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NEWSLETTER FEATURE

ImtechTelecom

Market News for the Service Provider Community January 2008

ETHERNET TAKING OVER THE WAN - Enterprises are now looking to Ethernet as their next WAN technology, signaling the end for legacy networks.

A survey of 120 large companies by analyst firm Current Analysis found that 67% reported already using carrier Ethernet in one form or another. Many are still using legacy technologies as well – 44% on Frame Relay and 25% on ATM - but the vast majority plan to move to IP-VPN and Ethernet soon.

"Carrier Ethernet is already widely deployed, but it is usually point-to-point or as an access line into an IP-VPN," says Joel Stradling, senior analyst with Current Analysis. "Now we are seeing end-to-end multipoint Ethernet gain traction."

Legacy technologies like ATM deliver a fixed bandwidth allocation which can be very constrictive to modern businesses. Ethernet, on the other hand, can be rapidly scaled up and down so that a company can go from 8 mbps to 100 mbps in the course of a month and back down again when demand drops. "With Ethernet you pay for what you use and not the upper limit of what you don't use," adds Stradling.

Carrier Ethernet has been plagued by a proliferation of terms which can confuse enterprise customers. Metro Ethernet, native LAN, GigE, Ethernet private line (EPL), Ethernet virtual private line (EVPL), Layer 2 virtual private network (VPN), Ethernet access, and virtual private LAN service (VPLS) are common terms used in service descriptions.

Two categories of Ethernet

The Metro Ethernet Forum has specified two distinct categories of Ethernet services to clear up the confusion. E-Line encompasses private and virtual point-to-point connections, and can be seen as an evolution of dedicated leaded lines and ATM virtual circuits. E-LAN refers to private and virtual multipoint services. Both E-Line and E-LANs offer scalability, improved bandwidth management and the ability to support classes of service and VLAN tagging.

Enterprises are being attracted to E-LAN as an IP-VPN alternative. Not only can hosts be dynamically connected and disconnected, E-LANs now support eight Classes of Services (CoS) making it ideal for prioritising delay-sensitive traffic such as VoIP and SAP over less sensitive email and Internet traffic.

According to Robert Rosenberg, president of Insight Research: "Many-to-many E-LAN service will be the fastest growing part of carrier Ethernet because the economic advantages of Ethernet actually increase exponentially (as opposed to proportionally) in relation to the number of points connected."

"The whole Ethernet services market is progressing rapidly, and to remain competitive, service providers do need to be looking at developing a wide portfolio of Ethernet services including any-to-any options," adds Current Analysis' Stradling. "Failing to address this area will give other players that are ahead of the curve the opportunity to differentiate themselves." Both Vertical Systems Group and Ovum RHK estimate that carrier Ethernet services revenues will exceed $30 billion by 2012.

IMTECH TELECOM WINS PRESTIGIOUS AWARD

World Wide Packets, a leading provider of Carrier Ethernet solutions, has named Imtech Telecom its European Systems Integrator of the Year 2007.

The award recognises Imtech's capability and success in selling, deploying and integrating World Wide Packets' LightningEdge® range of Ethernet-based solutions. Imtech is currently undertaking a major implementation of the technology within a large private operator's next generation Ethernet-based service.

Andy Charalambous, Vice President EMEA Sales at World Wide Packets, said: **"Imtech has been instrumental in generating market share for WWP across Europe and their knowledge and experience of the market has been invaluable to the development of our product roadmap. This award is a testimony to Imtech's service delivery and proven track record."**

Imtech Telecom
EUROPEAN SYSTEMS INTEGRATOR 2007
World Wide Packets

THE UNSTOPPABLE MARCH OF MOBILE

The European Commission's statistics group, Eurostat, has revealed that there is almost one mobile phone subscription for every citizen in the EU, and that in many countries, people are abandoning their fixed line entirely in favour of the mobile.

The Eurostat study reveals that nearly a fifth of households in the 25 European nations had a mobile phone but no fixed line in 2006. Lithuania tops the list where 48% of households have a mobile but no longer have a fixed line. It is closely followed by Finland (47%), Czech Republic (42%) and Latvia (40%). Fixed mobile substitution is least common in Sweden, Malta, Netherlands and Luxembourg where it is less than 10%.

