Successful IaaS

The underlying Infrastructure DOES matter

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Introduction

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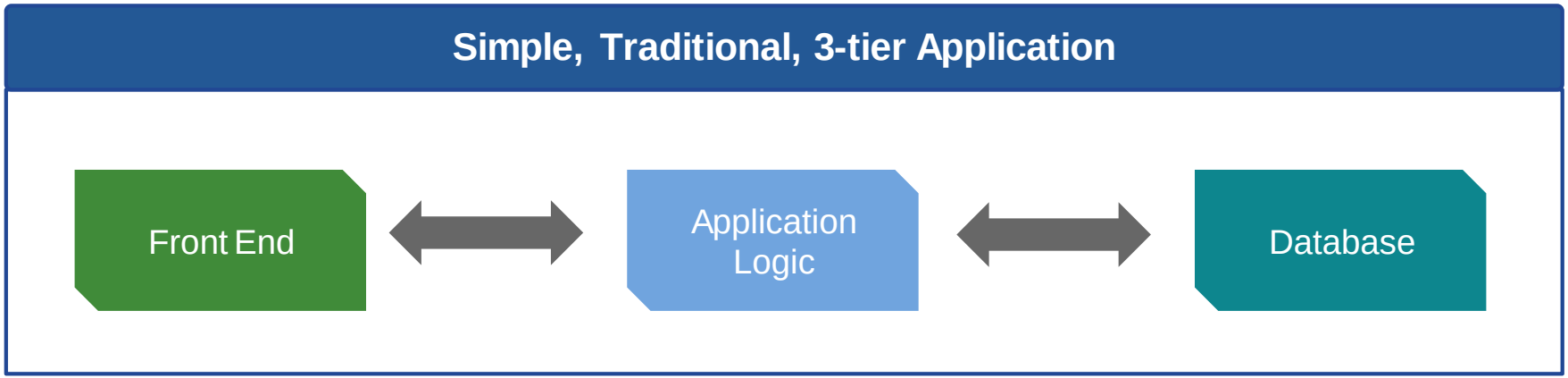
Why do organisations want to move to IaaS ?

- IaaS is now a commodity, so
  - Has a price advantage through scale benefits
  - Has security and reliability advantages
- Running a Datacenter should not be Core Business
- Make more effective use of people
- IT infrastructure experts difficult to hire and retain
- Applications are moving to Cloud, own DC becomes smaller

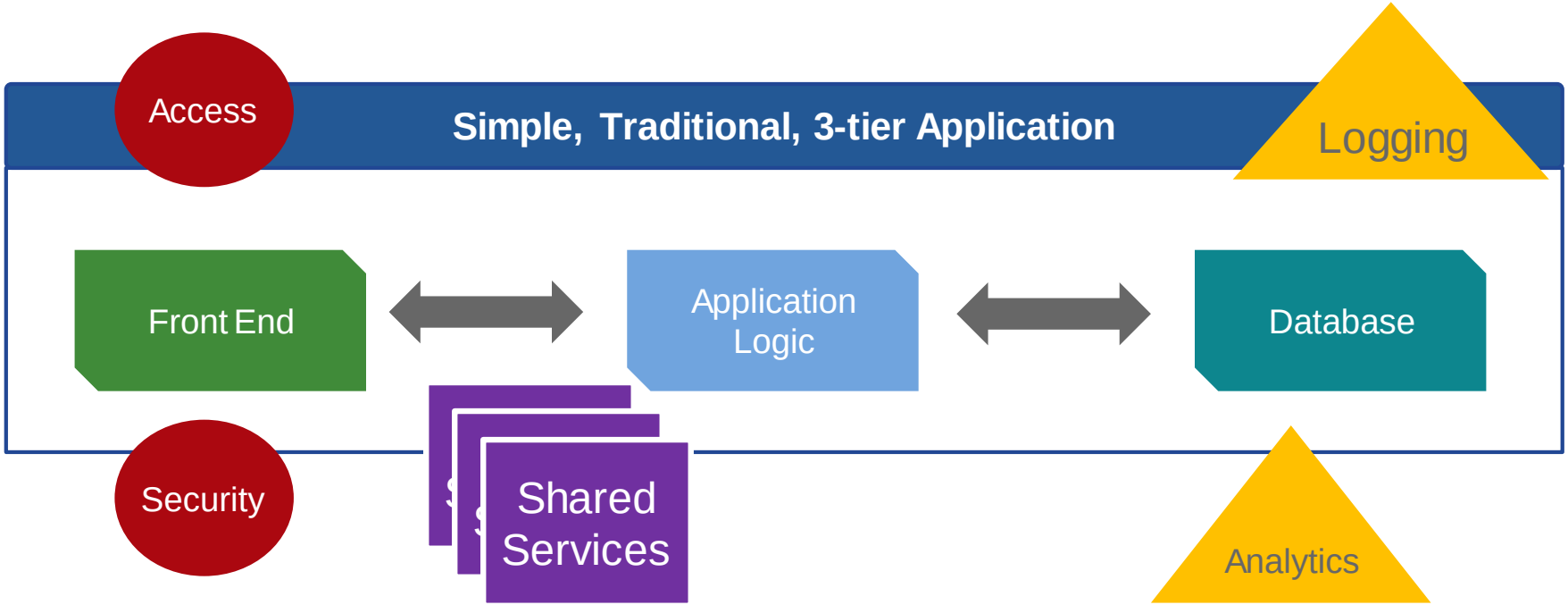
Let’s get started with IaaS!

