Final Version – agreed by NGN FOG

ACIF Next Generation Network Project

NGN Framework Options Group

(NGN FOG)

Policy and Regulatory Considerations for New and Emerging Services

Final Version – agreed by NGN FOG

Contents

1 Introduction

The introduction of transmission and switching technology based on packets of information has far-reaching implications for networks, services delivered to users and industry structure.

The public telephone service now supports both the social and economic health of the nation. It is based on an architecture over a century old, which has changed relatively little despite changes in the underlying technology.

A major change is taking placethat will see a move to NGNs that will support a wide range of services (multimedia, text and data, as well as voice) over a wide range of speeds, from low speed to broadband. The long term NGNs are still being standardised, but transitional, packet-based services are being developed and deployed in many countries, including Australia.

2 Overview

This paper outlines the views that have been established by the ACIF NGN FOG on the desirable policy and regulatory environment to assist the delivery of new and emerging telecommunications services and applications on packet-based networks. It considers areas of the current legislative and regulatory framework that will require close attention to determine the need for any changes.

This paper is in part a response to a DoCITA invitation for ACIF to facilitate an industry view of NGN regulatory implications, which may assist them in pro-active policy formulation and the management of consumer expectations.

Where a consensus view has not been reached, alternate views have been shown.

3 What is "NGN"?

The terms "Next Generation Network" and "NGN" are now in common use, but until recently there has not been a single widely accepted definition. At the broad level, many potential network arrangements are beyond the "current generation", as indeed are networks now being introduced. The term "NGN" now is in wider use, but with no more precise meaning than when the ACIF NGN Project started in 2002. There is, however, an emerging consensus in the telecommunications industry about the standards that are required for future ubiquitous networks, able to support fixed, mobile and nomadic users and able to carry voice, data and multimedia services. These networks are being called "NGNs".

3.1 ACIF's View of NGN

ACIF's NGN FOG has developed its own practical interpretation of an Australian NGN, broadly consistent with work in the International Telecommunication Union (ITU).

1. NGN is a concept, rather than a single network (and will include a range of different network technologies);
2. NGN architecture is separated into different layers and planes with open interfaces that allow service creation independent from the underlying technology (and infrastructure).

3. NGNs will be packet based, with the predominant packet technology Internet Protocol (IP) developed by the Internet Engineering Task Force (IETF).
4. NGNs will have to support a full range of services, including real-time interactive services (voice, text and multi-media).

In this document we consider services which will develop from current "***legacy services***", primarily those being offered on the circuit-switched PSTN. These are

- "***NGN services***" (or Next Generation Services), primarily those being specified by telecommunications standards organisations[1] (also called "carrier grade IP services).
- However, there are also "***transitional services***" such as Internet telephony (or IP Telephony/VoIP) which are pre-standardisation, but are now starting to be provided by the market.

The NGN standards now being produced should help ensure interoperability of services offered by different providers. However, interoperability is less certain for transitional services.

The ACIF NGN FOG work has shown both types are likely to have considerable policy and regulatory implications and recent work in the ACIF NGN Project has concentrated on this area.

3.2 ITU's Definition of NGN

The Telecommunication Standardisation area of the International Telecommunication Union (ITU-T) adopted the following working definition[2] in March 2004 for the NGN(s) now being standardised:-

"*A Next Generation Network (NGN) is a packet-based network able to provide services including Telecommunication Services and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent from underlying transport-related technologies. It offers unrestricted access by users to different service providers. It supports generalized mobility which will allow consistent and ubiquitous provision of services to users.*

The NGN is characterized by the following fundamental aspects:

1. *Packet-based transfer;*
2. *Separation of control functions among bearer capabilities, call/session, and application/ service;*
3. *Decoupling of service provision from network, and provision of open interfaces;*
4. *Support for a wide range of services, applications and mechanisms based on service building blocks (including real time/ streaming/ non-real time services and multi-media);*
5. *Broadband capabilities with end-to-end QoS and transparency;*
6. *Interworking with legacy networks via open interfaces;*
7. *Generalized mobility;*
8. *Unrestricted access by users to different service providers;*

[1] These network-based services are likely to include voice (telephony), multimedia (for example one-way and two-way video and sound) text and data, supporting applications drawing on some or all of these services.

[2] From www.itu.int/ITU-T/studygroups/com13/ngn2004/working_definition.html

9. *A variety of identification schemes which can be resolved to IP addresses for the purposes of routing in IP networks ;*
10. *Unified service characteristics for the same service as perceived by the user*
11. *Converged services between Fixed/Mobile;*
12. *Independence of service-related functions from underlying transport technologies; and*
13. *Compliant with all regulatory requirements, for example concerning emergency communications and security/privacy, etc."*

This definition was also endorsed by the Global Standards Collaboration Meeting (GSC-9) in May 2004 as the basis for NGN standards work across international, regional and national telecommunication standards development organisations.

3.3 NGN Concepts

To expand on these ideas, NGN is seen as a set of architectures that will promote the availability of a broad range of individual and/or integrated applications including voice, text or multimedia communications, information and transaction services. These will be delivered to individuals via a wide range of packet based access arrangements including fixed, wireless, mobile or nomadic (often with broadband capacity) and an extensive range of customer devices. Future networks are expected to transition to a common core IP-based network with a range of access technologies available. Services will be provided as applications on this network.

The delivery of these applications will normally be independent of the access technology. This will be characterised by the horizontal integration of various suppliers who provide either the physical infrastructure, the management and control of the infrastructure or an overarching end-to-end access service to the customer / user that supports the application being utilised.

Some of the key building blocks for these applications appear to require knowledge of the identity of the user and the management of that identity (authorisation, authentication, security and auditing); the (physical) location of the user/s and presence[3], i.e. whether they are currently connected and their preferred mode of interaction.

4 So What?

For regulation of future networks (both by industry and government) the following features are likely to be important:

1. Multiple access technologies will connect to core packet IP-based networks that carry numerous service types and these networks will need to interconnect in a manner that supports all service types;
2. Services such as voice, video and text will be carried as applications on these packet IP-based networks;
3. All access technologies (fixed, mobile and nomadic[4]) will evolve to be packet data technologies;

[3] Presence: An indication that tells if a user is available on the network (and often, if the user is willing to receive communications)

[4] Nomadic: A user may access the network from different locations. Mobility provides for continuous transition (seamless handover) between cells; nomadicity provides for discontinuous transition (disconnection and reconnection) between access points or cells.

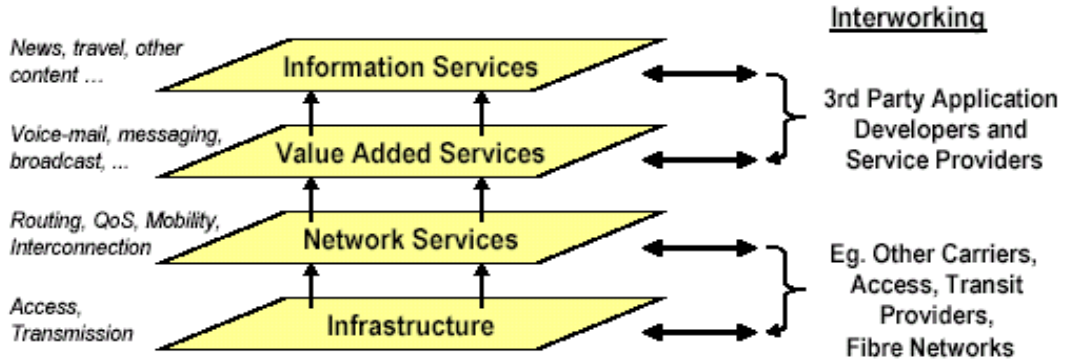
4. Delivery of services will be independent of the access technology, except for modification for any limitations in the access technologies;
5. Multimedia communications with support for Presence will be the norm;
6. Many services will be provided to mobile or nomadic users, making location information important ;
7. Numbering, naming and/or addressing schemes will need to encompass legacy, transitional and NGN services and associated directory services developed;
8. User equipment and networks will be intelligent, with much user equipment being able to be customized by the user, for example to increase usability and accessibility;
9. Peer-to-Peer communication will be common;
10. The distinction between public and private networks will become less clear, with VPNs extending corporate networks across public networks[5];
11. Users and service providers will require secure communications which protect privacy and which authenticate and authorise users and transactions;
12. Users will have an extended capability to control how they communicate and with whom - i.e. personalisation will be available

13. While any-to-any connectivity will remain an important feature for many NGN services there may be some services (eg instant messaging and peer-to-peer VoIP) for which it may not be assured; and
14. Commercial relationships between networks, and between users and service providers will exist both vertically and horizontally.

5 Future Industry Structure

5.1 "Layering"

One of the major innovations emerging from NGN activity is the introduction of network design based on "layers" with open, standardised interfaces between each layer. This approach plays an important part in both the standards-based NGN and transitional services.



This diagram gives a simple example[6] of layering in the core network(s).

[5] To clarify the status of services provided on VPNs, it is particularly important to separate the consideration of services provided and any underlying "Network Units". ACA staff participating in the NGN FOG suggested that the control of Network Units is clarified through the Carrier Licence and Nominated Carrier Declaration process. Independently of the control of Network Units, Carriage Services provided to parties outside the Immediate Circle of a provider are subject to interception and some other basic regulations that flow from the provision of a Carriage Service. If the Carriage Service is a Standard Telephone Service then some additional obligations will apply. Public and private network issues need to be considered in this context.

Interconnection will also be a feature of the infrastructure layer. This layering will have implications for future industry structures.

Infrastructure provision, particularly for access to the core network, will be a major requirement to support next generation services. Reliable access is essential, preferably over a wide range of access speeds. This access could be provided over the existing copper network (xDSL), existing coaxial networks (e.g. for Pay TV), fixed wireless access (e.g. using the proposed WiMax and later standards), mobile phone networks and optical fibre.

Support of network services will require both access and core infrastructure, but will not be dependent on a particular technology.

End-user services could be provided by facilities accessible over the network (e.g. servers) working in combination with customer equipment or by end-to-end customer equipment interaction alone.

5.2 Provision of Service

Applications can be provided over these service layers, using their underlying facilities, and could be accessible from a range of networks and over a variety of access arrangements.

As an example:

1. One service provider may provide physical infrastructure (e.g. Telstra for copper access infrastructure);
2. Another may provide basic network connectivity (for example providing IP over DSL, or IP carriage);
3. Another may provide a particular service over the network (for example, a BT Broadband Voice type Internet telephony service); and
4. Yet another may provide an application (for example, advanced call handling, video conferencing, voice to text conversion).

Point 4 introduces what might be called an *applications service provider* (ASP) who does not provide any carriage service, as in some examples under point 3. These ASPs may not be encompassed by current legislation (unless the service provider also provides a carriage service to the end-user). Furthermore, some requirements of current regulation could not be met by these providers. For example, control of quality of service may be to all intents and purposes outside the ability of some ASPs. Regulatory requirements may need to be applied to the responsible industry participant, and this “layering” may result in fundamental changes from current (legacy) arrangements for both NGN and transitional services.

Each function could be provided within the one company, or by a number of providers working together:

- An end-user may be the customer of an application service provider, who contracts with the network provider for the provision of access to the application. The application service provider would have the direct

[6] The terminology used in this diagram is derived from the Internet world. In this context, voice is a “value added service” above basic network connectivity. The term “value added service” is not used in the traditional telephony sense, as a service beyond basic telephony.

responsibility to the customer for the delivery of the service [7]. The provision of a total end-to-end service architecture (i.e. offering any-to-any connectivity) with associated operational and maintenance arrangements will be a major self-regulatory challenge for the industry.

- Alternatively, a single company may provide all of the layers described above, and attempt to contain their customers within a "walled garden".

The above discussion highlights a key feature of NGN - the decoupling of service provision from the underlying infrastructure. This means that a service provider might have no relationship with the infrastructure provider and the carriage service provider and could be geographically separated from its customers.

Moreover, the horizontal fragmentation of service delivery is likely to increase as more providers become involved in end-to-end service provision across a broader range of transmission network types. For instance, an end-user with a 3G mobile handset may access the Internet via a path from a mobile network to a VPN to a core network to the PSTN and then to the Internet. Each of these elements may be controlled by a different network operator, necessitating an increasing mesh of interconnection arrangements.

Current regulations distinguish between public and private networks. The service delivery developments associated with NGN and transitional services could result in an extension of public network regulation into corporate services and networks. Industry participants in the NGN FOG have suggested that, for public and corporate services and networks, there is a need to step back and look at the end-user experience and the parties responsible for the ultimate provision of services to the end-user to understand the application of the regulations. They have a concern that, if corporations purchase telecommunications services as a managed service or outsource operation of corporate networks to other parties, public network regulation may apply with different regulatory outcomes depending on the details of the arrangements. An alternate view suggested that where parties are providing carriage services to parties outside their immediate circle, they are subject to the regulations regardless of how they source the carriage services and regardless of the extent to which they transform the carriage services. These developments and related customer expectations need to be considered when developing NGN policy.

Australian government regulation and/or policy will have to take into account the layered architecture likely in future networks, with different and new service provider types possible for different layers. In addition, there is the prospect that the layered model itself may change over time as a result of further technological change or other influences on the market[8].

5.3 Future Services and Applications

There is a range of technical and commercial possibilities for the provision of many service combinations, with many capable of being provided from outside Australia. For example, a server supporting IP telephony/VoIP could be located anywhere in the world provided that it is accessible by suitable broadband infrastructure.

[7] ACA staff participating in the NGN FOG have indicated that they believe this condition suggest the Application Service Provider thus becomes the Carriage Service Provider for the end user.

[8] ACA staff note that the current technology neutral approach has dealt with increasing layering to date and the challenge will be to ascertain whether this approach is sustainable.

We are only at the beginning of NGN application development. Possible applications include:

1. Voice over packet networks including cable and DSL networks;
2. User/customer controlled advanced call management based on calling number, time of day, application/service subscribed, obligations entitled to etc;
3. Instant messaging (text and video);
4. Advanced presence information;
5. Video telephony;
6. Video messaging;
7. Collaborative tools – eg file transfer, desktop application sharing;
8. Location-based services for mobile and nomadic users; and
9. Audio, video and text conferencing.

6 Implications for Users

Large and medium corporate users are already using multifunctional packet-based networks to provide voice and data. These networks can be designed to meet internal company requirements, and to interconnect to both telephone networks and data networks (generally the public Internet) as well as providing access to other corporate networks. As the networks are under the control of the user (either directly or via arrangements with a public network operator) they extend the current arrangements for private networks. In an advanced corporate environment today's users may have services such as video telephony, presence, applications sharing, secure instant messaging etc from their desks and this capability may be mobile, nomadic or fixed. This would allow users to have the same capabilities, within the limits of the access technology being used, no matter where they were in the world.

The experience for consumers will evolve in the coming years but some of the features becoming available in corporate networks will become more widely available if there is a viable consumer market. The major determining factors will be the access devices used and the access technologies. Mobile phones and the Internet will provide an early "NGN" experience for many users with services such as push-to-talk, Instant Messaging, two-way video and content (video, audio and text) streamed and broadcast to the user. Transitional services such as IP telephony may be offered over residential broadband access.

One of the major policy requirements of current legislation is to ensure that "carriage services of social importance" are "reasonably accessible to all people in Australia on an equitable basis"[9]. At present this has been defined in terms of the telephone service or equivalent services (as part of the Standard Telephone Service or STS). Many other aspects of current policy and associated regulation are designed to ensure the availability of services of social importance or national interest (for example, emergency access and assistance to law enforcement agencies). They are often set as a regulatory requirement for providers of the STS.

To date, the STS has been provided over the circuit-switched PSTN. The NGN currently being defined by the standards bodies is likely to have long-term effects on the the future STS, assuming this concept is retained. There may be greater impact

[9] Quotes from the Objects of the Telecommunications Act 1997

on current arrangements from the shorter term, transitional services such as IP Telephony / VoIP as these services

may not meet the full range of regulatory requirements for "carriage services of social importance" currently applied to the circuit-switched PSTN. Nevertheless, they may offer other benefits to users which will make them attractive, There is a concern among some participants in the ACIF NGN FOG that an undesirably rigid interpretation of current regulations may limit these benefits, particularly during the transition phase.[10]

The STS is a technology neutral concept. As NGNs develop it will be important to ensure to the maximum extent possible that any regulations are service based. Regulations based on technologies and techniques used to provide a service will create confusion as the choice available grows.

6.1 Transition to NGN

Many consumers may see only limited changes in their current fixed services for many years, even if core network technology moves to NGN. Users will require suitable quality broadband access (principally low latency with high availability) and new access devices to be able to use many of the new NGN services likely to be offered.

Communications could be simplified by integration of addresses and contact information, making access and contact management far simpler and giving users greater control. For example, home, work and mobile phone numbers, IM address and work and personal email addresses could all be integrated so that users can manage how, when and where they are contacted. The inter-relationship of these numbering and addressing schemes, and their management during the transition to NGN will be a major task for the industry, particularly as some are nationally based (e.g. telephone numbers), some are globally based (e.g. IP addressing and Domain Names) and others are proprietary (e.g. Instant Messaging).

Some members of the ACIF NGN Project see there is a need to consider the introduction of digital divide legislation or additional universal service provisions in legislation to assist end-users who because of geography, economic circumstances, disability or other reasons might not otherwise have the opportunity to access new services in the future[11]. Further consideration of the significant policy issues concerning the provision of ubiquitous, reliable broadband access are beyond the scope of this paper.

Current regulation for voice services was created by abstracting the essential technology neutral features of a service that had evolved from circuit switched technology. The regulations have remained viable through the technological changes of last decade. NGN architectures will evolve in the coming years and there are many unknowns. Nevertheless, appropriate policy and regulation may be required to ensure users are able to enjoy the many benefits that NGNs appear to offer.

[10] ACA staff participating in the NGN FOG indicated that this is not the case currently, but is theoretically possible.

[11] The Digital Divide legislation (rev. 20) in South Korea provides an interesting model. It has led to the establishment of a Committee for Bridging the Digital Divide and the Korean Agency of Digital Opportunity and Promotion (KADO) along with a five-year plan to narrow the digital gap. This includes the provision of access to information and telecommunications services and an IT learning program.

Appendix A to this Report looks at **Meeting User's Needs**, and Appendix B looks at issues of **Emergency Services, Security and Privacy.**

7 Emerging Scenarios

There is no doubt that there will be an evolution from current circuit-switched networks to the standards-based, packet-switched, IP-based NGNs. The process has already begun, and the ACIF NGN Project work has identified a number of transitional scenarios. Because of the social importance of the current telephone service, these transitional scenarios are based around voice transmission and access to and from the circuit-switched PSTN, but the use of packet-based carriage allows for simultaneous or alternative carriage of other modes, for example text and video. Scenarios for residential and other users are:-

- Voice over the Public Internet (VoIP) Independent of the circuit-switched PSTN (e.g. Skype, FreeWorld Dialup)
- VoIP Services with Gateways to the existing circuit-switched PSTN (e.g. SIPphone, SkypeOut)
- Internet Telephony over Any Residential Broadband Access (e.g. Vonage, BT Broadband Voice)
- IP Telephony provided within a single Broadband Network (e.g. Neighborhood Cable, Comcast)
- IP Telephony to full Telephony Standards, combined with other carriage services (multimedia and data). (e.g. corporate networks, standards-based NGN)

Appendix C gives some more detail about these **Emerging Scenarios**.

8 Challenges

(The challenges below are not listed in any order of priority.)

8.1 A Disruptive Technology

Current regulation of telecommunications has developed over many decades and has been largely driven by or has influenced the capabilities of the circuit-switched PSTN and its architecture. The architecture underlying the move to NGN has the potential to require changes in current policy and regulation.

Adapting current regulation to NGN and transitional services may not be the best way to proceed to achieve the best outcome for the development of NGN in Australia, given that IP networks and technologies have fundamentally different capabilities and architectures from those of the circuit-switched PSTN. Unlike the circuit-switched PSTN, many parameters of the services requested by a user will be under the user's control, either directly or in association with the end-to-end service required. For example, network performance (i.e. QoS) will vary from the performance required to support interactive, real-time communication (voice and multimedia) to the variable performance of the current public Internet. In other cases, limitations of available access technologies may determine the performance.

The need to ensure that regulations remain technology neutral is reinforced by the possibility of continuing rapid changes in the underlying network and customer equipment techniques and capabilities. It will be essential for any regulations to be based on technology neutral descriptions of the key service features, to the extent,

rather than the delivery processes that could be temporary or not used by all providers, and not exclude innovative services that meet user needs.

A successful Australian example is the regulation of voice services as provided in cellular mobile services. The mobile handset has changed from a very utilitarian brick-like object to a fashion statement that combines camera, diary and other functionality. However, technology neutral regulation of the voice service has been a constant feature through this almost complete transformation of the network and customer equipment. Regulation recognises the general characteristics of the mobile service rather than the specific technology. The associated radio interface technical standards are technology dependent as would be expected, while safety requirements are technology neutral.

NGN evolution will be driven by market requirements, which will be reflected in emerging global standards. It is important that Australian regulation take account of these emerging standards and avoid to greatest extent possible the addition of special requirements for Australia. Such Australian-specific requirements could be costly to develop and may delay NGN deployment or service offerings in Australia. The challenge is for Australia to contribute to and influence the international standardisation process to include the capabilities required for the Australian environment (including regulation), recognising that Australia's current participation in international standards work is at a very low level and available expertise is limited. It is essential that Australian policy makers and regulators fully consider the potentially adverse consequences of introducing requirements that do not exist in other major markets.

Introduction of networks and services according to the NGN concept will be a prolonged transition process. Legacy, transitional and NGN services will need to coexist during this period. This poses a particularly difficult challenge for policy makers and regulators with potentially different requirements placed on legacy, transitional and future NGN services and the need to adjust the balance as the market evolves. Having the incorrect balance is likely to bias investment towards those services which have a regulatory advantage (such as lower regulatory compliance costs), or stop investment in socially and economically important services and infrastructure. This could limit the availability of "diverse and innovative carriage services and content services".

Current Australian legislation looks in greatest detail at "carriage services of social importance", built around the concept of the STS. Many of the transitional services (such as those outlined in Appendix C) have some of the characteristics of the STS, but may not be able, either commercially or technologically, to meet current STS regulatory requirements.