Mobile continues to boom in developing markets too. Informa Telecoms & Media reports that there are now 3.3 billion mobile subscriptions, equivalent to half of the world's population.

"The mobile industry has constantly outperformed even the most optimistic forecasts for subscriber growth," said Mark Newman, chief research officer at Informa Telecoms & Media. "It is difficult to imagine how a modern economy could function without mobile telephony and a number of recent studies have shown that the mobile phone is having a hugely positive impact on the economies of emerging markets."Informa estimates that mobile networks covered 90% of the global population by mid-2007. If prices continue to fall, it may not be too long before the next 1 billion join the age of the mobile phone.

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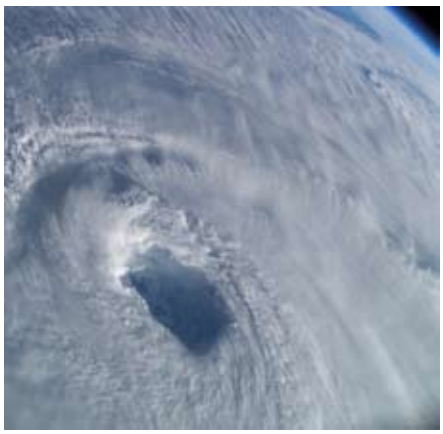
BEWARE THE COMING INTERNET EXAFLOOD

The Internet faces gridlock if operators don't invest in access infrastructure



There have been more warnings of an impending Internet overload that may cause widespread brownouts. Analysts are urging service providers to increase capacity in access networks and manage their bandwidth more effectively.

The latest report comes from analysts Nemertes Research, who warn that consumer and corporate Internet usage worldwide could outstrip network capacity in little more than two years. Nemertes said that although core network infrastructure will scale to meet user demand, access infrastructure, particularly in North America, will fall short within the next three to five years without additional investment.

The Internet has been transformed in recent years by bandwidth-intensive applications such as video, music downloads and file sharing. The rising popularity of online video sites such as YouTube have meant that Web traffic usurped peer-to-peer (P2P) file-sharing for the first time in four years this summer. Ellacoya reported in June 2007 that the Web represented 45% of all Internet traffic, compared to P2P at 37%. Streaming video made up 36% of Web traffic, with YouTube downloads making up 20% of it alone, or 10% of all traffic on the Internet.

All signs are that this trend is set to continue. A 2007 report on Internet traffic by Cisco says overall IP traffic will double every two years, driven largely by this hunger for video, particularly newer higher-definition content. Cisco predicts that by 2011 Internet traffic will exceed 27 exabytes per month, with business traffic making up less than 40% of it.

The next killer app could wound

"We must take the necessary steps to build out network capacity or potentially face Internet gridlock that could wreak havoc on Internet services," said Larry Irving, co-chairman of the Internet Innovation Alliance. "It's important to note that even if we make the investment necessary between now and 2010, we still might not be prepared for the next killer application or new Internet-dependent business like Google or YouTube. The Nemertes study is evidence the exaflood is coming."

Internet service providers and operators worldwide are already making the necessary network investment to cope with these increased bandwidth demands. This includes improving Internet backbone capacity, removing bottlenecks and upgrading obsolete equipment.

But investments in capacity alone are not enough. To cope with this explosion of new forms of traffic such as video, service providers also need to efficiently manage network capacity so that their subscribers receive the correct level of service. Tools are available from companies including Ellacoya, which allow service providers to identify each packet of network traffic, by subscriber and application. This gives them the ability to prioritise network traffic, enforce policies and identify and necessary infrastructure upgrades.

IMTECH TELECOM BELGIUM BUILDS 10GB NETWORK FOR SYNTIGO

To cope with increasing network traffic and customer bandwidth demands, Syntigo (B-Telecom) has built a 10Gb optical network to interconnect seven key locations across Brussels.

Syntigo is a subsidiary of The Belgium Railway Group, which not only operates the densest railway network in Europe but also owns a fibre optic network that covers more than 3,800km.

Syntigo is responsible for commercialising the overcapacity of this core network, but increasing usage of bandwidth-hungry applications and an expanding customer base were placing significant demands on the existing infrastructure.

Working with Imtech Telecom, Syntigo built a future proof, 10Gb network, connecting seven strategic data centres throughout the Brussels region.

