



SMART White Paper

SMART Hosting Solutions

Reducing carbon footprint

The double challenge faced by businesses today

With the mandatory Carbon Reduction Commitment (CRC) legislation affecting many public and private sector businesses today, the ability to capture and report on carbon emissions and then actively demonstrate a plan to reduce them substantially is now more essential than ever before. Not only are today's CEOs tasked with running a profitable business but they are under growing scrutiny to measure the impact of their operations on the environment at large.

At the same time, the current economic climate and central government spending squeezes are affecting both private and public sector organisations as they face the continual challenge of doing more with less, maximising productivity without additional headcount and reducing capital and operating expenditure across the board.

Many companies are turning to technology, in particular, workforce management solutions to help them achieve agility and cost efficiency from their greatest asset – their people.

This white paper outlines the benefits of deploying such solutions in a hosted and green environment. SMART believes this approach can save every business £100,000's and up to 5.5 tonnes of CO₂ a year. This document concentrates primarily on the environmental benefits but also touches on SMART's own approach to doing business in this area backed up by customer examples.

Reducing carbon footprint is top of everyone's agenda

By 2050, the British government is committed to reducing carbon emissions within the UK by 60% from 1990 levels and is imposing legislation on companies to help it achieve these ambitious targets. The Carbon Reduction Commitment (CRC) Energy Efficiency Scheme was created by the Department of Energy & Climate Change, established in 2008 to manage all aspects of UK energy policy and responsible for tackling global climate change on behalf of the UK. The CRC is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. These organisations are responsible for around 10% of the UK's emissions.

The scheme features a range of reputational, behavioural and financial drivers which aim to encourage organisations to develop energy management strategies that promote a better understanding of energy usage.

There is an annual performance league table that ranks participants on energy efficiency performance. Together with the reputational considerations, the scheme encourages organisations to develop energy management strategies that promote a better understanding of energy usage.

Organisations are eligible for CRC if they (and their subsidiaries) have at least one half-hourly electricity meter (HHM) settled on the half-hourly market. Organisations that consumed more than 6,000 megawatt-hours (MWh) per year of half-hourly metered electricity during 2008 qualify for full participation and must register with the Environment Agency, who is the administrator for the scheme.

Organisations that do not meet the 6000MWh threshold will have to make an information disclosure of their half-hourly electricity consumption during 2008. Participants, including supermarkets, water companies, banks, local authorities and all central Government Departments, will have to comply legally with the scheme or face financial and other penalties.

As a result of strict CRC legislation, there is now a significant argument for reducing the amount of CO₂ output by business, not just to reduce costs but to reduce the impact business has on the environment.

Coping with big budget squeezes in a changing work environment

Today's challenging economic times are affecting everyone, especially the public sector which probably faces austerity measures not seen in at least a generation. The NHS, for example, needs to increase efficiency and look at evolving workforce practices. As well as a duty of care to patients and staff alike, the NHS has the delicate balancing act of driving efficiency to get the most from its staff, while maintaining care standards.

The situation has been exacerbated by the widespread adoption of more flexible working practices in both private and public sector organisations. It is generally acknowledged that the key to reducing absence is promoting staff wellbeing and one important aspect of this is to ensure that staff are able to maintain a good work/life balance and receive the correct recognition and payment for the work they do. To manage this many organisations have installed workforce management systems such as eRostering and Time & Attendance. Within the NHS Bank Management has also been adopted to help manage agency staff requirements.

The most significant outcome of deploying workforce management solutions has been the financial impact on healthcare organisations. SMART's extensive experience of working with the NHS over many years, together with data gathered by its Workforce Efficiency Assessment (WEA) tools give real statistical evidence that eRostering and Bank Management can save Trusts £100,000's, essential when local authorities and councils are being squeezed to the limit by central government spending cuts.

The move towards hosted services

Recently, CIOs have been looking for new ways to reduce their capital spend and a company's IT estate has come under the spotlight as an area to cut costs. Generally, as a company grows so does its IT estate although any associated costs are not necessarily supported by bigger budgets or a larger IT department. As a result, hosting has become an increasingly popular and cost-effective alternative. Why buy extra servers or other devices you might need to support new software, then bear the brunt of extra costs to upgrade and finally replace them when you can access all the functionality you need, 24 hours a day, from someone else in a totally secure way?

