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Can private cloud be cheaper than public cloud?

Real stories about how companies run their private cloud cheaper.

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Executive Summary

In a previous report, *Can private cloud be cheaper than public cloud? 41% said yes, and the survey reveals how*, findings from a survey of 150 IT decision-makers were presented that showed forty-one percent claimed to be operating their own private clouds at lower unit costs than public cloud. This report presents a summary of five interviews undertaken with IT decision-makers to find out how they were achieving cost savings in their private clouds.

Although respondents saw direct cost as important in the use of private cloud, the bigger economic picture is what stood out. Private cloud was regarded by respondents as a premium choice in terms of growing and protecting the business that does not have to come with a premium price if efficiently managed and operated.

Reduction in labor costs and infrastructure efficiency were cited as the key means of squeezing private cloud costs. But respondents claimed that reduction in downtime, improvement in performance, better stability, and increased security and privacy had the biggest economic benefit, and what made private cloud stand out against public cloud as the best option for them.

Automation was a key driver of direct cost benefits. Respondents cited as much as an 80% reduction in full-time employee (FTE) expenses while simultaneously achieving a 25% increase in productivity.

Automation was regarded as a driver of broader economic benefits, too: one respondent cited a reduction in downtime of 30%, while another cited reduced security compliance breaches, both of which led to tangible economic benefits for those participants. Another respondent cited a 30% efficiency improvement in resolving incidents, and another a 5-10% increase in efficiency, both as a result of automation. Ensuring ongoing compliance was raised by several respondents as a major challenge.

All respondents said they believe that capacity planning is critical to performance, availability and cost-efficiency. Tools for managing capacity are commonplace, with one respondent stating these tools have led to 25% greater resource productivity.

Introduction

In the companion report, *Can private cloud be cheaper than public cloud? 41% said yes, and the survey reveals how*, we presented the results of a survey of 150 enterprise IT decision-makers, with the objective being to understand how industry was benefitting financially and economically from private cloud.

Private cloud has long been touted as the premium choice – an ‘enterprise grade’ cloud for mission-critical requirements, but at a premium price. Data protection, ownership and control are the typical arguments for going private touted in the media and by those advocating its underlying technologies. When it comes to total cost of ownership, public cloud is considered by many to be the standard choice for the cost-conscious CIO – no surprise considering the frequent price cuts announced by the hyperscalers and the resultant press attention they draw.

But the survey results showed otherwise: forty-one percent claimed to be operating their own private clouds at lower unit costs than public cloud. Half of respondents rated cost-efficiency as a key driver of their decision to use private cloud, although data protection and asset ownership were the most highly ranked. In fact, even if public cloud were to cost half as much as private cloud, respondents said they would migrate only 50% of workloads. These results indicate that private cloud is perceived to be a premium choice, but not necessarily at a premium price.

Automation and capacity planning were cited by the participants as the biggest drivers of cost-efficiencies, exactly the finding of 451 Research's Cloud Price Index study on private cloud late last year.

So why is the myth that private cloud is more expensive than public cloud still so commonplace? Perhaps enterprises can't be heard among the market noise associated with public cloud. To get a better understanding of the reality of private cloud costs, VMware commissioned 451 Research to interview five IT decision-makers to understand exactly how their private clouds are achieving economic savings over public cloud and what measurement, design and use-case aspects are contributing to these cost benefits. This report analyzes those responses.

Use Cases

The five respondents work at large and established enterprises based in the US. All respondents stated that their companies have been operating for more than 25 years, and reported IT budgets of \$25-50m – budgets they said are likely to increase 2-8% over the next two years. These companies have 2,000-45,000 employees, and all our respondents claimed to be early adopters or likely to act quickly to use new technology. Sectors covered are automotive production, financial services, IT and retail apparel manufacturing.

All five interviewees are senior administrators or managers whose companies are using private clouds on a multi-application basis, with multiple departments and projects operating workloads in the same private cloud infrastructure. Considering that 40-95% of workloads at those companies are on private clouds and that each company's IT budget is significant, all are clearly significant deployments. VMware was not involved in the panel selection or the interviews, and is not aware of the identities of the interviewees or their employers.

It is interesting that all the respondents are looking to grow and enhance the use of their private clouds, which runs counter to headlines of mass migration to the hyperscalers. Rather than looking to migrate to public cloud, the trend among the interviewees is to add more virtual machines and users, and to continue to leverage efficiency gains. This latter point raises a question: is private cloud getting cheaper, too, but just isn't getting noticed above the sound of the so-called public cloud price war?

