

# Regulators. Mount Up!

## VoIP in the Asian context

**Nick Abrahams and Brett Farrell consider the emergence of Voice over IP and how it may operate within a regulatory framework.**

### A PIECE OF A LARGE PIE

Even a small piece of the huge voice telephony market is desirable and worth pursuing. A lot of younger mobile telecommunications companies see Voice over IP (VoIP) as the way to gain market share. VoIP is voice telephony via the internet. It has the ability to bypass the local telephone exchange and cut the telcos out of voice call revenue.

The major telcos won't give up the market without a fight and that fight will be affected by the extent of regulation of VoIP providers. So what's all the fuss about VoIP regulation?

Companies who use VoIP on a virtual private network (VPN) are seeing significant cost savings and, due to the internal nature of the system, are not subject to the extensive regulatory obligations imposed by various governmental authorities (**Regulators**). No fuss there.

VoIP offerings to consumers and business are creating the current fuss. There are issues to consider from a telco industry perspective and also issues from the Regulators perspective.

The fundamental issue is the debate concerning VoIP regulation versus VoIP innovation. In this article we examine the debate surrounding this issue and how various countries are dealing with it. We also examine some common regulatory issues across the Asia-Pacific region and consider if it is possible for VoIP providers to meet the regulations without stifling innovation.

We believe VoIP will, if only to ensure consistency, require specific regulation. The new VoIP companies want to enter the market free from regulatory burden and support their case by claiming they should be considered as

part of the (relatively) regulation-free internet. Most Regulators have taken the view that VoIP services should be regulated in accordance with existing regulations affecting telephone services. Asian trends suggest that regulation will be cautiously implemented to grow VoIP services.

### REGULATORY OBLIGATIONS

#### Numbering Plans

Numbering Plans specify the numbers to be used in connection with the supply of telecommunication services to the public. Numbering Plans generally provide number allocations for mobile numbers, geographically fixed numbers and geographically wide numbers.

The problem facing VoIP operators is how VoIP fits within existing Numbering Plans. Existing Numbering Plans do not cater for IP addresses which in most cases are dynamic numbers assigned to the user when logging onto the internet. Calling line identification, emergency services and number portability are being considered in the context of applying to the Numbering Plan.

Regulators are currently considering how numbering plans will apply to VoIP numbers and it appears likely that a dedicated range of numbers will be assigned to VoIP services.

#### Law Enforcement and Interception

Law enforcement concerns could be the most difficult to resolve due to the nature of the internet. Common issues facing VoIP providers are how to:

- do their best to prevent telecommunications networks and facilities from being used in, or in relation to, the commission of offences;

- give officers and authorities such help as is reasonably necessary for the enforcement of:
  - the criminal law and laws imposing pecuniary penalties;
  - protecting the public revenue;
  - safeguarding national security; and
- ensure that a network or a telecommunication facility has the interception capability to enable communication passing over that network or facility to be intercepted.

The problem is where does law enforcement "tap" the wire and how many packets need to be captured and how does that happen when packets take multiple paths to the destination. Another problem arises when voice packets are encrypted. It has been suggested that the Regulators should require that a governmental body hold the decryption keys to allow law enforcement to decrypt all messages (assuming the encrypted packets can be captured). Undoubtedly there will be heated argument about who holds those decryption keys. It also raises a whole host of privacy considerations. This could all be even more complicated with recent developments in unbreakable quantum computing cryptology.

In addition, a VoIP service available in a certain country can be run from a location outside the jurisdiction of that country's law enforcement to tap the service. This will make compliance impossible both in terms of allowing law enforcement access and tracking down those behind the service.

#### Quality of Service (QoS)

The VoIP industry is currently relying on the strength of its data algorithms to cope with packet loss, jitter and latency

and provide consistent quality of service (QoS). This does not seem like a big issue for VoIP providers.

VoIP services are not yet able to offer the 5 “9’s” of 99.999% up time. Generally, it offers 99% and this could lead to multi-tier call charging similar to the Indian regime (discussed later). The Asian trends suggest that QoS is not important to the emerging VoIP market and imposing a 5 “9’s” type of obligation upon a VoIP provider could stifle the young companies.