Suppliers of Workforce Management systems like SMART offer a comprehensive range of hosting services designed to maintain and manage all aspects of a customer's solution, including licensing, backups, test restores, patches, service packs, anti-virus renewal, upgrades, performance monitoring, capacity management and hardware renewal. Delivered from some of the most advanced data centres in the UK, today's hosting services are built on a best-of-breed technical infrastructure that guarantees 99.99% application availability and combines optimum performance with the highest levels of security and data protection.

SMART recommends that these hosting services are wrapped around an attractive business package, for example, a flexible 'Pay-as-you-grow' plan which works on a per-user basis, allowing IT directors to minimise upfront costs, streamline cash flow and increase capacity seamlessly as their enterprise grows.

Creating an energy efficient data centre

One of the key design requirements of a hosted environment should be low power consumption and energy efficiency. This requirement should influence the design of the systems at every level from data centre cooling to server hard disk drives.

Servers and networking equipment have a prodigious appetite for electricity so one of the biggest savings in CO₂ is achieved by generating electricity in the most environmentally friendly way. The data centre should be supplied by a company with a significant investment in both Nuclear electricity production and renewable energy sources which means the CO₂ output per unit of electricity is very low, an order of magnitude lower than using coal or oil for electricity production.

Furthermore, the data centre hosting an organisation's workforce management solutions should ideally use "free air cooling" – this means that if the outside air is cool enough the air conditioning chillers are switched off and filtered air from outside the building is used to cool the data centre. This only requires fans to be active and the high power chillers are switched off.

The location of the data centre means that free air cooling will be used for approximately 9 months of the year – this represents a truly staggering CO₂ reduction for cooling over a traditional data centre which is still relying on chillers 100% of the time. This gives the cooling system an Energy Efficiency Rating (EER) as high as 3.0 and a European Seasonal Energy Efficiency Ratio (ESEER) above 3.5.

Smart Servers are key to successful hosting

The pedigree of the components that make up the servers located in the data centre should not be ignored. For example, the latest processors from Intel have a number of innovative features that make them not only the fastest and best performing processors available today but also the most energy efficient per unit of processing power. Similarly, SMART recommends embedding systems with the latest 2.5" hard disks rather than the older 3.5" disks. Newer, smaller disks hold similar amounts of data but consume less than half the power of older units. There are other environmental benefits of smaller drives such as reduced fuel for shipping as they are much lighter than the 3.5" drives and being smaller they require significantly less material in the chassis.

The positive impact of Multi-Tenancy in a hosted environment

Vendors who offer hosting services can further benefit their customers by sharing the same hardware across multiple customers because they are able to tightly control the environment and have a deep understanding of the various applications and libraries that make up the complete product and how their customers use it. This means that customers gain maximum advantage from the hardware leaving the vendor sufficient headroom to cope with peer use and create additional functionality to meet customers' changing business requirements.

In addition, the use of virtualisation drives the hardware harder and smarter so extracting more performance for lower consumption and CO₂ emissions. At the same time, virtualisation facilitates rapid recovery in the event of a server failure and aids replication of services across data centres for resilience.

Hosting is critical to reducing CO₂

SMART has estimated that a customer with a typical server system that is 4-5 years old is likely to create in the region of 6 tonnes of CO₂ per year. The CPUs will be single core, the memory architecture will be slow and high voltage and the disk subsystems will be using larger, heavier disks which draw more power than current disks. By transferring to a hosted environment, SMART has calculated that an NHS Trust could reduce this to 0.5 tonnes of CO₂ a year, saving 5.5 tonnes of CO₂ a year.

Even where an NHS Trust has a more modern system, without multi-tenanting and virtualisation, it will be creating in the region of 3 tonnes of CO₂ a year. Taking a hosted approach will reduce this to just 0.5 tonnes of CO₂ a year, a reduction of 2.5 tonnes a year.

Royal Free Hampstead NHS Trust opted to have their fully integrated eRostering, Bank and Time & Attendance systems hosted by SMART. As Jasvier Boyal, Director of Workforce at Royal Free explains, “We didn’t have the capacity in-house to host the servers, so were keen to take advantage when SMART offered this service. It is a cost effective and practical option, and meant that we didn’t have to provide the technical support for the system. It is hosted on a database in a data centre that is secure and encrypted so any information passing from the system would be safe. It also means that there is no likelihood of data leakages.”