Organisation wants to get started with IaaS



Difficult to put only parts of this “chain” at an IaaS provider

Organisation wants to get started with IaaS



Adding in the parts that make the application work in the customer environment

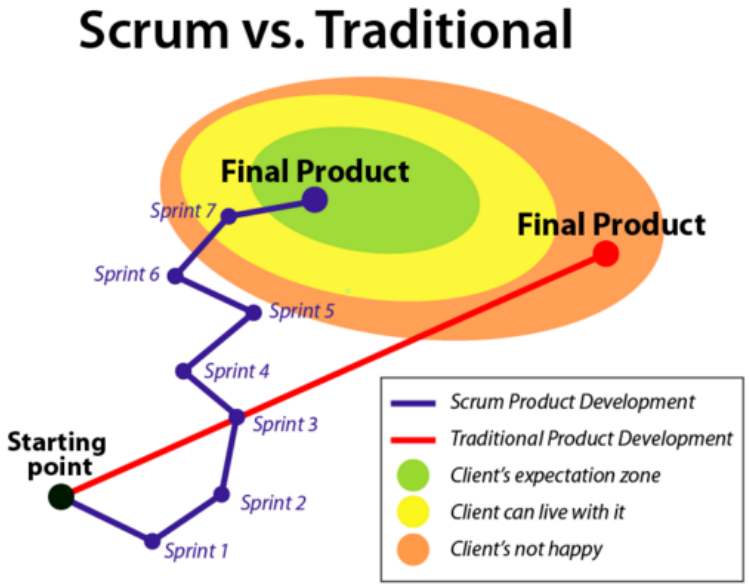
Gartner “Bimodal IT”

Type 1

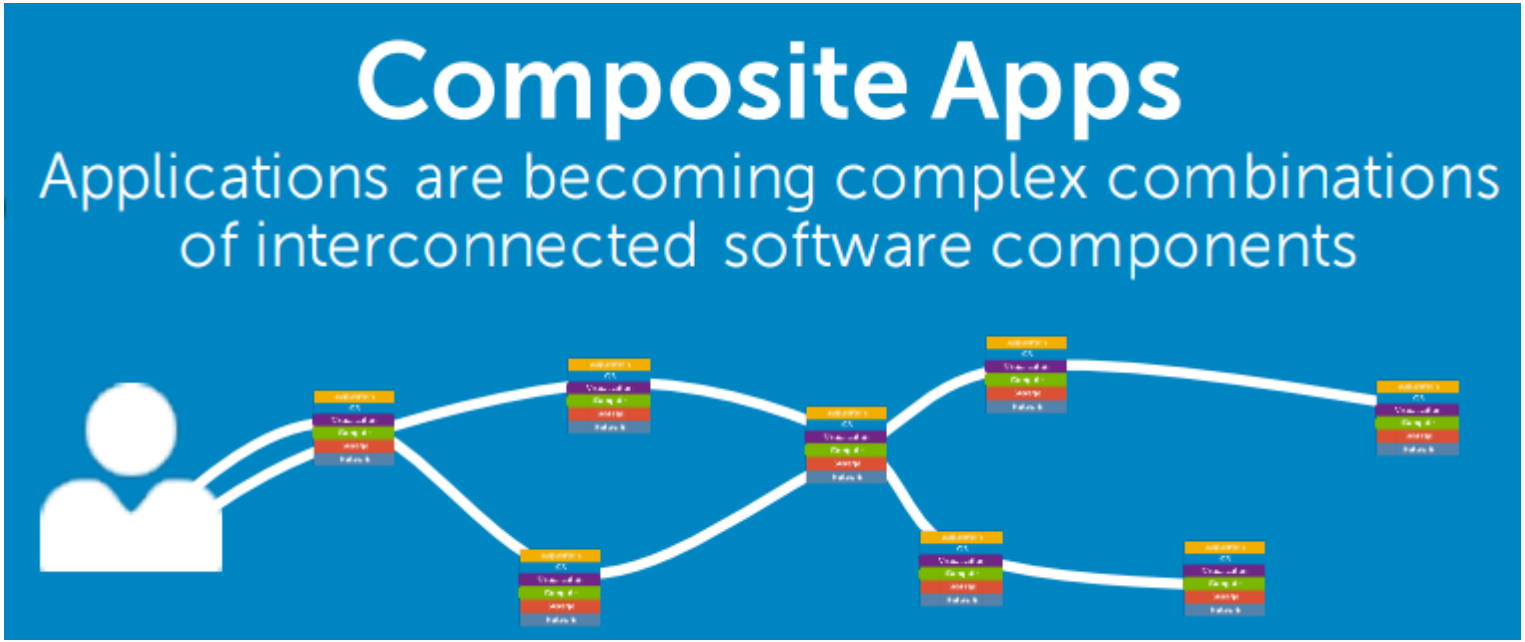
„Traditional”
(reliable IT)

