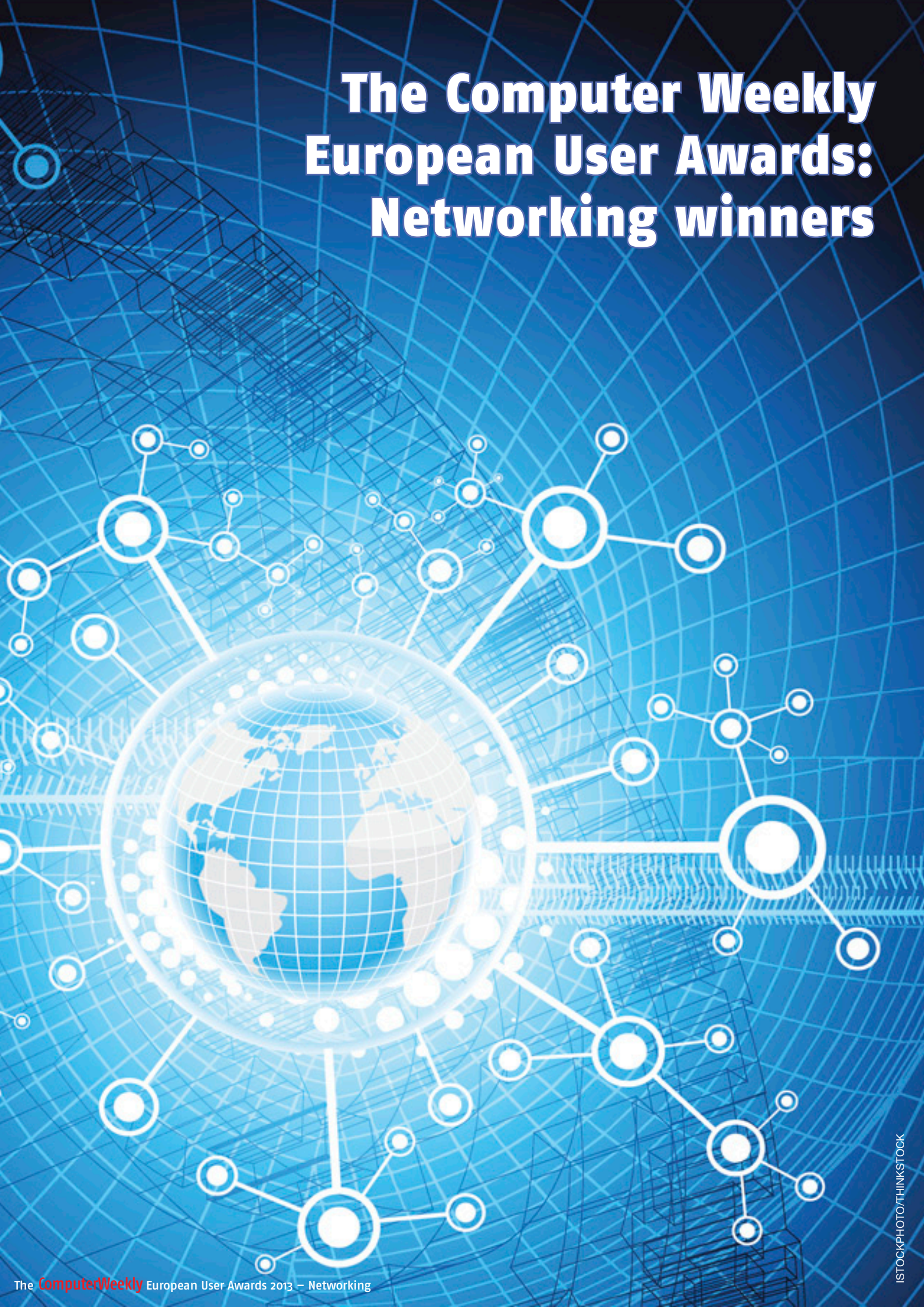


The Computer Weekly European User Awards: Networking winners



Computer Weekly European Awards for Networking – the winners

Jennifer Scott takes a look at what made the winning entries stand out from the crowd

Public Sector winner and Best of Show winner **Telestroke**

Entered by **Virgin Media Business**

How Telestroke Network hastens stroke treatment

In the UK strokes are becoming an increasing threat to our health. Every year an estimated 150,000 suffer from one and although seen as a disease only affecting the elderly, children and young people can also be victims.

