Simon Campbell-Whyte DCA Executive Director looks at the Data Centre's European Digital Agenda

News of the political and economic problems across the European Union has been making the headlines in recent months. However for data centre owners and operators of online businesses, which is nearly all of us to some extent these days, the EU can and does possess a great deal of insight into our current problems. While this month we look at the output from a recent event for the UK's public sector it's worth noting that Europe's "Digital Agenda" sets out some sensible action points to encourage the expansion of the online economy and also to remove the barriers to the adoption of new technologies and more resource efficient ways of working.

If you think about it, the availability of information hasn't yet changed all of the ways we live and work, some remain hard to shift - imagine how it would affect transport capacity if the majority of us didn't pack all the trains for the same couple of hours in the morning and evening, or if the major roads were navigable at 8am on a Monday morning?

At the core of the programme is the call to get involved in developing the Digital Agenda and this sits remarkably close to the DCA's objectives. The EU has identified a lack of R&D, lack of skills, lack of standards and a lack of network investment; in addition it also cites barriers to adoption of new technologies such as cybercrime, trust and interoperability. The EU commission has backed up this call with funds made available for projects to deliver the "Digital Agenda". The data centre has a huge role to play in all these areas and for most organisations demands an international strategy, R&D for example has to be invested in at a EU level, guidelines that influence the industry are rarely tested independently, manufacturer's claims on the merits of their technology isn't verified and without R&D investment we can expect little innovation. The industry's need to develop standards and skills is well documented, but this should also include security, this is an area that can't be avoided if we are to build confidence for cloud technologies.

It is unfortunate that the data centre industry hasn't organised itself before now in order to apply for EU investment, other sectors of ICT do benefit from considerable funds. Although it is no easy task, EU rules require a minimum partnership of private sector, regional government and academic institute in each member state, replicated across a minimum of three member states. However the DCA is now taking these first steps, after nine months of existence we have a wide enough membership across the EU to make a start.

At the time of writing we are working with our members in the Netherlands, Germany and UK to put forward a proposal for a Pan European Data Centre Academy (PEDCA). Crucially it is underpinned by research facilities across four universities working within the DCA. University of Leeds, University of East London, Goethe University of Frankfurt and TU Delft University in Amsterdam, their facilities will provide the initial platform they also have a strong interest in the data centre community due to their proximity to large data centre footprint.

The function of the academy will be independent Industry and technology research, development, training, education and skills development via work experience. This will be a good start but it is envisaged the academy will expand to more EU states as recognition of the data centre as an important factor of economic development is realised. For more information and to get involved contact me or my colleagues at the DCA.

"Don't Close The Door To Energy Efficiency!"

By Steve Hone, Operations Director, Data Centre Alliance

It was a pleasure to attend the recent GovToday event held at the Brewery in London, the Data Centre Alliance (DCA) were invited to attend and host one of the Master Classes to try to help highlight ICT as an area where a large percentage of their carbon reduction targets could be realised. The Data Centre Alliance exists to support the interests of the Industry and the promotion of energy efficient best practice so we were happy to help.

The DCA stand was ideally positioned between the auditoriums and the food/coffee so most of the public sector delegates attending the Master Classes passed by the DCA stand and as a passive observer is occurred to me that most seemed to have a "this isn't relevant to me" look on their faces, it was not until later when I had an opportunity to chat with some of the delegates did it become apparent that most simply did not even realise they had a data centre/IT server room at all! let alone that it represented such "low hanging fruit" when it came to potential power/cost savings.

My guess was that probably 60% + of their total power bill for their whole facility could be found in a 6ft Sq. room with a black door and a sign stuck on it saying **"KEEP OUT – Strictly No Admittance"** , if only we could get inside, then efficiency saving would surely follow. I will leave you with one final thought "realising just a 10% saving within your server room could have a massive effect in achieving ones overall efficiency goals, if you multiply this out across the entire public sector then a real dent could be made in reaching the Government's 2015 carbon emissions commitments".

Data Centre Efficiency & The Public Workspace – Take Control !

By Dr. Shaun Smith, Technical Director DCA and Principle Consultant at CS Technology

Everybody is feeling the pinch nowadays, and the public sector is under constraint more than most. Pressure from energy reduction legislation, ever increasing energy prices and tighter budgets driving down operational costs are all challenges we should fight with better energy efficiency and smarter energy control.