Type 2

„Cloud Scale”
(agile IT)
DevOps/Scrum



“Mode 2” applications make it even more complex



SEQUOIA

MICROSERVICES ECOSYSTEM

DEVELOPER TOOLS

DATA CENTER

SOURCE
Atlassian
GitHub
Gitlab

CONTINUOUS INTEGRATION
Atlassian
CloudBees
JFrog
Codeship
CircleCI
Werker
Shippable

CONTAINER REGISTRY
Docker
Amazon
Google

SERVICE DISCOVERY & PLANNING
Docker
Kubernetes
Hashicorp

SERVICE OPTIMIZATION
Force12.io

SECURITY & COMPLIANCE
Illumio
Apcera
CloudPassage
Banyan
Twistlock
Redlock
Palo Alto Networks
StackRox
Conjur
Scalock

MONITORING | LOG ANALYSIS
Wavefront
DataDog
Sysdig
Elastic
Logentries
Nagios
Gencore
App Dynamics
SumoLogic
Runscope
New Relic
SignalFX
Splunk

INTER-SERVICE COMMUNICATIONS
Confluent
Tensyr
Rabbit (Pivotal)
Hystrix
Thrift
Finagle
NATS
gRPC

ORCHESTRATION
Docker
Mesosphere
Apcera
Kubernetes
HashiCorp

PLATFORM MANAGEMENT
Docker
Mesosphere
AppFormix
Nirmata
Rancher
Stack Engine (Oracle)
Apcera
Flexiant
Containership
ManageIQ
Kubernetes

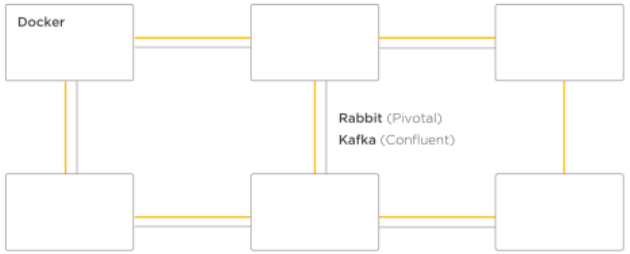
API MANAGEMENT
Mulesoft
Akana
Apigee
Runscope
Kong
WSO2
3Scale
Mashery

REGISTRATION
Zookeeper
CoreOS

LOAD BALANCING
NGINX
Datawire
Buoyant
HAProxy
Traefik

MICROSERVICES

Get small to get big. Microservices is an approach to building software that shifts away from large monolithic applications towards small, loosely coupled and composable autonomous pieces.