However, treatment has continued to improve thanks to strong research in the area and specialist consultants knowing how to act fast when a patient is diagnosed.

Now technology can have a part to play, as proved by the Cumbria and Lancashire Telestroke Network.

In 2007 a national initiative was launched that said all patients should be able to access thrombolysis treatment – which dissolves clots in the brain causing a stroke – 24 hours a day, seven days a week. Although the intention was sound, not every area of the country had the facilities to make it happen.

“In Cumbria and Lancashire, only one in eight of our hospitals were able to offer the treatment and on a Monday to Friday office hours basis, meaning there were an awful lot of patients who could not access the service,” said Kathy Blacker, director of the cardiac and stroke network in the region.

“We may have had the specialists but spread over such a large county – 3,500m² – and serving 2.2 million people, we could not deliver on a 24 hour basis.”

The organisation began to look further afield and saw many places internationally were using telemedicine to treat illnesses remotely. This allowed consultants to be anywhere with a strong internet connection and video conference with staff and patients at a hospital, being able to diagnose and order treatment without being in the room.

There are 16 consultants on the rota for the regional strategic health authority of NHS North West able to treat strokes so the organisations decided to team with Virgin Media Business to make the new system possible.

“We now have video as a service running over our 10Gb core network in Cumbria and Lancashire,” said Gus Hartley, the programme lead for ICT infrastructure at NHS North West. “It is a powerful little beast used by a number of public services to put stuff into a private cloud. Having such a strong central resource meant linking up to the telecarts in the wards and the consults at home was very reliable.

“We have installed IP VPN routers with business-class broadband into the consultant’s homes which don’t touch the internet, making it a consistent service.”

On top of the secure network connections, consultants can also access important hospital systems through a custom desktop, enabling them to see images of CT scans, medical records and other appropriate information to help them diagnose a stroke quickly and order the treatment.

“We had such support from clinicians and the Stroke Association, everyone wanted it to happen and actually the IT part was the least complicated”

Kathy Blacker, Cardiac and stroke network

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The network is fully managed by Virgin Media Business on a 24/7 basis, which brings great peace of mind to the organisations involved.

“The managed service aspect is so helpful,” said Blacker. “If the system hadn’t worked at night without it there would be no-one to help, but they offer 24/7 to back-up nurses or other staff and troubleshoot any issues remotely.”

The network manager can even go as far as identifying when a telecart is not plugged in and being charged, enabling them to alert the hospital and make sure the equipment is ready for use at any moment.

The system is now up and running and has been used for more than 500 patients; identifying 210 cases where thrombolysis could be used. However, it took a long time to push the scheme through due to numerous bureaucratic processes associated with any healthcare scheme.

“We began exploratory work on this system back in 2008 but it took until July 2011 until it got rolled out,” explained Blacker. “We were lucky that the Department of Health was running a regional innovation fund and we were awarded £250,000 to get the system up and running.

“We had such support from clinicians and the Stroke Association, everyone wanted it to happen and actually the IT part was the least complicated. Once the tender process had finished and the contract signed, it only took seven months to complete the deployment.”

Blacker said there was more to the system than just saving lives as well, with costs for future care being cut significantly for every patient diagnosed and treated quickly.

“Not only has this helped save people from dying but also from not suffering long term conditions,” she said. “Obviously this is great for them and their families, but also it is great for the NHS who we have calculated with save £7m in long term care costs.

“The official figure for care costs may be £30,000 per stroke but if that happens to someone young, a lifetime of care will cost much more.”

Looking to the future of the equipment they have deployed, Hartley explained how the NHS was already utilising it for other services and more would come.