At the moment, if a carriage service is provided to an end-user then the current Carriage Service Provider regulations apply. However some new NGN-based carriage services may not meet the features expected of current circuit-switched based services.

8.2 Transitional Services

The regulatory management of transitional services such as IP telephony/VoIP will be a major challenge. These services may not fit current regulatory models (having some feature differences from current services), but still could offer benefits to end-users. This issue is receiving policy attention in many countries.

Options in Australia could include

- Retention of current STS regulation, with case-by-case exemption from regulatory requirements. Many ACIF NGN Project participants have expressed concern that this would not produce the required certainty or flexibility to ensure industry development.
- The use of the current ability of regulators to provide exemptions, applied on a class basis, as necessary to address a generic issue.
- Modification of the current requirements, with the possible provision for a "secondary service" (e.g. Internet Telephony) that is not deemed to be "a carriage service of social significance"[12] and therefore need not provide all the features required of an STS.
- A new set of regulations that cover only NGN or packet based IP applications, services and networks but not the current circuit switched PSTN

Internet Telephony introduced as a "secondary service" may need to be clearly differentiated from the current STS. Separate number ranges are one option that could be considered as an interim measure. Clear information would be needed for users about available service features (and those not available). However this may raise competition issues for firms wishing to provide substitutable services.

It would be necessary to ensure that users (including itinerant users) were made aware of the limitations (if any) of these secondary services.

8.3 Balancing Requirements for New and Current Services

When considering the potential future regulatory environment for NGN services, a related factor that will require attention is the potential impact on the current services, in particular the fixed telephone service and the circuit-switched PSTN on which it is provided.

The transition from the current PSTN to future networks will take a considerable time, particularly for those services that will require reliable "carrier-grade" broadband access. One of the more difficult challenges for policy-makers will be how to promote the provision of innovative services while retaining sufficient support to ensure that the current circuit switched PSTN infrastructure continues to be maintained and upgraded as appropriate. Policy will have to balance the benefits from the new services that are likely to be offered, the continuing role of the current circuit-switched PSTN, and the demands for other social objectives such as the extension of the USO (or its future replacement) to cover the new services, in an environment where from the market prices of carriage services are likely to continue to fall.

However, some participants believe that this issue should not be interpreted as an argument to increase USO levies on competitive providers by the incumbent USO provider and it may raise competition concerns.

8.4 Classifying Services

Some services to be provided in particular forms might not always match current circuit-switched PSTN consumer expectations, for example QoS, reliability, dial tone

[12] This is similar to the current approach in Japan, the European Union and the Republic of Korea, based on the policy environment in those countries.

availability, access to emergency services and security. For some providers this might apply particularly in the early stages of service deployment, for example where services were being provided over the public Internet rather than by carrier-grade IP-based networks. At present, all such services would be subject to current Australian regulations and some might not be compliant.

Some of the factors that determine service availability will be directly under the control of the user, for example the customer equipment used by the user, competition with other traffic on the user's network and software configurations on the user's PCs. Other factors will be determined by the carrier(s) and/or service provider(s) the user selects, as well as the configuration of the called person's access and equipment. The challenge for the industry will be to support a market where a range of services can be offered, and where consumers are informed in an effective manner so they understand the options available and the implications of the choices that they make.

As previously discussed, the current legislation and regulation makes use of the STS as the service to which most voice regulation is directed. Since the STS concept was introduced in 1997 there has been considerable development in services and technology. A review of the objectives of the STS definition may be useful to ensure that there is scope for the introduction of new service combinations which may be delivered on IP-based networks. As an example, the VoIP component of multimedia sessions that also involve IP based video and data components should, in all situations, not be automatically subject to existing STS regulations[13]

Work in the ACIF NGN FOG suggests that the NGN may evolve to provide services that could come to be regarded as either:

- "Socially Important", akin to those services covered by the current USO, and probably warranting co-regulatory agreement. (For example, a future packet based telephony service may eventually replace the current circuit switched telephone network and come to be regarded as a socially important service.); or
- "Novel, innovative services which have not (yet) attracted sufficient significance and acceptance to reasonably be deemed socially important.

Finally, the extent of availability of suitable broadband access will mean that transitional and NGN service availability, or at least the availability of some features, is likely to be limited. For example, voice-over-packet networks require low latency, packet loss and jitter to achieve a suitable quality of service. For some time there may be no practical way of providing this to all Australians at a reasonable cost.

9 Criteria

9.1 Policy and Regulation

ACIF NGN FOG considers that any current or future regulation should be clearly based on the following tenets:

[13] ACA staff working in the NGN FOG indicated that at present, if a multi-media service session can include a service that is part of the STS then the voice component (or where voice is not practical and another form is equivalent) is subject to the STS regulations. This is desirable so as to ensure that the participating STS party can participate in the conference or other such activity. However, a multi-media session would likely not be subject to STS processes if the session could not be extended to PSTN customers. If within the meaning of the STS, only the voice specific components of the multi-media session are regulated.

1. Consumer & Social Policy;
2. National Interest;
3. Competition Policy;
4. Technical Feasibility; and
5. Effective and efficient use of and investment in infrastructure;
6. Minimisation of formal regulatory intervention with optimal use of industry self-regulation e.g. ACIF Codes, Standards/Specifications and Guidelines.

Further guidance was provided by DoCITA (Chris Cheah, May 2002) who expressed the view that the following government "social policy" interests should be considered:

1. Increasing the competitiveness of the Australian economy;
2. Opening up markets under a co-regulatory regime ;
3. Provision of new services;
4. Greater efficiency of service provision;
5. No disadvantage to rural subscribers;
6. Continued access to untimed local residential calls;
7. Long Term Interest of End Users (LTIE);
8. Meeting World Trade Organisation obligations; and
9. Interests of all users, including people with a disability

9.2 Regulatory Considerations

The following criteria have been developed to guide any proposed legislative or regulatory consideration.

Does it provide:

1. Support for an internationally competitive telecommunications market?
2. Encouragement for competitive market based outcomes rather than regulatory intervention which can lead to regulatory gaming?
3. That formal regulatory intervention will be used only for market failure and where there are self-regulatory gaps?
4. Encouragement for efficient investment and use of investment in :
    - access services and maintenance of legacy circuit-switched PSTN
    - NGNs & associated services?
5. Encouragement for the continued operation and maintenance of legacy circuit-switched PSTN?
6. Reasonable certainty for the industry, especially for investment?
7. A sustainable regulatory model within the limits of Australia's jurisdiction?
8. A technology independent model, to the greatest extent possible, with minimum regulation within networks (as in current legislation)?
9. Transparency and certainty of scope for the funding and provision of socially important services and features?
10. Fair outcomes for residential, SME and corporate users?
11. Regulatory requirements for features and performance that are compatible with consumer expectations such as reliability, geographic availability, quality of service, geographic information imbedded in numbers, accessibility by a diverse range of end users etc, or address these by information and/or other benefits?
12. Encouragement of the development of new services not available with current networks?
13. Economic rewards for efficient innovation / risk?
14. For national interest requirements?

15. Adequate scope for full representation of all stakeholders in a convergent industry self regulatory body, particularly in relation to development of standards?

10 Key Matters to be Considered

The ACIF NGN Project has identified a number of issues that will need resolution to give a sufficient degree of certainty for efficient and effective market development. Many of these are best addressed as part of the normal self-regulatory process, working with both supply and demand sides as well as equipment providers, but others may require clear policy decisions.

These issues are listed below. It should be noted that the order of the issues list does not indicate relative priority.

1. ***Industry structure*** imbedded in legislation needs to encompass changes in the underlying network and service model (see Section 6 above).
2. ***Telephone service obligations*** need to be reviewed to ascertain if there is a need to provide scope for alternative service combinations and possibly incorporating a definition of a new "IP Telephony" service.
3. ***Review of the Australian Numbering Plan*** as necessary subject to the outcome of 2 above, to support any new service(s), and assist interworking with existing services.
4. ***Market power and access to essential facilities***; new and emergingservice models and architectures may create opportunities for abuse of market power or regulatory gaming. As an example, emerging "Presence" models are dominated off-shore by four proprietary application service providers; if presence were to become regarded as socially important, then more open models may be required.
5. ***Interconnect settlement models***; new value paradigms in NGN architectures mean that new models may be needed for settlement of interconnect service provision, possibly based on bandwidth, QoS, volume, content …, in contrast to current concepts which focus on distance and time.
6. ***Socially Important Services*** (and Value Added Services): How are they defined, and what are the regulatory implications for these services?
7. ***Provision of text and video services*** for people who are deaf or have hearing, speech or communication impairment (see Appendix A)
8. ***Access to emergency services*** ; What provisions have to be made, and for what services? How can accurate location information be obtained (see Appendix B)?
9. ***Lawful interception***; what, where and in what form should interception of communications be undertaken in a multi-proprietary standards service architecture with dynamic, indeterminate routing ?
10. ***Privacy***; How to protect customer information in an "open", global, multi-service provider architecture, while still facilitating socially and nationally important service requirements?
11. ***Security***; ie. cyber security, the protection of service integrity from such things as denial of service attacks and spamming
12. ***End-to-end assurance of the "user experience";*** including QoS, availability, accesibility, reliability, delay performance, etc. This will be made more complex in an NGN environment as many parties may be involved in a call or session as providers of access, transit, session initiation,

authentication, application, content and customer equipment, all of which will impact the user experience.

13. ***Life-line service***; responsibility for service availability in the event of power failure especially where the end-to-end service is provided by a combination of application, service and network providers.
14. ***Public and Private Networks***; Division in legislation between public regulated networks and services versus private networks and services, limiting the possibility of unwarranted extension of regulatory requirements on public network operators to private corporate networks.
15. ***Clear distinctions*** between the regulation of services and the regulation of network unit ownership so as to quarantine the application of regulations from changes in the underlying network techniques and commercial arrangements.

Appendix A Meeting User's Needs

One of the major policy requirements of current legislation is to ensure that "carriage services of social importance" are "reasonably accessible to all people in Australia on an equitable basis"[14]. At present this has been defined in terms of the telephone service or equivalent services. As new transitional services develop, and as work continues on standardising the longer term NGN, user's needs have to be considered

a) Voice Equivalent Services

Voice equivalent services are currently defined as part of the STS (Standard Telephone Service) .There will be a continuing need for 'equivalent communication services' for people who are deaf or have a speech or hearing impairment. Future regulations could apply to socially important services that can provide real-time text services and real-time video services (for signing and lip reading. The provisions should be technology independent to the maximum extent possible. Continuing arrangements will be necessary to support the inter-operation of voice and these equivalent services (e.g a relay service, text-to-text and voice-to text servers).

The ACIF Any-to-Any Text Connectivity Options (TATA) Working Group has considered options (and been involved in new specification development) that will enable mainstream, NGN-type text services to provide the required 'equivalent' service with little impact on networks in the medium to long term. A similar scenario might apply to multimedia services and this requires further investigation.

b) Customer Equipment

There will be a need to support the supply of customer equipment, goods or services for use in connection with the STS for people with disabilities. In addition, there may be obligations under the Disability Discrimination Act 1992.

b) Possible Requirements

ACIF NGN Project members have suggested that requirements may include

i. Review of equipment currently available under telecommunications disability equipment programs
ii. User testing of new networks and devices;
iii. Interworking of new devices (such as SIP phones) with specialised disability equipment such as communication devices used by people with speech impairments
iv. Improved access to the existing text relay service, including the 106 text emergency service, via IP devices. The relay service must accommodate the needs of people who use voice-carry-over (speak and read the reply) and hearing-carry-over (type and hear the reply). An IP-based environment will allow people who use their hearing as their predominant receptive mode, and require text to support that mode, improved access to the telephone;
v. Improved access to existing speech-to-speech relay service to allow access via IP devices;

[14] Quotes from the Objects of the Telecommunications Act 1997

vi. Video relay service (new);
vii. Video access to 106 emergency service (new);
viii. Any-to-any text interworking for people who rely on text (new);
ix. Any-to-any video interworking for people who rely on video (new);
x. Awareness, training and support about the new services;
xi. Online information based on international web accessibility guidelines

Some ACIF NGN FOG participants expressed the view that in an NGN environment Voice, Text & Video can be equivalent services in terms of availability and support through networks and in Customer Equipment. Thus, there may be, potentially, a reduced need for "special" equipment in Disability Equipment programs, as long as standards development takes this requirement into account (as addressed in the ACIF Any-to-Any Text Connectivity work).Access to the Relay Service from IP customer equipment will be needed- and similarly this would be best achieved if users are able to exploit mainstream IP customer equipment.

c) NGN Standards Development

In the context of the development of standards for NGN products and services, there is an increasing level of interest by user-representative groups to participate in the standards setting processes to ensure that the standards being developed take into account and adequately address issues of potential concern to consumers. These may include health, safety, performance, quality, reliability, environmental protection and sustainability, ease-of-use, accessibility, backwards compatibility and interoperability.

The end-user contribution to standards setting improves the likelihood of the successful marketability of a product or service, thereby raising public confidence in the standards setting process. It utilises the invaluable ability of consumer representatives to look at a product from the viewpoint of the end-user. The recent Global Standards Collaboration (GSC) meeting encouraged standards bodies to implement a framework for user involvement in the standards setting process and to adopt a mutually agreed Guide to Consumer Involvement in Standards Making as the foundation for this framework. The Guide is based on the UN Charter of Consumer Rights and encapsulates the principles of effective consumer consultation and protection.

Appendix B Emergency Services, Security and Privacy

This Appendix summarises incomplete work by the sub-committee of the ACIF NGN FOG Policy and Regulatory Group, looking at future policy requirements, and subsequent regulatory action required (both self-regulation and Government regulation). It is work in progress, and many of the points made have not been conidered and by all participants in the ACIF NGN Project.

It is important to note that the definition of a Standard Emergency Telephone Service (*Telecommunications (Emergency Call Service) Determination 2002*) should augment the use of the term Standard Telephone Service when considering requirements for emergency services.

1. CURRENT POLICY AND GAPS

1.1 Current policy requirements

a) Generally (access for a person with a disability , universal provision, any-to-any connectivity, etc)
b) in specific areas
   (i) emergency services
   (ii) privacy
   (iii) security

2.2 Existing gaps in requirements

a) Corporate and private networks (e.g Universities)
b) ACA exemptions – Neighborhood Cable. Etc (as how the gaps are/can be dealt with in the current regulatory framework.
c) Emergency access by TTY users for all networks
d)Consumer awareness of functionality (or not) of new services

3.3 Description of types of new services

a) Voice over the Public Internet (VoIP) Independent of the Telephone Network (e.g. Skype, FreeWorld Dialup)
b) VoIP Services with Gateways to the existing circuit-switched PSTN (e.g. SIPphone, Skype+)
c) Internet Telephony over Any Residential Broadband Access (e.g. Vonage, BT Broadband Voice)
d) IP Telephony provided within a single Broadband Network (e.g. Neighborhood Cable, Comcast)
e) IP Telephony to full Telephony Standards, combined with other carriage services (multimedia and data). (e.g. corporate networks, standards-based NGN)

4.4 Resulting gaps in current policy

Refer to gaps identified in matrices attached as Annex A and Annex B. (These matrices cover services in (c) – (e)) These reflect the latest available inputs.

2. OPTIONS FOR NEW POLICY APPROACHES

2.1 International approaches

a) FCC approach (encouraging innovation, etc) - – "light touch" regulation for Internet-based services
b) EU Approach - concept of "Primary Access Telecommunications Service", plus permitted "non-PATS" services
c) North Asian approach – definition of a secondary service "IP telephony"

2.2 Suggested Options

a) Current policy objectives apply to all levels of service identified above (obligation is on the carrier/CSP)
b) Require that all residential premises have access to a "primary access telecommunications" [15] service in addition to other services (obligation on the USO provider and customer)
c) Define levels of service, and against each level, the policy objectives that should apply. To the extent that a policy objective no longer applies, what information requirements should apply (obligation on service provider and customer) If this option is taken the following addresses the issue of what information customers must be told.

If two levels of service are permitted then DCITA needs to define what constitutes a primary and secondary service (i.e. what minimum requirements must be provided for both)

Suggested Tests for a primary service might include:

(The following "duck[16]" tests are not in any order of priority and not meant to be exhaustive)

- Does it look like a standard telephone ?
- Can you dial ?
- At time of network congestion is an emergency call handled with priority and carried reliably ?
- Does it require access to power?
- Is accurate location information provided ?
- Can the Emergency Service Organisation phone the caller back ? (i.e. CLI)
- Is there a minimum quality of the service met (e.g. speech quality)
- Is it a real-time connection ?
- Are privacy requirements met ?
- Is there access for law enforcement agencies ?
- Does it meet the "any-to-any connectivity test"?

If the service doesn't meet some or all of these tests the following requirements need to be met: -

[15] Based on a concept from the *Electronic Communications Service Regulatory Framework* of the European Union.
[16] If it looks like a duck, acts like a duck, sounds like a duck …..is it a duck?

- Provider messages to consumers must be clear and effectively communicated.
- Strategies need to be implemented to handle the increased pressure on Emergency Call persons, Emergency Service Organisations, and callers.
- There are clear liability issues if access to emergency services is not provided.
- It needs to be clearly understood that cutting off a potential lifeline.

Additional views raised in the committee regarding the implications of permitting two service levels for the provision of telephony include:

- Increased cost of multiple services for consumers.
- Customers choosing a lower grade service without emergency access because of cost.
- Difficulty ensuring both services are adequately maintained if the low cost service is consistently used.
- Who will pay for emergency call service if revenue that contributes to USO drops?
- Potential gradual decline in STS if not maintained through on-going revenue streams.
- Confusion about who has what responsibility in a multi-provider environment where the service is provided for example through applications on customer equipment.
- Adequacy of the definitions of “primary & secondary” services created for a voice environment but used by people who rely on text and/or video for their communications.

DCITA will need to develop policy responses to address the following scenarios based on Service Types in 1.3 above. Policy responses are essential so that the general and specific issues such as discussion on access for people with disabilities and whether obligations met by network provider/equipment providers can be addressed in relation to each scenario below.

3. Conclusion

If the concept of primary and secondary service is permitted then service types 1.3 a), b) and possibly c) are likely to be classed as secondary services. Therefore the question needs to be asked should there be a mandated requirement that a user must also have access to a primary service before a secondary service can be used, and if so how would this be enforced? Would the consumer or the provider be responsible for ensuring both services are available?

Service Types 1.3 d) and e) should be regulated to provide equivalent access to ensure that they meet the components of the proposed “duck” test.

In the interim, ACA exemptions from legislative obligations are made on a one off basis and the process for doing so is not transparent any further exemptions should be based on legislative change.

ANNEX A. - EMERGENCY SERVICE ISSUES

ISSUE	What may be required?	CURRENT REGULATORY PROVISIONS	VoIP Where provided over someone else's network. (Scenario c)	VoIP where provided by own network (Scenario d)	IN NGN CONTEXT Carrier grade IP (Scenario e)	GAPS?	SUGGESTED ACTIVITY RESPONSE	TARGETTED AT WHOM
Communication by public to ESOs – in **public and personal**[17] emergencies	Access to ESO via voice (PSTN/mobile)/ text/video (soft dial tone or equivalent may be provided)	For PSTN/mobile – Required – Schedule 1 Tech Standard TS 18 and TCPSSA Pt 8	Reliable access not guaranteed – especially network congestion when there is a public emergency	Reliable Access possible if designed	Access assumed for defined services – should be flexibility to provide different levels of service	For fixed/mobile Reliable access denied/ may not designed for Not guaranteed now for SMS/video	**Short term**: Ensure access available. e/g. by retention of fixed line telephone for STS Medium/long term: Work with ITU-T for international standards	DCITA for policy decision Then ACA/ITU-T
	Location information	Maximum information available fixed lines - IPND,CLI, Less information available mobiles, corporate networks,	Not available unless manually inserted	Possible if designed, but flexibility for connection means less accurate information	Problem identified and international work in progress. Answering points are in fixed network. In future rely on CE	Gaps for nomadic and mobile users and corporate networks Call routing implications about number allocation	Determine importance – policy decision at international level (privacy implications)	DCITA for policy decision. CE standards and community education – by whom

[17] A **personal emergency** is one where the caller (alone) wishes to contact the emergency services – e.g. for a house fire;
A **public emergency** is one where many callers wish to contact the emergency services – e.g. for a bush fire.

Final Version – agreed by NGN FOG

ISSUE	What may be required?	CURRENT REGULATORY PROVISIONS	VoIP Where provided over someone else's network. (Scenario c)	VoIP where provided by own network (Scenario d)	IN NGN CONTEXT Carrier grade IP (Scenario e)	GAPS?	SUGGESTED ACTIVITY RESPONSE	TARGETTED AT WHOM
	SIP PHONES	Current regulation may not cover CE installation/reprogramming – only talks about CE				Issue about software/installation as covered by CE regulation	Clarification of Act	DCITA – for policy
ESOs with each other	Secure, reliable communication, especially in public emergency	DISPLAN required under Pt 16 of the Act ??	Not relevant ESOs should not be on VoIP networks	Not relevant ESO should not be on VoIP networks	Should a special priority service provided for ESOs	lack of interoperability - Multiple responsibilities /jurisdiction for commun-ications systems including denial of service attacks	National coordination of policy responses/national coordination of ESOs	NECWG/DCITA
ESOs with public in affected area	An equivalent of call broadcasting, e.g., messages to GSM phones	None – but would need access to IPND					Notification to affected people in defined area – suggested requirement for location database	

Final Version – agreed by NGN FOG

ISSUE	What may be required?	CURRENT REGULATORY PROVISIONS	VoIP Where provided over someone else's network. (Scenario c)	VoIP where provided by own network (Scenario d)	IN NGN CONTEXT Carrier grade IP (Scenario e)	GAPS?	SUGGESTED ACTIVITY RESPONSE	TARGETTED AT WHOM
ESOs to broader community – issue is congestion	Issue is high density traffic routing/multi media approach	None			Need to ensure diversion of traffic		Suggest policy response to support innovation	
Priority Assistance services	Priority installation/repair of service for PWLTMC	Licence condition on Telstra/ACIF Code						

ANNEX B - PRIVACY ISSUES

ISSUE	What may be required?	CURRENT REGULATORY PROVISIONS	VoIP Where provided over someone else's network. (Scenario c)	VoIP where provided by own network (Scenario d)	IN NGN CONTEXT Carrier grade IP (Scenario e)	GAPS?	SUGGESTED ACTIVITY RESPONSE
Who has access to IPND Data?		s. 285 of the Act					
Blocking sending of customer information e.g., ENUM, subscriber and location information,	Ability of person to block sending personal information or opt in process	Part 13 of the Act, CPI/CND ACIF Codes					
Exchange of customer information across C/CSP networks	Confining collection and use of information	Part 13 of the Act					
Malicious Call Tracing	Ability to trace malicious calls using CLI						
Unauthorised interception							
Authorised interception – access to personal communications	Confining interception to what is permitted by law	Telecommunications 9Interception) Act					

ANNEX C - SECURITY ISSUES

ISSUE	What may be required?	CURRENT REGULATORY PROVISIONS	VoIP Where provided over someone else's network. (Scenario c)	VoIP where provided by own network (Scenario d)	IN NGN CONTEXT Carrier grade IP (Scenario e)	GAPS?	SUGGESTED ACTIVITY RESPONSE
Agencies being able to ascertain the number from which the communication is made – traceability issue	CLI/MOLI (using GPS – not interim MOLI)	Act Part 18 requires STS provide CLI					
Agencies being able to ascertain the location from the number from which the communication is made Traceability issue	CLI and IPND date	Act Part 18 and Act Part 4, Schedule 2				Currently – cannot ascertain location for private networks/mobile numbers	
Will applications or the CE be able to alter the CLI – the authentication issue?							

