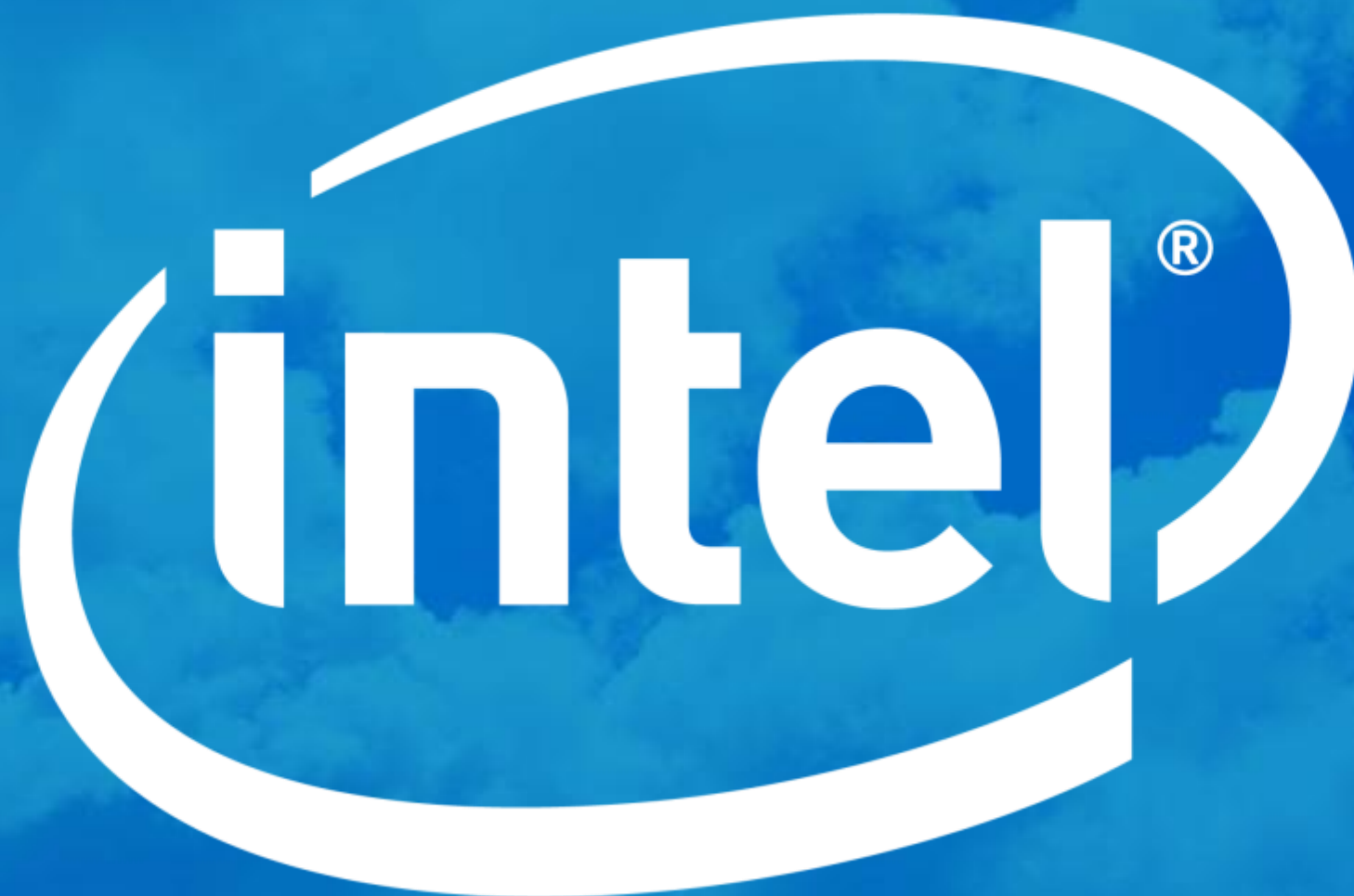






Tomorrow's Cloud Starts Today

Driving the Data Center Infrastructure for the Next Decade

Kirk Skaugen

Vice President, General Manager
Data Center Group

Today's Announcements

Cloud 2015 Vision

Open Data Center Alliance

Intel® Cloud Builders Program



Total Data Crossing the Internet

150,000,000,000,000,000 Bytes*
Through 2009

175,000,000,000,000,000 Bytes*
In 2010 Alone

*Exabytes

Source: http://www.cisco.com/assets/cdc_content_elements/networking_solutions/service_provider/visual_networking_ip_traffic_chart.html



By 2015...

