WIRELESS TO THE HOME

Tisser Kft. uses InfiNet Wireless to provide high capacity "wireless to the home" solutions for triple-play

Challenges

- To rapidly deploy high-capacity wireless bandwidth links to consumer apartment blocks for delivery of voice, video and internet services;
- To offer an alternative technology solution to "Fibre-to-the-Home" (FTTH);
- To provide a minimum of 40Mbps bandwidth with minimum latency to apartment blocks in a heavily-polluted 5GHz wireless spectrum;

Solution Technology

- InfiMAN 2x2 300Mbps Point-to-multipoint basestations;
- Each basestation served with 4 x InfiLINK 2x2 50Mbps high capacity client links;

Benefits

- Significantly reduced deployment time over fibre installation and reduced upfront network investment due to product flexibility and ease of deployment;
- Highly efficient and focussed spectrum usage provided maximum bandwidth in a narrow and congested 5GHz spectrum field;
- Supreme reliability of the system provided a viable alternative to fibre deployment;
- Savings of 90% on the budgeted maintenance costs, coupled with a 40% increase in subscriber growth, made the systems incredibly economical to deploy.

Introduction

Tisser Kft is one of a new breed of emerging ISPs and media companies in Hungary that utilizes high-bandwidth connections to consumers to provide TV, Internet and IP phone services. Their business model has been built using a backbone fibre-optic cable network to deliver next generation ultrafast Ethernet-to-the-Building services.

One of the disadvantages of using fibre as a delivery mechanism is the speed of deployment to locations where fibre is not yet available. For ISPs and media companies, expansion of the customer base and new customer acquisition is key to scaling and maximising the business case, and waiting for the rollout of fibre may potentially lose a valuable opportunity to acquire new clients.

In mid-2009, Tisser were requested to supply their triple-play service offering to a number of customers based in residential apartment blocks in Tiszaújváros, around 175km North-West of Budapest. The apartment blocks required high-capacity connections to the Tisser backbone of at least 40Mbps per apartment block link, and this would normally have been achieved with a "Fibre-to-the-basement" (FTTB) solution, reaching an Ethernet distribution node in each block that would then supply residential apartments and small businesses directly with their internet, TV and IP telephone service.

Because of the immediate lack of availability of fibre to these apartment buildings, Tisser turned to Crown-Tech, an integration specialist for wireless systems, to explore the possibility of using broadband wireless links as an alternative to high-capacity fibre links. Crown-Tech conducted a number of site surveys and eventually recommended field-trialling an installation of InfiNet Wireless's InfiMAN 2x2 and InfiLINK 2x2 units to provide the necessary links and high-capacity bandwidth to the core backbone.

Technical Challenges

There were essentially two technical challenges that the wireless system had to overcome in order to prove a feasible option for the project. Firstly, the links needed to be highly reliable: fibre offers virtually 100% reliability in terms of a transmission medium and therefore any wireless technology would need to provide extremely high reliability figures whilst still supporting the minimum transmission capacity of 40Mbps to each site. Secondly, a highly-overcrowded frequency spectrum around the allocated 5GHz frequency band meant that the ability to efficiently scan for, and subsequently use, narrow spectral channels was an absolute necessity, as was the ability to easily switch between frequency channels in order to optimize the available spectrum at any geographic location.

Since the apartment blocks ranged in distance from 300 metres up to 4 kilometres from the wireless base station, the necessity for efficient spectrum use became all the more important, and earlier trials with other vendors' equipment had proven unsuccessful because of their inability to operate in multipoint topologies across the polluted spectrum.

Solution

Crown-Tech, with additional support from InfiNet Wireless, provided Tisser with an initial point-to-multipoint node based on InfiNet Wireless's 2x2 MIMO technology. The initial trial installation would provide service to five apartment block locations, based on a 4-finger star topology, with an aggregate base-station capacity of nominally 300Mbps support configured links of 50Mbps. Following some initial reconfigurations to optimize both the spectrum utilization and the path bandwidths, the system was optimized to ensure each link offered a minimum of 50Mbps to the base-station, and over time this bandwidth did not degrade below the configured minimum. In addition, the equipment proved extremely reliable, with no link outages or system downtime over the trial period. This high reliability of the system also proved a major selling point of the technology to the subscribers in the apartment blocks: based on the system performance, subscriber growth within the trial period grew over 40% higher than the expected subscription, and as an additional bonus, the overall running and maintenance costs proved to be much less than Tisser and Crown-Tech had expected, dropping to less than 90% of the expected cost budget allocated.

László Kalapos, Senior IT Manager for Crown-Tech, comments on the implementation of the project: " At the outset of the trial, I would never have believed it possible to be able to utilise a high bandwidth, wireless multipoint system as a long-term alternative to a fibre backbone connection, and initially we considered the wireless network as a stopgap until the availability of fibre in the area . However, after nearly one year of operational experience, I can honestly say that the InfiNet Wireless solution has offered an unparalleled level of reliability, with running costs far lower than anticipated, whilst still delivering rapid and reliable bandwidth connections to the end users for video, data and voice. It is the first time, in my experience, that I have ever witnessed the near-flawless use of high capacity radio equipment in such an application, and the InfiNet equipment has undoubtedly contributed to both the success of the technical installation and the rapid and unexpected growth in the subscriber base for our customer. I would recommend that other service providers should look to InfiNet Wireless as a potential provider for their network."

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