OPERATING SYSTEM
Linux
UNIX
Windows
CoreOS
OpenStack
Mesosphere

INFRASTRUCTURE AUTOMATION
HashiCorp
Ansible (Red Hat)
Puppet
SaltStack
Chef

DATABASE & DATA MANAGEMENT
ClusterHQ
Minio
MongoDB
Crate.io
Cockroach

NETWORK
Cumulus
Docker
Big Switch
Weaveworks
FBOSS
Calico
OpenSwitch

CONVERGED INFRASTRUCTURE
Ceph (Red Hat)
Datawise
Springpath
Portworx

PLATFORMS
OpenShift
Joyent
Cloud Foundry
Deis
Docker

PUBLIC CLOUD
AWS
DigitalOcean
Azure
VMware
IBM
Google

Includes both companies and open source projects

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Now imagine having to move to another IaaS

Conclusion on IaaS

Using IaaS does not take away the complexity

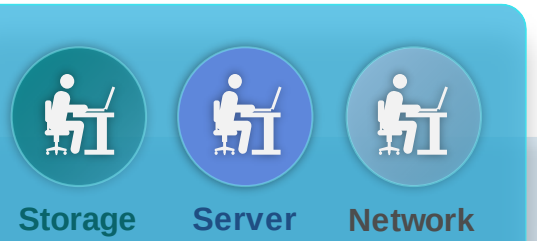
It takes away the simple infrastructure management tasks

Managing applications that run on PaaS is much easier

Fundamentals which should help in working with IaaS providers (and Hybrid situations)