Final Version – agreed by NGN FOG

ISSUE	What may be required?	CURRENT REGULATORY PROVISIONS	VoIP Where provided over someone else's network. (Scenario c)	VoIP where provided by own network (Scenario d)	IN NGN CONTEXT Carrier grade IP (Scenario e)	GAPS?	SUGGESTED ACTIVITY RESPONSE
Where will CLI (or number/location information) originate from?							
What form will CLI be presented as – number/IP address?							
Distributed Denial of Service Attacks ???							
Capability to intercept communications	Agencies must be able to intercept all communications	Act Part 15					

APPENDIX C Emerging Scenarios

IP-based Voice Services

The current structure of the public Internet is able to support voice as long as there is no congestion – loss, delay or jitter of packets causes unacceptable speech quality for two-way communication. When there is no congestion, speech can be carried as another form of data over the Internet. There are a range of views on the qualitative performance of the public internet for the support of voice services. ACA staff participating in the NGN FOG reprt that newer entrants believe the challenges associated with providing an acceptable quality of service for voice are considered to be relatively low, while more established operators tend to take a more conservative view and consider the challenges to be more complex. In particular, the provision of service over an existing broadband access, dimensioned primarily for residential Internet use, raise problems for telephony applications.

Services of this type (called *transitional services* in this paper) are now being introduced in many markets. They gain benefit from connectivity with the existing circuit-switched PSTN, but are not traditional services. They are raising a range of policy and regulatory issues that require short term resolution, but these resolutions have to take into account the precedent being set for other services, and the implications for existing legacy services, particular telephony.

Scenarios

The following scenarios have been identified by the NGN FOG, with consideration of related policy and regulatory implications.

1. VOICE OVER THE PUBLIC INTERNET (VOIP), INDEPENDENT OF THE TELEPHONE NETWORK

Voice calls are established end-to-end across the Internet, using special software at each end and (sometimes) centralised control arrangements.
Customer equipment would typically consist of a PC (personal computer running special software, but an ordinary telephone connected via terminal adapters to broadband Internet access might also be used.

Current examples include FreeWorld Dialup, Skype, SIPphone, Microsoft Messenger (voice enhanced).

Implications: As this is limited to the Internet (even though a voice service), there seems to be little regulation applying to this service.. However, such services provide competition to current long-distance telephony services for person-to-person communication without the associated obligations and this aspect may need to be considered. QoS is indeterminate.

2. VOIP SERVICES WITH PSTN GATEWAYS

Many of the commercial services according to Option 1 offer “free” PC-to-PC calls, but intend to obtain revenue from the provision of gateways to the telephone network. In many cases, there may only be one or two global gateways (for example, in North America, Europe and Asia). In the early stages there may not be an Australian

gateway, and users would have to be issued with telephone numbers from other countries.

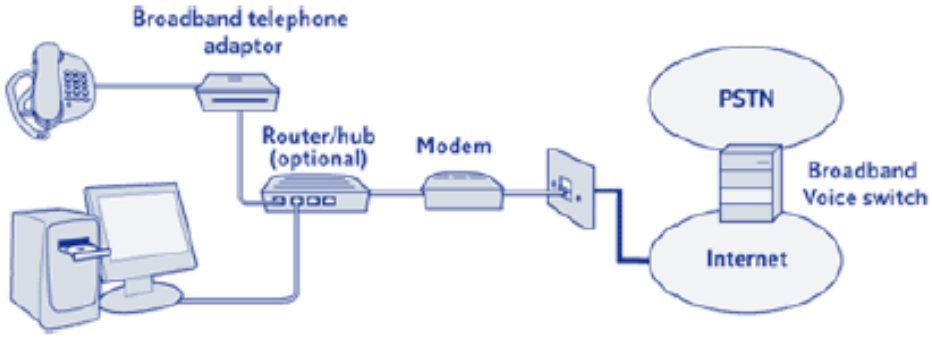
Many of the standard features (and regulatory obligations) of Australian telephone services may not be available (for example emergency access, directory service and user assistance) unless there is an Australian supplier or arrangements are negotiated with an overseas provider of some service features. The commercial relationship would be with an off-shore company, and interceptability of the service within Australia may not be assured, failing to comply with current Australian requirements. (This is not likely to be acceptable to Australian Law Enforcement Agencies.)

Implications: The technical, consumer (access to E000), policy and regulatory, security and commercial implications could be substantial.

3. INTERNET TELEPHONY OVER ANY RESIDENTIAL BROADBAND ACCESS

There is a growing availability of residential broadband access provided by a range of technologies (xDSL, HFC, radio and OF). Such access has been provided for high speed Internet use, and can be used to provide access to and from the telephone network. This scenario envisages a service designed to be available over any broadband access, with many of the service characteristics being determined by the details of the broadband
Customer equipment for this service is likely to be an ordinary telephone connected via terminal adapters to the broadband Internet access, but a special IP-based handset or a PC may be used.

Unlike Scenario 2, this service is likely to be integrated with the national network, with interconnection to and from the Australian circuit switched PSTN. Special features of some of the services now being introduced include the ability of users to choose one or more numbers from a wide range of locations (national and international), and greatly reduced tariffs to many destinations. In other markets, these services have been allocated separate ranges in the national numbering plan[18].



Source: BT Broadband Voice

The service appears very similar to a current telephone service, but has performance characteristics with assurance levels much lower than current circuit switched PSTN QoS levels, based on the Internet connection. Such services are not likely to meet current user and regulatory expectations for the PSTN.

[18] Examples include Japan, Republic of Korea and the UK.

Examples include Vonage (USA), Lingo (USA), BT Broadband Voice (UK) and many Japanese IP telephony providers (e.g. Yahoo Japan).

Implications: Subject to the broadband access and system design, such services are likely to fall short of current Australian regulatory requirements, for example for availability, quality, emergency access and interceptability. They are also likely to attract considerably less expensive tariffs.

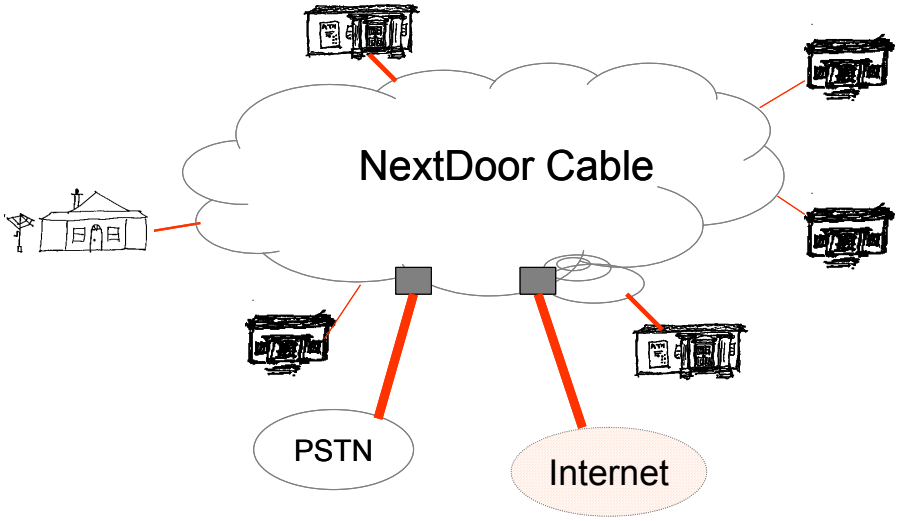
The NGN FOG has been looking at the implications of the possible introduction of these services as "secondary services" as has occurred in Europe and North Asia

4. IP TELEPHONY WITHIN A SINGLE BROADBAND NETWORK

This scenario covers the provision of a telephony service by the operator of a broadband network, for example a network primarily provided for cable TV services, to users connected to that network. In this case, unlike Scenario 3, the service provider has control over many of the characteristics of the service.

Providers of such networks may wish to offer a combination of entertainment, Internet access and telephony to their customers.
Standard telephones are the most likely customer equipment, with telephony service integrated with the national network. While such network providers could technically offer service to full telephony standards, it is possible that they may need/seek relaxation of some current policy/regulatory requirements, placing the service closer to Scenario 3 than the existing telephony service.

There are many examples now being planned. Announced Australian examples include services from Neighborhood Cable, Unwired and Comindico, and in many other countries cable TV operators are introducing this "triple play" on their network.



Implications will depend on the regulatory positioning. Currently, these services would be subject to full circuit-switched PSTN regulation. If future legislation provides a new service (or service classification) to cover such networks, many of the technical, operational, user and commercial issues will have to be revisited, including the arrangements for interworking with the current PSTN. Services of these types

may fall short of current Australian regulatory requirements for STS, for example for availability, quality, emergency access and interceptability[19].

5. IP TELEPHONY PLUS INTERACTIVE MULTIMEDIA, MOVING TO FULL NGN

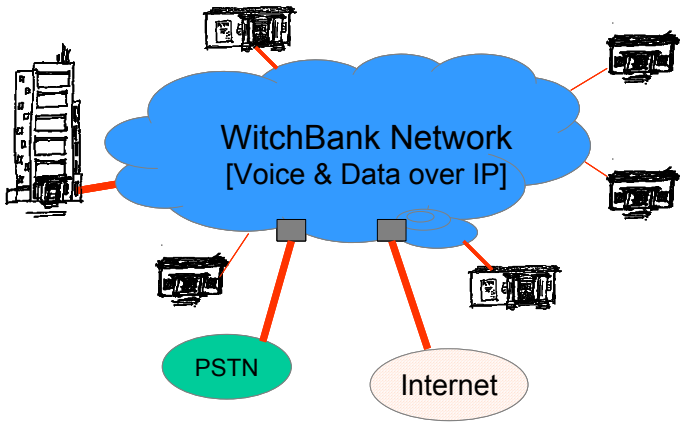
An IP based network could be designed to support the current telephony service, meeting all current regulatory requirements (or their near equivalent, modified to take into account underlying IP technology), for customers connected to the network. In addition, such a network could support interactive multimedia., This is in line with the international concepts of NGN, but at this stage interconnection arrangements for services other than voice have not been agreed.

Implications: The short term implications (for voice) are not large, but the full cost of meeting circuit switched PSTN requirements may be high.
Longer term, the issues for voice plus multimedia are those for the full NGN. Questions that would need to be resolved include the regulatory requirements that would have to be met for the non-voice services.

Corporate Networks

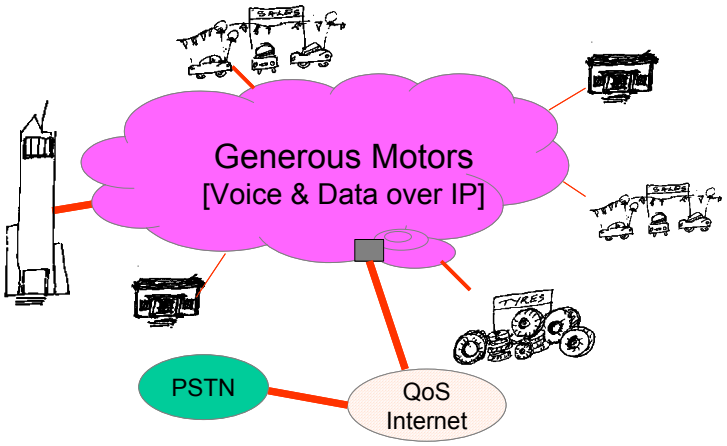
Current and future corporate networks are being developed using packet technology, predominantly IP.

These networks may be provided as private networks, or supported by a public network (IP Centrex). In either case, the performance of the network is under control of the network owner or leasee, and the network would generally fit under Scenario 4 or 5 above.

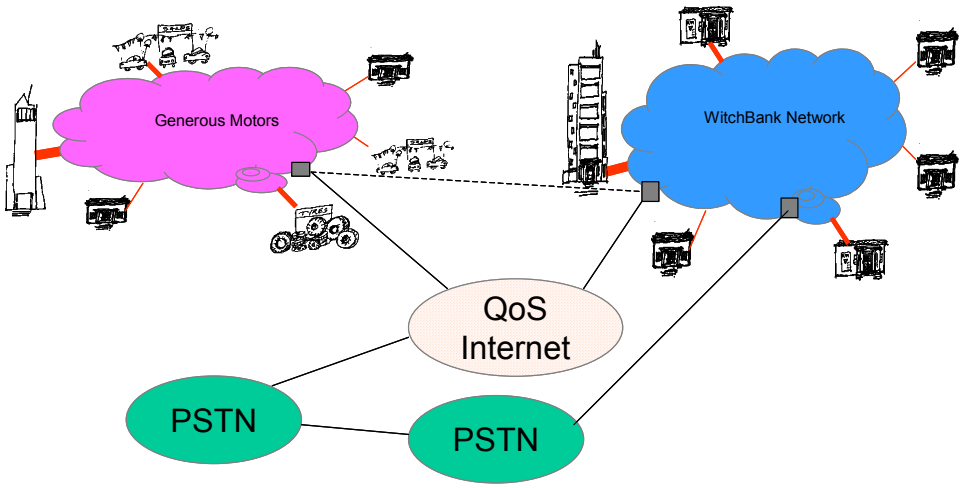


A simple corporate network would have gateways to both the PSTN and the Internet. Alternatively, the network may connect to an Internet Service Provider providing guaranteed quality of service and providing access to the PSTN.

[19] Cable operators in the USA are arguing for "lighter-touch" regulation for their telephony services. Exemptions to current obligations that might be sought from the regulator in Australia may be for a similar reason – the high cost of meeting current regulatory obligations.



Corporate networks using compatible standards may also directly interconnect, or connect via a QoS ISP.



Appendix D Regulatory Treatment of Services Matrix

This matrix was developed to provide a reference for ongoing work, and is not a finalised or agreed output from the ACIF NGN Project. It is provided for information only.

The matrix outlines the current regulatory treatment of services, with reference to the applicable regulation (legislation, subordinate legislation or ACIF Code) and the possible implications for NGN.

(The matrix is attached at the end of this document in PDF form)

"NGN Regulatory_Treatmer

11 Contributors

Graeme King	Nortel Networks	Co-Chair, RToS[20] Group
Lawrie Clarke	Telstra	Co-Chair, RToS Group
Michael Elsegood	Optus	Previous Chair, RToS Group
Teresa Corbin	CTN	Chair, ESSP[21] Group
Peter Darling	ACIF	Manager, ACIF NGN Project
Tracey Annear	ACE	
Gunela Astbrink	TEDICORE	
Patrick Emery	ACA	
Terry Gillespie	Optus	
Rowan Groves	ACCC	
Tim Hughes	Telstra	
Brian Kelleher	DCITA	
Denis Luttrell	QLD Police	
Sam Mangar	Optus	
Gary McLaren	McLaren Williams	
Pam Marsh	CTN	
Greg Neylan	ACA	
Colin Oliver	DCITA	
Matthew O'Rourke	ACA	
Brian Perkins	ATUG	
Michael Ryan	Telstra	
Holly Raiche	ACIF	
Andrew Simpson	ATUG	
Peter Skeen	ACA	
Kevin Sutherland	ACA	
Grant Symons	ACA	
Richard Windeyer	DCITA	
Richard York	ACCC	

[20] RToS - Regulatory Treatment of Services

[21] ESSP - Emergency Services, Security and Privacy

ACIF - NGN Regulatory Treatment of Services Matrix

FOR DISCUSSION PURPOSES ONLY

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	"Comments have been extensively used through out this spreadsheet using a small red trianglular symbol in the top righthand corner of each cell"				Policy Drivers				What are the driving interests and purposes being served by each of the current obligations?					Services or Applications that available now		Potential Regulatory Impact on NGN:-			
2	**Category**		**Regulatory Obligation**	**Regulation Reference**	**Consumer & Social Policy**	**National Interest**	**Promote Competition**	**Technical Reason**	**What does this regulation apply to ?**	**Who does this regulation apply to ?**	**What was the Real Intent of this Regulation**	**Issues and Implications in 2010**	**Other Questions ??**	**STS**	**Multi Media/ SMS/ Mobile/data**	**Applications & Services**	**Customer Equipment CE**	**Core & Transport Network**	**Issues**
3	**Network Requirements**		Access to Ring & Dial Tone	Act Sect 376	Y				STS	All/add to CE		Comment		Y				Y	
4			Customer Service Guarantee	TCPSS Pt 5	Y				STS	Telstra		Comment		Y				Y	
5			Enhanced Calling Handling Features	CSG Pt 1	Y				STS	All		Comment		Y				Y	
6			Access to Emergency Call Services	TCPSS Pt 8	Y				STS	All		Comment		Y		Y	Y	Y	
7			Untimed Local Calls/Long Distance	TCPSS Pt 4	Y				STS	All	Comment	Comment		Y				Y	
8																			
9	**Assisted Services**		Directory Services	Act Pt 3	Y				STS	Telstra		Comment		Y		Y			
10			IPND	Act Sch 2 p4 /C555	Y	Y			All	All		Comment		Y	Y	Y			
11			Operator Services	Act Sch 2 Pt 2	Y				STS	All		Comment		Y		Y			
12			Emergency Call Services (Operator)	ACA Det/C536	Y				STS	Telstra/NRS				Y	Y	Y	Y	Y	
13			National Relay Service	TCPSS Pt 3	Y				STS/TTY	ACE		Comment							
14																			
15	**Cabling**		Customer Cabling (Min Standard)	Act Pt 21	Y				All	All/Customer Cablers				Y			Y		
16			Network Cabling	Act Pt 21/C524	Y			Y	All	All				Y				Y	
17																			
18	**Customer Equipment**		Communicate with an Emergency Service	TCPSS Pt 8	Y				STS	All				Y	Y	Y	Y	Y	
19			Handset Interoperability	Act Pt 21	Y		Y		STS	All/Manufacturers		Comment		Y			Y		
20			Application/Service Interoperability	New								Comment				Y			
21			Minimum Health and Safety Standards	Act Pt 21	Y				All	All				Y	Y		Y		
22			Provision of Disability Eqpt	TEDR	Y				STS/TTY	All		Comment		Y		Y	Y		
23																			
24	**Industry Codes**		Restrict Access to Unacceptable Services	TCPSS Pt 9A	Y				All	All		Comment		Y		Y			
25			Call Charging and Billing Accuracy	Act Pt 6/C518	Y				STS	All		Comment		Y	Y			Y	
26			Calling Number Display & Blocking	ACIF C522	Y				STS	All				Y			Y	Y	
27			Customer Awareness	Act Pt 6/C521	Y		Y		All	All				Y		Y	Y		
28			End-to-End Network Performance	Act Pt 6/C519	Y			Y	STS	All		Comment		Y				Y	
29			Interconnect Obligations	Act Pt 21			Y		All	All		Comment		Y				Y	
30			Itemised Billing	Act Sch 2/C542	Y				STS	All				Y		Y		Y	
31			Malicious Call Tracing	ACIF C525	Y				All	All				Y		Y	Y	Y	
32																			
33	**Numbering**		Number Portability	Act Pt 22/C540			Y		All	All	Comment	Comment		Y				Y	
34			Numbering (Plan - E.164)	Act Pt 22		Y			All	All		Comment		Y				Y	
35			Numbering, Naming & Addressing	New															
36																			
37	**Preselection**		Preselection	Act Pt 17/C515			Y		All	All	Comment			Y				Y	
38			Carrier Over-ride	Act Pt 17			Y		All	All	Comment			Y			Y	Y	
39			Calling Line Identification (CLI)	Act Pt 18	Y				All	All	Comment			Y			Y		
40																			
41	**Privacy**		Essential Level of Privacy & Security	Act Pt 13	Y				All	All		Comment		Y	Y		Y	Y	
42			Protection of Customer Information	Act Pt 13/C523	Y				All	All		Comment		Y	Y	Y		Y	
43			Protection of Communications	Act Pt 13		Y			All	All				Y	Y	Y	Y	Y	
44																			
45	**Security**		Identity Management- Administration/ Authorisation/ Authentication/ Traceability	New								Comment				Y	Y	Y	
46			Interception Capability	Act Pt 15		Y			All	All		Comment		Y	Y	Y	Y	Y	
47			Disaster & Defence Plan	Act Pt 16		Y			All	All		Comment		Y	y	Y	Y	Y	
48			Restrict Unauthorised Access to Networks	Act Pt 13		Y			All	All		Comment		Y	Y			Y	
49			Presence (Currently Connected)	New												Y		Y	
50			Location (geographic / Lat & Long)	ACIF G530	Y	Y			All	All		Comment		Y		Y	Y	Y	
51			Distributed Denial of Service attacks (DDoS) due to Spam/cyber attacks etc	New								Comment				Y	Y	Y	
52			Services provided from Outside of Australia	New								Comment						?	
53																			
54	**TIO**		Member of TIO Scheme/Compliance	TCPSS Pt 6	Y				All	All				Y		Y	Y	Y	
55																			
56	**Transport Network**		Any-to-Any Connectivity (Voice & Text)	TCPSS Pt 6	Y				STS	All		Comment		Y		Y	Y	Y	
57			Network Integrity (Free from Interference)	CIAC ?		Y			All	All				Y			Y	Y	
58			End-to-End Performance/QoS	ACIF G502/C519	Y				All	All		Comment		Y		Y	Y	Y	
59																			
60	**USO**		Supply a Standard Telephone Service (STS)	TCPSS Pt 2	Y		Y		STS	PUSP		Comment		Y			Y	Y	
61			Supply Payphones	TCPSS Pt 2	Y				Payphone	Telstra	Comment						Y		
62			Supply Digital Data Service (GDDS/SDDS)	TCPSS Pt 2	Y				Data	Telstra/Hotkey							Y		
63			Call Charging Zones (SZ, EZ)	TCPSS s108	Y		Y		STS	Telstra		Comment		Y				Y	
64			Supply Interim services (IPSTS)	TCPSS Pt 2	Y				STS	Telstra				Y			Y		
65			Standard Marketing Plans	TCPSS Pt 2			Y		STS	PUSP				Y		Y	Y	Y	
66																			
67	**Licence Conditions**		Low Income Support	CLCD	Y				STS	Telstra				Y			Y	Y	
68			Priority Assisted Services	CLCD/C609	Y				STS	Telstra		Comment		Y			Y	Y	