As Syntigo's key partner, Imtech Telecom implemented Density Wavelength Division Multiplexing (DWDM) technology from SEE Telecom, a Waterloo - Belgium based optical products manufacturer. The system integrator also managed the design, calibration, testing services and field maintenance to ensure the successful roll-out of the network.

NEWS IN BRIEF

Ellacoya is the 2007 recipient of the prestigious inaugural Red Herring Global 100 award, only given to the best startups in the World! Past winners include such well-known names as Google, Yahoo, Skype, Netscape, Salesforce.com, and YouTube. Red Herring (www.redherring.com) is the premier analyst and media corporation covering entrepreneurial activities and new technologies. Ellacoya has been selected as one of the best startups in the world. Evaluations were made on both quantitative and qualitative criteria such as financial performance, innovation, management, global strategy, and ecosystem integration.

According to a quarterly study by broadband analyst Point Topic, residential broadband speeds are increasing in nearly all regions. The biggest increases were seen in the Asia-Pacific where operators China Tietong and NTT introduced services with downstream speeds as high as 100 Mbps. In Western Europe average downstream bandwidth increased by a more conservative 6.2% to 5.5 Mbps. Only in North America and the Middle East & Africa have average residential downstream speeds remained relatively unchanged.

A new study from Parks Associates predicts that IPTV subscriptions in Europe will grow five-fold to more than 25 million by 2011. However, the analyst warns that operators will face major ARPU challenges because of growing competition from cable, satellite and digital terrestrial services and other telcos. To differentiate their services and add real value, service providers need to strike a balance between competitive pricing and value-added features.

European businesses are increasingly committed to Web-enabled applications as a cost effective way of delivering critical business applications, according to new research from analysts Quocirca. It found that 42% of the organisations it surveyed had deployed Web-based applications. Businesses have extremely high demands for the performance and availability of Web applications: 58% of respondents expect response time to be within 3 seconds and 90% expect a response within 5 seconds. In addition, 84% expect Internet availability of more than 99%.

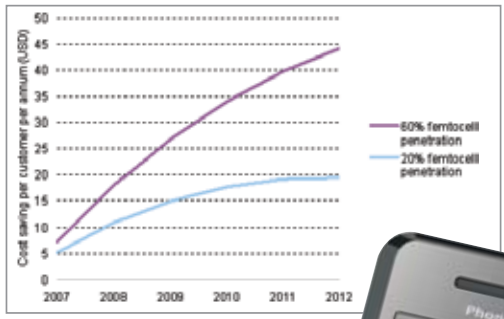
FEMTOCELLS TO DRIVE MOBILE BROADBAND BOOM

Mobile operators struggling to cope with mobile broadband uptake are looking to tiny, indoor base stations to deliver faster speeds and improved call quality

The latest technology to grip the mobile world is the femtocell, a tiny low-powered 3G access point designed to be used indoors. Analysts believe that the femtocell will drive further fixed-to-mobile substitution while helping mobile operators reduce their operational expenditure by backhauling traffic over a consumer's own broadband connection.

Femtocells have a maximum range of around 30 metres. They operate only within an operator's licensed spectrum so can be used to complement macro networks, providing indoor coverage where it is poor or non-existent.

Typically the size of a WiFi access point, the femtocell simply plugs into an existing DSL modem although some vendors are already working on integrated gateways. The femtocell is a fully-functioning 3G base station so subscribers can use their existing 3G handsets, giving the technology a distinct advantage over dual mode GSM/WiFi or GSM/Bluetooth handsets such as BT Fusion.



The access point creates an IP tunnel back to the mobile operator's 3G network via the consumer's DSL line. Subscribers will be attracted to reduced voice tariffs when using their own home base stations and benefit from a vastly improved call quality and data throughput.

The indoor challenge

Delivering high-quality mobile broadband inside buildings is a tough challenge for the macro mobile networks because walls attenuate radio signals. This is a particular problem for 3G because it uses higher spectrum bands where radio frequency signals attenuate more rapidly. A macro base station typically uses up 40 times more power providing coverage for a device used indoors than one used outdoors. Because of the way that 3G works, power is shared amongst all users in a cell. If some of the users are indoors, it reduces the capacity of the macro cell as a whole and so quality of service suffers for all users.

