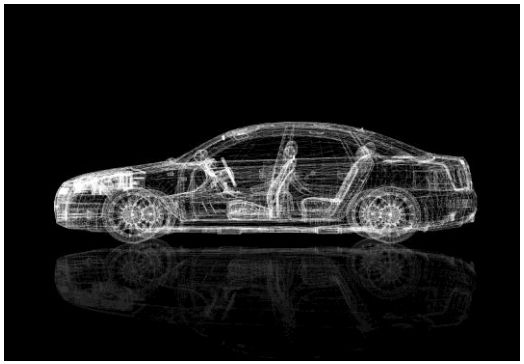
Cloud At eBay

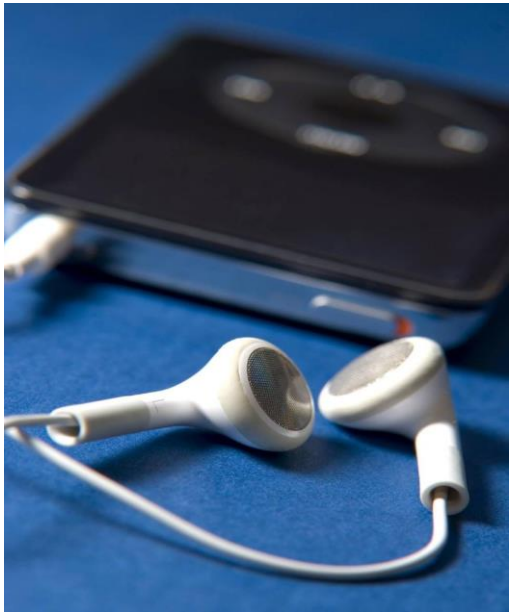
June 7th, 2013

A Commerce Platform

720 cosmetic products



1440 cars



3600 mp3 players

800 diamond rings

eBay Snapshot

350 MILLION
listings as of October, 2012

100+ MILLION
eBay mobile app downloads

105 MILLION
active users in 190 countries

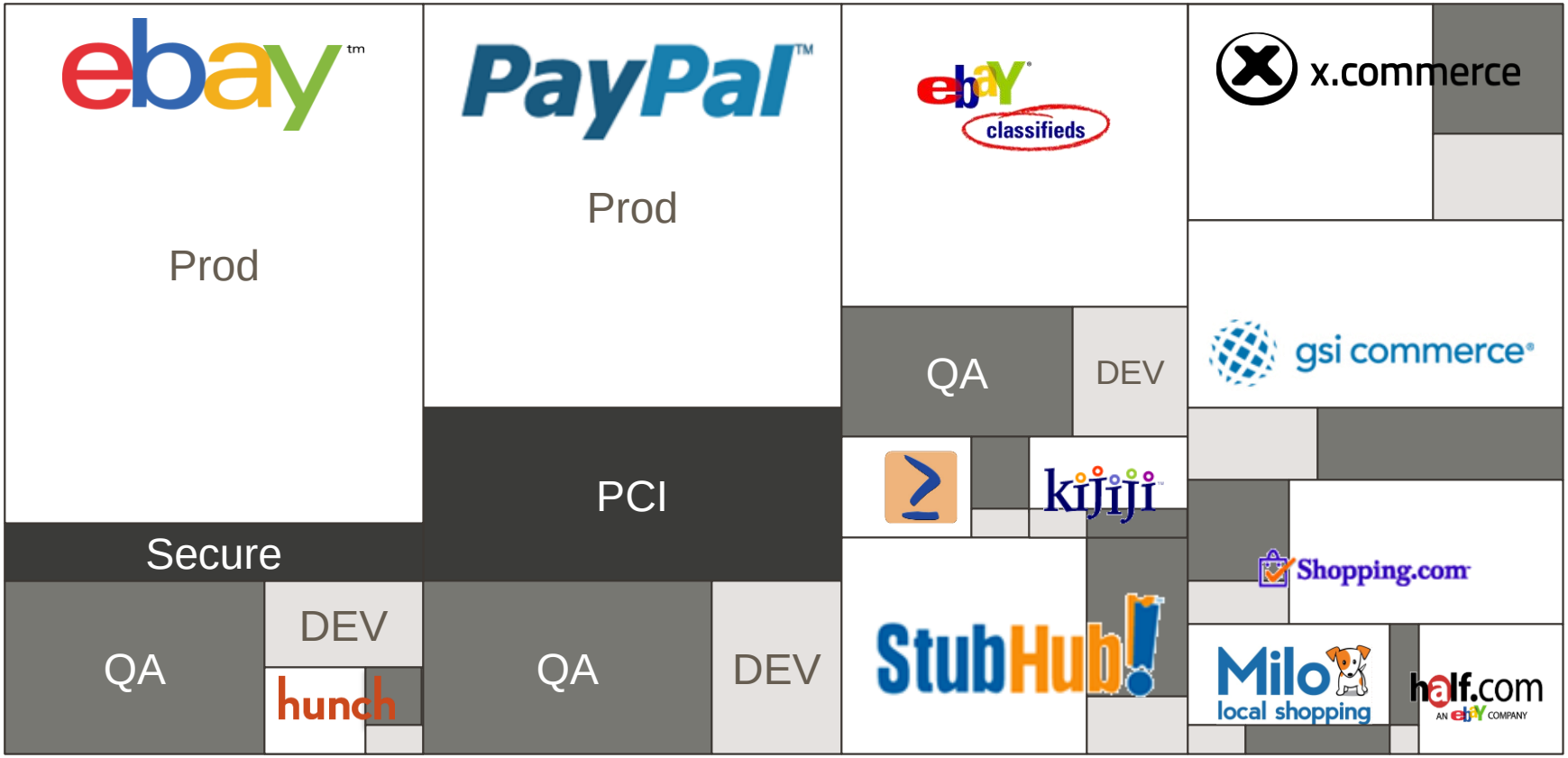
20%
of items are purchased by shoppers from outside their countries

