



Business Transformation One Step at a Time

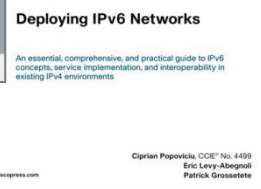
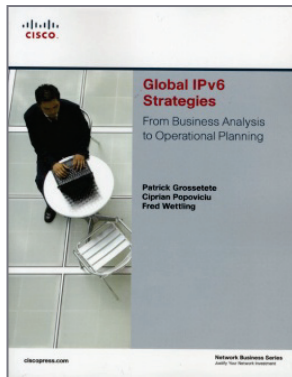
CLOUD ADOPTION AND IPv6 TRANSITION

Nephos6 Expertise and Experience



Expertise

Co-Authored Books and Standards

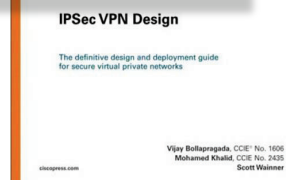
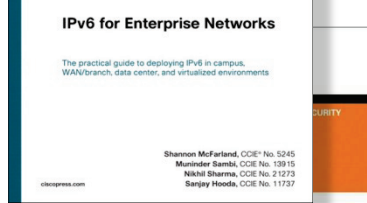


- RFC 4779
- RFC 5180
- RFC 5375
- RFC 5741
- RFC 6105

Certifications



- CISSP
- CCSK
- CSCI
- VCP
- PMP



Experience



Nephos6 Services – Addressing the Problem



Education

- IPv6 Foundations
- Securing IPv6
- IPv6 for Decision Makers



One of very few org
authorized to certify

Consulting

- Strategy and Planning
- Architecture and Design
- Testing and Deployment
- Product readiness and marketing

Next Gen Networks

DC Optimization





Oracle Solutions

Cloud Adoption

IPv6 Transition

Well defined, effective and practice proven methodologies

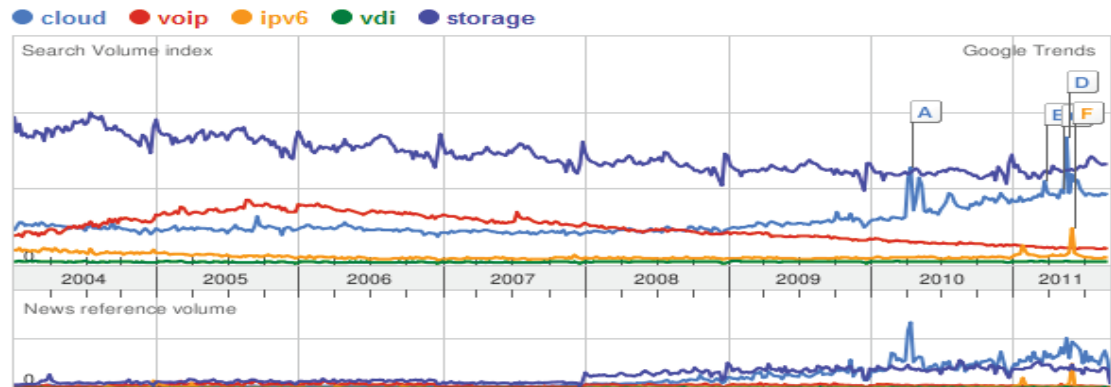


-  The IT environment context
-  IPv6 + Cloud Considerations
-  Cloud Support for IPv6
-  Conclusions



1. The IT Environment Context

“You cannot ignore Cloud and you cannot wish IPv6 away.”