Many mobile operators fear that their macro networks would otherwise not be able to cope with a boom in mobile broadband without the help of the femtocell. Femtocells enabled with high speed packet access (HSPA) ensure that the high speed broadband services available outdoors can be accessed indoors at maximum data rates.

Reducing costs

The unit cost of a femto access point is currently about £100 compared to £30,000 for a macro base station. Base stations are also expensive to maintain, costing up to £3,000 per month. To improve indoor call quality and provide sufficient capacity for the expected demand for mobile broadband, operators would have to substantially increase the density of their 3G networks which means more base stations. The femtocell is a considerably cheaper option.

Operators must decide how they will charge customers for the femtocell. One school of thought suggests that the femtocell will reduce the cost of servicing indoor users so much that access points should be heavily subsidised. Operators will also be eyeing new revenue potential. The femtocell could encourage fixed-to-mobile substation and the faster data rates may entice users into premium content services such as full track music downloads.

French analyst firm IDATE estimates that the resolution of network integration issues, coupled with cost reductions, should lead to a ramp up in volumes in the 2009-2010 timeframe. IDATE believes 10 million UMTS femtocells will be shipped in 2010, rising to 18 million in 2011.

Annual cost saving per customer for a small operator (with 5 million customers) deploying 3G femtocells (Source: Analysys Research, 2007)

IS IT THE END FOR FIXED PRICE MOBILE BROADBAND?

Europe will have five million mobile broadband connections by the end of this year, according to Swedish analyst firm Berg Insight, with connections rising to 30 million by 2011.

However, in a world where subscribers can surf unlimited via the mobile web, the industry is questioning the viability of the existing fixed price mobile broadband model, particularly as the rise of social media and web-based applications start to put significant pressure on mobile network capacity.

While the likes of YouTube and Google can deliver content for free via the mobile Internet, the pressure falls on the network provider to ensure adequate capacity and continued high-speed delivery. Considerable investment is required, and the fixed-price mobile broadband model simply does not deliver the revenues required.

For mobile broadband to work for European network operators, they must ensure customer pay for the traffic they use, and charge a premium to carry high-bandwidth applications and services.

MOBILE BOTTLENECK

More Mobile operators worldwide are concerned about the spiralling costs of mobile backhaul. The simple formula of adding leased lines to cell sites to meet the voice needs of more customers has been blown out of the water by the exponential growth in mobile data. Bandwidth-hungry applications need more backhaul to prevent them from clogging up networks, but flat ARPUs mean that the business case for more leased lines does not add up.

To overcome this barrier, operators are looking towards new more scalable backhaul solutions. The most attractive of these is Ethernet as it allows operators to increase their bandwidth requirements as and when they need it, while maintaining the necessary quality of service. The key to using Ethernet in mobile backhaul is pseudowire technology, which allows operators to carry any communications protocol over the network to meet all their voice and data requirements.

The ultimate goal for mobile operators is to move their entire network over to IP. This is already happening in the core network with the deployment of IMS, and the use of Ethernet in the backhaul network provides them with a clear migration path to an all-IP infrastructure.

JUNIPER MX480 – INTEGRATED ROUTING & BRIDGING

JUNIPER'S CARRIER ETHERNET BRINGS ALL OF THE ROUTING FUNCTIONALITY REQUIRED OF CORE NETWORKS TO EDGE ETHERNET AGGREGATION

For Imtech Telecom and Juniper, "Carrier Ethernet" encompasses the hardware, software and operational infrastructure that enable service providers to deliver carrier-grade Ethernet services. Juniper's Carrier Ethernet solutions are built specifically for carriers, incorporating the features that carriers have requested.

Juniper's Carrier Ethernet brings all of the routing functionality required in core networks to edge Ethernet aggregation. The Juniper implementation of Carrier Ethernet includes the capabilities and flexibility that enable service providers to easily scale Ethernet services from trial to network-wide production. At its foundation, Juniper Carrier Ethernet also supports and extends relevant industry standards and recommendations of consortia including the Metro Ethernet Forum.

INTEGRATED ROUTING AND BRIDGING

Juniper's Integrated Routing and Bridging (IRB) technology provides MX-series routers with a significant performance advantage. IRB enables routers to recognise which packets are being sent to local addresses so that they will bridge where possible and route when necessary.

