



CLOUD SERVICE PROVIDER BLUEPRINT

Objective

In an increasingly dynamic environment, cloud service providers (CSPs) need a way to quickly deliver tailored, usage-based offerings to enterprises with minimal investment and risk. A distributed interconnection architecture provides:

- Flexible revenue models — Onboarding is simplified and vendor lock-in reduced with resource and network virtualization.
- Security and compliance — Comprehensive, prediction-driven service and its monetization are made possible with real-time instrumentation.
- Global scalability — Integration and orchestration of application life cycles are automated.

Design Principles

Global location coverage — Ability to place secure control points near clients, partners and things for responsiveness and compliance.

Interconnection and ecosystems — Greatest choice in networks, clouds, partners and ecosystems with dynamic exchange options.

Integration and control — Proximity and low latency enable private integration of physical and virtual services from a marketplace of leading partners.

Enterprise

CSPs facing commoditization, competition and shrinking margins can innovate new services on a secure, dynamic interconnection platform that automates cloud integration, management and usage accounting.

Provider

Network, SaaS, content and other service providers enable and integrate cloud platforms, ecosystems and customers by deploying services for CSPs at the digital edge in a highly scalable, pay-as-you-go model.

Managed Services

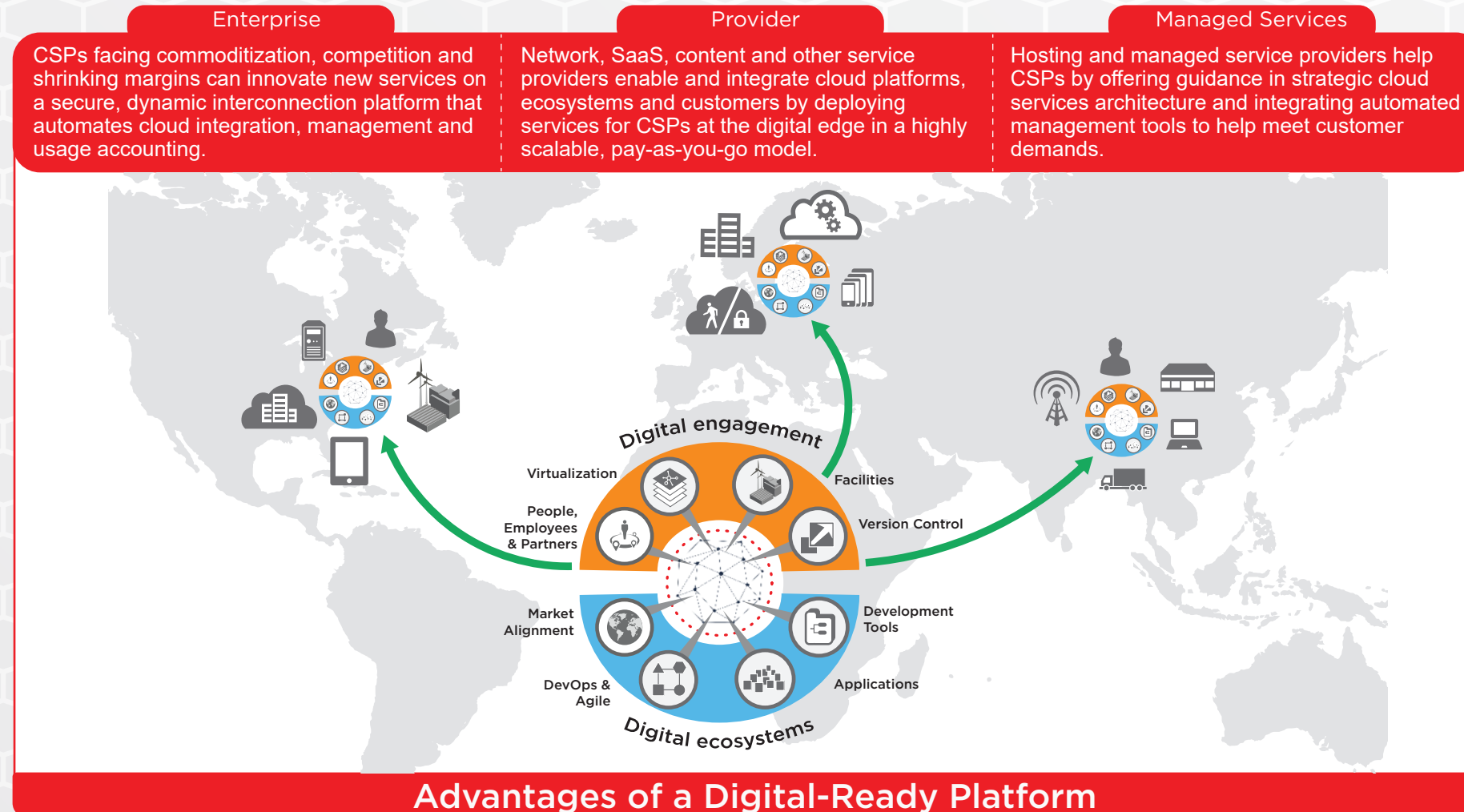
Hosting and managed service providers help CSPs by offering guidance in strategic cloud services architecture and integrating automated management tools to help meet customer demands.

