



Cisco IT DataCenter Strategy Creating Cloud-Ready Network

Kenneth Lim
IT Director, Cisco Systems

Market Transitions Create New IT Opportunities... Also Changes the Role of IT

Technology Transitions



Changing Role of IT



Business Implications

Infrastructure Challenges



Total Cost
of Ownership



User
Experience



Security



Application and
Service Migration



Operational
Excellence



Configuration and
Policy Implementation

Cisco IT's Digital Operating Model



Simplification

IT as a Service
Simplify Everything



Automation

Modular IT
Extend the Cloud



Security



Monitor &
Adapt

Insightful Data
Self Service



Continuous
Innovation

Continuous
Delivery

Cisco IT at a Glance



98
Countries



583
Offices



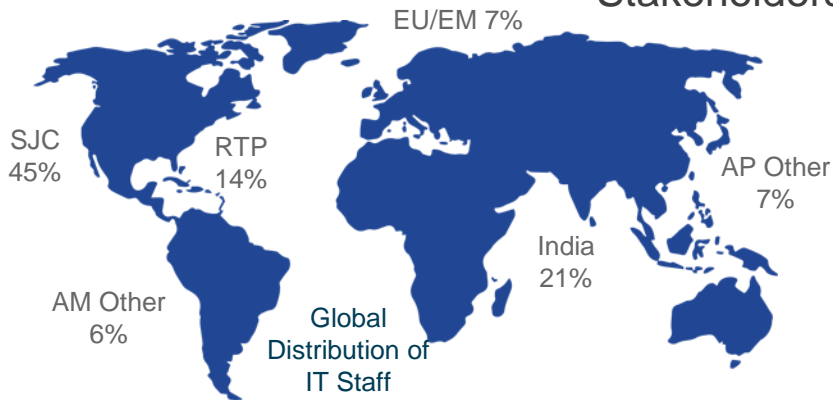
139,317
Connected
Stakeholders



4.8 Billion
DNS Requests
Per Day



12,979
UCS Blades



55,000
Virtual Machines



26
Data Centers



<15 Min
Infra
Provisioning
Time



17,000
Containers



104 IT Services
3000 apps



550+
SaaS Apps

Digital Transformation Journey

FOUNDATION



- ITaaS
- DC Virtualization

ACCELERATOR



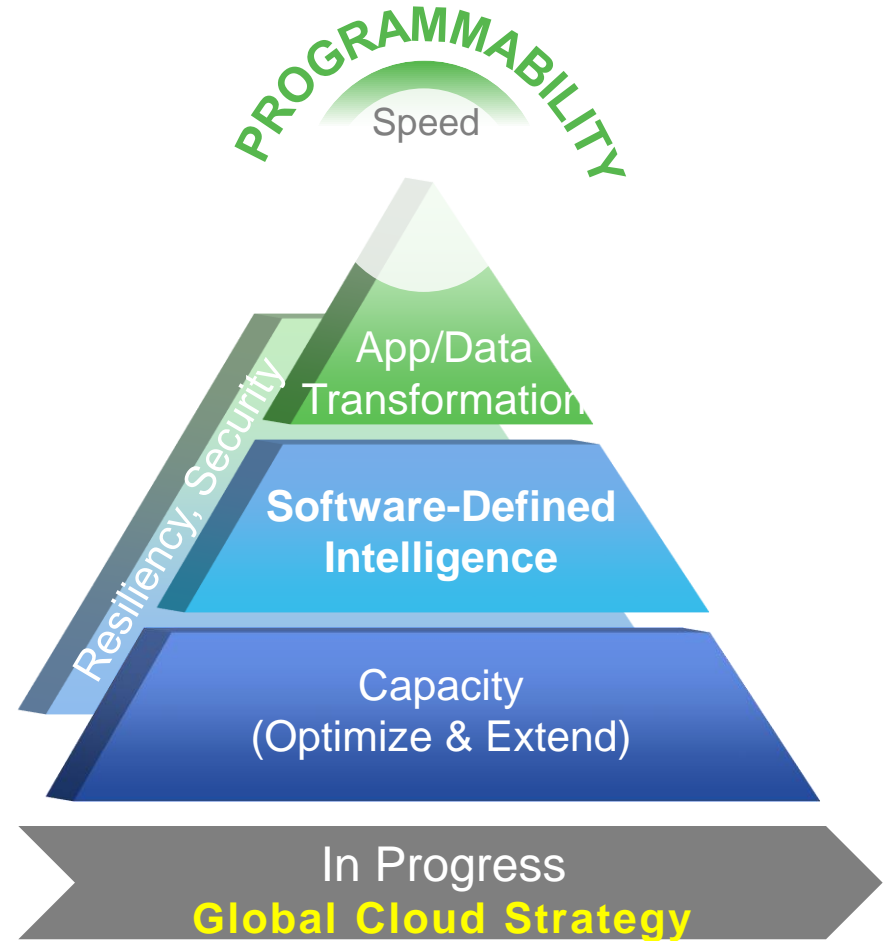
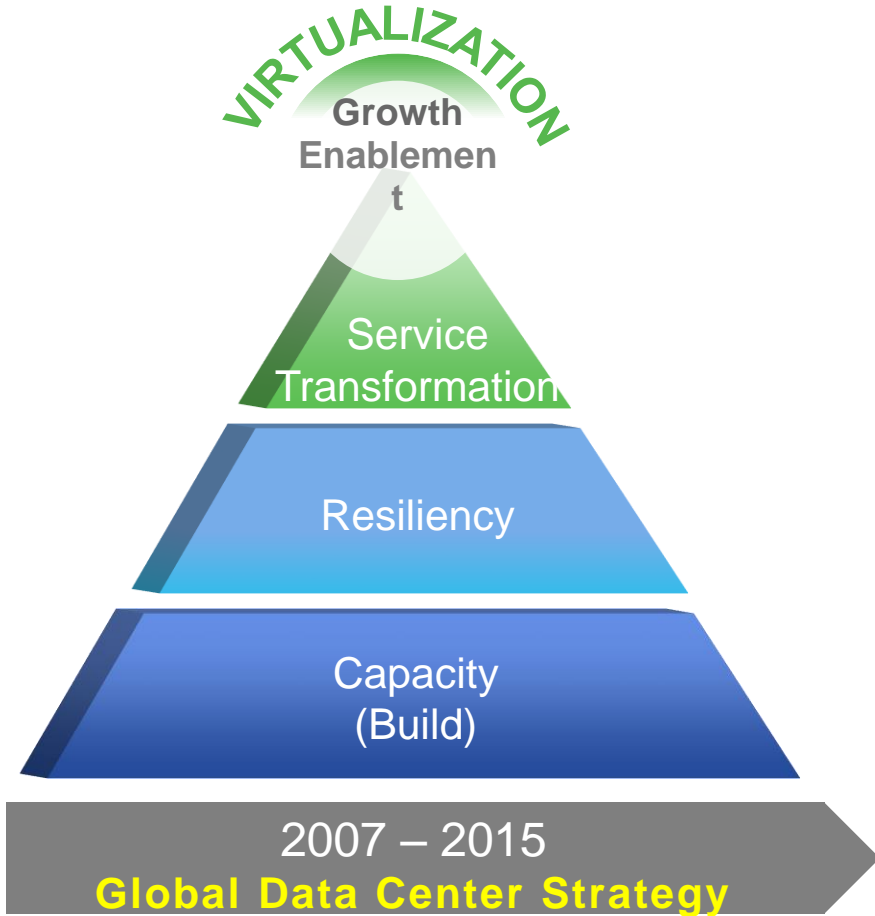
Global Cloud Strategy

