Inside Track
Research Note

FREEFORM DYNAMICS

The Economics of Application Platforms

Don’t let anarchy or false economies hold back future-proof transformation

in association with

NUTANIX

Introduction

Why would anyone care about the economics of application platforms? Whether it's a dedicated system stack, a traditional x86 virtualisation environment, or a modern cloud option, what you pay for the 'systems layer' should, in theory, be a relatively small part of the overall cost equation, especially over the lifetime of an application.

That is no longer true, though. These costs can now be very significant, especially once you add in the too-often-forgotten management element. In many ways, it is a problem that has crept up on us, but not for the reason we've heard so often that it's become a cliché: "The squeeze is on, IT needs to do more with less, blah blah."

Instead, it's quite simply that platform costs are out of control in many organisations. Part of this is a lack of objective, coordinated and disciplined decision-making, which causes procurement inefficiency and impedes strategic transformation activity, especially if it brings about the anarchy known as cloud sprawl.

This paper explores such challenges based on the results of a recent survey of 158 IT professionals. We go on to consider what's important when looking to transform at a platform level to create a more coherent and future-proof hybrid environment. Let's start our conversation, though, with a review of where organisations are today.

Taking stock - do you have a bit of everything?

It's obviously hard to keep up with escalating demands and expectations when you rely on old systems and tools, so over time you introduce new platforms, architectures and delivery models into the mix. This has led many to bring software-defined infrastructure into the datacentre, while also adopting various forms of cloud (Figure 1).

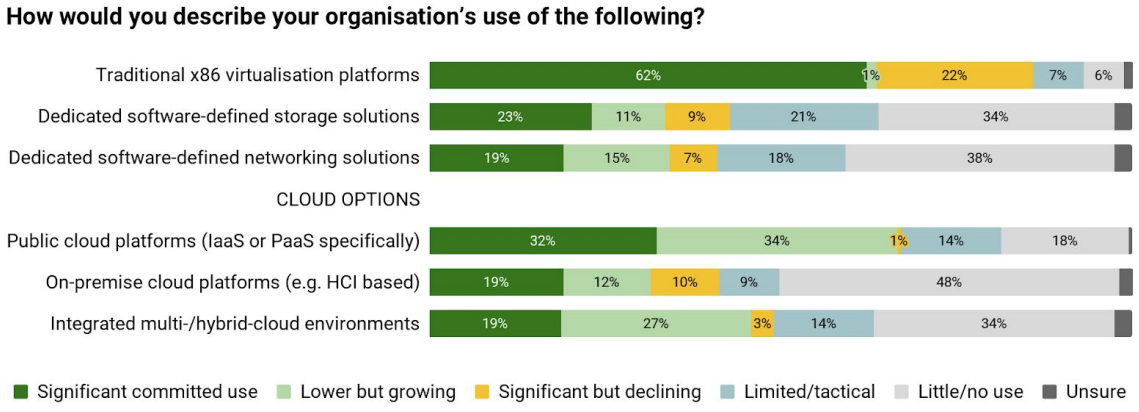

Figure 1 In the drive to meet evolving needs, IT teams have turned to a variety of different platform solutions

As the chart shows, despite the influx of new technology and services, older platforms such as traditional x86 virtualisation environments from the likes of VMware and Microsoft aren't going away in a hurry. While not touched on in our study, the same can be said for non-x86 proprietary or legacy environments - Unix, mainframe, etc.

What's not shown on the chart above is that each category often includes multiple specific platforms and services in use. As an example, it is not unusual for a single organisation to be using two or more software-defined storage solutions from different vendors, and/or services from multiple cloud platform providers. Pull it all together and a massive proliferation of platforms is evident (Figure 2).