ONE MILLION
customers signed up for new mobile accounts in the first half of 2012

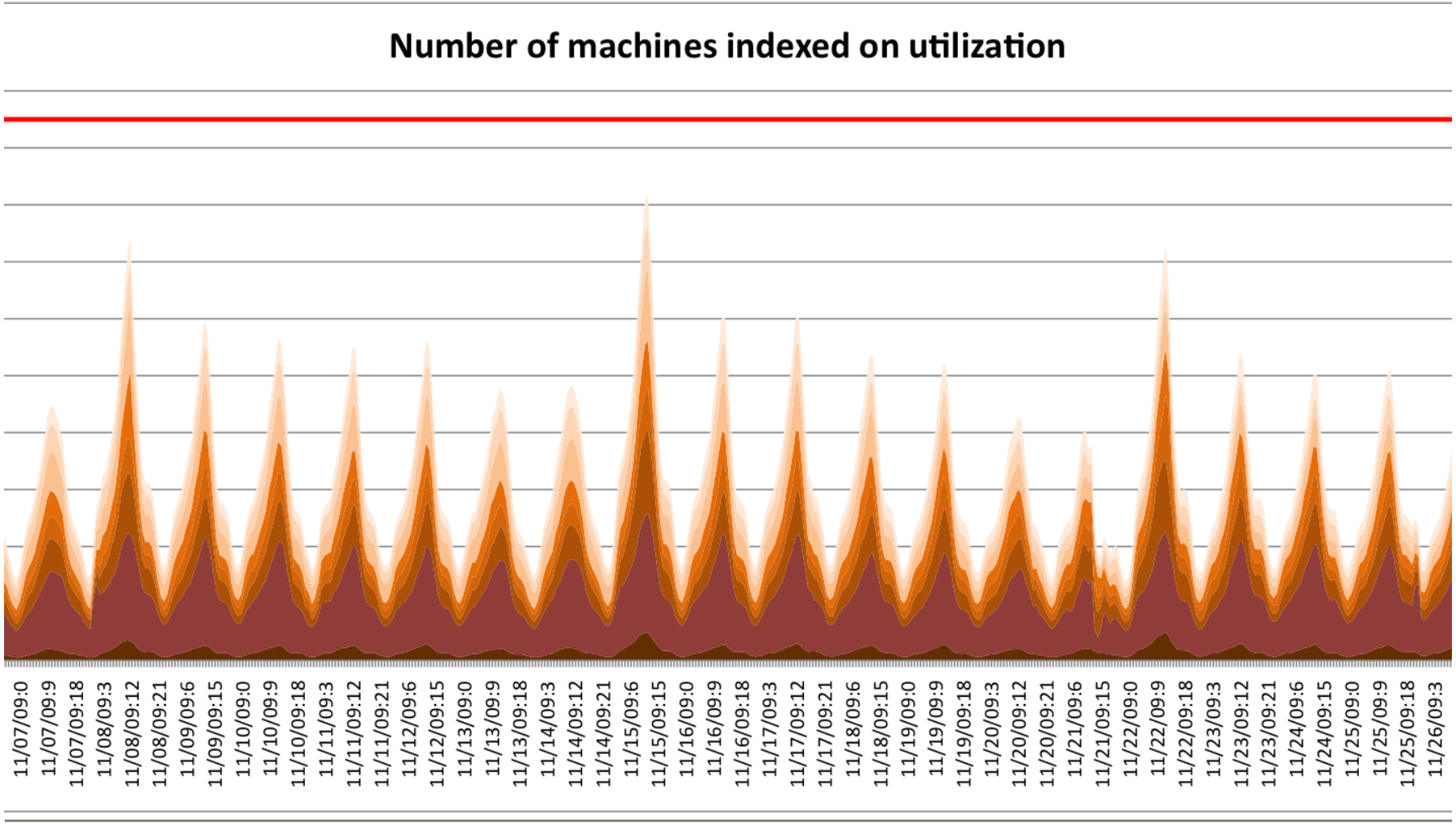
25 MILLION*
Sellers from around the world

* Nearly

Variety of Business Needs



Traffic and Capacity



Requirement

A new application can be deployed on 100 new servers and be ready to serve traffic in less than 45 minutes