Capabilities

- Value-added services — Create innovative offerings and sophisticated cloud services.
- Low-latency interconnection — Offer agile, high-speed connectivity near population centers.
- Visibility across clouds — Gain insight into usage and service levels across clouds in each region.

Benefits

- Simplify on- and off-boarding with dynamic connections.
- Meet evolving customer needs and customize solutions by region.
- Provide the opportunity to build non-commoditized revenue models.
- Streamline digital engagement and integrate real-time capabilities for strategic insights.

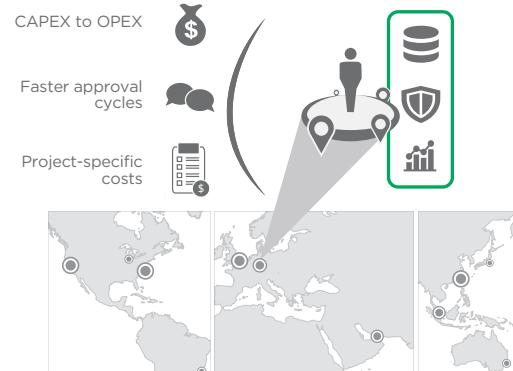


Advantages of a Digital-Ready Platform

PLAYBOOK STRATEGY

1ST Differentiate the User Experience

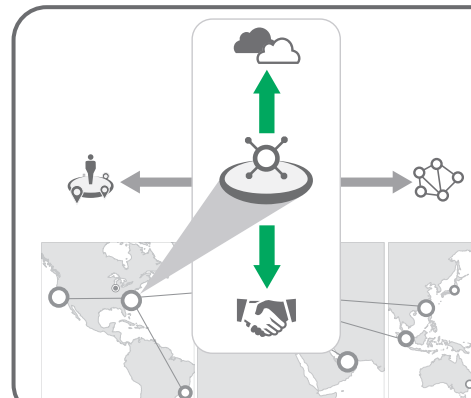
Rewire network and security infrastructure by migrating to a strategic set of distributed interconnection control points adjacent to dense clusters of value chain partners, clouds and ecosystems. Establish partner data exchanges and secure them with distributed controls, while optimizing and scaling capacity with software-defined network services.



- Deliver customer cloud services locally, extending reach.
- Customize delivery and tailor services with local insights.
- Leverage proximity to customers, clouds and partners for improved performance and efficiency.

2ND De-Risk the Business

Reduce business risk with an interconnection platform. Simplify and standardize on a global interconnection platform that enables consistent IT policies and compliance enforcement. Enhance collaboration and streamline innovation.



- Enforce consistent digital business policies, especially for regional data privacy.
- Standardize IT governance across multiple clouds and regions.
- Innovate offerings and test new markets with minimal investment risk.

3RD Scale Through Ecosystems

Scale through interconnected ecosystems. Locally harvest, process and exchange client-centric data for timely intelligence. Expand the value chain with partners and data to build value-added offerings and create superior outcomes for clients.



- Harvest real-time multicloud data.
- Deliver real-time, actionable, omnichannel insights.
- Introduce high-value, specialized cloud services to address latent needs.



Problem

New revenue streams increasingly rely on digital products and services; however, CSP IT infrastructures cannot support the flexibility, performance, security and scale needed to meet customers' digital expectations.



Solution

CSPs are transforming their IT infrastructures from traditional and centralized to geographically distributed. By establishing a presence in metro areas characterized by dense clusters of networks, clouds, partners and customers, CSPs are maximizing global collaboration and transforming business models to deliver services locally. A local presence reduces latency and complexity, allowing services to be customized based on local insights and delivery tailored to a variety of devices.