That is why any energy manager, facilities or IT director who is mandated to meet stringent energy saving targets such as those imposed by the Climate Change Act 2008, would be folly to ignore the ripe fruit in the form of electricity savings that are available in today's legacy data centres. Even the most modern IT room or data centre has significant energy savings potential. The solution is not a secret one, as the technology available and successful case studies are well documented, as are the guidelines for achieving this such as the EU Code of Conduct and ASHRAE TC9.9 but to name just two. The clinch pin to achieving maximum and realistic energy savings is all down to control, and a well-planned analogous process of aligning the data centre to best practices.

On average as a high level rule of thumb, a data centre with a PUE (Power Usage Effectiveness) of 2.5 can save approximately £500 per year for each kilo-Watt of operational IT installed. In its broadest sense the PUE for a data centre is calculated as PUE = Total Facility Power ÷ Total IT Power. Therefore estimated annual energy savings that are achievable could easily run into tens of thousands of pounds for a small to medium sized data centre. Additionally typical substantial energy saving projects such as free cooling installation can deliver returns on investment in the order of 10-15 months, making them financially economical as well as helping to deliver energy saving targets.

Although data centres typically use 25-50 times the power of office spaces, the energy consumed in these areas is still overwhelming. For example a thousand PC's running 24/7 would incur an annual electricity bill of £70,000. If all UK businesses shut down their computers when not in use, it would contribute 10% of the Government's Climate Change Levy target and 40% of the energy efficiency targets set by the Carbon Trust. A well thought out data centre and IT strategy plan succeeds by balancing the business requirements with financial realities and correctly provisioning the CapEx for infrastructure, by recapturing lost power and cooling, and by reducing the OpEx through more efficient energy usage. A truly unified efficiency strategy and business plan that aims to realign the infrastructure to the energy saving targets whilst meeting the business requirements delivers a clear roadmap for a smarter data centre provision.

CS Technology is working with the Data Centre Alliance is helping to provide crucial energy efficiency advice to data centre and office space users in the public sector. By understanding the targets and pressures on the public sector for reducing energy usage and minimising operational costs, the data centre services and consulting advice is provided by industry experts who are bringing practical solutions with realistic benefits and energy savings to customers who operate critical IT in the public sector. (Optional) Too often, data centres small and large are fitted with aisle containment, blanking plates, gaps in the floor sealed, and floor grilles are upgraded, as these are but a few common steps that are recommended as part of an efficiency improvement plan. Yet to only have the facility manager complaining that his energy bill has in fact increased for the data centre, not reduced.

This is not because these measures are not conducive to energy saving, quite the contrary, it is because these are only a small part of the overall energy improvement plan and alone can lead to a detriment effect on efficiency if these measures are not accompanied by an efficiency control process. If more significant measures of reducing energy costs are deployed, such as installing free cooling, then the overall net impact in energy savings would undoubtedly be very favourable, however this scenario would still be flawed in two major ways. Firstly the efficiency loss due to inadequate control over air management just mentioned would be overshadowed and hidden by the significant energy savings being made outside the data centre, with the free cooling. Thus there exists the same problem, one of poor energy management and control even though energy is actually being saved. Secondly, energy saving in data centres is often gained by taking several small steps accompanied by one or two major steps.

These are all important to the overall efficiency plan, and the small increases in efficiency should not be overlooked in favour of the larger ones, as these minor details are vital in completing the whole picture for reducing energy use, and maximising the cost savings.

Dr. Jon Summers University of Leeds

It was a pleasure to chair the Gov Today master class sponsored by the Data Centre Alliance (DCA), presented by Duncan Clubb of CS Technology.

As with the all public sector organisations, Universities also have data centres and in my experience most of them could use some simple solutions to make them more energy efficient. Some of these solutions were highlighted in the excellent presentation by Duncan. The data centre is largely unseen by most employees in an organisation, but it is a major contributor to the organisation's background energy use. Addressing issues in the data centre, not only reduces the carbon emissions, but it also saves on operational costs.

The DCA with the help of its partners and accreditation and certification board, on which I sit as an impartial (or unbiased) member, can offer some assistance in assessing the energy efficiency of public sector data centres and thereby help these organisations reach their carbon reduction targets.