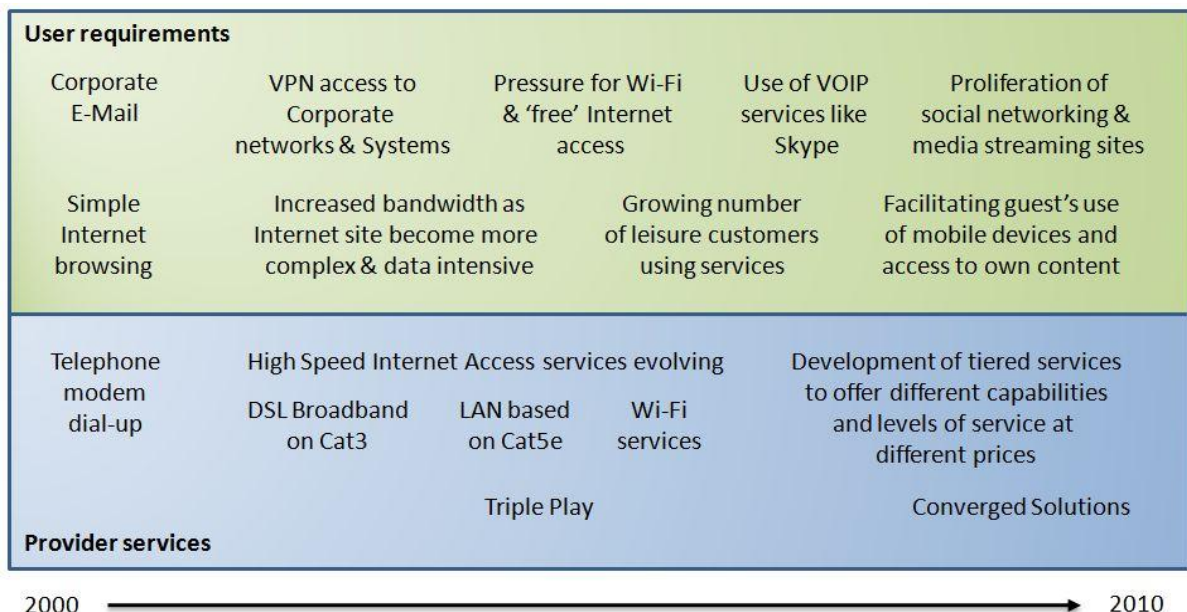


The Evolution of High Speed Internet Access

By **Bryan Steele**, founder and Managing Director Jireh-Tek

It's hard to believe that only ten years ago hotels were offering telephone points to facilitate modem dial-up access to the internet and for remote dial-in to corporate systems including email. Both within a hotel and domestically, it was necessary to procure an ISDN line to improve upon the telephone dial-up speeds and even then that only delivered 128KB/s, a fraction of the basic 2MB/s broadband service offered today.

Throughout the last decade the emergence of new technologies and the growing demands of guests have resulted in the development of more sophisticated managed internet services.



At the beginning of the decade, High Speed Internet Access (HSIA) was delivered into existing hotels by retrofitting solutions utilising existing infrastructures. This normally involved the installation of DSLAM technology alongside the telephone switch and utilisation of the Cat3 telephone wiring to carry the data.

A DSL modem was also required in the guest room, along with a power source. This equipment was often tampered with by guests, the power unplugged due to a lack of sockets, and as a result other guests might find the service unavailable. The quality of the service would also be adversely impacted if the telephone wiring was old and in poor condition.

New hotels and many refurbishment projects led to the installation of structured network cabling. This provided far more robust installations as all equipment could be located in secure closets with only a network socket on the guest room wall. These Local Area Network solutions delivered higher bandwidth capacity to each room as well as a greater ability to manage that service remotely.

This management capability is important in a climate of hacking and virus attacks. Indeed, hotels have been used for internet access by the criminal fraternity on the basis that computer activity will be hard to trace back to them. Suitable measures in terms of design, network security and operational processes need to be in place to combat this.

The Triple Play

The concept of 'triple play' began to emerge in the middle of the decade. This looked to utilise the network as a shared infrastructure to support HSIA, IP telephony, and IP TV and Video On Demand (VOD) installations. At this point, it was not a case of integrating these systems; but rather designing the network to enable all of these services to coexist on a single network with the required quality of service to support the voice, data and video traffic.

At the time, such an approach required the use of Cat5e structured cabling to deliver the required bandwidth and performance. However, ADSL2+ and VDSL technologies now deliver much higher bandwidth across a Cat3 infrastructure enabling triple play solutions to be delivered without the cost of retrofitting structured cabling in existing hotels. Much of the cost of a retrofit is not the cabling itself; but the redecoration that might follow an installation.

One of the benefits of triple play for the hotelier was a consolidation of HSIA and VOD providers in the marketplace. This afforded the opportunity to select a single vendor to deliver both services on a single rather than dual infrastructure, optimising the required capital investment. Additionally, the services were then supported by one rather than two separate vendor support desks with a potential saving on annual maintenance contracts.

