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CRAIG MENZIES & RYAN KENNEDY, CLOUD TRANSFORMATION EXPERTS FOR PUBLIC SECTOR AT NUTANIX, REVEAL THEIR TIPS ON HOW UNIVERSITIES CAN SUCCESSFULLY NAVIGATE THE CLOUD JOURNEY.

The Cloud Journey Rulebook for Universities

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Synopsis:

Universities across the UK are having to stand out from the crowd more than ever to attract students as well as private and government funding. Delivering a robust IT infrastructure that serves both students and staff has become central to this, but doing it successfully is not without its challenges.

While the cloud offers the technical infrastructure universities are looking for, there is no one size fits all 'silver cloud' which delivers the best in service and price point for all workloads.

First, let us agree that every university is on a cloud journey. Accepting that, what are the key challenges that university IT teams face and how should they approach them?

This short whitepaper advises on some fundamentals:

- Determining the most appropriate destinations for different workloads
- Maximising cost-effectiveness
- Attracting inward investment
- Delivering robust security

The key questions to consider on your cloud journey

You can't rush your cloud journey. Take your time to think about your desired outcomes and what you need to deliver them. This will prevent you from making the wrong decisions about where your applications should live.

Start by thinking about your guiding star. This has nothing to do with infrastructure at all, but the outcomes you're looking to achieve for your three major stakeholders:

1. The students (and the student experience).

2. The research departments (and their need to attract funding).

3. The university as a business.

The IT team's focus is on serving these three groups and the questions you ask should always tie back to them. Effectively, what you're doing is conducting cloud readiness assessments for your applications to determine the most appropriate location for each service and how it will impact these stakeholders.

Is this the best place to run the workload?

When you're thinking about where a workload should live, think about how it's being used and might be used in the future. This second point is key. As requirements change over time, it is rare for an updated piece of software to need less CPU, less memory. Applications may have dependencies on other applications or data, which impacts latency, which then impacts experience. Security is also key for every business, but universities have been impacted more than many.

IT teams have learned that there is sometimes a need to be more granular when looking at workloads. End User Computing (EUC) or Digital Workspace, which saw a boom during the COVID-19 pandemic, is a perfect example as requirements are so varied. For simple requirements, the public cloud is the cheapest way of delivering this service, while for more complex requirements with GPU or data dependencies, on premises has been shown to be significantly more cost-effective and delivers the right experience to students. The same granularity should be applied to other workloads with a breadth of need.

Adopt a 'test, learn and optimise' approach when considering where to deploy your workloads, and start by considering who the user is and what their needs are. When looking at the location, consider adding 'for now' at the end. On-premises might be right 'for now', but cloud in the future or public cloud might be right 'for now', so ensure you have mobility in mind.

Will this improve cost-efficiency?

The main things to watch for with cost and cloud are surges in use, the cost boundaries defined by fixed virtual machine sizes and the tiering of security services.

This means that if you're dealing with a system that experiences bursts, like admissions, you need that flexibility to scale up. In this instance, you might turn to the public cloud, but you also have to expect the cost of service to go up. With flexibility comes a lack of predictability.

However, this is where a hybrid cloud approach can help, where you're on-prem most of the year when the workload is steady, thus providing the best cost point, but burst to a public cloud to handle the increased need when required.

This level of flexibility and portability is much-desired. In the most recent Enterprise Cloud Index 2020 - a global study of over 3,600 IT leaders into their IT strategies - 76% of public sector respondents (and over 80% across all sectors) identified hybrid cloud as their ideal IT operating model. That is, hybrid cloud being a combination of SaaS, potentially a number of public cloud providers and on-premises infrastructure.

Away from cloud models, we're also seeing a significant consolidation of IT teams within UK universities, not in the number of people but the amount of work which needs to be done, as IT is seen as a differentiator to the business. The same way it is seen in other industries such as retail and financial services.

Key to this is obviously automation and self-service. You want a modern IT infrastructure that looks after itself. The more you automate people out of the process, the less you spend on maintaining the cloud infrastructure and the more stable it becomes. That doesn't render you or your team obsolete - it means you can shift your focus from the day-to-day tasks and 'keeping the lights on', to delivering new innovative services and infrastructure to your institution.

We have seen this with many of our university customers, who have gone through their modernisation, and built in automation and self-service, therefore freeing up these smart people to think of new and innovative ways to help the business.

Is this secure?

Data breaches are on the rise among UK universities and colleges. Over 25% of all UK universities have reported ransomware attacks in the past decade. This is partly driven by the fact that universities are still relying heavily on legacy infrastructure, which provides a high number of attack vectors because of the number of connection points they have.

With a security-first approach, hardened platforms and a solid disaster recovery plan in place, you can mitigate the potential damage though and, if impacted, recover significantly faster.

Take shadow IT. Shadow IT always adds to the complexity of the security challenge. These are typically internal workarounds implemented by users to (perceived) limitations within an existing infrastructure to give them a bit of unauthorised freedom within the system - like opening up remote access in an otherwise closed system.

Shadow IT creeps in for two reasons:

1. It takes too long to provision the required equipment.

2. Workarounds were desired to improve access when working remotely.

Workarounds often leave the entire system insecure, meaning anyone who finds the access point could eventually break into the university network, regardless of how secure people might think their passwords are.

So get a secure, flexible system in place for researchers to do their jobs. You remove both the temptation for workarounds and you look better on paper because you've got the infrastructure in place to make work happen. Offering up a research cloud, delivered through self-service is a win for everyone.

