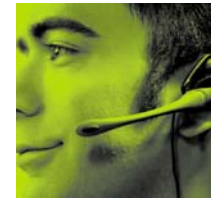# Inter-provider QoS Forum
MIT October 2005

Managing value

Kevin Mason
Telecom New Zealand Ltd

Telecom

The views expressed in these slides are those of the author and not necessarily those of Telecom NZ

IP interconnect

- Telecom NZ does not currently provide IP interconnection services to any other provider supporting more than one class (Best efforts only today).

- The immediate need for admission control is not present.

- Voice interconnection only occurs using TDM voice via gateways.

- We have been asked by other providers for VoIP interconnection and the implications of this are currently being worked through.

- Our Australian operations is currently engaged in a industry dialogue (ACIF) on VoIP interconnection. This has just begun so the direction is unclear at this time.

Telecom

Value based pricing

Telecom NZ has a strong desire to retain and enhance value based pricing

Value based pricing has been used successfully for many years to extract margin from the market to mutually benefit all.

The regulator in New Zealand currently accepts, in principle, the community merits of value based pricing.

A typical example occurs with traditional POTS.

- The more users connected to a network the greater the value for all users.

- But the ability to pay for that participation differs among users.

- If all users had to pay the same amount for their participation then the number of users participating would reduce.

- To avoid the negative effects (reduction in overall value) on the remainder of the population of connected users the price is adjusted based on the ability to pay

- Consumer customers pay less, business customers pay more for essentially the same service.

- Governments do the same with their tax structures.

Telecom

Asset utilisation

Telecommunications is a highly perishable product

- If any available bandwidth is not sold at any time, then incremental value capture is lost, you cannot sell those bits at a later date, the opportunity is gone for good.

- So in an ideal world any network would be running at maximum capacity continuously, providing revenue capture was occuring.

- Telephony services attempted to optimise utilisation by offering cheaper services in less popular times (off peak rates), leaving peak capcity for those with the willingness to pay.

- This captured maximum value at that moment in time on networks that only supported a single application – voice..

Telecom

Time of day

Time of day pricing mechanisms are now less relevant on their own because;

- machine to machine (e.g. peer to peer) traffic is increasing in volume of users, machines are happy to wait.

- Multi service networks now mean network peaks are no longer application specific.

  - The internet data service is fully loaded in the evening when telephony has lower demand and lower value.

  - Saturday afternoon may be a high value time on certain weekends for real time video (major Sports events) when telephony and internet services command lower value.

Telecom

Is voice and video calling in eleastic ?

- Rate adaptive voice and video codecs are in mass production today

- Changing the codec rate mid flight is achievable if properly coordinated.

- "Internet" appliances use these techniques, and will continue to refine such techniques.

- Use of these technologies need to be the sole domain of "internet" appliances.

- Intrenched thinking in the telco industry may resist utilising such technologies.

Telecom

What does this mean

There is a strong desire to pursue the use of admission control based on;

- Who is requesting the resource

- What they intend to use it for, i.e. what application and what destination

- Whether the resource request is from a directly connected customer or an interconnect point.

- The appliance capabilities

Telecom

What does this mean

The decision to admit traffic to any class may therefore be based on Policy using the following types of inputs;

- Customer subscription type (e.g. a customer who is allowed a high rate codec in times of low congestion but is only allowed use of a low bit rate codec in time of high load)

- Customer "credit" rules – e.g. extensions to "Throttle on cap" models

- Application type

  - Service per unit of resource for a given class of transport may be priced lower if it is a voice application rather than an unstated data application. This occurred previously with ISDN

  - Video calling may be even lower per resource unit but the network may reserve the right to demand a lower bit rate codec is used when requested or the right to trans code if required.

- Current network loading and topology for the path requested

- Load prediction algorithms for the expected duration of the session

Telecom

At this time it is believed

- Admission control must be at least determined in a policy server function that is told;

    - the application

    - The user

    - The appliance capability

    and make the decision about what resources, if any, to provide at the time of the request.

- Any mechanism that does not differentiate on both real time commercial and technical business rules both at POI ingress points and customer attachment points will inhibit value capture.

- It is not envisaged the aggregate admission control will be desirable or preferred by those requiring our services.

- Time will tell if this proves wise !!!!

Telecom