

The need for sustainability and skills



The Data Centre Alliance holds the first of its annual two day University of Leeds Data Centre Conferences, **Executive Director Simon Campbell-Whyte** reflects on this and the industry's need for skills development and recognition of its needs by academic institutions.

Whenever I have conversations with data centre people about their view on a conference or asked their opinion on one I've missed, I often get responses like, "yeah it was ok but same old stuff", "didn't learn anything new" or "it was so-and-so just trying to sell their stuff" so I saw the June's two day DCA/University of Leeds International Conference on Sustainable Data Centre Design and Operation as an opportunity to do something a little different, I'm pleased to say it was a great success.

There was a refreshing atmosphere that you only get at a place of learning, perhaps helped by a twinge of nostalgia amongst speakers and delegates, but definitely a sense that this neutral ground embraces new ideas, but values solid evidence and scientific principles. All this, I'm sure, provided the ingredients for the lively, interesting and diverse debate that was enjoyed over the two days. It was also good to see and hear views from some younger heads amongst the audience and on stage. My thanks goes out to University of Leeds and the DCA members that supported and organised this event, we intend to repeat the event next year.

Education is an important aspect of the data centre that has been often overlooked, this is an area the DCA and



its members are determined to address. We are planning a human resources portal our members can access which will provide an opportunity for employers to track individuals who wish a career in the data centre industry.

In addition, Universities can use the portal to make available students suitable for government funded internship programmes where valuable experience can be gained. This, coupled with developing initiatives like the planned Data Centre MSc we hope will ensure the industry is fed with capable, employable people. I hope, one of which is featured in this article.

In this issue it is also interesting to get some insight from Telecity who are a large data centre employer that demands these high calibre people.

The pressure is on for European corporations to compete with markets in other parts of the world that also have high or even higher demand for increasing data centre space and need experienced experts. So it is vital we invest in our education systems, which after all, in the case of the UK and many other EU states, are some of the best academic institutions in the world so we need to use them.



Review of Day One of the Two day DCA International Conference on “Sustainable Data Centre Design and Operation”, University of Leeds, June 21 2011

The first international conference on ‘Sustainable Data Centre Design and Operation’, organised jointly by the University of Leeds and the Data Centre Alliance, was held in the School of Mechanical Engineering, at the University of Leeds on June 21-22, 2011. The aim of this conference was to share best practice and future challenges within the Data Centre community and to provide an independent forum for open debate on the key issues affecting energy efficiency in data centres and on the implications for forthcoming legislation for the data centres industry. **By Dr Harvey Thompson.**

Day one of the conference was opened by DCA Vice-Chair Professor Dennis Kehoe CEO of Aimes Grid Services who outlined “a systems approach to data centre control for cloud-based architectures” this clearly demonstrated the importance of the data centre with regards to the future of cloud and provided a useful insight to the overall picture. Followed by DCA Technical Director Dr Ian Bitterlin of Ark Continuity Ltd who’s talk was entitled PUE VsWUF? Comparative water-usage in low-PUE data-centre designs. This provided a fascinating analysis into data centre water usage which concluded that even though low PUE facilities consume more water the total effect still points to this as the most environmentally friendly method.

The first morning’s highlights also included some enlightening talks from Bethany Whitehead of London South Bank University, “Applying Life Cycle Assessment to Data Centre Sustainability”, Lee Funnell of The Siemon Company “Critical architecture choices and the dramatic impact

of the physical layer on data centre performance” and Ian McDonald of St Andrews University, who wrapped up the morning session with a presentation on the “Application of Energy Efficiency Techniques at the University of St Andrews.

Lunch on the first day was kindly sponsored by Aimes Grid Services.

Ashley Davis of JP Morgan Chase opened a fascinating afternoon session with “Data Centre Efficiencies” which looked at the challenges of managing facilities whilst using case studies to demonstrate the issues so frequently over looked at the design and commissioning stage. This was followed by Steve Bowes-Phipps from the University of Hertfordshire “A Best



Practice Guide for Greening Data Centres”, Mark Dixon of University of Leeds and Gareth Whitaker from Couch, Perry & Wilkes who highlighted the challenges of HPC cooling in “Terraflops into a terribly tight space”, Jeremy Hartley of Dataracks talked on “eCool: Cold Aisle Containment”, Andrew Goodwin of Energetix Group “Improving PUE with the use of battery-free UPS”, George Hannah of Airedale International Air Conditioning, “Using Heat to Increase Cooling – How New Cooling Technologies for Data Centres can increase Efficiency and Reliability”, Dr Ian Bitterlin (Ark Continuity Ltd) “The application of Solar Photovoltaic (PV) generation technology to Data-Centre facilities” and finally the first day was closed by Alan Fisher of Dycem who talk “The Unseen and Silent Killer – an undetected disaster” covered the importance of an effective anti-particle and contamination strategy in the data centre.

A report on Day Two and the Conference dinner will appear in the next issue.

Recruiting, retaining and developing staff: The unique challenges in the data centre industry

The quality of your operations team can often be the key differentiator in the data centre industry. As an industry, we play such a crucial role in ensuring the efficiency of our customers' IT operations and freeing them to focus on their own core strengths, and therefore they need to know that we will provide the reliability, flexibility, transparency and excellence in service delivery for this to happen. **By Adriaan Oosthoek, EU VP of the Data Centre Alliance, and Country Manager, UK and Ireland, TelecityGroup.**



A set of talented, dedicated and knowledgeable data centre managers and engineers is crucial for this, ensuring we can provide optimum availability and service levels, customer service and consultancy. As such, at TelecityGroup, we place a strong emphasis on recruiting, developing and rewarding the most exceptional staff, as we view it as key to serving our customers, and growing our business.