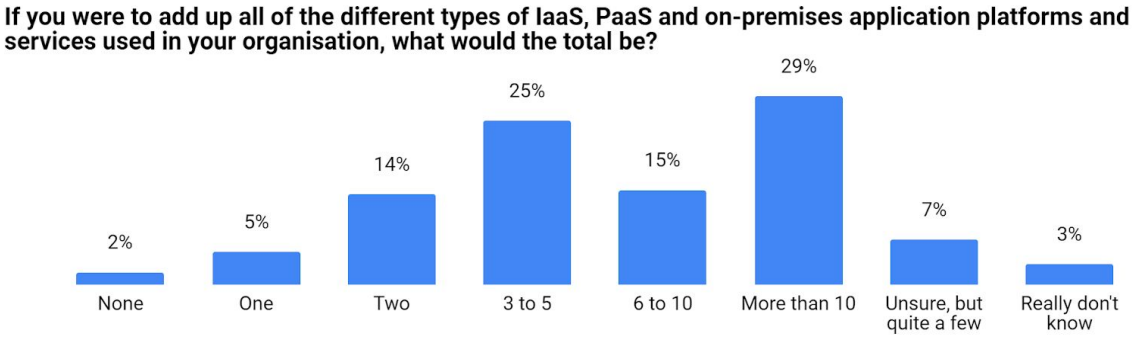

Figure 2 Proliferation of application platforms is a potential challenge from a cost and operational perspective

At one level, this enthusiasm for modern platforms and services can be seen as positive. Developers, application teams and operations staff are exploiting the wide range of platform and service options now available to them. This is consistent with the oft-cited desire for modern approaches to application delivery in general (Figure 3).

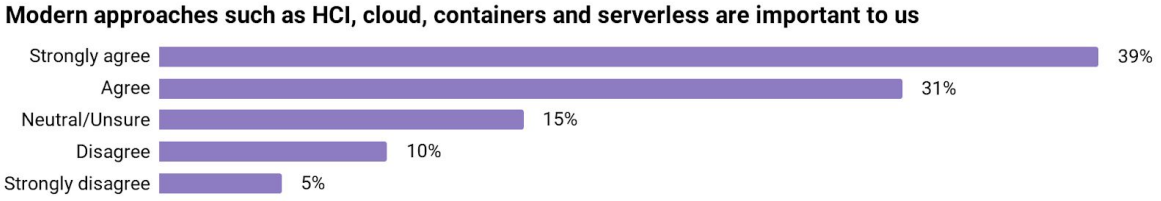

Figure 3 New approaches are seen as important, but are decisions always made in the right way?

The question is whether those new platform and service decisions are always made in an informed, objective and coordinated way, and the evidence suggests that they often are not. Our survey highlighted a range of challenges and pitfalls, not least in relation to costs and cost management. These challenges were associated with both cloud services (IaaS and PaaS) and on-prem platforms, so let's study each of these in turn.

A cold, hard look at public cloud economics

The public cloud is often positioned as the answer to all of IT's prayers, and the cloud model certainly offers advantages in flexibility, scalability, and so on. The reality though is that there's no such thing as 'the' public cloud. What we have is a rather immature marketplace, where diverse infrastructure and platform offerings provide little consistency. You don't have to look very closely to uncover a wide variation in functionality and commercial terms. Against this background, many of our survey respondents reported that keeping costs under control was a challenge (Figure 4).

