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5 STEPS TO A SUCCESSFUL CLOUD MIGRATION

Experts define best practices and pitfalls

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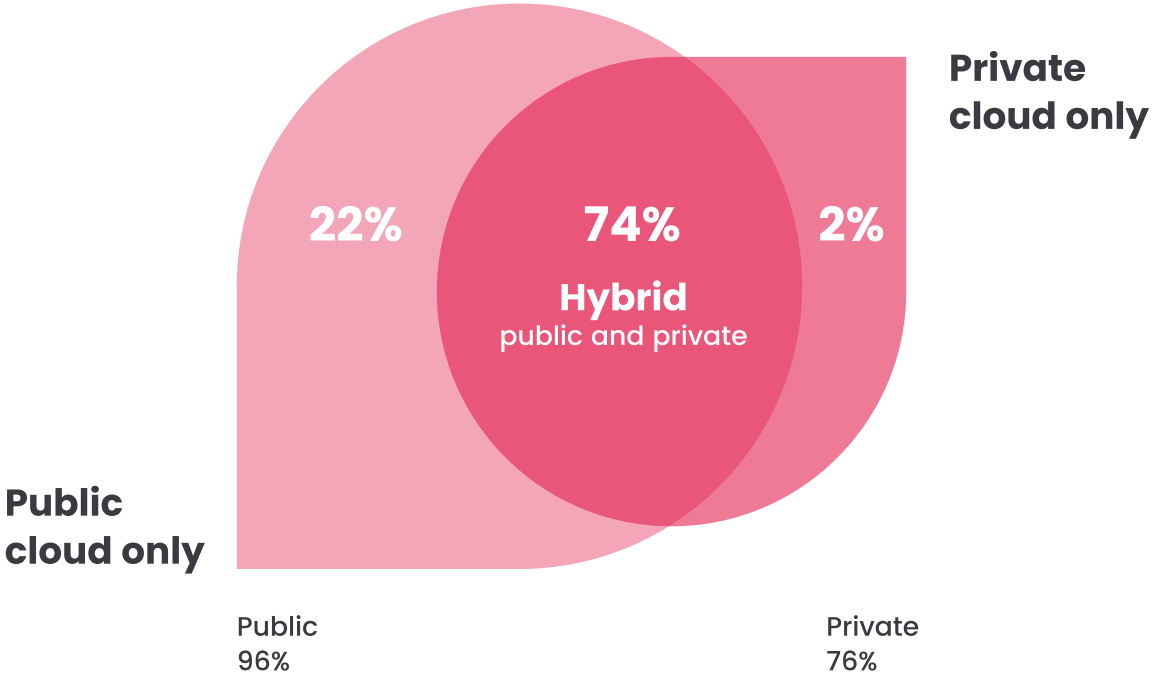
Cloud technology is fundamentally reshaping the way businesses run and operate. It does so by facilitating and enabling organizations to deliver services faster, cheaper, and more efficiently on a global scale, thereby unleashing tremendous operating efficiencies. Smart organizations are either already tapping into the power of a multi-cloud environment and the benefits that it offers or are gearing up for the imminent transformative transition. That's why nearly all (98%) of organizations of all sizes, industries, and regions surveyed for the 2020 Flexera State of the Cloud report have adopted at least one cloud service.

TYPES OF CLOUDS USED

% of all respondents



Source: Flexera State of the Cloud Report

Today, the question for businesses is no longer whether or not they should use the cloud. But rather, how to build the right cloud strategy and choose the right combination of clouds to realize key benefits.

To answer the how question, Altamira.ai joined other industry experts in December 2020 as a part of the Inaugural Technafresh event. Among the speakers were:

- Phil Black, Chairman of the Altamira.ai Advisory Board
- Mark Brincat, CTO of SHL
- Russell Fowler, CEO of Green Future Technology Consulting
- Sarah Milton, Digital Transformation Consultant
- Artur Ortega, Head of Platform Architecture at Babylon Health
- Alex Ostrovsky, Solution Architect at Altamira.ai

The following is a synopsis of what the expert panel recommended for those, who are looking to make a successful leap of migrating to the cloud, while avoiding common pitfalls.