Business Problem



- 78% of IT leaders said made/making the transition to IPv6
- 94% of work began within the past two years
- 54% deemed the move essential to the organization
- 73% were concerned about missing out on the benefits
- 92% indicate that security team is involved in transition efforts
- 56% believe responsibility should fall on SP and the company
- 63% indicate an executive committee is overseeing the effort
- 55% have sought/plan to seek assistance of consultants

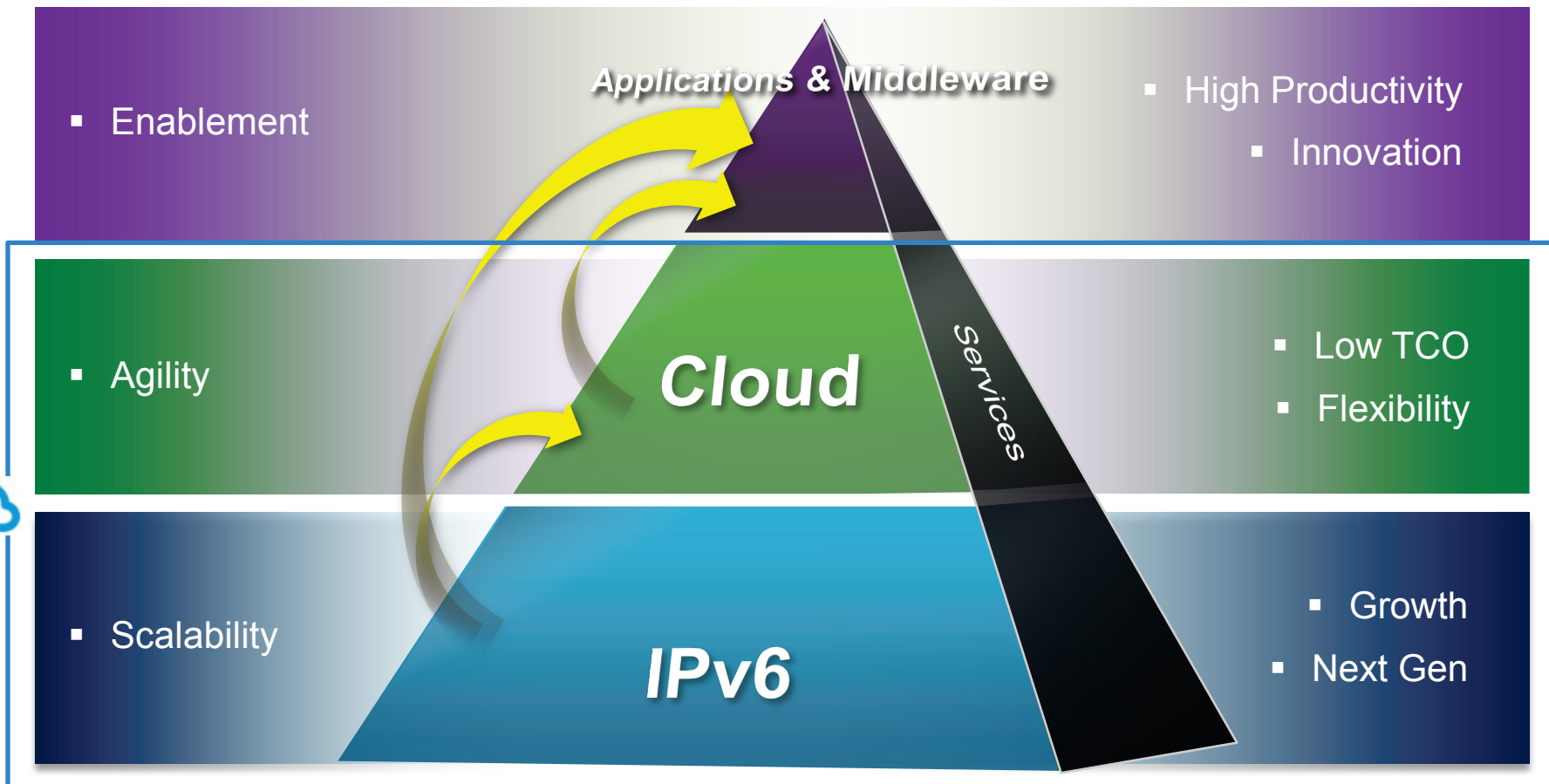
Cisco Survey: <http://www.networkworld.com/news/2011/052411-cisco-ipv6.html>

