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HOW TO AVOID STRANDED INVESTMENTS IN INTELLIGENT BUILDINGS

Mike Welch, Managing Director of Control Network Solutions, the DALI™ (Digital Addressable Lighting Interface) lighting control specialist, explains why it makes commercial sense to adopt a more flexible, open approach to the control and management of lighting systems today.

At a recent RBS Innovation Gateway meeting, Professor Doug Crawford-Brown from the Centre for Climate Change Mitigation Research at Cambridge University spoke on the concept of 'stranded investments'.

A stranded investment is one where a particular technology or solution is acquired to address one set of issues. But, in the time it takes to implement the solution, the reality dawns that the situation has changed and a whole range of new issues have emerged which will not be effectively addressed by the investment made.

This concept applies readily enough to the way we construct and manage buildings. We spend huge amounts of time, effort and money in trying to plan for a building that will operate in a certain way before the foundation holes have even been excavated.

When we arrive at the point of occupation, the world around us has invariably moved on. Business conditions, the environment, energy prices, regulations and other factors are rarely, if ever, fixed points for any considerable length of time. Occupier expectations of the spaces they inhabit have also changed and will constantly evolve over the lifetime of the building.

Of course, every building can be reconfigured to adapt to changing factors and user needs. But, this type of renovation often requires a fleet of trucks and an army of trades to put in new cables or remove existing ones; to move partition walls; fit new lighting fixtures and shift other equipment around. It's a very labour-intensive and expensive process. But, it doesn't have to be this way.

Increasingly, we live in a world of soft, easily reconfigurable technologies, especially in the world of building controls. If the right technology decisions are made at the beginning of a project, then the building can be easily adapted to cope with the impact of office churn.

Take the recently completed Standard Bank office in Johannesburg as an example. In this prestigious building, some years in the planning, everything was delivered and installed according to specification. However, as soon as the building became occupied, reconfiguration took place very quickly.

Many of the people moving into the building were not those initially consulted about their space requirements by the building's designers. And, if they were, their views and needs had altered since that first consultation. A number had changed their job within the company or, fundamentally, wanted their desks in a different part of the workspace, so re-organising their space in a way that impacted on how the lighting was grouped, switched and controlled. Sending in specialist engineers to reconfigure the lighting could have proved a nightmare. Instead, on this project, change has proved a much more straightforward process.

This 65,000m² office development features an elitedali™ solution which is controlling, maintaining and managing the lighting system for the entire building, incorporating 4,500 Digital Addressable Lighting Interface (DALI®) light fixtures and 1,600 DALI® multi-sensors. elitedali enables Tridium's Niagara AX platforms to provide the building with intelligent, automated dimming and switching off of lights in response to daylight and occupancy sensors to save considerably on energy consumption. It also speeds up maintenance, by reducing the time required to replace or reconfigure luminaires according to user demand.



From the site or wherever they might have been in the world, the systems integrator has the freedom to simply access the wire sheets via their PC, then re-group, re-zone and re-adjust control strategies, as necessary. They could re-associate groups of lights with new switches and sensors, different numbers of lighting or whatever was needed to meet the new requirements of its occupants in real time. This was all accomplished quickly, cost-effectively and with minimum impact on the actual business that the end client was trying to transact in the space. And, it's a process that will inevitably continue to be repeated over the lifetime of the building.

The lessons are clear. In my view, we should simply resist trying to work out what's going to happen with our buildings and its occupants in the future. It makes far better sense to implement solutions, such as those at Standard Bank, which maximise the ability of those tasked with managing or using that space to be as flexible as possible so that they can adapt to what is in front of them at minimum cost and as near as possible in real time.

An open approach brings the opportunity to realise these and other substantial benefits. I think of it as an inverted pyramid. With the pointed end at the bottom, we emerge through the pyramid, and, as it widens out, we find greater and greater opportunity to achieve more and more desirable outcomes – flexibility of reconfiguration, energy savings, reduced CO2 emissions, better value assets, improved building ratings, easier operation and maintenance, lower costs and so on.



By bringing together elitedali™ lighting control and Tridium's Niagara^{AX} Framework, energy managers can change the way the lighting operates and observe changes in energy use in real time. They can also receive in-depth and accurate information about the performance of the lighting through the BMS as never before. Without such an open solution, it is only possible to access such data in a proprietary format, making it difficult to combine with data gathered from other areas of

the building services. This approach puts that information directly into the clients' hands, and enables them to specify the format of the information produced for “cloud analytics and big data” applications.

It's a world that liberates energy managers and buildings owners and transforms buildings from stranded investments to valued assets.

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Editor's notes:

Based out of the UK and serving markets globally with its range of energy-saving open control solutions, CNS is a Certified Tridium Developer Partner. Using Tridium's web convergent technology platform, CNS creates smart open standards products and solutions. elitedali™ for Niagara AX® is available for installation via a global network of Certified elitedali Partners (CeP™). CNS also manufactures the CNS-Enocean™ Niagara AX Driver which leverages the company's experience with elitedali and device modelling techniques to offer wireless/energy harvesting control solutions for intelligent building management, automation and lighting systems. For more information on elitedali™, visit www.elitedali.com. Follow elitedali™ on twitter @elitedali or join the discussion on LinkedIn at elitedali for Niagara AX Group.