Barriers that some hoteliers have faced in trying to move towards triple play solutions have been ongoing lengthy VOD contracts, and HSIA deals where the provider installed and so owns the network preventing its use to deliver the other components of a triple play solution. These deals were normally revenue share arrangements. In the current economic climate and with a decade of operating experience behind them, many vendors now seek purchase or rental deals rather than revenue share contracts.

Wi-Fi and charging flexibility

In addition to HSIA being offered in guest rooms, Wi-Fi services were delivered in public areas, and Wi-Fi and cabled services in conference and meeting rooms. An ability to flex the bandwidth available to a hotel is useful in order to accommodate large meetings and the HSIA demands of the delegates as well as perhaps webcasting or video-conferencing requirements. Frequently secure access to corporate networks is needed and can be provided through the provision of VPN support.

Vendors have also worked to provide hotels with more flexible billing options, to allow HSIA to be bundled with other services such as VOD and telephony. This realignment on pricing may also reflect the competitive impact of readily available low cost 3G data services for PCs, as well as ever improving mobile devices, such as the Smartphone, allowing access to email and the internet.

In recent years there has been a trend towards providing guests with free internet access. This decision was made as a brand differentiator; probably when usage was primarily for email access and more basic web-browsing. However, as domestic broadband internet bandwidth capacity has increased while costs have fallen, consumers have become accustomed to accessing online media.

YouTube, Hulu and the BBC are examples of major sites which offer both video and audio content. YouTube reported 89 million visitors to its site in March 2009. Over 5.5 billion video streams were viewed, and 10 hours of video content was uploaded every

minute. In the UK, the BBC's iPlayer has proved so popular that at peak viewing times it consumes 5% of the UK's internet capacity.

The cost of reliable data circuits, with suitable service level agreements, to connect hotels to the internet is still significant, and raises the question as to the wisdom and affordability of a blanket 'free' internet policy. Some hoteliers and HSIA providers are already re-evaluating this approach and are developing 'tiered services' – different options at different price points, in terms of bandwidth and quality of service management. This could still allow free access for those requiring basic services such as email by offering a lower bandwidth, capped service; whilst offering alternative choices to allow a guest to stream media or make voice calls over the internet.

It remains to be seen how great an impact readily available online media will have on VOD usage; but clearly affordable high capacity internet access is needed to facilitate any switch. In the future, the guest may choose to pay for an HSIA video streaming service rather than a VOD movie.

Internet Service Providers (ISPs) have been so concerned about the impact on their networks that they have been suggesting that the BBC should contribute to the cost of providing increased capacity. In addition to streaming media from sites like these, some guests also access content in their own homes using technology such as the Slingbox from Sling Media. This allows a guest to control their domestic TV tuner and stream the desired channel to their PC in the hotel room. These video streaming capabilities create significant bandwidth requirements for a hotel.

Converged solutions

Communications technology has developed over the decade. Voice services such as Skype and other Voice over IP solutions, whether from telephony providers or using soft-phones linked to corporate telephone switches, are commonly used as are webcams for video-calls. These types of service are particularly sensitive to the quality of the service in terms of available and steady bandwidth capacity. Also, delays in transmitting data packets result in a poor audio and video quality.

The multitude of internet based services which must now run on the network: email, internet browsing, voice, video, media streaming necessitate not only flexible and adequate provision of high-bandwidth connections but also proper network design and management if the quality of these services is to delight rather than frustrate the guest.

In addition to these, 'converged solutions' are now being developed. These aim to deliver even more services on the common network infrastructure; further optimising the total cost of ownership for those systems as well as delivering an enhanced guest experience. Converged solutions seek to go beyond coexistence by integrating the traditional triple play components with other business systems. For example, this will allow a guest to order food and beverage, book a health club reservation or manage the room environment via the TV in the room. This expands the potential business scope for the service providers.

In conclusion, it is clear that the complexity of services which must be delivered, the need to guarantee a high quality of service and the importance of maintaining an infrastructure which is secure necessitates careful design, change control and ongoing operational management. As technology and guest demands increase, this can only become more challenging. The question for the hotelier must be, "Is this my core business or an area which is technically complex and sensible to outsource?"

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Bryan Steele, the founder of Jireh-Tek Limited, has over 25 years of business experience including several senior management and IT Director level positions over the past 15 years. He initially received an excellent business and IT grounding working for a major blue chip company, Unilever, for 19 years. More recently, he was an IT Director in both the internet and hospitality sectors - the latter with a major UK hotel chain, Thistle Hotels. Bryan's pioneering work in the hospitality sector led to his appointment to the Board of Directors of Hotel Technology Next Generation in 2004. In June 2006, he was appointed as an Executive Advisor to HTNG. Bryan has had considerable involvement in Guest In-Room Technology, chairing teams in HTNG's In Room Technology Workgroup.