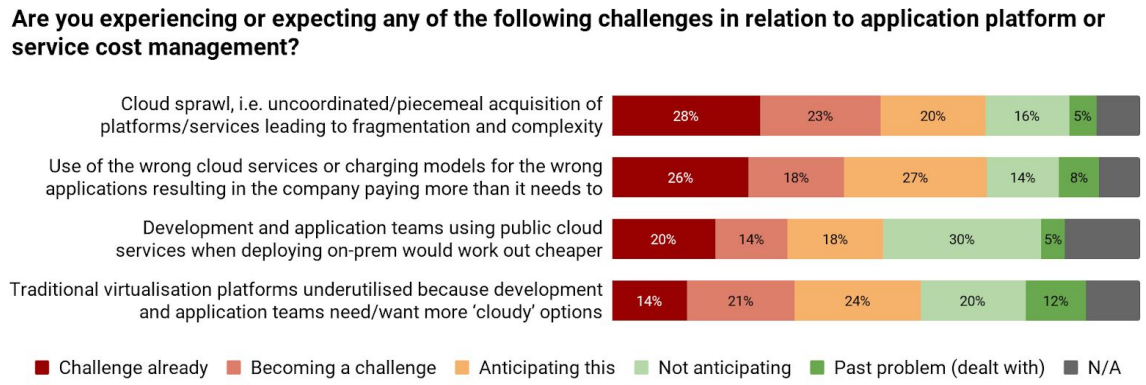

Figure 4 Many are experiencing economic challenges in relation to the public cloud

Always cheaper? Really?

Most survey respondents also reject the popular claim that the public cloud is always the cheaper option. Related to this, very few believe that the market is stable when it comes to charging models and prices (Figure 5).

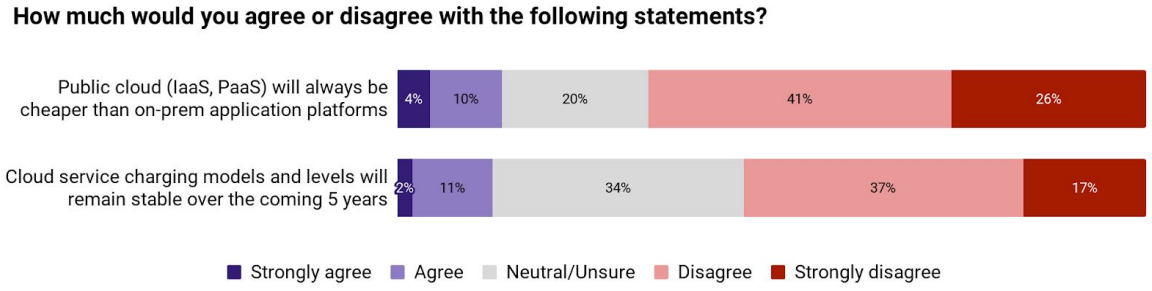

Figure 5 Most disagree that the public cloud is always cheaper, and are also not convinced about market maturity

On the broader question of cloud economics, survey respondents provided some insightful perspectives in their own words. Here is a selection of representative quotes:

- ➔ *"Many applications do not need the scalability of the cloud, but they do benefit from some advantages of on-prem processing such as conveniently-available storage. It is not efficient to run those services in the cloud as the cost is higher."*
- ➔ *"Storage and communications costs often make cloud services significantly more expensive than on-prem, particularly for larger applications."*
- ➔ *"It's nice to be able to spin-up a powerful instance to try something out that'll consume a lot of resources without worrying about the three-figure charge showing up on the next invoice."*

The importance of taking an inclusive longer-term view

Many also made the point that it's important to consider costs over the longer term:

- ➔ *"On-prem is simply much cheaper than the [public] cloud in the medium-to-long run based on the usual 4-6 year application lifecycle."*

- ➔ *"On-prem is often cheaper in the long run when you add up human capital and Capex vs Opex. On-prem gear is so fast and affordable now, you can barely use all the resources you procure. Power, data and cooling are pennies compared to the cloud where [providers] are ripping you for nickel and dime services."*

- ➔ *"When you already own a platform and it is currently working well, it doesn't make sense to buy it again just to put it in the cloud. When it comes time to upgrade or replace that platform, if it costs less to replace it on-prem than a year of it being hosted in the cloud, why would you pay more?"*

Those last two comments highlight that existing assets and resources must always be taken into account. The incremental cost of accommodating a new application, for example, can be minimal if you already have a datacentre and the team(s) to run it.