ACIF - NGN Regulatory Treatment of Services Matrix

FOR DISCUSSION PURPOSES ONLY

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
69																			
70	**Powers & Immunities**		Code of Practice	TCP1997	Y				All	All						Y	Y	Y	
71			Low Impact Facilities	TLIFD	Y				All	All				Y	Y		Y		
72																			
73	**Other Obligations**		Network Reliability Framework (NRF)	CLCD	Y				STS	Telstra		Comment		Y			Y	Y	
74			Standard Forms of Agreement (SFOA)	Act Pt 23	Y				All	All/Not all				Y		Y	Y	Y	
75			Radiocommunications standards	RHEER	Y				All	All				Y			Y	Y	
76			Internet Assistance Program	CLCD	Y				Data	Telstra						Y	Y	Y	
77																			
78	**Competitive**		Anti-competitive conduct	TPA Part IV			Y		Most markets	Virtually all business	Comment	Comment		Y	Y	Y	Y	Y	
79			Anti-competitive conduct	TPA Part XIB			Y		Telco mkts	All Telco carriers and CSPs	Comment	Comment		Y	Y	Y	Y	Y	
80			Consumer Protection	TPA Part V	Y				Most markets	All Telco carriers and CSPs	Comment	Comment		Y	Y	Y	Y	Y	
81			Exemption Orders	TPA Part XIB			Y		Telco mkts	All Telco carriers and CSPs				Y	Y	Y	Y	Y	
82			Tariff filing direction	TPA Part XIB			Y		Telco mkts	All Telco carriers and CSPs	Comment			Y	Y	Y	Y	Y	
83			Record Keeping Rules	TPA Part XIB			Y		Telco mkts	All Telco carriers and CSPs	Comment			Y	Y	Y	Y	Y	
84			Disclosure directions	TPA Part XIB			Y		Telco mkts	All Telco carriers and CSPs	Comment			Y	Y	Y	Y	Y	
85			Access declaration (including pricing principles)	TPA S152AB			Y		Telco carriage services	All Telco carriers and CSPs	Promote LTIE	Comment				Y		Y	
86			Standard Access Obligations	TPA S152AR			Y		Declared Telco carriage services	All Telco carriers and CSPs	Promote LTIE	Comment				Y		Y	
87			Arbitration of access disputes	TPA Part XIC			Y		Declared Telco carriage services	All Telco carriers and CSPs	Promote LTIE	Comment				Y		Y	
88																			
89	**Price Controls**		Retail price control arrangements	Determination	Y				Small number of call services	Telstra		Comment				Y		Y	
90																			
91																			
92	**No. of Obligations**				45	8	18	2						59	19	37	43	53	

ACIF - NGN Regulatory Treatment of Services Matrix

FOR DISCUSSION PURPOSES ONLY

Cell: D1
Comment: Michael Ryan:

At the top of your Excel page.

If you go to File/Page Setup, them select the Sheet tab,

then in the Comments: box (about 2/3 the way down the Sheet tab under Print)

select the "At End of Sheet" pull down option (little down arrow)

this will print the comments with a cell reference, ie. Cell: A1, Comment:abcdef etc.

If you also select the Row and Heading tick box on the same Sheet tab,

this will print out for you the column and heading reference which makes it easy to navigate around your spreadsheet.

Cell: M1
Comment: Michael Ryan:

The Regulatory Map was developed to test the current regulations against a set of policy principles or obligations to see what or how a future regulatory environment would look like.

This set of 4 questions is an attempt to find the questions which will need to be asked to satisfy the objective set above.

The attaching of obligations to services or applications may well depend on the service or application function.

Cell: S1
Comment: Michael Ryan:

It must be considered that the obligations that are currently attached to an STS will be distributed across an expanded end-to-end service. These expanded parts of and end-to-end service may not be provided, controlled or owned by a single carrier or CSP within a single legal or legislative boundary but maybe managed by a "communications broker". This is an indicative view of the network only and is by no means set in concrete - we do not as yet fully understand what it will look like.

NGN model	Application/Service	CE - Customer Eqpt	Service Access	Local Access	Core/Transport
		|----------	----------|	----------X	----------X---------- to other networks
PSTN model	Hard coded in CE	POTS Telephone	CAN RSS, RIM Copper Cable O/F Cable Wireless & satellite	LAS S12, AXE	TNS/PDH & SDH

CAN - Customer Access Network
POTS - Plain Old Telephone Service
TNS - Transit Network Switch
LAS - Local Access Switch

Presently the IETF develop Internet protocols where as the ITU specify the underlying standards - the internet world and the carrier world.

Oftel definition of a VoIP service:

"A VoIP service should be regulated as public voice telephony, if:

1. the service is marketed as a substitute for traditional PSTN voice services; or
2. the service appears to customers as a substitute for public voice telephony; or
3. the service provides the customer's sole means of access to the PSTN.

However, where a VoIP service is clearly being offered as an adjunct to a traditional circuit switched PSTN service or as a secondary service, it is likely not to be considered as public voice telephony."

Cell: D2
Comment: Michael Ryan:

Carriers - Those persons who own a telecommunications network unit to supply carriage services to the public.

Carriers must comply with a range of legislative obligations. These include compliance with the Telecommunications Act 1997 and the Telecommunications (Consumer Protection and Service Standards) Act 1999. Carriers are also obliged to provide access to their telecommunications infrastructure to other carriers. They must comply with the standard access obligations under the Trade Practices Act 1974 and with any other relevant Commonwealth, State or Territory legislation.

Under Part XIC of the Trade Practices Act 1974, the ACCC facilitates access to the networks of carriers and CSPs. This includes declaring services for access, approving access codes, approving access undertakings, arbitrating disputes about declared services and registering access agreements.

Carriage Service Providers (CSPs) - Those who use a telecommunications network unit to supply carriage services to the public, ie resell time on a carrier's network for telephone calls and includes ISPs.

CSPs are not subject to any licensing requirements but are required to comply with the Acts and service provider rules relating to such matters as the provision of operator services, directory assistance services, information for the maintenance of the IPND, itemised billing, CSG Standard, provision of access to ULC and the emergency call service,

TIO scheme, protected payments and compliance with requirements applying to provision of telephone sex services.

Carriage Services - include telephone and Internet services.

Industry (Self) regulation codes have been included but not all C/CSPs are either signitories or registered users to the ACIF codes - refer to ACIF web site for details.

Cell: I2
Comment: Michael Ryan:

What does this regulation apply to ?

For Example :Declared service, Payphone, STS, Special or General Digital Data services, ISDN

All - Applies to all services including a STS, Internet and other services.

STS - Applies to a Standard Telephone Services only (refere to column N2 for an explanation of an STS)

CE - Customer Equipment

PUSP - Primary Universal Service Provider

Cell: J2
Comment: Michael Ryan:

Who does this regulation apply to ?

Part XI C - to all carriers and CSPs who provide declared services

USO - to Telstra to provide STSs

All - All Carriers and CSPs.

Telstra - Only applies to Telstra.

NRS - National Relay Service (which is currently managed by ACE)

Cell: K2
Comment: Michael Ryan:

What is the Real Intent of this regulation ?

Part XI C - Promotes competition, encouraging economically efficient use of and investment in infrastructure

What is it trying to achieve ?

Ie. Achieve any-to-any connectivity.

Greg Neylan:

The column headed "What was the Real Intent of the Regulation" should be omitted as the intentions are generally clear from the Acts or the EMs. Any unusual situations could be handled under the Issues column in the Potential Regulatory Impact for NGN.

Cell: L2
Comment: Michael Ryan:

What are the implications and issues of this obligation still applying in its current form in an NGN environment in 2010 ?

There will be obligations that will not make sense or be technically or economically deployable with future networks or applications.

What are these regulations ?

Regulators should also make sure that there are no artificial barriers to these services succeeding whilst continuing to ensure that consumers are adequately protected by industry standards.

NGN services should increases competition and innovation as well as offering customers new features and possibly new pricing and charging patterns.

Cell: M2
Comment: Michael Ryan:

What other questions or issues need to be asked or debated?

For Example

Will all these regulations exist in future particularly where technology either makes the regulation redundant or impossible to fulfil by carriers or CSPs ?

Interception - How will a carrier/CSP provide interception on a public VoIP /ATM network where packets do not transverse the same route or network ?

What is the regulatory "Safety Net" ?

What kind of barriers to entry does the regulatory "Safety Net" erect ?

Consumers may need to be informed as to the differences/limitations of an NGN service and a PSTN service, particularly if an NGN is not an STS.

Cell: N2
Comment: Michael Ryan:

The current Standard Telephone Service as defined in the Telecommunications (Consumer protection and Service Standards) Act 1999 - Section 6.

Section 6 of the Telecommunications (Consumer Protection & Service Standards) Act 1999) defines the standard telephone service ("STS").

In simple terms, an STS is:
· a voice telephony service; or
· an equivalent carriage service that would comply with the Disability Discrimination Act 1992 (eg. teletypewriter); or
· a carriage service with a designated purpose (eg. data carriage service if prescribed in regulations - but no such regulations have been made to date),
with which a customer is ordinarily able to communicate with other customers of that service using the service (ie.any-to-any connectivity). Regulations may also designate the service to have particular characteristics but no such regulations have been made to date.

Therefore, any carriage service that satisfies the purpose of voice telephony (or if voice telephony is impractical for a person with a disability, an equivalent form of communication) and has any-to-any connectivity may be regarded as an STS.

A "carriage service" is defined in the Telecommunication Act 1997 as a "service for carrying communications by means of guided and/or unguided electromagnetic energy".

The Telecommunications Bill 1996 Explanatory Memorandum states:

· STS is not explicitly linked to the concept of the public switched telephone service or any particular service technology.
· STS is "based on the concept of voice telephony (or its equivalent for people with a disability) reflecting that, in the first instance, the service is for basic voice communications… In practical terms, 'voice telephony' is intended to refer to communications by voice by telephone. The key idea behind the concept is the 'plain old telephone service', or simple, real-time, 2-way voice communication."

· " 'Same service' should be interpreted broadly and with regard to the relevant purpose of the STS, rather than the underlying delivery technology. Thus a person should be able to use the STS to communicate by voice telephony, whether it be supplied, for example, by different types of line links or terrestrial or satellite radio communications".

· "The ability to prescribe purposes for the STS provides an effective functionality-based means of clarifying or upgrading the STS concept over time. Examples of other purposes that may be declared include the carriage of data and tone signaling".

· "The ability to declare in regulations additional purposes for the STS and characteristics of the service enables the STS for the purposes of the USO to be readily upgraded and more precisely specified…The ability to change the STS for the purposes of the USO in this way ensures that the basic service will be of general appeal to most customers and can be adjusted where appropriate, while reserving the prescribed carriage service component of the USO to ensure that there is reasonable access to services that may not be of general appeal…The ability to prescribe STS purposes for specific regulatory purposes also means that should the STS be modified for the purposes of the USO, then it can be similarly modified for other provisions. This means that the STS concept in different provisions can be kept in tandem if appropriate, enabling various attributes to continue to be attached to the STS that must be supplied under the USO".

Cell: O2
Comment: Michael Ryan:

This is only a small sample of current services (all those other than a STS), other services including more generic services (such as ISDN) could be included.

Must consider whether or not Alternate telecommunications Services (ATS) fit into this category.

For the purposes TCPSS Sect 8E, alternative telecommunications services, or ATS, are services the supply of which by a particular universal service provider the ACA authorises for the purposes of this section

Cell: P2
Comment: Michael Ryan:

Proprietary or 3rd party applications or services may possibly be "always on" and may include a combination of the following applications/services running on the CE at any one time :-

Unified Messaging
Voice Telephony
Multi Media
Video (for the hearing impaired)
Business and Leisure Applications or software - Banking etc
Interactive gaming (Multiple players)
Web Access (Surfing)
Location determination (GPS, emergency)
Access Security (Who am I ?)
Data Services (B/W on demand)
Electronic Commerce (supply chain management)
Information Brokering
Home Automation
Presence:- Follow-me
On-line Customer Care
Nomadicity

How will authorisation, authentication and auditing be performed ?

How is the user of the CE ?

Need to consider issues such as portability and roaming

Cell: Q2
Comment: Michael Ryan:

The customer equipment may or may not be under the control of the owner of the CE.

Customer equipment may include:-

IP telephone /SIP telephone
Handheld wireless devices - mobiles
Laptops - wireless and fixed access
PDAs - wireless and fixed access
Softphones
Xbox, PS2 etc
TTY and Text Phones
Video Phones
The Internet Fridge
Water pump and irrigation, Security system etc
Telemetry services

Once the user has been authenticated, the core network may download the users profile :-

1. Services/applications that the user has subscribed to,
2. obligations the user is entitled to,
3. Push advertisements,
4. Generate location information for the core network,
5.

Cell: R2
Comment: Michael Ryan:

This may need expanding out into more columns as a number of articles now divide this part of the network into core, edge and access layers or network elements. The edge layer has the intelligence and value adds whilst the core has control and enhances the network. The access layer must be flexible and broadband.

This includes the transport and Core network elements which may be a combination of the following technologies :-

ATM or LAN switch
IP Core Routers
DWDM
DWDM mesh networks
SDH transmission
IP over Optical
Optical Switching
3G or 4G Mobile networks

Other equipment will be at a point closest to the customer, i.e.

DSLAM
ATM Edge Switches
IP/VPN/MPLS Routers
Softswitchs
VoIP
Ethernet Switches
Frame

The access network may consist of one or more of the following access technologies:-

Copper Cable
HFC
FTTx - Optical Fibre cable (FTTC, FFH etc)
WLAN - meshed & Pt-to-Multi Pt
3G Mobile - GSM and CDMA
GPRS
xDSL
Satellite - LEO and GEO
Wireless - Pt-to-Pt and Pt-to-Multi Pt, DECT
Wi-Fi - 802.11a, 802.11g
IBurst, Bluetooth
Power-Line
LAN, WLAN

What about the "Home Service Network" ?

The access network will need to be flexible - be able to expand and contarct due to bandwidth demand.

Meshed wireless networks - Where do they fit into the network ?

Other functions which would also be part of these elements include:-

Billing ,Charging and Settlement

User Authentication Server and Security
Customer database - SLAs and user options
Location and Presence Servers
Media , Web and E-mail Servers
Interconnection
Application and Feature Servers
Mobile Gateways
Protocol converters, Signalling - IP, SS7
E000 and E106 routing
Numbering - ENUM
Call Server and Routing
QoS
Privacy

Cell: S2
Comment: Michael Ryan:

Is the regulation/s going to exist in future ?

What is the outcome of this issue ?

Will the obligation or regulation impact financially on carriers, CSPs or consumers?

Other than the NGN equivalent of a STS, will other services fall under the definition of an Alternate Telephone Services as specified in the TCPSS sect 8E ?

If there is no economically and/or technically feasible solution to complying with a current obligation in future, what exemptions or other relief can the industry apply for ?

The industry will need to develop a self regulatory environment where industry players (C/CSPs, consumers, regulators etc) agree to and enforce guidelines on what measures providers should take to ensure consumers are aware of the limitations of NGN services.

This is the least intrusive option but because guidelines may not be enforceable, could providers opt-out and harm consumers and possibly gain a competitive advantage ?

Greg Neylan:

The treatment of services as an Alternative Telephone Service arises when a service is being provided by a Universal Services Provider and has been authorised by the ACA, obviously after submissions by the USP.

Cell: D3
Comment: Michael Ryan:

Public Switched Telephone Network (PSTN)

That part of the Telecommunications Network which enables any customer to establish a connection for voice frequency communication with any other customer either automatically or with operator assistance.

Note: The PSTN has a nominal transmission bandwidth of 3.1 kHz.

Regulations made for the purposes of paragraph (2)(e) of The Act must not specify an objective if the achievement of the objective is likely to have the effect (whether direct or indirect) of requiring a telecommunications network or a facility to:

(a) have particular design features; or
(b) meet particular performance requirements.

The following are examples of purposes that could be declared by regulations made for the purposes of paragraph (1)(c) of Sect 6 The Act:
(a) the purpose of the carriage of data;
(b) the purpose of tone signalling.

ACIF S003:2001

Cell: E3
Comment: Michael Ryan:

Access to Ring and Dial tone are provided as part of the delivery of a STS to assist the customer in making a STS call. These tones enable the customer to interpret the progress and availability of the STS services as it progresses through the network/s.

Cell: L3
Comment: Michael Ryan:

Will other formes of identifying or signalling the progress of a communication (whether this be voice, message, e-mail) be employed (ie. visual indicators, vibrators etc) ?

Will these indicators be dependent on the CE and application being used by the end user ?

The indicator may be tailored by the end user.

Current methods of signalling by CE, ie tone dialling, may not be carried reliably over different interconnected IP networks.

The carrier may only provide a signal which is only recognisable by the CE or application.

A combination of software/hardware development and VoIP has allowed Microsoft to add voice services at the desktop. There is no reason as to why we cannot have a browser, listing C/CSPs and prices for different calling destinations and services - with carrier preselection.

Cell: D4
Comment: Michael Ryan:

Part 5 of the TCPSS refers to CSGs, the Telecommunications (Customer Service Guarantee) Standard 2000 makes specific reference to the Standard only applying to a voice grade service although the service maybe used for other purposes.

The Activation and Assurance applies to the local part of the network and not the end-to-end service.

This applies to an STS (including disabiliy services excluding TTY) but not a mobile service.

It provides time frames for the supply and repair of services depending on the size of the local population and location with respect to the CSP's or carrier's infrastructure.

Telecommunications (Consumer Protection and Service Standards) Act 1999

Telecommunications (Customer Service Guarantee) Direction No.1 of 1999

Telecommunications (Customer Service Guarantee) Direction No.1 of 1999 (Amendment No. 1 2001)

Thef maximum timeframes in which a CSP can claim a mass service disruption (MSD) exemption from CSG timeframes. Exemptions can be claimed for circumstance beyond a CSP's control, such as bushfires or severe flooding. Previously there were no specific timeframes within which CSPs were required to provide a general notice of the declaration of an MSD exemption.

Cell: E4
Comment: Michael Ryan:

The Customer Service Guarantee (CSG) Standard applies to CSPs that supply the STS. The objective of the CSG is to encourage improvements in service levels by requiring CSPs to meet a set of minimum standards.

The CSG standard applies to the delivery and maintenance of less than five (5) STS lines only and does not include CE, customer cabling or payphones.

Under the CSG, CSPs are legally required to meet specified standards on the time taken to connect a STS and certain enhanced calling features, repair a fault or service difficulty and attend customer appointments.

Where these standards are not met and no exemption applies, CSPs are required to pay compensation to eligible customers.

The responsibility of the CSG is with the carrier or CSP who has the relationship with the customer or service supplied.

The impact is felt by the relationship provider of the STS if more than one supplier of the service is involved in supplying the STS.

The test is that the service is inoperable. This is not an end-to-end guarantee.

Cell: J4
Comment: Michael Ryan:

Alston DoCITA 11/8/03

Where telephone companies fail to meet these timeframes they are required by law to make automatic compensation payments to customers.

The exemption scheme will only apply to telephone companies with a small share of the market in a specified geographic area and will help companies to enter the fixed phone market and offer services in new areas. To be eligible for a temporary exemption, a telephone company will have to prove that it does not supply fixed phone services on a medium or large scale in the area for which an exemption is sought. The company will also need to prove that the proposed exemption will result in an overall benefit to users of telephone services in the area.

http://www.dcita.gov.au/Article/0,,0_1-2_15-4_116328,00.html

Cell: L4
Comment: Michael Ryan:

Should CSGs apply to other services or applications in the NGN environment ?

It is anticipated that service will be decoupled from access in the future.

How will CSGs apply to applications/services when these maybe supplied seperately by either a Carrier or CSP ?

Eg Carrier/s supplies the video link but the VRS (Visual Relay Service) supplies the visual interpretors (Sprint http://www.sprintvrs.com, AT&T etc).

ACA Media Release No. 10 - 18 February 2004 CSG changes to improve opportunities for competition

The ACA has taken steps to encourage competition in the fixed telephone market and make it easier for new CSPs to enter the market.

The amendment introduced a temporary exemption scheme to help providers in the fixed telephone market.

A small share of the market in a specified geographic area would be eligible under the exemption scheme.

“To be eligible for a temporary exemption a CSP must prove that it does not supply fixed telephone services on a medium or large scale in the area in which the exemption is sought.

“The CSP must also prove that the exemption will benefit users of telephone services in that area.”

