A Protocol for the v6 Generation

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IPv6 is Easy – IT is Hard

Ciprian Popoviciu

AGENDA

- IPv6 Context
- An Adoption Experience
- Lessons Learned
- Where to go next

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Introductions

- Ciprian Popoviciu
- IPv6 work started in 2001
- Strategy, Standardization, Architecture, Deployment, Product
- Currently Director of Infrastructure Services, IPv6 Practice Lead at Technodyne

BASELINE

"IPv6 Is an Evolution Not a Revolution of the Internet Protocol"

IPv6

IPV6 AND IPV4 DO NOT INTEROPERATE

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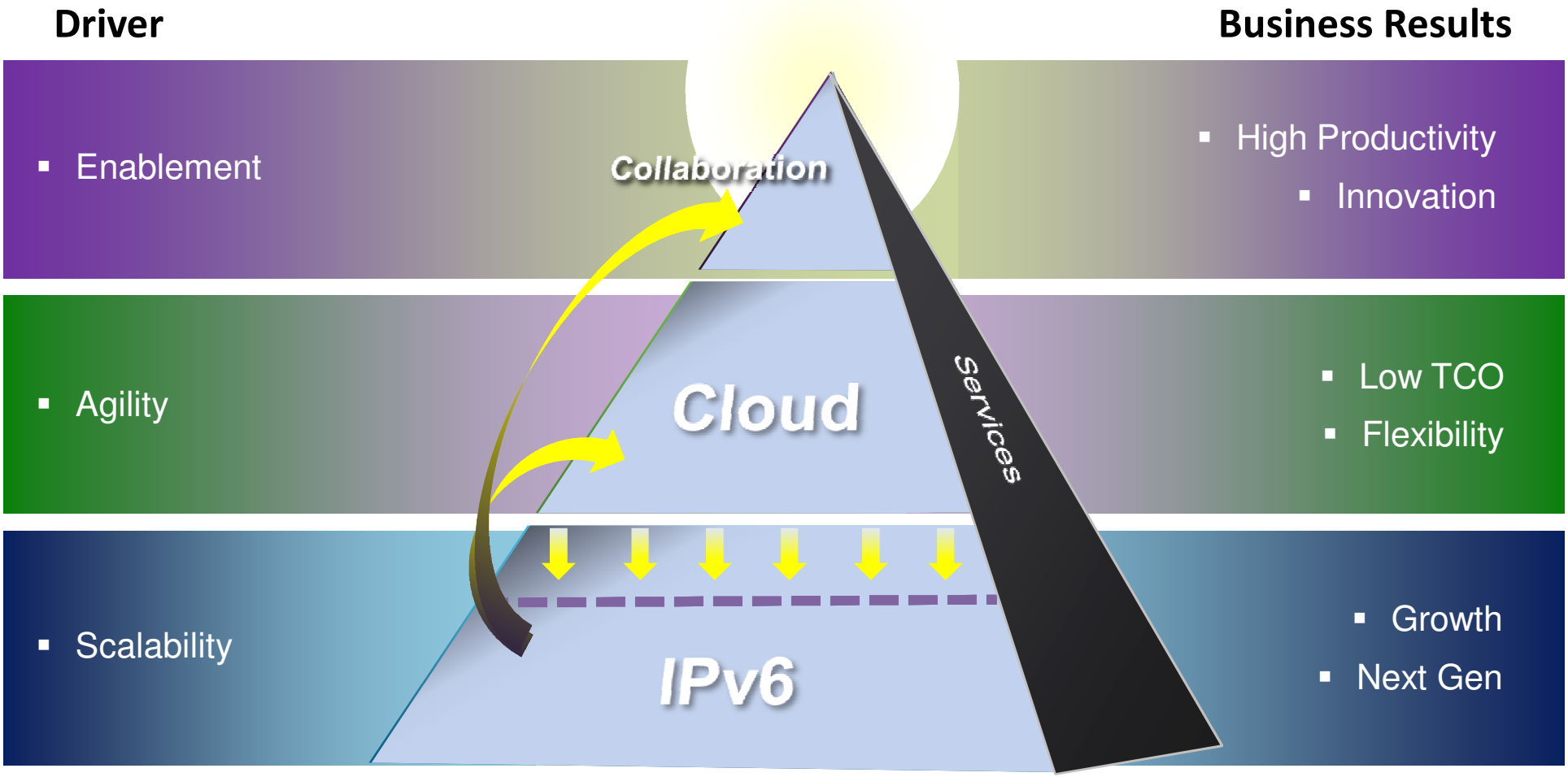
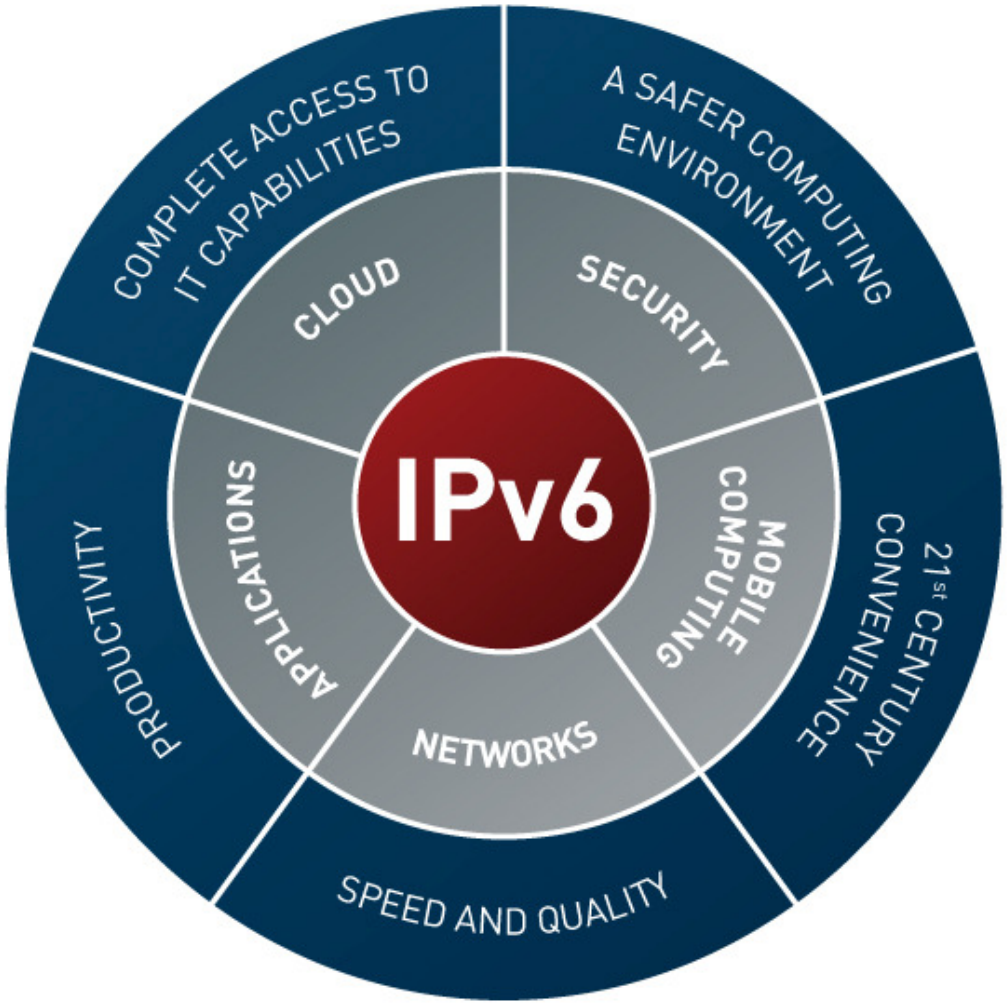
IT Transformation – Three Inflexion Points