Capex vs Opex - a strong challenge to an industry narrative

Something that surprised us was just how strongly our survey respondents challenged the frequently-heard industry narrative on Capex/Opex, in comments such as these:

- ➔ *"For us, Capex benefits from a tax position and depreciation perspective still outweigh any advantages of the Opex model."*

- ➔ *"As with many public sector organisations, projects can often come with Capital funding, but no ongoing funding to support a subscription or Opex charging model. This often makes outright purchase of kit more affordable than a long-term contract for cloud based solutions."*

Contrary to the popular myth, not everyone is obsessed with a move from Capex to Opex. This is particularly the case in the UK public sector, though it can apply in any industry, depending on accounting preferences and financial reporting objectives.

An informed and balanced assessment is essential

Those challenges should not be interpreted as the public cloud being universally problematic from a cost perspective, however. The right workload hosted on the right service with the right contract can make economic sense. There will also be occasions when you'll be happy to pay a premium for the flexibility, scalability and/or functionality offered by a specific service. Public cloud options can then represent a useful way to work around skills, resource and/or space constraints, or shortfalls in capital budgets.

However, if you make the wrong choices and/or fail to control adoption you'll pay the price. As well as unnecessarily high service fees and additional integration and management overheads, there can also be significant cost and disruption involved in having to switch when serious mismatches arise.

On-prem platforms have their challenges too

In the on-prem vs public cloud debate, you can legitimately argue that there's often no benefit in migrating stable applications running on stable platforms to a cloud service. When reviewing the state of your datacentre infrastructure, however, the important question is how well geared up you are to meet evolving needs, not just current ones.

With this in mind, a message that comes through strongly is that older platforms are often not cost-effective when it comes to supporting modern application requirements. Furthermore, whether you extend older platforms or introduce cloud-like alternatives, there's a range of potential cost-related 'gotchas' (Figure 6).

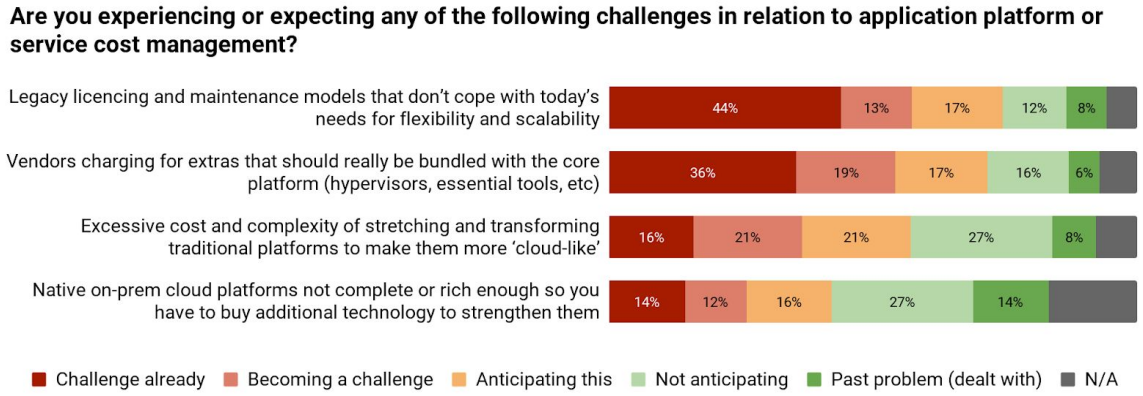

Figure 6 Supporting today's application requirements through on-premise platforms can be challenging

The picture we see here is consistent with many of today's platforms having been designed during the early days of x86 virtualisation. Back then, over a decade ago now, the name of the game was consolidation to clear up years of accumulated server sprawl, and both the technology and the associated licencing models reflected that. Throw Agile, DevOps and Continuous Delivery into the mix, along with the highly dynamic and/or unpredictable nature of many of today's 'digital' applications, and you have a significant and potentially costly mismatch.

It's important then to be cautious of traditional vendors wanting to protect their incumbent position and boost their income by perpetuating the use of older platforms and licensing models. Not surprisingly, most survey respondents said it's better to adopt modern platforms for modern needs rather than stretch existing ones. A more modern platform will often make sense both functionally and commercially (Figure 7).