IRB adds further flexibility and choice to Juniper Networks multi-layered Carrier Ethernet solutions. For redundancy purposes, IRB can be combined with implementations of the Virtual Router Redundancy Protocol (VRRP) in both bridging and VPLS environments.

JUNIPER M

JUNIPER'S CARRIER ET APPROACH TO DELIVER ETHERNET

Imtech Telecom and Juniper Netwo approach to delivering Carrier Ether First, Ethernet PICs and Line Module and T-series routers to allow Etherne efficiently extended throughout vari enables Ethernet to be implemented effort or investment.

Secondly, Juniper Networks MX-serie products built from the ground up t and reliable Carrier Ethernet. Juniper reliability and resiliency necessary in s meet today's-as well as tomorrow's-

MPLS PLUG-AND-PLAY

Operating expenses make up a signifi in some networks. To help alleviate so industry's first MPLS Plug-and-Play ca series routers, and now in the MX-ser

MPLS Plug-and-Play is designed to sig certain time-consuming tasks. This fur dramatically reducing the complexities

Whenever routers can switch instead o reduce the number of address look-up implementations of the Virtual Router environments.

JUNIPER MX480 INVESTMENT PROTECTIO

FLEXIBLE DEPLOYMENT OPTIONS

Traditional Metro Ethernet products are only able to perform Layer 2 switching. Service providers implementing these Layer 2 devices often find themselves needing additional functionality, such as MPLS, VPLS, or Layer 3 functionality. However, until now, service providers in this situation found that they had to add another Layer 3 network device to address this need - thereby increasing network complexity, CAPEX, and OPEX.

The MX series ESR's from Juniper Networks solve this challenge by providing both layer 2 and layer 3 functionality in one single device. Service providers have the flexibility to implement a multi-layer solution including L2, L2 over MPLS and full layer 3 MPLS services, with a choice of appropriate line card technology cost optimised for the service required. This flexibility enables service providers to offer business Ethernet services such as E-LAN, E-LINE or E-TREE, within the same MX-series ESR. This combination of Layer 2, Layer 3 and Ethernet services gives service providers a high degree of flexibility with a single equipment investment.

THE GREEN NETWORKING ADVANTAGE

The industry-leading density of Juniper's MX-series ESRs provides another important benefit to service providers beyond scalability: energy efficiency. With energy costs soaring and growing concern about the global environment, service providers need to ensure they are doing their part to conserve energy consumption.

Juniper Networks helps service providers decrease power consumption and environmental impact by providing environmentally efficient platforms. For example, the MX-series ESRs can handle more bandwidth and subscribers with much less space and power consumption than other products on the market.

Juniper®

IX480 - MPLS, PLUG N PLAY

HERNET TAKES A MULTIDIMENSIONAL CING A HIGH PERFORMACE CARRIER

ks takes a multi-dimensional net service provider solutions. s are available on E-, M-, t to be seamlessly and cost- us parts of the network. This as appropriate with minimal

s ESRs are a new family of deliver service providers with high-performance, scalable, MX-series ESRs are designed to provide the required ervice provider networks and to cost-effectively scale to increasing bandwidth requirements.

cant amount of the total network costs–up to 75 percent me of these cost concerns, Juniper has developed the abilities, already featured in JUNOS and the M- and T- es ESRs as well.

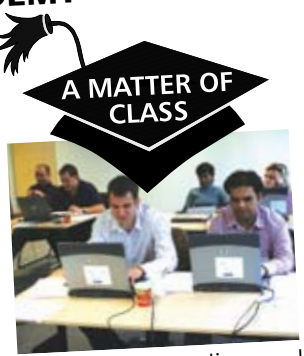
nificantly reduce network operations by automating ctionality lowers operating costs significantly by of setting up and maintaining the network.

f route, they eliminate several layers of processing and s. For redundancy purposes, IRB can be combined with Redundancy Protocol (VRRP) in both bridging and VPLS

ON

INTRODUCING iCADEMY

Imtech Telecom offer you the chance to participate in a one day MX480 introduction course, at our offices, whereby you will learn the benefits of Juniper Carrier Ethernet free of charge.



Register your interest now online and receive a free MX480 polo shirt.

Plus all attendees will receive a further JNCIA-ER voucher (worth $125) that you can use at any Prometric Testing Centre.