Principles

Simplify

Automate Everything

Any Application Anywhere

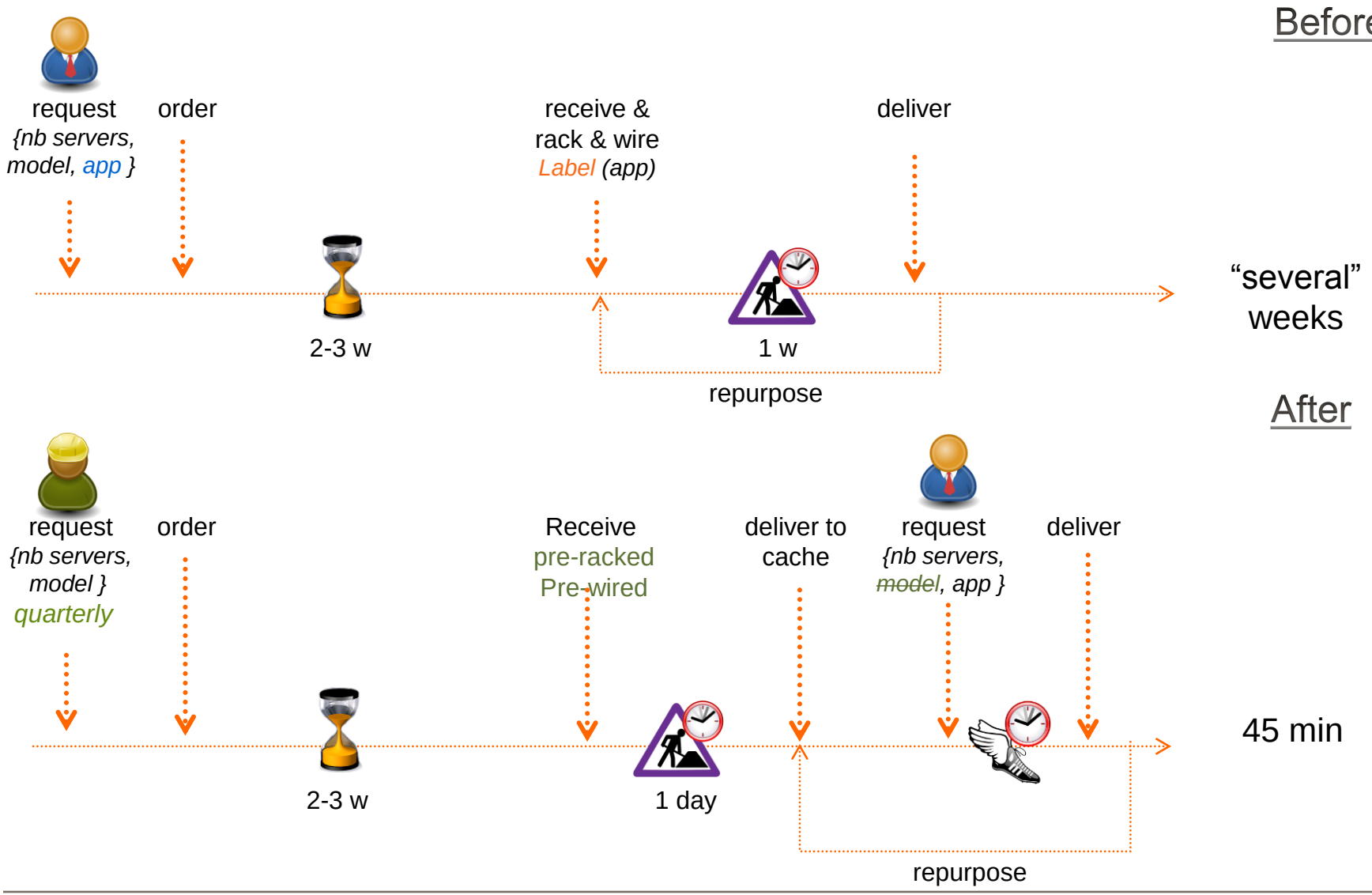
Proportional Security

Plan for Failure

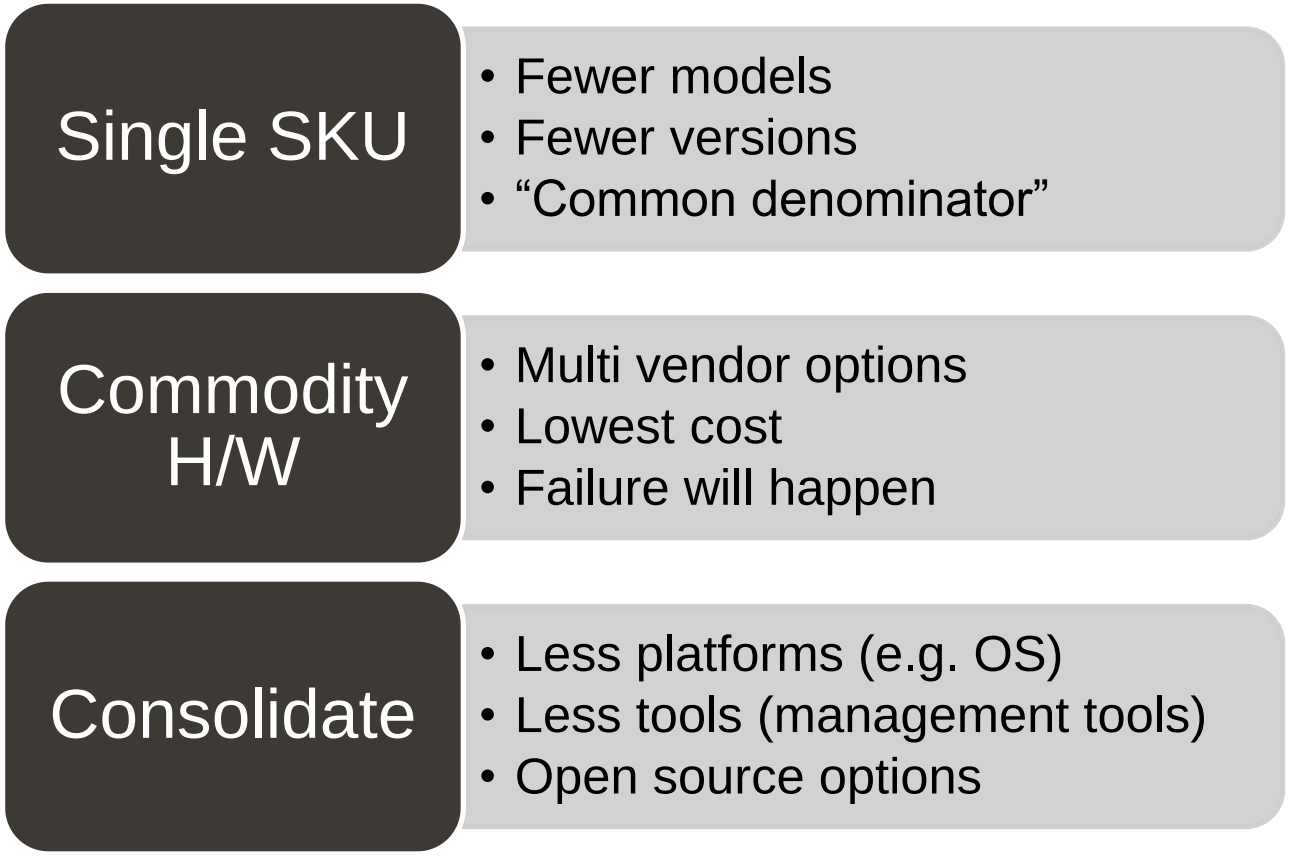
SIMPLIFY

- Process
- Technology
- Organization

Process Simplification



Technology


Single SKU
• Fewer models
• Fewer versions
• “Common denominator”
Commodity H/W
• Multi vendor options
• Lowest cost
• Failure will happen
Consolidate
• Less platforms (e.g. OS)
• Less tools (management tools)
• Open source options

