

Creating a commercial model for interconnect

Is co-operation amongst operators required to ensure smooth regulatory changes ?

2007 will see Next-Generation Networks (NGNs) reach a greater degree of market penetration than ever before. The technology is already in place – operators such as THUS already have a fully functioning NGN up and running, while BT is starting to roll out its NGN in parts of the UK. Work is still needed to educate enterprises about the benefits NGN services can bring, but the market is without doubt ripening and demand for converged services continued in 2006. For NGNs to reach their full potential, however, there needs to be a concerted and coordinated approach to interconnection and interoperability. In particular, a commercial model for interconnect between competing NGNs must be universally agreed and implemented if the technology is to be a success.

Different countries are developing their own approaches to NGN regulation, dependent upon issues unique to each market. In the UK, the recently formed industry body NGNuk has been established to coordinate views on NGN issues, with a view to agreeing guidelines for interconnect and interoperability between different operators. Although regulators have traditionally been closely involved in defining interconnect regimes, the aim here is to agree as much as possible on a consensus basis, and narrow down the areas of disagreement to a few key issues that can be resolved by Ofcom. For example, it should be possible to agree the overall structure for charges on an industry basis, but for elements where BT has significant market power, Ofcom will probably need to set the level of charges.

The pros and cons of different charging structures are complex and hotly debated by those who operate in the telecoms space. As different services are converged onto the same infrastructure, there is pressure to converge the basis on which the services are charged. In the UK, fixed and mobile voice calls are charged on a 'calling party pays' (CPP) basis, which means the originating operator collects a fee from the end user and then pays the called party's operator for terminating the call; Internet traffic often follows a 'sender keeps all' (SKA) model, and in some countries mobile interconnection follows a 'receiving party pays' (RPP) model. As well as debating the merits of CPP, RPP and SKA, operators will need to consider whether interconnection should be billed on a usage basis (voice calls are currently charged on a pence per minute basis), on a capacity basis (data traffic is often charged per Mbps of capacity between the two networks) or an event basis. When it comes to charging for services provided by BT, an 'element based charging' model is used for most regulated services at present, but this may prove harder to implement in an NGN world, where there is greater use of common platforms and systems, and functionality is distributed between different layers.

There are also a wide range of technical issues that need to be resolved if there is to be smooth connectivity between different NGNs. Quality of Service (QoS) is one area where much work still needs to be done. Operators will be looking to QoS as a means of service differentiation – using QoS to offer quality-assured products for which they can charge a premium compared to best efforts products. For QoS dependent services to function effectively across multiple interconnecting networks, there needs to be a degree of consistency in the way that QoS is defined, measured and charged across connecting NGNs.

One of the key technologies for differentiated QoS is MPLS (Multi Protocol Label Switching) which assigns labels to each packet of data, to enable prioritisation

depending on the nature of the traffic – whether it is email, video or voice. Operators currently define their own QoS parameters or tiers of service – THUS, for example, has Gold, Silver, Bronze and best efforts tiers of service. Other operators may have similar tiers, but for true interoperability there needs to be a degree of QoS uniformity or at least compatibility between these definitions. Additionally, measurement of QoS needs to be agreed to enable operators to monitor services and check they are meeting the quality parameters their customers are paying for.

The NGN architecture separates the data transport and media flow layer (containing the packets of data making up a voice call) from the call control and session management layer (containing the signalling and intelligence information used to establish calls, generate billing information and tailor services to customer profiles). Another area of debate is the extent to which interfaces between interconnecting operators' control layers should be opened up: the greater the degree of visibility and control, the greater the flexibility and scope for innovation, but also the greater the cost and risk to security. A low level of control may well be acceptable to the incumbent, who by and large has the lion's share of the customers, but it may hurt the smaller players who need full interoperability to survive as a business. Competition is vital to the survival of the thriving telecoms market, where to date, new technologies and service differentiation have created opportunities for new players to enter the market and new profiles to emerge in the value chain.

The tools for regulation are fairly blunt, and in setting the new regulatory framework, it is vital to give industry free rein to define the framework by which services are charged on a wholesale and resale level. We are at the stage now where the industry can use the transition to NGNs as a catalyst to jump to new framework for charging and regulatory price controls better suited to the converged markets of the future. NGN is also a catalyst for new service models and we can not let this innovation be restricted due to limitations and lack of flexibility in the charging model. By June 2008, NGNuk aims to have agreed an NGN interconnect model that 'allows the predictable and seamless transport of a technically unrestricted range of services across multiple NGNs using a commercial framework that drives service and application innovation and efficient investment'¹. Until that point, it is in everyone's interest to co-operate and resolve these issues for the good of the industry as a whole.

¹ NGN UK [http://www.ngnuk.org.uk/8.html?&no_cache=1&sword_list\[\]=interconnect](http://www.ngnuk.org.uk/8.html?&no_cache=1&sword_list[]=interconnect)