The Policy Defined Datacenter

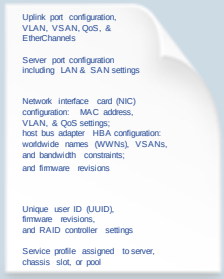
Cisco Technology



1

Experts determine policies for infrastructure components

Template Specification



Individual Profiles

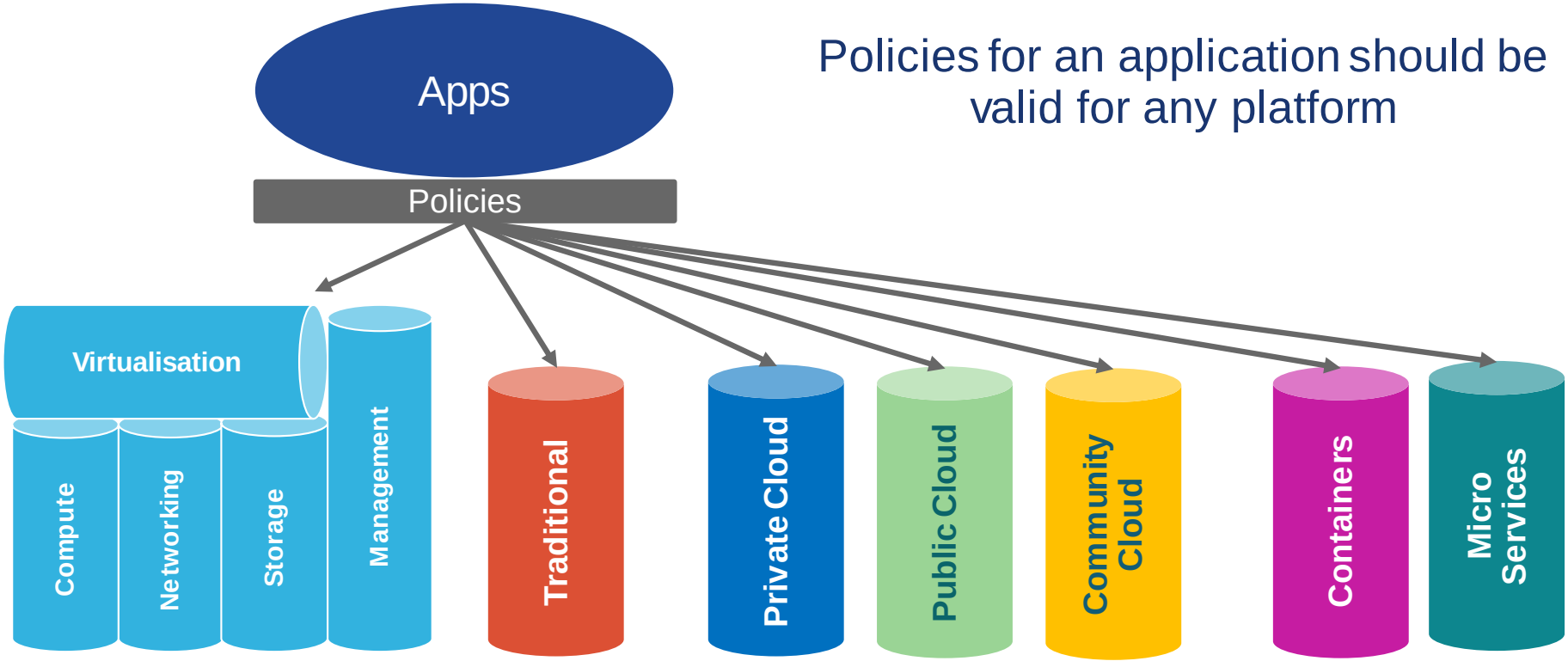
2

Engineer builds policies into Templates for App Deployment

3

Users instantiate a template to deploy their functionality and adapt instance to required price/performance

Consistent Policies across deployment platforms



Policies for an application should be valid for any platform

End-to-end Orchestration
that understands policies

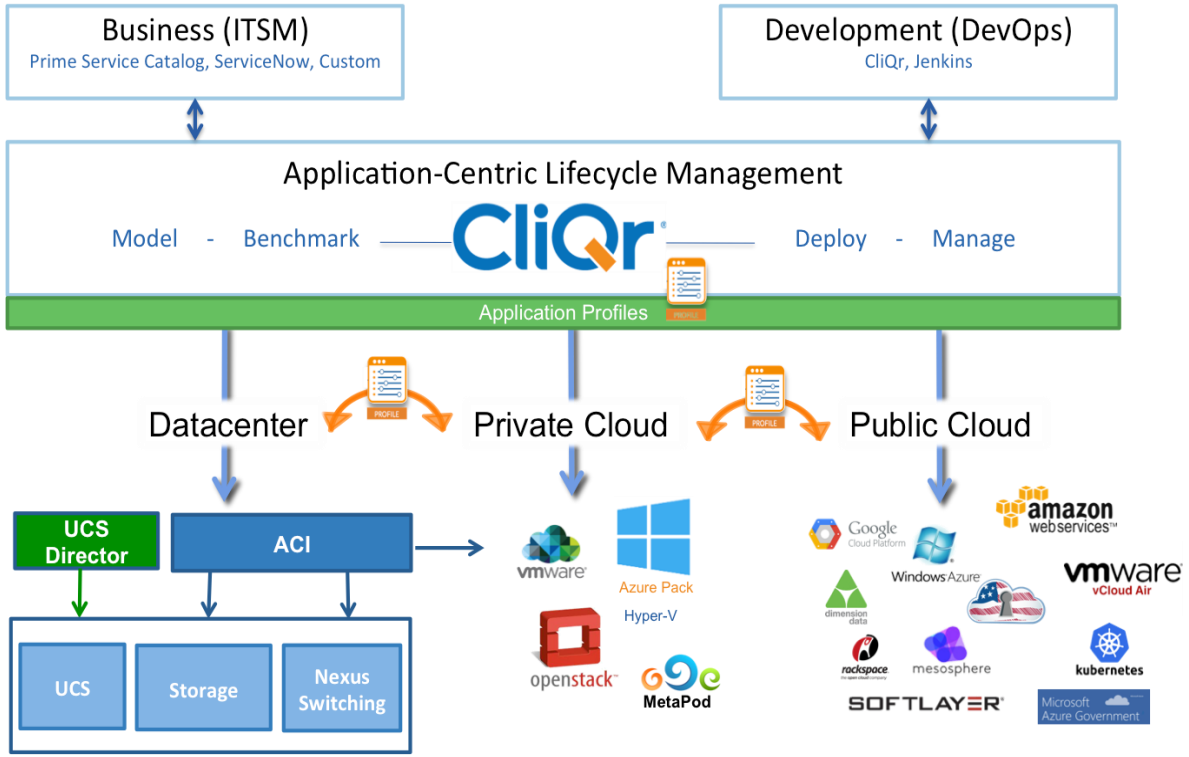
Cisco Technologies in conjunction with 3rd party

Self Service Front End

Service Orchestration to any destination platform

Deployment Automation

Destination Platform



Use the network as a Sensor

Cisco Technology

- The network can be used to examine all data streams
- Real-time analytics on the data stream gives you the ability to
  - Gain Performance and Reliability insight on all parts of an application chain
  - Add Security and Compliance functionality to the data stream while in transit