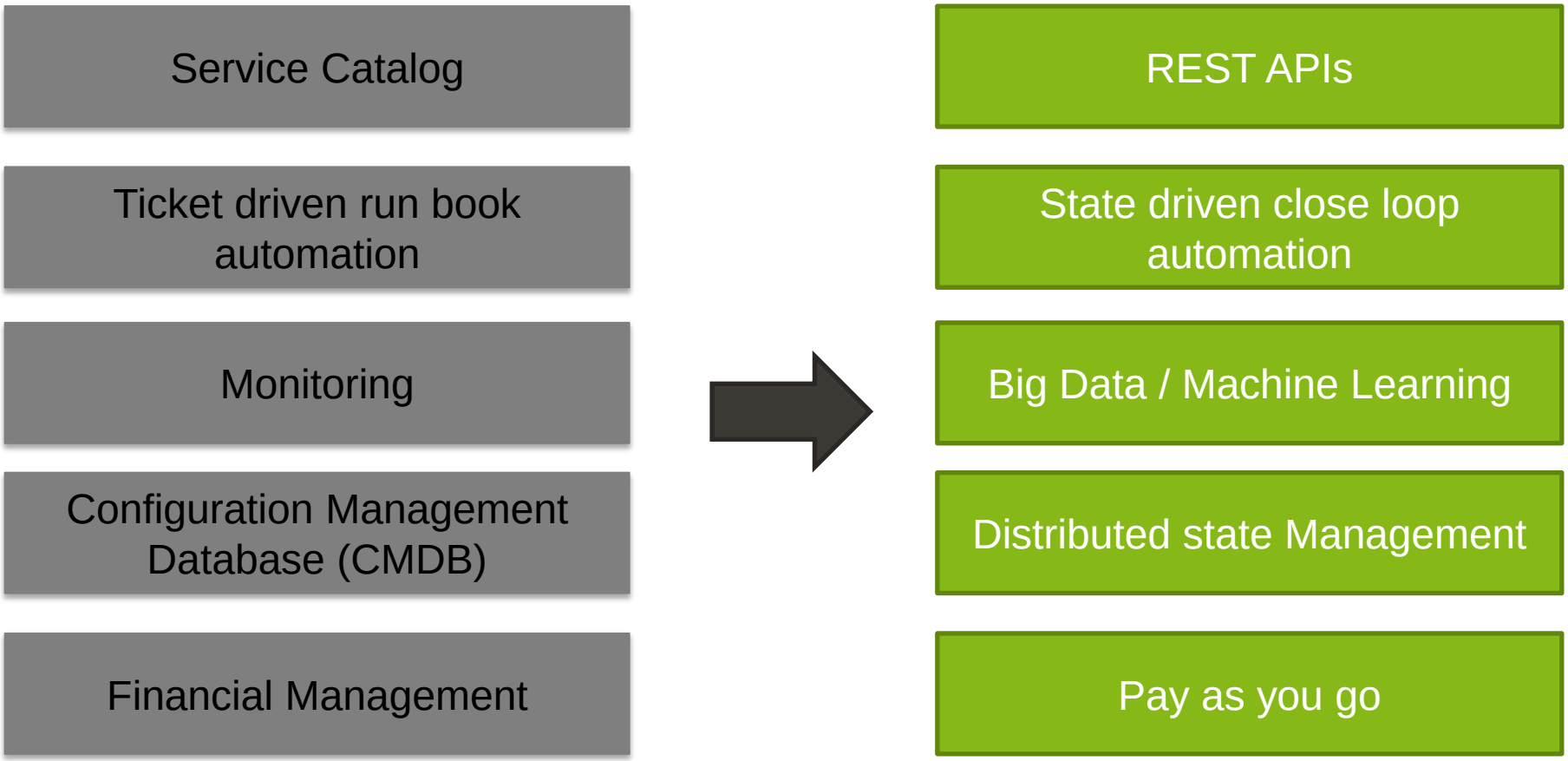
Organization

"organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations"