### Emergency Services

Access to emergency services via standard telephones is almost a universal regulatory requirement. The question is, do VoIP providers need to comply with the regulations in relation to emergency telephone services?

In order to comply with regulations, VoIP providers may need to ensure that their packets give caller location details to assist emergency services. A secondary complication is that VoIP services do not take power from the local exchange. In the event of power failure, VoIP services will not be able to operate.

### Operator and directory assistance and itemised billing

VoIP customers will want access to operator and directory assistance services. A likely solution is for the VoIP to provide these services itself or to arrange for a third party to provide these services by agreement.

Regulations often require providers to provide itemised billing for each call. It is not entirely certain how a VoIP provider will comply with itemised billing when providing bundles of minutes to a customer.

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## THE GLOBAL CONTEXT

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To put the Asian experience into context, it is worthwhile to examine how countries outside the region are dealing with this quickly emerging technology.

### United States – the regulatory recalcitrant

In the US, initial court decisions have found that VoIP is an “information service” rather than a “telephony

service” (*Vonage Holdings Corporation v Minnesota Public Utilities Commission (MPUC)*). An information service brings VoIP into the internet space, which is unregulated in the US. The US Congress left the internet unregulated for competitive and developmental reasons.

The court ignored the MPUC’s “quacks like a duck” argument where it was suggested that VoIP offers voice telephony just like a standard regulated telephone service. Therefore, just because VoIP uses a different infrastructure to a standard telephone service does not make it any different to a standard telephone service, in effect, VoIP looks like a duck and quacks like a duck, therefore it should be regulated like a duck (ie a standard telephone service). However, the court held that VoIP is an information service and consequently kept this relatively new industry within unregulated space citing the US congressional wishes to refrain from regulating the internet.

The US Federal Communications Commission Chairman Michael Powell announced in February 2004 that the FCC’s position was that VoIP services should be the subject of some regulation, especially universal service and emergency call services. The FCC enquiries continue whilst the US VoIP market remains in a state of confusion.

The US lawmakers are considering the “VOIP Regulatory Freedom Bill”. It has not yet come out of the Committee on Commerce, Science, and Transportation for a vote in the Congress.

The Bill contains provisions banning state governments from regulating or taxing VoIP. Connecting to the PSTN may require VoIP providers to adhere to the Communications Assistance for Law Enforcement Act (and assist with wiretaps). The Bill imposes a universal service levy that will go to providing discounted phone service to low income and rural Americans. The hearings into the bill have also touched on 911 services.

### Canada

The Canadian experience departs from the US. Primus introduced a VoIP

service and Bell Canada filed a complaint with the Radio, Television & Telecommunications Commission. Bell Canada claimed the Primus service did not comply with relevant regulations including emergency call services and QoS obligations. The results of this are not yet complete but it appears that Canadian regulations focus on the service attributes rather than the technology (ie PSTN vs internet) and therefore it is likely VoIP will fall to be regulated in the same fashion as a standard telephone service.

### The United Kingdom

In the United Kingdom, the *Communications Act, 2003* enacted EU Directives to implement a technology-agnostic electronic communications regime. VoIP is covered under that regime. Whether or not VoIP is regulated as publicly available telephone service depends on:

- If the service is a substitute for a traditional public telephone service;
- Would the customer think the service is a substitute for a public telephone service or would they use it as a first choice for an emergency call; or
- If the service is the only means for the customer to access the public network.

The VoIP service will be regulated if any of the above criteria are satisfied. There is an exception to regulation where the VoIP service is adjunct to the main service or offered as a secondary service.

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## REGULATION IN THE ASIA PACIFIC REGION

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VoIP is likely to be specifically regulated in some manner throughout the Asian region once the market matures. Given that is the case, there are a number of common obligations that will apply to the VoIP provider. Below we outline some of the main regional developments regarding VoIP services.