A unique industry

However, the data centre industry differs from many others in this area. To excel in this industry, you need to have a specific mix of customer-facing skills, data cabling and patching ability, basic IT knowledge, as well as mechanical and electrical skills; this skill-set is unique to the industry. In terms of customer service, uptime is often judged as the most important metric. Offering optimum service levels is far more than just having the correct infrastructure in place, our facilities engineers play a crucial role in this. Additionally, the majority of daily interaction with customers is on the data centre floor between the operations teams of TelecityGroup and those of our

customers, so customer-facing skills are of crucial importance. We work with recruitment agencies specialising in IT and the data centre industry to find people that meet these requirements, as well as offering an Internal Recruitment Incentive to ensure we attract the right staff. Equally important though, is putting the processes in place so we retain and develop the outstanding staff we do have.

Developing the best staff

To retain the very best talent, we look to reward outstanding performance at TelecityGroup, and ensure providing the optimum working environment, training, and career development opportunities. We regularly review employee remuneration and reward packages, while a systematic approach to performance management, with annual appraisals for all staff, allows the business to recognise and reward strong performance and identify development opportunities. We've also introduced a long-service award scheme to recognise employees who have been with the company for over ten years. However, we believe the most important factor in ensuring we keep the best data centre operations teams

is continual training and development opportunities. Challenging our staff and providing the optimum opportunities for career development creates the kind of environment which can only be of benefit to our customers. Our employees have access to training and development opportunities throughout their careers, including internal and external courses, on-the-job development and coaching. We offer a Corporate Sponsorship Scheme which gives financial assistance and time off work to study for a professional qualification in line with business needs. We've also recently implemented an enhanced induction programme for new employees across all countries we operate in, and introduced a new training programme to develop management skills and leadership capabilities.

Fostering the next generation of data centre workers

A key challenge for the industry is bringing through the next generation of data centre staff. Due to the specialised nature of the skill-set required, there is a limited pool of exceptional workers out there and there are no specific graduate programs or other educational

“The future of our industry? – Speaks!”



A rapid increase in the size and number of data centres and the energy requirements to run them has caught the attention of the media, environmentalists and policy makers. While researching potential topics for my Master’s thesis, I was drawn to the topic and was eager to learn more.

Lakshmi Reddy writes.

After discussing the topic with my tutor at the University, Patrick James, who had done some related research in the past, we decided to make it the focus for my thesis. Luckily, a fellow student, who learnt of my interest on data centres, put me in touch with Peter Shepperd. Peter, an associate at Simmons & Simmons LLP—a leading international law firm who are a founding member of the Data Center Alliance (DCA), introduced me to Simon Campbell-Whyte and Steve Hone.

This was just a week before an international conference on ‘Sustainable Data Centre Design and Operations’ was scheduled to be held at the University of Leeds. Simon mentioned the conference and suggested that it might be a good idea to attend and gain some insight into the industry. Having just started to explore the world of data centres, this seemed like a wonderful opportunity. The talks delivered at the conference, spread over two days,

helped me gain a deeper understanding of the prevailing issues and on-going research. Meeting researchers and practitioners and discussing the issues in person was invaluable.

In this regard, I’m very grateful to Dr Harvey Thompson and Dr. Jon Summers, the organisers of the conference and to the University of Southampton for sponsoring me to attend the event. Compared to many engineering disciplines, the IT industry and design and operation of data centres is at a very nascent stage of development. Standards and best practices are still being developed and improved upon.

The challenges the industry is facing could be addressed if the focus is placed on efficient practices. With growing environmental concerns and the escalating cost of power generation, resourceful utilisation of energy and the effective design and operation of data

centres has become crucial.

This is an area where organisations such as the DCA, which is bringing various players in the industry together, play a significant role by providing a platform to exchange ideas and to formulate a plan of action.

Metrics and measurements are known to provide insight into the working and performance of a facility. While metrics such as PUE currently exist, they are not yet robust enough to serve as the only guide to improving efficiency. Universally accepted and vetted metrics and standards are vital if there is to be a sustainable growth in the industry. In this regard, DCA, with access to expert knowledge and resources, could conduct real-time experiments on various possible methodologies and metrics to achieve the best practices. In-line with this, in my thesis, I intend to analyse the metrics that are currently in use, identify shortcomings if any and work on suggesting alternate approaches.

programs specific to the skills required for the data centre industry.

Alongside my role at TelecityGroup, I’m also EU VP of the Data Centre Alliance, and I view one of the most important aspects of this as working to solve this problem by fostering the next generation of highly-skilled data centre engineers and managers. To

do this, the Data Centre Alliance is working alongside the University of Leeds to raise the profile of the data centre industry amongst both graduates and undergraduates, as well as looking to provide best possible training and support to nurture this talent.

It is essential that this expertise is captured and fed more widely into

University education as soon as possible to ensure the data centre industry can utilise the appropriate skills to sustain growth in the future. Both TelecityGroup and the Data Centre Alliance are committed to this; only through the on-going development of IT skills will we be able to continue to deliver the level of service our customers expect.