

Case Study Digest

ICT: Greening the Public Sector



The UK technology sector is:

- ▶ improving the efficiency of its own products and services
- ▶ helping to reduce emissions across the wider economy
- ▶ focusing action where it matters: the public sector, our biggest customer

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Foreword

We warmly welcome the publication of this Intellect-led Public Sector Case Study Digest.

This digest is an excellent document in its own right – highlighting the many innovative ways public sector organisations are tackling the challenge of delivering the Greening Government ICT Strategy and contributing to the wider sustainability agenda.

The digest also very helpfully reinforces the consistent and positive messages emerging from the public sector on the progress with the Greening Government ICT journey.

Its publication follows the government's own Greening Government ICT One Year On Report. We are beginning to make good progress, but continued collaboration across Government and Industry is crucial if we are to achieve the targets we have set.

Publication of the Digest supports our strategy going forward, as we begin to embed best practice and use Green ICT solutions to improve the operational efficiency and effectiveness of our public services. Again, government and industry working together in partnership will ensure our success.



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Introduction

The ICT sector is in a unique position. On the one hand our products and services use energy, and we must do everything we can to optimise efficiency and improve performance. On the other hand, our offerings help other sectors to work more efficiently and reduce their emissions. Some technologies enhance existing processes and drive incremental change; others are more transformational, enabling new ways of working, driving dematerialisation and leading to new business models. Their emissions reduction potential is much more dramatic. So, ICT and related technologies play a vital role in helping us achieve our emissions reduction targets, both in the UK and the EU.

In fact, we believe that **the intelligent use of technology is the only way that we can genuinely decouple economic growth from energy consumption**. Therefore, ICT will be a critical enabler of the low carbon economy. This position is reinforced by the European Commission's current initiative on ICT for Energy Efficiency, led by DG Infosoc, which supports our view that ICT has a very strong part to play in achieving the 2020 targets for the EU.

Technology not only has an important role to play in delivering energy and emissions savings, it is also an essential tool that can be used to improve operational efficiency. In fact, in many cases, environmental benefits are a side effect of projects that were primarily designed to reduce cost. The government's Operational Efficiency Programme aims to deliver £15 billion in savings by 2014. These savings will be spread across five key areas in the public sector, of which ICT is one. We know that ICT will be key to delivering a number of these efficiency improvements, and we can anticipate that significant environmental benefits will also be delivered by using ICT to replace physical processes with virtual alternatives, improve mobile working, model policy outcomes and optimise processes.

In previous papers, Intellect has explored the role of the UK technology sector in tackling climate change, most recently focusing on what ICT and related technologies can do in the three sectors that account for the vast majority of UK emissions: transport, buildings and energy supply.

Now we want to focus on how our technologies can help the public sector – the biggest buyer of ICT in the UK and therefore our members' most important customer – by demonstrating some of the good work that is already being done across government through real life case studies. Firstly, we look at ways in which ICT and associated technologies are being used intelligently across the whole public sector estate to reduce emissions, then we explore the more familiar topic of greening ICT per se.

This booklet contains a selection of shortened summaries only. For full-length versions, a directory of all our case studies, and links to other work we have done in this area, please see the list on the back page.

Part one: Greening the public sector through ICT

Green ICT is not just about reducing emissions caused directly by ICT equipment – the 2%. In fact, ICT has a much more important role in helping to tackle the other 98% of emissions.

In our High Tech: Low Carbon report (February 2008) we pointed out that the intelligent use of ICT in other sectors has the potential to reduce carbon emissions many times in excess of the total emissions attributable to ICT itself. This view is supported by a number of independent bodies. A report from the WWF identifies ten uses of ICT that could together save at least a billion tonnes of carbon dioxide by 2020. Analysts McKinsey estimate that 7.8 billion tonnes could be saved by the use of ICT in buildings, power, transport, manufacturing and teleworking. GeSI (the Global eSustainability Initiative) estimates that the intelligent use of ICT could reduce overall emissions by 15%, dwarfing the 2% emissions directly attributable to ICT.

In fact the WWF go one step further in their 'From Fossil to Future' report, advocating an increase in the footprint of ICT if it will deliver larger savings elsewhere. A local government study in Sunderland explored different emissions reduction scenarios. Perhaps unexpectedly, in the best case scenario (ie the one that delivered the largest overall reduction in emissions) the emissions from ICT actually increased significantly (see below). According to the WWF, "a single-minded focus on absolute reduction targets of CO₂ from ICT would obviously not be very strategic and could be counterproductive."