“We have added more diagnostic capabilities to the telecards and the video as a service can now be used for other functions, such as cancer networks or speech and language therapy,” he said. “It is a powerful service.

“We also now have access to the internet and a variety of user interfaces, meaning it could be used on Android devices or iPads, which will also have huge implications for the stroke service.”

Hartley added: “We have 30 projects right now on telemedicine but the key to these services is to work together with other organisations and do it strategically. Building services individually won’t happen but if you build a large strategic platform, there are a lot of possibilities.”

Blacker agreed the future possibilities of the deployment were an exciting prospect and everyone involved was pleased about the achievements so far.

“All the organisations are really proud of it,” she said. “It was very frustrating for them before when they knew there was a treatment that could be offered but if someone had a stroke on the wrong day, it couldn’t be given.

“Now the network is running, we are exploring our long term goals.”

“Building services individually won’t happen but if you build a large strategic platform, there are a lot of possibilities”

Gus Hartley, NHS North West

Public Sector honourable mention **London Olympics 2012 project**

Entered by **BT**

London’s Olympic network from BT

In the summer of 2012, all eyes were focused on London as the world’s greatest sporting event took over the capital city. With almost 27 million viewers of the Olympic Games opening ceremony in the UK alone, the pressure

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was on to get the whole event right, from building the venues in time, ensuring public transport could cope and winning medals, through to the underpinning technology.

After a long and hard-fought tender process, BT was awarded the contract at the end of 2007 to provide networking for all the sites, in London and across the UK, and to ensure everyone from press to athletes and, of course, the spectators, would be able to stay connected.

But it was not only the visitors to the Olympic sites who depended on the network. It was needed by millions of spectators around the world so they could watch and share in the experience wherever they were. With this mammoth task, four years for planning does not seem like a long time.

Tim Boden, the technical director of the Games – who is now back in his day job of solutions director for the Unilever account at BT – tells Computer Weekly about the long process to secure and deliver the contract.

“I joined BT in 2006, just after the invite to tender had been published. A long-list was released in March 2007, but it took a long time to be narrowed down to two, which I believe was us and France Telecom – or Orange Business Services as it is represented here,” he says.

“It took a further nine months of negotiations before we were selected in December 2007, meaning the whole process took about 18 months.”

Staffing a huge networking project

When the deal was done, BT became responsible for all the Olympics networking needs, from wide area networks (WANs) to local area networks (LANs), wireless LANs to mobile services, and everything in between.

This needed a strong team that, although grew in size throughout the process, began at a very modest number for such a mammoth task.

Planning began in the wake of the Beijing Olympics, with a team of between 25 and 30 staff, says Boden. Two years later, when it had finished the designs, the tech team grew to between 50 and 60 staff.

“When the first project needed to go live – in fact it was LOCOG’s (London Organising Committee of the Olympic and Paralympic Games) offices – in April 2010, we had 100 people, and when the Games were a year out we had grown again to 250,” he says.

However, it was in the final weeks and months that the staff numbers exploded and the challenge of managing people became one of Boden’s biggest issues.

“When we were starting to roll out for the test events, things really began ramping up and we had around 850 people for the duration,” says Boden.

“Four or five years out, it looks like a normal telecoms contract, albeit for a high-profile case with certain service levels that had to be guaranteed. However, the whole process of managing those people and training them up took the best part of two years’ planning to find a way of getting those additional 550 people completely functional in a three-month window,” he says.

BT decided to use only existing BT employees, rather than hiring in contractors, offering the roles as rewards for good performance in their normal jobs. However, this added another level of strain to Boden and his team, who had to negotiate that time off with existing line managers, get the staff ready and then faze them out when it was time to return to the day job.

The figures behind the deployment are sizable: more than 5,500km of optical fibre was laid across 94 venues; 11,500 fixed telephones were installed, making and receiving 500,000 calls; and the number of BT Wi-Fi hotspots in London hit 500,000.

All the equipment was provided by Cisco, as one of the lead sponsors of the project, with much returned afterwards. “We put the kit back into somewhere around 60,000 or 70,000 boxes,” says Boden.