DESTINATION

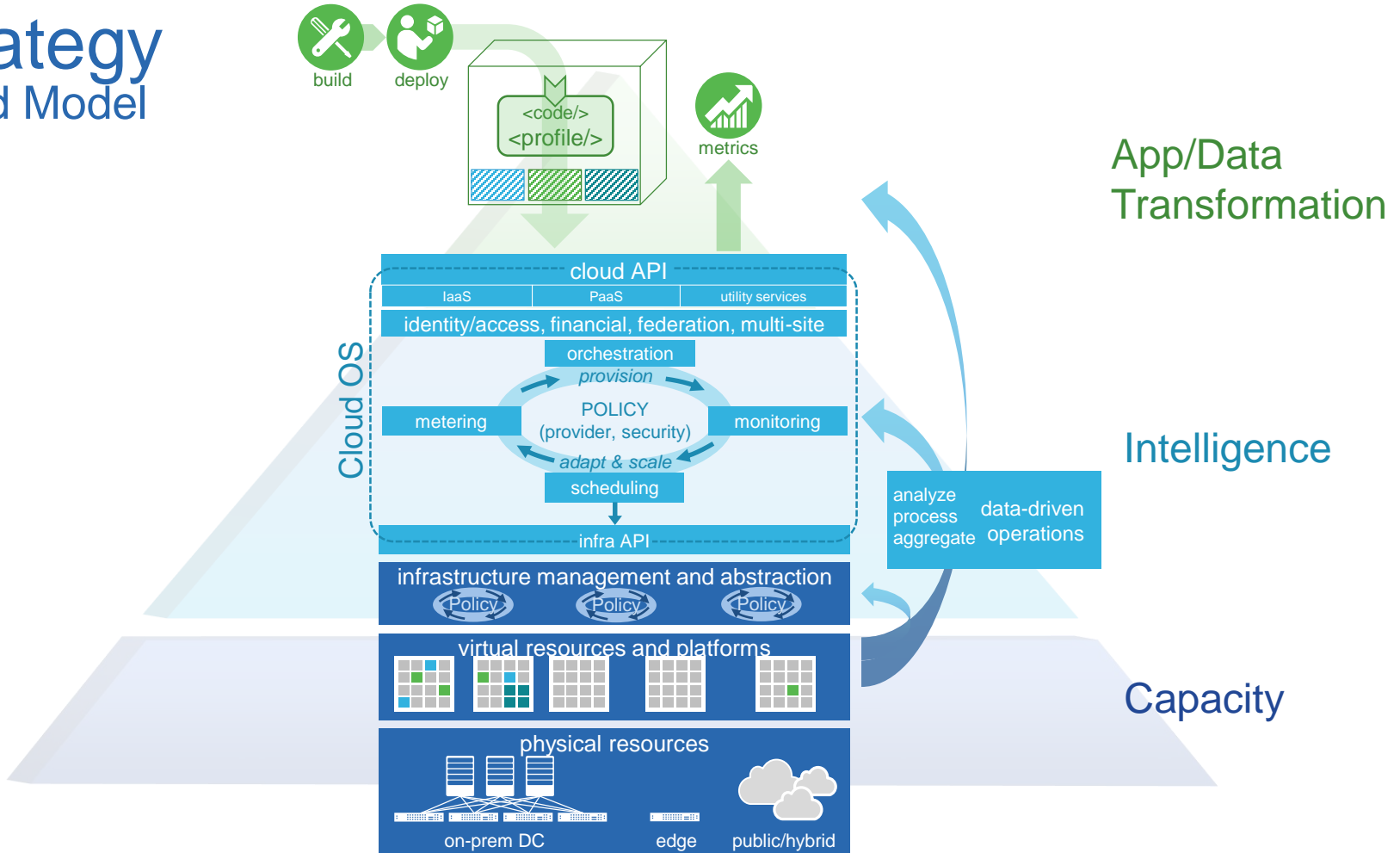


Secure Digital Business

Cisco IT Global Cloud Strategy



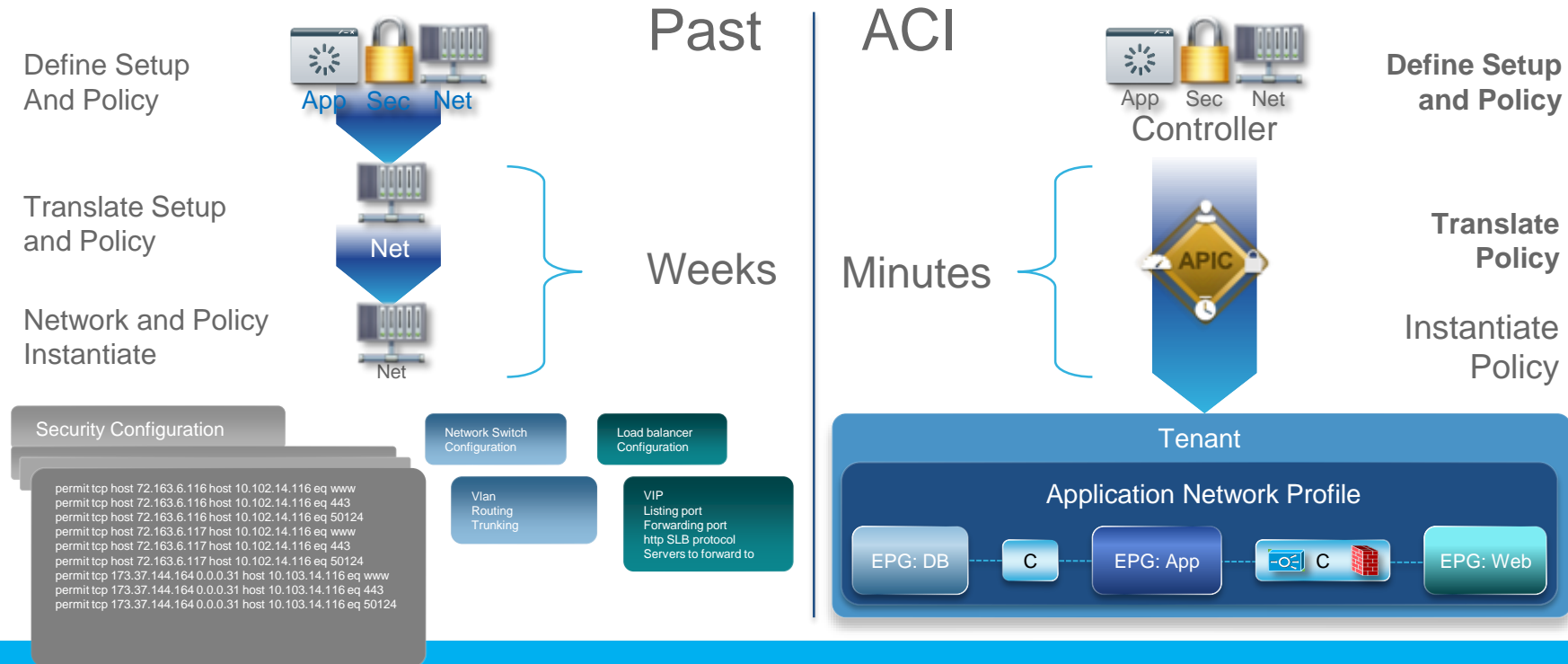
Strategy Cloud Model



Software Defined
Intelligence

ACI
(Application Centric
Infrastructure)

Defining and Applying Network Setup and Policy Past vs. ACI

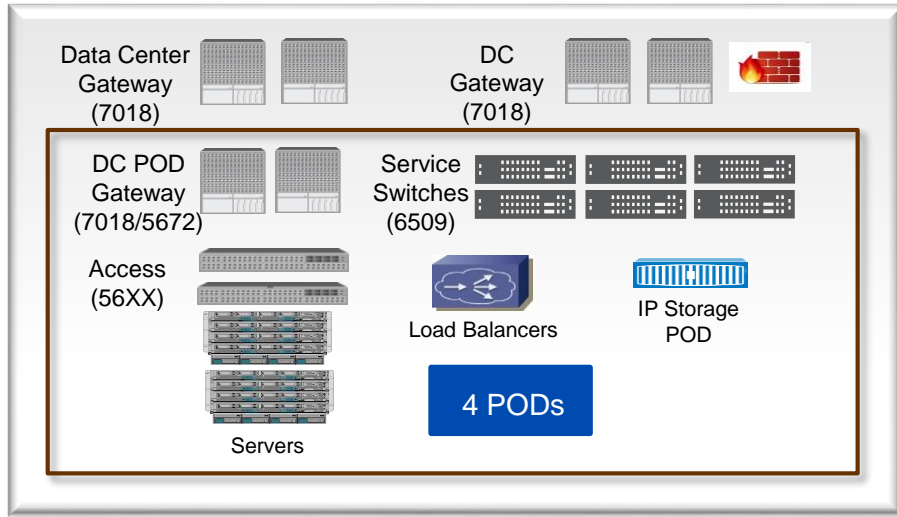