The use of ICT in greening government operations is not limited to streamlining the way that services are delivered to the end-user. The intelligent use of ICT can reduce energy consumption right across the government estate, from building management to fleet logistics. Service delivery is therefore only one of four areas that we have highlighted where ICT and associated technologies can have the most impact in terms of operational processes. These are explored in turn in the following pages.

- A. Service delivery: including the administrative processes behind delivering services to the citizen, including back-office operations.
- B. Mobile working: for example, secure network infrastructures and broadband enable remote or home-working.
- C. Intelligent transport: bus lane management and transport smart cards make public transport more attractive, road charging reduces congestion and fleet logistics, tracking and telematics optimise vehicle efficiency.
- D. Smart buildings: energy management technologies including smart meters, sensors and low energy lighting optimise the energy efficiency of buildings.

Greening the public sector through ICT: A - Service delivery

Introduction

As mentioned previously, technology can have a dramatic effect on operational efficiency within the public sector estate, and in doing so, on energy efficiency. In fact many solutions are implemented with cost savings or service improvement in mind, and environmental benefits are a secondary reward.

All public sector organisations are responsible for delivering services to citizens or businesses, whether a local authority issuing parking permits or DVLA administering car tax renewals. Traditionally, all such processes have been paper-based and many, such as the renewal of car tax discs, have required face-to-face transactions. We already know that the cost of an electronic transaction is only a fraction of the paper-based or face-to-face equivalent. However, these financial savings are almost invariably accompanied by environmental benefits which often go unnoticed.

Sometimes these benefits are enjoyed by the consumer – such as the option to renew tax discs online, where an automatic transaction that takes a few seconds, and which can be done from home by anyone with an internet connection, now replaces a physical trip to the post office laden with all the correct documentation (or two trips in many cases because people fail to take exactly the right documents with them the first time).

Sometimes these benefits are enjoyed by the service provider – for instance, Highland Council (see below) is making significant savings from improved efficiencies. The good news is that such cost savings can be passed on to ratepayers or fund upgraded services. And sometimes benefits are enjoyed by public sector employees – in Wakefield (see opposite) the intelligent use of ICT has reduced commuter miles by 127,000 per annum.

One pattern that seems to be recurrent in successful green ventures by public bodies is that in many such cases a partnership approach has replaced the traditional supplier-customer relationship. For instance, BT has been closely involved as a major partner in Suffolk's campaign to be the greenest county in England. The huge advances made on this initiative despite a very limited budget demonstrate that **by working closely together, the private and public sectors can achieve far more than they could individually.**

Service delivery case studies

Sunderland: Best case scenarios for carbon reduction

Best Foot Forward undertakes cost benefit and carbon analyses for a wide range of bodies, many within the public sector, on the implementation of green technologies. One recent project with the GLA calculated whether there would be a financial benefit from adopting electronic conferencing. They were able to demonstrate that adopting video conferencing technologies would deliver very substantial cost savings and as a result it has since been successfully implemented. Another project in Sunderland explored different emissions reduction scenarios and identified a best case scenario (i.e. the one with the greatest overall reduction in CO₂) in which the emissions from ICT actually increased by more than 4000%. The reason for this was that the emissions from ICT were tiny in relation to the savings it could deliver so that even after this dramatic increase the footprint of ICT was still only 0.2% of the whole. This particular scenario used ICT to provide an online solution that reduced travel by 50%, equating to an overall CO₂ reduction for the organisation of 30%.

HEART: eCARE in Scotland

HEART – Highland Electronic Assessment Recording Tool allows electronic offline capture of assessment information in locations across the highlands, negating the need for network or wireless connectivity by practitioners in the field. HEART is being rolled out over Highland Council and NHS Highland, covering a population of 200,000 widely dispersed over one third of Scotland's land area. The clinical objective is, where consent is given, to store and share data through a central repository for use by workers from multiple agencies, and to provide a mobile working solution that securely stores data offline until workers return to the office. This initial approach focuses on the elderly. The result has been a dramatic improvement in efficiency because transactions and journeys by different service users and agencies are no longer duplicated because the same information is no longer collected multiple times by different agencies and instead is shared between them.

