and the development of new smart phone handsets which facilitate the use of mobile broadband such as the iPhone and the Nokia N Series, applications such as Mobile VoIP are increasingly becoming available and used by consumers.

### **What is Mobile VoIP?**

Mobile VoIP is a VoIP service that can be accessed using some mobile devices and services with data access. Mobile VoIP calls may be possible over fixed mobile networks; for example, wireless hotspots and Wi-Fi and WiMax networks, or over mobile operator 3G networks. In Australia the costs of VoIP over mobile 3G networks may not be as attractive due to the relatively high data costs and data allowances on mobile broadband plans.

### **Benefits of Mobile VoIP**

The main benefit of Mobile VoIP for consumers is that it bypasses the originating mobile carriers' telephony network and allows cheap calls to be made on mobiles via the internet based providers. VoIP offers an alternative to international roaming by allowing consumers to make cheap international calls and avoiding high roaming costs. Mobile VoIP also has the added benefit that it is mobile and consumers are not tied to the fixed infrastructure such as PCs and DSL modems to make VoIP calls.

### **Disadvantages of Mobile VoIP**

While Mobile VoIP offers a number of benefits for consumers, for mobile operators it has the potential to erode their traditional mobile voice revenues. While Mobile VoIP is increasingly becoming available in Australia, it has had minimum impact to date. However, as consumer knowledge and awareness of mobile VoIP increases, so will the uptake and usage of mobile VoIP, which could result in future revenue decreases to traditional mobile voice revenues.

### **Developments in Mobile VoIP**

In Australia there have been a number of developments which have enabled the use of Mobile VoIP including increased coverage and speed of mobile networks, changes to mobile data packages and the increasing provision of Mobile VoIP applications for mobile phone platforms.

### **Changes to mobile data plans**

Consumers are increasingly using their mobile phones for internet access. The ACMA research indicates 55 per cent of Australians aged 14 and over had a 3G-enabled phone and of these a third had accessed content from their phones in 2009. This has increased from 30 per cent of 3G-enabled phones in 2008, with a third accessing content. Operators are responding to this increased demand and mobile data plans are becoming more competitive. Operators are bundling packages in an attempt to attract and retain customers to their 3G networks and developing specific pricing plans for mobile internet-enabling phones such as the iPhone. This increase in data options increases the possibilities of mobile VoIP.

### **The provision of VoIP services for mobile phones**

The best known Mobile VoIP application for the mobile phone is Skype. A Skype application for iPhones was launched in March 2009, and by the beginning of April 2009, the application had been downloaded by over one million consumers around the world,

around six downloads every second.<sup>11</sup> The Skype application allows Skype users to call other Skype users for free and a small fee applies for calls to fixed or mobile services. This can be paid through a subscription or a Pay As You Go (PAYG) model. Skype is also available for download on compatible LG, Motorola, Nokia, Samsung and Sony Ericsson phones.<sup>12</sup>

Prior to the launch of the Skype application, Hutchison had partnered with Skype to launch the Skypephone. This was the first time an operator in Australia had offered a Mobile VoIP offering for its subscribers. This phone allowed customers to make free Skype to Skype calls and send free instant messages to other Skype users globally. Skype and Hutchison also launched this service in Austria, the UK, Denmark, Hong Kong, Ireland, Italy and Sweden.

Skype is not the only VoIP application available for use over a mobile phone, MyNetFone offers a Mobile VoIP service aimed at business users. The service allows owners of Nokia N and E series mobile phones to download software which enables them to make and receive VoIP calls from their handsets via Wi-Fi and 3G.<sup>13</sup> Other Mobile VoIP providers include Yeigo, Fring, Truphone and VoPium.