Multiple Devices:
Switches, Load-Balancers, Firewalls

- Faster Instantiation
- Portability
- Better Visibility
- Re-Usability

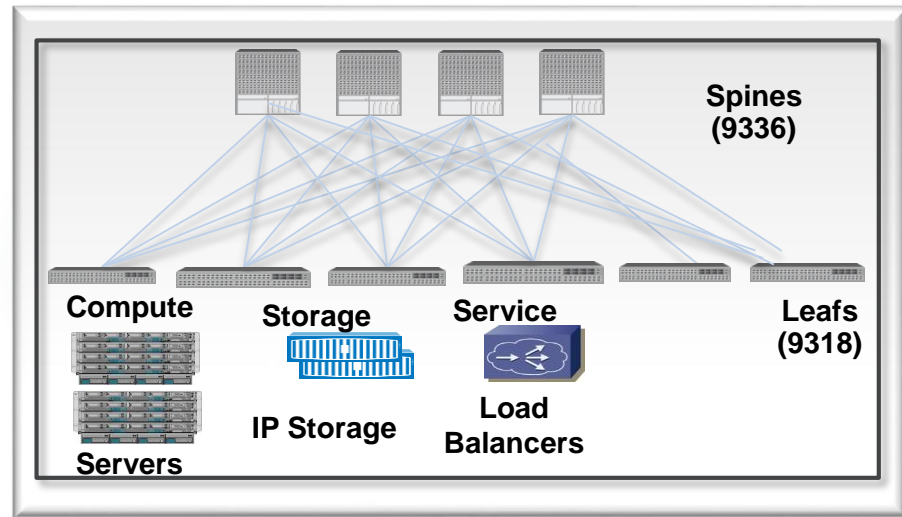
ALLN Data Center – Traditional vs. ACI

Traditional



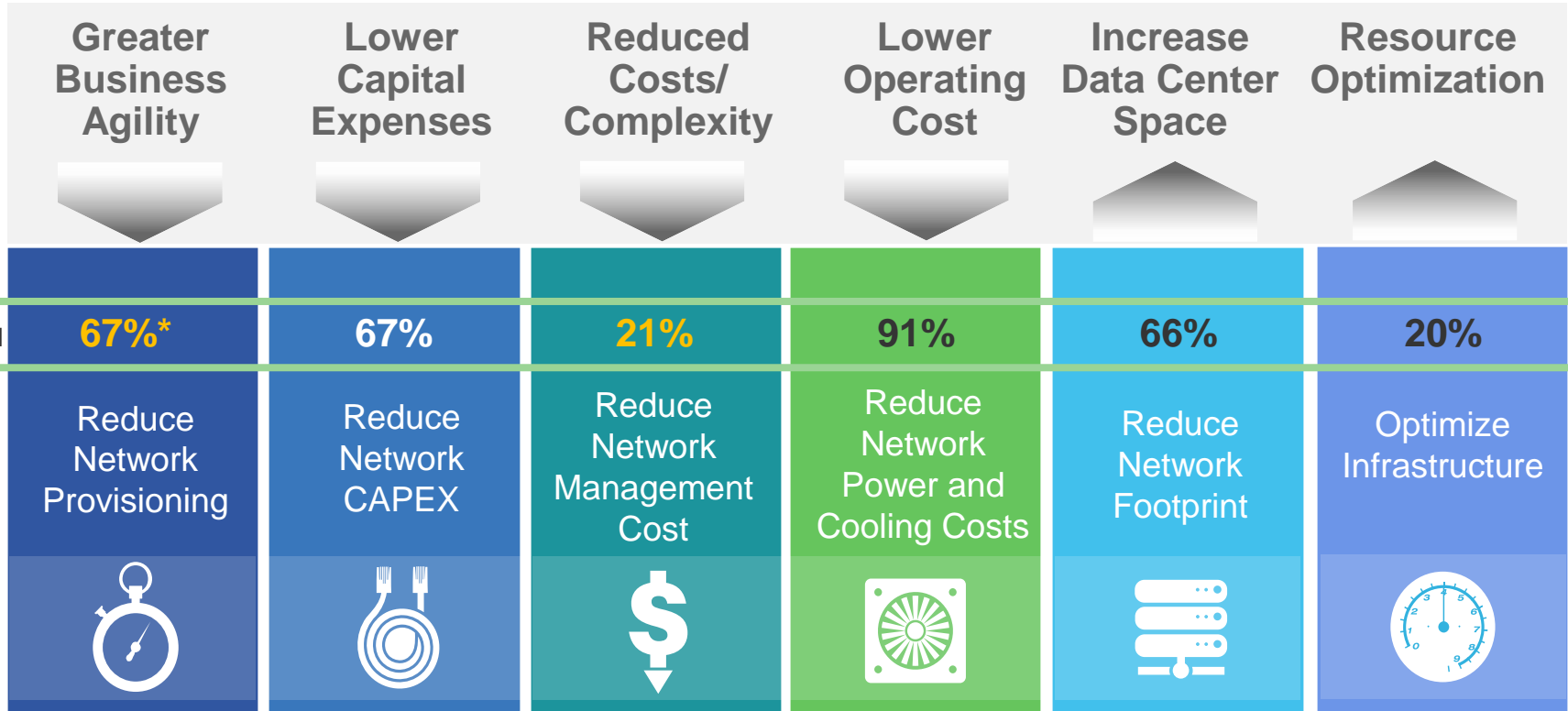
Function	Type	Count
DC GW	7018	9
Service Switch	6509	7
Access	5672	97
Other	Interfaces	963
		1076