IPv6 in the IT Context

Ultimately, it's about people doing business



IPv6 TOUCHES EVERYTHING

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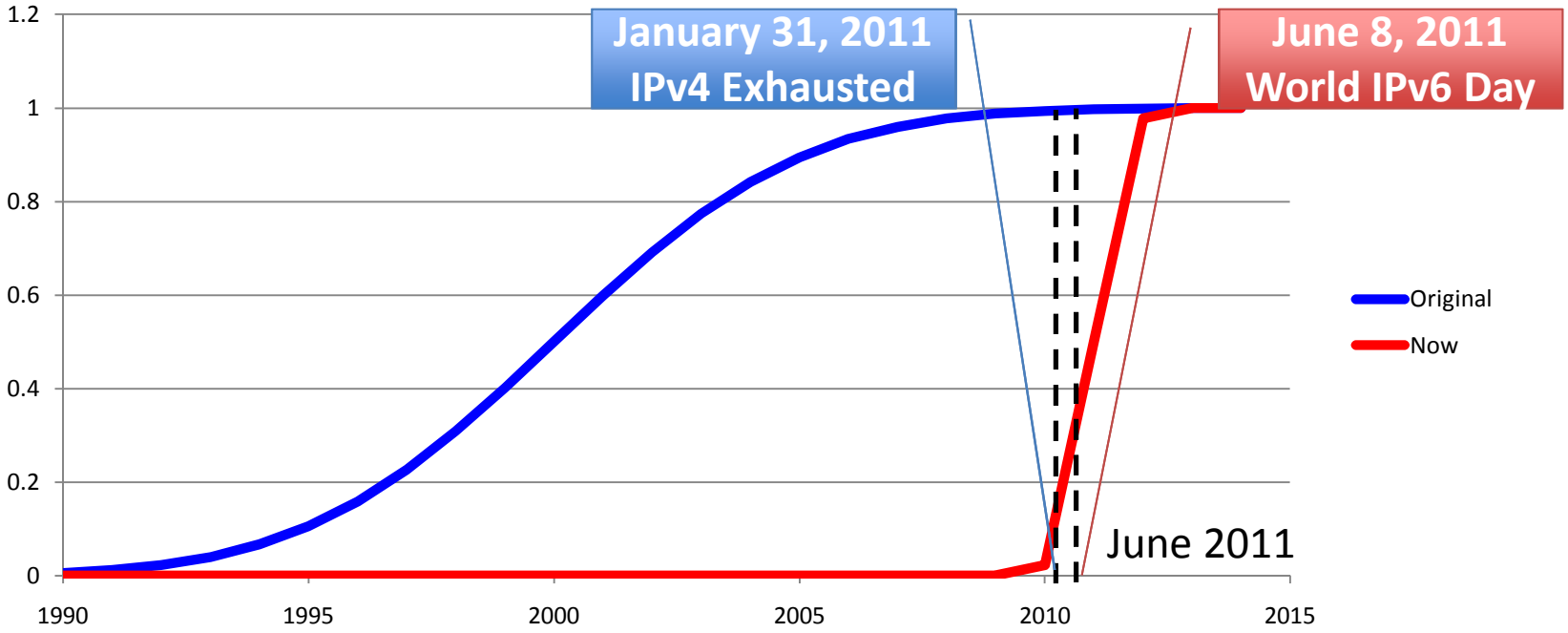
IPv6 in the Business Context



- **Opportunity to differentiate/Risk to lose competitiveness**
- **Inexpensive if well planned/Very expensive if accelerated**
- **Operational optimization/Increased risk**