1. DEFINE YOUR PURPOSE

The experts agreed that successful cloud migration must start with a clear vision and understanding of your organization's digital strategy. And that understanding comes with knowing two factors:

- Your business model, i.e. how you drive value to your customers, and
- How available technologies can help your business model evolve

Digital transformation consultant and former CIO Sarah Milton shared her experience in bringing a global shipping firm to the cloud—an especially challenging task for a fleet of ships with less-than-reliable connections to the internet. For her organization, the ability to connect to vital business systems anytime, anywhere was critical. Getting the job done required assessing which cloud providers could best adapt to her organization's unique infrastructure and needs.

Russell Fowler, CEO of Green Future Technology Consulting, faced a different challenge in leading a cloud-based transformation at a major British airport: the need to share data with many partners at a single site.

Alex Ostrovsky, Solution Architect at Altamira.ai, outlined three places to look for value in the cloud.

RETURN ON INVESTMENT:
The cloud tends to deliver greater efficiency at potentially lower cost than alternative on-premise solutions

AGILITY:
The cloud offers capabilities that allow organizations to adapt in near-real-time to changing market conditions and demand

GEOGRAPHICAL REACH:
If you need to service customers around the world, the cloud can provide vital network benefits, such as reduced latency thanks to local data centers that are available for usage

Adding to this list, Mr. Fowler brought up sustainability. He pointed out that the average power usage effectiveness score (PUE)—that is, the ratio of energy used for cooling and other infrastructure for energy used for computing—of an on-premises data center is 1.8. That means the data center uses almost as much energy maintaining itself as it does on its primary function. This is another area where cloud solutions shine: "The major providers use AI to absolutely optimize the energy usage", Mr. Fowler explained. "And they achieve a PUE of around 1.125." This will be a growing factor as Enterprises focus on meeting energy and carbon targets over the coming years.

2. PERFORM A THOROUGH ASSESSMENT

As the next step, the experts recommended making a thorough assessment of your organization's readiness. Namely, the investigation should involve answering three of the following questions:

- **Do you have the right people?**
  This question drives the other two since talent makes everything else possible
- **What is the maturity level of your processes?**
  The Gartner IT Score or Capability Maturity Model Integration can help you in making this judgement
- **Is your organization ready and willing to change?**
  In other words, does it have the right mechanism to produce a change of this magnitude? And is the reason behind the change compelling enough to justify the efforts that will be required to carry out the transition; including the efforts that will need to be put up to overcome the challenges that will prop up during the process?

Sarah Milton urged event participants to assess their existing talent pool and the receptivity of the organization to change. "To some degree, that's chance and availability, not necessarily something you can go out and construct."

In addition, if you do not have the right skill sets in-house, you will have to invest in training, Mark Brincat, CTO of SHL, said. "You can't go and just hire all sorts of new people." Instead, Mr. Brincat advised taking a look at your team's potential to train in the skills you need. "We ourselves had really good success. My team, in the beginning, knew practically nothing around the cloud."

For Mr. Ostrovsky, working with Altamira.ai clients, is about building a development culture and competency framework that produces champions with crucial skills. These champions can then share knowledge and lead teams through the transformation. It is these people that will help you get through the initial application steps - the low-hanging fruit - to tackle the really hard pieces of transitioning from legacy applications and infrastructure to the cloud.

After defining your digital transformation strategy and assessing your organizational capabilities, it comes time to investigate which cloud managed services will best help you achieve your goals. Most likely, the best solution will comprise a combination of cloud providers.