ACI Fabric



Function	Type	Count
Spine	9508	5
Leafs	9396	38
APIC	Controller	3
Other	interfaces	1292
		1338

Data Center ROI for ALLN



ACI

Migration Process

Application Evolution

Cloud-Tolerant
(Functional in a Cloud Environment)

Actions done **TO** the
application



Cloud-Ready
(Flexible Application Leveraging
Cloud Capabilities)

Actions done **FOR** the
application



Cloud-Native
(Intelligent Application That
Maximizes Use of Cloud Capabilities)

Actions done **BY** the
application

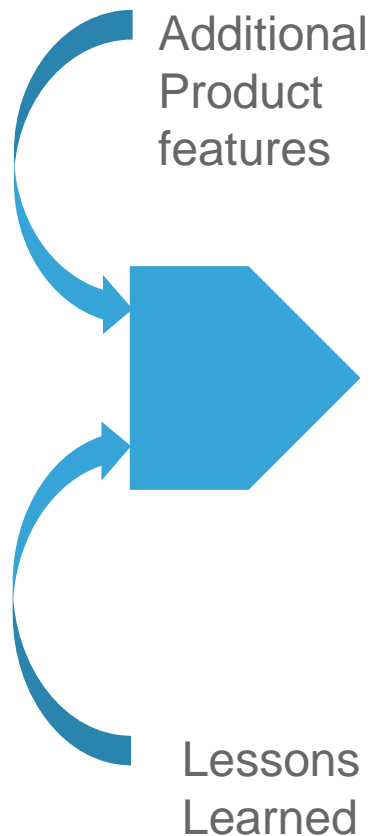
Infrastructure-Centric

Application-Centric

Approach

Align migration roadmap to product ready features

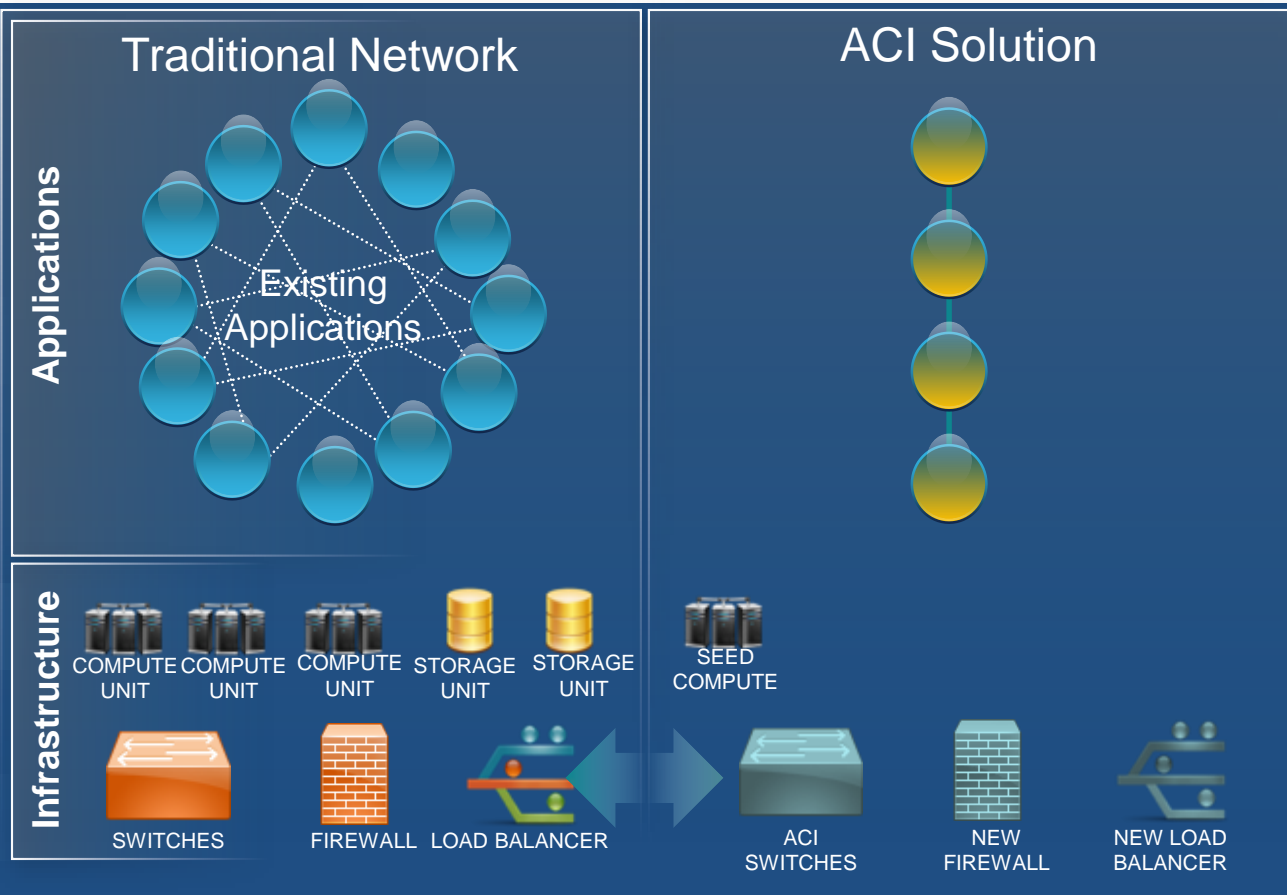
- Internal facing workloads (e.g. MITaaS - Customer Registry, Master Data Management, etc)
- Green Field (e.g. Hyperion)
- Early Adopters (e.g. Hadoop, BRMS, Commerce Analytics)



