Tiscali Group chooses Cisco next generation metro Ethernet technology to accelerate delivery of triple-play broadband services in Europe

Executive Summary

CUSTOMER NAME
- Tiscali Group

INDUSTRY
- Service provider

BUSINESS CHALLENGE
- A successful Internet service provider, Tiscali wanted to counter the commoditisation of Internet access by developing a range of 'triple-play' data, voice and video services

NETWORK SOLUTION
- Together Tiscali and its technology partner, Cisco Systems, have developed an innovative solution comprising metropolitan area networks for intelligent broadband aggregation based on Cisco metro Ethernet technology
- The solution provides four discrete virtual circuits to customers, enabling the delivery of high-quality services including over 100 TV channels

BUSINESS VALUE
- By 2007 Tiscali expects to have grown ADSL customers from one million to 3.8 million, 40 per cent of which will be receiving unbundled access services
- Improved margins, increased revenue and closer relationships with customers through differentiated, value-added data, voice and video services

Tiscali is implementing metropolitan area networks for intelligent broadband aggregation based on Cisco metro Ethernet technology to meet the financial, performance and time-to-market criteria of its European local loop unbundling programme.

BUSINESS CHALLENGE

Tiscali S.p.A. was launched in January 1998 following the deregulation of the Italian telecommunications market.

Initially established as a regional telephone operator and Internet Service Provider (ISP), Tiscali rapidly expanded its operations throughout Italy and beyond to become a pan-European player, differentiating itself from its competitors with innovative services and marketing strategies.

Today Tiscali has consolidated its operations and is focused on accelerating growth in Italy, the United Kingdom, the Netherlands and Germany, offering broadband and narrowband access for consumer and business applications as well as innovative communications services and content.

Key to successfully implementing that strategy is offering customers more than just Internet access, by itself a commodity. With changes in the regulatory framework making it possible to unbundle the local loop from incumbents, comes the possibility for Tiscali to develop a brand differentiating, 'triple-play' portfolio of broadband data services (including Internet access), Voice over IP, and high-quality TV channels.

Prepared by Cisco Systems, Inc.

NETWORK SOLUTION

Like most ISPs, Tiscali's business model was originally based on a dial-up Internet model, but the growth of broadband led to increasing use of wholesale ADSL (Asymmetric Digital Subscriber Line) with Tiscali in effect paying the incumbent telco to back-haul traffic to the Tiscali Tier 1 backbone network.

For Tiscali, however, there were two notable exceptions. During its acquisition phase, Tiscali had purchased an ISP in Denmark and another in Holland which, thanks to more liberalised regulatory environments, had both been able to take advantage of local loop unbundling.

In Holland, demand for higher speed Internet access was especially strong and helped Tiscali understand the future importance of an unbundled broadband model. There Cisco had provided a solution in 2001 based on an ATM (Asynchronous Transfer Mode) DSLAM (Digital Subscriber Line Access Multiplexer) – the Cisco 6260 IP DSL Switch at the incumbent's Point of Presence (PoP) central office.

The successful take-up of unbundled services led to Tiscali building out the core and distribution layer of its Dutch network with Cisco 12400 Internet Routers and Cisco Catalyst 6509 Switches. The initiative included one of Europe's first implementations of MPLS (multi-protocol label switching) technology which was used to streamline traffic flows between seven PoPs and provide a better wholesale delivery model.

Access was controlled by a combination of an existing Cisco DSL infrastructure and Cisco AS5850 Universal Gateways offering a range of broadband and dial access methods. With these network enhancements, Tiscali was able to offer public switched telephone network (PSTN) access to national and international broadband voice services thanks to a Cisco PGW 2200 PSTN Gateway, providing a carrier-grade Signalling System 7 (SS7) interconnection to the national carrier.

"CISCO'S SOLUTION USING METRO ETHERNET FIBRE-BASED NETWORKS DELIVERED THE RIGHT QUALITY, AT THE RIGHT PRICE. IT'S A SIMPLE SOLUTION THAT IS VERY RELIABLE, QUICK TO INSTALL AND EASY TO MAINTAIN."

