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NEW working committee announced to help address 'Skills Gap'

By Steve Hone CEO, DCA Trade Association

WE HAVE REACHED the ½ way point in 2016 and it's been such a busy 6 months that it's shot by in a blink of an eye, and the EU's recent shock Brexit result has definitely proved that we truly do 'live in interesting times'. With a UK leadership contest of both sides of the house looming, which may or may not force a midterm election, one may well assume that this would be causing many to panic, you would be wrong. Sure, we are heading into unchartered waters however if there is one sector which has proved time and time again that it can brave unpredictable rough seas and come out the other side even stronger then it's the data centre sector.

Having just come back from workshops in Brussels, Frankfurt and Amsterdam I am delighted to report that the desire for continued collaboration with the UK is stronger than ever. One of these workshops was very much centred on this month's journal theme which is 'the growing skills gap'. It is clear following discussions in Brussels that this issue is definitely not unique to the UK but is of European concern and will only be resolved through increased collaboration.

This collaboration will need to be on multiple layers to effect real change. However, if we think of this as a journey with a beginning and an end it has to start at grass roots level. Attracting the right skilled people into the sector is not helped if they don't even know a career within the data centre sector even exists. This needs to be closely coupled with driving through equality as the sector is currently heavily male dominated. Careers advice would then come in a close second, helping to map out the best educational paths for the next generations to follow from secondary school options right through to 6th form/college and or university is key. Practical experience to compliment academic qualifications would definitely be next on the list with a focus on graduate programmes, apprenticeships and or work experience initiatives to help make the candidate more employable. Finally,

as the sector and technology continually evolves we need to ensure suitable personal development programmes are in place to ensure that those we do employ remain competent, fulfilled and at the top of their game.

The DCA Trade Association recognises that these challenges can only be addressed through working more closely together and to that end we are pleased to announce the formation on a NEW working committee of experts to look into ways these 'Skills Gap' challenges be tackled together. The formation of this new working committee was announced at the Industry Update Summit held at Manchester University on the 11/12th July as part of the annual Data Centre Transformation Conference which was started by the DCA Trade Association back in 2011.

The Skills Gap Session was hosted by Peter Hannaford from Data Centre People with presentations from Dr Theresa Simpkin from Angela Ruskin University and Andrew Stevens from CNet training. They were

joined by many other stakeholders both from business and academia who are equally keen to work together on this skills gap initiative. The ½ day seminar also covered updates on the current Standards Landscape, data centre related research projects and a panel session on Certifications. For those who were unable to attend the seminar but are interested in joining the Skill Gap Working Committee then just contact the DCA to find out more. Seminar content and links are also available via the DCA website, **www.datacentrealliance.org**

As always I would like to thank all those that not only contributed articles to this month's DCA journal but also thank those who presented and attended both the afternoon update summit and DCT16 this year.

Your positive feedback on the new workshop format will assist in making sure that next year's event is even better. I know many are taking the opportunity to take a break over the summer so I will see you all with batteries recharged soon.

Training

By John Booth, Managing Director, Carbon3IT

AS YOU'D EXPECT from someone who has been in the IT industry for 35 years, I've undertaken a hell of a lot of training. Firstly, as an apprentice with BT back in the 80's, where the 3-year programme brought us up to speed on all things telecommunications. Some of this was 'on the job', some of it was at the BT Technical Colleges in the City and Kennington and some of it was local area based mostly in the City at various HQ buildings. The apprentices also undertook a HND in Telecommunications, mine was at SELTEC in SE London.

After completing the training, you were then allocated to a group suited to your chosen discipline. Mine was customer apps in the City of London, where I installed telephone lines, small key systems. I sometimes helped out the other engineers on 'bigger' stuff, such as key and lamp units, Post Office Dealer Boards and Private Manual/Automatic branch exchanges, known respectively as PMBX, or PABX's.

Sometimes you got sent on a course to get you familiar with newer technologies or tools. I remember when the krone tool became the de facto method of attaching wires to sockets which also became line jack units (RJ11) that we went on a week's course to learn how to use the tool!

After I left BT the courses became more in house, usually with one of my fellow project managers explaining about things informally. When I joined Computacenter in 1997, it was training central. We spent approximately 6 weeks of each year doing external training courses, mostly vendor driven, I must say.

It was probably a condition of maintaining certain corporate accreditations to have x% of the engineering staff formally trained. I know that I've still got course manuals and training books on operating systems that went out in the early 2005's.