- Mass migration
- LAE on ACI
(Lightweight Application Environment)
- Granular Security

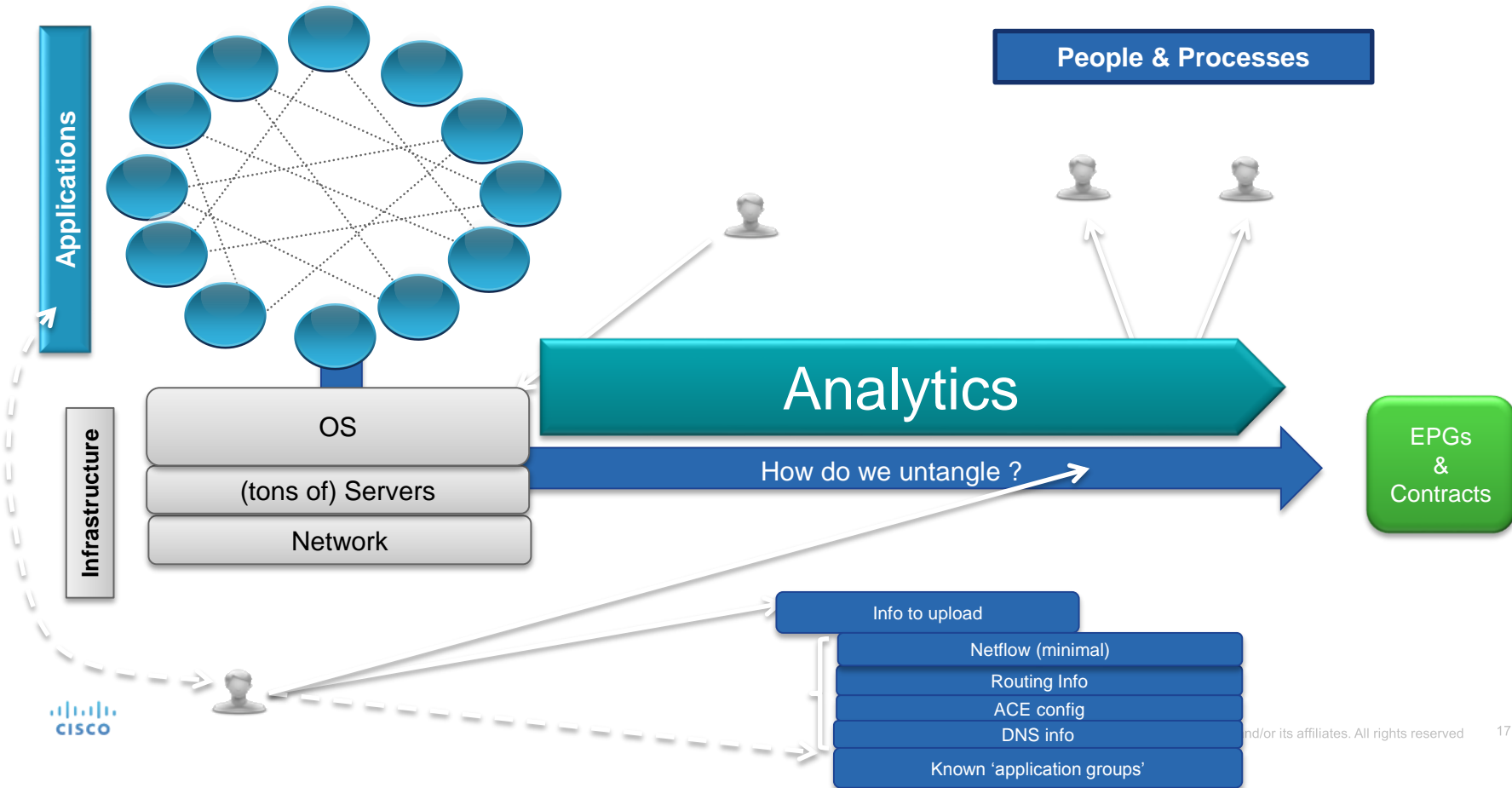
Migration Process

- 0** Network Dependency Mapping
- 1** Build the ACI Fabric in Parallel
- 2** Install Seed Compute into ACI Fabric
- 3** Connect Fabric to Traditional Network via Uplinks
- 4** Define EPGs, Network Application Profiles, etc.
- 5** Move Storage Unit
- 6** Move Applications to ACI
- 7** Move Compute Unit
- 8** Iterate: Identify next App(s) to set up and migrate



Application Dependency Mapping / untangling

Leveraging Tetration Analytics (TA)



ADM - High Level Steps

- **Deploy TA sensors on the Application hosts**
 - ✓ Windows hosts
 - ✓ Linux hosts
- **Capture live network traffic to/from app hosts over a period of time**
- **TA Tool analyzes network traffic data**
 - ✓ Group traffic data into end point groups called clusters
 - ✓ Filter noise(non app traffic) and common service traffic
 - ✓ Add/modify clusters based on requirements
- **Define Application Profile**
 - ✓ Add clusters(EPGs) to define an application canvas
 - ✓ Identify and resolve policy exceptions
 - ✓ Adjust Clusters and policies to define final set of EPGs and contracts
 - ✓ Export the final ANP(Application Network Profile) file for APIC