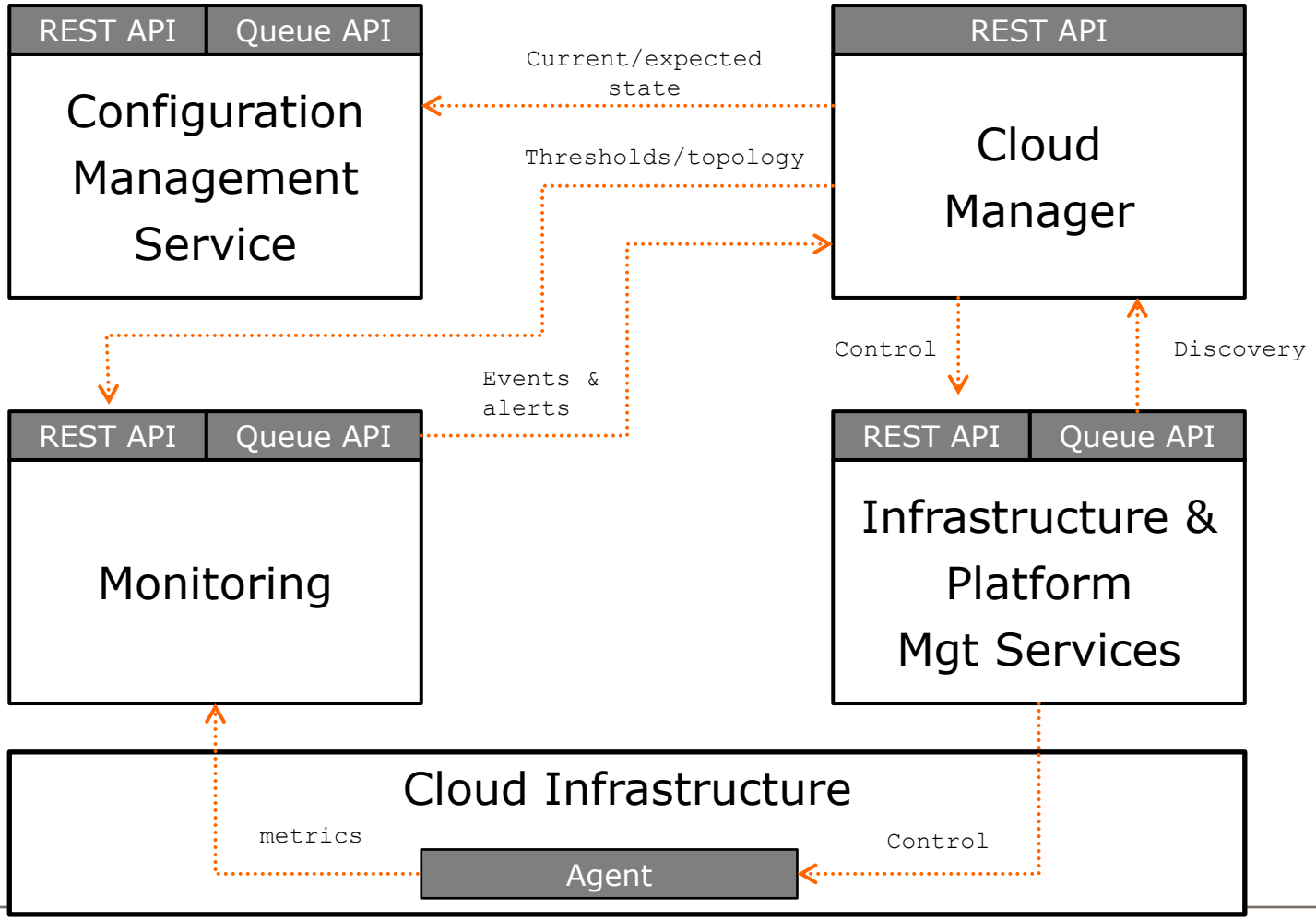
Conway's law

AUTOMATE EVERYTHING

Cannot be automated	**The task requires human involvement (e.g. racking and wiring)**
No support for automation	**Component lacks API or requires UI based actions**
Limited rate of change	**Configuration requires restart, reload, file sync**
No permission	**Configuration requires special credential/role**

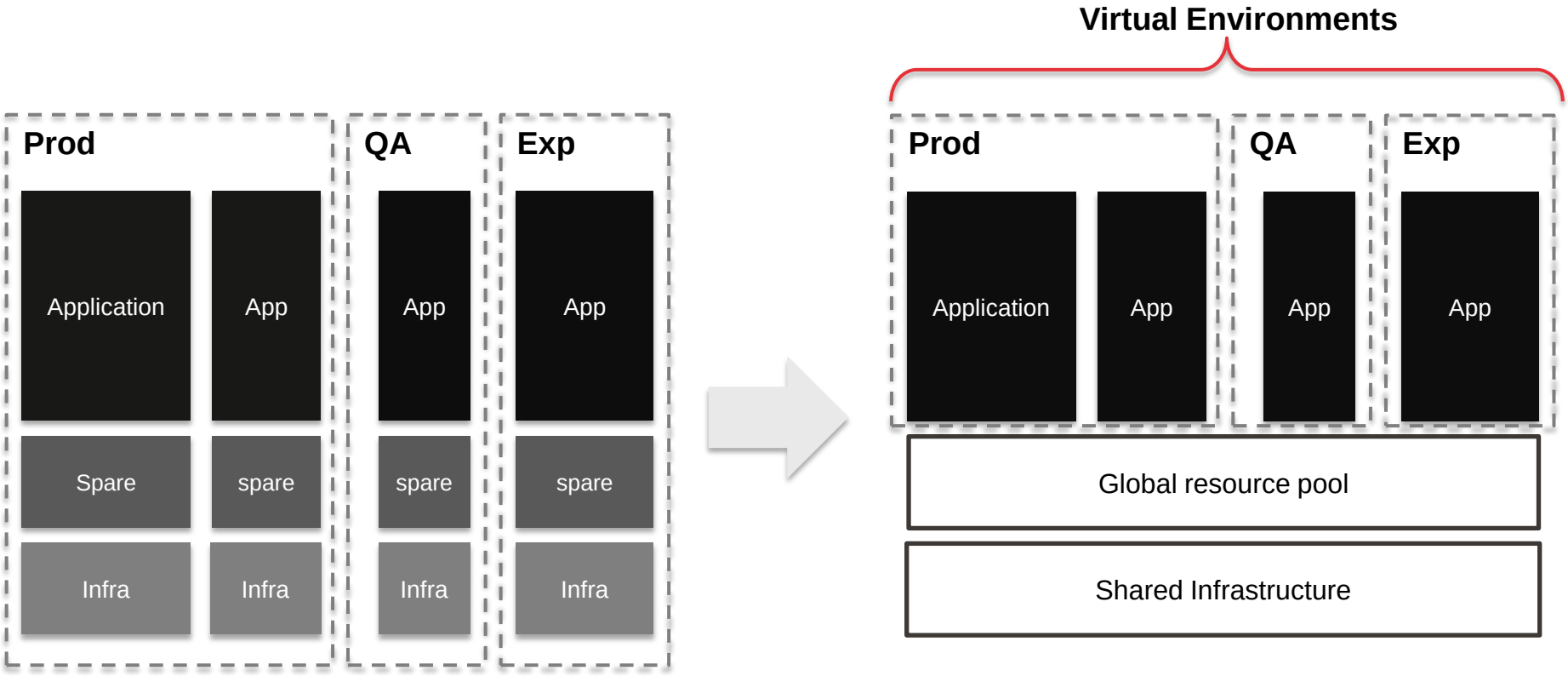

Service Catalog
Ticket driven run book automation
Monitoring
Configuration Management Database (CMDB)
Financial Management
REST APIs
State driven close loop automation
Big Data / Machine Learning
Distributed state Management
Pay as you go