Embedded Security, Analytics, and Telemetry at 100G Wire Rate

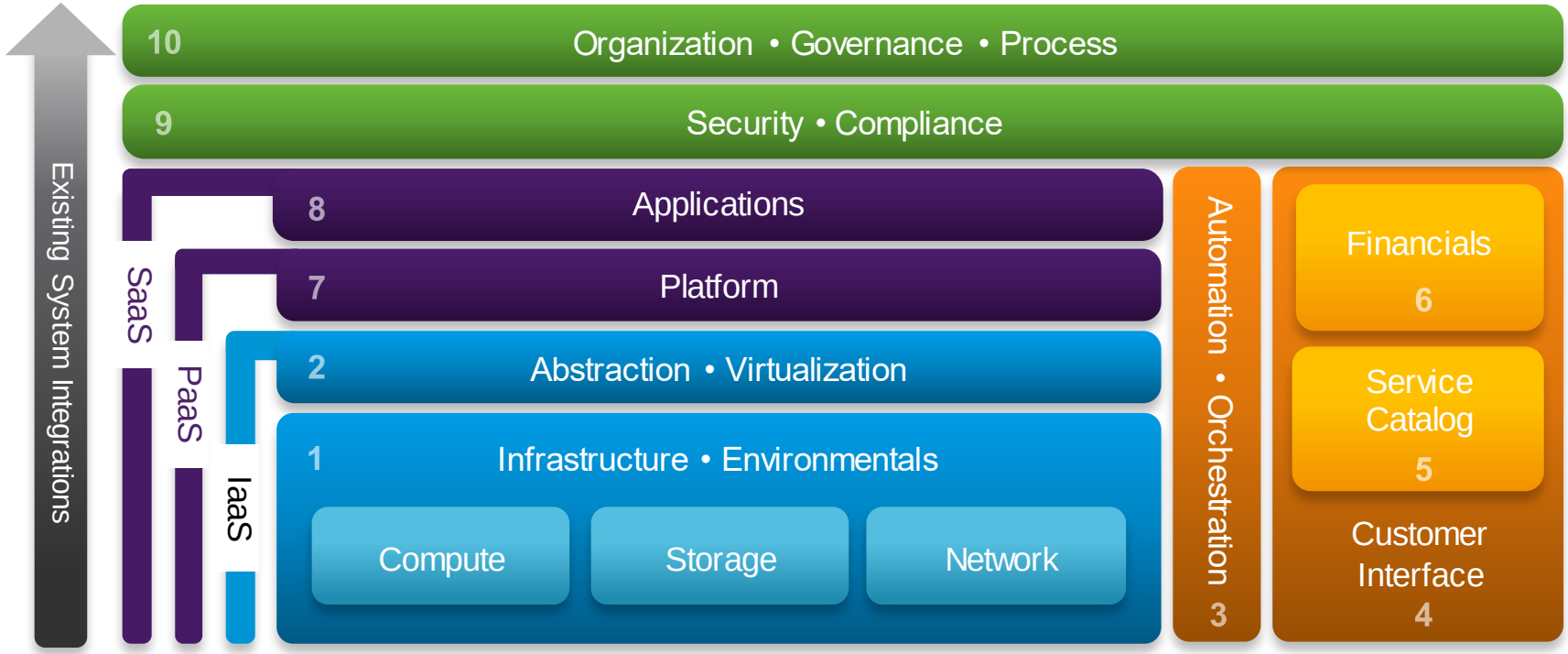
An IaaS provider using the network as a sensor is able to provide their customers with better

- Management information about what is going on in their applications
- Efficiency of their IT experts

