How Transformational Leaders Are Leveraging Containers to Deconstruct and Rebuild their Businesses

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If there's one phrase likely to strike fear in a CIO's heart, it's "cloud silos". As a result, fear of lock-in keeps many businesses from leveraging best-in-breed multi-cloud infrastructures and deploying transformational technologies like containers. As CTO Cloud Partner Eco Systems at Fujitsu, Sanjeev Kamboj helps customers transform their businesses to extract the greatest benefit from digital transformation. Here he shares insights on how to get past the fear of lock-in to make transformational changes.

Businesses adopt the cloud to maximize agility and flexibility. The conventional wisdom is that they need to avoid provider or technology lock-in at all costs to keep their options wide open. The reality is different. In some cases, a degree of lock-in is not a bad thing – as long as businesses go about implementation with the right skills, the right leadership and the right partners to maintain the maneuvering space to accommodate future requirements.

Containers are one cloud technology that effectively illustrates this. I previously covered [their growing popularity](). It's no surprise that developers love containers, since they make it possible to create and implement microservices-based code exceptionally quickly – therefore keeping up with the insatiable demands of internal and external customers.

Like the shipping containers that inspired their name, containers are self-sufficient application bundles that can be moved (in theory) wherever needed. Another similarity they have with shipping containers is the wide-ranging ecosystem, logistics and infrastructure required to make the system work – from the docks to the machinery to move them around and the fleets of trucks or trains transporting them to final destinations.

Complexity means that implementation is not for the faint of heart

The exponential growth of business models that rely heavily on containerization, from Netflix to Uber to Etsy, has accelerated enterprise deployment at scale. Analyst experts are on record as predicting that more than 75% of global organizations will be running containerized applications in production this year. This means dramatically increased complexity with multiple options open to enterprises to choose from.

Even if a corporation has a multi-cloud strategy in place, container deployment requires another layer of decision-making. For a start, there's plenty of choice regarding providers and their corresponding solutions – including Amazon's EKS, Google's GKE, Azure AKS, HPE's Ezmeral and VMware's Tanzu. Before selecting one over another, remember that containers can't be categorized as either infrastructure or applications. They are more intrinsically entangled and entwined with core systems. Also, each provider has a slightly different approach. Despite all the headline benefits of container portability, this does not extend to transferring between the clouds where they reside without the correct planning and an understanding of how they consume data.

The high degree of integration means that container implementation triggers other business impacts. Initially, an organization should reevaluate its internal perception of IT assets and infrastructure. You can think of the shift in perception as the difference between having pets and owning livestock. Managing IT estates used to be simpler before mass cloud adoption. A business specified and acquired the hardware it needed, then lovingly cared for each server like a pet – patching and updating software when necessary, sometimes at the weekend or in the middle of the night. Containers are treated more like livestock. Implementing an update is more likely to involve trashing the original service and redeploying from a repository. This has deep-reaching consequences for many other parts of the business – for example, how do you charge for a service regularly rebuilt from scratch and keep track of how all the underlying services are communicating and behaving? We are moving towards a *Modern Application* landscape that needs different leadership, sales, solution building, and commercial frameworks.

The skills shortage is particularly evident in this area

Another issue to consider is that containers are an emerging technology growing in popularity – you will either need to train existing staff or recruit individuals with relevant skills. As with any technology project, you will seek individuals who have experience deploying at web scale in production environments– but this is a new, disruptive technology that has only really been around for a handful of years. Therefore, few individuals have experience in multiple deployments, but this is growing daily. Each business has an IT landscape specific to its needs and unique technical interrelationships, so every project brings new challenges and complexity. Even individuals with the appropriate experience will need time to specify and plan the best route to deployment.

Even if your business implementation is relatively straightforward, you'll still most likely need a wide range of skills in your engineering teams. Some of your data may continue to live outside the containerized environment. You need to figure out the best home for it – this means acquiring skills that span all the cloud environment/s that host your data, plus knowledge of your entirely different container environments. For example, you might host corporate data on Oracle and use AWS containers that may need to communicate in a distributed architecture. You may also find that you use a variety of clouds and providers, further adding complexity.