Market Opportunity – Three Major Inflexion Points



Driver

Business Results



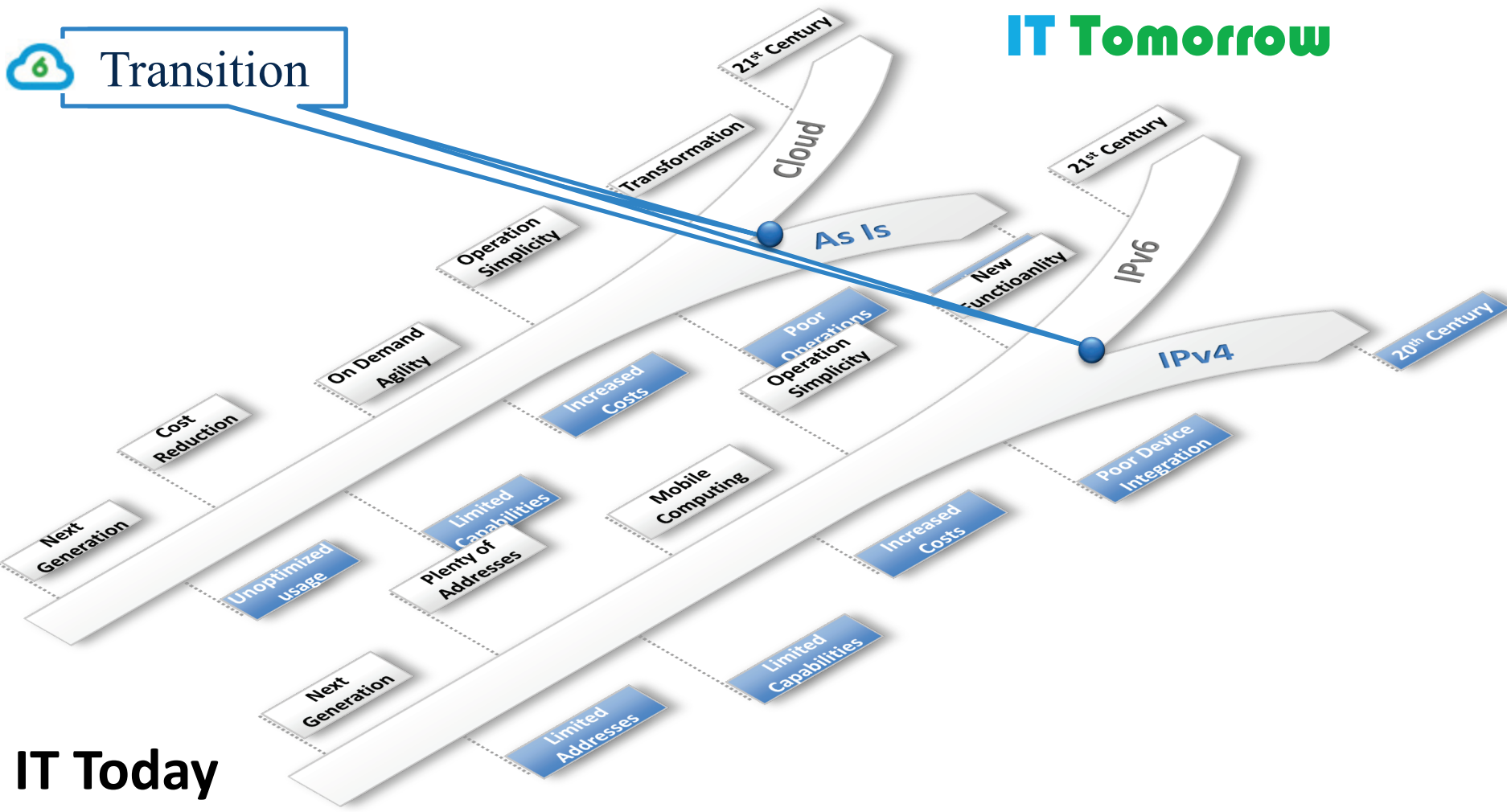
It is no longer about should I move to IPv6 and cloud, it is more about how do we do it