### **Implications of Mobile VoIP**

By using a carrier's wireless data network, VoIP allows mobile customers to bypass the providers' telephony network. In Europe and the United States, there have been attempts by other operators to restrict the use of VoIP applications on other networks. In Europe, there are reports that the UK's O2 has restricted the use of Skype's mobile application to WiFi hotspots<sup>14</sup> and in Germany Deutsche Telekom prohibited the use of VoIP applications on its 3G network, restricted its use on its hotspot network and cancelled contracts of customers who tried to work around the restrictions.<sup>15</sup> However, Deutsche Telekom announced in June it will lift the ban and instead charge customers from €9.95 (AU\$16.80) per month for using mobile VoIP services.<sup>16</sup> Likewise in the US, AT&T has reportedly restricted the use of the Skype iPhone application on AT&T's 3G network. This will limit the use of Skype for iPhone to WiFi hotspots.<sup>17</sup>

These actions are raising debate about net neutrality and restrictions of trade, which are under discussion in the United States and European Union.

### **LTE and VoIP**

Long Term Evolution (LTE) is widely expected to become the next major standard in mobile broadband technology. As LTE is built around IP, it offers additional opportunities for calling via VoIP systems.

There are numerous trials underway worldwide using LTE. In Japan, DoCoMo has trialled LTE and reached peak speeds of 300Mbps download and 50Mbps upload.<sup>18</sup>

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<sup>11</sup> Peter Parkes, Skype webpage, *2 million Skype for iPhone downloads*, 8 April 2009, [http://share.skype.com/sites/en/2009/04/2\\_million\\_skype\\_for\\_iphone\\_dow.html](http://share.skype.com/sites/en/2009/04/2_million_skype_for_iphone_dow.html).

<sup>12</sup> Skype webpage, accessed May 2009, [www.skype.com/intl/en/download/skype/mobile/](http://www.skype.com/intl/en/download/skype/mobile/).

<sup>13</sup> MyNetFone website, accessed May 2009, [www.MyNetFone.com.au/business-voip-solutions/enhanced-services/MyNetFone-on-the-go/](http://www.MyNetFone.com.au/business-voip-solutions/enhanced-services/MyNetFone-on-the-go/).

<sup>14</sup> Will Park, Wireless Ventures Ltd, *Skype for iPhone banned by carriers in US, Europe*, 6 April 2009.

<sup>15</sup> Doug Mohny, Fierce VoIP, *Skype iPhone restrictions stir up lobbying in Europe*, FCC, April 4 2009.

<sup>16</sup> Archibald Preuschat, Totaltele.com, *T-Mobile replaces Skype ban with surcharge*, 02 June 2009.

<sup>17</sup> Will Park, Wireless Ventures Ltd, *Skype for iPhone banned by carriers in US, Europe*, 6 April 2009.

<sup>18</sup> Luke Coleman, Communications Day, *LTE delivering 300Mbps in DoCoMo trials*, 18 June 2009.

In Australia, LTE has been trialled by many vendors including Nokia Siemens Networks (NSN) and Motorola.<sup>19</sup>

The development of specifications for delivering voice services over LTE access networks is underway by a range of industry operator groups.

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<sup>19</sup> Grahame Lynch, Communications Day, *NSN declares success for managed services performance, but doesn't seek NBN lead operator roles*, 18 June 2009

# Conclusions

There are an increasing number of VoIP providers in Australia, reaching 268 at June 2009. However, there has been a shift in the business models of these providers, with an increasing number of VoIP providers becoming ISPs offering VoIP as well as broadband services. There is also a trend for ISPs to diversify their service offerings and to include VoIP services as a bundled package, especially when providing services over Naked DSL.

Consumer use and interest in VoIP is also increasing, with 14 per cent of the Australian population aged 14 years and over having access to a VoIP service at home. A further 12 per cent of the Australian population without access to a VoIP service in the home indicate they are likely or very likely to take up VoIP in the next 12 months. As expected, international calls are the main type of VoIP calls, but half of VoIP users also make national calls.

A number of developments in the industry which have had an impact on the provision of VoIP will also contribute to this growth. The introduction of Naked DSL has had a positive impact on VoIP as a service and many ISPs are now offering VoIP in conjunction with broadband services. This allows consumers to choose whether they have a fixed-line service and enhances their opportunities substitute a traditional fixed-line service for a VoIP service. Other developments which are likely to have an impact in the future include the provision of Mobile VoIP and the development of new handsets which facilitate the provision of mobile VoIP, and the introduction of LTE networks which are IP networks and will require the voice to be delivered over IP.