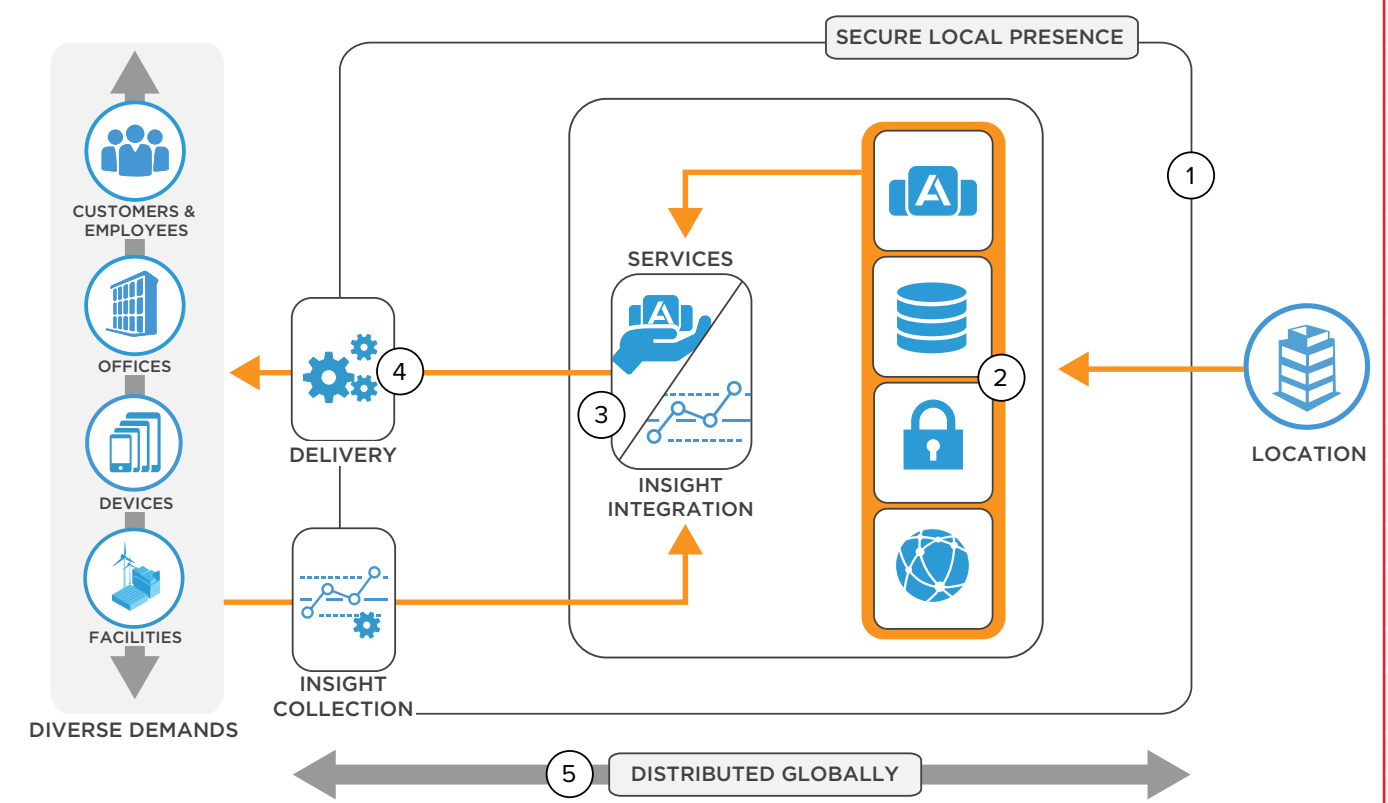
Constraints

1. Poor application performance — High latency between clouds introduces unacceptable response time.
2. Traditional CSP infrastructures are increasingly complex and costly to onboard, preventing cloud providers from delivering a high-quality user experience.



Steps

1. Establish and distribute a secure localized presence — Select metros with a high density of customers, NSPs and service partners, where service growth is expected to continue to rise. Extend your reach, becoming a local provider by creating a densely connected control hub in chosen locations.
2. Deliver customer cloud services locally — Improve response times by providing services locally to dense cluster of users, channeling local metro traffic at high speed.
3. Customize delivery and tailor services with local insights — Leverage insights gathered locally to provide real-time service tailoring, adjusted to local and regional needs.
4. Adapt delivery to dynamic users and devices — Adapt to new trends, devices and special events in each region, dynamically adjusting to mobile users' requirements and providing a seamless user experience.
5. Distribute services across customers, partners and employees — Simplify the movement and tracking of transactions, workflows and data across counterparties as customer needs change.