When I first set up my own consultancy practice in 2009 I was now in charge of my own destiny and my own training. Money was fairly tight so I had to be fairly clever about what courses I took, they did after all have to add credibility to myself and the business. For a Sustainable IT Consultancy, one really should be proficient and knowledgeable

about Green IT. So the first course I did was the Foundation Certificate in Green IT, followed by an Intermediate Certificate in the EU Code of Conduct for Data Centres (Energy Efficiency). Yeah, it is Green IT, honest! Right, so that was the subject matter sorted, now what about the application of it to conventional business practice, especially one as risk adverse as IT, that came from taking both PRINCE 2 (I am a practitioner - hmmm, reminds me that I have to update my accreditation) and ITIL Foundation.

When we decided to provide consultancy on standards, I quickly undertook the ISO 50001 Lead Audit Course and then this year the ISO22301 Implementation Course. As I have done a Lead Auditor course it allows me to audit 22301 as well, in fact, once you have done a Lead Auditor course, all you have to do is one of the various courses associated with a standard and you then get the ability to audit it!

I've also undertaken the CDCAP course from CNet.

As many of you are aware, we provide support services to the Data Centre Industry in the form of EUCOC, Audits, Training and Standards. This means that I personally need to be up to date with my training, so we

normally allocate money towards a training budget at the start of the year, this year alone we already spent about 6k on training courses with another couple to organise, and that will push the total to about 10k for the year.

So, training has been very important personally to me, and to the wider IT industry in general. But, and this is thinking about both colocation and enterprise data centres, how many people responsible for our mission critical data centres have undertaken formal training?

I suppose the best way to find out is to speak to the training providers and find out how many people have undertaken any form of training, and whether this training is supported by external verification of the content and if any form of qualification is offered.

I suspect, although I could be very wrong, that the numbers of formal qualifications will result in a few hundred, a poor number when we consider how many data centres in the EU Code of Conduct for Data Centres (Energy Efficiency) definition as follows: "For the purposes of the Code of Conduct, the term "data centres" includes all buildings, facilities and rooms which contain enterprise

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servers, server communication equipment, cooling equipment and power equipment, and provide some form of data service (e.g. large scale mission critical facilities all the way down to small server rooms located in office buildings)

So, what is to be done?

The EURECA project has developed a series of 7 (or more specifically 9) training courses, these are available as a mix of short 2 hour modules or longer 2 day courses. They are as follows:

- The first is a general awareness course on the realities of climate change and an overview of sustainability and energy efficiency in the data centre environment.
- The second is a short course on legislation.
- The third on assessment systems.
- The fourth involves 2 courses; one a short course, and one a longer more formal course on the use of the EUCOC for improvement.
- The fifth, another short awareness course and a longer formal course on the use of the EURECA tool.
- The final course will be an overview of the EURECA case studies and some suggestions for the wording of formal tenders and tender templates.

These courses will be available after the 5th EURECA workshop to take place in Amsterdam in late September and will be available in the following countries, UK, Netherlands, and Germany.

The courses will be available for public sector organisations only and for the duration of the project will be free of charge.

Some colocation companies can also benefit from the courses so they understand what we are saying to the public sector and what steps they may need to make in order to be compliant for any possible PS tenders, or contract extensions. Once the project is completed (September 2017) the courses will be made available to the wider community and will be chargeable (TBA).

If you're working in the public sector and would like to attend either the 5th EURECA workshop in Amsterdam or register for a training course please visit the EURECA-Project website on **www.dceureca.eu**

In my professional opinion, the world today is supported by digital services that originate or terminate in mission critical data centres and it is imperative that those facilities are staffed by professional trained and qualified personnel.

I'd urge readers to either get qualified or employ qualified personnel and consider providing training.

Data centre risk mitigation – refining the human touch...

By Sarah Parks, Director of Marketing, CNet Training.

RISK AFFECTS every organisation, although the types of threats that businesses face depend on varying factors, yet many businesses struggle to accurately identify and counter risks effectively.

The statistics being reported about the causes of data centre outages vary all the time, however there is usually a one common theme… yes, you guessed it, a high level of human error.

Being human related, one could argue that it is easily addressed, a little training and bob's your uncle, new lessons have been learned and mistakes mitigated… If only it was as simple as that! How can a manager be total assured that the individual has taken all the new learning and information on board, or be confident that the knowledge gaps have actually been addressed to ensure that the same mistakes will not happen again? Plus, one of the most obvious issues is the fact that most organisations choose to send their best employees on training and education programs, treating it as a bonus or reward for them, rather than choosing the employees that lack the knowledge and skills and actually need to learn more.