Paolo Susnik, Chief Technical Officer, Tiscali Group

By the end of 2003, with the reality that bandwidth – and even alternative voice services – were becoming commoditised, Tiscali reviewed its long-term strategy. It decided that the future lay with triple-play services which would enable it to form closer relationships with customers and benefit from higher average revenue per user (ARPU).

But with that vision came the understanding that in order to fulfil its mission – to empower people, promoting equality through access to the Internet – Tiscali would need to increasingly free itself from the limitations imposed by incumbents' networks, and create truly direct relationships with its customers that would give it the flexibility to meet their needs.

If unbundling was the way forward, developing the best technological solution was the next challenge. Of the two early examples, Holland provided the most appropriate role model. Cisco also shared with Tiscali its experience with other service providers that had developed unbundled solutions and meetings between the companies' most senior managers explored both the technology options and triple-play business models.

Asked about Cisco's contribution, Paolo Susnik Chief Technical Officer, Tiscali Group says: "Of all the vendors Tiscali deals with, Cisco is one of the most strategic because they are able to act as independent consultants. Cisco's good advice and honest approach have been invaluable to Tiscali since the company was founded in 1998 and our achievements are proof of that."

Technology had moved on in the years following the first deployment of ATM DSLAMs and Cisco believed that the answer to successful unbundling lay in developing an end-to-end Ethernet solution using more IP-centric DSLAMs. This, Cisco judged, would deliver a more flexible and cost-effective solution that could evolve to take advantage of future developments in IP technologies.

For example, in a traditional ATM DSL aggregation network, 155Mbps STM1 (Synchronous Transport Module) circuits from each DSLAM are carried over a SDH (Synchronous Digital Hierarchy) network to a central PoP to a rack of BRAS. The bandwidth required for video demands would exceed an upgrade to 622 Mbps STM4 and consequently the DSLAM. ATM was not a substainable technology anymore.

Moving to an Ethernet solution would not only deliver more bandwidth at less expense – a Gigabit Ethernet (GE) interface is two to three times the cost of a high-speed ATM interface – it would allow far greater flexibility and efficiency, supporting techniques such as traffic prioritisation through Quality of Service (QoS) and IP multicast for video to maximise efficiencies in the network.

"THE FIRST MEASUREMENT OF SUCCESS OF OUR LOCAL LOOP UNBUNDLING PROGRAMME IS THE NUMBER OF EXCHANGES UNBUNDLED AND THE MAN HOURS REQUIRED. HAVING CISCO'S DEPTH OF EXPERIENCE IN BROADBAND TRIPLE-PLAY SOLUTIONS MEANS WE CAN MEET OUR DELIVERY TARGETS AND GAIN A MARKETING ADVANTAGE."

Paolo Susnik, Chief Technical Officer, Tiscali Group

Tiscali developed a metro Ethernet solution using Cisco 7600 Series Routers at central PoPs (linked back to Tiscali's core backbone in Italy comprising Cisco 12000 Series Routers). Not only was the Cisco 7600 Series Router capable of aggregating multiple GE streams, it would also manage the hundreds of high quality multicast video streams needed to deliver QoS IP to customers. At the edge, Cisco 3750 metro Ethernet switches would sit behind an IP DSLAM and provide redundancy back to the main PoP over a DWDM (dense wavelength-division multiplexing) network.

With the architecture agreed, field trials proved the concept and in Spring 2004 Tiscali adopted metro Ethernet as its DSL technology strategy for delivering triple-play services.

Installation followed, with the first phase deployment in 15 Italian cities comprising around 300 PoPs completed in October. A second phase, covering a further nine cities and 100 PoPs was deployed by spring, 2005, and a third expansion phase is underway.

BUSINESS VALUE

Local loop unbundling forms the central strategy in Tiscali's 2005-07 Business Plan which focuses on four European markets – Italy, the UK, the Netherlands and Germany.

During that time Tiscali plans to invest over €300 million in developing and completing its unbundled infrastructures in those countries. Rollout in Italy is being accelerated, while in the Netherlands – where unbundled ADSL services are already available – the plan is to grow ADSL coverage from 60 per cent to 80 per cent and improve on the Quality of Service (QoS) offered by migrating to metro Ethernet. While the regulatory position in Germany is currently unclear, Tiscali sees the UK as an extremely attractive market, offering opportunities for substantial growth. By 2007 Tiscali expects that more than 40 per cent of its forecast 3.8 million customers will receive unbundled access services.