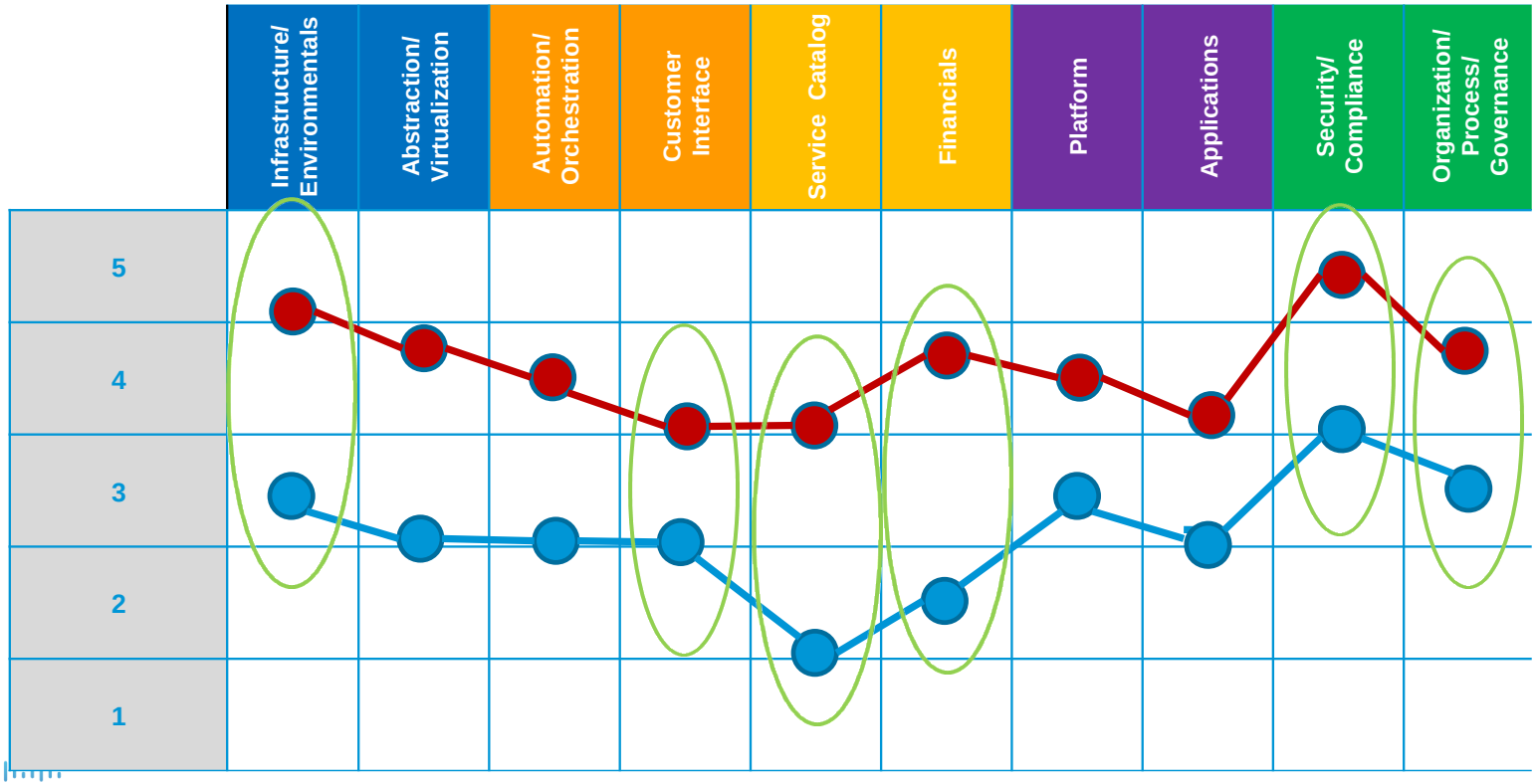
Services that can help customers and providers with improving adoption and success