The overall challenge is to ensure that staff are both technically competent and confident in their abilities, knowledge and skills. Many may be highly competent yet lack the confidence to trust their knowledge and instinct to fully implement their ideas, or more risky, some may lack the confidence to challenge colleagues when they know they are doing things wrong. On the complete reverse of this there is a situation that poses an even bigger risk, some staff may be highly confident yet lack the actual knowledge and skills, so continue to confidently do things wrong…

With these dilemmas clearly in mind a new and exclusive assessment tool is available within the network infrastructure and data centre sector. The tool is based upon situational judgement analysis mapped to confidence modelling. It has the ability to revolutionise the way data centre managers identify, manage and mitigate people risk. Known as the Data Centre CCAMä Tool (Competency & Confidence Assessment Modelling), created by CNet Training and powered by Cognisco, it provides real-time analysis of both competence and confidence for individuals and exposes root causes of employee behaviour (positive and negative) in network infrastructure and data centre facilities. Ultimately it helps to identify the 'unconscious incompetent'.

The powerful tool uses proven complex software that is supported by a team of psychologists and operates within International Test Commission guidelines. It guides employees through various based criteria to identify where individuals' real skills, knowledge and ability gaps are and, through subsequent targeted intervention, behaviour can be positively changed. Each question is situational based and is answered by the individuals who then rate how confident they are with their answer.

With valuable insight and analytics of each employee, the results of each assessment allows the right course of development action to be planned and implemented to

address individuals' actual weaknesses. It may just be one technical area that requires a manager to nurture the individual through knowledge gaps, or professional training to confirm knowledge and skills with industry recognised qualifications and official certification. The key and most valuable element is that the intervention can be planned and targeted to address specific weaknesses. The chosen intervention can also be assessed as the CCAM Tool assessment can be taken again post-development, it therefore helps to ensure that the newly learned behaviour or knowledge has been utilised effectively, thus maximising the opportunity to achieve a return on investment.

On the flip side the tool identifies the organisation's key performers, allowing effective succession planning to take place to help protect the future of the business too. This analytical approach can also form a valuable part of the recruitment process, allowing managers to know and understand potential strengths and weaknesses within potential recruits and plan budgets accordingly to work towards mitigating any slight risk that they could pose to the organisation. Or it can simply help rule out individuals thus saving time and effort.

Whilst the complexities of these advanced analytical tools are of huge benefit to organisations, the ideal scenario is to use them alongside other more general education. There is no substitute to the more traditional classroom led training

1. Can achieve **OPTIMAL PERFORMANCE** High Understanding / High Confidence	20%
2. Have immediate **KNOWLEDGE GAPS** Lack of Understanding	50%
3. Are potentially at **RISK** Misunderstand / Misplaced Confidence	30%

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People Facts in Organisations:
Above are statistics from typical organisations.
20% *of staff provide Optimal Performance (have high understanding and high confidence) – these are your star performers and perfect for succession planning moving forward*

50% *of staff have Knowledge Gaps (have a lack of understanding) – these can be developed with the relevant form of intervention from mentoring through to further education programs*

30% *of staff are a Risk to the Organisation (Misunderstand and have misplaced confidence) – these think they know more than they do and need serious consideration as they are a large risk to your business*

environment. Professional instructor led programs that include a good mix of theory and practical learning and are assessed throughout the program with case studies and practical assessments, rather than just a memory test via an exam, provide essential vendor neutral education. They teach high levels of best practice, codes of conduct and provide a much needed standardised baseline of education for the subject in hand, forming the backbone of knowledge for particular subject areas. Even better if they award industry recognised qualifications and official certifications. This essential

education can be supplemented and enhanced further with additional specialist education, knowledge, skills, mentoring and competency and confidence interventions to help progress individual careers throughout the sector.

In summary, people are a risk in any organisation but with the right approach to education and on-going assessments resulting in the appropriate levels of interventions, risk can be radically reduced. Saving time, money and the odd grey hair perhaps!

Netwise Hosting – 'Our Story'

Matthew Butt, Managing Director of Netwise Hosting, talks us through the captivating history of his data centre business.

HAVING RECENTLY LAUNCHED our brand new 11,000sq ft bespoke 'London Central' data centre in London Bridge, Netwise Hosting is quickly becoming one of the capital's most talked about data centre operators. I founded the business in 2009, aged 19 at the time, and in just seven short years my company has moved from a humble shared office space to designing, building and operating two private data centres in the London area.