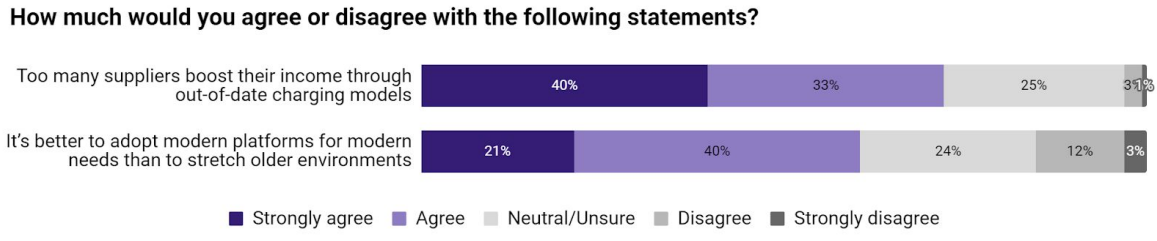

Figure 7 Vendors might welcome the stretching of older platforms, but this may not be in your best interests

Looking to the future - all bets are on!

Stand back and consider how to meet a diverse and ever-evolving set of application needs over the coming years. When you bear in mind the imperative to avoid the kind of mismatches we have been discussing, the chances are that you'll see a place for a range of different platforms, services and charging models (Figure 8).

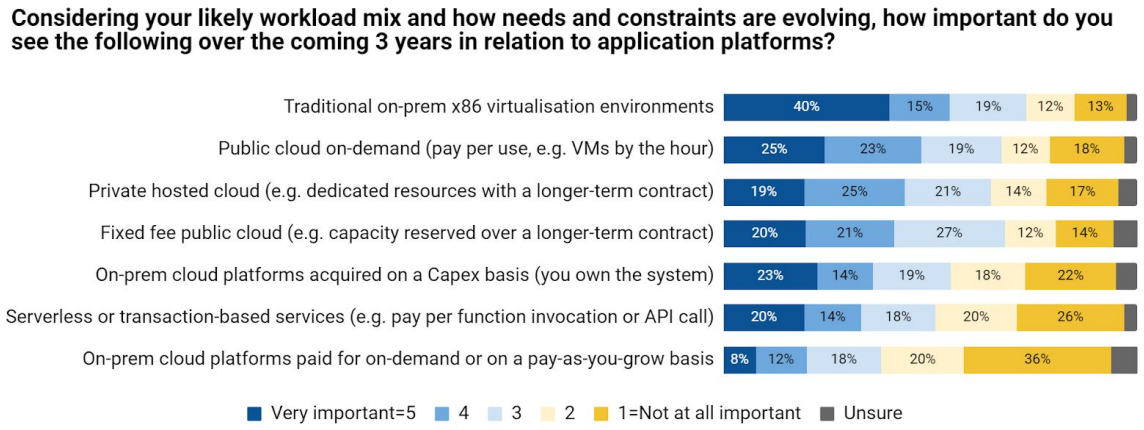

Figure 8 Looking to the future, there is a place for pretty much every platform and cloud service option

A specific requirement within this is to support freedom of movement, i.e. to allow the easy migration of applications when necessary. You may have to do this in response to a service provider changing the commercial rules, or a vendor declaring end-of-life for an on-prem platform. More likely, however, is migration because an application's platform needs have changed over its lifetime.

For example, it might make sense to develop a given application on-prem, move it to a public cloud for the pilot phase, then back into the datacentre for production scale-up in proximity to dependent resources within a highly-controlled governance framework. Thereafter, further migration might reflect a change in usage patterns, or different technology options becoming available. To be clear, this is just an example - where an application starts life and its subsequent migratory route will depend on many factors.

The need for this kind of freedom and flexibility is understood by the majority, though relatively few say they are well geared up to support it (Figure 9).