Cell: D5
Comment: Michael Ryan:

Enhanced call handling feature means any of the following features:

(a) call waiting (enabling a customer to receive a second call on a telephone service while engaged on a call);
(b) call forwarding (causing a call directed to a number to be redirected to a stored number);
(c) call barring (enabling a customer to control access to some, or all, network numbers before a call is established), but not a call barring option that a carriage service provider programs into its network;
(d) calling number display (enabling a customer to identify the number of a calling party);
(e) calling number display blocking (enabling a customer to prevent the display of his or her number to a called party);
(f) any other enhanced feature, about which the ACA considers it appropriate to make a standard, that:
(i) can be supplied as part of the CSG service; and
(ii) can establish, maintain, modify or terminate a call made using the CSG service.

Telecommunications (Consumer Protection and Service Standards) Act 1999

Telecommunications (Customer Service Guarantee) Direction No. 1 of 1999

Cell: E5
Comment: Michael Ryan:

These are features a customer requests or possibly a CSP will provide to increase or retain market share.

Bundled products/features.

Cell: L5
Comment: Michael Ryan:

Will the current set of features be applicable in future ?

Will this also flow onto applications and services which become available but as yet have not been developed ?

Cell: D6
Comment: Michael Ryan:

A CSP who supplies a STS should provide access, free of charge, to an emergency call service (E000, 112 and 106) unless the ACA considers it would be unreasonable tom be provided.

In June 2002, the ACA, using its powers under the Telecommunications (Consumer Protection and Services Standards) Act 1999, made the Telecommunications (Emergency Call Service) Determination 2002 . The Determination places obligations on carriers, carriage service providers, and emergency call persons in relation to access to and provision of the emergency call service.

Telecommunications (Consumer Protection and Service Standards) Act 1999

Telecommunications Act 1997 Sect 18

For the purposes of this Act, a person is taken not to have access to
an emergency call service unless, in the event that the person
attempts to place a call to the relevant emergency service number,
the call can be established and maintained.

ACIF C536:2002

C/CSPs have an obligation to provide Access to Emergency Call Services.

Telecommunications (Emergency Call Persons) Determination 1999.

Telstra Corporation operates an emergency call service for receiving and handling calls to the following emergency service numbers:
· 000
· 112.

The NRS provider is expected to operate an emergency call service for receiving and handling calls to the emergency service number 106

Cell: E6
Comment: Michael Ryan:

As a result of the Telecommunications (Emergency Call Service) Determination 1997, all carriers and CSPs are required to ensure access for consumers to the emergency call services.

The emergency call service is currently operated by Telstra as the Emergency Call Person (ECP) for 000 calls. Text-based emergency calls for people with hearing and speech impairments are managed by the NRS as the ECP for number 106 calls.

Consumers are entitled to direct access, free of charge, to the emergency call services and ancillary arrangements for emergency call handling.

Carriers and CSPs must ensure that emergency calls can be carried within and across networks to be delivered to the ECP.

ACIF C536-2003 & CG534:2003

Cell: I6
Comment: Michael Ryan:

Standard Emergency Telephone Service

Cell: L6
Comment: Michael Ryan:

Will it be possible to give priority to emergency service calls ?

Cell: D7
Comment: Michael Ryan:

Local calls are to be charged for on an untimed basis.

Cell: E7
Comment: Michael Ryan:

CSPs are not required to offer or provide local calls. However, if they choose to do so, they are obliged to give residential and charity customers the option of untimed local data and voice call services. They must also offer untimed local voice call services to their other customers.

This was introduced to satisfy Government Policy and has been expanded to include ULCs in Extended Zones.

Cell: J7
Comment: Michael Ryan:

This regulation applies to all carriers and CSPs who provide local calls.

Cell: K7
Comment: Michael Ryan:

This obligation was placed on carriers and CSPs to satisfy Government policy to provide low cost and affordable local calls to customers to enable those customers to call their local community of interest. The obligation was expanded to include ULCs in Extended Zones.

Cell: L7
Comment: Michael Ryan:

Local calls are currently based on the closest community of interest.

How would a provider charge ?

Tariffing is currently based on time and distance. How will carriers and CSPs using NGNs charge ?

What is the concept of an ULC ?

By volume of packets, time or distance ?

Will it be a flat rate per month for all local and long distance services ?

Will an ULC exist if local calls are free ?

Tariffing or charging paterns have not as yet been considered by any of the NGN groups.

Cell: D9
Comment: Michael Ryan:

A carriage service provider who supplies a standard telephone
service must make directory assistance services available to each
end-user of the service.

Telecommunications Act Sch 2 Pt 2

The NRS provides persons who are deaf or who have a hearing and/or speech impairment with access to a standard telephone service on terms, and in circumstances, that are
comparable to the access other Australians have to a standard telephone service.

Telecommunications (Consumer Protection and Service Standards) Act 1999 Div 1 Part 3

Directory assistance services must be made available by National Relay Service (NRS) .

Cell: E9
Comment: Michael Ryan:

This is provided as a benefit to those customers who do not have access to either the White or Yellow Pages.

The National Relay Service (NRS) must provide similar services for the disabled community.

Cell: L9
Comment: Michael Ryan:

The provision of OAS may be opened up to either competition or provided from outside Australia in future.

What are the implications with respect to the privacy of Australian customer details

Cell: D10
Comment: Michael Ryan:

The Licence Conditions (clause 10 (1)) oblige Telstra to establish and maintain the IPND.

A CSP who supplies a carriage service to an end-user and the end-user has a public number must give Telstra such information as Telstra reasonably requires in connection with Telstra's fulfilment of that obligation.

ACIF C555:2002

Public Number Customer Data may only be accessed from the IPND for Approved Purposes as specified in Licence Condition 10 (1), or as specified by the ACA by written notice, which are:

(a) providing Directory Assistance Services;
(b) providing Operator Assisted Services or Operator Assistance Services;
(c) publishing Public Number Directories;
(d) providing Location Dependent Carriage Services;
(e) the operation of Emergency Call Services or assisting Emergency Services under Part 8 of the Telecommunications (Consumer Protection and Service Standards) Act 999;
(f) assisting Enforcement Agencies or safeguarding national security under Part 14 of the Act;
(g) verifying the accuracy of information provided by the Data Provider and held in the database against the information Data Provider holds; and
(h) any other activities specified by the ACA by written notice to the IPND Manager.

ACIF C555:2002 Integrated Public Number Database (IPND)

Cell: F10
Comment: Michael Ryan:

The IPND is an industry-wide database that contains details of all customers.

Telstra is currently specified as the IPND Manager.

The database is available for CSPs to provide operator and directory assistance services.

Emergency and law enforcement agencies also have access to the database.

Carriers and CSPs who supply carriage services to end-users with a public number must give any information reasonably required by the IPND Manager for the purposes of fulfilling the Manager's obligations.

Carriers and CSPs must download customer details to the database daily.

ACIF C555:2002

The Licence Conditions (clause 10 (1)) oblige Telstra to establish and maintain the IPND. Pursuant to the Telecommunications Act 1997 (Cth) (the Act), Carriage Service Providers that supply a Carriage Service to an End User where the End User has a Public Number must give Telstra such information as Telstra reasonably requires in connection with Telstra's fulfilment of the obligation as the IPND Manager (Part 4, Schedule 2 of the Act).

Part 13 of the Act deals with the protection of personal information by limiting its use, disclosure and secondary use and disclosure. Section 285 of the Act allows for specified disclosures and uses for information held in the IPND. Telstra's Licence Conditions also contains provisions about the disclosure and use of Public Number Customer Data held in the IPND. This Code is intended
to expand on the protections for Public Number Customer Data provided for by the provisions mentioned by setting principles and standards for the handling of Public Number Customer Data.

The IPND Manager must take all reasonable steps to protect and secure Public Number Customer Data from misuse, loss and unauthorised access, modification or disclosure of Public Number Customer Data.

Cell: L10
Comment: Michael Ryan:

If other methods of providing location information are used, i.e. GPS data, which is then forwarded on from the user's device back into the network, then a single IPND database may not be needed.

Cell: D11
Comment: Michael Ryan:

Certain operator services must be provided to end-users of
standard telephone services dealing with faults and service difficulties.

Telecommunications Act Sch 2 Pt 2

The NRS provides persons who are deaf or who have a hearing and/or speech impairment with access to a standard telephone service on terms, and in circumstances, that are
comparable to the access other Australians have to a standard telephone service.

Telecommunications (Consumer Protection and Service Standards) Act 1999 Div 1 Part 2

Operator Services must be made available by National Relay Service (NRS) .

Cell: E11
Comment: Michael Ryan:

This is provided for the benefit of customers who use a STS.

CSPs who supply a STS must make operator and directory assistance services available to all customers. This may be achieved either by providing the services themselves or by arranging for a third person to provide the services. CSPs must give another provider access to operator-assisted services if requested, on terms and conditions agreed between the parties.

The National Relay Service (NRS) must provide similar services for the disabled community.

Cell: L11
Comment: Michael Ryan:

The provision of OAS may be opened up to either competition or provided from outside Australia in future.

Cell: D12
Comment: Michael Ryan:

ACA Detrmination

Telstra Corporation operates an emergency call service for receiving and handling calls to the following emergency service numbers:
• 000
• 112.

The NRS provider is expected to operate an emergency call service for receiving and handling calls to the emergency service number 106.

The number 106 has been specified in the Telecommunications Numbering Plan 1997 for use as a secondary emergency service number by people with access to the National Relay Service. People whose standard telephone service uses voice telephony only will not be able to use the number successfully.

The number 112 has been specified in the Telecommunications Numbering Plan 1997 for use as a secondary emergency service number on mobile carriage services for which it is a recognised emergency service number.

ACIF 536:2003 Emergency Call Serviec Requirements

Cell: I12
Comment: Michael Ryan:

The objectives of this industry code are:

to ensure all end users of a STS have access to an emergency call service in case of life threatening emergencies or where a time critical response is required from an emergency service organisation;

(a) to ensure the operational effectiveness of the Telecommunications (Emergency Call Service) Determination 1999;

(b) to ensure that the obligations of carriers and carriage service providers, in relation to the emergency call services, are clearly documented and understood; and

(c) to promote public understanding (through public number directories) of the emergency call services, including appropriate use, and advise that the disclosure of personal information to emergency service organisations will occur as part of the emergency all process, in accordance with section 35 of the Telecommunications (Emergency Call Service) Determination 1999.

Cell: D13
Comment: Michael Ryan:

TELECOMMUNICATIONS (CONSUMER PROTECTION AND SERVICE STANDARDS) ACT 1999 - SECT 93

The NRS provides persons who are deaf or who have a hearing and/or speech impairment with access to a standard telephone service on terms, and in circumstances, that are comparable to the access other Australians have to a standard telephone service.

The NRS allows people who are Deaf or have a hearing or speech impairment to use the telephone. Messages are sent by voice, modem, speech to speech or telephone typewriter (TTY).

The NRS also enables anyone in the community to communicate with people who are deaf, hearing or speech impaired. Essentially, the NRS operates as a communication bridge for deaf, hearing impaired and speech impaired people in the community when using the standard telephone service. The NRS is provided for under Part 3 of the Telecommunications (Consumer Protection and Service Standards) Act 1999.

TELECOMMUNICATIONS (CONSUMER PROTECTION AND SERVICE STANDARDS) ACT 1999 - SECT 95
The National Relay Service (the NRS)

(1) A reference in this Part to the National Relay Service (or NRS) is a reference to a service that:

(a) provides persons who are deaf, or who have a hearing and/or speech impairment, with access to a standard telephone service on terms, and in circumstances, that are comparable to those on which other Australians have access to a standard telephone service; and

(b) is provided by a person under a contract with the Commonwealth.

(2) The NRS contract must provide for the NRS provider to prepare service plans for the NRS. The service plan must include at least the following matters:

(a) timetables for the supply of the NRS; and

(b) performance standards to be met by the NRS provider.

(3) The Minister must arrange for each NRS service plan to be published in whatever manner the Minister considers appropriate.

Cell: J13
Comment: Michael Ryan:

The NRS is provided by Australian Communication Exchange (ACE) under contract to the Commonwealth.

ACE was formed in May 1995 as a result of a merger between two well established Australian organisations, Deaflink and Deafness Resources Australia. The service was originally funded by the Government through the Department of Communications, Information Technology and the Arts (DCITA).

In June 1998, ACE signed a contract with the Commonwealth for the provision of the NRS for a further five years. The contract expired on 30 June 2003. The Commonwealth has the option at its sole discretion to extend the contract beyond this date for a further 3 years.

Payment of the NRS levy is shared among all telecommunications carriers based on eligible revenue assessments for the relevant financial year. All carriers who operate in a financial year are participating carriers.

Cell: L13

Comment: Michael Ryan:

Will the services provided by the NRS be expanded to include text and video relay services ?

Will there be more than one relay service provider ?

How will the relay service be funded ?

Cell: D15
Comment: Michael Ryan:

The ACA may, by written instrument, make a technical standard relating to specified customer equipment or specified customer cabling.

Standards under this section are to consist only of such requirements as are necessary or convenient for:

(a) protecting the integrity of a telecommunications network or a facility; or
(b) protecting the health or safety of persons who:
(i) operate; or
(ii) work on; or
(iii) use services supplied by means of; or
(iv) are otherwise reasonably likely to be affected by the operation of;
a telecommunications network or a facility.

Ensure that customer equipment can be used to give access to an emergency call service.

Ensure, for the purpose of the supply of a standard telephone service, the interoperability of customer equipment with a telecommunications network to which the equipment is, or is proposed to be, connected.

The Telecommunications Act 1997 Part 21 Div 3

Cell: E15
Comment: Michael Ryan:

All customer installations are required to meet a minimum set of technical standards.

This is to provide a level of protection and technical quality for both customers and technical staff who are required to maintain these networks.

What aregulations will be applied to wireless based customer installations or networks (UWB, WiFi, WLL, FRA etc) ?

Cell: D16
Comment: Michael Ryan:

The ACA may, by written instrument, make a technical standard relating to specified customer equipment or specified customer cabling.

Standards under this section are to consist only of such requirements as are necessary or convenient for:

(a) protecting the integrity of a telecommunications network or a facility; or
(b) protecting the health or safety of persons who:
(i) operate; or
(ii) work on; or
(iii) use services supplied by means of; or
(iv) are otherwise reasonably likely to be affected by the operation of;
a telecommunications network or a facility.

The Telecommunications Act 1997 Part 21 Div 3

ACIF C524:2001 External Communication Cable Networks (being revided)

Cell: E16
Comment: Michael Ryan:

The ACIF code C524:2001 provides guidance on the basic principles of installation, maintenance and safety of External Communication Networks with the purpose of achieving the minimum requirements for electrical, structural and network reliability, as well as setting out the minimum provisions that are considered necessary for the safety of employees and the public under the specified conditions.

The provisions of the ACIF code C524:2001 apply to all External Communication Networks whether or not the External Communication Network is:

(a) in service or out of service;
(b) being constructed and has never been Energised or operated in some form; or
(c) being constructed on or near other Utility infrastructure.

Cell: D18
Comment: Michael Ryan:

The ACA may, by written instrument, make a technical standard relating to specified customer equipment or specified customer cabling ensuring that customer equipment can be used to give access to an emergency call service.

The Telecommunications Act 1997 S376

Cell: E18
Comment: Michael Ryan:

A determination under section 147 requires a carriage service provider who supplies a standard telephone service to provide each end-user of that standard telephone service with access to that emergency call service; and
Telecommunications (Consumer Protection and Service Standards) Act 1999 S149

The ACA may impose requirements on any or all of the following:

(a) carriers;
(b) carriage service providers;
(c) emergency call persons;
in relation to emergency call services.

The Telecommunications Act 1997 S376

ACIF G534:2003

This Guideline is to provide assistance to members of ACIF Working Committees when developing or revising AS/ACIF Standards and ACA Technical Standards (TS 18) when assessing the requirements in those Standards: (a) to ensure that Customer Equipment can be used to give access to an emergency call service; and (b) to ensure, for the supply of the Standard Telephone Service, the interoperability of Customer Equipment that is designed or intended for connection to a telecommunications network, with that network

Cell: D19
Comment: Michael Ryan:

The ACA may, by written instrument, make a technical standard relating to specified customer equipment. Standards under this section are to consist only of such requirements as are necessary or convenient for:
(a) protecting the integrity of a telecommunications network or a facility; or
(b) protecting the health or safety of persons who:

(i) operate; or
(ii) work on; or
(iii) use services supplied by means of; or
(iv) are otherwise reasonably likely to be affected by the operation of; a telecommunications network or a facility ensuring, for the purpose of the supply of a standard telephone service, the interoperability of customer equipment with a telecommunications network to which the equipment is, or is proposed to be, connected.

The Telecommunications Act 1997 S376

Cell: G19
Comment: Michael Ryan:

Telecommunications network standards ensure interoperability of customer equipment and communicatuions networks to deliver a STS. This then allows end users to tranfer to competing carriers abd CSPs.

The Telecommunications Act 1997 S376

Cell: L19
Comment: Michael Ryan:

If Microsoft can add voice services to its desktop applications, there is no reason as to why other software developers cannot offer similar applications for their browsers. But Microsoft are also adding security features which may limit interoperability.

Currently all four international Instant Messaging providers (AOL, MSN, Lotus and Yahoo) cannot interoperate.

Equally important is the QoS at the CE where media encoding/decoding id performed. CE with less processing capabilities may not deliver the QoS to end users even though the core and access networks may deliver a high QoS. From a providers point of view, providing a high quality media application can include not only the core and access networks but also the CE.

Cell: D20
Comment: Michael Ryan:

Will an application or serviced developed by one vendor be able to operate with another vendor's application or service offering ?

This includes operating and signalling systems.

Greg Neylan:

It is very desirable that services and features should be available irrespective of network boundaries. This needs to be achieved with processes that do not hinder innovation.

Cell: L20
Comment: Michael Ryan:

What obligations will be attached to Applications ?

ie CSGs , Emergency calling, ?

What if the application determines the service type, security access, interoperability etc ?

Will the obligation be on the application provider or the application developer, ie Microsoft ?

Cell: D21
Comment: Michael Ryan:

The ACA may, by written instrument, make a technical standard relating to specified customer equipment. Standards under this section are to consist only of such requirements as are necessary or convenient for protecting the health or safety of persons who:

(i) operate; or
(ii) work on; or
(iii) use services supplied by means of; or

(iv) are otherwise reasonably likely to be affected by the operation of; a telecommunications network or a facility ensuring, for the purpose of the supply of a standard telephone service, the interoperability of customer equipment with a telecommunications network to which the equipment is, or is proposed to be, connected.

The Telecommunications Act 1997 S376

Cell: E21
Comment: Michael Ryan:

Standards under this section are to consist only of such requirements as are necessary or convenient for protecting the health or safety of persons who operate or work on a telecommunications network or a facility ensuring, for the purpose of the supply of a standard telephone service.

The Telecommunications Act 1997 S376

Telecommunications equipment intended for use on the customer side of the network boundary must comply with the Telecommunications (Customer Equipment and Customer Cabling) Labelling Notice.

Technical standards for customer equipment are developed and maintained by industry under the direction of ACIF.

When industry requires these standards to be made by the ACA and enforceable, ACIF forwards them to the ACA for making under section 376 of the Telecommunications Act 1997. The standards are then incorporated into the Telecommunications (Customer Equipment and Customer Cabling) Labelling Notice for identified carrier services.

Customer equipment connecting to carrier services identified in the Labelling Notice and manufactured in Australia or imported from overseas must be labelled with the A-Tick compliance label.

Cell: D22
Comment: Michael Ryan:

Under subsection 142 (2) of the Act, a reference in Part 7 of the Act to the supply of a STS includes a reference to the supply, to a person with a disability equipment, goods or services, as the case may be, are for use in connection with the standard telephone service.

Telecommunications (Equipment for the Disabled) Regulations 1998

It is unlawful for a person who, whether for payment or not, provides goods or services, or makes facilities available, to discriminate against another person on the ground of the other person's disability or a disability of any of that other person's associates:

(a) by refusing to provide those goods or services or to make those facilities available to the person affected by disability; or
(b) in the terms or conditions on which those goods, services or facilities are made available to the person affected by disability; or
(c) in the manner in which the goods, services or facilities are made available to the person affected by disability.

Telecommunications (Consumer Protection and Service Standards) Act 1999

Disability and Discrimination Act 1992

Cell: E22
Comment: Michael Ryan:

One of the objects of the Telecommunications (Consumer Protection and Service Standards) Act 1999 is to ensure that the standard telephone service, payphones and other carriage services of social importance are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business.

CSPs that provide the STS to customers must also provide customers with disabilities with equipment to enable them to access this service. This may be achieved either directly, by providers developing their own Disability Equipment Program, or indirectly, by entering into an arrangement with a third party to provide the service.

The ACIF Standard, S040:2001 provides requirements and where appropriate recommends design features which remove barriers to access for people with disabilities. Regard must be had to this Standard in determining compliance with the Disability Discrimination Act 1992.

The supply of a standard telephone service includes a reference to the supply of other customer equipment (ie TTYs, Alarms, LVDs etc) in order to comply with the Disability Discrimination Act 1992.

Cell: L22
Comment: Michael Ryan:

What will be the minimum standard of communications for the disabled ?

Text ?

Video ?

Minimum standards of quality will be required so that visual or sign language (Auslan) can be used and interpreted in a practical way. These standards will depend on the application (or encoding/decoding algorithms). Current software/hardware allows uses a min of 128kbps with 384kpps the preferred min for video relay interpreting.

Work is currently being undertaken by the ACIF TATA group to identify CE and options so that the Hearing Impaired are able to take advantage of expected new services and features offered by NGNs. This work includes the capability of text communications in IP standards.

Cell: P22
Comment: Michael Ryan:

Must be able to communicate with TTYs

Cell: Q22
Comment: Michael Ryan:

Alternative devices may provide text and/or video communications.

Cell: D24
Comment: Michael Ryan:

This prohibits unacceptable conduct by telephone sex service providers, and CSPs, in relation to telephone sex services.

If a CSP engages in unacceptable conduct in relation to a telephone sex service, charges for the service must not be included in a bill sent by or on behalf of the CSP to the customer concerned.

The supply of other goods and services must not be tied to the supply of a telephone sex service.

The regulations may prohibit or regulate the supply, advertising or promotion of a specified telephone sex service.

Cell: E24
Comment: Michael Ryan:

This regulation is required for social or public benefit.