Dealing with the Transition



Transition

IT Tomorrow



IT Today



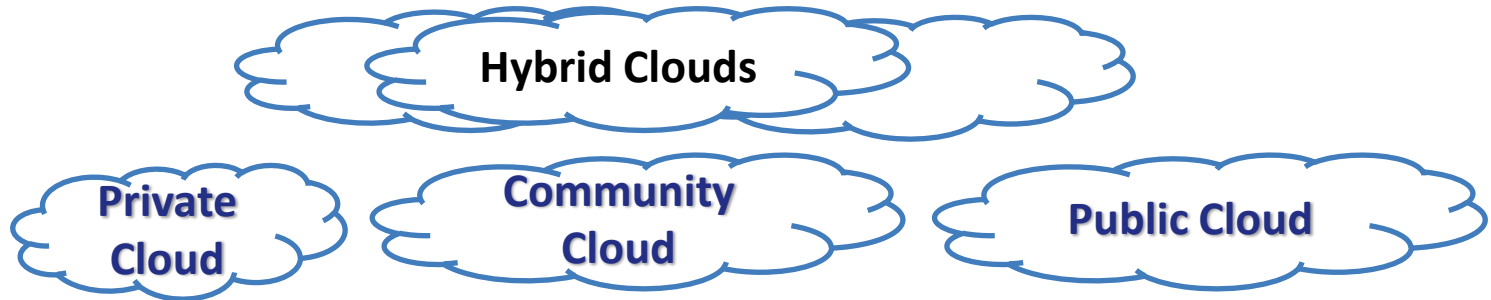
2. IPv6 + Cloud Considerations

“The promise of Cloud cannot be fully met without IPv6.”