Wakefield: Worksmart

Wakefield Metropolitan Borough Council has implemented an initiative called Worksmart to improve staff productivity, whether working from home, remotely or in the office. A power failure in 2006 had highlighted resilience issues so Wakefield asked Microsoft to deliver a new IT solution. Microsoft implemented a 64bit architecture delivering more scalable, higher performance computing solutions for 8,000 staff. As a result of improved efficiency from this solution, Wakefield saved £4 million in revenue, raised £7.3 million in receipts from asset disposal and improved productivity by 15% in some areas with cashable savings of £81,000 per year in e-Services alone. The number of office buildings could be reduced from 34 to 6 and commuter miles have been reduced by 127,000 per annum, a saving of around 35 tonnes of CO₂. In short, the new computer network infrastructure at Wakefield has delivered notable economic and environmental gains.

Greening the public sector through ICT: B – Mobile working

Introduction

Responsible for around 25% of CO₂ emissions, the transport sector is one of the biggest contributors to climate change in the UK. In the longer term the objective is to move to low carbon and zero carbon vehicles, but while we are making this transition the focus needs to be on reducing emissions from the existing fleet.

ICT provides a number of solutions which fall into two groups, travel substitution and intelligent transport (covered in section C). The studies below deal with technologies that can remove the need for travel altogether. Secure intranet technologies and broadband allow people to access all the information they need to work effectively from any location. Broadband also enables the widespread deployment of electronic conferencing which can remove the need for travel altogether. It is particularly effective in large organisations with operations spread between offices in different geographical locations.

Many large private sector organisations have generated significant financial savings by implementing mobile working across their operations and the use of travel substitution technologies is also rising within the public sector. The important lesson to learn is that in the most successful cases the new technology was rolled out in conjunction with a revised travel policy.

Mobile working case studies

Westminster: Members' portal

Westminster City Council provides local government service to 232,000 people and over 47,000 businesses. The Council wanted to upgrade their system to improve efficiency and user interface, putting information at members' fingertips through a Members' Information Portal. Many authorities use such portals, but Westminster wanted its portal to connect with the Corporate Geographic Information System (GIS). A pilot group of council members worked with Artemis and the corporate GIS team to create a user-friendly solution easily accessible to councillors with varying IT skills. The portal used Windows SharePoint Services.

The resulting secure extranet, accessible to elected members, gave them location-specific information, enabling them to work more proactively on issues of concern, respond more effectively to enquiries and network with stakeholders across the area. It enabled councillors to work effectively from home or remotely, dramatically reducing transport both of people and documents. It is the first portal to be integrated with GIS mapping.

Westminster again: Flexible Location Working (FLoW)

Westminster City Council wanted to introduce desk sharing to use their office space more efficiently and worked with BT to deliver flexible working. Three work-styles favoured by the Council were Flexible Office Worker (someone working from the office but sharing a desk), Frequent Home Worker (someone who worked from home at least one day a week), and Fixed Desk Worker (who did not share a desk). The principle barriers were not technological but cultural and behavioural, but the excellent business case of £3 million savings in two years provided a good incentive to drive the project forward. Opting for a 70% desk:staff ratio freed up four floors of space in City Hall which could then be sub-let, funding a full refurbishment of office space for the 2,000 employees still based there. Next steps are to turn attention to other council buildings across the borough. BT was well-equipped to advise Westminster – its flexible working programme was one of the largest implementations of its kind in Europe and saves the company around £500 million a year in property costs. BT has also achieved an amazing 99% return from maternity leave and extremely high staff retention rates.

CRS: Mobile working in healthcare

The CRS (Care Record Service) is part of the national programme for IT (NPfIT) and provides clinicians with access to patient records. However, until recently they could not access the system away from base. A pilot project with Dell, in association with Intel, implemented a mobile working trial developed specifically for community-based clinicians and therapists. This solution enabled the user to access the care record service, email and all other normal online facilities live and in real time from remote locations. Although the objective was to improve productivity by allowing clinicians to make use of what had previously been 'dead' or unproductive time and optimise their schedules, there was a significant environmental benefit in the reduction of travel. Previously clinicians had to visit base each morning before visiting patients to check the day's appointments. In many cases the subsequent journey to visit patients could reverse the one they had just travelled. Instead they now access this information from home and travel directly to their patient. Similarly they no longer need to return to base to complete their notes, saving another journey.