Forces

- The rate at which enterprises are connecting to cloud and IT providers is increasing at a 37% CAGR.
- Customers want seamless and customized self-service experiences regardless of device or location.
- IT must adapt to growing customer demands while maintaining or reducing costs.



Outcomes

- Improve user experience with local points of presence and enhance performance with reduced latency.
- Accelerate end-to-end solution delivery with direct interconnections between partners, clouds and customers.
- Simplify the movement and tracking of transactions, workflows and data across counterparties end-to-end as customer needs change.



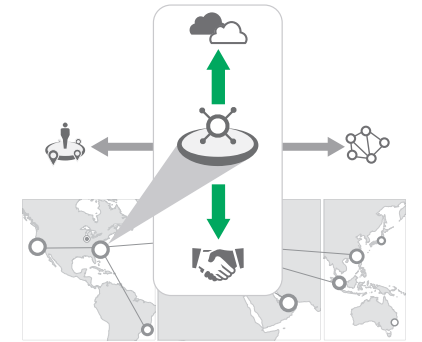
Problem

CSP IT infrastructures cannot support the flexibility, performance, security or scale needed to meet growing customer demands locally or globally.



Solution

A secure, globally distributed interconnection platform attracts enterprise customers and service providers for a rich technology landscape where unique value can be identified quickly. CSPs can simplify multicloud complexity with seamless management tools that enable enterprises to extend their secure boundaries to the digital edge, ensuring their global and local policies are enforced with little delay in performance.



Constraints

1. Detailed service usage and SLA information cannot be delivered across clouds due to the lack of end-to-end visibility.
2. Reliance on the best efforts of the public internet for security and reliability increases the risk of malicious attacks or theft.
3. Expansion into new regions creates significant data privacy challenges as each region has unique and volatile requirements.



Forces

- By 2021, at least 50% of global GDP will be digitally enhanced with growth in every industry driven by digitally enhanced offerings, operations and relationships, making security a primary challenge.
- A large-scale breach of cybersecurity is one of the greatest risks enterprises face as they expand their global reach.
- More than 18 major countries globally block the transfer of data related to accounting, tax and financial information.