“As soon as the system went live we saw a return on investment. In fact, the savings made in one month in agency staff costs has paid for the entire project, and we will keep seeing savings for years to come. The system has delivered huge savings both in cost and in improved efficiencies and it will be a key component as we develop new ways to deliver patient services, as the NHS moves into a new, cost conscious era.”

Jasvier Boyal, Director of Workforce, Royal Free Hampstead NHS Trust.

Conclusion

SMART is committed to developing sustainable solutions that help organisations to reduce costs and their carbon footprint. Accessible from anywhere in the world, SMART’s web-based workforce management solutions are developed using Microsoft .NET to give a zero-footprint solution that is flexible, reliable, scalable and easy to implement, and provides an environmentally responsible option.

SMART’s data centre operator also has a tree planting programme in place where over 500 trees have been planted so far – equivalent to approximately 500 tonnes of CO₂, part of the organisation’s support for the Trees for Business Campaign. It is also extending its outreach to some of the best scientific institutions around the country, collaborating with Brunel University to identify practical ways to recycle heat and airflow to minimise draw on the power supply, and optimising hardware to ensure power consumption is reduced wherever possible.

By taking advantage of the wealth of sophisticated workforce management solutions available today in a well-controlled, hosted environment that is intelligently powered, organisations will be better positioned to reduce costs but still make money, keep happy staff and meet their compliance obligations, while benefiting the community at large.

Other useful sources

Other publications on e-rostering & workforce management include:

- “E-Rostering briefing” – HFMA
- “A guide to implementing e-Rostering in your workplace” – NHS Employers
- “Improving the use of temporary nursing staff in NHS Acute and Foundation Trusts” – National Audit Office
- “E-rostering and workforce management” – Pierre Audoin Consultants, Research Paper, September 2010

About SMART

UK based and with 25 years experience, SMART is the leading provider of solutions for workforce management designed to help organisations to achieve agility and cost efficiency from their greatest asset – their people. Utilising our own highly skilled and experienced people SMART helps companies to maximise the performance, productivity and value of their workforce. Our solutions can assist in achieving a sustainable reduction in people costs of up to 10%, while providing a better working environment for staff. From time and attendance through to workforce planning, scheduling, absence management and comprehensive automated reporting, the SMART solution suite offers a wide breadth and depth of functionality. It can be fully installed on site, delivered as a managed or hosted service with a full range of support services from SMART’s own in-house consultants.

Accessible from anywhere in the world, SMART’s web-based workforce management solutions are developed using Microsoft .NET to give a zero-footprint solution that is flexible, reliable, scalable and easy to implement, and provides an environmentally responsible option. The data centre supports the Trees for Business Campaign and we are collaborating with Brunel University to identify practical ways to recycle heat and airflow to minimise draw on the power supply, and uses optimised hardware to ensure power consumption is reduced wherever possible.

SMART in Healthcare

SMART RPC provides a simple web based solution for creating and managing Trust-wide staff rosters and time and attendance related activity. The only Next Generation workforce management solution available today, SMART RPC has been designed by our developers to support all NHS Trust roles – a feature that is currently unique. As well as eRostering SMART RPC encompasses Automatic Attendance Recording and Bank Administration, in one easy to use system.

As a Next Generation rostering application, SMART RPC has a host of time-saving features including Auto Roster which generates staff rosters in minutes, and alerts to managers in real time to warn of potential problems with their rosters. In addition it provides unrivalled fairness and transparency in dealing with shift preferences of staff, helping to improve staff morale and reducing staff turnover.

SMART provides comprehensive workforce management solutions to a significant proportion of the UK Healthcare market and was selected as sole provider of e-rostering and time and attendance for the National ESR programme and has unique, proven and fully automated integration with ESR.

Over 600 organisations worldwide benefit from SMART’s solutions and services in both the private and public sectors. Customers include Gateshead Health NHS Foundation Trust, Salford Royal NHS Foundation Trust, The Dudley Group of Hospitals NHS Trust, Ocado, Gist, Habitat, Jaguar, JCB, Mandarin Oriental, Sainsbury’s, Swissport, Trailfinders, Tussauds Group, and Greater Manchester Fire & Rescue Service.

For more information, please visit www.smart-workforce.com

For information relating specifically to the NHS sector, please visit: www.smart-rostering.co.uk

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Making People Count.