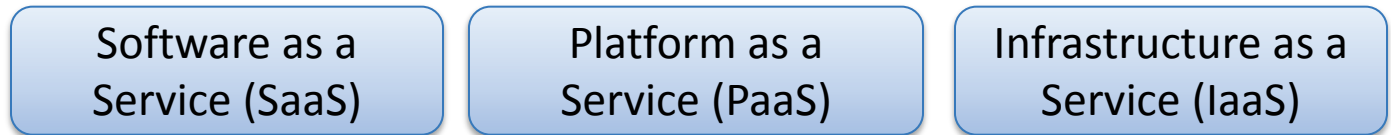
Cloud Basics – Service Delivery Models



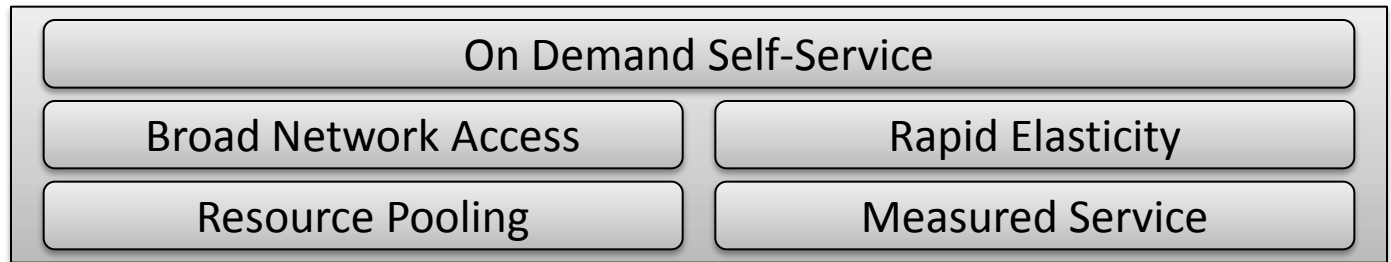
Deployment Models



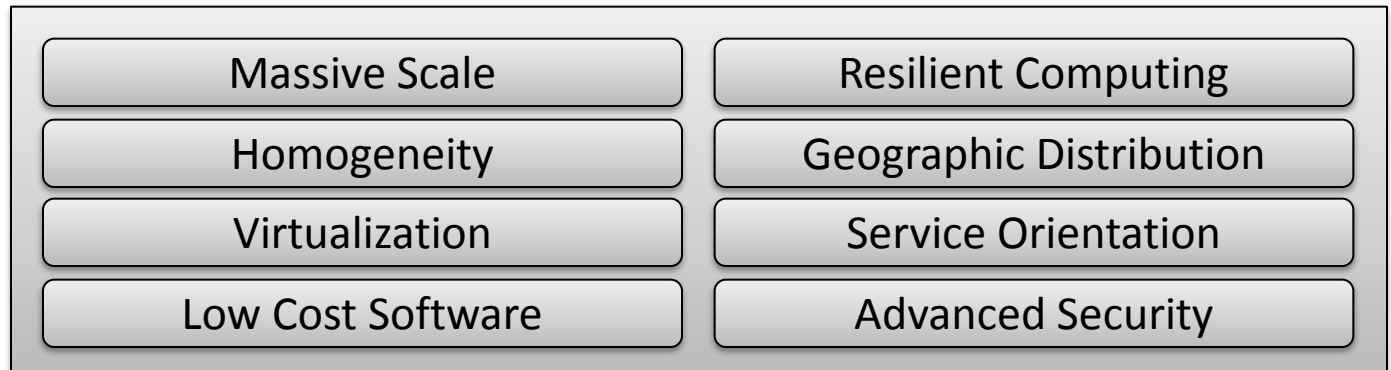
Service Models



Essential Characteristics




Common Characteristics



IPv6 + Cloud – Optimize Transitions



- Align requirements and lifecycles for cost reduction
- Avoid re-work due to sub-optimal design/plan for each transition taken independently
- Define the next generation architecture of your IT Environment to leverage the capabilities and observe the needs of both sets of technologies

 These principles are applicable to any strategic IT initiative, IPv6 touches everything

IPv6 + Cloud – Addressing, addressing, addressing ...

- Easy, direct access to Cloud resources (remember AsiaPac)
- Sufficient address space to meet the growing needs for compute resources
- Easier management of the IP address space for the creation and removal of compute resources
- Easier management of the IP address space for the creation of Virtual Private Clouds

 Do not trivialize the power of plentiful IP address space

IPv6 + Cloud – More addressing ...



- Reclaim IPv4 address space used for East-West and operational traffic
- Large enough addresses to embed customer, service type or service tier relevant information
- One ID

The IPv6 address might become the key tie between next gen apps and infrastructure

IPv6 + Cloud – Protocol Specific Considerations



- New architectural models
- NDP better than ARP in large broadcast domains
- SLAAC as a provisioning option
- IPv6 <-> ISIS <-> TRILL

 Great opportunities for innovation

Your IPv6 + Cloud Game Plan



- DC Infrastructure (network, compute, storage, appliances and foundational services) is IPv6 ready
- Infrastructure outside the Data Center (WAN, WAN acceleration) is IPv6 ready
- Orchestration components are IPv6 ready, particularly the DDI
- Application profiling for Cloud should include IPv6 readiness evaluation
- Double the arguments in favor of managing out legacy
- Do not forget readiness of staff (training)



Ask Cloud providers about their IPv6 readiness



3. Cloud Support for IPv6

“Host Virtual, Inc. has seen a 473% increase in its customers’ use of dual-stack IPv4 and IPv6 hosting services since late last year.”



- Openstack – Support with API 1.1
<http://www.cybera.ca/tech-radar/using-openstack-with-ipv6>
- Openflow – Support with 1.2 specification
- Proprietary implementations might claim support but I have my doubts it is complete or even working support

To orchestrate your Private Cloud you will need to assess IPv6 readiness of tools. Another full assessment or another line item, your call.



