

VoIP services – Competition implications

The ACA has released its draft discussion paper on VoIP services. This brief note (memo) examines those issues raised by the draft that may have implications under the Trade Practices Act, including parts XIB and XIC, and the Commission's powers under the *Telecommunications Act, 1997*. The memo's context is in relation to VoIP as a 'next generation service' (NGS) and whether the issues raised are typical of other NGS that have developed over recent years and those that are emerging. Therefore, the issues raised in the memo are not exhaustive, and have been identified only as those that are most relevant to the current discussion of VoIP services. This means that while the focus of the current industry discussion will be shaped by VoIP services, it is also important that in considering the competition impact, that broader next generation network (NGN) aspects are also taken into account where possible.

The memo begins with the assumption that NGS require (and are enabled by) NGN, and that the potential exists for NGNs to be little more than the transmission media for NGS. In such an environment, the end-user device contains much of the functionality that determines the nature of the NGS. This is in contrast to existing PSTN-based services where the main functionality and control functions reside in the core network.

VoIP service issues

The ACA Discussion Paper describes three distinct types of VoIP service: one is a peer-to-peer service that relies on software sold to subscribers and loaded on PCs; one is a corporate network service that interacts with both the Internet and the PSTN; and the last is a 'carrier-grade' managed VoIP service that uses dedicated IP capacity separate to the 'public' Internet. The voice services themselves are a separate protocol (application) that can be managed by a provider or by individuals who have compatible software and appropriate hardware.

Consequently, it is now possible for different service providers to offer particular elements of the end-to-end service independently of one another. This raises the prospect that the sources of market power may have evolved; that the associated regulatory focus on bottlenecks and the termination service should also change or expand; and that previously distinct markets may now be separated into a vertical supply chain, while some others may be merging. Examples are the voice call market splitting into voice carriage and voice application markets, and fixed and mobile voice markets ultimately merging into one voice market.

The ACA paper asks at 4.1 whether existing arrangements enable VoIP providers to operate competitively, and independently of broadband access providers while maintaining the provision of a reasonable quality of service (QoS).

Interconnection standards and network architectures

The ACCC considers that QoS is emerging as a key factor that is shaping the future operation of the communications industry. Concerns that the 'public' Internet cannot provide QoS to the same level as the PSTN has resulted in considerable discussion about NGN architecture and interconnection standards. The ACCC is interested in exploring the extent to which an industry-wide agreement to implement a particular architecture or interconnection standard may prevent the emergence of competing architectures or interconnection standards. For instance, can adoption of an architecture that relies on soft switches and gateways prevent the emergence of other alternatives such as protocols that prioritise packet flow?

Questions of whether one architecture or standard is ‘better’ than another are less important at this stage than first principle questions of whether there should be a standard for QoS or whether it may be appropriate for a range of service quality levels to be available to consumers.

The ACCC is also interested in assessing whether adoption of such uniform architectures and standards may be used to raise barriers to entry to new competitors at any or all layers of the NGN and/or VoIP environment. Specifically, can architectures and/or standards be used to prevent overlay applications from being forwarded over the PSTN or on to other IP networks?

Moreover, the forum in which such standards might be developed may favour one arm of a convergent industry over another. The ACCC is interested in exploring how existing industry institutions may be expanded to ensure appropriate levels of representation by all segments of the converged communications industry in determining the most appropriate and efficient architecture and standards should these be necessary.

Interoperability

The ACCC understands that end-user devices are increasingly intelligent, and contain much greater functionality than is present in fixed telephones. The differing levels of functionality in VoIP devices may act to adversely affect any-to-any connectivity, particularly if functionality is the result of proprietary development.

At 4.10, the ACA paper asks whether the introduction of new features for VoIP services would be facilitated by the use of a specific number range. Related to this is the degree to which investment in VoIP services is likely to be promoted by the different options for numbering of VoIP services. The ACCC is interested in exploring the relationship between investment in VoIP services and the implementation of the Numbering Plan associated with these services.