Cell: L24
Comment: Michael Ryan:

Restrictions could be based on user profile which is determined at authorisation and authentication stage of logging on.

Cell: D25
Comment: Michael Ryan:

Part 6 of the Telecommunications Act 1997 identifies the role of Industry Codes, developed by the industry, to apply to participants in the industry in relation to their telecommunications activities. The Act defines requirements for the development of Codes (ACIF C518:2001).

One of the matters which may be subject to an industry code is identified in Section 113(3)(n) - “the accuracy of billing of customers of carriage service providers in relation to the supply of STS".

Section 115, Part (2) allows a code dealing with the accuracy of billing of customers of Carriers and CSPs in relation to the supply of STS to have an effect on network and customer equipment design and performance.

ACIF C518:2000 Call Charging and Billing Accuracy

Cell: E25
Comment: Michael Ryan:

This Code applies to voice-telephony fixed and mobile Carriers and Carriage Service Providers supplying telecommunication services intended primarily for the purpose of voice-telephony, consistent with the definition of STS.

The range of voice services may change over time, and underlying technology may change. This Code applies to circuit switched telephone calls.

This Code addresses the call charging and billing accuracy of STS. It does not address the call charging and billing accuracy of other carriage services or content services.

In a competitive market, many new and different call charging options are continually introduced, some of which may apply only to a single customer or group of customers, for either a defined or ongoing period.

ACIF C518:2000

Cell: L25
Comment: Michael Ryan:

How will billing be done ?

Current a customer is billed on a minutes of use basis over a particular distance.

In future , a customer maybe billed for the transportation of a quantity of packets of information, QoS, applications used, type of information downloaded etc. Customers can understand and can conceptualise the billing for carrying a service but will find it very difficult to get the idea of charging for packets of information, ie

How many packets for a voice call from Melbourne to Brisbane ?

How many packets make up an ULC ?

Do all packets attract the same charge between the same 2 locations ?

If more packets are used for video than voice and you request a higher QoS for voice, how do you differentiate between these packets and charge ?

This could also be done as flat fee or usage charge.

Is there any benefit to owning the network at the packet level ?

Carriers must be able to extract value in the delivery of services (voice, video etc) across a distance.

The ecionomics of an IP network do not fit the economic models of a PSTN network.

Cell: D26
Comment: Michael Ryan:

Part 6 of the Telecommunications Act 1997 identifies the role of Industry Codes, developed by the industry, to apply to participants in the industry in relation to their telecommunications activities. The Act defines requirements for the development of Codes (ACIF C522:2003).

One of the matters which may be subject to an industry code is identified in Section 113(3)(iv) - calling number display in relation to the supply of STS.

ACIF C522:2003 Calling Number Display

Cell: E26
Comment: Michael Ryan:

CND has been offered by telecommunications providers (carriers and CSPs) since late 1997. Its introduction was influenced by Guidelines prepared by the former AUSTEL Privacy Advisory Committee. Those Guidelines dealt with the measures to be adopted prior to introducing the product, including a public education campaign and the offering of the CND service on an “opt out basis”.

Cell: D27
Comment: Michael Ryan:

Part 6 of the Telecommunications Act 1997 identifies the role of Industry Codes, developed by the industry, to apply to participants in the industry in relation to their telecommunications activities. The Act defines requirements for the development of Codes (ACIF C521:2001).

One of the matters which may be subject to an industry code is identified in Section 113(3)(a) - telling customers about goods or services on offer, the prices of those goods or services and the other terms and conditions on which those goods or services are offered in relation to the supply of STS.

This includes features, termes and conditions of service provision, charges etc which can be found in the SFOAs from each carrier or CSP.

ACIF C521:2001 Prices, Terms and Conditions

Cell: E27
Comment: Michael Ryan:

The ACIF C521:2001 Code has been developed to provide a minimum set of standards for suppliers to meet when providing information to customers about the prices,
terms and conditions of the products on offer.

Industry compliance with the Code will:
• better educate customers about the industry and the products on offer;
• provide safeguards against the confusion and deception of customers;
• improve the fairness and accuracy of information provided; and so
• allow customers to make informed purchasing decisions; and
• increase customer confidence in the industry.

The Code establishes principles which must be heeded by industry participants as well as providing specific guidance and obligations regarding advertising, pre-sale and contractual information provided to customers.

Cell: D28
Comment: Michael Ryan:

Part 6 of the Telecommunications Act 1997 identifies the role of Industry Codes, developed by the industry, to apply to participants in the industry in relation to their telecommunications activities. The Act defines requirements for the development of Codes (ACIF C519:2002).

One of the matters which may be subject to an industry code is identified in Section 115(2)(b) - to have the direct or indirect effect of requiring customer equipment, customer cabling, a telecommunications network or a facility to meet performance requirements that relate to the quality of standard telephone services.

ACIF C519:2002 End-to-End Network Performance (Currently being reviewd).

Cell: E28
Comment: Tracey Annear:

The ACIF C519:2002 Code aims to ensure voice telephony and basic voice-band data transmission delivered
over public circuit switched fixed and mobile networks meets an acceptable overall level of performance for consumers. Consumer benefits should flow from the adherence by Carriers and CSPs to a defined level of network performance. This Code also establishes an industry framework for Carriers and CSPs to demonstrate compliance of their overall network performance to a set of technical objectives.

The primary aim of the Code is to specify the requirements for checking the overall end-to-end network performance of the multi-service deliverer, multi-network environment in Australia.

It also aims to assure end users, Regulators and Government, that the switched networks operated by Carriers and CSPs provide an acceptable level of overall end-to-end network quality for a standard telephone service.

Cell: L28
Comment: Michael Ryan:

The new draft Code C519 is currently up for public comment.

Will the obligation to provide 24/7 availability lie with a single carrier or CSP or will it be distributed ?

Currently carriers deploying IP networks over dimension their networks as there is very little available on how to domension these networks - this is not a viable economic long term solution to providing a carrier grade of service/QoS/CoS.

Applications may have a real impact on video services eg. quality of transmission and reception for Sign language (Auslan) and any-to-any connectivity for text and video.

An IETF recommendation, MPLS (Multi Protocol Label Switching), provids a mechanism for tagging packets with forwarding information that can be used to assign the packets a particular priority that allows enforcement of QoS guarantees. MPLS can also partition bandwidth into multiple channels with definable service levels or classes. These clases could be devided into :-

1. Time critical applications - voice and video over IP

2. Mission critical applications - Oracl and SAP

3. Transaction oriented applications - Updates to databases etc

4. Time elastic applications - E-mail

But the system has to be flexible in order to avoid sustaned data flows from high priority applications shutting out bandwidth from lower priority applications.

Cell: D29
Comment: Michael Ryan:

The Telecommunications Act 1997 Part 21 Div 5

The ACA may, by written instrument, make a technical standard relating to the interconnection of facilities.

These standards are enforced by section 152AR of the Trade Practices Act 1974, which sets out the standard access obligations.

Trade Practice Act 1974 Part XIC Div 3.

Cell: G29
Comment: Michael Ryan:

Any Carrier implementing a carriage service using a number specified in the National Numbering Plan , should make that carriage service accessible by routing to and from any other Carrier, where such routing is required to achieve the objective of any to any connectivity expressed in the Trade Practices Amendment (Telecommunications) Act 1997.

ACIF G538: 1999

ACIF G549:2000

ACIF G500: 2000

Cell: L29
Comment: Michael Ryan:

The parameters or service details will need to be expanded .

Need to look at what other service parameters (CoS, QoS, Location, Presence, Identity/Authentication etc) which will be required to be passed between carriers or CSPs.

There will be a need for backwards compatibility to legacy systems.

How will latency or delay be apportioned between all the parts (where parts of the ene-to-end service are provided by different carriers or CSPs) of and end-to-end service ?

Customers are tolerant to a latency or delay of 150mS.

Greg Neylan:

Interconnection using IP processes may need to be included in the ACCC's declared access services. There may be a need to develop processes to minimise the translations between circuit switched and packetised call handling to minimise latency and other quality concerns.

Cell: D30
Comment: Michael Ryan:

This clause applies to a CSP who supplies a STS.
The provider must provide itemised billing for calls made using such a service. The provider may do this by:

(a) providing the itemised billing itself; or

(b) arranging with another person for the provision of the itemised billing.

The Telecommunications Act 1997 Sch 2 Part 5.

ACIF C542:2003 Billing

Cell: E30
Comment: Michael Ryan:

A CSP who supplies a STS must provide itemised billing for each of its customers of such a service.

Itemised billing means provision of a bill that contains the date, duration and charge for each call and the number to which the call was made or details as determined by the ACA.

Except for ULCs, CSPs must provide itemised billing for each of their customers supplied with a STS.

Itemised billing for ULC must be provided at the customer's request.

The Telecommunications Act 1997 Sch 2 Part 5.

Gerg Neylan:

Consideration is required if itemisation is required to clarify billing or to provide call details. Should a CSP providing calls on a weekly rate be required to provide call details? The assumption of a charge per call may well be replaced soon by an alternative model.

Michael Ryan:

All the literature and the experts expect that there will be a shape increase in bandwidth usage primarily associated with an increase in video based services whether for messaging, information, entertainment or for other applications not as yet dreamed of as service providers are still primarily offering and providing services in narrow bandwidth networks.

That said, if we want to provide or offer customers these next generation applications (video, voice & data) which will require "controlled/managed" quality of service, several technical issues along with an appropriate billing method still need to be solved both in the network and at the edge of the networks close to the customer.

One area which has not received any discussion in any of the industry forums so far, is what an appropriate billing method would look like and how will a customer be billed. Currently our billing methods are based on time and distance.

It is expected that we will be providing both content and applications on an NGN network (assume IP based for the immediate future) but this then raises the issue of what will the charging patterns be for these content oriented services.

(Note the change to consumer here as the consumer can be a customer to many providers)

In the transfer of content to a consumerr, time is no longer the only measure or indeed the best measure as the customer can stay connected for a very long time (always-on) and down load very little content (only retrieve a small amount of data) or only use one application. Charging based on the content or volume of data transferred is not the most appropriate charging pattern as customers perceive this as meaningless. Many consumers will not understand or comprehend the link between the amount or volume of data transferred and the amount they are billed.

A consumer can instinctively link time and distance to a cost but they will find it very hard or cannot link the number of megabytes downloaded (ie for a music file) with cost. How much is a 5 minute STD call between Sydney and Melbourne - a consumerr can approximately calculate this in their head as time can be roughly measured by them. Ask any consumer to count the megabytes for a music down load and work out an approximate cost particularly when they do not have any idea on what download speed their internet connection is capable of providing or their service throttled back after so many megabits have been down loaded.

A far more seductive possibility is to charge a consumerr according to the content itself (a movie, a song, a business application - etc) and its perceived value to the consumer.

The problem with this pattern of charging is that it is more difficult to implement because it entails deploying very sophisticated software in the network to ascertain, almost in real-time, what content is being downloaded at what Qos or CoS or what application is being used, is the consumer authorised to down load and use the content and application, has the consumer been authenticated and what is its cost.

These charging patterns will need to be developed so that they are easily understood by both the consumer (who must perceive them as being fair and reasonable) and the content and application suppliers (to receive their payments) who are part of the horizontal supply chain.

I am not saying that the current methods of billing should be scrapped but that other methods need to be considered and their merits discussed otherwise we may just see revenue disappear to suppliers in the supply chain and carriers may just become a very big and loss making data pipe.

Cell: D31
Comment: Michael Ryan:

The ACIF C525: 2002 Code was developed to establish rules for the cooperative handling by Carriers and CSPs of Life Threatening and Unwelcome calls received by their Customers.

Section 287 of the Telecommunications Act 1997 (Cth) envisages that Carriers and CSPs will assist in the provision of information when necessary to prevent or lessen a serious and imminent threat to the life or health of a person (Life Threatening Calls).

Section 85ZE of the Crimes Act 1914 (Cth) provides protection for Customers against calls that are menacing, harassing or offensive (Unwelcome Calls).

Cell: E31
Comment: Michael Ryan:

The ACIF Code deals with the handling of Life Threatening and Unwelcome Calls by Carriers and CSPs and the NRS in relation to telecommunications activities they carry out, including the following:

(a) carrying on a business as a Carrier;
(b) carrying on a business as a Carriage Service Provider;
(c) supplying goods or services for use in connection with the supply of a listed carriage service; or
(d) carrying on a business as the National Relay Service (NRS) Provider.

Cell: D33
Comment: Michael Ryan:

The ACCC has statutory powers to direct the ACA in regard to the portability of allocated numbers (number portability) under the Act. The ACCC issued Directions to the ACA pursuant to these statutory powers. Under those Directions:

(a) Local Service was specified as a “declared portable service”;
(b) the ACA was directed to set out rules in the Numbering Plan about the portability of allocated numbers;
(c) the ACA was required to specify for local services that Carriers and CSPs must provide number portability for the relevant portable numbers to the customers of each other C/CSP; and
(d) the ACA was empowered to grant exemption orders to allow Carriers and CSPs to be exempted from some or all of their obligations to provide number portability.

ACIF C540:2003 Local Number Portability

ACIF C546:2001 Customer Transfer

ACIF C570:2003 Mobile Number Portability

Cell: G33
Comment: Michael Ryan:

CSPs must comply with the Numbering Plan made by the ACA under Part 22 of the Act. The Numbering Plan includes rules about number portability and identifies which CSP has the routing responsibilities for calls to portable numbers. CSPs must provide number portability with equivalent service in accordance with the Numbering Plan.

The ACA may make Determinations and Declarations under the Numbering Plan covering issues such as the implementation date for number portability for particular services or exemptions from portability requirements. These Determinations and Declarations are subordinate regulatory instruments with which CSPs must also comply.

Portable numbers are local (or geographic) numbers, freephone/local rate-1800, 1300 and six digit 13 numbers and mobile numbers.

If a person is a carrier or a CSP, the Numbering Plan requires the first person to provide number portability in relation to customers of a CSP.

In exercising the power conferred, the ACCC must have regard to whether portability of particular allocated numbers is required in order to promote the long-term interests of end-users of carriage services or of services supplied by means of carriage services.

For the purposes of The Act (Part 22 Div 2), the question whether a particular thing promotes the long-term interests of end-users of carriage services or of services supplied by means of carriage services is to be determined in the same manner as that question is determined for the purposes of Part XIC of the Trade Practices Act 1974.

Cell: K33
Comment: Michael Ryan:

To promote competition between carriers and CSPs.

Cell: L33

Comment: Michael Ryan:

How will regulators implement "portability" of names ?

Will there be portable and non-portable names ?

Will need to look at ACIF codes on redirection.

How will the ownership of numbers or names be traced and or recorded ?

Who will have the right to enter numbers or names into the Enum database ?

Opt-in ?

What about silent numbers ?

Greg Neylan:

The requirement for new forms of portability may increase as email becomes a more dominant form of communication. The policy needs to be considered because existing ACA powers would not appear adequate for such a process.

Cell: R33
Comment: Michael Ryan:

ACA Decision: Application for Exemptions from Requirement to Provide Local Number Portability for Neighborhood Cable in respect of its VoIP Service
---

Background
Under Part 6 of Chapter 11 of the Telecommunications Numbering Plan 1997 (the Numbering Plan), carriage service providers (CSPs) who are unable to meet their obligations to provide number portability for declared services may apply for an exemption. Exemptions may be sought from obligations under Part 2 (Providing portability), Part 4 (Rules for routing to portable numbers) and Part 5 (Other portability obligations for CSPs) of the Numbering Plan.

Section 11.17 of the Numbering Plan sets out the procedures that CSPs are required to follow in seeking an exemption.

Section 11.18 of the Numbering Plan allows the ACA to grant exemptions for a CSP or for classes of CSPs. An exemption may apply for a specified period, specified purposes, specified customers or be subject to specified conditions.

In deciding the application, the ACA must consider:

whether the Australian Competition and Consumer Commission (ACCC) is satisfied that the exemption is necessary to promote the long-term interests of end-users;
whether it is technically feasible for a CSP to provide number portability; and
any other matters the ACA considers relevant.

Neighborhood Cable's Application

On 12 September 2003, NC wrote to the ACA applying for an exemption from the porting of local numbers away from the NC telephony network. In its application, NC noted that under its network interface arrangements with Telstra, Telstra will treat the indial numbers (used by NC) associated with its ISDN Primary Rate interface product as a complete block of numbers for porting services. ACIF Local Number Portability Industry Code describes processes that enable an entire indial number block to be ported, but not individual numbers from the block. Whilst the number block could be removed from the ISDN interface enabling individual numbers to be ported, the indial service required by NC to support its remaining customers in the number block would no longer be available.

NC's reasons for not providing number portability are therefore based primarily on the following reasons:

under its existing connection arrangements with Telstra, porting of numbers is not supported; and
it is impractical for NC to upgrade its interconnect arrangements in a cost effective and timely manner consistent with the proposed launch of its services.
Back to the Top

The ACA's View

Following consultation with the ACCC and the applicant, the ACA notes that the industry recognises the technical issues associated with porting an individual number from an indial number block in the network interface arrangements described by Neighborhood Cable.

The ACA additionally notes that Neighborhood Cable has considered other interconnect arrangements with Telstra, such as common signalling, but these are not commercially viable at this time. The ACA acknowledges that Neighborhood Cable's interconnect arrangements with Telstra may change over time and therefore any exemption should be subject to review.

Back to the Top

The ACCC's View

The ACCC has also advised that it is satisfied that the exemption is necessary to promote the long-term interest of end-users (LTIE) for the reasons that:

under Neighborhood Cable's existing connection arrangements with Telstra, porting of numbers is not supported; and
it is impractical for Neighborhood Cable to upgrade its interconnect arrangements in a cost effective and timely manner consistent with the proposed launch of its services.
Back to the Top

The Decision

The ACA accepts that, consistent with Section 11.19 (5) of the Numbering Plan, it is not practical for Neighborhood Cable to provide local number portability. Therefore the application for Exemptions from Requirement to provide Local Number Portability has been granted on 22nd October 2003.

The ACA will review these issues within 2 years as this is considered a reasonable time to revisit the technical and commercial issues raised by Neighborhood Cable.

Cell: D34
Comment: Michael Ryan:

The ACA is required to make a Numbering Plan for:

(a) the numbering of carriage services in Australia; and
(b) the use of numbers in connection with the supply of such services.

Numbers may be allocated to carriage service providers:

(a) in accordance with an allocation system; or
(b) otherwise than in accordance with such a system.

The numbering plan will specify emergency service numbers.

The Telecommunications Act 1997 Part 22 Div 1

Cell: F34
Comment: Michael Ryan:

Telecommunications numbers are regarded as a national resource and are not in any sense owned by any party to whom they are allocated, transferred or issued. Ownership of numbers is never passed to a carriage service provider (CSP) upon allocation, or to a customer upon issue, but remains with the Commonwealth of Australia.

When a CSP is in receipt of a number allocated to it by the ACA, the CSP has an obligation to manage that number until such time as that number is either issued to a customer or to the CSP, transferred to another CSP or temporarily provided to another CSP under contractual arrangements or surrendered to the ACA.

When a customer is issued with a number in association with a telecommunications service, the customer gains rights of use of that number.

Draft ACIF Rights of Use Code C566; 2003

CSPs may be liable for payment of an annual numbering charge under the Telecommunications (Numbering Charges) Act 1997 (the Charges Act) and the Telecommunications Act 1997. Local service (geographic) numbers are specifically exempt from charges.

Cell: L34
Comment: Michael Ryan:

It is important to understand when and how an alias is attached to a number, ie geographic location, Security, Identity etc

The current characteristics or aliases of a number must be separated from the number and the importance of the characteristics must be known. A decision will need to be made as to whether or not these characteristic are carried forward into the future.

ENUM ? What will its role be ?

There are many issues including security and privacy which need to be solved - this hopefully will be done in the Australian ENUM Discussion Group trial.

This is being looked at within the ACA's AEDG as very little has been done in dealing with the issues of privacy and security either in Australia or overseas.

Other issues include Authentication, ROU, access, the equivalent to number portability, Opt-in etc.

The challenge is to provide clarity and to ensure certainty regarding coherent and consistent application of key principles which will need to be developed with respect to transparency, non-discrimination, fair competition, legal certainty, competitive neutrality and uniqueness in the management of this resource.

Discussion is also starting around the use of a separate number range for IP based services, ie 05 xxxx xxxx, as is currently being used in Japan and the UK. This is a non-geographic number range and would indicate that this service is not a PSTN service and therefore will be different.

Will geographic numbers have any significance in an NGN world ?

IP networks are not geographically constrained.

IP networks will have an element of mobility and there will be little relevance in a geographic based tariff or charging structure.

IP services will have a personal rather than a business or household focus.

Cell: D35
Comment: Michael Ryan:

There are a number of issues arising in this area :-

1. ENUM - what will the outcomes be from the AEDG trail ?

2. Whether or not Charging Zones will apply in future ?

3. Will a special number range be allocated for different NGN applications, services or technology types, ie 05 xxxx xxxx ?

4. Will alpha-numeric addresses be available ?

5. Will you the person be allocated a name/number indefinitely (who will have ROU ?) ?

6. How will the number/name be allocated ? By an auction for premium names and numbers ?

Cell: D37
Comment: Michael Ryan:

CSPs supplying a STS must comply with the Telecommunication (Provision of Pre-selection for a Standard Telephone Service) Determination 1998 and the Telecommunications (Provision of Pre-selection for Specified Carriage Services) Determination 1998 made by the ACA under Part 17 of the Act.

The Determinations provide for carriers and CSPs that supply a STS to make pre-selection available to the greatest possible extent to facilities-based CSPs.

The ACA may also declare that a particular carrier or CSP is exempt from the requirement to provide pre-selection in favour of other CSPs.

The ACA must make a written determination requiring each carrier or CSP who supplies a standard telephone service or carriage service to provide pre-selection in favour of a specified CSP, in relation to calls made using a STS, in the manner specified in the determination.

In making a determination the ACA must have regard to the technical feasibility of complying with the requirement concerned and the costs and benefits of complying with the requirement concerned.