Greening the public sector through ICT: C – Intelligent transport

Introduction

In the previous section we explored some of the technologies that reduce the need to travel. This section explores the use of technology in making essential travel as efficient as possible. A range of ICT-enabled technologies optimise efficiency and reduce the environmental impact of transport. These include e-ticketing, road pricing and congestion charging, machine to machine (M2M) communication, satellite navigation, logistics, route planning, dynamic route guidance, intelligent speed adaptation, cruise control and a whole range of telematics applications. Many of these are described by the umbrella term “intelligent transport systems or ITS”.

Intelligent transport systems are tools that combine computers, databases, maps and sensors to assist drivers and improve transport infrastructure. They are particularly effective in tackling congestion and non-optimal driving behaviour. The European Commission has found that up to 50% of fuel consumption is caused by these two factors alone and since the UK suffers the worst congestion in Europe our road system is an ideal candidate for ITS.

Intelligent transport case studies

IVHM: Round the clock MOT for military vehicles

IVHM or Integrated Vehicle Health Monitoring is a pioneering system being developed by BAE Systems in partnership with Rolls Royce, Thales, Boeing, Meggitt and Cranfield University. Simplistically it joins together a chain of maintenance and support technologies which detect faults in military vehicles before they cause damage. As a result maintenance is done when needed, servicing and replacement requirements become more predictable and the likelihood of catastrophic failure is much reduced. Fault sensors, corrosion sensors and acoustic crack detectors monitor the condition of vehicle parts, radar systems monitor engines for foreign bodies and performance and intelligent fault diagnostic technologies (IFDT) use software tools to diagnose faults. The information is communicated to maintenance crews via a logistics infrastructure. The system will dramatically improve efficiency by optimising vehicles, parts and labour but will also save many millions of pounds a year.

London: Congestion charging

IBM UK now manages the London Congestion Charge, which has reduced emissions in the zone by 15-20%. IBM also helped implement an automatic road charging system in Stockholm which dramatically reduced congestion. Vehicles were automatically recognised and charged as they entered or left the city centre during peak hours. By the end of the trial, traffic was down nearly 25% with an estimated reduction in CO₂ of 41,000 tonnes. Public transport schedules were changed to reflect the faster travel speed.

Oxford Buses: Fuel savings through telemetry

Oxford buses trialled an ITS solution to improve fuel performance. The trial used a combination of driver training and telematics. The training program was called RIBAS, an acronym of Revs, Idle, Braking, Acceleration and Speed. The telematics device measured each of these from the driver unit within the cab. Parameters were set for each and when broken, the driver was alerted by a beep and a red light. Fuel readings were measured daily for 12 weeks on all trial vehicles. Significant fuel savings became apparent very rapidly. Although driver training alone produced initial fuel savings, this could not be maintained without the policing of the telematics device which provided a constant reminder for drivers. As a result of this success the system was rolled out to the entire Oxford Bus Fleet. Almost a year on, fuel savings have been maintained.

Scotland: Transport modelling

Atkins has developed sophisticated modelling tools to enable transport planners and decision makers to identify and implement transport strategies with the least environmental impact. These calculate operational emissions from the transport network, using inputs from traditional transport models and also accommodate additional factors such as behavioural change programmes and financial incentives. The tools help policy makers assess the effectiveness of different policy options in reducing transport related emissions.

Oyster: Enhancing public transport

The Oyster card is an electronic public transport ticketing system for London that was implemented in 2005. Whilst primarily intended to deliver improved efficiencies and speed up passenger transit through traditional station bottlenecks, it has delivered a number of environmental benefits. Firstly, it has made public transport options both simpler and cheaper and as a result bus and tube journeys have become more attractive to the user. Secondly, the system feeds back passenger movement data which facilitates forward planning and helps to optimise the available capacity, thereby delivering further system efficiencies.

Dartford: Intelligent public transport

ACIS is implementing Intelligent Transport Systems in Dartford, UK to encourage the use of public transport. The system currently being adopted provides residents with an electronic display in their homes which tells them when the next bus will arrive. Buses also use TLP (traffic light priority) to improve speed through traffic lights and bottlenecks if necessary, improving reliability and regulating the service.

Greening the public sector through ICT: D – Smart buildings

Introduction

Energy use in buildings accounts for around half the UK's 150 million tonnes of carbon dioxide emissions. There is scope for ICT and associated technologies to play a major role in reducing the emissions related to our public buildings through the application of smart building technologies. These include building and energy management systems, metering technologies, environmental sensors, lighting control systems, energy auditing and optimisation software, and communication networks.