Transform your IT: Domain 10 framework

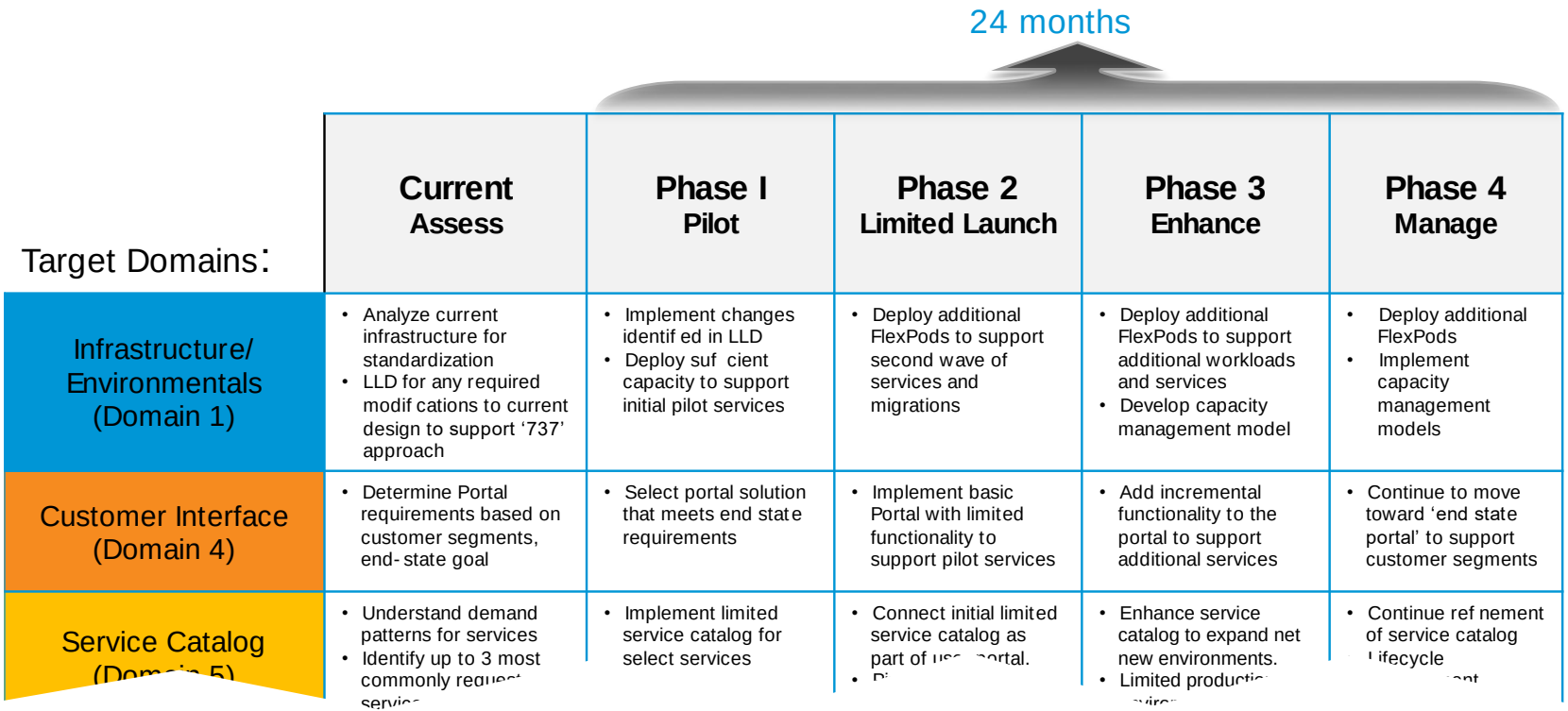
Cisco Services



Free Workshop to determine current and desired state



Sample IT Transformational roadmap



Cisco Services

IaaS based on OpenStack

	DIY OpenStack	OpenStack Distro	Cisco Metapod
Product roadmap w/upgrades	None	OpenStack software only	Entire OpenStack system
SLAs	No	Sometimes (depends on Distro vendor)	Yes – 99.99%
Support	None	Software only	Full stack
Production timeline	Unpredictable	More predictable	Predictable
OpenStack skill sets required	High	Medium	Low
Operational complexity	High	Medium	Low

Summary

- Application Dependancies are the cause of complexity in IT Infrastructure
- Using Policies in your datacenter allows IT personnel to focus on exceptions and automating everything else
- Cisco provides technology that supports using IaaS for the Policy Defined Datacenter
- Cisco and her partners provide the comprehensive services to help customers succesfully adopt and migrate to IaaS providers
- Cisco provides solutions that help IaaS Providers create services that better match the needs of their customers

The underlying infrastructure does matter!

Q&A


CISCO

Summary

- Help your customers understand that IaaS doesn't magically take away the complexity of their IT Infrastructure
- Using Policies in your datacenter allows IT personnel to focus on exceptions and automatoming everything else
- Cisco provides technology that supports using IaaS for the Policy Defined Datacenter
- Cisco and her certified partners provide the comprehensice services to help customers succesfully migrate to IaaS providers
- Cisco provides solutions that help IaaS Providers create succesfull offerings to the Community participants

Running your Infrastructure as a Service

- Establish Governance, Manage the Service → New skills for IT personnel
- Standardization on unit of consumption to compare price/performance of providers
- Billing, Payments and assigning cost centers
- Management of services between Provider, Partner and Consumer
- The flexibility and freedom of the underlying technology
- How to put Complex Services into a Catalogue / Portal?
- Ensuring end users actually consume the IaaS and don't go rogue
- Migration Scenarios to and between providers
- Integrate existing environment with the IaaS

Notes

- Security aspect
- Showcase demo – Saxion
- Trial runs
- 1hr 11:30 am GMT, Monday/Thursday, 4wks prep
- Make description
- Webinar 1st, Workshop later, Adobe Connect