The Telecommunications Act 1997 Part 17

ACIF C515:2003 Preselection

Cell: G37
Comment: Michael Ryan:

Pre-selection provides a mechanism for enabling Customers to choose, to the extent technically possible, their preferred Carriage Service Provider for Pre-selectable Services. Pre-selection therefore has the benefit of enhancing Customer choice through the removal of obstacles that would prevent end users from gaining access to competing services.

From a broader perspective, Pre-selection facilitates:
(a) the supply of carriage services as efficiently and economically as practicable, balancing the legitimate commercial interests of access seekers and access providers;
(b) the effective participation by all sectors of the Australian telecommunications industry in relevant markets (whether in Australia or elsewhere);
(c) competition between suppliers of standard telephone and other carriage services; and
(d) the economically efficient use of, and the economically efficient investment in, the
infrastructure by which Pre-selectable Services are supplied.

ACIF C515: 2003

Cell: K37
Comment: Michael Ryan:

To promote competition between carriers and CSPs.

Cell: D38
Comment: Michael Ryan:

Pre-selection must include over-ride dial codes for selecting alternative carriage service providers on a call-by-call basis.

Cell: G38
Comment: Michael Ryan:

The CSP must take such steps as are necessary to ensure that each end-user of the carriage service is able to make use of those codes for selecting alternative carriage service providers on a call-by-call basis.

Cell: K38
Comment: Michael Ryan:

To promote competition between carriers and CSPs.

Cell: D39
Comment: Michael Ryan:

CLI is integral to the operation of telecommunications networks, facilitating efficient call management, route selection and billing and is passed between carriers and carriage service providers (including internet service providers) to support the operation of carriage services in accordance with the Act.

This section of The Act applies to a person if the person is a carrier or a CSP and a controlled facility of the person consists of a switching system used in connection with the supply of a STS.

The person must take all reasonable steps to ensure that the system is capable of providing calling line identification (CLI).

The Telecommunications Act 1997 Part 18 S355

Cell: E39
Comment: Michael Ryan:

Carriers and CSPs are required to take all reasonable steps to ensure that a switching system used in connection with the supply of a STS installed after 1 July 1997, or capable of providing calling line identification (CLI) immediately before 1 July 1997, is capable of providing CLI.

CLI makes possible the provision of a range of products and services to customers, including Calling Number Display and calling name display (both referred to as CND).

The assumption by residential customers is that CLI is correct and belongs to a certain location that is easily identified. For corporate and mobile numbers, this is not the case as only the gateway is identified and not the number.

Greg Neylan:

The requirements and expectations for fixed corporate services and for mobile services should be detailed separately. For fixed corporate services isn't there an assumption about use of a public directory number pertaining to a central location - and mobiles may involve other assumptions?

Cell: K39
Comment: Michael Ryan:

To enable customer or end users to identify incoming calls.

Customers expect that CLI information is correct and it is possible that this expectation will be higher in future.

Cell: D41
Comment: Michael Ryan:

Carriers and CSPs must protect the confidentiality of information that relates to the contents of communications that have been, or are being, carried by carriers or CSPs and the carriage services supplied by carriers and CSPs.

The disclosure or use of protected information is authorised in limited circumstances (for example, disclosure or use for purposes relating to the enforcement of the criminal law).

Certain record-keeping requirements are imposed in relation to authorised disclosures or uses of information.

Cell: E41
Comment: Michael Ryan:

In implementing an essential level of privacy and security a C/CSP will also be protecting its own networks and customer data.

Cell: L41
Comment: Michael Ryan:

Where will this level of security be located ?

In the:-

Application

CE

network.

How will it be implemented ?

Cell: D42
Comment: Michael Ryan:

Carriers and CSPs must protect the confidentiality of information that relates to the contents of communications that have been, or are being, carried by carriers or CSPs and the carriage services supplied by carriers and CSPs.

The disclosure or use of protected information is authorised in limited circumstances (for example, disclosure or use for purposes relating to the enforcement of the criminal law).

Certain record-keeping requirements are imposed in relation to authorised disclosures or uses of information.

ACIF C523:2003 Protection of Personal Information of Customers of Telecommunications Providers

ACIF C541:2003 Credit Management

Cell: E42
Comment: Michael Ryan:

Carriers and CSPs are required to protect the confidentiality of information that relates to the content of communications they carry, the carriage services they supply, and the affairs or personal particulars of customers.

The disclosure of use of protected information is authorised in limited circumstances (for example, disclosure or use relating to the enforcement of the criminal law).

The ACIF C523: 2001 Code rules are drawn from the revised National Principles for the Fair Handling of Personal Information re-issued by the federal Privacy Commissioner in January 1999.

The Code is intended to ensure that the privacy of individuals is protected in the collection, use, disclosure and storage of customer personal information.

The Code allows customers to make informed choices about their use of
telecommunications services and provide guidance to carriers and CSPs as to their obligation in relation to the handling of customer personal information.

Cell: L42
Comment: Michael Ryan:

Where will this level of security be located ?

In the Application, CE or network.

How will it be implemented ?

ie.
Currently the security of a customer's number is performed by the network/carrier and customer. The customer takes responsibility for the security of their number by providing a closed office or home (or takes personal responsibility for their mobile (IMIE, IMSI and MSISDN on SIM card). The carrier provides security of information and possibly a fixed network item such as a LIC in an PSTN exchange.

In future when a customer has domadicity or can log on anywhere anytime, how will a customer have confidence in the security of their number not being misused once they have logged off a particular CE ?

How will Indentification, authentication etc be determined ?

Cell: D43
Comment: Michael Ryan:

Carriers and CSPs must protect the confidentiality of information that relates to the contents of communications that have been, or are being, carried by carriers or CSPs and the carriage services supplied by carriers and CSPs.

The disclosure or use of protected information is authorised in limited circumstances (for example, disclosure or use for purposes relating to the enforcement of the criminal law).

Certain record-keeping requirements are imposed in relation to authorised disclosures or uses of information.

Cell: F43
Comment: Michael Ryan:

An eligible person must not disclose or use any information that relates to the contents or substance of a communication that has been carried by a carrier or CSP or the contents or substance of a communication that is being carried by a carrier or CSP (including a communication that has been collected or received by such a carrier or provider.

Cell: A45
Comment: Michael Ryan:

This catagory includes National Interest or Public Security and Law Enforcement issues.

A number of possibly new services have been included in this category for discussion and debate. This is by no means a full list of possible new services but a beginning to a list that should grow.

These possible new services include:-

1. Presence (Currently Connected),

2. Distributed Denial of Service (DDoS) or DoS due to SPAM, virus or attacks,

3. Services provided from outside Australia,

4. Serviec or application encryption of communications (Skype),

5. Unable to provide access to ESOs

6. Nomadicity

7.

Cell: D45
Comment: Michael Ryan:

Identity Management

How does a network or a C/CSP :-

1. Identify that a user or customer of the network has the authority to access the network ?
Is this my customer ? If not, what do I do with the customer ?

2.What authority does the user or customer have to access different products, services or applications ?
Do I provide an STS or some other enhanced service ?

3.How does the network, carrier or CSP authenticate the user who has a legitimate right to use the network ?
What methods does the network employ to determine legitimate access ?

4. How will a carrier or CSP trace the authorisation, authentication and legitimate use of a service and be able to support investigations initiated by either regulatory, law enforcement or public information requests/investigations ?
Will need to develop IP traceback capabilities to investigate attacks.

The Identity Management (trust, security and privacy) space includes security administration, authentication and authorisation. The key element in identity management is the management aspect. Any application that requires a user and password effectively knows the identity of a given user. What identity management provides is greater control over this process, minimising the number of times a user needs to sign into individual applications or services an also provides a more granular control over tasks that are performed and data that can be accessed. Identity management can more securely and effectively manage trusted relationships among partners, suppliers and customers.

Keeping an audit trail linked to known identities also reduces the risk of unauthorised access and attempts to go outside the defined boundaries or the applications or services where permission is authorised or they have been paid for.

Cell: L45
Comment: Michael Ryan:

Will this be soft wired or hard wired ?

It may end up that the CE or the application will have the capability to determine the level of security, authorisation and authentication. Different levels may depend on the features and obligations the end user has paid for.

This may lead to only bi-lateral agreements between carriers and CSPs.

Cell: D46
Comment: Michael Ryan:

Carriers and CSPs must comply with the obligations concerning interception capability and special assistance capability.

Carriers and certain nominated CSPs must comply with the obligations to prepare and submit an annual interception capability plan.

Carriers, carriage service providers and agencies are required to meet different costs associated with the provision of various capabilities related to interception.

The Telecommunications Act 1997 Part 15 Div 1

For the purposes of paragraph 329(1)(e) of the Act, the following matter is relevant to the IC plan of a carrier or nominated carriage service provider if the agency co-ordinator has notified the matter in writing to the carrier or provider:
(a) a description of the arrangements that the carrier or provider will put in place to maintain within Australia, and under the control of persons holding appropriate national security clearances, the means:
(i) to support its legal obligation to provide interception capabilities in relation to carriage services (including the provision of a physical interception point);
(ii) to protect information relating to interception; and
(iii) to provide other reasonably necessary assistance relating to interception to national security and law enforcement agencies

Cell: F46
Comment: Michael Ryan:

There are certain carrier and CSP obligations regarding interception capability.

Broadly speaking, all services must be capable of being intercepted unless an exemption is granted. The current standards applicable to this interception capability are contained in the International User Requirement.

Carriers and nominated CSPs are also required to lodge an annual Interception Capability Plan with the Attorney-General's Department and the ACA.

For the purposes of the Act, interception of a communication passing over a controlled network or controlled facility consists of listening to or recording such a communication, by any means, in its passage over that network or facility without the knowledge of the person making the communication.

Carriers and CSPs are obliged to assist law enforcement agencies to enforce criminal law, protect public revenue and safeguard national security. Assistance can be in the form of providing customer information, call charge records or detailed interceptions of communications.

Assistance to law enforcement agencies can be provided:

in response to an uncertified request for assistance, whereby the carrier or CSP must make a decision that the assistance is 'reasonably necessary' or when a certificate is issued by a senior officer of a law enforcement agency or a warrant issued by the Administrative Appeals Tribunal (AAT) or by a judge nominated by the AAT.

Cell: L46
Comment: Michael Ryan:

This may not be technically possible with packet based networks such as VoIP. Skype provides a service where the encryption in performed by the software at ech end of the service.

Need to understand what a Warrant says with respect to what is to be intercepted, ie an E.164 number, a name, a SIP address etc

Cell: D47
Comment: Michael Ryan:

A carriage service provider may be required to supply a service for defence purposes or for the management of natural disasters.

Telecommunications Act 1997 Sections 335 to 346

Cell: F47
Comment: Michael Ryan:

Carriers and CSPs may be required to assist the Commonwealth by supplying a carriage service for defence purposes or for the management of natural disasters. Carriers and CSPs may also be required to enter into agreements with the Commonwealth about planning for network survivability or operational requirements in times of crisis.

The Minister may declare that a condition of a Carrier licence is that a carrier is required to comply with one or more specified Federal or State disaster plans.

(The Dept of Defence authorities can issue a notice for carriage service providers to supply specified carriage services for use by defence authorities.)

This should also include the issues of communicating with the public (into, out of and between), communications (priotity) between emergency services (into, out of and between) in or near the emrgency area or declared area.

Cell: L47
Comment: Michael Ryan:

Will C/CSPs be required to maintain a resonable service during a disaster ?

Will ESOs/defence have the equipment and acccess to NGNs in a disaster situation ?

Will ESO/defence traffic on an NGN have priority ?

Cell: D48
Comment: Michael Ryan:

Carriers and CSPs must protect the confidentiality of information that relates to the contents of communications that have been, or are being, carried by carriers or CSPs and the carriage services supplied by carriers and CSPs.

The disclosure or use of protected information is authorised in limited circumstances (for example, disclosure or use for purposes relating to the enforcement of the criminal law).

Certain record-keeping requirements are imposed in relation to authorised disclosures or uses of information.

Cell: F48
Comment: Michael Ryan:

A person must not disclose or use any information or document that relates to the contents or substance of a communication that has been carried by a carrier or CSP or the contents or substance of a communication that is being carried by a carrier or CSP (including a communication that has been collected or received by such a CSP for carriage by it
but has not been delivered by it or carriage services supplied, or intended to be supplied, to
another person by a carrier or carriage service provider.

Cell: L48
Comment: Michael Ryan:

How will "trust" be assigned to intermediate carriers or suppliers of carriage services ?

Will transparency of service and obligation attributes be required ?

Cell: D49
Comment: Michael Ryan:

The need here is for networks to be able to recognise the presence of a user/customer who is currently connected and who maybe roaming between different networks or access technologies, i.e. between differently operated Wi-Fi hotspots, mobile networks etc

This will enable users, law enforcement agencies, carriers and CSPs to determine if a customer is presently accessing the carrier's or CSP's network.

This is similar to when you log onto a chat room - you are able to determine who is on line at a point in time - recognise that your friends are on line.

Cell: D50
Comment: Michael Ryan:

The ACIF G530: 1999 Code The Mobile Location Indicator (MoLI) is a supplementary service which provides the geographic location of a caller at the time of call establishment, to downstream network services, for the purpose of providing user services (provide emergency services) which are dependent on location.

This specification refers to Interim MoLI for emergency services use. This specification describes a procedure for passing information about the approximate location of the mobile caller to the Emergency Call operator in selecting the required emergency call service .

Cell: E50
Comment: Michael Ryan:

Provided a customer has access to reliable and believable location information which indicates their position, a customer may then utilise this information in locating services (Coffee shops, Wi-Fi Hotspots, navigation etc).

In the reverse direction, emergency service providers are also able to pinpoint the customers location whether this is in real time or the last stored or known location. This will depend on the on the ability of the customer's device to obtain geographic location data.

This geographic or location data may be obtained from GPS satellites or other wireless sources (maybe similar to Diff GPS).

Cell: F50
Comment: Michael Ryan:

All carriers in the United States, including wireless carriers, are required to direct 911 calls to a public safety answering point (PSAP). This is the so-called "basic 911" requirement. While many areas of the United States have had 911 systems in place for several years, it wasn't until passage of the Wireless Communications and Public Safety Act of 1999 that carriers were required, as a matter of federal law, to direct 911 calls to PSAPs (this requirement became effective in 2002). In local areas that have not yet designated PSAPs, carriers are required to direct 911 calls to a state-wide default point or to the appropriate emergency authority.

The FCC's rules (Title 47, Code of Federal Regulations, Section 20.18) required wireless carriers to begin providing E911 -- i.e., calling number and location information -- to PSAPs in two phases. In Phase I, wireless carriers were required to begin providing the calling number and the location of the cell-site or base station receiving the 911 call by April 1, 1998. In Phase II, wireless carriers were required to begin providing the latitude and longitude of the caller for at least 50% of their coverage area or population by October 1, 2001 (or within 6 months of a PSAP request, whichever is later), and for 100% of their coverage area or population by October 1, 2002 (or within 18 months of a PSAP request, whichever is later). As part of the Phase II requirement, carriers were required to begin selling location-capable handsets no later than October 1, 2001, and to ensure that 100% of new digital handsets activated were location-capable by December 31, 2002. By December 31, 2005, carriers must achieve a 95% penetration rate of location-capable handsets among their subscribers. The latitude and longitude positioning information that must be provided as part of Phase II has certain reliability requirements based on the technology used. For handset-based technologies, the location information must be within 50 meters for 67% of calls and within 150 meters for 95% of calls. For network-based technologies, the location information must be within 100 meters for 67% of calls and within 300 meters for 95% of calls. (For the remaining 5% of calls there must be a location estimate.)

Greg Neylan:

The FCC requirements may result in location sensitive equipment being part of customer equipment for the world market. It would be useful to have some insight on whether this might occur and the equipment types where it might happen. An objective to facilitate the use of such equipment here may have broader benefits for industry and consumers alike.

Cell: L50
Comment: Michael Ryan:

Similar requirements (to those currently imposed on C/CSPs in the USA) should not be placed on C/CSPs in Australia until the technology is capable of providing this service with a high degree of probability of availability or accuracy of data.

The "density" of base stations does not exist in non-metropolitan areas to provide a reliable degree of certainty.

Location information (and CLI) should also be provided in association (as an overhead packet ?) with either a text or video call.

The ACA has issued a document which discusses a number of current technologies for determining location. These current technologies are still imprecise. The ACA is leaving it up to the industry (commercial) to determine which technology will be deployed but whichever technology is deployed an interface must be provided to ESOs.

Cell: D51
Comment: Michael Ryan:

Consumer and regulators are in the process of trying to understand and develop guidelines both for industry and consumers.

Is the industry code ACIF C580:2002 Short Message Service (SMS) Issues, the start of trying to manage thse types of new services and the associated or unwanted outcomes ?

C580 defines the various types of SMS messages which can be sent via direct access bulk transmission across SMS networks and specifies the appropriate mechanisms to be used by the industry to achieve desired behavioural outcomes.

Cell: L51
Comment: Michael Ryan:

Development of IP Trace back capabilities

There are practical deployment issues with the current 4 types

Cell: D52
Comment: Michael Ryan:

The objects of these Rules of Conduct are:

(a) to ensure that carriers and carriage service providers use all reasonable endeavours, in their dealings with operators, to prevent, mitigate or remedy unacceptable conduct engaged in by the operators; and

(b) to enable the ACCC to take appropriate action if operators engage in unacceptable conduct or carriers or carriage service providers contravene these Rules of Conduct.

Rules of Conduct about dealings with international telecommunications operators No. 1 of 1997

Telecommunications (International Conventions) Notification No. 1 of 1997

Cell: L52
Comment: Michael Ryan:

How will consumer , national and competitive interests be impacted where a service is provided from outside the current Australian legal boundary ?

How will the Australian and International legislative and legal jurisdictions manage services and networks which are located outside sovereign states ?

Call centres located in other parts of the world who provide for example socially unacceptable services, financial services, financially fraudulent schemes, betting etc

Cell: D54
Comment: Michael Ryan:

Certain carriers and CSPs must enter into the Telecommunications Industry Ombudsman scheme. Carriers and CSPs must comply with the scheme. The TIO is an industry-based and funded disputes resolution scheme for small business and residential customers of eligible CSPs.

Eligible carriage service providers are a CSP who supplies a STS, where any of the
customers are residential customers or small business customers or a public mobile telecommunications service or a carriage service that enables end-users to access the
Internet.

Cell: E54
Comment: Michael Ryan:

The Telecommunications Industry Ombudsman is a free and independent alternative dispute resolution scheme for small business and residential consumers who have a complaint about their telephone or Internet service.

The TIO is authorised to investigate complaints about the provision or supply of telephone or Internet services.

The TIO aims to settle disputes quickly in a fair, objective and non-bureaucratic way, having regard not only to the law and to good industry practice, but also to what is fair and reasonable in all the circumstances.

The TIO is “an office of last resort”. This means that in the interests of fairness the service provider must be given a reasonable opportunity to settle a complaint with a customer before the TIO will become involved.

The TIO investigates complaints by considering the facts provided by both parties in a dispute. The TIO is not a consumer advocacy service but rather seeks to assist both parties to a dispute by reaching a fair and equitable resolution

Cell: D56
Comment: Michael Ryan:

A service passes the any-to-any connectivity test if an end-user supplied with the service for a purpose mentioned in Part 6 (of the Act) is ordinarily able to communicate, by means of the service, with each other end-user who is supplied with the same service for the same purpose, whether or not the end-users are connected to the same telecommunications network.

Cell: E56
Comment: Michael Ryan:

This includes other forms of communication that is equivalent to voice telephony, ie Text communications for the disabled.

Networks which are capable of providing a STS must also be capable of providing real time any -to-any connectivity including text.

Cell: L56
Comment: Michael Ryan:

Currently legislation and regulatory obligations only apply to the Any-to-Any connectivity of voice and text services which are equivalent to a STS. In future these obligations maybe extended to include video services which can be used for Auslan, ie a Video Relay Service such as provided by AT&T etc using Netmeeting.

There needs to be a standardisation of text/video services on NGNs used by the impaired communities, ie Text over IP (ToIP). This standardisation extends to CE, applications, services and networks.

How will Relay services interconnect and operate ?

Cell: O56
Comment: Michael Ryan:

Although Any-to-Any connectivity is available for SMS, SMS in Australia is a store and forward service and currently there are no regulatory obligations attached.

Cell: C57
Comment: Michael Ryan:

Must also include Continuity of Service, ie reliability.

Cell: F57

Comment: Michael Ryan:

Requirements on network and information security are constantly and rapidly moving. Broadband leads to being permanently connected to the internet, with as a result an increased vulnerability and therefore a higher probability that something will go wrong.

Cell: D58
Comment: Michael Ryan:

This specification provides network design recommendations for connections including PSTN, ISDN and Mobile that are all digital between network interfaces with digital or analogue access lines from appropriate end-user Customer Equipment (CE) and private networks. These recommendations are based on assumptions about certain characteristics of the interconnecting CE and interconnecting networks.

Although G502: 1998 does not specifically provide guidelines on what QoS a network should provide or deliver, the performance specifications of transmission loss, circuit noise, delay and echo, error performance, GoS and availability all impact on what QoS a network can deliver.

This specification helps ensure quality voice to end-users by carriers and CSPs while providing for evolving service needs and compatibility with the existing PSTN.

ACIF C519:2002 End-to-End Network Performance (Currently being reviewd).

Cell: E58
Comment: Michael Ryan:

QoS is a very "subjective" measurement of network or service quality and will vary with customer perception of loudness, sidetone, clicking, noise and availability and the importantance placed on these by the customer.

Cell: L58
Comment: Michael Ryan:

Should consumers be made aware if the QoS does not meet specific standards ?

There is no specific regulatory requirement for QoS on a NGN service.

How will QoS be maintained across interconnected IP networks ?

ACIF C519 has been revised recently but specifically excludes IP based networks.

Is there an immediate requirement to develop and industry code for IP networks ?

High quality interactive communications requires a one-way delay of less than 150 mS and less than 1 % loss. From a service providers perspective, QoS provisioning implies building a managed IP network that can transfer the information in a managed way and not over a best effort network. The end-to-end nature of QoS requires quality handling not only in the access network but also in the core network and CE.