But pressures were felt keenly by Boden and his team when time was not on their side.

“In some cases, we could plan around that, as with Horse Guard’s Parade,”

“Four or five years out, it looks like a normal telecoms contract, albeit for a high-profile case and with certain service levels that had to be guaranteed”

Tim Boden, BT

he says. “We knew that just six weeks before they were trouping the colour for the Queen’s Jubilee, after which we had to change it into a beach volleyball stadium capable of holding 15,000 and with the networking needed by the press and other dignitaries. That was planned almost to every minute, but definitely hour by hour.”

Then there were the road-based events, where routes were only closed off very close to the races, so BT had limited time to get everything up and running.

“Venues such as Wimbledon, where just three weeks before the men’s final had taken place, mostly went fine,” says Boden.

The wet spring put it behind schedule on the outdoor venues, however. “For example, in Greenwich Park things were very tight because we couldn’t get power to the venue.”

First-class delivery of Olympic coverage

Despite these hurdles, Boden and his team finished on time, and organiser LOCOG was very pleased with the results.

“BT’s major programme approach to right-first-time delivery, risk management and exhaustive testing ensured that all major milestones were delivered on or ahead of time, and as a key technology partner helped enable a first-class delivery of the Games,” says LOCOG CIO Gerry Pennell.

“The global media placed great demands on the IT and telecommunications infrastructure. Feedback from broadcasters was that London 2012 was the best Games service they had experienced – a great testament to the hard work and service levels provided by BT,” he adds.

“London staged one of the greatest Olympic and Paralympic Games ever. Beyond the statistics, technology had a profound effect on how people interacted with the Games, and none of that would have been possible without BT, whose commitment to these Games was quite simply spectacular,” says Pennell.

Skills and processes better for BT

But the London Games was always touted as one of legacy. What has Boden and BT left behind that can benefit the UK and its economy?

“All the fibre which supported broadcast at the time has become part of OpenReach – BT’s commercial ISP business – so if you go to Weymouth now, for example, you can get great fibre speeds where there wasn’t any before,” says Boden.

“The capacity on managed services was upgraded during the Games, meaning we have now been able to upgrade central capacity to support businesses.”

But for Boden, the real legacy of the Games for BT is on the inside of the company.

“Skills and processes will be the big legacy here for BT,” he concludes. “We have developed closer relationships within the business, developed better assurance methods, and improved security from working closely with a number of government agencies. BT will see the benefits.”

“Beyond the statistics, technology had a profound effect on how people interacted with the Games, and none of that would have been possible without BT”

Gerry Pennell, LOCOG

Best Technology Innovation winner: DANTE

Entered by **Infinera**

The DANTE link for Euro academics

Europe is renowned for its academic prowess, but technology is increasingly becoming a larger factor of moving research forward.

Not only do universities and other research institutions need strong networks

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to conduct their own studies, they also are working more closely together, collaborating on projects to garner expertise without having to be in the same location.

A key underpinning of this process is the Delivery of Advanced Network Technology to Europe (DANTE). The non-profit organisation was set up almost 20 years ago to provide a dedicated communications network to the more local networks run in each country, such as the JANET network in the UK.

“We focus on high quality and our services are more advanced than what is available commercially,” says Michael Enrico, chief technology officer (CTO) at DANTE. “For example, we have been running IPv6 on our network for more than 10 years.”

“Networks have a dual remit,” he says. “Yes, they have to provide high-quality internet access and data transit between institutions, but their other remit is to support research into networking in its own right.

“We are expected to be early adopters and at the cutting edge of these technologies, hence what we did with IPv6, or if you take something like multitasking, which we have again done for some time.”

There are 32 regional networks connected to the GÉANT network, run by DANTE, serving universities and colleges, as well as schools and some government organisations in select countries.

“We have 40-50 million researchers involved but they are like the eyeballs on the end of the network,” says Enrico. “DANTE is the backbone and it is something for each of the regional networks to build on, then with institutions on top of that.”