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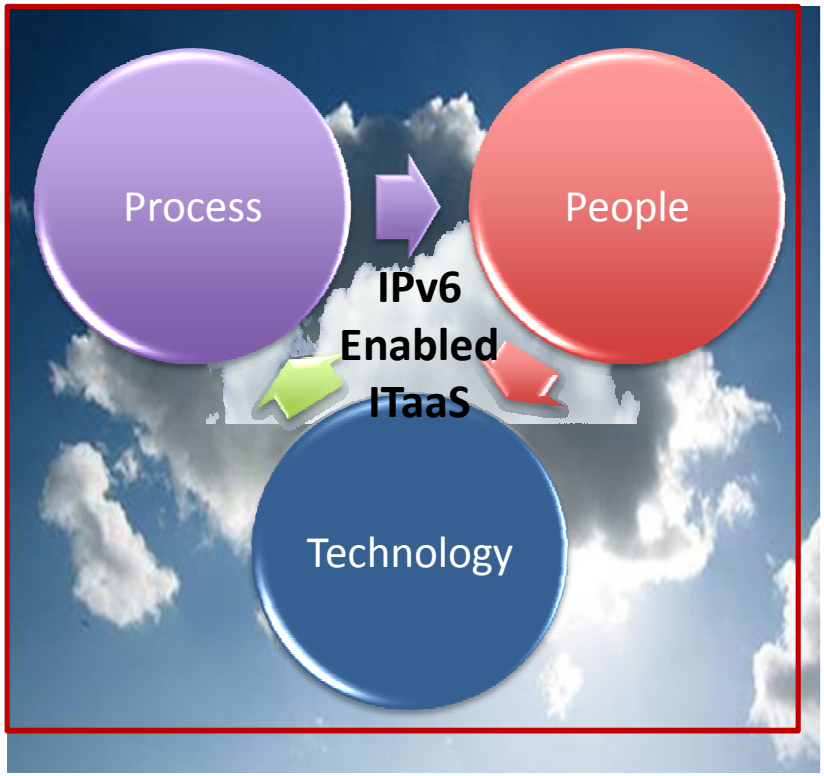
IPv6 in the IT Transformation Context

Planning Processes
Change Management
Service-Oriented Support
Business Continuity



Usage Patterns
Roles & Responsibilities
Organizational Structure
Education

Virtualization (Compute, Storage Network)
Orchestration Tools
Application Performance
Security Tools

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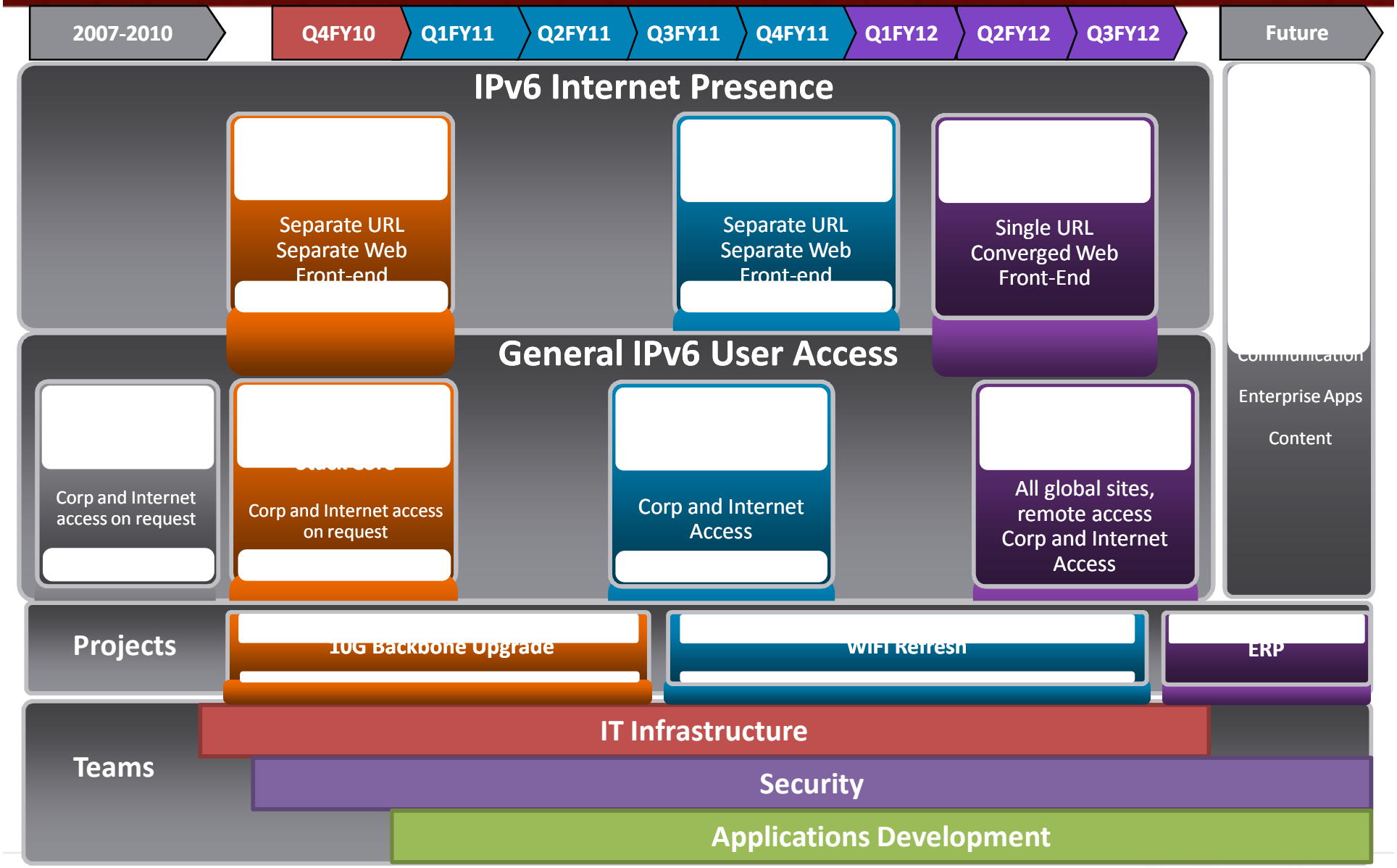
Integration Roadmap Example