“Over the next two years, we plan to continue to add more users to our cloud infrastructure, so we are going to increase our sharing of hardware resources and focus more on adding VMs and optimizing them.”

IT Director, Financial Services

All respondents are using tools to aid provisioning, typically a combination of dynamic provisioning (scaling in response to triggers or time schedules) and static provisioning in response to end-user requests. The aspirational trend, however, is for algorithmic provisioning, where analytics tools can preempt changes in capacity before they happen, and can spin up the appropriate resources both in advance and ad hoc.

“We provision our compute resources with the help of deep-dive analysis of our IT infrastructure, our KPIs and our SLAs. We have tools which we leverage for resource relocation and optimization, and that helps us to manage and plan our compute resource as and when we need it.”

IT Director, Automotive Manufacturing

All respondents were measuring public cloud costs against private cloud and were tracking cost efficiencies gained through automation and capacity planning.

“[We measure] the type and amount of data which we are processing and how long it takes through our private cloud compared to our public cloud...we compare how well we are performing through our private cloud compared to public cloud because we can measure the KPIs from both the environments as we can transfer workloads from public to private.”

Systems Administrator, Fashion Manufacturing

Automation

In *Can private cloud be cheaper than public cloud?* 41% said yes, and the survey reveals how, we mentioned that automation was chosen by 17% of 150 IT decision-makers as their number one cost-saving measure. The interviewees were asked to provide further depth on why automation was so important and what benefits it provided. The respondents were using automation across a gamut of cloud-related tasks: releases and deployment, access control and enforcement, virtualization management, configuration management, scaling, and network configuration, for example.

As one might expect, the benefit of being able to refocus labor on more important tasks was raised by a number of our interviewees:

“We automated repetitive maintenance tasks and freed our FTEs and saved costs. This led to 80% FTE cost savings on repetitive tasks.”

IT Director, Financial Services

But respondents also cited economic benefits far beyond cost savings as being fundamental to the economics of choosing a private cloud, including SLA management, availability and even security:

“We were able to identify and alert ourselves on system failures proactively, thus, reducing system reboot times, crashes and repair time, which led to cost benefits. We were able to improve our availability and significantly reduced our downtime by 25-30%.”

IT Director, Financial Services

All respondents believed they could further improve efficiency and cost gains with better tools and processes, including a proposed 10% reduction in downtime and a 5-10% reduction in efficiency.

It seems that although direct cost savings compared to public cloud is important, decision-makers view private cloud as protecting greater economic interests – for example, revenue protection as a result of having an available and performing webpage, reputational protection through timely delivery to customers through agile processes and functions, and legal and brand protection through securing end users’ personal data. The financial impacts of a breach, an unavailable website or a broken process are significant, and these are the primary reasons why CIOs like a tighter-controlled private cloud over a public cloud. But if operated efficiently, it seems that private cloud can also be cheaper than public cloud. This seems to be win-win.

However, it’s not all great news for enterprises. When it comes to automation, the greatest challenge appears to be understanding the process in the first place, before it can be optimized and automated:

“The failure or inefficiency of an automation is due to the [lack of] understanding of the process which needs to be automated.”

IT Director, Financial Services

The cultural impact of automation also resonated with our participants:

“The biggest challenges which we face would be workforce management. Since, we try to automate various processes, therefore, we end up having underutilized resources, which are a waste of our operations cost. This, in turn, increases the pressure on us to allocate the resource efficiently or release the resource, resulting in high attrition.”

Systems Administrator, Fashion Manufacturing

One solution is to place the disintermediated employees into driving more value-adding projects to gain an edge on the rest of the market.

A further dark cloud hung over the aspiration of a highly automated cloud: compliance:

“[Any time] automation is implemented, we must reassess the policies around that process or function so that there are no compliance or security shortfalls. If automation increases significantly, then it will increase the need to reassess policies so that we do not compromise with our regulatory compliances.”

IT Director, Automotive Manufacturing

Perhaps as automation increases, the ability of those automation tools to assess risk and compliance will also mature.

Despite these challenges, all respondents were keen to improve automation in their respective private clouds to drive cost-efficiency and broader economic benefits. Success led to great benefits for this business:

“Automation reduced our processing time, it reduced our employee hours, eliminating manual intervention from various processes, and it helped us in achieving proactive problem and incident management.”