Public and Virtual Private Cloud



Ask your CSP:

- Is the service dual stack capable?
- Is access native or tunneled?
- Is there functionality parity between IPv4 and IPv6? (load balancing, IP portability, manageability, security)
- Is it equally easy to provision IPv6 or dual-stack services as it is to provision IPv4 services?
- Are any solutions offered that make transitioning to IPv6 easier?



Most providers are there but demand will drive enablement!

Providers – IaaS and Hosting

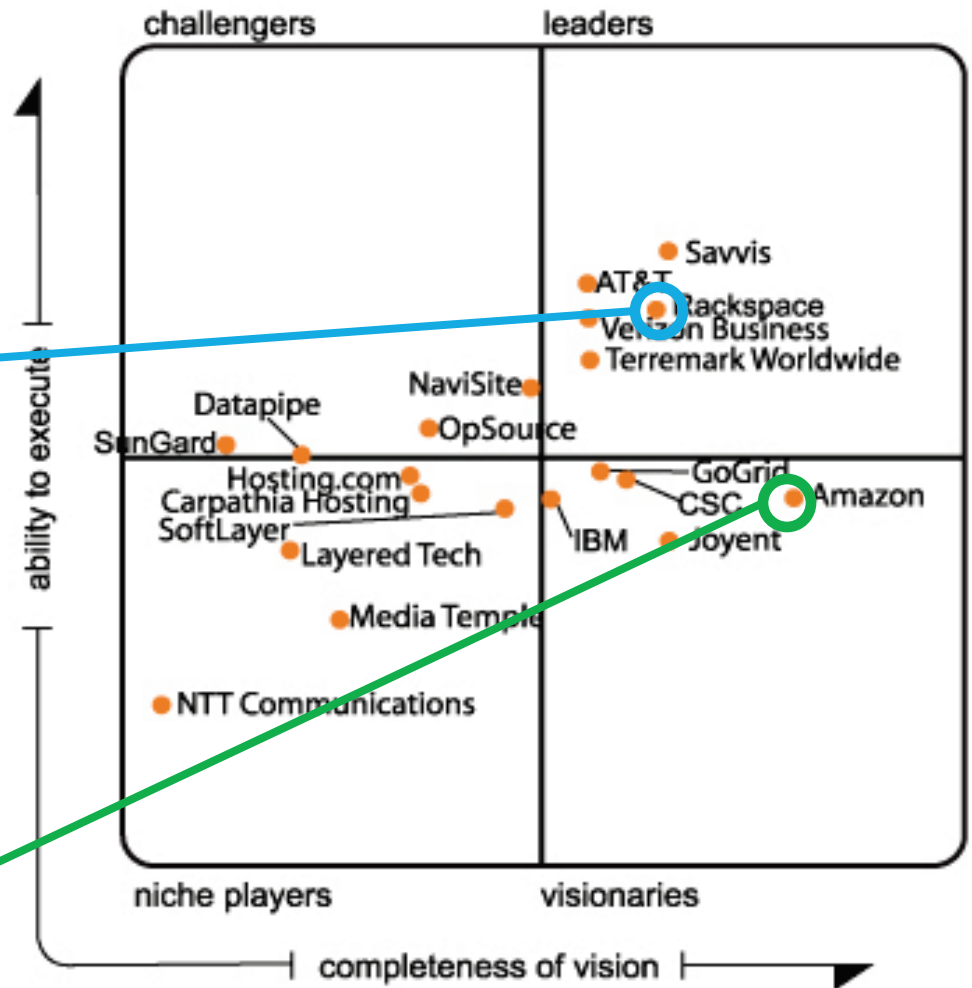


Rackspace:

- [Private Cloud](#)
- [Critical Sites](#)
- [Dedicated server configurations](#)
(Servers, Firewalls, Load Balancers)
- [Cloud Sites](#)
- [Email & Apps](#)
- [Cloud Files](#)
- [Cloud Load Balancers](#)
- [Cloud Servers](#) (WIP)