These researchers are in need of the best capabilities out there and in 2012 DANTE realised there was a need to update its own network to provide them.

“Our previous transmission was getting old,” Enrico says. “Requirements were progressing, such as the demand to light up networks with 100Gbps capacity, and it was time to refresh.”

DANTE is funded by the European Commission’s (EC) framework programmes and with funding from FP7, DANTE began to look at options to increase this capacity.

After following the strict procurement process, which seeks out the most “economically advantageous” solution, rather than the cheapest, the decision was taken to deploy Infinera’s DTN-X platform into the network.

“About a year ago this process resulted in us picking Infinera for our WDM (wavelength division multiplexing) optical layer,” says Enrico.

The technology was able to provide the much needed capacity to research institutions, but it was the management of this capacity that particularly impressed DANTE.

“At the end of the day, there were various reasons why [Infinera] were the winners, but from a technological perspective they were the leaders in photonic integration, bringing the many optical components [together] to do what Intel has been doing for the microprocessor for a number of years,” says Enrico.

“There is the lower power consumption to think of, and more reliability, but the flexibility is key. We work in large chunks of bandwidth, with an install capacity of 500Gbps, but thanks to the integrated OTN (optical transport network) you can provision smaller chunks, be it 100Gbps, 10Gbps or even 1Gbps.”

With the added control plane using GMPLS (generalised multi-protocol label switching), these capacities can be provisioned and allocated quickly to those researchers demanding it, who need things up and running as fast as possible.

“The problem in the past, especially with research projects, is they were dependent on funding so are unwilling to commit to technology until funding is signed off,” says Enrico. “When they get the go-ahead, however, they want the services to have been installed yesterday, so we have to act quickly.

“These Infinera products give us a great advantage.”

DANTE is about 90% through the deployment process at the moment, expecting to complete in May, but it is looking to the future, beyond European boundaries, of how it will be able to aid even more regional networks and

“We are expected to be early adopters and at the cutting edge of these technologies”

Michael Enrico, DANTE

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researchers worldwide.

“DANTE is also involved in various projects, promoting networks in developing parts of the world, funded by European aid programmes,” says Enrico. “Over the years, we have lent expertise so regional networks in Latin America could be set up, as well as in less-wealthy areas of the Asia Pacific and we connect to those parts of the world.

“But we also connect to our peers, such as Internet2 in the US, as we have capacity over the Atlantic and are currently working on the first 100Gbps network link.”

He adds: “Closer to home, year-on-year more people join, but there are not many more European countries left. We are starting to connect places from the former Soviet Union, such as Ukraine and Belarus, but while the European side grows slowly, other parts in the world are joining fast.”

The growing network and increasing capacity shows the change in the academic world of more collaboration and bigger projects; something Enrico and his team are keen to support.

“With CERN and its search for the Higgs Boson, there was lots of data collected in Geneva but then distributed to centres around the world,” he says. “It just reflects how big science has become a global enterprise.”

“When [researchers] get the go-ahead, they want the services to have been installed yesterday, so we have to act quickly”

Michael Enrico, DANTE

Private Sector winner CSR

Entered by Silver Peak

How CSR boosts WAN with SilverPeak

CSR may be headquartered in the UK – specifically Cambridge – but to compete internationally, it needs its sites spread around the world and connected with a strong network.

The semiconductor company designs chips based on location, connectivity and audio technology found in a number of mobile accessories.

It currently has 27 sites, spread across 11 countries in every region, and houses 2,300 employees under the company roof. Such an operation demands a network CSR can rely on.

“The challenge is always providing quality of service in our outlying offices,” says Mark Taylor, senior support analyst at CSR.

He says the company had always focused its strategy on having centralised services for all its different offices to access, rather than separate servers for applications at each location.

“When you grow organically out of one base – ours being in Cambridge – it is quite common to have everything centralised,” explains Taylor.

“Then, little by little, you may end up with services in other parts of the world too. This has happened to us through acquisition, but the aim has always been to keep everything centralised. This does create a challenge, though, for those sites that are far away or have a connection that is not very good.”