More Users



>1 Billion More
Netizen's

More Devices



>15 Billion
Connected Devices

More Data



>1 Zetabyte
Internet Traffic

Is the Infrastructure Ready?

In The Last 5 Years Alone:

20x Performance/Watt

Half The Platform Idle Power

15:1 Consolidation

We Have Made Tremendous Progress...



But Not Enough...

Security



70% of Respondents Saying Security is Top Concern In Moving to Public Cloud¹

Efficiency

Today's Technology Would Require Building 45 New Coal Power Plants to Support 2015 IT Infrastructure²

Manageability



IT will spend ~\$2T on deployment & operations thru 2015 unless smarter infrastructure radically simplifies management of virtualized environments.

Lock-In

the **451** group

August 2010

"We have seen lock-in return as a top concern....routinely seeking alternatives to proprietary virtualization and cloud computing technology "

Infrastructure Must Evolve to Address IT Challenges

1. IDC Market Analysis, January 2010.

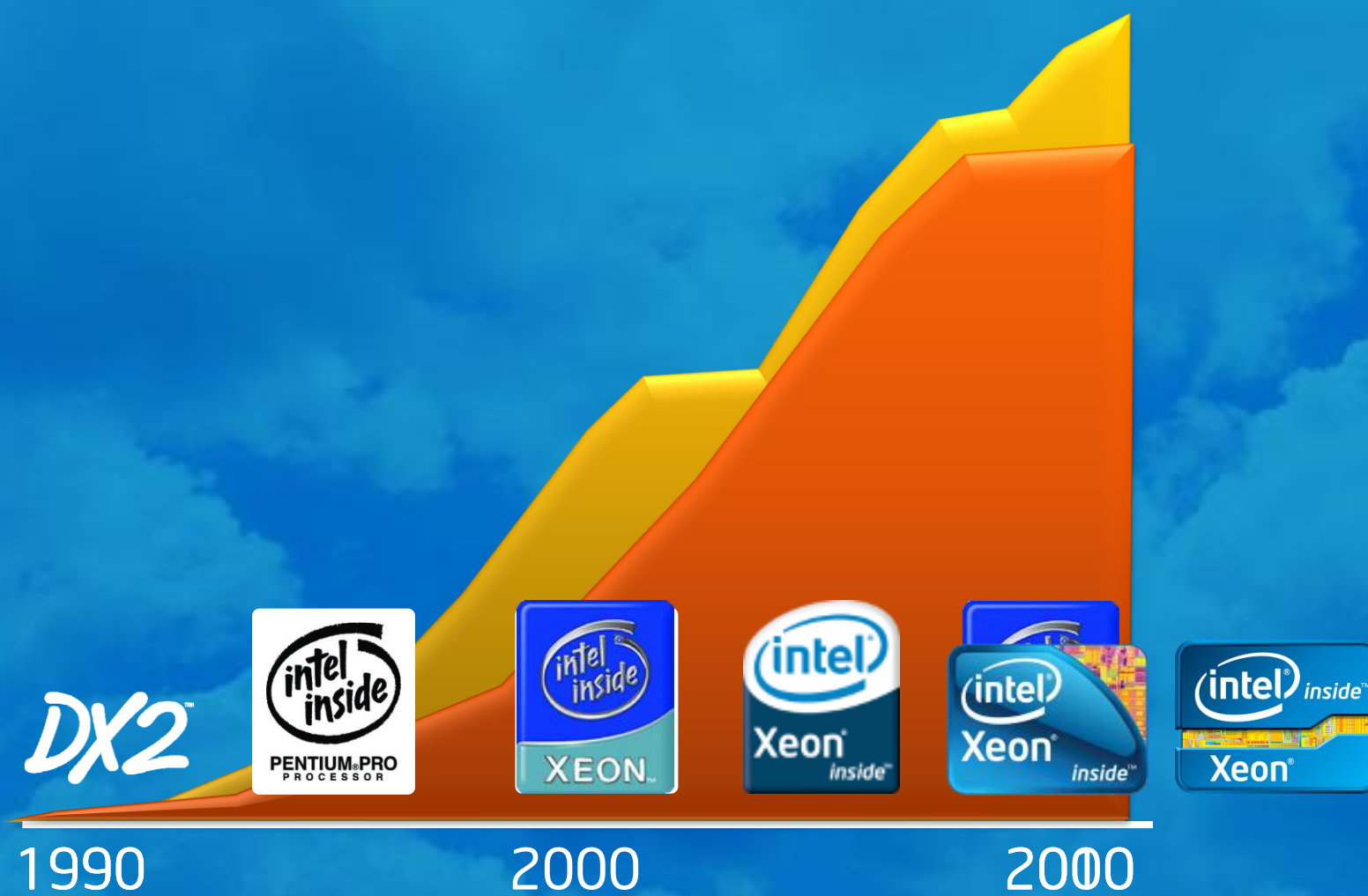
2. Source information in backup

* Other names and brands may be claimed as the property of others.