Technology as a gateway to increased funding

Attracting increased funding for your university's research programmes is second only to bringing in new students when it comes to helping universities grow, both in terms of size and stature. And, having a solid IT infrastructure in place is the key to securing that funding.

Take the Research Excellence Framework (REF) - the ranking system that helps determine funding allocation for research projects conducted by university staff. What some universities have found is that by improving their technical capabilities, they increase the likelihood of securing funding.

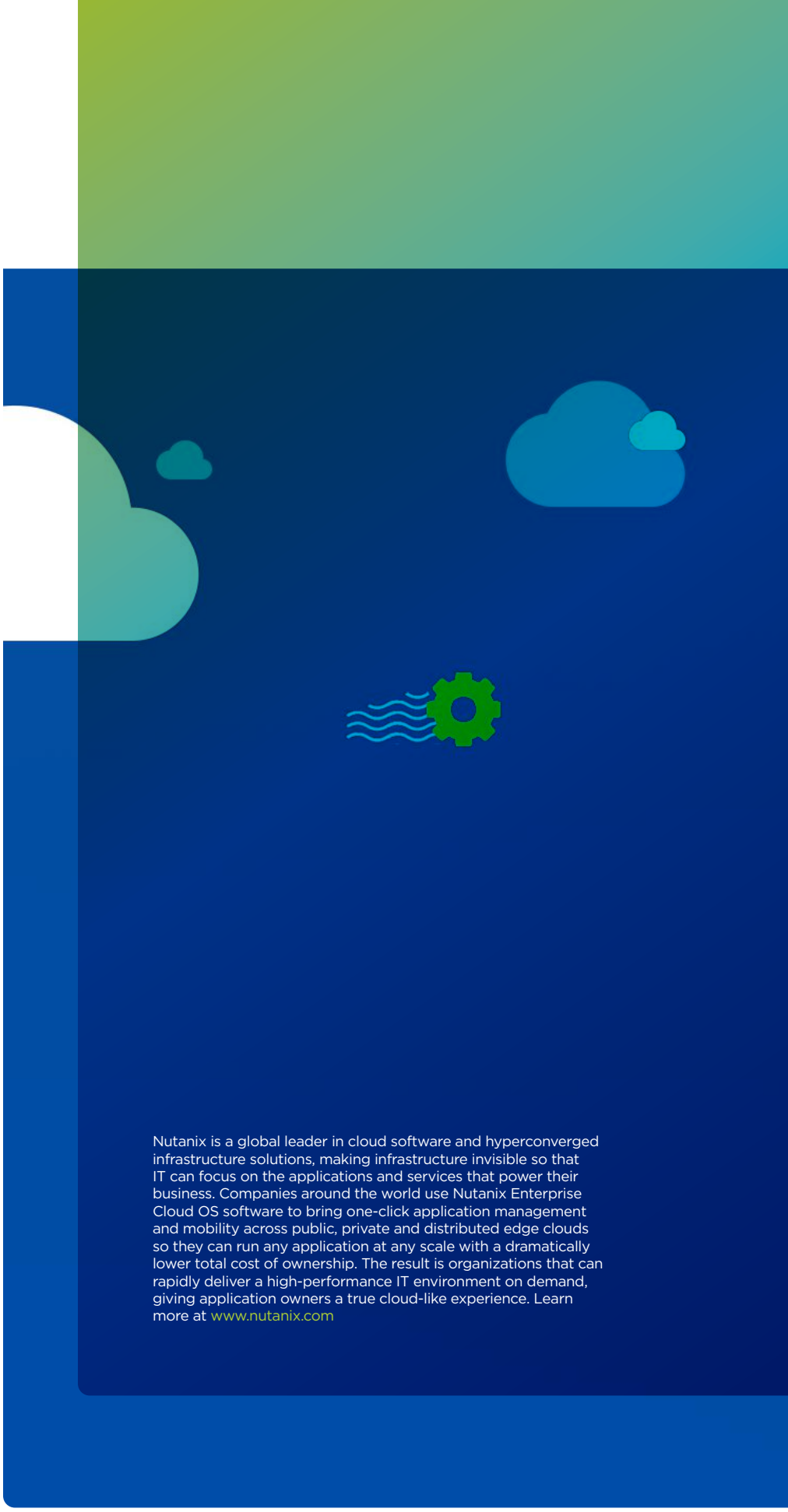
IT is every bit the enabler to deliver the research securely, to let academics do their work safely. The more the technical capabilities are clearly outlined, the better.

As well as providing a stable platform, you need to demonstrate the ability to control costs. For example, if you get a five-year grant through REF based on a cost analysis, you'll get the money required to get you through those five years. If your cloud costs start to skyrocket beyond your initial forecast and control, you can't simply go back and request more funding. For this reason, you might want to consider on-prem over public cloud to give that level of cost-stability and security that potential investors want to see.

Summary

In summary, the more you rush towards the end of the journey, the more likely you are to make decisions that cost you money, leave holes in your security, and introduce inefficiencies and workload issues that negatively impact everyone.

Start early so you're not making rushed decisions, pay attention to the finer details of how your applications are used, and approach your cloud journey as a continuous voyage, rather than a single destination. Over time things will move and you'll want to change it up. So be prepared. Take input from as many people as you can, but always keep an eye on your guiding star.



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