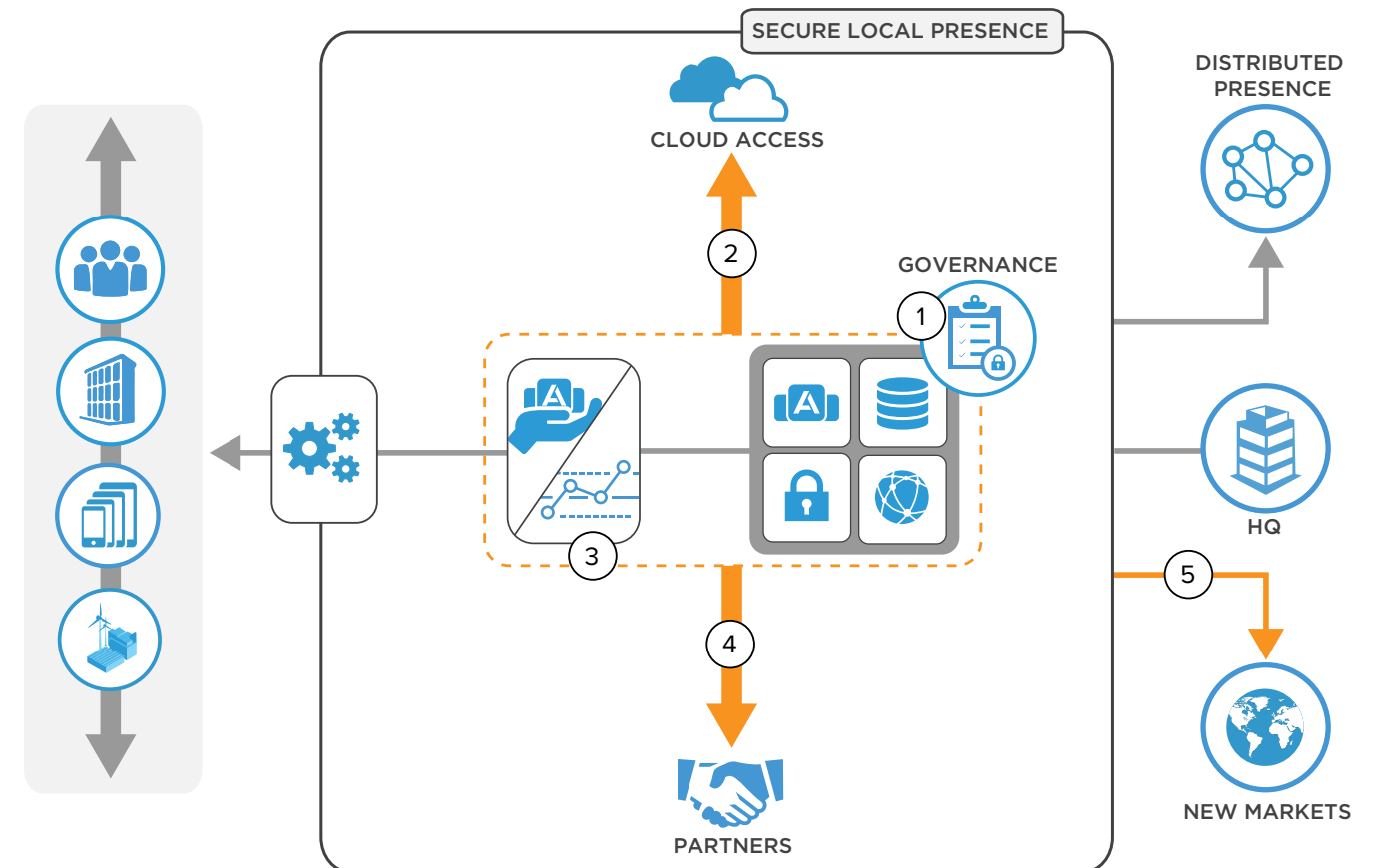
Steps

1. Standardize IT governance — Deploy scalable and tailorable policies that can be enforced in a cloud-neutral environment. Ensure rules and their enforcement can be efficiently executed using partner services.
2. Enforce consistent digital business policies — Enforce global and local policies by updating and synchronizing rules locally so that cross-cloud applications and workflows can adhere to them.
3. Aggregate data for compliance — Enforce regional data privacy rules at each distributed digital exchange point, ensuring local data is managed according to local rules.
4. Enable dynamic partner engagement — Enable virtual connections to partner flows and data using an API-centric workflow. Provide end-to-end monitoring of all flows.
5. Innovate offerings and test new markets — Minimize the cost of entering new markets by providing services that connect to new partners without requiring a large investment in hardware.



Outcomes

- Reduce business risk by simplifying privacy and regulatory compliance with standardized IT policies and global visibility of audit data.
- Streamline business processes by integrating business partners through interconnection.
- Accelerate innovation by testing new markets and solutions with no need for extensive capital investments.



**Problem**

CSPs are increasingly challenged by commoditization and falling prices in an increasingly competitive field. Costs to onboard new customers continue to increase.

**Solution**

CSPs must offer higher value services to their enterprise customers. They must avoid lock-in, simplify multicloud management and gain better visibility into service levels and spending. They must ensure their applications and workloads are free to run across clouds for the best user experience at optimal cost, while adhering to local compliance rules. CSPs can innovate and expand specialized, differentiated solutions by composing discoverable new services via dynamic interconnection to partners, ecosystems and customers.