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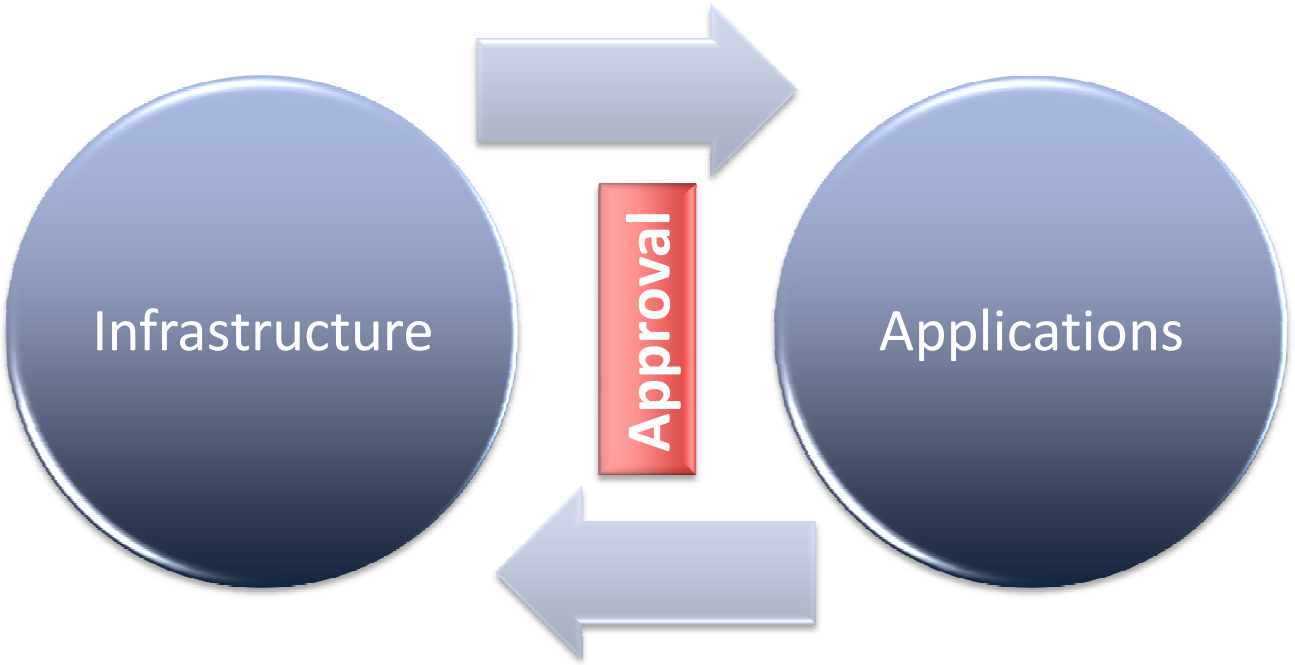
The Challenge



The Challenge of Kick-starting Synchronized IPv6 Adoption Process

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Guidelines

Phased approach:

- Define a set of apps for the initial offering
- Define roadmaps for the rest of the apps
- Define guidelines for apps owners to ensure IPv6 readiness going forward

Value vs Cost:

- Considering the timeline, realistically, many apps would be IPv6 challenged
- Avoid apps which require significant resources to migrate and/or support
- Focus on apps which do not require multiple teams coordination

Realistic and Relevant:

- Avoid mission critical apps
- Choose apps which have a relevant usage frequency

Phased Approach

Phase 0

- Identify the apps for the Phase 1 of the Pilot
- Identify the migration steps and requirements
- Test the selected apps
- Prepare the infrastructure

Phase 1 (Pilot)

- Deploy the identified apps/services
- Operate the offering and monitor the results
- Collect trial data
- Identify and test the set of apps to be made available in Phase 2

Phase 1 Candidates

Aplications	Use Frequency				Adoption	Owner	Resource
SCMDB	25	20	16	14	51%	PDI	View
QDDTS	25	23	19	15	69%	PDI	Web
IOS Build	25	22	16	15	47%	STEP	View
CC Tools	25	22	16	15	52%	STEP	View
AutoEASY	25	21	15	0	31%	STEP	Test Lab
All Builds	25	17	14	3	44%	STEP	View
EngWeb	24	21	20	13	96%	EngLearni	Web
PRRQ	23	16	15	14	72%	STEP	Web
CDETS	23	21	16	15	85%	PDI	Web
eARMS	22	15	1	0	39%	STEP	Web
TIMS	21	15	0	0	31%	PDI	Web
EDCS	21	13	10	6	96%	PDI	Web
ClearCase	21	21	21	21	63%	PDI	View
AEtest	17	0	0	0	21%	STEP	N/A
HALib	17	0	0	0	22%	STEP	N/A
EngLearn	17	2	0	0	80%	EngLearni	Web
TFT	16	0	0	0	23%	PDI	Web
Teambuilder	16	0	0	0	30%	STEP	View
CCACHE	16	6	0	0	35%	STEP	View
CBS	16	14	0	0	29%	STEP	View
TrainStation	15	8	0	0	61%	PDI	Web
LDS	15	15	15	15	38%	EHS	View
IOU	15	14	0	0	31%	STEP	View
SA	14	0	0	0	34%	STEP	wwwin-?
ACME	7	0	0	0	17%	STEP	View
FTS	6	0	0	0	35%	PDI	Web
ProjectNET XE	1	0	0	0	25%	Dennis	Web