How my core team and I have managed to get to this privileged position makes for an

interesting read, one which I'd like to share with the DCA readers. It's no secret that the data centre industry is notoriously difficult to penetrate; its capital intensive, highly competitive, and has enormous barriers to entry. So to really understand how we've managed to get where we are today, it's best to look right back to the genesis of Netwise, the early DNA that would later feed into the award-winning services we provide to customers all around the world.

I feel it's best to start with some understanding of who the key people behind

the organisation are; there is of course myself, Matthew Butt, and I am the Founder and Managing Director. Then there's Matt Seaton, Senior Manager and fellow founding team member.

We have sat at the helm of Netwise from day one, both entirely responsible for the design and build of the data centres. Both of us have always had a natural affinity for business, technology and hands-on work, a mix that would feed strongly into the formative years of Netwise Hosting. We first came together back in 2005 as friends preparing for our

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GCSE's, to explore the idea of running a game hosting business that would provide online players with high quality gaming servers. I sourced a range of old IBM servers from an IT clearance company, and we set to work on converting the attic of my family home into a make-shift hosting facility. Twelve tower servers sat around a custom-built central rack containing basic core systems which included a load balanced router, switch gear, an open source firewall and a homemade KVM unit - amongst other items.

These servers would be a constant source of hardship for us, as the antiquated hardware would need constant attention to ensure it remained operational. Although we both had strong experience in building computer systems, this is where we would first cut our teeth on server hardware, which is a comparative minefield.

As this was essentially an after school project at the time, budgets were effectively non-existent, and access to resources highly limited. We had no choice but to be highly creative in our approach to service delivery, which still feeds into operations at Netwise Hosting today. Thinking outside the box is a normative process at Netwise, and this is where that permeating philosophy can be traced back to.

Looking ahead, it was always rather obvious that this makeshift rooftop location would never work commercially, and had to this point simply functioned as a test-bed; a learning and development platform serving a handful of very small clients. The hum of the server fans, as well regular fault alarms, could be clearly heard in the bedroom below – less than ideal it's fair to say!

By 2007, we were drafting plans that would see the project take its first major step forwards, putting Netwise on a pathway to becoming a true enterprise-grade service provider. Game servers were eventually dropped from our service set, with focus

shifting firmly towards business hosting services. In 2008, as Matt and I finished Sixth Form College, the business moved into its first private office and in-house data centre space in Raynes Park, South London. Matt would head to University on the South Coast, working remotely and returning to London regularly to assist with development - I would take charge of the primary business development function until Matt's return to a full-time position in 2011.

I worked on splitting the new space in two, building a custom sound-proofed wall that would create a working office, alongside a self-contained fully-functioning comms room which housed full height blade server enclosures. This would be where our early concepts for innovative power distribution, cooling and network design solutions would first take shape.

Here, we would build out the organisations first serious hosting platform, which would allow for the development of credible business hosting services and enable the company to grow into a small but fully-

featured hosting provider. A new opportunity for growth presented itself early in 2009, which would provide the expanding business with new service capabilities, and the chance to operate from a far better suited location; Netwise Hosting became a limited company and moved to a large serviced office in Wallington, South London. In a somewhat unique deal that I engineered for the benefit of the business, we took control of the existing on-site data centre, and began to develop the business into an enterprise-class hosting company specialising in dedicated servers and small-scale server colocation. This would be the beginnings of an era of real traction for Netwise, developing the brand, the service set, and building a solid base of high-quality enterprise customers.

Leveraging the use of an existing high-quality data centre space provided us with a twin-facetted insight into the operation of a facility of this nature; the benefits were hugely obvious, however not having total ownership of the current site and how services were delivered from it would become a concern for sustainable growth and the retention of complete flexibility. In a relatively short space of time, Netwise had become known and applauded for commanding control and ownership over its services, something I was very keen to retain moving forwards.

Wallington proved valuable as a development centre for the business, however the lack of end-to-end control over service delivery meant that 2010 would become a pivotal year for Netwise Hosting – either dramatically change direction, or design and build a private data centre from the ground up, taking back total control of service design

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and delivery. We called a meeting with our private investors, and after much deliberation and financial stress-testing, we decided to move on the concept of building a small private facility, with a planning phase put in motion in mid-2010. Plans would come together over the course of the next ten to twelve months, with every aspect of the site designed entirely in-house.

