

■ Whitepaper

# Network Agility for the Cloud Era

**alkira**

The Fastest Way to the Cloud.

The enterprise migration to cloud has been driven largely by the imperative for enhanced agility and improved operational velocity. In every industry, we find customers are scaling their digital business efforts as a competitive imperative to stay relevant in a world that has seen democratization of access to computational power by the cloud.

This transformation has reshaped entire industries by lowering and shifting the barrier to entry. Nimble startups can now scale on the latest infrastructure with little up-front investment, scaling operations with agility as business needs demand. This has posed a real threat to slower moving incumbents, with no-one knowing exactly where the next innovation or competitive threat will come from.

Public cloud will continue to be the epicenter of innovation across industries and for companies of all sizes. “Data is the new oil” is a commonly heard expression. Software harnesses and unleashes the value of that data. Differentiated services based on insight derived from aggregated enterprise data combined with the computational power of cloud and advanced services like Machine Learning, Deep Learning, and Analytics are pivotal to differentiation in today’s competitive reality.

Unlocking the value of cloud more than ever traverses industries and is vertical as well horizontal in application. Examples such as inventory optimization, improved and automated forecasting, and customer care reimagined are all enabled through large data sets and the power of cloud. Cloud enabled services like chatbots so prevalent today, is another example of digital transformation not possible a short time ago.

The ability to rapidly innovate is the common theme across all these examples. Meeting customer needs, scaling up to meet the growing demand of those needs, experimenting with new approaches, with minimal up front investment, and the ability to move quickly with agility, while not compromising the security or performance, are essential constructs that make the difference in today’s competitive marketplace.

It's incumbent on IT departments to deliver on the capabilities that enable and deliver on the promise of cloud agility. Containerization, serverless architectures with microservices, and modern application development are hallmarks of DevOps agility. The flexibility and agility to repatriate containers from one cloud provider to another is a staple best practice. These approaches along with automation result in faster time-to-market

and technological edge in a hyper competitive world.

Characteristics of DevOps today include reduced build times, ability to pivot and change rapidly, minimized manual effort, reduced risk through intelligent automation, and a cohesive end-to-end lifecycle management for iterative application development and rapid deployment with scale.

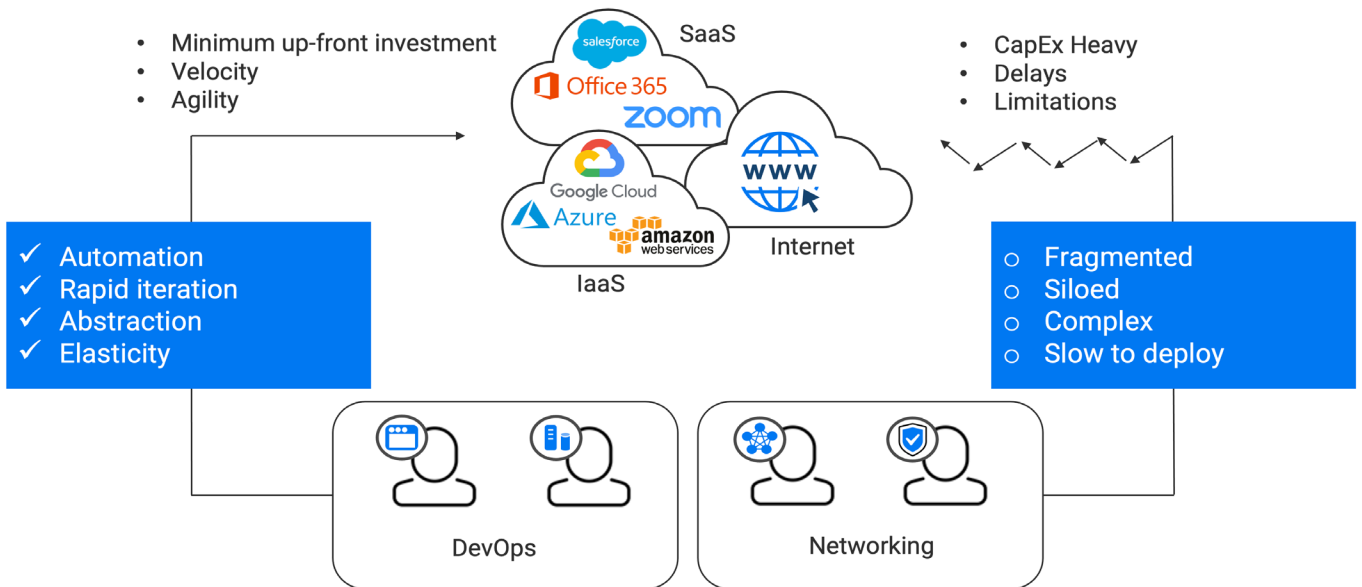


Figure 1: The Network Isn't Sufficiently Agile for the Cloud Era

DevOps has adopted agile at its core. Unfortunately, the same cannot be said for networking. This transition to cloud has created a fundamental shift in the traffic patterns and demands of the underlying network infrastructure. This poses challenges about where and how to provide the required network services.