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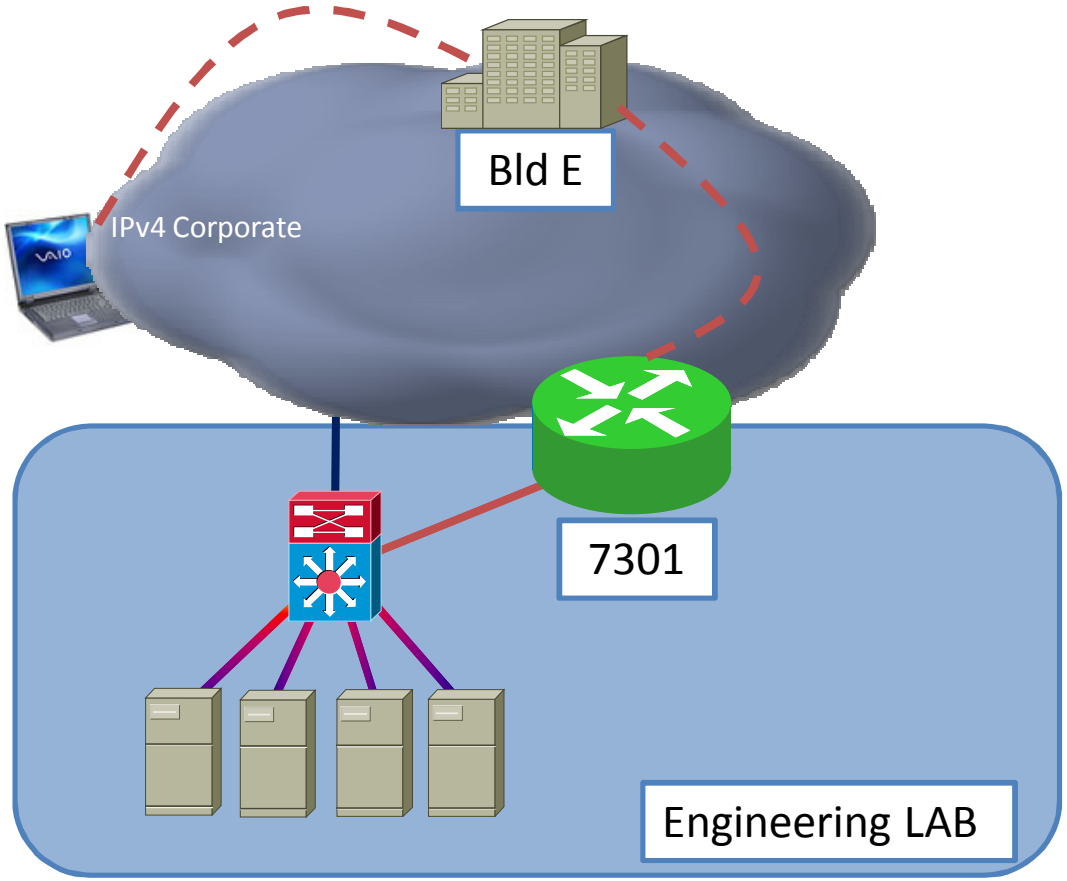