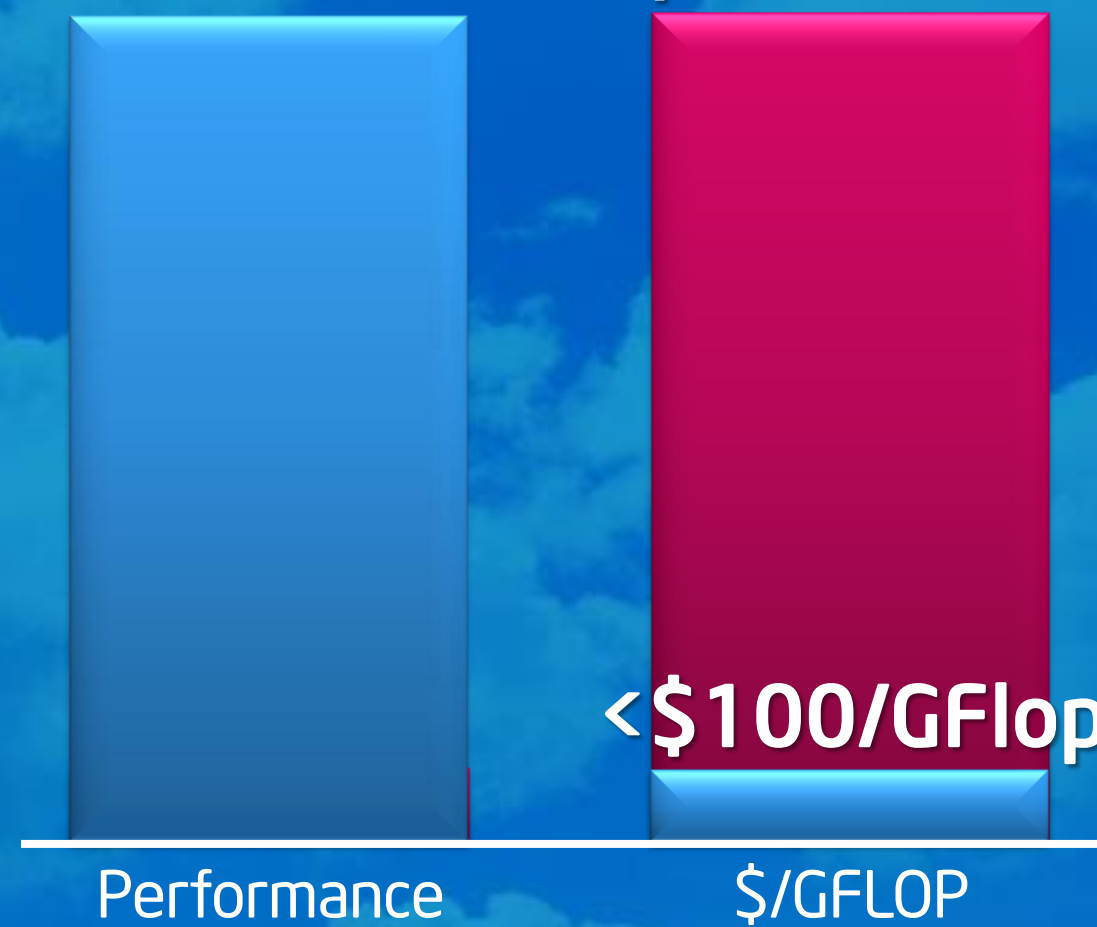
We've Helped Transform Industries

Annual Server Unit Shipments



Supercomputing

>500 TFLOPS ~\$55K/GFLOP



The Compute Model Evolution



Cloud Computing Can Once Again Transform the Economics of Computing & Services

Save \$25B of IT Spend in 2015



Accelerate \$100B of Industry Services through 2015



Save 45 Giga Watts in 2015



Introducing: Cloud 2015 Vision

FEDERATED

Share data securely