3. UNDERSTAND THE STRENGTHS AND WEAKNESSES OF CLOUD OFFERINGS

Every cloud service has its unique advantages and offerings, Mr. Ostrovsky pointed out; with the three largest players being:

AMAZON WEB SERVICES (AWS)

is the leader of cloud services and very strong in areas of computing, databases, IoT/IIoT, messaging and notification, governance, infrastructure as code, SDK libraries, and other services

MICROSOFT AZURE

offering is the second-most popular cloud provider; it has solid security, identity and access management, machine learning (ML), Dev/DevOps, operations tools, and governance capabilities. It also has the best geographical reach among cloud providers. A lot of people look no further than Microsoft Azure. And for good reason, it is a go-to cloud to integrate into your business. Especially if the business is already heavily reliant on a Microsoft technology stack for powering its software solutions, adding Microsoft Azure to the ecosystem seems like a no-brainer

GOOGLE CLOUD PLATFORM (GCP)

has strong offerings in serverless and container-managed services, AI and ML, big data, network and API management, hybrid and multi-cloud support, mobile capabilities, and security

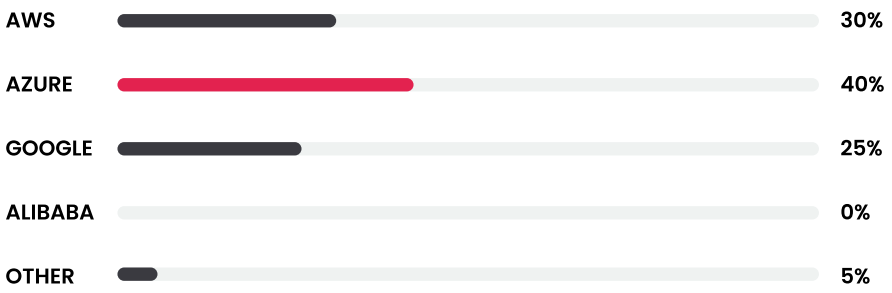
As Mr. Ostrovsky said, although AWS, Azure, and GCP are the three biggest providers, they are not the only cloud providers with robust service offerings. Oracle, IBM, and Alibaba are working hard to increase the reach of their clouds. And the big three are not available everywhere. For example, only Oracle operates in Saudi Arabia, making it the only option in that country.

Even so, when going with a cloud with a smaller customer base such as IBM, Oracle, Alibaba, or any other cloud outside of the big-three group, the main challenge becomes getting the right talent in place to set up and manage the deployment and integration of cloud systems. According to Mr. Ostrovsky, this is due to the fact that fewer specialists have experience with cloud software offerings of these smaller players. And sometimes, it is hard to find relevant professionals to employ or it becomes more difficult to train existing employees into these technologies.

Technafresh host, Phil Fanthom, floated a poll to gauge what cloud services best served the audience members. Members of the audience voted Microsoft Azure to be their favorite at a greater rate (40%) than for any other. AWS came next, with nearly a third (30%) of respondents saying it was most helpful for meeting their objectives. In line with what was said by Mr. Black, there is a curious interrelationship to examine between Amazon coming second in the poll, whilst enjoying unequivocal statistical leadership in global cloud services in terms of market share. This is likely reflective of Amazon's head start in the cloud space. However, Microsoft Azure, although playing catch-up, is now seeing tremendous growth and momentum in expanding its customer base. A quarter of the poll respondents (25%) named cloud services from Google as their top choice. Finally, no respondents elected Alibaba as their cloud provider of choice. And just (5%) of participants selected "other providers" as their favorites. Possibly speaking, at least in part, to the significance of network effect at play.

POLLS

In your experience;
Which of the cloud providers has been the best and helped you deliver on your objectives?



Mr. Brincat chose AWS for his organization because he felt it provided the fastest pathway from idea to execution across three global regions. For Sarah Milton, the challenge of selecting the right cloud was complicated by having to deploy across floating platforms (i.e., ships) that could not maintain constant, high-bandwidth connections. "We stuck them on a bit of water with a terrible bit of string, and then said, 'Let's go to the cloud and see how that works,'" she said of her community of users.