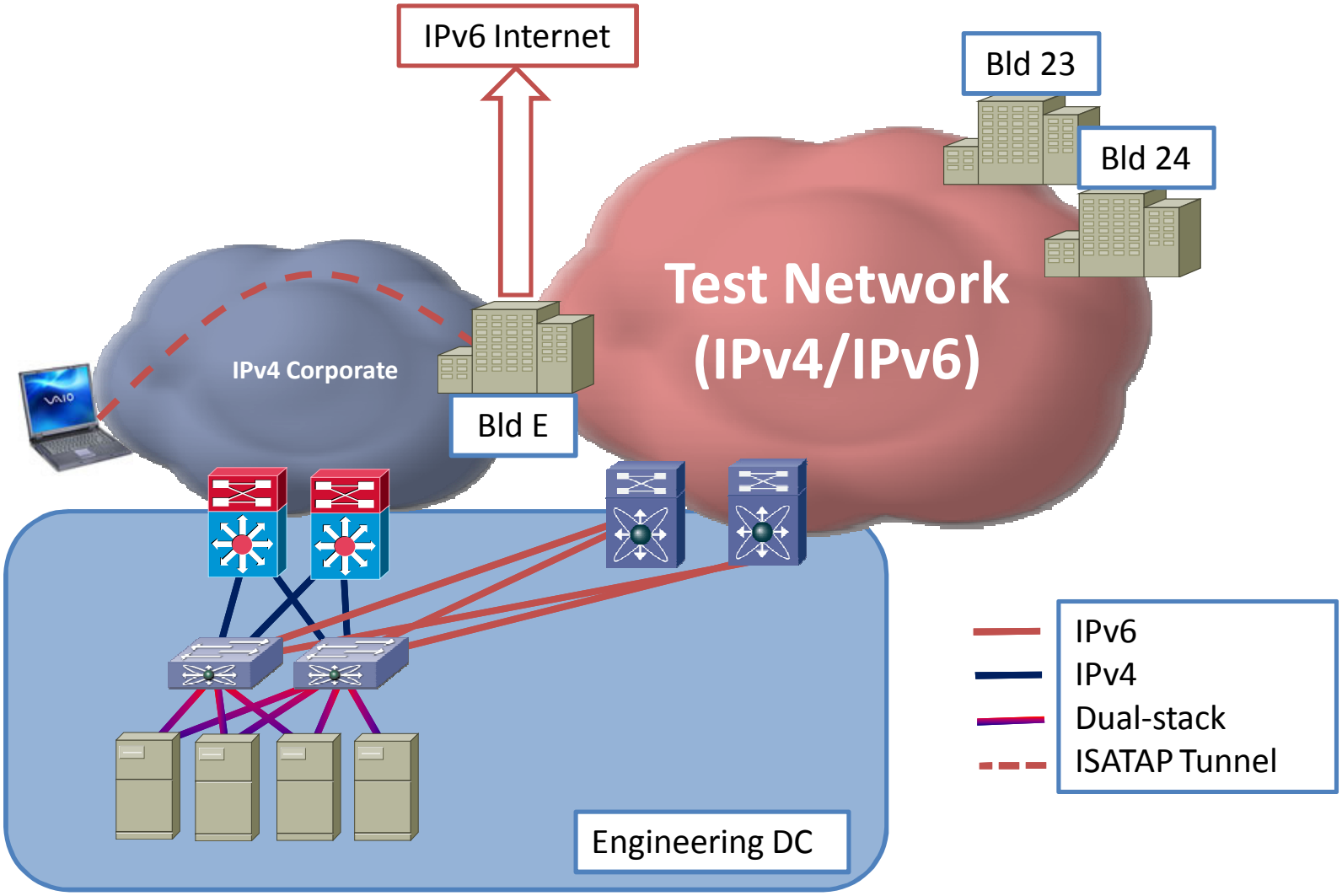
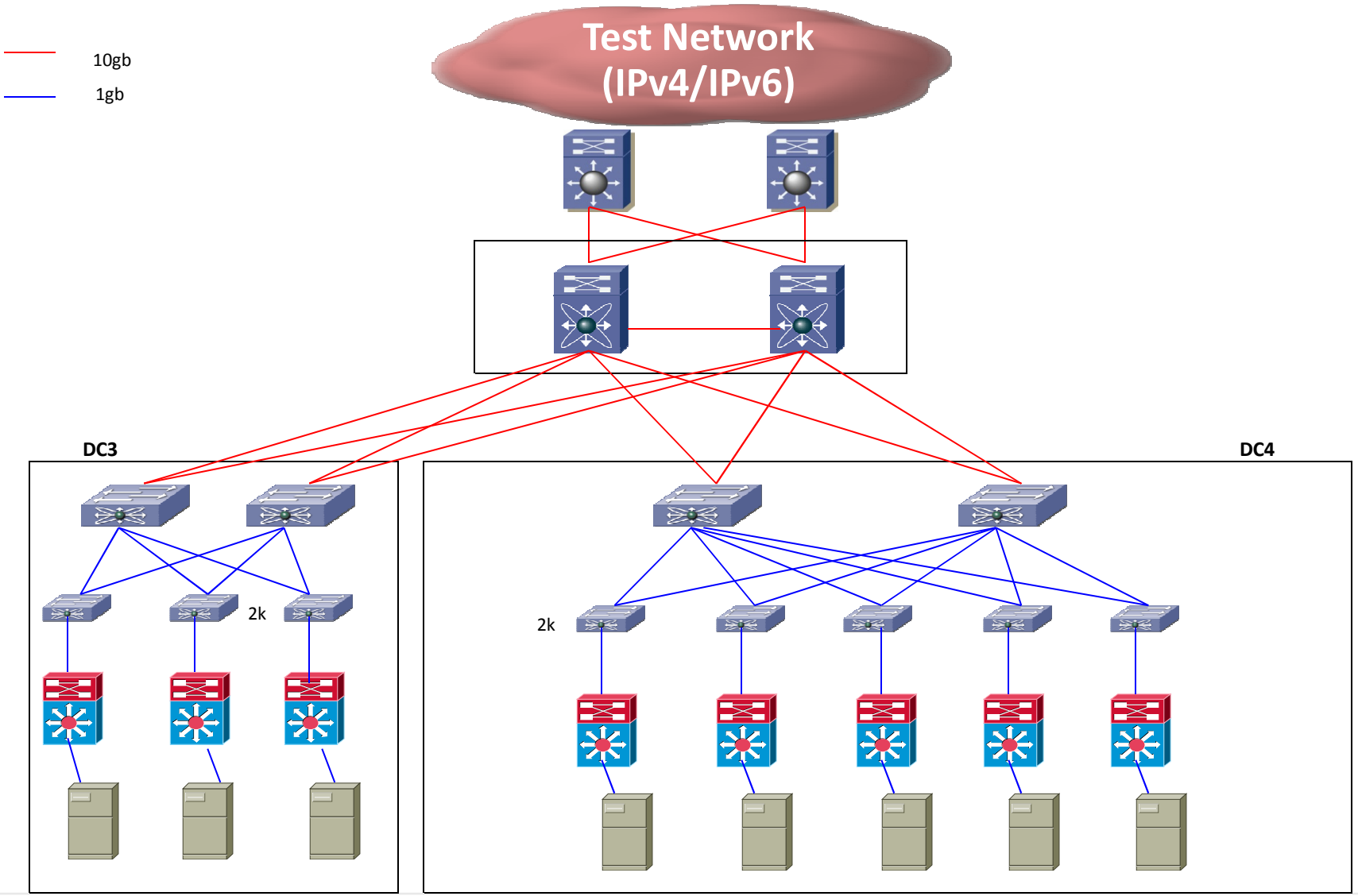
POC LAB