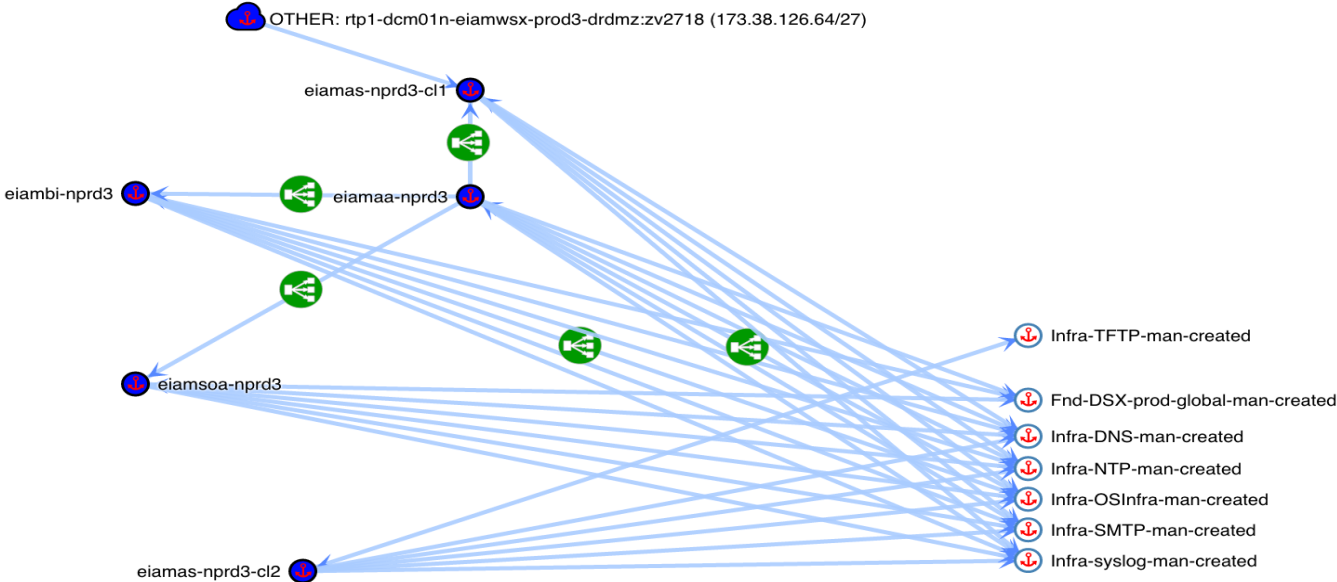
Example of an Application Canvas

After clustering has been done

Application Profile / oam*

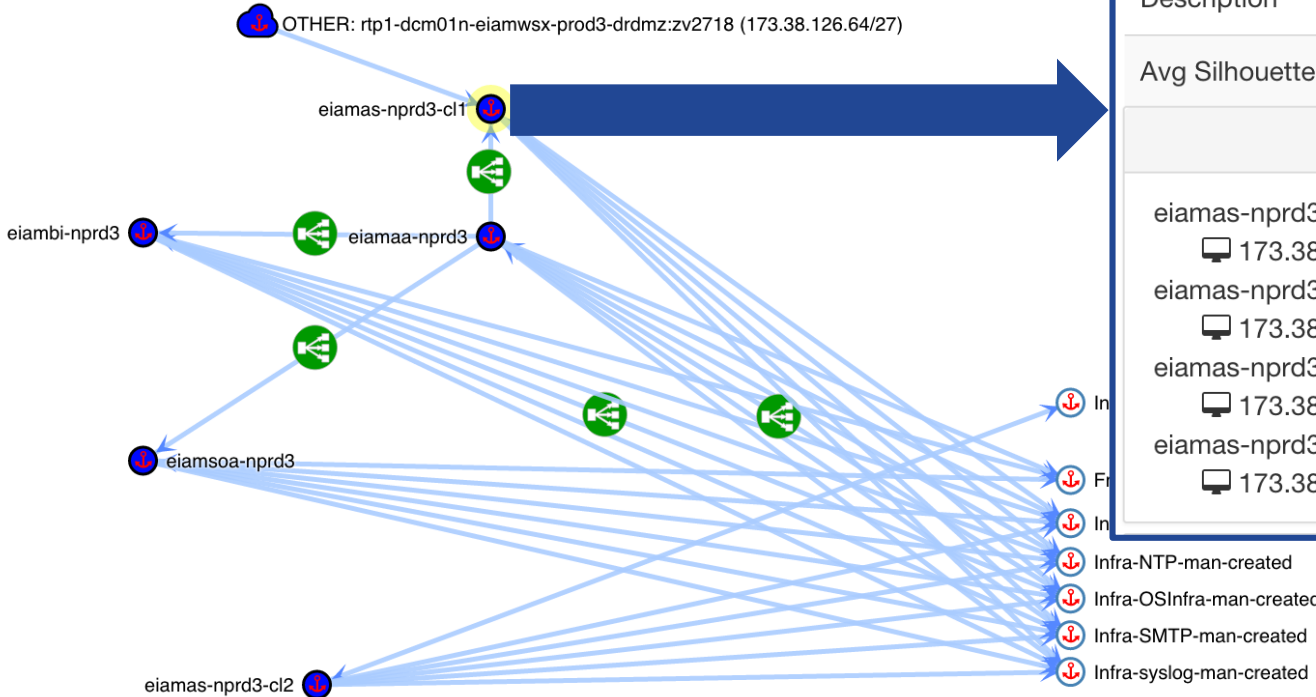
- + (Add)
- (Remove)
- (Toggle visibility)
- (Toggle pin)
- (Toggle swap)

- Allen-outbound-email-created-bot
- bpimweb-nprd3-0*
- bpimweb-nprd3-0* (2)
- bpimweb-nprd3-0* (3)
- bpimweb-nprd4-0*
- bpimweb-nprd4-0* (2)
- bpimweb-



Click on EPG

Shows all servers within the EPG (based on recommended clustering from ADM)



Cluster: eiamas-nprd3-cl1

Name: [eiamas-nprd3-cl1](#)

Description: [\[edit\]](#)