The commercial significance of triple-play services is highlighted in Tiscali's 2004 Report & Accounts that shows that the gross margin narrowed to 46 per cent of revenues, from 50 per cent in the first half of 2003. This deterioration was due to the increasing proportion of ADSL services provided, as wholesale broadband services – while increasingly popular – offer far lower profitability than dial-up services. The gross margin, however, is expected to progressively improve over the next few quarters with growth in unbundled broadband services.

"OF ALL THE VENDORS TISCALI DEALS WITH, CISCO IS ONE OF THE MOST STRATEGIC BECAUSE THEY ARE ABLE TO ACT AS INDEPENDENT CONSULTANTS. CISCO'S GOOD ADVICE AND HONEST APPROACH HAVE BEEN INVALUABLE TO TISCALI."

Paolo Susnik, Chief Technical Officer, Tiscali Group

"Cisco's solution using metro Ethernet fibre-based networks delivered the right quality, at the right price. It's a simple solution that is very reliable, quick to install and easy to maintain. The first measurement of success of our LLU programme is the number of exchanges unbundled and the man hours required. Having Cisco's depth of experience in broadband triple-play solutions means we can meet our delivery targets and gain a marketing advantage," says Paolo Susnik.

In the UK the first phase of unbundling will see Tiscali equipment installed into 27 BT exchanges which serve densely populated towns and cities. The company aims to provide unbundled broadband services direct to customers, bypassing BT's network by summer 2005.

In developing its plans to grow its ADSL infrastructure and deploy a competitive unbundling and triple-play business plan in its target countries, Tiscali also had the support of Cisco Systems Capital which has worked in partnership with the company since 1999. Cisco Systems Capital arranged a series of lease solutions, which will also include specifically constructed Technology Migration Leases. These financial instruments will enable Tiscali to benefit from the latest technology while avoiding technical obsolescence impacting on profit – a powerful combination which will enable Tiscali to develop its markets with cutting edge technology and effective financial flow timing.

The new unbundled infrastructure in Italy has already enabled Tiscali to become the first service provider in the country to offer ADSL 2+ connection with speed of 12 and 24Mbps. Residents in areas covered by Tiscali's Italian unbundled local loop network enjoyed a free upgrade from 640kbps to 2Mbps. Another new service provides email users with a massive 2Gb of disk space,

anti-virus and antispam applications for a modest €30 a year with the ability to send and receive emails with attachments of up to 20Mb. Voice and wholesale unbundled services are soon to be launched and video will follow in the coming months.

Importantly, in Italy, the metro Ethernet infrastructure gives Tiscali the great potential of enabling IP-based services to businesses, including MPLS IP VPNs via the Cisco 7600 Series Routers.

TECHNOLOGY BLUEPRINT

Tiscali has been able to take advantage of developing technology and move to an IP and Ethernet model for broadband aggregation. In doing so it benefits from Cisco's IP Next Generation Network vision of converging all services on to a single, scalable platform which, through QoS and other techniques, is able to intelligently prioritise and manage different traffic types and applications.

The Cisco 7600 Series Router is the first high-performance Ethernet aggregation platform with a 256-gigabit backplane, 30 million packets-per-second routing performance and the ability to serve up to 32,000 simultaneous users. Supporting both MPLS and IP multicast, the Cisco 7600 Series Router takes full advantage of a 40-Gbps-per-slot infrastructure to offer unsurpassed Ethernet densities of 32-Gbps ports per slot with 10-Gbps port uplinks.

Access to the DSLAMs is provided via Cisco Catalyst 3750 Metro Series switches. This is a new line of premier multilayer switches that bring greater intelligence to the metro Ethernet edge, enabling the delivery of more differentiated metro Ethernet services. They feature hierarchical QoS and traffic shaping, intelligent 802.1Q tunnelling, VLAN mapping, MPLS and Ethernet over MPLS (EoMPLS) support, and redundant AC or DC power, which is particularly useful as most central offices are not equipped with AC power.

"Cisco's solution using metro Ethernet fibre-based networks delivered the right quality, at the right price. It's a simple solution that is very reliable, quick to install and easy to maintain," says Paolo Susnik.

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