across public and
private clouds



AUTOMATED

IT can focus more on
innovation and less
on management

CLIENT AWARE

Optimizing services based on
device capability



Desktops

Laptops

Netbooks

Personal Devices

Smartphones

Smart TVs

Embedded

Catalyst for Change



Open & Interoperable Solutions Essential





Marvin Wheeler
Chief Strategy Officer



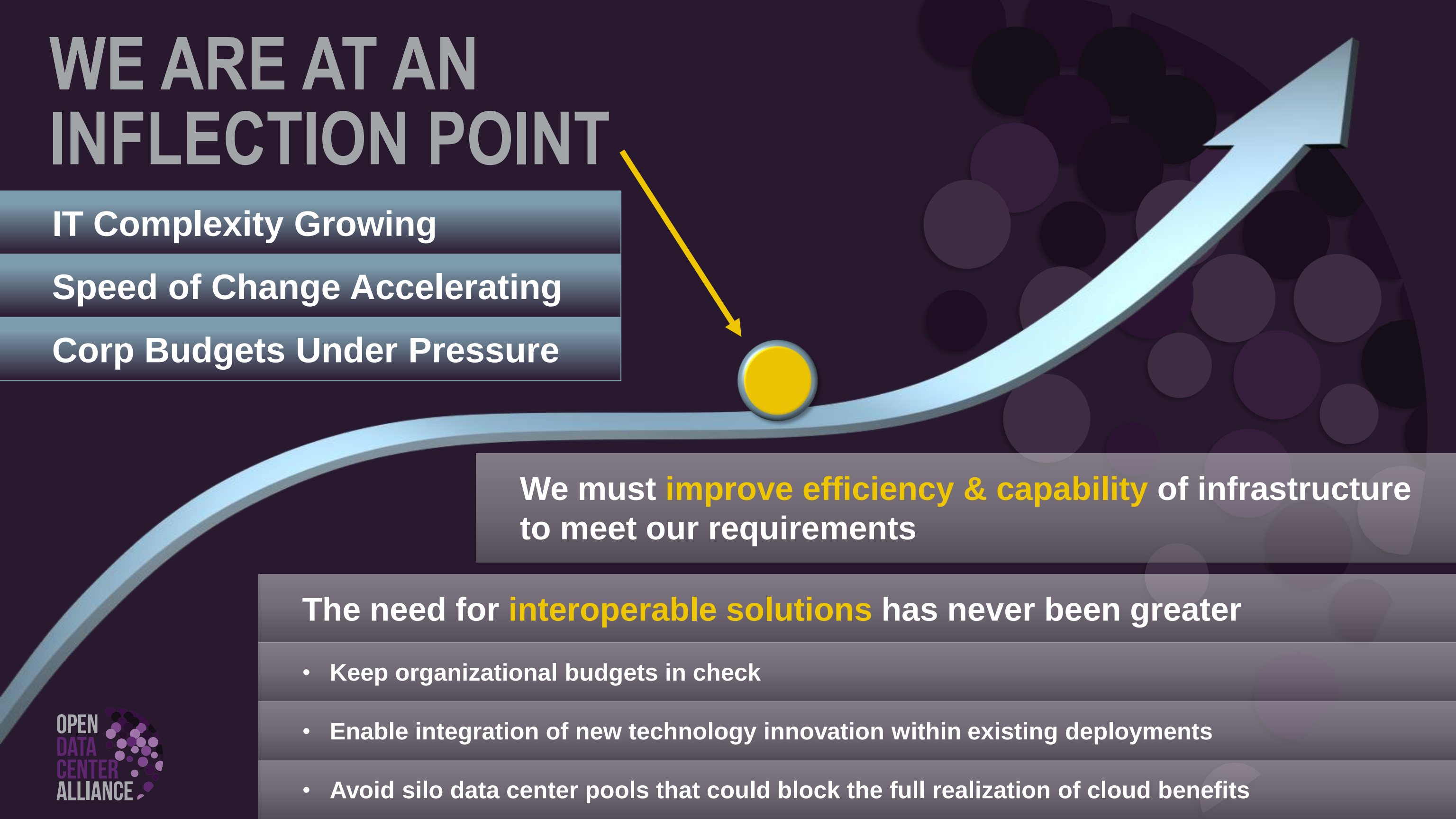
Curt Aubley
VP & CTO Cyber Security & NexGen Innovation