The ACCC is also conscious that proprietary functionality may be a source of market power, particularly in networks where externalities may lead to greater value being placed by consumers on subscribing to those networks. The ACCC is therefore interested in the views of interested parties on whether proprietary standards are likely to give rise to market power concerns.

Addressing

The ACA paper poses a number of questions in section 5 concerning whether VoIP services should be provided under a special number range and allocation. The paper notes that the final decision may have impact on barriers to entry and uptake of VoIP services.

In addition, the ACCC is interested in whether separate number ranges may serve to identify service providers and their customers such that incumbent telephony operators might then be able to target consumers of competing VoIP services for their own bundled offerings, or those service providers who may be regarded as strategically significant. There is also the issue of whether separate number ranges will act to check the attractiveness of VoIP provider’s offerings.

Inter-network Compensation

In addition to its interest in the impact of network architecture and interconnection standards on competition outlined above, the ACCC notes that commercial interconnection arrangements between VoIP providing networks and other voice service networks are uncertain. For example, existing declarations of PSTN and mobile voice termination services may not include termination of VoIP services, since the service definitions are couched in terms of circuit-switched delivery and/or geographic based number ranges.

Moreover, the ACA paper recognises that there are a number of service providers at both the network and application layers who are likely to be involved in the provision of the end-to-end service. However, many of these will not have a direct relationship with the customer. Consequently, some service providers will need to rely on interconnection arrangements in order to recoup the cost of providing their component of the total service.

The ACCC has had some involvement with interconnection arrangements in this type of multi-service provider network, principally the Internet, and considers that there are significant issues that require resolution to ensure that the correct investment and pricing signals are sent to prospective and active market participants. These include defining the relevant metrics by which cost and value should be measured, the appropriate interconnection pricing model, and the nature of how costs should be recovered through the transmission chain. Accordingly, the ACCC welcomes comment on the appropriate means of ensuring that all providers involved in end-to-end service delivery are adequately compensated.¹

Also of concern to the ACCC is the issue of regulating interconnection between legacy networks and NGNs. Interconnection between these is of particular importance during the transitionary period to fully developed NGNs. The OECD (and others) have noted that current per minute based interconnection pricing may no longer be suitable for pricing in the NGN environment as IP resources are not dedicated for the entire period to an application as in the case of the PSTN. The ACCC will also need to ensure that while pricing of any bottleneck services is not excessive, it does not deter innovation. In addition, the interconnection framework may need to allow for different types of network interconnection agreements for different categories of services (e.g. phone, internet, or cable TV traffic).

The ACCC welcomes any comments on the type pricing approach that may be more appropriate for NGN-based services.

Sources of Market Power

Considering issues more broadly than VoIP services, the ACCC understands that Next Generation Networks (NGNs) are generally expected to lower barriers to entry in provision of telecommunications and other services. However, this can also lead to new sources of market power. Reporting the results of the study commissioned by the European Commission, the OECD noted potential points of market power can relate to:

- Network capabilities (e.g. interconnection);
- Elementary services (e.g. proprietary standards);
- User access capabilities (e.g. provision of content);
- Individual user information (e.g. billing information).

¹ These issues are explored in considerably greater detail in the ACCC's draft report on internet interconnection (October 2004) see pp78-83 and 108-115 in particular.

Market power can be exercised through either denial of provision of services/capabilities at these points, or through discriminatory provision (e.g. price and quality of service discrimination). However, it is also possible that potential exercise of market power at one point will be offset by the potential exercise of market power at another point, should these points be controlled by different parties. It is also worth noting that while some points of potential market power are already regulated (such as regulation of network interconnection), others (such as provision of content) are not.

The ACCC seeks the views of interested parties on the scope for market power across NGNs, and the potential for market power to be offset or negated by countervailing power in related markets.