Cloud Components



Based on Openstack

ANY APPLICATION ANYWHERE

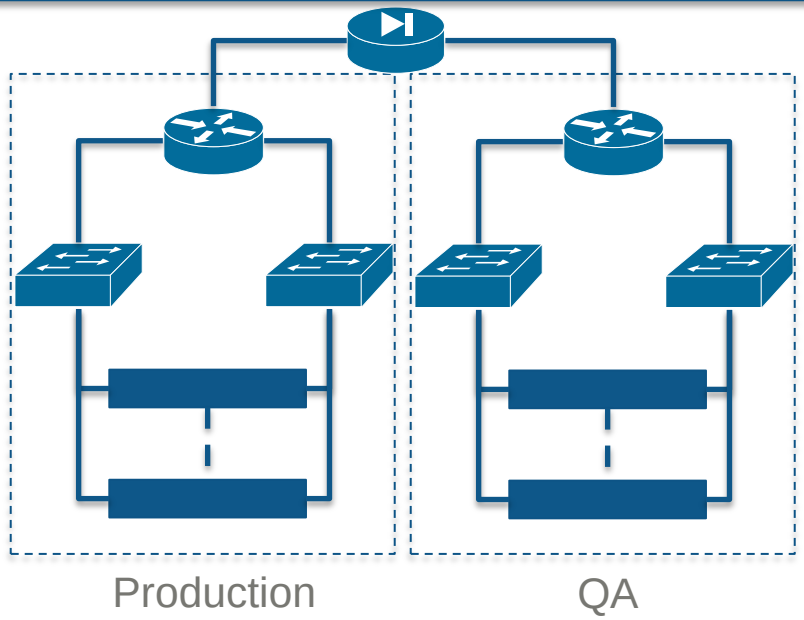


Silos with custom design

Virtualized infrastructure

Isolation with VLAN

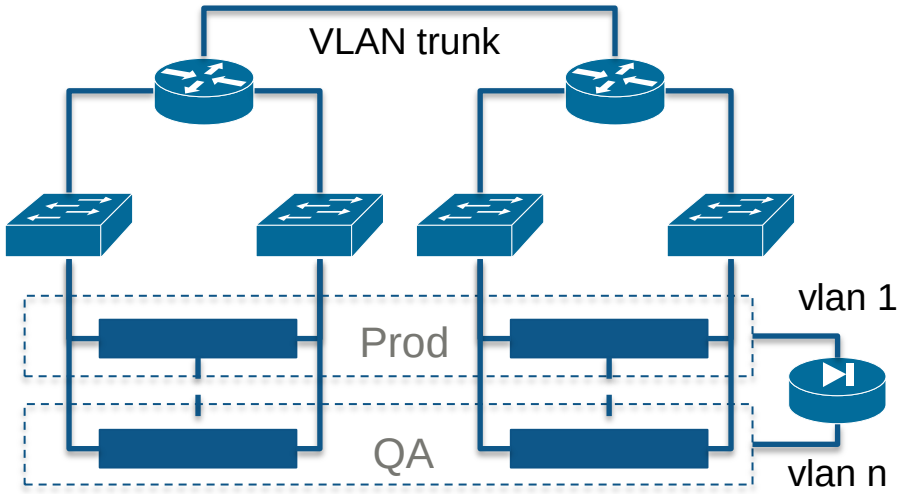
Dedicated Network