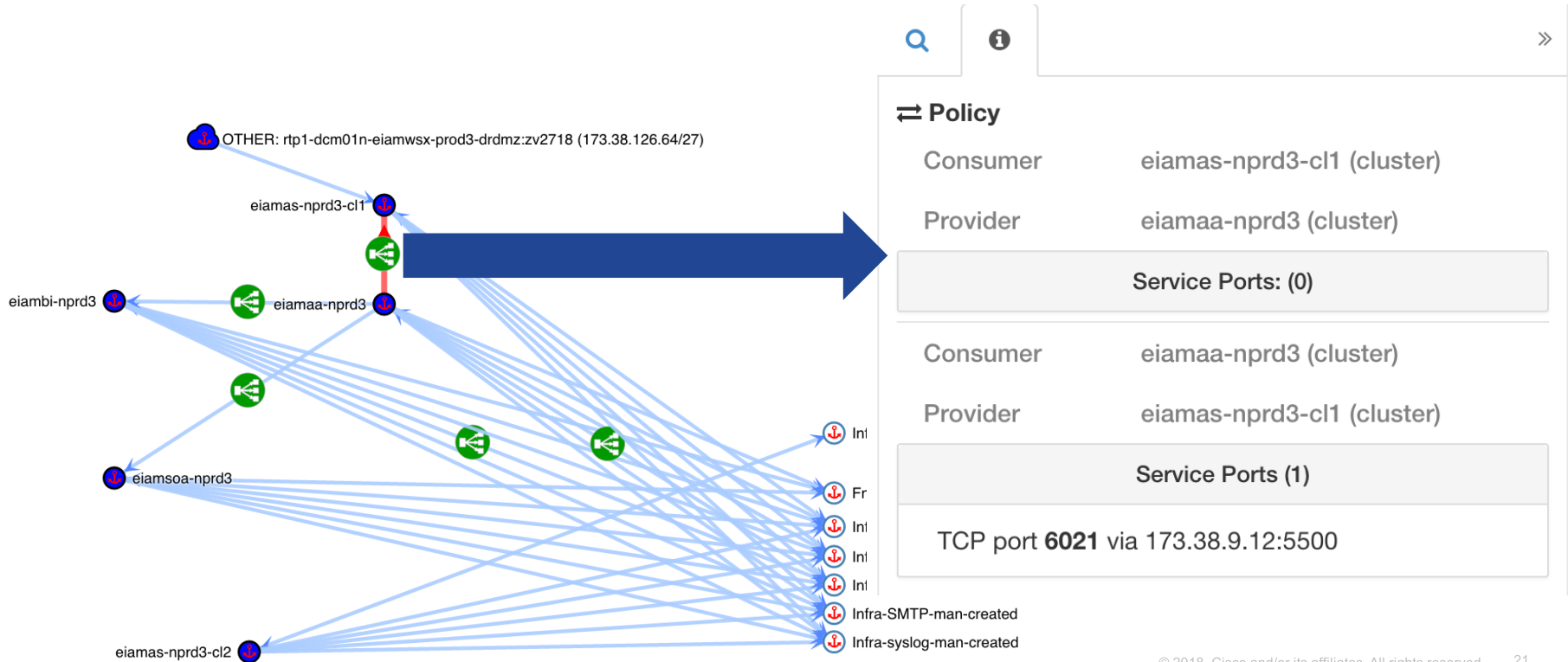
Avg Silhouette: N/A

Endpoints (4)

- eiamas-nprd3-01
173.38.9.4
- eiamas-nprd3-02
173.38.9.5
- eiamas-nprd3-03
173.38.9.6
- eiamas-nprd3-04
173.38.9.7

