

# THE FUTURE OF SOFTWARE-DEFINED NETWORK

Outcome based adoption of digital transformation is driving the Next-Gen enterprises to evaluate business drivers around Software Defined Networking and beyond.

The market for SDN and NFV is expected to grow from USD 3.68 Billion in 2017 to USD 54.41 Billion by 2022, at a Compound Annual Growth Rate (CAGR) of 71.4%.

Source: Markets and Markets



## Cloud

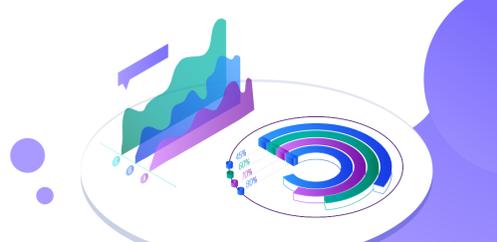
Application proliferation and differentiation is driving the organization cloud strategies and directions. DevOps needs are ever changing and demands a Network environment which is scalable, flexible and supports rapid innovation cycles.

According to Gartner, most enterprises have workloads residing in multiple clouds and data centers. By year 2020, on average 40% of custom built applications will go into public cloud, 38% will remain on-premises and 22% will move into colocation. This makes interconnectivity between clouds and data centers even more important.

## Big Data & Analytics

The digital universe (comprising the data we create and copy annually) is expected to reach 44 trillion gigabytes by 2020. This vast amount of data places new demands on the enterprise network.

Gartner cites that "Through 2017, 25 percent of big data implementations will fail to deliver business value resulting from performance problems due to inadequate network infrastructure." The Traditional network architecture becomes oversubscribed, leading to increased latency and congestion issues.



## Mobility

The 'bring your own device' (BYOD) initiative for accessing both business and personal applications has surged mobile data traffic in enterprise network, which is expected to reach 71 exabytes per month by 2022, up from 8.8 exabytes in 2017.

According to IDC, the fast-growing number of mobile devices accessing the network not only increase the traffic but also generate their own usage patterns that require a level of application performance that is not supported by traditional network architecture.

## IoT

Gartner forecasts that 8.4 billion connected things will be in use worldwide in 2017, up 31 percent from 2016, and will reach 20.4 billion by 2020. The sheer volume, variety and velocity of data that will be generated from connected things will have immeasurable impact on data center network infrastructure.



## CHANGE IS INEVITABLE

For widespread adoption, SDN has to change. Even with remarkable capabilities such as 'network programmability', 'network virtualization', 'automated provisioning, control, and management', SDN has still seen limited adoption. Arguably, some of the major roadblocks are attributed to

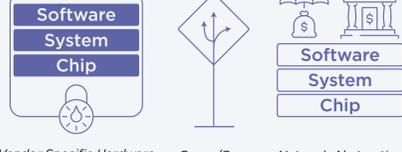
- Architectural Complexity
- Vendor Restrictions
- Troublesome Migration
- Cultural Obstructions
- Application Mobility Constraints
- Multi-Tenant Analytics
- DevOps Collaboration
- Static Network Management and Insights



The SDN architecture needs to be reengineered to address the following dynamics

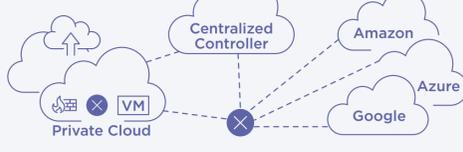
### Investment Protection

- Leveraging existing underlay or Greenfield Deployment
- Complexity with Vendor Lock-In



### Multi-Cloud Hybrid NW Collaboration

- Application Mapping & Real Time NW - Discovery & Topology View
- Capability & Roadmap



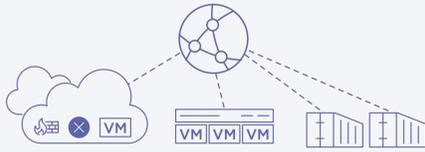
### Advanced Integration

- Multi Tower Strategy (Discrete vs Hyper converged)
- Multi Tenant; Open API; Traffic Profiling



### Migration & Workload Portability

- 'As a Service' levels of Abstraction
- Software Defined Visibility
- Intelligent Traffic Flow



### Risk Averse and Secure

- Security Groups; Firewalls & NGFWs
- Unified Security Policy
- Security Automation & Compliance



### True Automation & Orchestration

- ML and NLP based automation
- Auto - Optimize, Self Aware

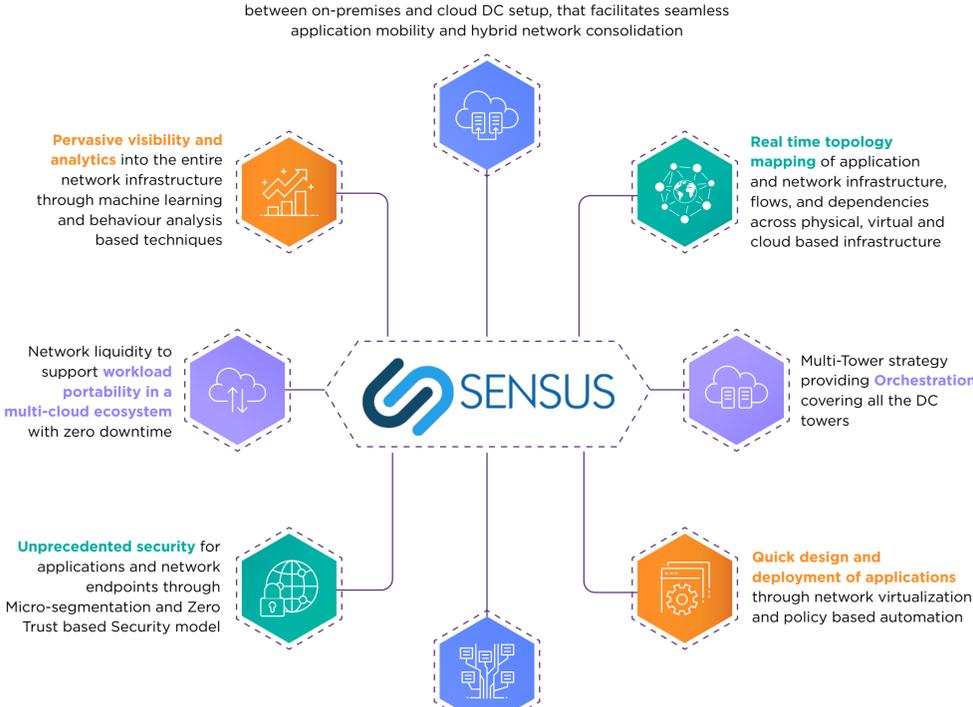


Sensus is HCL' Software-Defined Network framework that covers end to end transformation of data center network infrastructure.

It takes into consideration a broad range of engineering and architecture parameters in defining the right SDN strategy. The framework takes a holistic view of the network environment considering transformational benefits of software based control and API driven agility. It integrates programmability to network infrastructure so as to make it virtualized, automated and readily adaptable to changing workload needs and hybrid ecosystem. It uses a vendor-neutral approach to stitch the right solution forming a seamless fit for the overall multi tower strategy.

## BENEFITS

On-Demand and highly reliable hybrid interconnect between on-premises and cloud DC setup, that facilitates seamless application mobility and hybrid network consolidation



To find out more about how HCL's Infrastructure Management services can help you simplify IT complexity and support your business' digital initiatives:

please contact us at [ITO@hcl.com](mailto:ITO@hcl.com)