- physical network build out
- Fragmentation
- coarse grained isolation

+ Physical isolation
+ fool proof

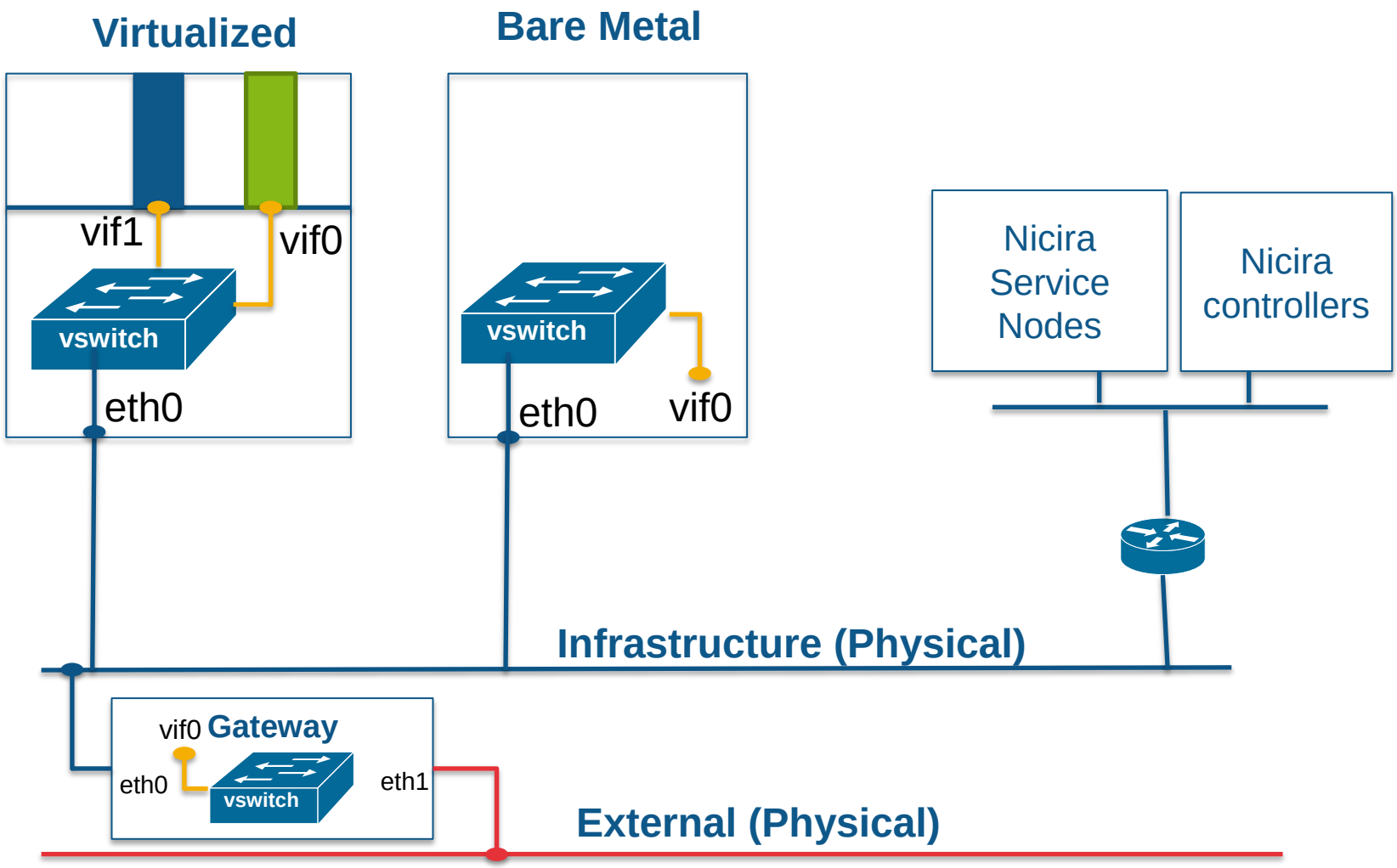
VLAN Based

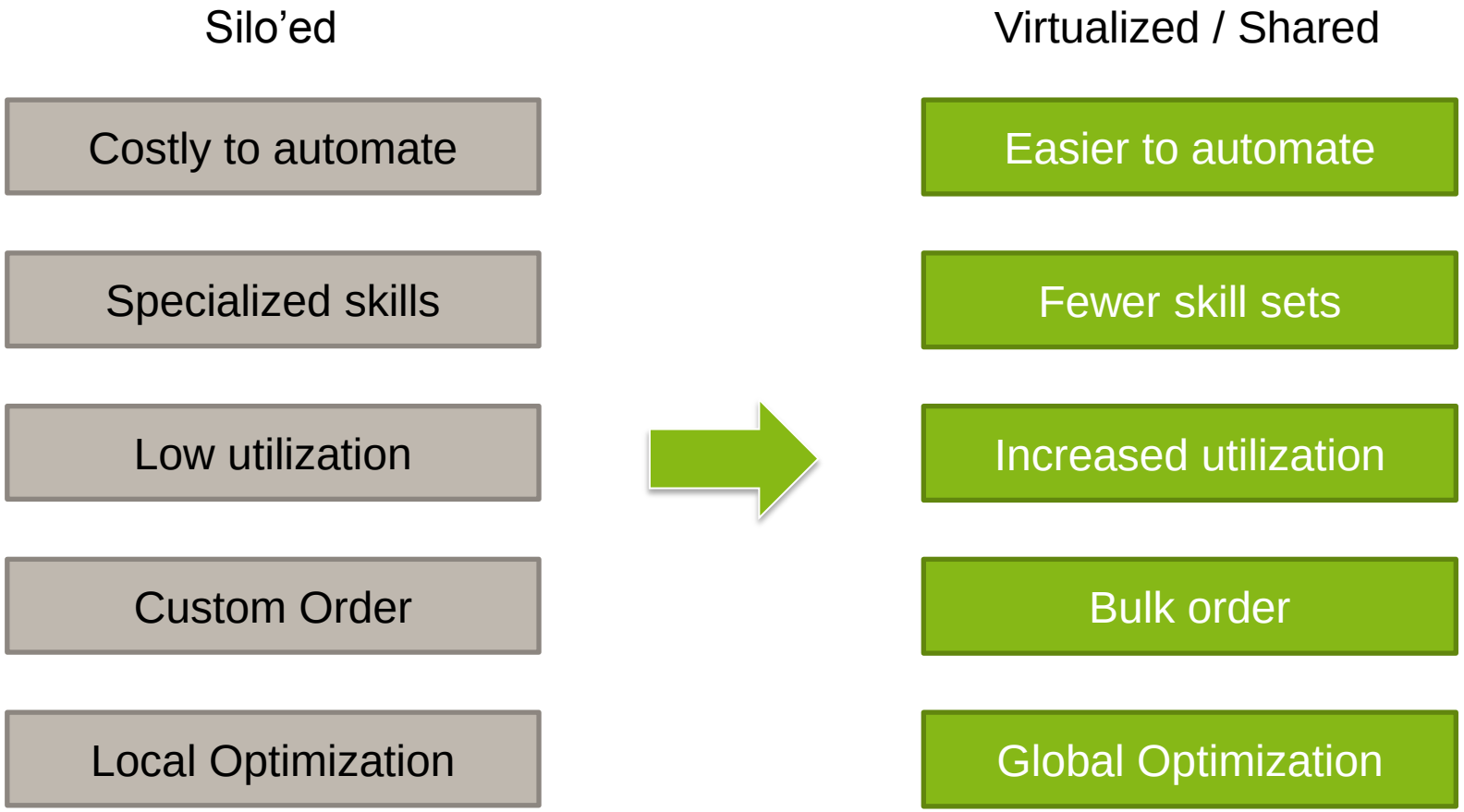


- Limited scale (n = 4096)
- Large fault domain (STP)