Click on flows between EPGs

Shows TCP or UDP ports used between EPGs, show SLB in between



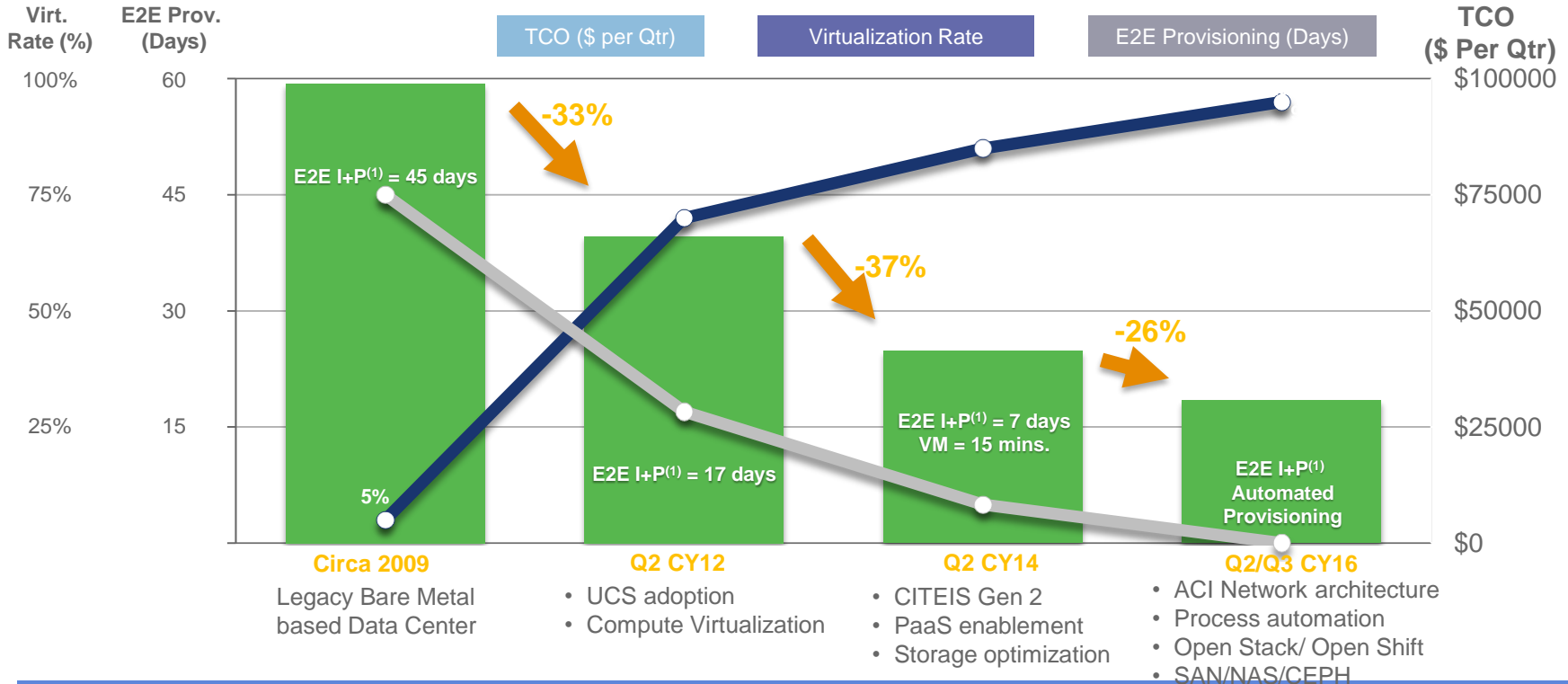
Automation

Application Centric Cloud - ACC

Digitized World

Data Center Transformation

Sustained YoY TCO⁽¹⁾ reduction – provisioning from days to minutes

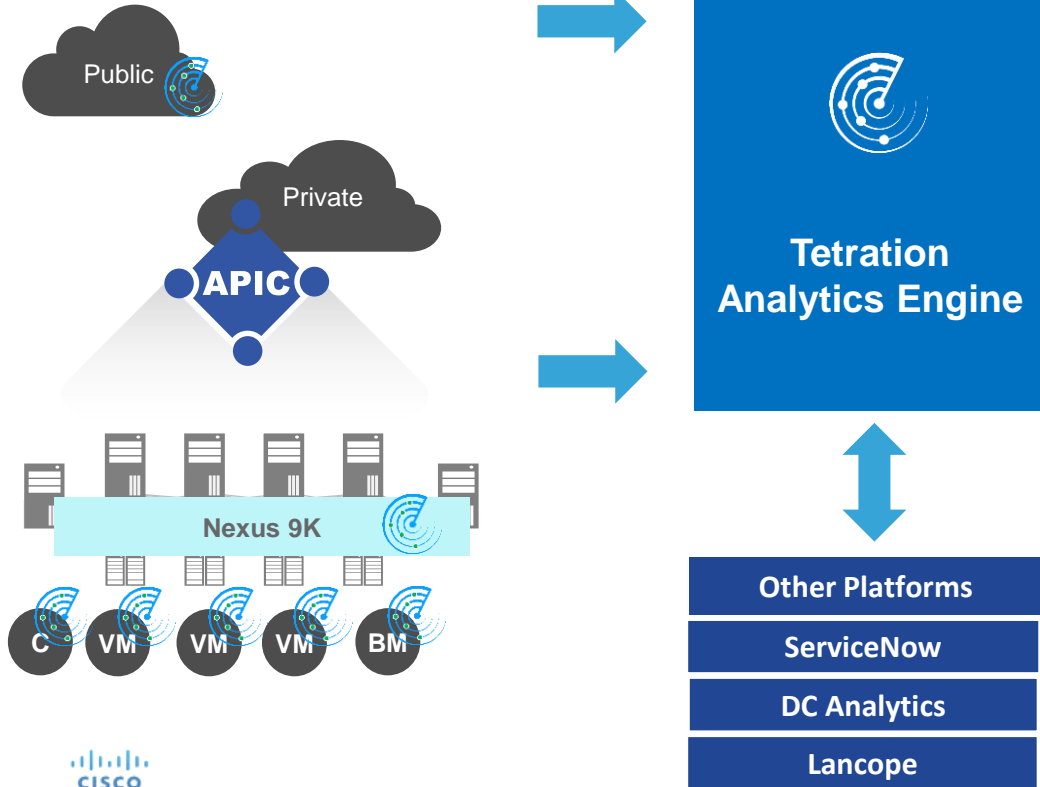


(1) E2E I+P = E2E provisioning time for both Infra & Platform components of the bundle

(2) TCO for typical Bundle covering Compute: 24 servers (Bare Metal or Virtual); Storage: Six TB (SAN/NAS/CEPH); DC Nw: Traditional → ACI; Platform: One DB Schema, 10 JVMs, Weblogic, MMX (messaging), BPIM, WSG, Apache, OBIEE

One Platform, multiple use cases

Network Flows + Server-level Information + Analytics



Use Cases



Applications Insight

- Dependency Mapping
- ACI Migration (whitelist)



Application Monitoring, Performance

- Benchmarking on the Network
- Deviation Detection



Security & Auditing

- Auditing
- Security Enforcement
- Policy Verification ~ 'what if'
- Threat Detection

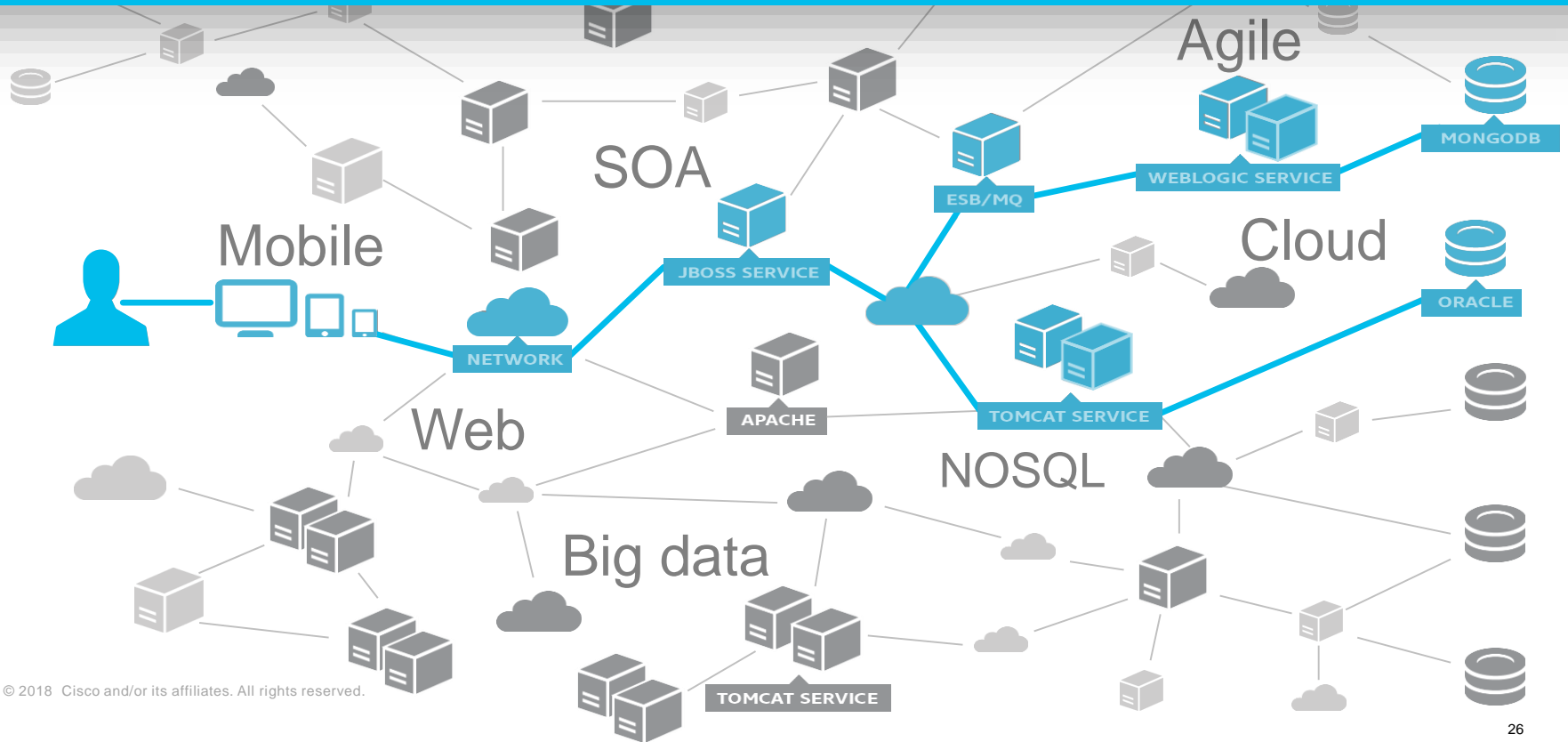


CMDB accuracy

- Inventory (Service Now)
- Increase Operational Insights
- Unused infrastructure (?)

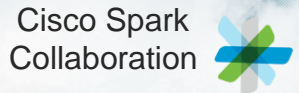
The TRANSACTION

is one of the best measures of user experience and business impact

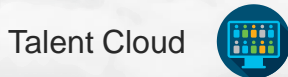


Cisco IT Multi-Cloud Strategy

servicenow



eloqua



Priva



