



On Campus, Colocation or in the Cloud? How Universities can determine the IT Strategy for Today and Tomorrow

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Biography

David Watkins heads up the Solutions Team at VIRTUS Data Centres, working with customers to provide customized solutions. He has been at VIRTUS since 2009, where he was previously head of operations. Before VIRTUS, David was head of UKMEA data centres at Unisys.

Part of ST Telemedia Global Data Centres Group, VIRTUS Data Centres is London's leading data centre company and owns, designs, builds and operates the country's most efficient and flexible data centres. Located in and around London's metro, VIRTUS Data Centres leads the industry with award winning innovation in hyper efficient, ultra-high density and highly interconnected facilities which are designed specifically to offer the flexibility modern users need.

David blogs at <https://virtusdatacentres.com/blog>

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Abstract

Higher education and research organizations faced with challenges for urgent digitization of their applications and data platforms, are now moving their IT infrastructure off-campus and into a purpose build data centre to ensure that their IT works harder for less. The demand from universities for increased efficiency, lower costs and lower environmental impact has led to High Performance Computing (HPC) forming a crucial element of IT operations, explains the author of this article.

Introduction

Data centres quietly reside at the heart of the modern university. Effective IT planning and wise investment in infrastructure means that institutions can deliver better services to students and staff – from remote learning and Big Data powered progress analysis, to High Performance Computing (HPC) and supercomputing required for research.

The explosion in data is putting increasing demands on IT infrastructure that is already over-stretched in many institutions forcing them to face the challenge of determining how to upgrade, replace and / or renew. In parallel, university leaders face physical limitations such as space constraints and energy efficiency



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commitments – and, of course, the ever-present issue of needing to manage their defined, immediate costs, and future IT infrastructure financial expenditure.



Choosing a strategy

How can universities ensure they choose the best IT strategy to make sure they can meet their needs of today, are able to scale for tomorrow and are ready for any unforeseen circumstances that the future may bring?

The fundamental starting point is to decide whether to stick with centralized, on campus IT infrastructure for data and compute functions, or to engage with an outsourced data centre provider or even a cloud solution

It's likely that the status quo is on campus, and serious investment has already been made into building and managing these facilities. But there are some serious upsides to taking the plunge and outsourcing the IT infrastructure.

Moving IT infrastructure off-campus and into a purpose-built data centre allows you to maximize efficiencies and cut costs. What's more, by moving your IT infrastructure off-campus, you can free up valuable space for other activities such as more teaching or research facilities. It also eradicates the challenge of supporting data centre electrical and cooling infrastructure, while also freeing up IT dedicated staff resources.



Many specialist data centres are purpose built to support High Performance Computing, crucial for today's requirements to manage and process vast data sets. Premium providers like VIRTUS dedicate huge amounts of resource to developing the perfect environment for super computers and have experience of excelling in this field; institutions including Kings College London, Imperial College and the University of Bristol are already harnessing HPC deployments within VIRTUS data centres, to support their complex data processing requirements within a shared environment.

VIRTUS also brings a competitive advantage to research institutions. It offers the opportunity to be part of a wider education ecosystem where all organizations have a common interest – to benefit from shared facilities in which researchers can collaborate, increase energy efficiency and reduce costs. In partnership with Jisc, VIRTUS provides the infrastructure for this ecosystem: a communal data centre environment provided in a framework where members can share data sets under one roof, collaborate and ensure that the UK is at the forefront of academic and global medical research.

The framework ensures that the procurement process is simple and straight forward, and that the quality of the data centre facility meets the key requirements of resilience, scalability and cost efficiencies. This is made possible as the combined infrastructure allows quicker localized connectivity, transforming how universities look at their data centre facilities.



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Outsourcing also ensures that these institutions can support their environmental and sustainability goals. At VIRTUS we run on 100% renewable carbon-zero energy across our sites, so our customers can be confident they're choosing the greenest option possible.