By mid-2011, work on the private facility had begun in Sutton, which would be named 'London South'. This coincided with Matt's full-time return to Netwise, reprising his role as Senior Manager. The Sutton build project was certainly an enormous undertaking; highly labour intensive, and highly capital intensive. Matt and I would undertake at least 90% of the works first hand, whilst simultaneously nurturing a continually growing business in Wallington.

After an initial build phase of around six months, the new site was in a position to service its first customers. This would be the first time we found ourselves able to deliver enterprise-grade colocation services from a top-class facility that we had total end to end control over. Over the next two years, awards would roll in, and growth would be exponential – 300% year on year. The facility would continue to improve, with additional amenities including a fully stocked server preparation area and a purpose-designed customer entrance. Fast forward to early 2013, and the small 20 rack facility was nearing capacity, thanks to fantastic uptake by SME's both locally, nationally, and even internationally.

The London South site was always designed to function as a real-world proof of concept in the operation of an entirely private bespoke data centre – ultimately, we always had our sights trained on operating larger facilities in London. The project proved to be a total success, providing our customers with a bespoke South London home for their hosted infrastructure, and providing Netwise with incredibly healthy financials with which to develop the business further.

By mid to late 2013, a number of sites in Central London had already been earmarked and explored as potential locations for a second facility, which would run alongside the Sutton data centre.

Towards the close of 2013, we would face adversity on a scale that would likely cripple any less agile or self-capable organisation. The South London facility had been built into the ground floor of a large building owned

by Nationwide, who would agree to sell the property to developers in 2014. I received a compulsory purchase order, and Netwise had just six months to vacate the property. This gave a half-year window in which to speed up the plans for Central London, begin the build of the new facility, migrate all existing customers out of the South London site, and fully decommission the otherwise perfectly operational data centre.

On paper, this would most likely spell the end for any business faced with such an insurmountable obstacle. It's only through sheer grit, strong mindedness, and incredibly creative project planning and execution that would ensure our survival. In fact, this would go far beyond survival; my team and I have always been willing and able to find a silver lining, and so we leveraged this adversity into a new opportunity – up-scale and take on the London retail colocation market full force, building a facility with the proportions and range to cope with servicing much larger projects.

In January 2014, works on our new 'London Central' facility began in earnest, with the site planned for completion in 2015, despite up-scaling the project considerably. In March of 2014, we fully decommissioned the Sutton site, and performed a large-scale in-house migration of all existing customers to a partner site in Docklands until works at the new data centre reached completion.
By May 2015, the new flagship data centre was ready to receive our existing customer base, which this time saw an even larger migration effort to include the additional footprints deployed since leaving Sutton. This also allowed a number of key anchor tenants to move into the new space. Development of ancillary services and amenities would continue to the close of 2015, leaving 2016 largely free for rapid expansion into the London retail colocation market.

We proudly launched the new facility to the press in February 2016, and received much industry praise for the execution of the project. A number of industry consultants have noted that the new facility is one of the highest quality bespoke colocation offerings in Europe.

Our London Central data centre now stands as one of the capital city's most exciting new technology prospects, and is already nearing 20% capacity. The entire facility has been designed with total modularity in mind, which allows us to flexibly scale the capacity of the data centre as required. Throughout 2016

and into 2017, the first data hall will be grown out to its 5 pod capacity, which will help serve London's rapidly growing technology sector. A second near identical hall will then be commissioned once capacity hits 75-80% in the first hall.

That essentially brings us up to the way things stand today. It hasn't been at all easy, but it has been hugely rewarding. Long hours and hard work have paved the way here, and plenty more of the same will follow in the pursuit of excellence. My ultimate goal is to open further London and UK facilities in the coming years, and we are already in the very early stages of exploring possible site options in East London, West London and Manchester.

I could go into far more detail in almost every area of this story, however there simply isn't the time to do so here. I'm always happy to grab a coffee and speak with anyone in more detail where interested!

About Netwise Hosting
Netwise Hosting provision enterprise-level hosted environments to a wide and varied customer-base, working closely with clients all around the world. Specialists in high quality, highly resilient colocation services, Netwise Hosting design, build and operate their own private, bespoke data centres delivering an unparalleled end-to-end service set.

A young and dynamic team sit at the helm, allowing Netwise Hosting to grow progressively and organically into the leading independent facility operator it is today. The bespoke, almost boutique nature of the Netwise Hosting facilities, coupled with the unique dynamism of company operations, allows for the supply of truly individualised solutions - meeting the exacting needs of clients regardless of any budgetary or other such constraints.