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ITS A MATTER OF CLASS...

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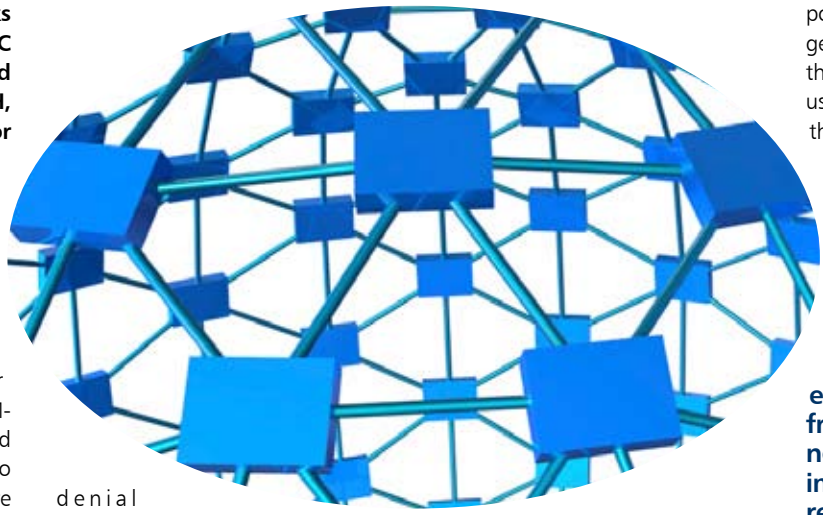
MITIGATING CARRIER ETHERNET SECURITY RISKS - offers tremendous opportunity for service providers...

Carrier networks vulnerable to MAC address spoofing should look to Ethernet over SDH, writes Ralph Santitoro, director of product line management at Turin Networks



Information privacy and protection are significant concerns for all enterprise network managers, especially when traffic traverses the wide area network. That's why for years they have trusted their TDM-based private lines, transported over dedicated SDH channels. So far many network managers have been reluctant to run private data over a packet-switched public Ethernet network.

Ethernet has been augmented in recent years to improve security and privacy. However, standards for virtual LANs, (VLANs) authentication and network access controls have brought added complexity and are not necessarily suited to the WAN.

VLANs can expose the enterprise subscriber's host MAC addresses even though the Ethernet frame's IP payload may be encrypted. This leaves the network vulnerable to external threats such as MAC address spoofing, passive monitoring, man-in-the-middle attacks and MAC denial of service (DoS) attacks.

Service providers can mitigate these risks by delivering Ethernet services over next-generation SDH using the Generic Framing Procedure (GFP), Virtual Concatenation (VCAT) and Generalized MPLS (GMPLS) technologies.

Ethernet private line (EPL) services, which connect the enterprise's equipment to the public network with a dedicated SDH channel, offers the high availability, reliability, quality of service and security that enterprises have become accustomed to with their TDM private line services - but with Ethernet's flexibility to meet growing bandwidth demands within their opex budgets.

Enterprises are now being attracted to Ethernet Private LAN (EPLAN) services which can provide the same secure benefits of EPL but provide any-to-any connectivity for multiple sites. The security, QoS, reliability and availability are assured by SDH encapsulation.

By using Ethernet-over-SDH, service providers can use dedicated and diversely routed channels for transporting point-to-point EPL services or multipoint EPLAN services across the public WAN infrastructure with the highest possible level of security. Next generation SDH encapsulates the enterprise's Ethernet frames using GFP and diversely routes them across non-contiguous SDH channels using VCAT. GMPLS enables the dynamic assignment of SDH channels as new services are activated.

These technologies "scramble" the enterprise's Ethernet frames across the SDH network, making it impossible to eavesdrop, reassemble or redirect them...

... even if monitoring test equipment is placed in the SDH optical path, only Ethernet service frame fragments can be recovered.

Ethernet services delivered over SDH let enterprises receive the highest service availability and QOS, along with the bandwidth scalability and ubiquity of Ethernet. Despite the security concerns that have been associated with Ethernet, service providers can leverage and extend their existing SDH infrastructure to provide secure, end-to-end Ethernet services.