+ L2 isolation
+ somewhat soft Cabling

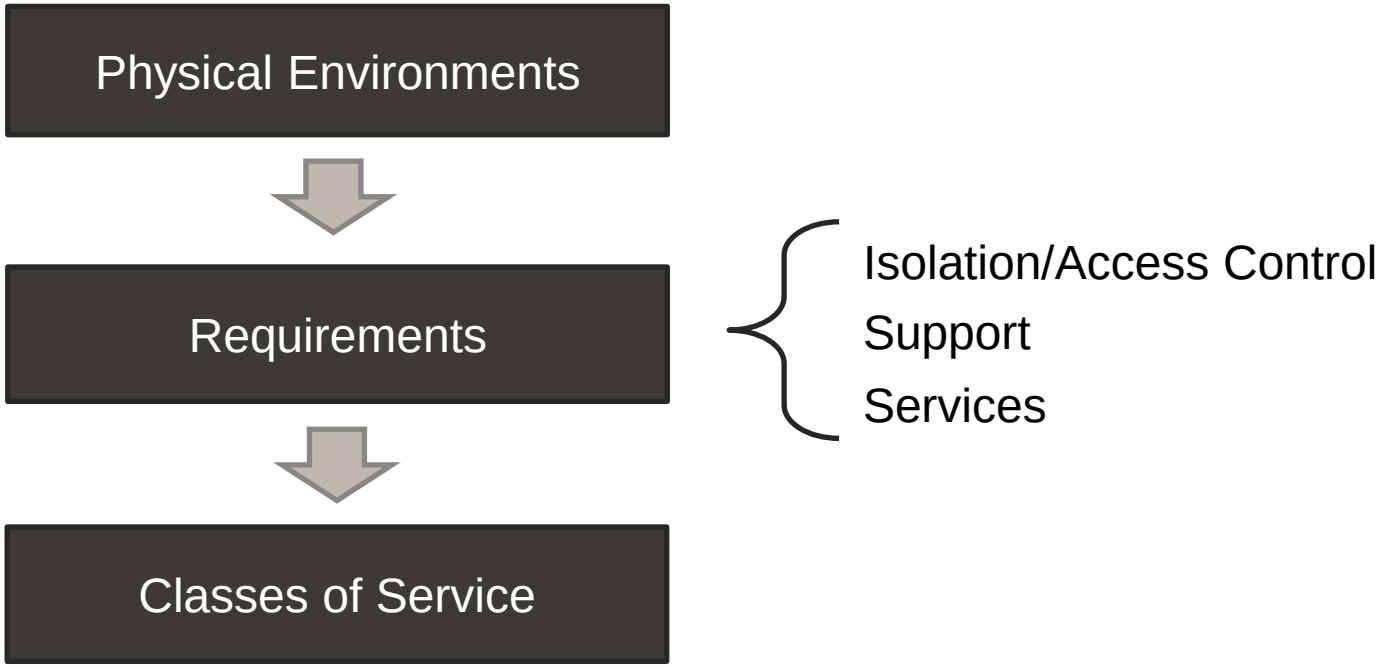
SDN with Openvswitch Deployments




Silo'ed
Costly to automate
Specialized skills
Low utilization
Custom Order
Local Optimization
Virtualized / Shared
Easier to automate
Fewer skill sets
Increased utilization
Bulk order
Global Optimization

PROPORTIONAL SECURITY

Class of Service



Class of Service

Production

Obligations	Restrictions	Capabilities
QA Approved Builds	No Login Access	Core DB access
Prod OS version	No Corp Access	24/7 Incident Mgt
Monitoring	No QA Access	Site traffic Access

DEV

Obligations	Restrictions	Capabilities
Certified OS versions	Limited Prod Access	Full root
	Limited QA Access	
	No site Traffic	Filtered Internet

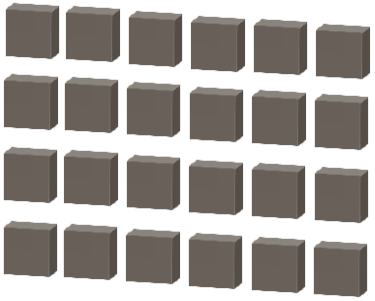
External

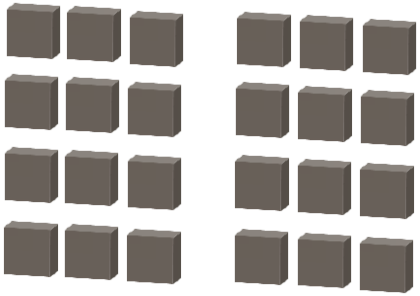
Obligations	Restrictions	Capabilities
	No Prod Access	Private DB
Certified OS Versions	No Corp Access	24/7 Incident Mgt
Monitoring	No QA Access	Site traffic Access

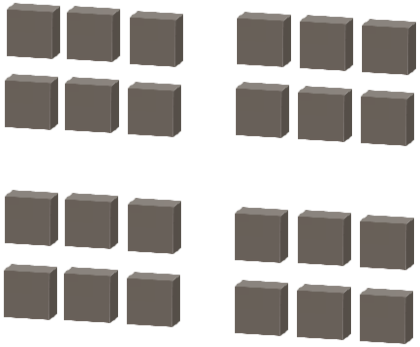
PLAN FOR FAILURE

Monolithic → Functional Split → Horizontal Split

Single availability zone → Multiple availability zones → Multiple Fault domains







THANKS

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