OPEN DATA CENTER ALLIANCE



WE ARE AT AN INFLECTION POINT



IT Complexity Growing

Speed of Change Accelerating

Corp Budgets Under Pressure

We must **improve efficiency & capability** of infrastructure to meet our requirements

The need for **interoperable solutions** has never been greater

- Keep organizational budgets in check
- Enable integration of new technology innovation within existing deployments
- Avoid silo data center pools that could block the full realization of cloud benefits

TODAY'S ANNOUNCEMENT

OPEN DATA CENTER ALLIANCE



Enable delivery of cloud and data center solutions that meet the challenges facing data centers today and tomorrow, support solution development in an **open, industry-standard** and **multi-vendor** fashion, and aid in deploying solutions through **member usage** of the **Alliance roadmap**.

Create

Unified voice for data center requirements

Deliver

Requirements roadmap to and with industry

Commit

Roadmap to guide internal IT deployments

FOUNDING MEMBERS

Steering Committee



JPMORGAN CHASE & Co.



Member Companies



Over **70 members** across the globe

GLOBAL IT INFRASTRUCTURE SERVICES



Santa Clara
Dallas
Culpeper
Miami
Dominican Republic
Bogota
San Paulo

London
Brussels
Madrid
Amsterdam
Istanbul

- Presence in 4 continents
- 12 data centers
- 160 Global service carriers
- Gold Winner of Best of VMworld 2010 Award in Public/Hybrid Cloud Computing Technologies

GLOBAL IT INFRASTRUCTURE SERVICES



Top Challenges:

- Provide federated, interoperable and secure solutions to customers
- Aggregate massive amounts of processing power into a condensed and dense footprint
- Plan for the multi-hundred watts/sq. ft. data center

Reasons to Join Open Data Center Alliance

- Success-based budgeting
- Power in numbers
- Deep, meaningful technical dives

Help our customers focus on their core business



CURT AUBLEY

VP & CTO Cyber Security & NexGen Innovation



GLOBAL SECURITY AND IT COMPANY

LOCKHEED MARTIN

- 133,000 people worldwide
- \$44 billion in 2009 sales
- 2500 Programs
- #1 provider of Information Technology for the U.S. federal government for 16 years

(Washington Technology magazine)