On the other hand, Mr. Fowler had a collaboration with partners and interconnectivity as the number one priority when making a decision on which company to select for putting together its airport cloud infrastructure. For him, Microsoft Azure turned out to be the right choice.

And for Artur Ortega, Head of Platform Architecture at Babylon Health, the right choice was no single choice. This meant ensuring that all of the technology used was transferable from one cloud to another, and to still be deployable when there is no cloud. That is because his company's mission to provide digital health services anywhere, anytime meant that his organization had to extend services into regions that lacked access to one cloud or another.

4. KNOW HOW TECHNOLOGY CAN BENEFIT YOUR BUSINESS AND CUSTOMERS

The experts pointed out that sometimes organizations focus on technologies rather than the benefits they provide. That is a danger because getting distracted by the next big thing in technology can lead businesses to waste resources on technology that they do not truly need to create value.

As Sarah Milton explained, the best technology in the world will do your organization no good if you cannot get your business leaders to sign off on it. That is why it is critical, she said, to present technology to business leaders in terms of what it can do for them and the company. One obvious business case to make for the cloud is predictable costs of using only what you need. “This is a completely new way of looking at costs when you come from a data center where you have a fixed rate of costs”, Sarah Milton said. “That means when you do not have anyone using it, your costs go almost down to zero.”

As an example, Mr. Ortega spoke of how his team at a major news organization met spikes in demand with scaling up weekly and dialing back after the wave of demand came back down, as part of a regular schedule.

Fowler urged participants to focus less on cloud technology itself and more on cloud-enabled business functions. “Technology is an overhead”, he said. “It is seen as a cost that is not necessarily directly giving value to the business. The things [applications, experiences and interfaces] on top of it—that generate the data and the insights—that is where the value is.”

5. START WITH PILOT PROJECTS AND EVOLVE

Now that you understand what you want from the cloud and what it can do for you and your business, and you have selected the right providers for your use cases, it is time to make the move. Mr. Ostrovsky suggested following a simple four-step playbook for when it comes time to implement your cloud solution:

> **1. ASSESS**
> Review your existing application and data assets to find those with the greatest potential for ROI in the cloud

> **2. PILOT**
> Start with a relatively small project that will allow you to test ideas and architectures and help build the business case

> **3. MIGRATE**
> Define the best cloud migration strategy for each of your assets and move them to the cloud

> **4. GOVERN AND OPTIMIZE**
> Bring together a multidisciplinary team to collaborate on growing and maintaining your cloud implementations. That should include establishing policies for security, cost, access, and data cleansing

When assessing pilot project opportunities, you need to give a lot of thought to data. At the initial phase of the migration to the cloud, it makes sense to plan and gather data in a Data Warehouse, if possible, or, alternatively, in a Data Lake. This will enable you to structure the data, get rid of duplicates, and remove corrupted or no longer valid data. Valid and structured data can become a powerful basis for intelligence in all forms (AI and BI). Moreover, this will simplify the cloud migration process. When the company moves its assets to the cloud and adopts a cloud-native approach, there might not be a need to keep all of the data in one place or even one cloud.

The concept of Service Mesh as a flexible mechanism of communication between the assets across hybrid cloud platforms will enable the organization to use the data and get the most out of it.