AWS:

- AAAA and PTR but no transport
- Elastic Load Balancer
- No support in VPC



As of December 2010

Providers – IaaS and Hosting



Softlayer:

- Access
- Provisioning? cPanel (11.36)

Voxel:

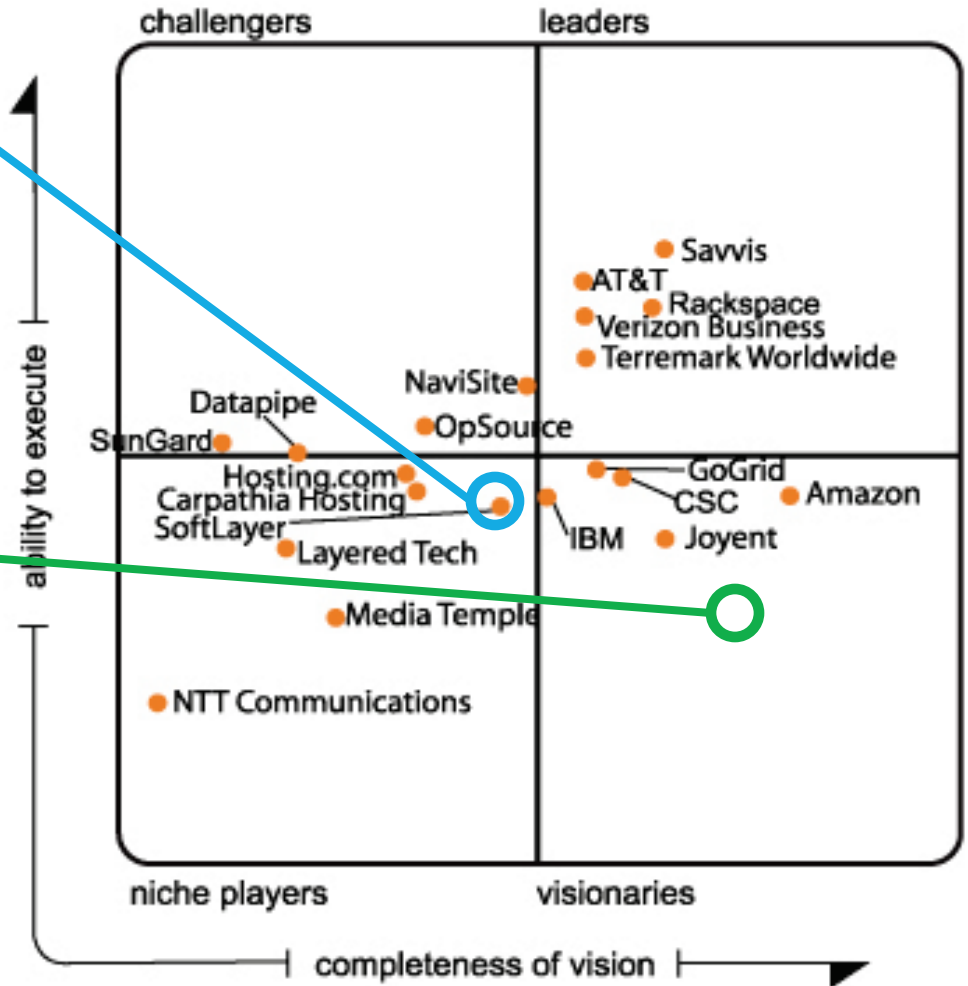
- [VoxCLOUD](#)
- [VoxSERVER](#)

CA/3Tera:

- Applogic

Host Virtual:

- Dual-stack out of the box



Differentiating Opportunity

As of December 2010



5. Conclusions



- Address both inflexion points within a common, comprehensive, corporate wide strategy
- An IPv6 perspective will change your Cloud architecture for the better and vice versa
- Leverage funding and prioritization
- Many opportunities for innovation
- Work with the providers



The promise of Cloud cannot be fully met without IPv6.



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