Transformational leadership is crucial

As you embark on a transformation project, do not underestimate the importance of having the right leader in place. Leaders will have long-term experience of this scale of transformation – dealing with a fast-moving, emerging technology that constantly rewrites the rules. With no real precedents to rely on for guidance, leaders must be familiar with complexity theory, open-minded and comfortable with a high degree of ambiguity and volatility.

When leading any kind of organizational change, it's also normal to encounter resistance. Cultural change and evolution in organizational structure are critical factors in successful transformations. Leaders must inspire their people and hold their nerve for the duration of a project. This can take time. Unlike infrastructures of the past, you just can't update one app at a time. When implementing container-based workloads, you can update them all at once. Once you start, there's no turning back. You must keep going and trust in your ability to complete the process.

The best transformational leaders are adept at effecting organizational change. The shape of the organization at the outset of a significant project will need alteration to achieve future objectives. Identify what future teams should look like to navigate to the other side. A leader should deconstruct and rebuild the operating model to truly exploit transformative technologies, creating an adaptive organization. (read more about how to do this here)

Finally, transformational leaders need strong socio-political instincts. Business transformations are so incredibly complex that it is vital to identify the right partners. Another critical transformation success factor is leveraging the power of an ecosystem. Implementing containers does not allow you the luxury of keeping all options open by incorporating a selection of approaches. The best choice is an ecosystem that can deliver solutions for current and future challenges.

Putting it all into practice in a multi-cloud environment

What does this look like in practice? We recently modernized the IT landscape for International Personal Finance Plc, a leading home credit and digital loans provider. The company turned to us to unlock additional speed and agility by moving to the cloud.

Our long experience working with IPF gave us a deep understanding of precisely what was needed. As a long-term strategic partner of both AWS and VMware, we brought the power of the ecosystem to this project.

As with all significant projects, sharing skills in a constant learning loop is essential. For IPF, one of the biggest challenges was cultural – addressing the fear of change. Detailed planning and preparation addressed the widespread perception that a significant technology shift would render the business incapable for long periods. In the end, the total downtime for the switchover was just a few minutes one weekend and there was zero impact on customers or the business.

The results speak for themselves. Although perceived as a technology change, the whole business was fundamentally involved. The transformation changed everything from legal to commercial considerations. This streamlining also significantly reduced IT costs by around 50% in some cases.

Deployment takes courage and time

There's no denying that deploying containers is challenging. Nevertheless, fully distributed applications become the norm as businesses adopt this agile approach to penetrate new markets and seamlessly roll out new services. Each organization must shape and reshape itself to fully support and enable transformation. The next frontier is to optimize is the distributed network and its associated distributed applications.

The applications landscape is changing beyond all recognition – but if you haven't yet started down the path of distributed apps, there is still time to get started. Everyone is still trying to figure out this brave new world, providing a massive opportunity for those getting it right early on. You can set yourself up for success by building the right partnerships, leadership, and the right internal team. We've created a ready-made set of alliances with the Fujitsu partner Ecosystem – a combination of complementary areas of expertise that ensures each project is a true collaboration.

You'll also need to maintain confidence to lead your company through a transformation. Take heart from trailblazers like Netflix, building services faster and targeting their customers more effectively. And as for obstacles, you will encounter some, of course. But go with it and you'll reap the benefits.

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Sanjeev focuses on understanding a customer's business drivers and using technical excellence to identify, design and deliver web-scale architectures, strategies and specific multi-cloud solutions that address these business drivers and add value to a customer's business. He has a deep technical knowledge and a proven track record in leading sales teams and Cloud Enterprise Architects in delivering complex solutions, working with key Fujitsu partners such as AWS, Microsoft, Oracle, VMware, and Google.