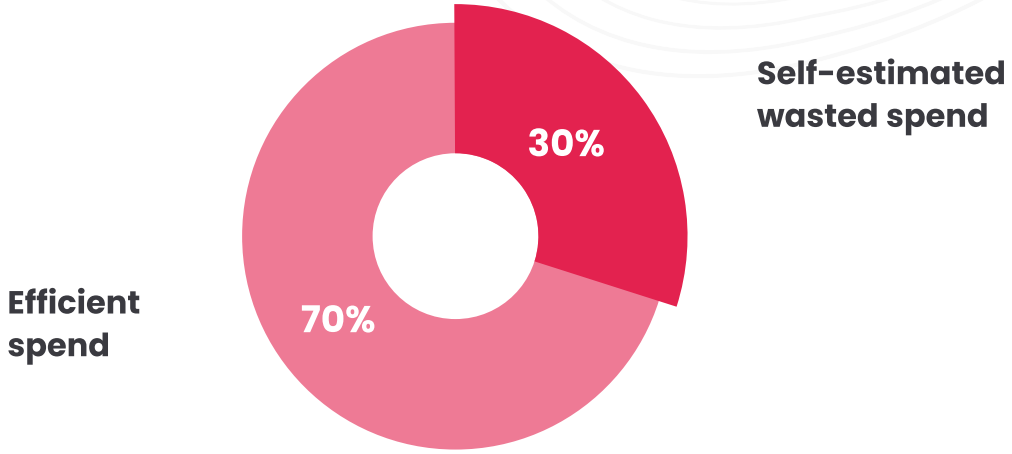
Mr. Ostrovsky also pointed to common pitfalls. One of these is the Jevons paradox, which stipulates that as soon as resources become cheaper and easier to attain, people start using them more.

For example, it can take weeks to increase in-house IT capacity. And although that has its drawbacks, it also makes overspending harder. However, in the cloud, IT teams can spin up groups of virtual machines, for example, within hours or even minutes. This can result in teams acquiring excess capacity without enough forethought, for "temporary" testing purposes, and "just in case" because it initially seems so easy and cheap.

The Flexera survey found that organizations overspend on cloud services by an average of (23%) and waste (30%) of their cloud investments.

PERCENTAGE OF CLOUD SPEND WASTED

% of waste of all respondents



Source: Flexera State of the Cloud Report

However, as companies become familiar with the flexibility and power of the cloud and the access it provides to the latest technologies such as text-to-speech, computer vision, big data and other Machine Learning and AI capabilities, it is clear that applications and services can evolve in interesting ways, much faster than in the past.

LOOKING TO THE FUTURE

The panelists agreed that cloud use would only grow in all kinds of businesses for the foreseeable future. “More organizations are going to need to be technology companies”, Sarah Milton said.

Mr. Ortega sees increasingly distributed architectures and mesh networking as the future of the cloud. Companies and individuals, he predicted, will lend and borrow CPU time on their devices to form distributed platforms “where everyone is part of a huge service mesh.”

Mr. Brincat expects growing data sovereignty concerns to drive customer choices in cloud providers and offerings. He also predicts increasing value in disassociating data from specific cloud platforms to enable greater flexibility to operate in different regions and more agility for responding to market shifts.

In the meantime, follow the steps outlined here to transform your business with the help of the cloud and gain needed technological traction and momentum for enhanced efficiency for your business in the shortest amount of time possible.

ABOUT TECHNAFRESH

Technafresh events aim to create a community of technology and business leaders dedicated to exploring how technology can enable and advance humankind.

"Technafresh is a great concept and fantastic online event", said one participant at the first Technafresh event. Another said: "This event had technical credibility, which is often lacking in other similar events. Knowledgeable panel and an engaging host. Well done!"

Experience the full inaugural Technafresh event and contribute your ideas to future events.

ABOUT ALTAMIRA.AI

Altamira.ai is a verticalized software development company offering solutions and consultancy to its clients who are exploring digital transformation through innovation and bespoke technology solutions. Altamira.ai employs the power of Cloud platforms, Artificial Intelligence, and design thinking to build digital solutions to help its customers transform their business and gain a competitive edge.

Headquartered in Bratislava (Slovakia), with development centers in Slovakia and Ukraine, Altamira.ai is a partner of choice that has built a world-class team of talented professionals, and targets the clients across multiple industries with particular domain expertise in fintech, pharma & healthcare, retail & e-commerce.

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