GLOBAL SECURITY & IT COMPANY

LOCKHEED MARTIN

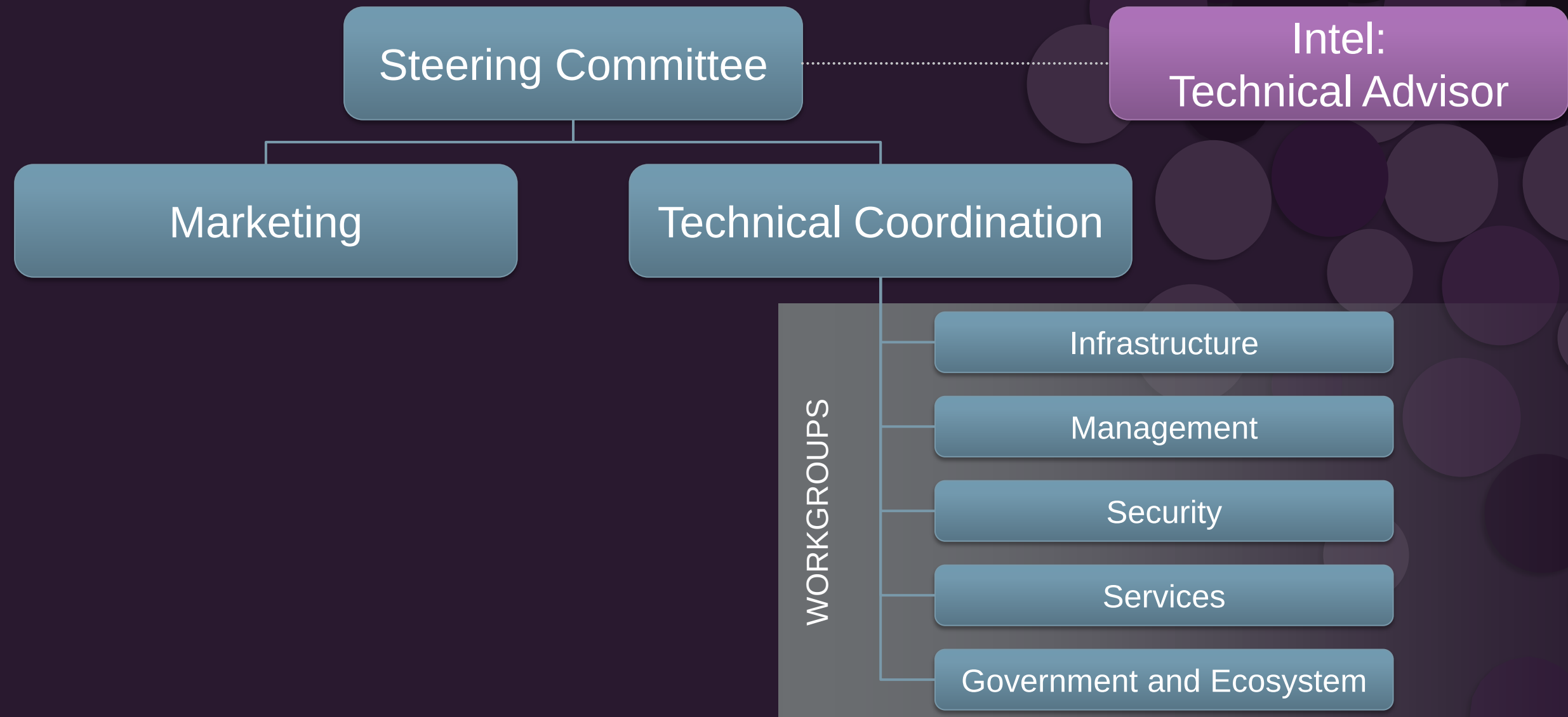
Top Challenges:

- Increasing agility and affordability
- Improving energy efficiency
- Providing customers secure performance and scalability for mission success

Together Driving

- Helping our customers with innovation options
- Drive interoperability, scalability, & efficiencies
- Enhance future cyber security capabilities

ALLIANCE LEADERSHIP



ALLIANCE USAGE MODEL ROADMAP

DETAILED REQUIREMENTS FOR DEPLOYMENT

Initial Usage Models Released
with 1.0 Roadmap

H1 - 2011

Infrastructure

Scale Out Storage

Proximity Based Storage

Unified Networking

Management

Policy Based Power
Management

Dynamic Workload Placement

Security

Trusted Compute Pools

Infrastructure Compliance

Services

Cloud On Boarding

Common Provisioning

Government & Ecosystem

Cloud Models

Licensing Models

Focus:

- Long-term commitment with multi-year Roadmap.

Development:

- 19 prioritized usage models culled from dozens of potential targets.