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Reducing risk and energy consumption through learning

By Sophia Flucker, Director, Operational Intelligence

WITH OVER 70% of failures due to human error, training has an important role in managing risk; not only avoiding failure in the first place but also ensuring a smooth and speedy recovery after an incident. Awareness is also necessary in order to capitalise on energy saving opportunities.

Learning does not only apply to individuals but also to organisations. Organisational learning is characterised by maturity and processes (shown on the diagram as accumulated experience), for example around structure and resources, maintenance, change management, document management, commissioning and operability and maintainability. Individual learning is a function of knowledge, experience and attitude (shown on the diagram as depth of experience). An environment where both organisational and individual learning are developed helps reduce failure rate and equips operators with the know-how to reduce energy wastage more effectively.

Kolb's learning cycle (shown below) describes how people learn best when continually reflecting, developing theory and applying this to practical situations.

However, in industry contractual boundaries often mean that individuals do not learn from areas outside of their direct responsibility. For example, a design consultant rarely gets feedback on how effectively their design worked in practice.

Based on these considerations, OI have developed an award-winning collaborative approach to reducing data centre risk and energy consumption. This increases operator awareness of the opportunities and challenges around delivering data centre energy reduction by combining theory and practice in on-site workshops.

Unlike traditional classroom training, these sessions take place on site and have bespoke content developed specifically to target what learners need, e.g. how
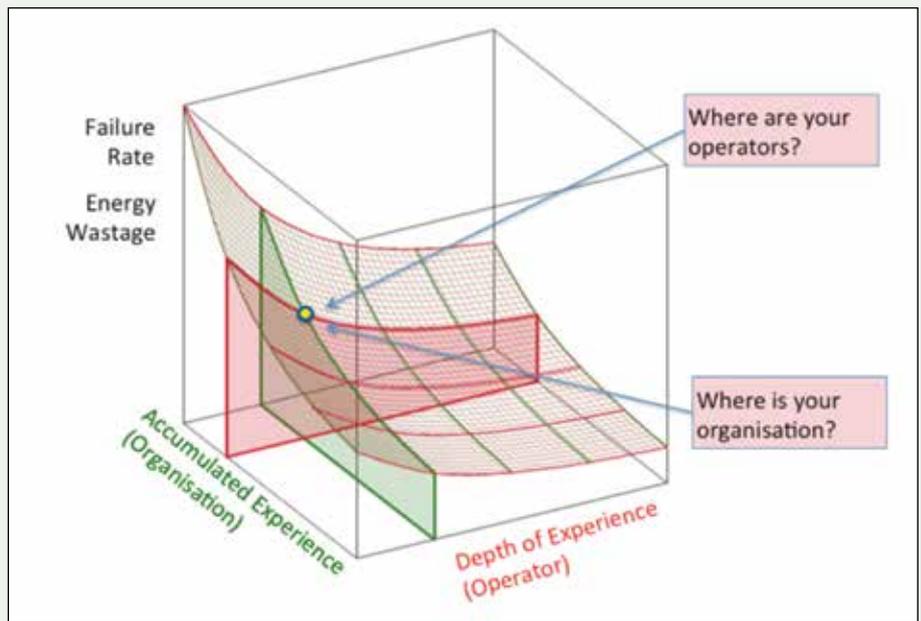
to improve their site's energy efficiency. Learner feedback has indicated that a high practical content works best, so the timetable includes site visits and related exercises, rather than lectures on theory.

Regular learning checks are included to ensure that participants understand the course concepts and that the delivery is effective in achieving the learning objectives. This does not necessarily mean passing an exam, which is an easy way to conduct an evaluation, but does not usually replicate the real circumstances where learners may need to recall and apply knowledge.

Some students struggle with understanding exam questions, although they have a solid understanding of the concepts being tested. Participants analyse the possibilities for improvement at their data centre with support from the OI team to understand industry best practices. This approach provides participants the support they need to implement improvements and gives them ownership of the process. To date this has enabled an average energy reduction of 12% with a return on investment of 8 months. It is also an effective way to promote communication between teams and motivate staff.

Not all operators embrace the ethos of investment in training/workshop-based problem solving. Common concerns and counter-arguments are:

What if I train all my staff and they leave?'	Experience has shown this promotes job satisfaction and assists staff retention. Also, *What if you don't train them and they stay?'*
We're replacing all our plant with more efficient plant therefore its not worth doing'	The workshop approach is compatible with any other energy saving initiatives and allows their full potential to be realised.