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The vital role of the Data Centre

The fundamental platform for the current rapid transformation to digitalisation and convergence is the Data Centre. The Data Centre therefore has an increasingly important role to play in today's engineering and construction industries, particularly with regard to Information and Communication Technology (ICT) solutions.

This is according to Jaco Cronje of EES Africa (Pty) Ltd, who discusses the latest trends which make the construction of a Data Centre so crucial, and examines the key issues to be considered.

EES Africa is an ISO 9001:2008 certified company providing management, engineering and auditing services to a range of industries throughout Africa. It specialises in the integration of multiple system infrastructure including ICT, data centres, audio visual, life safety, security and building automation systems.

"Digitalisation involves aligning business objectives with Information and Communication Technology (ICT) solutions, and is the next step in convergence for businesses," Cronje explains. "Digitalisation is part of the Internet of Things (IoT), integral to which is what Gartner refers to as the 'Nexus of Forces'. This is the convergence of cloud, information, social collaboration and mobility."

He emphasises that businesses which implement digitalisation will achieve operational, cost and organisational benefits.

Cronje states that a Data Centre can be defined as a space or facility used to house ICT systems and associated components in a controlled environment. "When considering the implementation of a data centre it is essential to start at the heart of the IT network and explore the IT services and requirements clients have."

All businesses rely on internet connectivity, telephone systems, printers and data storage. The level of reliability of these spaces changes. As the resilience of the space is increased, it moves from being a patch room, to a server room and then a Data Centre.

The Data Centre comprises different areas, the most notable being the white space, the area where the IT equipment is housed. "The support infrastructure is as large as the white space and can cost as much as three times that of the white space. The plant equipment ranges from generators to chillers, to distribution boards and water tanks."

Standards pertaining to Data Centres

Due to the growing international demand for Data Centres and the sensitivity around their operations, Data Centres were constructed in the early days at rapid rates and without fully comprehending the business factors at play. Out of this scenario, various international standards were born, the major driver for which is to avoid Data Centre downtime.

A key set of standards or ratings relevant to data centres are those created and administered by the Uptime Institute, an advisory organisation based in California. It is recognised globally for its 'Tier Standards & Certifications for Data Centre Design, Construction, and Operational Sustainability' along with its 'Management & Operations' reviews. Bradley Hemphill, Managing Director of EES Africa, holds an Accredited Tier Designer (ATD) qualification from the Uptime Institute. The Uptime rating is based on four levels and demands different requirements per rating.

Advantages of colocation

While an organisation may choose to construct its own Data Centre according to its requirements, a fundamental issue which should also be considered is that of colocation. The concept of colocation or sharing of a Data Centre arose due to the fact that Data Centres demand tremendous expertise in construction, engineering and maintenance procedures, as well as a large capital outlay. A colocation centre is defined as a type of Data Centre where space, equipment and bandwidth are available for rental to any customer.

"Colocation facilities provide metered space, power, cooling, physical security for the server, storage and clients' networking equipment, and connect them to a variety of telecommunications and network service providers," says Cronje. "It makes business sense to share the facilities in order to warrant the capital investment, and actually turn what some consider a grudge payment, into a revenue stream."

Open Access Networks

Central to colocation is the ability to support any telecommunication provider, software service, or hardware vendor. An Open Access Network (OAN) refers to network architecture in telecommunications, and is the business model that separates the physical access to the network from the delivery of services. In an OAN the owner or manager of the network does not supply services for the network. These services must be supplied by separate service providers.

“Open Access provides effective, wholesale access to network infrastructure or services. Connecting new businesses to existing communications networks is more affordable and less risky than building networks from scratch.”

Co-lo Data Centres are often referred to as Carrier Hotels if they follow the Open Access Network model.

It has been proven in many international cities that the Data Centre closest to the financial hub has over time become the most sought after Data Centre from an accessibility, support and security point of view. Examples of these centres are found in Chicago, London, Amsterdam, New York and Toronto.

The business case

The Data Centre is a specialist space and an essential requirement in today’s ICT domain, particularly regarding the trends towards transformation to digitalisation.

Cronje concludes: “With a typical lifespan of 20 years, the Data Centre is a long-term investment. The decision is not whether there is a need for a Data Centre, but rather whether an organisation should construct its own Data Centre sized to its requirements or utilise a colocation Data Centre in an outsourced facility model.”

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EES company profile:

Established in 2001, EES Africa (Pty) Ltd specialises in the integration of multiple system infrastructure including ICT, Data Centres, Audio Visual, Life Safety, Security and Building Automation Systems. As an ISO 9001:2008 certified company, our vision is to be Africa’s management, engineering and auditing professional service provider of choice. The EES Value Proposition focuses on translating technology into tangible deliverables for clients through the experience of a talented team of Engineering and ICT Consultants and Project Managers. With offices in Cape Town, Johannesburg and Stellenbosch, EES

operates predominantly in the Renewable Energy, Oil & Gas, Financial Services, Infrastructure, Utilities, Telecoms and Mining sectors.

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Issued on behalf of EES Africa (Pty) Ltd
by ***Corporate Communication Services (CCS)***

For further information please contact:

Annabel Eaton
Corporate Communication Services (CCS)
tel: +27 (0) 21 702 3550 (CT, South Africa)
cell: 082 8984878
e-mail: eatona@netactive.co.za