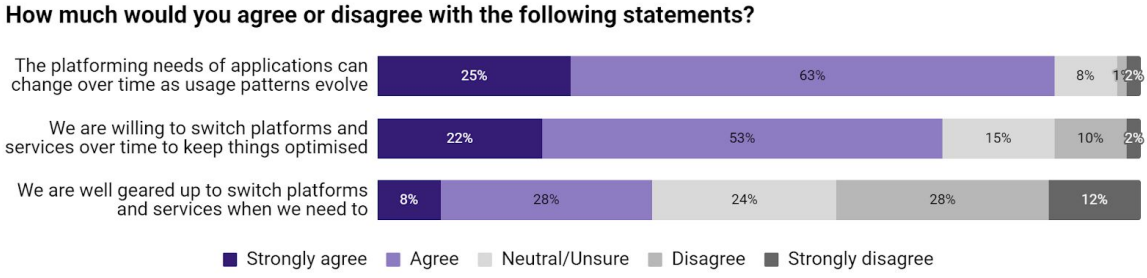

Figure 9 Today's application needs are more dynamic, so freedom and flexibility is particularly important

Preparing for Multi-Cloud and Hybrid-IT

Reviewing all of the wishes and desires, there is a clear requirement for some specific overarching capability that can keep things optimised. Similarly, there is a strong appreciation of the need for platforms and tools that allow easy movement and migration of workloads, along with a growing awareness of the emerging importance of multi-cloud capabilities (Figure 10).

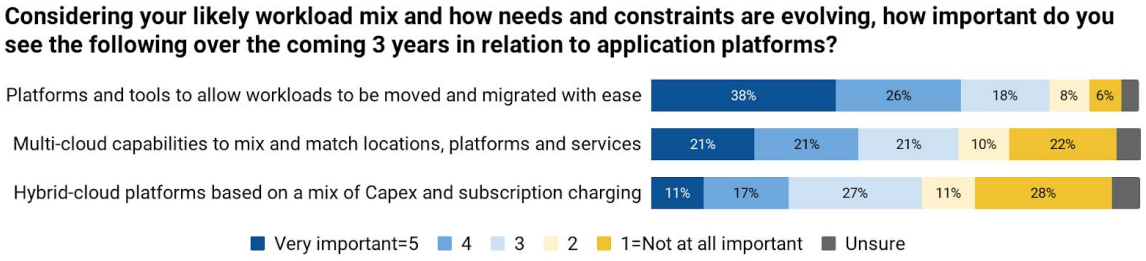

Figure 10 Specific hybrid/multi-cloud capabilities are required to support strategic transformation

The third line on this chart relates to offerings that have emerged recently based on the notion of bridging a public cloud environment into your own datacentre. There are benefits to doing this if you have a big commitment to a specific public cloud, but it's important to note that this model is not the same as the multi-cloud concept. It allows migration flexibility in one dimension only, namely between your datacentre and a public cloud, but only for that specific cloud stack. This model, and the architecture that goes with it, will not help if you want the freedom to move applications and workloads between stacks and services from different vendors and providers.

Fortunately, a new generation of solutions is emerging within the industry to address the need for a more open hybrid/multi-cloud approach. Such platforms can often make more sense from a strategic perspective and are worth seeking out.

In summary

Public cloud services have a lot to offer, but they are not always the most cost-effective option. The truth is that the dramatic cost savings claimed by some are generally only achievable by migrating your entire application portfolio to the public cloud, which is neither feasible nor desirable for most organisations. The majority of organisations will still want and need to leverage their existing investments in the datacentre and associated skills, and it's important to acknowledge this when considering platform economics.

That said, older on-prem platforms such as traditional x86 virtualisation environments are often not great at supporting today's needs. It might be possible to stretch their capability to get closer to what's required, but there are practical and economic constraints when doing this. The prevailing view among respondents to our survey is therefore that it's best to implement modern hybrid/multi-cloud platforms to support modern application needs.

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