This may be a set of MPLS tunnels that provide simple high throughput transport of packets between edge networks where intelligence and value adding may occur. Edge networks may perform the mapping of QoS requirements between the managed core and access networks. The edge networks will also identify source address, application type, destination address and other information elements to perform routing and traffic management functions.

Cell: A60
Comment: Michael Ryan:

The universal service obligation (USO) is the obligation placed on universal service providers to ensure STS, payphones and prescribed carriage services are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business. No carriage services have been prescribed to date.

Telstra is currently the sole universal service provider.

In 2001 the provision of STS under the USO were declared contestable. No competing universal service providers (CUSP) have either applied or been approved. USO contestability was initially to commence in two pilot regions of Australia.

Contributions (to the Levy Fund) by C/CSPs in Australia is based on the assessed eligible revenue of each C/CSP.

Cell: D60
Comment: Michael Ryan:

As the primary universal service provider, Telstra must ensure that all people in Australia, no matter where they live or conduct business, have reasonable access to STS. The supply of STS includes consumers having access to an efficient and reliable telephone service, a good voice reception and responsive fault repair.

Under the USO in relation to the STS, a universal service provider for an area is to supply standard telephone services on request, and where required supply a telephone handset (with rental option) or appropriate customer equipment for people with a disability. The supply of a STS includes the supply of customer equipment or customer equipment, in order to comply with the Disability Discrimination Act 1992.

Telstra is the supplier of last resort but has no obligation to supply anything else and the type of network access is at Telstra' discretion.

Cell: E60
Comment: Michael Ryan:

Telstra will be taken to have fulfilled its USO to persons under the Act by supplying and maintaining the first STS to another person (the customer) at each particular place of residence or place of business, if that STS is reasonably accessible to persons other than the customer reasonably requiring the use of that service in that property or place.

Cell: G60
Comment: Michael Ryan:

The standard contestability arrangements contained in Division 6 of Part 2 of the Act apply to the universal service areas determined under the Universal Service Areas Determination (No. 1) 2001 for the service obligation dealing with the STS. Under these arrangements carriers and carriage service providers can seek approval from the ACA to compete with the primary universal service provider, Telstra, to provide STS or ATS in fulfilment of the STS obligation under the USO.

Cell: L60
Comment: Michael Ryan:

Although competition for the supply of USO services has been open for two contestable areas for the past 2 years (from 2001) .

No CUSPs have registered with the ACA to provide alternative services in these areas.

Need to have a look at what defines a STS and what the difference is between a STS and an ATS.

The FCC has made the distinction between a telecommunications service and an information service. Calls between a closed user group such as Free World Dialup are free. These calls currently do not attract PSTN regulations and the costs of complying with those regulations.

Cell: D61
Comment: Michael Ryan:

Telstra's obligation extends to the supply, installation and maintenance of Telstra operated payphones in Australia, including the process for public consultation on the location of payphones and the process for resolution of any complaints about the location of payphones.

A payphone is a fixed telephone that is a means by which a STS is supplied and when in normal working order, cannot be used to make a telephone call (other than a free call or a call made with operator assistance) unless, as payment for the call, or to enable payment for the call to be collected:

Cell: E61
Comment: Michael Ryan:

One of the main objectives of the universal service regime is to ensure that all people in Australia, wherever they reside or carry on business, should have reasonable access, on an equitable basis, to a payphone.

Cell: K61
Comment: Michael Ryan:

To provide reasonable access, on an equitable basis, to a public payphone and includes:-

Functionality (ie TTY or other standard interface) of payphones;
Levels of accessibility for people with a disability;
Levels of accessibility for people in Indigenous communities;

Cell: D62
Comment: Michael Ryan:

The digital data service obligation (DDSO) is the obligation to ensure that a general digital data services or a special digital data services is reasonably accessible to all people in Australia on an equitable basis wherever they reside or carry on business and to ensure that general digital data services are reasonably accessible to at least 96% of the Australian population on an equitable basis or that special digital data services is reasonably accessible to the remainder of the Australian population on an equitable basis.

Cell: E62
Comment: Michael Ryan:

Telstra fulfils the GDDS through the provision of a basic rate ISDN service, with more than 96 % of the Australian population able to receive this service. The SDDS is available to less than 4 % of the population, with Telstra providing this service using an asymmetrical satellite service providing a 64 kbit/s downlink to the end-user. A rebate system is in place for the SDDS to assist in meeting the relatively high cost of providing satellite equipment.

The SDDS is contestable - currently only one other provider.

Telstra utilises its basic rate ISDN service to fulfil the GDDS obligation, and its Big Pond broadband satellite service to fulfil the SDDS obligation. The GDDS areas and special digital data service areas are to be ascertained in accordance with the Digital Data Service Areas Determination 1999 (No.1) (the Determination) made by the Minister.

Cell: J62
Comment: Michael Ryan:

The digital data service obligation (DDSO) is the obligation placed on a digital data service provider to ensure that digital data services are accessible to all people in Australia on an equitable basis, wherever they reside or carry on business.

The DDSO consists of two obligations - the general DDSO for people in general digital data service areas (approximately 96 per cent of the population) and the special DDSO for people in special digital data service areas (approximately 4 per cent of the population, usually living or working at a distance of more than 4.5 kilometres from their local telephone exchange). The GDDS is currently provided by Telstra and the SDDS is provided by both Telstra and Hotkey Internet Services.

Digital data service providers are required to provide digital data service plans that set out how they will fulfil their obligations as digital data service providers. Telstra's digital data service plans include commitments to quality of service and connection timeframes.

Hotkey's special digital data service plan has yet to be approved by the Minister.

Cell: D63
Comment: Michael Ryan:

If a CSP charges an eligible customer for eligible local calls made using a STS supplied to the customer, the provider must give the customer an untimed local call option.

A CSP who charges for a call made using a STS supplied to an eligible customer in a particular standard zone, being an eligible customer who is a residential/charity customer, if the call is made between points in the applicable zone in relation to the provider and in relation to the customer.

The zones must have been in place before 20 September 1996.

Immediately before 1 July 1991, Telecom supplied a carriage service that was a STS to persons in that area, the charges for calls of a particular kind between points within that area made using the service were, or would be, worked out on an untimed basis, that area is a standard zone.

There are 102 extended zones, with a total of about 40,000 services, in the most sparsely populated areas of Australia. These zones cover close to 80 per cent of Australia's land area and have a population density of less than 0.5 persons per square kilometre. Extended zones fall outside Telstra's standard local call charging zones and are defined by a specific group of telephone numbers.

Extended zone customers have not previously had access to untimed calls at local call rates. Each active extended zone has a designated community service town which is in a Telstra standard charging zone surrounded by or near the adjoining extended zone. Unlike customers in the extended zones, customers living in community service towns have previously been able to access untimed local calls within their standard zone area.

Cell: E63

Comment: Michael Ryan:

Extended zones customers have previously had limited or no access to untimed local calls, and consequently have incurred more costly timed access to Internet service providers compared to customers in other charging zones. The provision of untimed calls at the local call rate for calls within a customer's extended zone, and to a customer's adjacent extended zone, commenced on 31 July 2001. The agreement is intended to reduce the disparities in access to services and facilities experienced by customers in extended zones.

Charging zone means a charging zone specified in the table in attachment 6 to the Telstra Public Switched Telephone Service (PSTS) Section of the document known as the Telstra Standard Form of Agreement as in force or existing from time to time.

Extended Zone has the same meaning as in the Agreement for the provision of untimed local calls, untimed Internet access and other carrier services to Extended Zones dated 1 June 2001 between the Commonwealth and Telstra, as amended from time to time.

Cell: L63
Comment: Michael Ryan:

Will there be pressure to change the current definitions or geographic descriptions of charging zones by competitive carriers or end users ?

Charging zones do not map to anthing in the IP world.

VoIP providers are supplying services to locations, ie cities and not ESAs or zones.

Greg Neylan:

The zoning structure is independent of technology. Fixed NGN services should fit into the structure.

Cell: D64
Comment: Michael Ryan:

An Interim service means a service that satisfies the requirements that provides a customer with a service for voice telephony or a service equivalent to a service for voice telephony where voice telephony is not practical for a customer with a disability.

CSG Direction No. 1 of 1999 (Amendment No. 1 2001)

An interim service is a voice telephone service which will primarily utilise mobile or satellite technology and deliver core service functionality similar to that of a standard telephone service. An interim service can be supplied to a customer for a period that does not exceed:

· 12 months from the date of the customer's request if the location requested by the customer is a remote location without infrastructure; or

· 6 months from the date of the customer's request in other areas; or

for a longer period with the agreement of the customer.

Telstra Corporation Limited—Variation of Approved Standard Marketing Plan Notice No. 1 of 2001

Cell: E64
Comment: Michael Ryan:

In those circumstances where an extensive delay is envisaged in supplying a STS or repairing a fault with an existing STS, Telstra offers a customer an interim service, or in some circumstances, a choice between an interim service and an alternative service consistent with its universal service obligation.

The offer of an interim service or an alternative service will be limited to one per place of residence and one per place of business, irrespective of the number of STSs provided at either place.

Cell: D65
Comment: Michael Ryan:

A draft standard marketing plan for a primary universal service provider (PUSP) for a universal service area in respect of a service obligation is a plan that sets out:

(a) the equipment, goods or services that the provider will supply in fulfilment of that service obligation, so far as it relates to that area; and

(b) the arrangements for supplying and marketing the equipment, goods or services.

The Minister may determine in writing requirements for draft policy statements and draft standard marketing plans of primary universal service providers.

TCPSS Part 2 Div 5

Cell: G65
Comment: Michael Ryan:

Within 90 days after a person becomes a PUSP for a universal service area in respect of a service obligation.

Cell: A67
Comment: Michael Ryan:

These have not been covered by other obligations.

Cell: D67
Comment: Michael Ryan:

Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997 (Amendment No. 2 of 2002)

The ACCC concluded that:

Changes to the price control arrangements that will allow the price of services to begin moving closer towards costs are considered to be an extremely important objective for the next period of price control arrangements.

The ACCC further concluded that the standard residential line rental was at that time only about 55 per cent of the cost of providing the average line.

Section 52 of the Telecommunications Act 1997 (the Telecommunications Act) provides for the licensing of carriers (generally persons who own specified infrastructure facilities known as network units) to supply telecommunications services to the Australian public. Section 63 of the Telecommunications Act empowers the Minister to impose licence conditions on a carrier licence.

On 23 April 2002 the Minister for Communications, Information Technology and the Arts (the Minister) announced new price control arrangements to apply to Telstra from 1 July 2002. As part of those arrangements, the Minister announced that Telstra would be required to obtain ACCC consent to an increase in a line rental charge for residential customers. ACCC consent was to be contingent on Telstra complying with new conditions to be applied to its carrier licence, requiring Telstra to:

· provide, and actively market, products and arrangements for low-income consumers; and

· maintain and resource a new Low-income Measures Assessment Committee (LIMAC), comprising representatives from welfare organisations and responsible for reporting annually to the Government on the effectiveness of the low-income package and Telstra's marketing of the package.

Cell: E67
Comment: Michael Ryan:

The objective is to ensure that line rental increases to bring prices closer to costs do not adversely affect low-income consumers, either by increasing the size of their telephone bill or discouraging them from maintaining their telephone service or becoming connected.

Cell: D68
Comment: Michael Ryan:

Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997 (Amendment No. 1 of 2002)

Priority Assistance applies to the connection of a first STS where there are no existing STS at a place of residence (whether supplied by Telstra or another provider) and the fault repair of one nominated STS where all STS at a place of residence are inoperative (whether supplied by Telstra or another provider).

Priority Assistance offers customers who meet the eligibility criteria, the highest level of service practicably available at the time, on the connection of the first STS and/or fault repair of a nominated STS.

Specific timeframes apply.

ACIF C609:2003 Priority Assistance for Life Threatening Medical Conditions

Cell: E68
Comment: Michael Ryan:

Once a customer has been validated, a line test is undertaken on a customer's STS service to determine its reliability.

Priority Customers, that is customers who satisfy the eligibility criteria in relation to a diagnosed life-threatening medical condition with a specific level of service.

That is, to provide a Priority Customer with the highest level of service practicably available at the time on:

- the supply of the first STS

- the fault repair of a nominated STS

Cell: L68
Comment: Michael Ryan:

How will this obligation be meet where the service may be provided over many networks and applications ?

Cell: D70
Comment: Michael Ryan:

Under Division 2 of Part 3 of Schedule 3 to the Telecommunications Act 1997, a carrier may, for the purposes of determining whether any land is suitable for its purposes:· enter on, and inspect, the land; and· do anything on the land that is necessary or desirable for that purpose.

A carrier may also, for the purpose of surveying or obtaining information in relation to any land that, in the carrier's opinion, is or may be suitable for its purposes:· enter on any land; and· do anything on the entered land that is necessary or desirable for that purpose. This regulation sets out conditions to be complied with by a carrier in exercising powers under Division 2 of Part 3.

. carriers are required to do as little damage as practicable and undertake restoration of land;

. carriers are to comply with relevant industry standards and international agreements;

. carriers are to maintain records;

. carriers must take all reasonable steps to co-locate and co-operate with other carriers and public utilities for installation activities

Cell: E70
Comment: Michael Ryan:

The main features of the notification to landowner and occupier section are:

. the carriers must notify landowners and occupiers at least 10 business days before engaging in an activity (for low-impact facilities, managers of public land are treated as a landowner or occupier and must also be notified);

. the landowner or occupier has the opportunity to object to the activity and the carrier is required to resolve the objection by agreement;

. if there is an objection, then the objection can be referred to the Telecommunications Industry Ombudsmen.

Cell: D71
Comment: Michael Ryan:

The purpose of the Telecommunications (Low-impact Facilities) Determination 1997 (the Determination) is to specify when a carrier can enter land and install a low-impact telecommunications facility without seeking approval under State and Territory laws. The Determination also ensures that such installations are subject to the processes for negotiation and dispute resolution set out in the Code of Practice 1997 (the Code).

The Determination contains a list of telecommunications facilities and activities that are essential to maintaining telecommunications networks and are unlikely to cause significant community disruption during their installation or operation. Adherence to provisions under the Determination facilitates rollout of sensitively designed carrier infrastructure which benefits the end-user.

Co-location in Residential and Commercial areas

Underground facilities

In-building subscriber equipment and internal equipment shelters

Cell: E71
Comment: Michael Ryan:

A facility cannot be a low-impact facility unless it is specified in this determination. Therefore, overhead cabling and new mobile telecommunications towers are not low-impact facilities.

Certain facilities cannot be low impact facilities:

· designated overhead lines
· a tower that is not attached to a building
· a tower attached to a building and more than 5 metres high
· an extension to a tower that has previously been extended· an extension to a tower, if the extension is more than 5 metres high.

Carriers have broad powers to inspect land, install low impact facilities and maintain facilities under Schedule 3 of the Act. When exercising Schedule 3 powers, carriers are required to comply with the Telecommunications Code of Practice 1997 (the Code).

The Code sets out the administrative processes for the exercise of Schedule 3 powers. There is a range of other obligations imposed by the Code when exercising Schedule 3 powers, including not making any more noise than is currently allowed under the relevant State or Territory legislation, doing as little damage as is practicable and requirements to notify land owners.

Cell: Q71
Comment: Michael Ryan:

Customer equipment which includes structures and antennae or dishes.

Cell: D73
Comment: Michael Ryan:

Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997 (Amendment No. 4 of 2002)

Telstra must, within 10 working days of the end of each calendar month, or such other timeframe as the ACA agrees in writing, provide a report and supporting data to the ACA on:

(a) the percentage of CSG services in each FSA and nationally without any faults or service difficulties for the preceding calendar month; and
(b) the average availability of CSG services, as a percentage of total possible available time, in each FSA and nationally for the preceding calendar month.

The Amending Declaration provides for new licence conditions to apply to Telstra in its capacity as the main provider of telephone services in Australia.

The purpose of the new licence conditions is to:
· improve consumer awareness of overall service reliability, nationally and regionally;
· improve the operation of poorly performing parts of, and services in, the Telstra telephone network, particularly in regional and rural Australia;
· improve community confidence in reliability of the customer access network; and
· empower the ACA to enforce reliability and remediation requirements where warranted.

Cell: E73
Comment: Michael Ryan:

NRF is an outcome of the Besley Telecommunications Service Inquiry (TSI). This regulation was imposed on Telstra as a new Carrier Licence Condition (from January 1, 2003).

NRF covers only Customer Service Guarantee (CSG) telephone services, i.e. services covered by the ACA CSG Standard (customers with up to and including five fixed line telephone services) and specifically deals with CSG services with recurring faults, i.e. "CSG tail performance".

What is actually reported on?

NRF performance reporting to ACA at three levels:

NRF Level 1 (Field Service Areas - FSA). Public reporting by Telstra and the ACA.

NRF Level 2 (Exchange Service Areas - ESA) - For ACA monitoring purposes - Not public reporting.

NRF Level 3 (Individual CSG Services) - For ACA monitoring purposes - Not public reporting.

Cell: L73
Comment: Michael Ryan:

How will the NRF be administed if there are many providers of applications, services and networks particularly if these are all different suppliers ?

Cell: D74
Comment: Michael Ryan:

Part 23 of the Telecommunications Act 1997 allows CSPs to use a standard form of agreement (SFOA) as a contract with their customers for the supply of certain telecommunications related goods and services. If a CSP uses an SFOA, then it is obliged to make the SFOA available to their customers on request. CSPs that use SFOAs are required to provide customers with concise summaries of the terms and conditions set out in the SFOA applying to their service. These summaries should be clear and simple, and readily accessible to customers.

The existence of an SFOA does not preclude alternative terms and conditions being agreed between the parties, and provides a fallback position should the parties not be able to agree. SFOAs must be lodged with the ACA.

Part 23 of the Telecommunications Act 1997

The Telecommunications (Standard Form of Agreement Information) Determination 1999

Cell: D75
Comment: Michael Ryan:

To manage the radiofrequency spectrum effectively, the ACA has introduced regulatory arrangements affecting manufacturers, importers, and authorised agents of radiocommunications products. The ACA also has compliance requirements relating to the electromagnetic compatibility (EMC) performance for a wide range of electrical and electronic goods, and for telecommunications equipment.

A mandatory standard limiting human exposure to electromagnetic radiation (EMR) has been introduced. The standard currently applies to all mobile phone handsets and base stations, cordless phone handsets and cradles, and satellite phone handsets, but will eventually include all radiocommunications transmitters. EMC and EMR arrangements are based on a declaration process, have separate levels of compliance, have labelling requirements, and are being harmonised with other technical regulatory arrangements.

The Radiocommunications (Human Exposure-Electromagnetic Radiation) 1999 Standard

Sections 162 and 182 of the Radiocommunications Act 1992

ACIF C564:2002 Deployment of Radiocommunications Infrastructure

Cell: A78
Comment: Michael Ryan:

Richard York from the ACCC is to provide and expand this category and add comments.

Cell: I78
Comment: ryork:

Cell: J78
Comment: ryork:

The reach of Part IV extends to virtually all businesses, including unincorporated businesses and government trading activities, as a result of State/Territory application laws.

Cell: K78
Comment: ryork:

Enhance the welfare of Australians through the promotion of competition and fair trading and provision for consume protection.

Cell: L78
Comment: ryork:

Expect these sections to be just as relevant in 2010 as they are now.

Cell: K79
Comment: ryork:

Prohibt anti-competitive conduct in telecommunications markets

Cell: L79
Comment: ryork:

Expect these sections to be just as relevant in 2010 as they are today.A key feature of this legislation is that the amendments are framed in such a way as to be service and technology neutral. The ACCC-administered provisions do not concentrate on the regulation of specific services, such as the STS.

Cell: K80
Comment: ryork:

Enhance the welfare of Australians through the promotion of competition and fair trading and provision for consume protection.

Cell: L80
Comment: ryork:

Expect these sections to be just as relevant in 2010 as they are today

Cell: K82
Comment: ryork:

Make relevant conduct in telecommunications markets more transparent

Cell: K83
Comment: ryork:

Make relevant conduct in telecommunications markets more transparent

Cell: K84
Comment: ryork:

Make relevant conduct in telecommunications markets more transparent

Cell: K85
Comment: ryork:

TPA specifies that the object of this Part of the TPA is to promote the long-term interests of end-users (LTIE). In determining whether a particular action would promote the LTIE, the ACCC must have regard to:
- whether it would be likely to promote competition in a market(s) for a relevant service by removing obstacles to end-users of relevant services gaining access to these services and other related issues;
- whether it would be likely to achieve the objective of any-to-any connectivity; and
- whether it would be likely to encourage the economically efficient use of, and the economically efficient investment in, the infrastructure by which relevant services are provided.

Cell: L85
Comment: ryork:

The current declaration provisions under Part XIC of the Act are likely to be just as relevant to new carriage services used in the provision of NGSs as they are for current services declared under the Act. Further, to the extent that the provision of NGSs will use services already declared under the TPA (eg. transmission), these service declarations will continue to be of relevance when used in the provision of NGSs.

Cell: P85
Comment: ryork:

Relevant to carriage services used in the provision of NGSs

Cell: L86
Comment: ryork:

These provisions are likely to be just as relevant to declared carriage services in 2010 as they are today. To the extent that new carriage services used in the provision of NGSs might be declared under Part XIC of the TPA, standard access obligations would apply. Further, to the extent that the provision of NGSs will use services already declared under Part XIC (eg transmission), existing access obligations will likely apply in relation to these elements of the provision of NGS.

Cell: P86
Comment: ryork:

Relevant to carriage services used in the provision of NGSs

Cell: L87
Comment: ryork:

Likely to be just as relevant in 2010 as they are today.

Cell: P87
Comment: ryork:

Relevant to carriage services used in the provision of NGSs.

Cell: D89
Comment: ryork:

Telstra Carrier Charges - Price Control Arrangements, Notification and Disallowance Determination No.1 of 2002 Power to make Determination comes from Telecommunications (Consumer Protection and Service Standards) Act, 1999

Cell: L89
Comment: ryork:

Current price control determination expires in June 2005. The Minister is likely to conduct a review prior to this expiry date to determine whether retail price controls should apply to Telstra beyond this date, and if so, what form they should take. It is hard to know what services (if any) would be subject to retail price control arrangements in 2010. It is conceivable, however, that certain NGSs could be considered as appropriate for retail price control arrangements.