MALWARE GETS SERIOUS: Organised crime and virus writers

No longer the domain of frustrated teenagers, malware has become the favoured Internet tool for criminal gangs intent on fraud, theft and spamming. Malware such as Stormworm, which created one of the world's largest botnets, caused considerable damage during 2007. The threats are likely to increase significantly during 2008.

"2007 was the year of prolific cyber-crime with certain gangs becoming famous within the security industry. Notoriety within a hot market always encourages an influx of new players wanting their slice of success," warns Mark Sunner, chief security analyst, MessageLabs. "Significant increases will also be seen in the techniques the bad guys will use. Predictability is the Achilles heel of cyber-crime and the bad guys will avoid repeat attacks at all costs."

Criminal malware has a very different impact on its victims than viruses of old. Instead of delivering a spectacular payload such as deleting files or damaging a machine, malware is now much more subtle. It is designed to pass under the radar to steal information from companies or set up botnets that send out millions of spam messages. Stormworm infected so many machines in 2007 because its writers continually released new variants to keep ahead of the anti-virus industry.

Internet crime is now big business with industry experts estimating that the shadow Internet economy is now worth $105 billion. Malware writers are writing tools to order, which allows anyone to commit crime on the Internet, irrespective of their technical skills. Targeted attacks are a particular growth area, with MessageLabs capturing up to 1,100 a day in 2007. These Trojans are personalised, often hidden in Microsoft Office documents, undetectable by AV tools and are designed to give access to the victim's computer. Malware experts believe that these attacks are going to be a big feature of Internet crime in 2008.

SOFTWARE RENTAL HITS THE MAINSTREAM

Businesses are looking to a new model for delivering core enterprise applications – and its good news for ISPs

Software as a service is shaking up the enterprise applications market with an increasing number of companies choosing to buy their software on demand. Its advocates say that it is easier to use and manage, quicker to deploy, offers better performance and lower cost of ownership. And perhaps most importantly it gives business units the ability to buy their own services directly.

The market for software as a service (SaaS) is booming. Gartner Group predicts that the worldwide revenue from SaaS will surpass $5 billion in 2007. This is a 21% increase over 2006, and the analyst expects the market to grow considerably through to 2011, when it will reach $11.5 billion.

Software as a service grew out of the failed application service provider (ASP) model first seen in the Internet boom. However, unlike most ASP services, SaaS is architected specifically for network delivery. Customers pay for the software by subscription or through a pay-as-you-use utility model and it is hosted on either a shared or a dedicated platform.

"SaaS adoption is highest in applications that support simplified, common business processes or large, distributed virtual workforce teams," said Sharon Mertz, research director at Gartner. "Ease of use, rapid deployment, limited upfront investment in capital and staffing, plus a reduction in software management responsibility all make SaaS a desirable alternative to many on-premises solutions, and they will continue to act as drivers of growth."

Making the match

Some software is clearly better suited to online delivery than others, with adoption rates varying between 1% to in excess of 75% of total software sales, according to Gartner. E-learning and Web conferencing have a 60% and 70% adoption rate respectively, while enterprise content management (ECM) has an uptake of only 1%.

The ease of use and simple deployment of SaaS has also given business units the freedom to acquire their own applications without having to go through the IT department. Freed from long development and deployment cycles, business units can meet their immediate need with services delivered over the network. Although this helps align IT with business objectives, businesses need to ensure that it does not spawn a flood of rogue buying. To prevent this, the IT department should continue to have a role in the governance of all new services, even if acquired directly by the business units.

IMTECH TELECOM - MANAGED SECURITY SERVICES

Virtual Security Operation centre, with attractive customised GUI for Service Providers.

Imtech Telecom, the global leading technical services integrator continually provides managed security services (MSS) solutions. Imtech Telecom's unique 'best of breed' solution, allows the provision of MSS as part of their managed services suite to its customers in the telco, carrier, service provider and enterprise communities.

The integration of Imtech's MSS delivery platform into their service portfolio makes it possible for Imtech to provide high-quality, low-

cost, scalable managed security solutions that can quickly and easily meet customer requirements and generate recurring service revenues.

Commenting on this MSS solution, James Morgan, Managing Director of Imtech Telecom UK said, "The managed services market is one of the fastest growing areas in the telecoms and business landscape and Imtech Telecom is grasping the opportunity with both hands.