There are many reasons why a university might decide to outsource its IT operations: to quickly add new capacity to keep up with the demand for services; substitute an ageing data centre; free up real-estate space for other purposes such as teaching; join an ecosystem to share facilities and data; or simply to cut costs.

There is lots to consider, but you're unlikely to stick with a single data centre strategy. 'Hybrid IT', a combination of in-house facilities, cloud and colocation, is already the dominant model of infrastructure deployment, and will likely remain so for years to come. The most important thing to remember is that you don't have to be tied into one solution – but can mix and match to serve your current, and changing, needs.

Reference

VIRTUS Data Centres is a crucial part Jisc's Janet network, a high capacity network for education and research, which allows Universities to access the shared data centre, both nationally and globally. For more information see <https://virtusdatacentres.com/industries/healthcare-education-research>



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King's College London



KING'S COLLEGE LONDON

As one of the top 20 universities globally, King's College London is dedicated to world-class teaching and cutting-edge research. King's is a founding partner of a group of universities alongside Jisc – a charity that provides digital solutions for education and research in the UK – that has established the first UK and world collaborative research data centre to drive and maintain the UK as global research powerhouse.

Key challenges for King's College

King's College London's data centre facilities were inefficient, outdated and an unsuitable environment for future technology development. The result was an ad-hoc evolution of technology and infrastructure, which was not conducive to the research aspirations of the college.

This was compounded by the increased need for computational solutions to undertake large medical research programmes using High Performance Computing (HPC) clusters which handle and analyse large amounts of data at high speed. Tasks that can take months using normal computers can be done in days or even minutes with HPC platform, making these systems essential for successful research.

The solution – A colocation data centre

To overcome some of these challenges, various relationships with other research-intensive universities as well as Jisc, the provider of the JANET network that serves 18 million users were developed. Through these conversations a partnership was formed between Jisc, King's College London, The Sanger Institute, The Francis Crick Institute, The London School of Economics & Political Science and Queen Mary University of London.

Together these institutions had a common interest: to create shared facilities in which researchers could collaborate. They also wanted to increase energy efficiency and reduce cost. To meet all of these requirements, Jisc and its institutional partners chose to set up a shared data centre to provide a platform for greater collaboration between universities and other research institutions.

LONDON4 was chosen for its commercial flexibility, along with its agile, resilient and efficient data centre platform, whilst also enabling institutions to fully manage the connectivity of their services.

LONDON4 is able to supply as standard a range of power densities from 4k to 30kW per rack. The data centre can quickly cater for periods of high power demand if required by the partners, which is common among those who work on complicated research and require HPC.

Why LONDON4?

VIRTUS LONDON4, situated in the Slough Trading Estate, is a state of the art data centre facility, built to a Tier III standard, with multiple ISO accreditations. The data centre benefits from 27 MW of IT load in a facility that is over 36,000 m², providing ample space and ability for UAL to easily grow according to their needs.

The site benefits from seven layers of physical security, making it ultra secure, with around the clock surveillance of all IT infrastructure, giving UAL peace of mind. As well as this, LONDON4 is designed with eco-efficiency in mind, whilst also always offering 100% on power, meaning the site will never go dark, so key IT functions at the university will never be interrupted.

The University's executive said...

- **FASTER:** Migrated services are running noticeably faster since the move to VIRTUS LONDON4
- **MORE RESILIENT:** There will be no chance of a power failure and the new equipment is configured to cope smoothly with the failure of any one component so we have confidence in our key business services
- **SECURITY:** The new network design safely separates data and services so the risk of breach reduced. The implementation of General Data Protection Regulation (GDPR) has increased the interest in this
- **GREENER:** LONDON4's green credentials support the University of Arts' ambitions for maintaining eco-efficient operations

For more information

To learn more about VIRTUS Data Centres, their facilities, migration packages and how they can help your business, visit www.virtusdatacentres.com

VIRTUS Data Centres

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