**Constraints**

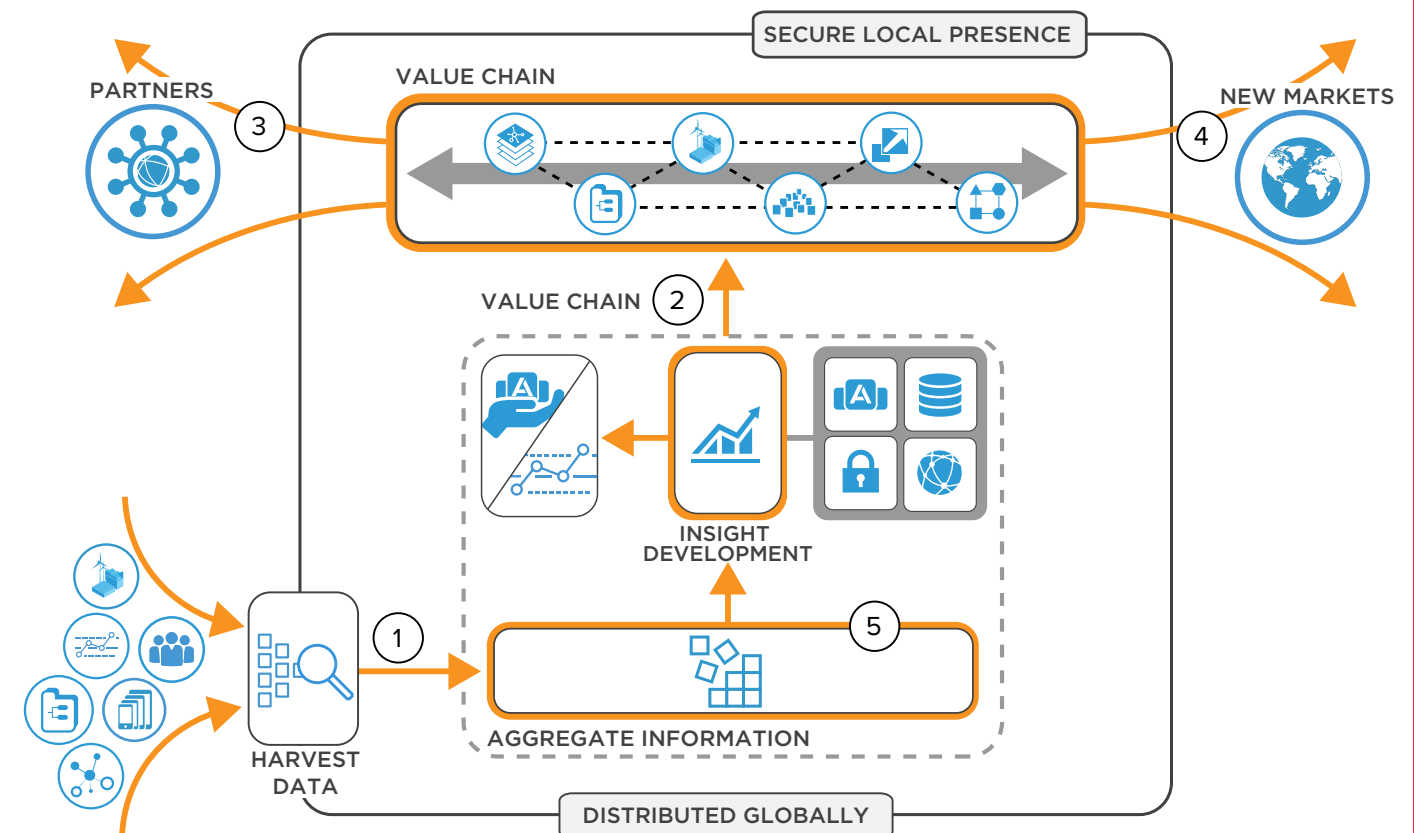
1. CSPs can not compete on their own to create the differentiated value-add services to remain relevant.
2. CSPs have not been able to provide customers with the detailed cross-cloud service usage or SLA information they require.
3. CSPs must find ways to create new revenue while dealing with the reality that enterprises will demand that vendor lock-in be removed.

**Forces**

- The emergence of 3D printing will force new ways to consider supply chain logistics.
- As urbanization intensifies, new strategies must be used to find optimal logistics.
- Factory and warehouse inventory strategies will force new, real-time fulfillment processes that require end-to-end visibility.
- Logistics must be prepared for real-time fulfillment bidding.
- Urban transportation will become more complex as drones and automated, connected vehicles are optimized.

**Steps**

1. Harvest real-time multicloud data — Enable real-time collection services to work between clouds at the edge in customer-controlled environments. Facilitate the discovery and configuration of SaaS-based AI, ML and DL analytics with appropriate storage that enables multicloud data access.
2. Deliver omnichannel insights — Enable the seamless delivery of real-time insights to all user personas across a variety of devices and formats, tailored per region.
3. Continually adapt partner networks — Enable fast, easy discovery and access to partner ecosystems, with the ability to rewire connections on demand to meet needs.
4. Introduce specialized cloud services — Leverage usage and service request insights to suggest new types of services that can be published to the market via APIs and ecosystems and enable new revenue models.

**Outcomes**

- Improve decision-making with real-time insights collected and processed near the source.
- Enhance user engagement regardless of the interaction channel.
- Expedite time to market by simplifying the partner engagement process.