Selecting a WAN optimisation provider

CSR had already employed wide area network (WAN) optimisation technology to try to improve access to applications such as Perforce, Microsoft file services (CIFS) and computer-aided design (CAD) tools for its more far-flung operations, but knew it needed work.

“We already had WAN optimisation from Expand Networks, and this had fairly reasonable performance and they were good at their job,” says Taylor. “But when Expand was taken over by Riverbed, we needed to look at alternatives as we didn’t know if we would have the support we then needed.”

A number of issues had arisen during Riverbed’s acquisition of Expand, with Taylor claiming later iterations of the WAN optimisation software were full of “killer bugs that were very hard to pin down”.

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He decided to try out an alternative – and SilverPeak came out head and shoulders above its predecessor.

“Quite simply, SilverPeak outperformed them,” says Taylor. “Part of the attraction to SilverPeak was that it just works when it comes to the IP layer. It looks at the most basic layer and performs tasks like deduplication and compression simply.

“It is also application independent, so it works with everything. It was a doddle to install – you could just whack it in and you were off. Other solutions have blades for every app, which can be all well and good, but we just didn’t see the benefits for us.”

SilverPeak implementation challenges

After a month of testing – two weeks waiting for the correct hardware and two weeks trialling the software provided by SilverPeak – CSR decided to go ahead and roll out the VXOA software solution across its network.

“Deployment took three months and it wasn’t that straightforward,” admits Taylor. “It was not just about accelerating the network, but ensuring it coexisted with the network and that different configurations worked in parallel.

“That did have its own challenges. For example, with our small sites in Asia, where we couldn’t really justify sending out a member of staff, we had to engage with local people, and sometimes had non-technical people finishing the deployment.”

However, despite a slightly bumpy road to roll-out, CSR completed the deployment in January 2012. A year on, the company is pleased with the changes it has seen.

“When you work in IT, no news is good news, and the reaction so far has been no complaints,” says Taylor.

CSR has received positive feedback from customers it has specifically contacted about the service.

“All those previous bugs have been eradicated, backup across WAN is 10 times faster and the ability to check out depositories has been sped up. Add the compression and deduplication features, and I can see the benefits without asking,” he says.

Productive plans for the future

Taylor and his team are now able to look to the future, and with an optimised network, he already has plans to boost productivity and cut costs.

“We are looking at trying to deploy connections over VPN links, which obviously require a highly reliable and high-quality service,” Taylor concludes.

“We can really reduce costs by having VPNs from small sites, so I will be looking at this year, trying a couple of offices, and seeing what the experience is like before trying to roll it out further.”

Cloud Innovation winner Svenska Tågkompaniet AB (TKAB)

Entered by **Appeare Networks**

TKAB adopts mobile for Swedish railways

Public transport may be valued by millions, but there is no denying the frustrations for both customers and staff when delays hit a service. The major issue ends up being the lack of information to hand, meaning travellers and employees can feel helpless when faults occur, unable to know what needs to be fixed and when everything will be running smoothly again.

However, with mobile technology, these surprise occurrences can be lessened and problems on lines can be addressed faster than ever before.

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Mark Taylor, CSR

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One transport company which has embraced the advances in cloud computing and remote access via mobile devices is Svenska Tågkompaniet AB (TKAB), the rail operator of Tåg i Bergslagen, X-trafik and Värmlandstrafik in Sweden.

Established in 1999, the company runs 56,000 train services every year, serving five million customers. However, it has a relatively small number of employees, standing at 350.

Before 2005, communications between staff at TKAB was paper-based, leading to a lengthy process and a lack of real-time information for those working on the railways. It decided to adopt rugged Microsoft Windows devices soon after and instantly saw benefits, both in money savings and efficiency.

“But this solution had given us a number of challenges,” explains Håkan Jarl, chief operating officer (COO) of TKAB. “The devices were expensive to maintain, service and replace, the application was limited and the capabilities of consumer smartphones had come on in leaps and bounds with iPhone and Android leading the way.