Building management systems (BMS) control building services automatically to maintain a comfortable working environment with minimal waste. Data on occupancy and space is combined with information from sensors, and a computer adjusts the controls for temperature, ventilation and lighting to maintain optimum efficiency. Energy management systems work in a similar way to BMS but may operate on a much larger scale – for instance across a large, multi-building operation such as a hospital, university or local authority.

Metering technologies include applications that intelligently monitor energy use in buildings and pinpoint areas of waste. Sensors can detect movement and ambient light levels and adjust lighting accordingly. Low energy lighting is now widely available, eg, LEDs, which are four times as efficient as traditional incandescent bulbs and yet have similar brightness to halogen lights.

Smart building case studies

EMS: Making buildings 'intelligent'

Siemens have been installing building and energy management systems (EMS) for some years and have made thousands of buildings 'intelligent', saving hundreds of thousands of tonnes of cumulative CO₂ emissions across Europe. In one case, Siemens building technologies optimised the energy consumption of an indoor swimming pool, saving the operators over £140,000 a year. Siemens' industry-leading technology uses specialised algorithms to calculate ventilation and heating requirements and has already optimised energy efficiency in thousands of buildings world-wide. In Germany, Siemens is a contracting partner for over 1600 buildings, delivering savings of over £115million and almost 650,000 tonnes of CO₂ over the contract term.

National Theatre: LED lighting

Philips and the National Theatre are implementing a programme to replace this landmark public building's lighting scheme with a state of the art, dynamic and energy efficient design. The first phase of the LED lighting solution provided by Philips focuses on the exterior, giving the National Theatre a spectacular colour palette, illuminating new areas and providing a new video wall installation on the roof to replace the old dot "seefact" display. The second phase will concentrate on revitalising internal lighting and improving efficiency, and there will be an ongoing programme of improvement as Philips continues to develop even more sophisticated lighting technology. The LED solution will not only provide dramatic visual enhancement, it will reduce the energy needed to light the iconic exterior by 70% and deliver savings of £100,000 per year.

Alnwick: DEFRA's Lion House

Lion House, completed in 2008, was designed with sustainability in mind. In addition to a number of ecodesign features like a photovoltaic array and high insulation, a building management system was also installed to optimise building performance. This monitors and controls heating, ventilation, lighting, power and hot water. It produces a monthly report to help monitor performance. A digital display of real time energy use and carbon emissions shows staff members how their actions affect the building's performance. The combination of these technologies and their high visibility is particularly effective in changing behaviour.

BACS: Multi-building energy management

Siemens implemented a Building Automation and Control System (BACS) in a hospital which operated on three separate sites. Following a full energy analysis, opportunities for savings were identified and evaluated. A web-based Energy Management System (EMS) provided full intelligence of the operation of the heating systems together with sophisticated control mechanisms, so that energy use could be optimised. It also continually sought further reduction opportunities. The result was that energy savings in excess of 30% for heating and electricity were achieved, with an ROI of less than six months.

Part two: Greening public sector ICT - Introduction

Back in 2007 Gartner estimated that ICT was responsible for around 2% of global CO₂ emissions. Within offices, however, the Carbon Trust estimates that ICT consumes around 15% of the total electricity used, and anticipates that this could even rise to 30% by 2020. The government office estate is no exception and while ICT is an indispensable part of the operational infrastructure, there is certainly potential for improving energy efficiency.

Therefore, in July 2008, the Cabinet Office published its 'Greening Government ICT' strategy, which set targets for the energy consumption of ICT within the government office estate to be carbon neutral by 2012 and for the whole lifecycle of government ICT to be carbon neutral by 2020. Key targets of the strategy include extending the life of ICT assets, reducing the overall number of devices, implementing power management options, mandating green printing defaults and improving server utilisation. 'Greening Government ICT One Year On' (published in August 2009) has provided granular feedback on progress made within departments.

The following case studies illustrate how departments, agencies, local authorities and other public institutions are successfully reducing the carbon footprint of their ICT estate, both through the application of the Greening Government ICT strategy and through other complementary approaches.