The security framework required to meet the needs of today's enterprises is also changing as cloud and mobility become more prevalent. The challenge for enterprises is to deliver the underlying network services with DevOps-like agility consistent with the business value of cloud.

The agility you demand from the infrastructure stack isn't just for DevOps. The key shift is choosing a networking strategy that is consistent with the agility you demand from your DevOps environment.

The fundamental questions in this network paradigm shift are:

1. Is our infrastructure strategy fully exploiting the cloud for speed, agility, and efficiency?
2. Are we delivering world class services to our business with optimal agility across our entire infrastructure stack?

For maximum strategic leverage, both of these questions need to be inclusive of networking. But these questions are often not thought of in the context of the end-to-end network. Making matters worse, we often find that the underlying assumptions about network design often fall short of the true agility your business demands from the shift to cloud.

More than ever your network is more than just plumbing, it's a key strategic differentiator.

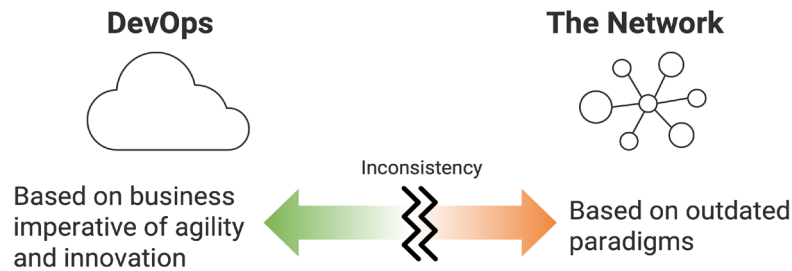
**Incorporating a well architected set of network services is pivotal in your overall plans for maximizing your investments in the cloud.**

The issue with networks today isn't a lack of investment, as evidenced by the vast amounts being poured into WAN upgrades, investments in colocation facilities, standing up cloud networking constructs, and the often-hidden costs of cloud native networking built into your cloud budget. This core issue is when choices made about network design don't fully account for the cloud operating model paradigm shift.

In order to support maximum agility, there needs to be a radical simplification of how networks are designed and managed. This principle is at the heart of the simplification journey. Tactical decisions resulting in silos only leads to further complexity, increasing the technical debt and operational burden for your enterprise. Every choice you make that is inconsistent with the business value of cloud agility adds to this technical debt. Networks today can be amplifiers of choice, or they can gate your agility. Unfortunately, the latter scenario is far too common.

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**Your networking dollars should accelerate digital transformation, not hinder it.**

Figure 2: New Way of Thinking is Needed

Going back to our DevOps vs Network comparison, DevOps is usually automated, designed for rapid iteration, with the underlying complexities of infrastructure abstracted for maximum agility and usability.

In contrast the network is usually in a reactive stance, capex heavy and slow to deploy, slow to pivot, slow to resolve incidents, having to manually integrate disparate systems, with lack of end-to-end visibility and controls.

Networking today often delays, limits, or derails digital initiatives. Heavy investments are incurred that don't materially improve operational agility. When an investment doesn't incrementally reduce your technical debt while improving your agility, it's likely the underlying assumptions need to be reassessed with the business value of cloud in mind.

It's not uncommon for months of networking related delays to cause frustration between

the business and IT, resulting in the pursuit of alternative solutions and shadow IT. Since most organizations have by default become multi-cloud either through business imperatives or acquisition, this challenge is not only ongoing but further amplified as complexity grows.

Keeping in mind that business agility is the chief impetus of cloud, any approach that doesn't decrease complexity is by definition the antithesis of efficiency and agility. Complexity always drives up aggregate costs in the long run, sometimes in ways that may not be visible at the surface level.

Automation efforts related to cloud networking are only partially effective. They are limited in scope and resource intensive. Because it's not end-to-end automation, it doesn't address the multi-cloud reality enterprises face today.

Even with automation, visibility and control remain a challenge even in a single cloud environment. Concurrently, there is a vast chasm that exists in the technologies, tools, processes, and skills required to build and manage cloud networking vs legacy on-prem.

The shift to cloud, driven by the business imperative of increased agility, requires a fundamental change in how enterprises think about network architecture. A networking service that behaves with cloud-like agility can only be delivered from the cloud. The cloud is elastic, consumable on demand, transcends boundaries, allows for portability, can be spun up in new geos and for new workloads quickly, minimizes up-front investment in lieu of agility.

It's about speed and velocity. It's consumed from the cloud and built on the same constructs as the cloud. Just like your DevOps strategy, it's agile and portable. There is simply no viable way to build this on your own that isn't excessively complex or prohibitively expensive.