Our MSS VSOC solution ultimately offers two key benefits. To telecoms customers, the solution offers access to managed security services that can potentially reduce end-user churn and increase revenue. At the same time, this solution enhances Imtech's value added set of services, going far beyond the traditional 'sell&go' kits. This MMS solution is totally unique to the market and is absolutely key in providing our customers solutions that they demand. Having consulted our key customers we feel this solution is a perfect match between our customer's requirements and its key features."

"Hesitant to change, the Druids found themselves lagging behind the times which inevitably led to their extinction... any questions?"

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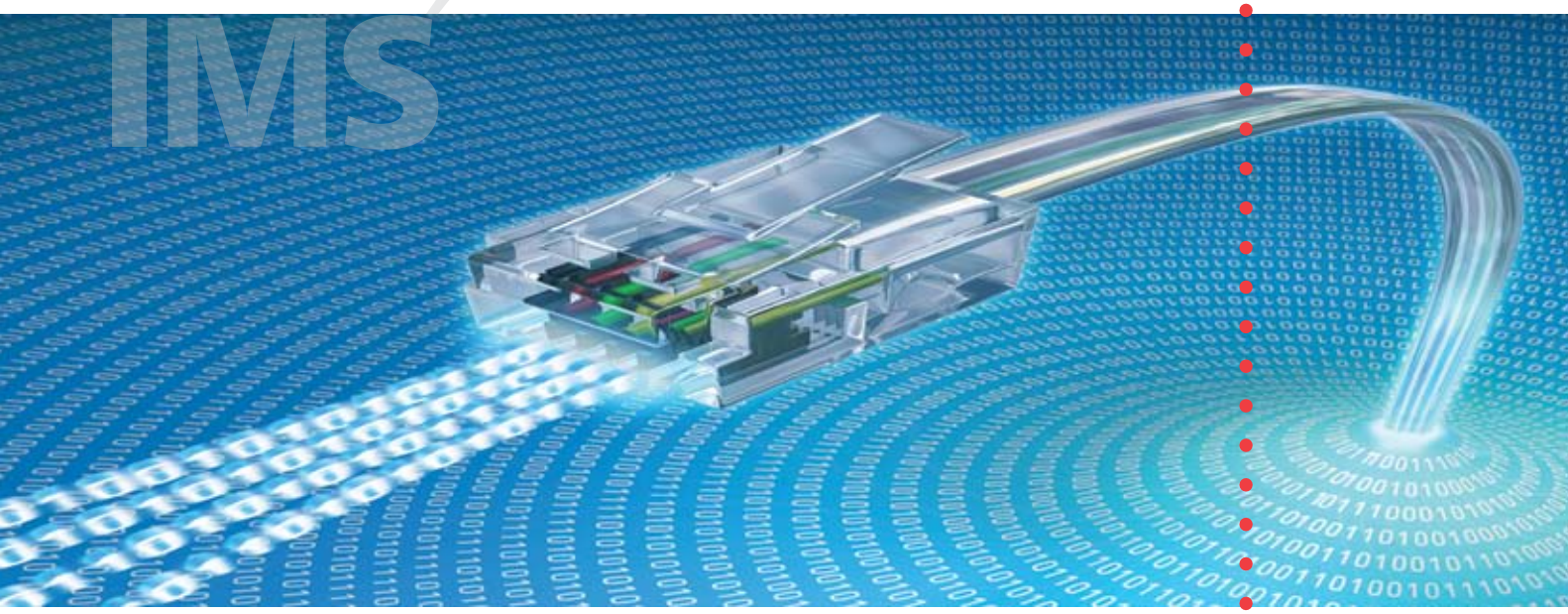
NEW TECHNOLOGY PARTNER '08

Turin NETWORKS

Connecting the dots to Carrier Ethernet



Turin Networks, Connecting the dots:

- to enable you to deliver new IMS or SOA based applications and services quickly and efficiently
- so you can provide cost effective Ethernet services with the reliability, security and performance of your legacy services
- on a single platform integrating traditional transport capabilities and MEF certified services
- allow you to deliver mission critical applications with the highest level of security and fail-over alongside best effort services
- to reduce your Capex and Opex allowing you to truly "pay as you grow"

Connecting the dots with Imtech Telecom creates a seamless transition to Carrier Ethernet.

Imtech

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