Case Studies – Greening public sector ICT

Edinburgh: Optimising IT infrastructure

The City of Edinburgh Council provides a range of services from more than 70 principal locations to 480,000 citizens, businesses, and organisations in Edinburgh and Lothian. In 2005, the City of Edinburgh Council embarked on a service-led IT transformation programme with its outsourcing partner BT. The result was a virtuous circle with reductions in service costs leading to efficiencies, which then generated further opportunities, leading to more service improvements. In addition to significant cost saving (£6.4 million over five years) and dramatically improved service, there was a wide range of environmental benefits, for instance reduction in office space and associated heating and lighting as 2,500 information workers were moved into one building from 18 sites. The redundant sites were then sold, generating capital receipts of £40 million.

Flintshire: Virtualising IT

Beyond its statutory obligations to increase energy efficiency and reduce carbon emissions, Flintshire is taking a proactive stance on climate change. For the growing IT infrastructure, the emphasis is to eliminate 'white space' in servers and storage devices via consolidation and virtualisation. Flintshire will remove a total of 80 physical servers from its infrastructure by virtualising them to VMware partitions on six IBM System x3950 servers. This will remove the costs associated with 80 physical servers, as well as their significant lifetime carbon footprint; Flintshire now buys around five physical Intel processor-based servers each year, compared with more than 40 in previous years; the use of server virtualisation on the IBM System x platform supports ultra-rapid provisioning of new servers, with lower total power and cooling requirements.

Perth and Kinross: Virtualising IT infrastructure

Perth and Kinross Council wanted a more cost-effective delivery environment for a growing portfolio of citizen-centric services, some of which required multiple servers consuming large amounts of electricity. The council adopted a virtualisation strategy where multiple, software-based servers are stored on a single machine and opted for Microsoft's Windows Server® 2008 operating system with Hyper-V™ technology. Savings in the first year will be £100,000 because the cost of virtualisation at £50,000 is only a third of the cost of buying new physical servers (£150,000). This approach will also deliver annual savings of £40,000 in electricity costs and power savings of 350,000 KWh, equating to a reduction in CO₂ emissions of 151 tonnes. Further reductions from 111 servers to 17 will enable the council to decommission an entire data centre.

Peterborough City Council: NightWatchman

NightWatchman is a software programme that enables computers that are left on but not in use to be switched off centrally, safely and remotely. Peterborough City Council has 4,500 staff and estimated that 30% of PCs were being left on when not in use, costing the authority between £40 and £60 per machine. Even after an education programme, machines were still being left on because staff found it hard to differentiate between stand-by and off-modes. The authority implemented NightWatchman across its entire ICT infrastructure. It achieved a return on investment within 3 months, cost savings of £50,000 per annum and a reduction of 250 tonnes of CO₂ emissions per annum.

Queen Margaret University: Holistic ICT

Queen Margaret University, with 4000 students and 550 employees, needed a flexible IT infrastructure to support staff, students and visitors in its new campus. The system had to be exceptionally energy efficient and generate minimal heat in order to work in the natural ventilation used throughout the new building, which is designed to be sustainable. It also had to be easier and more cost effective to manage. Wyse delivered a thin computing infrastructure solution using Wyse V50 thin clients. Information services were centralised on data centre servers running Citrix Presentation server, and Citrix Access Gateway enabled home working for staff and students. The result was that in addition to making personal data, applications and learning resources fully accessible, the thin clients delivered significant energy savings, consuming one tenth the energy of standard PCs and emitting much less heat. Remote working was also fully enabled. Support and maintenance were simplified, the learning environment was more flexible and personalised and security was improved.

Liverpool Women's NHS Foundation Trust: Virtualising IT

Liverpool Women's NHS Foundation Trust is England's largest women's healthcare provider. As operational requirements became more complex the Trust's IT infrastructure grew more challenging. The whole IT infrastructure was upgraded with Dell PowerEdge servers using VMWare to allow the creation of virtual machines within one server, which run applications independently of each other on a single machine. 30 physical servers were reduced to four. More services are now delivered using less hardware and 70% less power. Cooling costs have also been reduced because the server estate now generates less heat.

For more Green ICT case studies please visit www.intellectuk.org/casestudies

Intellect works with and for members to:

- ▶ develop the UK's capability to support a strong and growing technology sector
- ▶ improve their business performance by
 - providing insights into markets and supply chains and constructively influencing their development
 - engaging with government and regulators to create the most favourable environment for growth and employment
 - maintaining the industry's reputation and championing its strategic importance
 - sharing and promoting best practice

For more information visit www.intellectuk.org

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