This cloud delivery paradigm requires a shift in your thinking about networking based on a proven pattern of abstraction of complexity, software as-a-service, and automation. It's a proven model that these constructs put you in the best possible position for agility and efficiency.

You can try to build this and stitch it together, but then again you could try and build your own cloud-based CRM in lieu of using Salesforce. Why don't you do that? In today's world SaaS is the right way to consume networking. Because the network fabric has extended across multiple clouds, a solution that transcends those boundaries is the only way to reclaim end-to-end control.

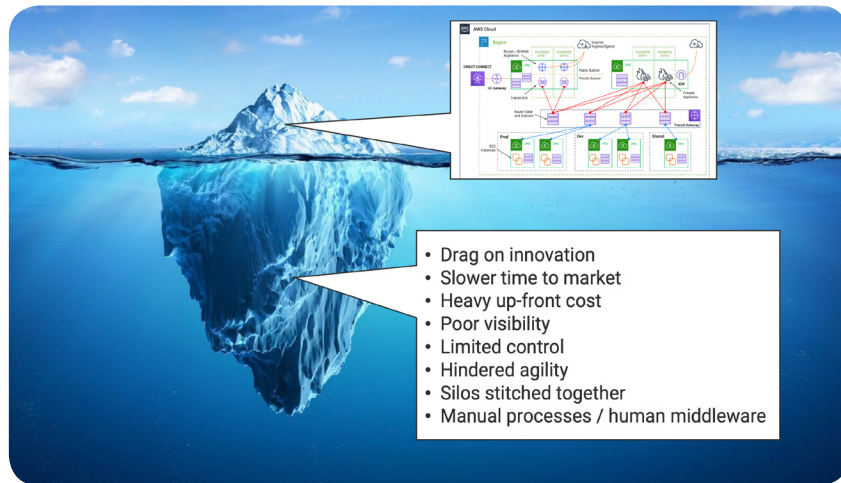
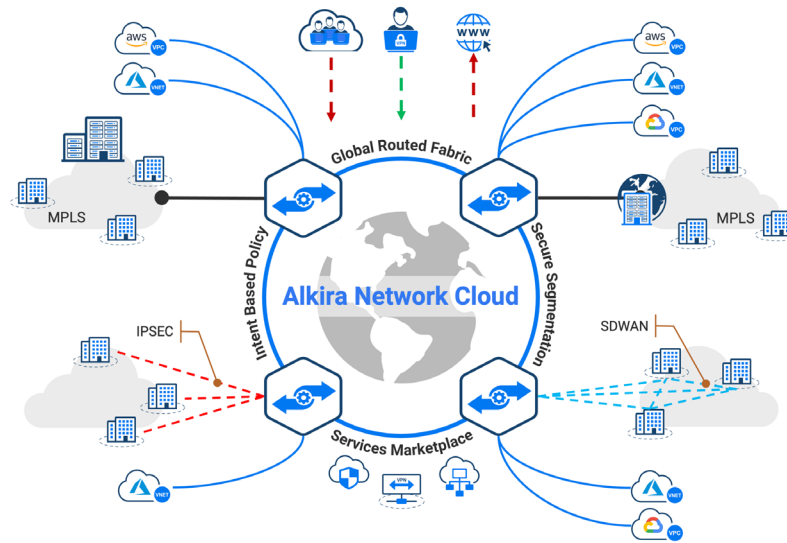


Figure 3: Simplification is Key to Agility

The networking industry is riddled with solutions creating silos of complexity stitched together, resulting in efficiency gated by an architecture built on disparate standards and control planes, that are not optimizing your organization for a cloud

operating model. A build your own strategy or one of orchestration drain your precious enterprise resources and go against the grain of a network optimized for agility and consistent with the business value goals of cloud.



- Delivered from the cloud
- Behaves like the cloud
- Speed and velocity
- Agile and portable
- Abstraction of complexity
- Software as-a-service
- Automation

Figure 4: Alkira Cloud Area Networking

Alkira believes your dollars spent on networking should accelerate the performance of your digital transformation and represent a source of competitive advantage. These are precious and critical investment decisions. A network modernization effort that is consistent with cloud agility paradigms must improve the long-term cost structure while minimizing up front investments.

Concurrently it must improve your responsiveness to the strategic needs of your enterprise and associated business imperatives. The business case that accompanies your investment decisions is based on a solid foundation of maximizing your investment in the cloud.

The goal is to reduce your total network infrastructure costs as a percentage of your overall spend while you mobilize and accelerate your ability to capture the benefits of cloud for your organization. This is what we call the agility + efficiency exponential effect. Both are foundation core outcomes of solid networking strategy in the cloud era.

Your strategy needs to serve both outcomes concurrently with maximum efficacy. A more efficient architecture means reducing over provisioning and efficient scaling as the need arises. All of these are constructs that are only available and possible through a SaaS model. This is why we built Cloud Area Networking.