



Problem

Content delivery models are changing to a multidirectional, multimedia volume mix that becomes less predictable as users grow and technology advances, requiring a more flexible, resilient architecture that can add bandwidth as needed and survive local outages cost-effectively.



Solution

Leverage an ecosystem of service providers that can expand and contract based on business-driven policy decisions enacted through real-time configuration control. Adapt to changing business needs across time zones, business and partner acquisitions, content contribution trends, traffic patterns, new regulations, unpredictable events, technical innovation and new capability requirements to support new business value chain models. Store the policies in local data repositories at the edge. Drive most traffic volume to the interconnected edge node mesh where digital ecosystems can route the traffic most efficiently. Leverage predictive analytics to inform policies about real-time changes to demand across the distributed enterprise. Assess user trends and traffic analysis that will enable you to dynamically rewire services and connectivity to continually adapt.



Constraints

1. Fears of being caught without sufficient bandwidth cause firms to over- or under-provision in a fixed-price architecture, while demand remains dangerously unpredictable.
2. Volume and bandwidth policy management are not considered feasible or strategic, given historical experiences in IT.
3. Dispersed, policy-driven volume management is unfeasible in a traditional hub-and-spoke network architecture with a few central hubs.
4. Service connections are often fixed, limiting the responsiveness required in a crisis.
5. A mindset change is required to architect a network and its services as a fluid set of interconnections.
6. The mix of file types and sizes requires increasingly sophisticated QoS transmission policies.



Steps

1. Install business policies at the edge for dynamic responses to spikes in demand by leveraging local vendor and business ecosystems via interconnection.
2. Drive traffic volume to the inter-node mesh, allocating resources where they are needed while meeting user experience requirements.
3. Leverage a global ecosystem of digital services as and when needed, managing costs more effectively.
4. Employ policy-based acquisition of content delivery and contribution service chaining in real time.
5. Leverage cross-regional digital ecosystems to find the optimal service chain across clouds by driving traffic through the interconnected edge mesh.
6. Leverage predictive analytics to inform policies about real-time changes to demand across the distributed enterprise.



Forces

- Meeting unpredictable demand must become a strategic asset, not a liability.
- Planning for periodic shifts in demand is a policy issue, not an engineering project.
- Real-time, flexible, purpose-built infrastructure is a strategic enabler of a global digital enterprise.
- Demand will fluctuate sufficiently to challenge most assumptions about capacity management in traditional architectures.
- Technology change rapidly accelerates increased file sizes and rich content, with live events requiring increased infrastructure/mission-critical support.
- User mobility across regions creates challenges for personalization.



Results

Technical

- Utilize real-time analytics and predictive models to inform business strategies and link marketing to results.
- Expand services and bandwidth without re-architecting every few years.

Business

- A dynamic, real-time enterprise that responds to changing needs in demand, flexibly increasing infrastructure supply to match user experience needs while saving resources when demand drops, without re-architecting the network.
- Consistently enhance local user experience based on local needs, regulations and customs.
- Add or subtract business value chain partners as needed.
- Improve and drive business strategy, operations and execution in real time.

Reference View