Pilot Infra – High Level (Data Center)





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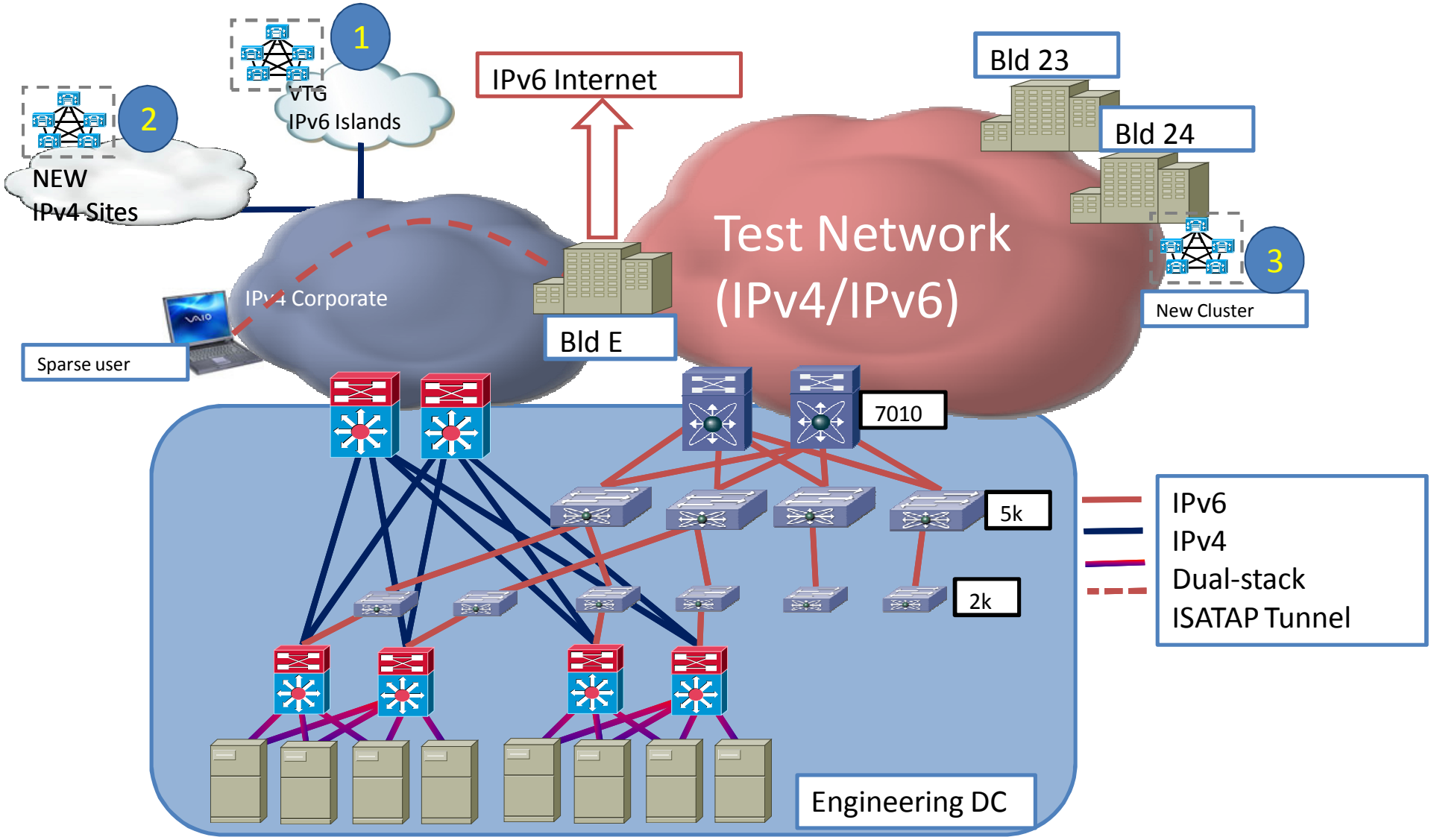
UC Options