IT Director, IT Industry

Capacity Planning

Capacity planning is required of any IT function – when and what capacity should be procured now and in the future. It’s a balancing act, trying to find a compromise between provisioning too much and provisioning too little. That explains why in our first paper, capacity planning was cited by our respondents as being the number one driver of cost savings.

All our respondents stated they believe their capacity-planning tools and processes are mature and cost-beneficial to the company. Furthermore, they cite the capability of tools to provide actionable insights in real time.

“The biggest benefit or success which we have come across is knowing the actual capacity of our infrastructure. The tools give us the capability to understand our capacity requirement can be met in the best possible way, how we can optimize the capacity further and reduce our consumption costs.”

IT Director, IT Industry

These tools and processes were also seen as being critical to the economic benefits derived through capacity planning, namely reduced cost by preventing overspending on unused capacity while meeting performance and availability requirements:

“...capacity planning helps us in understanding our consumption patterns, and it also helps us in understanding the issues so that we can troubleshoot them at fast as possible. This has led to close to 25% more resource productivity of our dev teams, and it also has a lot to do with automation of our processes which we have discussed earlier.”

IT Director, IT Industry

This balancing act is an ongoing challenge for users, and predicting consumption is key to getting this balance right. Finding skilled professionals is the big barrier:

“The main challenges for capacity planning is that we need experts for the role; otherwise, the planning isn’t optimally done and the capacity issues are not understood well, which increases the resource cost.”

IT Director, IT Industry

Despite these challenges, some of our participants identified room for improvement:

“We are planning to optimize our server capacity further because our capacity planning shows that we have a window of 5% more server utilization than before, so we will make the necessary adjustments.”

IT Director, Automotive Manufacturing

What is Driving Savings?

So overall, how is private cloud deriving economic value? Reduction in labor was the primary means by which companies were saving on costs using private cloud:

“We can automate processes more effectively in private cloud, leading to efficiency and agility of the infrastructure. This also leads to cost savings because cost of FTEs is eliminated from manual processes, and the workflow becomes much faster.”

IT Director, Financial Services

Of course, there is more value to be gained than just cost savings, and it seemed broader economic value mattered to our respondents. Availability and performance were major contributors to economic benefits.

“Reduced downtimes and higher system performance is achieved in our private cloud, which gives a lot of cost savings on a yearly basis.”

IT Director, Financial Services

And, perhaps, it’s no surprise that security also was noted as being of economic value to private cloud.

“Security in private cloud is much better and robust, therefore preventing any damages or cyberattacks on our network – for example, DDoS, phishing, etc.”

IT Director, IT Industry

The participants view these factors as their key reasons for choosing private cloud. They don’t just see security, availability and performance as important IT characteristics – they see them as key economic characteristics, protecting, strengthening and enabling the overall business, rather than just IT. Private cloud was deemed to be of critical importance with regard to overall business economics, far beyond just compute cost savings.

“Private cloud gives more performance benefits and control over public cloud in our experience, so it becomes a better investment solution for us because we can save a lot on operational costs, resource costs, [obtaining] service quality, etc.”

Systems Administrator, Fashion Manufacturing

Conclusion: Has Private Cloud Met Expectations?

Asking whether private cloud has met expectations to a panel of decision-makers who are saving money using private cloud over public cloud seems to be a moot point. But why is it meeting expectations? It's a point we've come back to repeatedly during this report: the combination of direct cost savings with the broader economic benefit of performance, stability and security. In the first paper, we found that 41% of those surveyed were paying less for private cloud than public. Of course, this leaves 59% who believe they are paying more, but even here, most of this 59% believe they are paying a premium of less than 10%.

If private cloud were purely a cost play, then those 59% wouldn't be using private cloud at all. Yet, they are still choosing to use private cloud, even if it's costing them a little more. Why?

“Our private cloud expectations have been met because there are many benefits which we can capture from it. For example, our infrastructure services are more streamlined and our capacity and development processes are more effective. We could achieve more availability and more employee utilization due to automations and better performance of resources in our private cloud.”

IT Director, Financial Services

As we have said in both reports, respondents are choosing to use private cloud because of the greater economic benefits: the protection of the business through a highly available site, an estate protected against security breaches, and the assurance that when something goes wrong, the problem can be solved quickly and by those who understand the impact best. Compared to public cloud, some can save on direct cost, and others may spend a little more, but many decision-makers believe that over the long term, private cloud can pay dividends.