### India

The Telecom Regulatory Authority of India issued a regulation on QoS for VoIP in January 2004. India regulated

VoIP on a tier system that is:

- Toll Quality – which means the VoIP service must be comparable to landline services.
- Below Toll Quality – recognising that VoIP services are not perfect allowed a lower charge for services below toll quality.

### **South Korea**

One factor that has led to South Korea's broadband popularity is a commitment to VoIP services where regulation allows resale of VoIP services to stimulate competition. South Korea originally offered free VoIP in order to capture market share although charges have now been implemented.

Foreign ownership restrictions have been completely removed, opening the VoIP services market further.

VoIP providers in South Korea are classified as special service providers (SSPs) when providing VoIP services via the public network and as value added service providers (VSPs) when providing PC-to-PC VoIP services.

In South Korea, a VoIP service provider must go through a process of notification (for VSPs) and registration (for SSPs). SSPs must also hold standard technology qualifications that demonstrate the technological capability for providing the VoIP service and also must prove financial viability before launching any VoIP service.

### **Singapore**

Initially only SingTel could provide VoIP services within Singapore. The Singaporean telecommunications market was liberalised in April 2000 and a licence class called the "internet based voice and/or data service" was offered. Any organisation can provide VoIP services (or data services) provided they have this licence and abide by a minimal QoS benchmark.

In a now crowded Singaporean market for VoIP services, the national carrier SingTel has actively participated with two notable VoIP services. eVoiz allows SingTel customers to make a call from their PC to telephone subscribers in certain countries at a cheaper rate than the international direct dial. The

other service, V019, permits a telephone user to make an international call over a VoIP system by dialling a special prefix. The call cost for this service is a little higher than for eVoiz but the service operates from a normal telephone rather than from a computer.

### **China**

In 1998 a Chinese appellate court ruled that offering VoIP services was not explicitly prohibited under existing Chinese administrative rules and regulations including the 1993 "Provisional Arrangement for the Approval and Regulation of Decentralised Telecommunication Services".

In 1999 the Ministry of Information Industry (MII) issued licences to government affiliated telecommunications companies, China Telecom, China Unicom and Jitong Communications to provide VoIP services.

Presently, China has established an IP telephony standards group addressing issues such as technology standards for VoIP services, support deployment of domestic IP telephony products and laws and regulations relating to IP telephony. Chinese VoIP operators can set their own tariffs without prior approval from MII.

### **Thailand**

Thailand has two state owned telecommunications carriers, TOT Corporation which manages domestic voice communications and CAT Corporation which manages international voice and data communications. Thailand is still grappling over whether or not to regulate VoIP as a voice communication or a data communication. Both the CAT and the TOT have introduced VoIP services.

It is early days for VoIP regulation in Thailand. Interestingly in Thailand internet service provider concessionaires are prohibited from offering VoIP services and violators could face withdrawal of their concession. There are currently no QoS obligations enforced regarding VoIP latency and accessibility in Thailand.

### **Australia**

Australian regulator, the Australian Communications Authority (ACA) is coming to terms with the growth of the VoIP market and plans to hold industry consultation into VoIP regulation during 2004 with regulations to be provided by mid-2005. What is clear already is that the ACA believe that VoIP should be regulated as a standard telephone service and not an information service specifically with regard to law enforcement and emergency call obligations.

The ACA issued a press release stating that they plan to amend the Australian Emergency Call Determination to make it clear that service providers will not face liability where a user is unable to make an emergency call due to circumstances beyond the control of the provider eg power outage. This assists VoIP providers as VoIP phones are powered from the mains and not the local exchange.

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## **CONCLUSION**

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VoIP is a disruptive technology. It will definitely lead to lower call costs to consumers over time. Just how low and how quickly will depend to a large degree on the scope of regulation. What is clear is that VoIP is sufficiently different to the existing standard telephone service that it requires specific regulation. However, the regulation needs to be "soft-touch" so as to strike the balance between preserving important public policy and encouraging innovation.

In any event technology may overtake the whole regulatory process as peer-to-peer VoIP operations like Skype threaten to do to the telcos what Napster did to the record companies.

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