Delivery

- Workgroup development underway
- Membership to approve 1.0 in Q1'11

ENGAGING WITH THE INDUSTRY

MAKING OUR ROADMAP REQUIREMENTS A REALITY

Roles

Vendors have an important role in the Alliance

Focus

Workgroups drive vendor engagements and establish liaisons with complimentary industry orgs

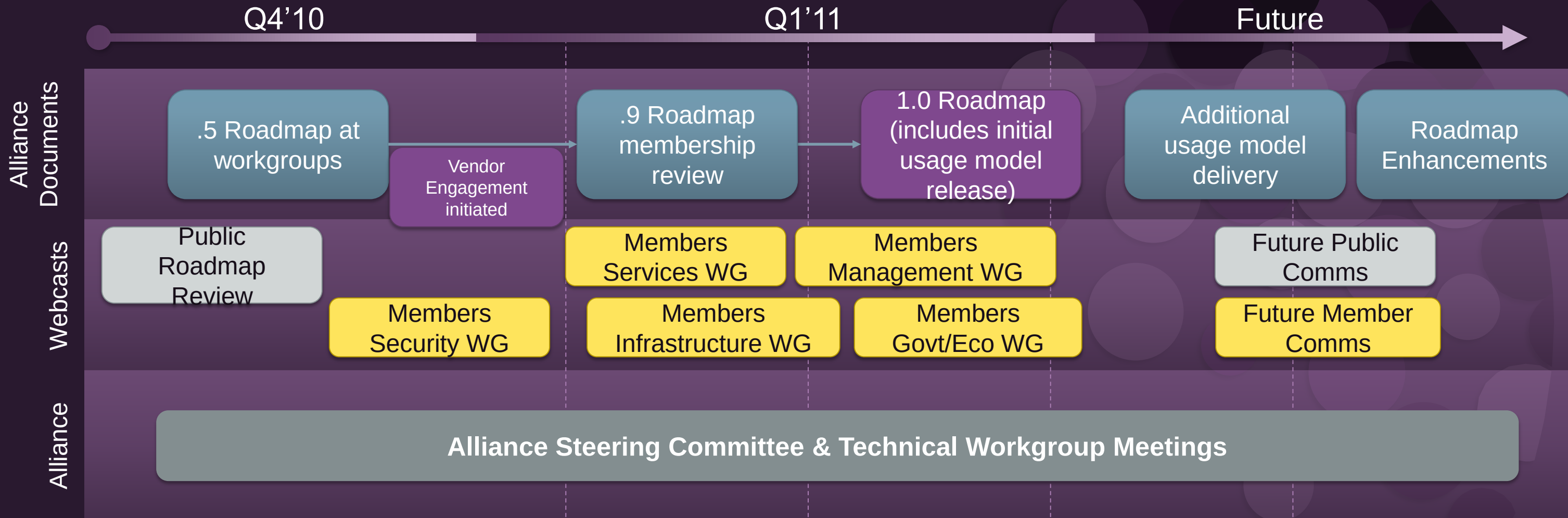
Discussion

The Alliance will encourage healthy industry debate on Roadmap in a vendor-agnostic fashion.

Finalization

Alliance members will vote their approval of the Roadmap and Usage Models.

WHAT'S NEXT



All timeframes, dates and products subject to change without notice.



Join the Alliance: apply for membership at
www.opendatacenteralliance.org

Intel: Addressing Alliance Requirements

IT & Service Providers



Define and Prioritize IT Requirements

Products & Technologies



Enable New Capabilities In Intel Platforms

Intel® Cloud Builders



Collaborate and Publish Proven Reference Solutions



Intel® Cloud Builders

*Easing Cloud Deployments
via Proven, Interoperable
Solutions for IT*



Intel® Cloud Builders: Proven Solutions

20 Reference Architectures Available Today: Intel.com/cloudbuilders



Joyent SmartDataCenter*
Microsoft System Center VM Manager Self-Service Portal 2.0*
Novell* Cloud Manager
Parallels* Elastic IT Solution Developer Cloud
Red Hat Cloud Foundations*
Ubuntu Enterprise Cloud*
Univa UD*
VMware VCloud* Director

Coming Soon:

FUJITSU

HCL

HUAWEI

HyTrust
Virtualization Under Control

inspur 浪潮

kraftway
ТЕХНОЛОГИИ ДЛЯ ЛЮДЕЙ

lenovo

nimbula

宝德
PowerLeader

TAROX

* Other names and brands may be claimed as the property of others.

Summary

Cloud 2015 Vision: Federated, Automated, Client Aware
The Journey Starts Today

Open Data Center Alliance:
Prioritizing IT Requirements for Open, Interoperable Cloud Solutions

Intel® Cloud Builders:
Validated Cloud Solutions From Industry Leaders