“We had new requirements for new applications as well so we started looking at the market.”

Knowing mobile could make TKAB a smoother operation, the search began for a new solution. However, the operator had very specific needs.

“There were the large systems integrators of course, but our budget constraints and our project scope didn’t really fit working with those guys, so we looked at a very small group of specialist suppliers focused in this area” adds Jarl.

TKAB settled upon Appear after seeing its work with other transport firms and discovering it was able to offer a cross platform solution, stopping them being locked into one device or operating system (OS).

“Appear also proposed us to join a large European Initiative, MobiCloud, which is a broader program led by the European Commission (EC), aimed at building a number of enterprise mobility applications for industries such as ours in the cloud, says Jarl.

“We were keen to leverage the latest research that comes from that project and learn from mobile deployments in other countries and industries.”

TKAB decided to adopt a number of solutions based on the Appear IQ platform. At the back-end is a cloud based mobility platform which has enabled mobile clients to be rolled out on Android and iOS based devices to 330 employees, while 30 users in its control centre, as well as external contractors, have got access to a web application.

The operator has then built its own suite of applications on top of these solutions giving better functionality and efficiency to the workforce than ever before.

Apps include a team communications system, which includes live mapping of staff to find the nearest person to help or fix any issues, a reporting solution so damage reports get to the right people as quick as possible – with added photo capabilities – and an app for helping maintenance workers get damaged trains booked in fast, with the capability for other employees to check the progress on the job.

There is also a live traffic reporting programme, live timetables and traffic alerts so everyone is notified of any delays on the network.

“Behind the simplicity of the solution is masked a lot of complexity,” says Jarl. “The whole mobility solution is integrated with our back office information systems, as well as systems from the national rail authorities to provide for example live traffic information.

“The context capabilities of the platform can be used to decide how information is distributed based on who is logged in, what their position is and current assignments.”

He adds: “The platform also provides information back to Trafikverket and Tågkompaniet to ensure compliance to our SLAs - for example helping TKAB avoid heavy fines by ensuring that reports are correct and consistent.

The deployment of these systems took TKAB and Appear six months and

“The devices were expensive to maintain, service and replace, the application was limited and the capabilities of consumer smartphones had come on in leaps and bounds”

Håkan Jarl, TKAB

despite fears due to its previous mobile experiences, the operator said it was one of the best run IT projects it had ever embarked on.

“The main difficulty with mobile projects is the satisfaction of the end users (our employees) who are relying on the system day in and day out for their work,” explains Jarl.

“For this project we relied on specific groups of “super users” that we recruited at a very early stage (when designing the application), so that they could contribute to the development process and the training programs, and ultimately, support our implementation to the entire organisation.”

TKAB is currently buying the mobile devices for its staff, but in time this will change.

“A goal of the project is that both employee’s own devices and company-owned devices could be used,” he says. “We can let employees keep the devices after 12 to 18 months and this acts as a great incentive for them to take care of [them].

“We see this as a very smart way to avoid having to invest in expensive ruggedised devices.”

Now the company is enjoying the benefits, estimating it has saved more than €100,000 alone in administrative work it would have spent without the new systems.

Overall infrastructure costs have also been cut by 40%, but the biggest saving is the ability to reallocate resources and manage them more efficiently – something TKAB predicted would save €800,000 annually.

“The beauty of the mobile data platform we now are using is that it’s designed to accommodate more systems in our IT infrastructure and even our business partner’s infrastructure over time,” concludes Jarl.

“Following the success of this first phase, new areas will be addressed, [including] mobilising systems such as Remote Rolling Stock Management that provide communication between the rolling stock and the operations centre and monitor the status of the vehicle. We would then not stop at the operations centre, but instead empower our mobile train drivers with this communication.”

TKAB was the winner of cloud innovation of the year in Computer Weekly’s European user awards for networking. ■

“The beauty of the mobile data platform we now are using is that it’s designed to accommodate more systems in our IT infrastructure... over time”

Håkan Jarl, TKAB