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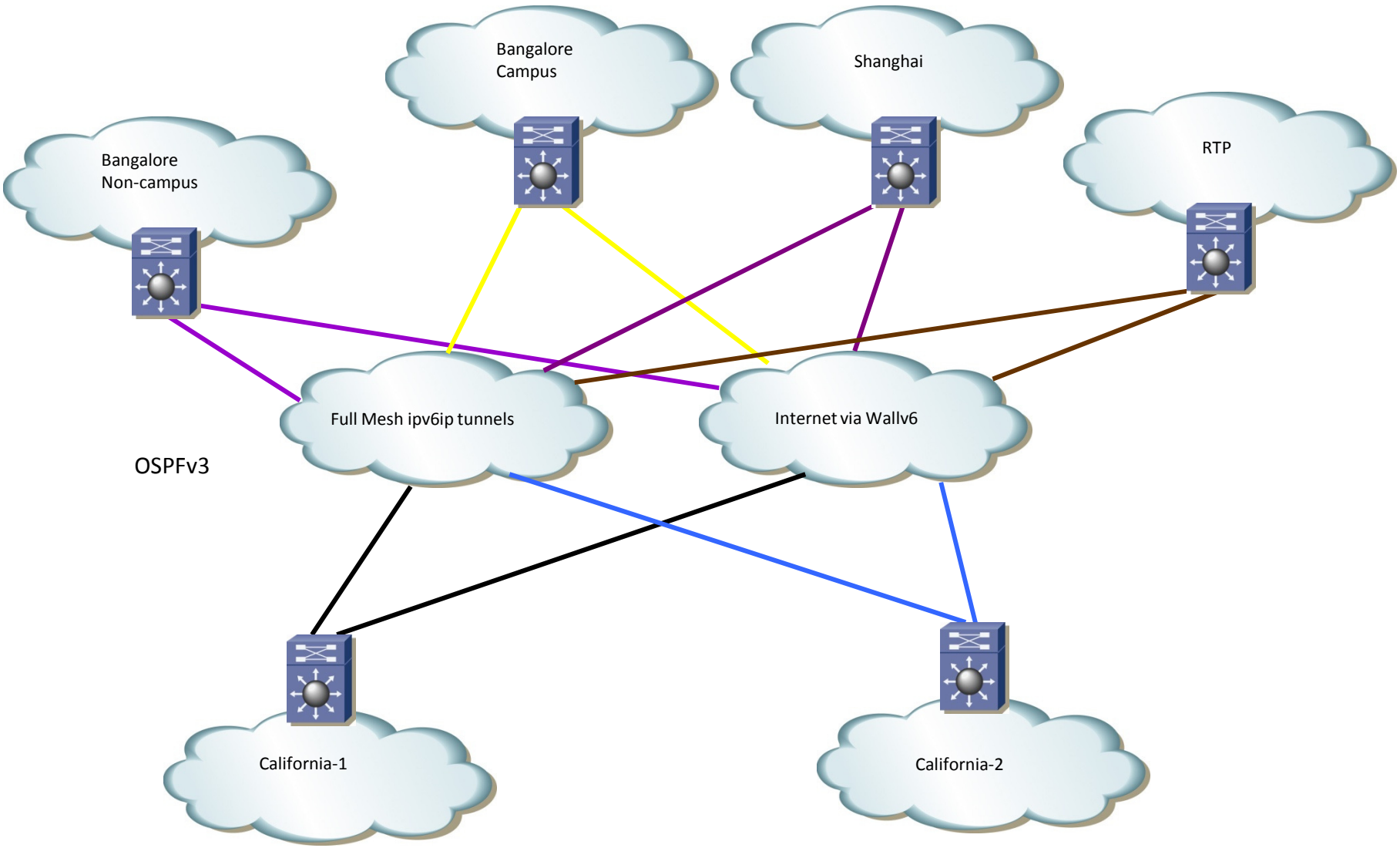
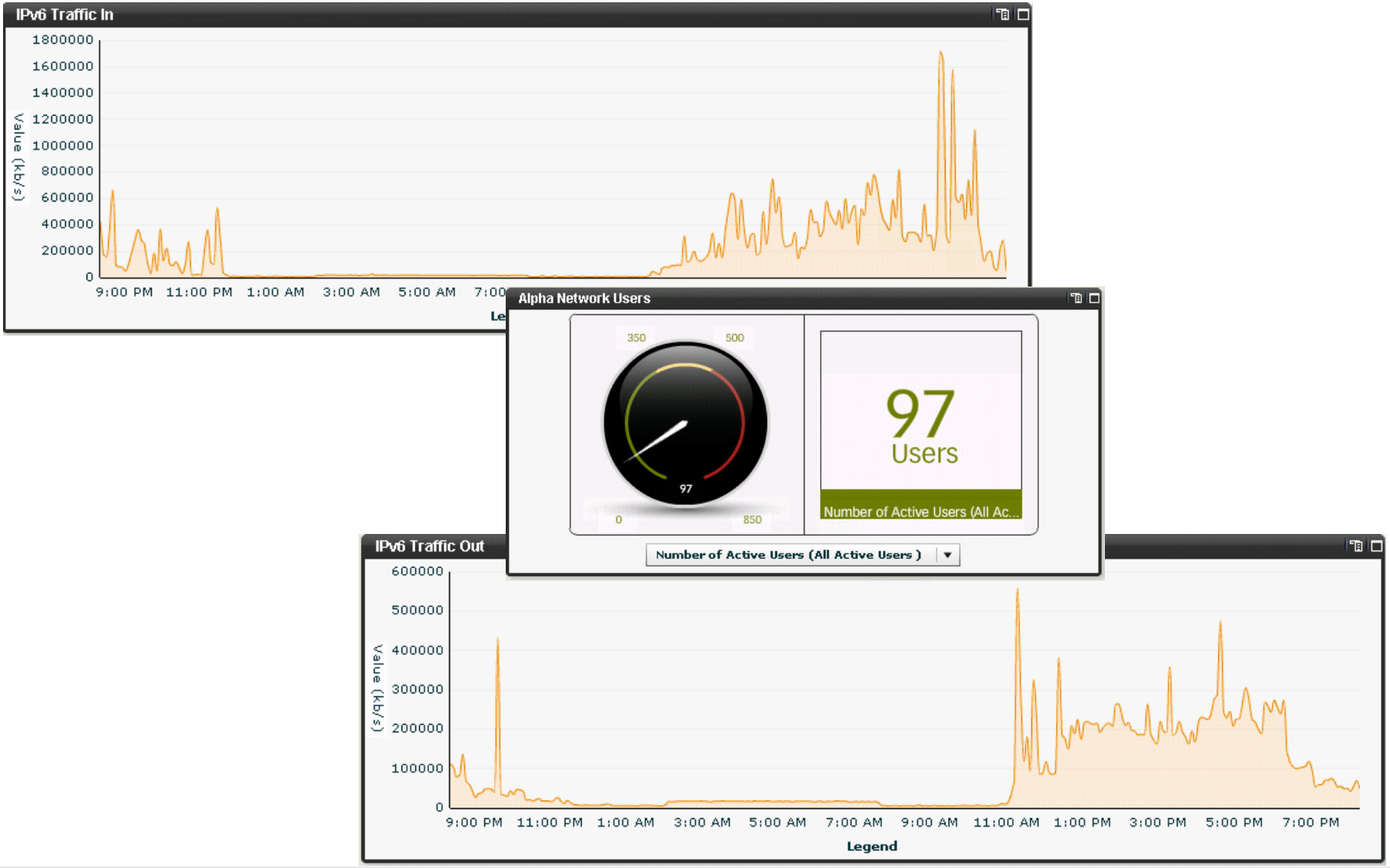
World Wide Expansion



Metrics and Monitoring



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The Security Perspective

- Due to monitoring and IP Protection gaps, ***Risk Assumption*** by key business leaders (including Legal) is mandatory
- Tight control of IPv6 client footprint
  - ***IPV6 stack removed*** from standard image for client devices, VDI, DC servers
  - ***ISATAP gateway removed fro DNS***
- Development and deployment:
  - Must be ***vetted*** by Infosec CSIRT team/management
  - ***Review new standards*** with Infosec's CSIRT team

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Process is Critical

- If you think it is just about technology, you are mistaken
- If you think it is just about services, you are mistaken
- **It is about active support throughout the organization**
  - From executive to individual contributor level
  - From purchasing to development
  - From design to deployment
- The process focus helps minimize costs, properly orchestrate alongside inflight projects, avoid surprises and achieve goals

Decision Makers, Stake Holders, Training

- The key decision makers are essential
- Good stakeholders are catalysts
- Training is the enabler

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Planning

- Vision for the business or the adoption driver
- IPv6 Training
- IP architecture that supports the vision -> IPv6 addressing scheme + design
- Evaluate infrastructure readiness to support the IPv6 implementation of the architecture
- Drive requirements and define purchasing strategy
- Align with other initiatives to accelerate readiness
- Define timeline

Overnight Adoption is Limiting and Expensive

Next Steps?

- Engage the Decision Makers
- Start Training
- Begin!

Recommended Reading

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