Defense Research and Engineering Network Implementation Details
– 2003 to 2008 –

IPv6-team

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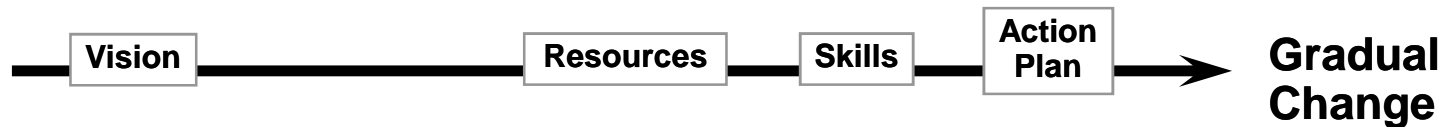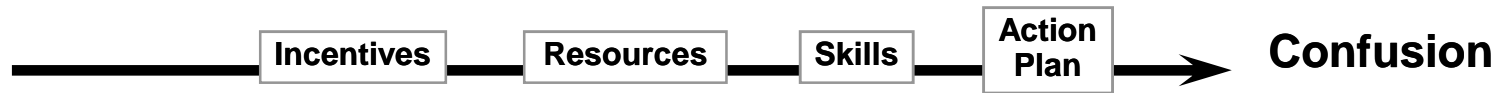# Preparation for IPv6 deployment
(Success factors for *any* change)

| Vision | Incentives | Resources | Skills | Action Plan | → | **Change** |

Effects of missing factors:

| | Incentives | Resources | Skills | Action Plan | → | **Confusion** |

| Vision | | Resources | Skills | Action Plan | → | **Gradual Change** |

| Vision | Incentives | | Skills | Action Plan | → | **Frustration** |

| Vision | Incentives | Resources | | Action Plan | → | **Anxiety** |

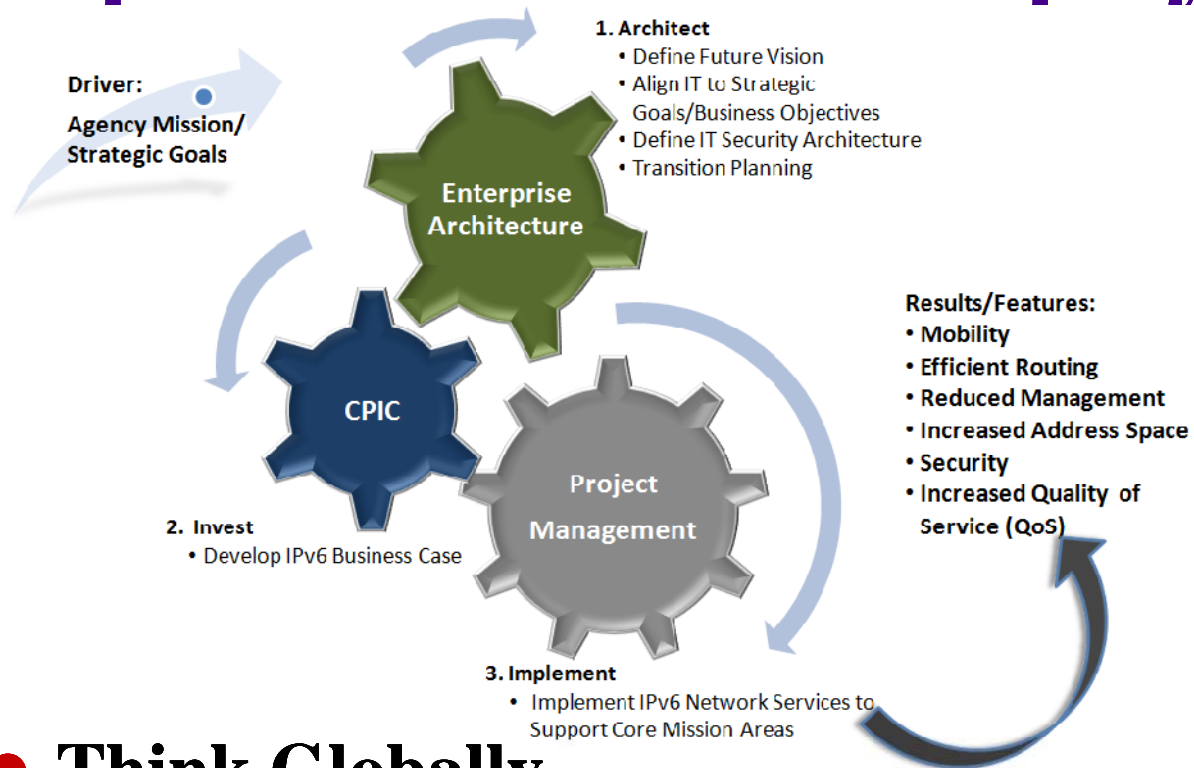| Vision | Incentives | Resources | Skills | | → | **False Starts** |

Source: Delorese Ambrose, in 1987 personal communication to TransPlant personnel.
Originally from the Enterprise Corporation, a consulting firm no longer in existence.

Preparation for IPv6 deployment

Driver:
Agency Mission/
Strategic Goals

Enterprise Architecture

1. Architect
- Define Future Vision
- Align IT to Strategic Goals/Business Objectives
- Define IT Security Architecture
- Transition Planning

CPIC

Project Management

2. Invest
- Develop IPv6 Business Case

3. Implement
- Implement IPv6 Network Services to Support Core Mission Areas

Results/Features:
- Mobility
- Efficient Routing
- Reduced Management
- Increased Address Space
- Security
- Increased Quality of Service (QoS)

- ## Think Globally
  - Vision/Goals/Architecture/Investment Strategy
  - Communicate, *Communicate*
- ## Act Locally
  - COMMUNICATE, **communicate**
  - Avoid grand implementation plans/flag days

Preparation for IPv6 deployment
(Corporate or enterprise preparation for *any* change)

Introductory remarks–

- **In the slides that follow, replace the phrase "DREN IPv6 Pilot" with "Corporate planning team" or "Enterprise implementation group" or "Company deployment committee", as appropriate to your situation**

- **In the slides that follow, the term enclave/site may not directly apply to your situation. Substitute the term branch, office, division, or other organizational unit, as appropriate to your situation**

Preparation for IPv6 deployment

(Corporate or enterprise preparation for *any* change)

7 steps in planning a successful change:

1. **Define problem, solution, and scope for planning**
2. **Decide on a transition strategy**
3. **Characterize adopters**
4. **Identify effective transition mechanisms**
5. **Select and synthesize**
   - refine scope and strategy
   - design interactions among adopters
   - refine whole product
   - set priorities for action
6. **Prepare to manage risk**
7. **Document the plan**

Source: the Carnegie-Mellon Software Engineering Institute (SEI), see
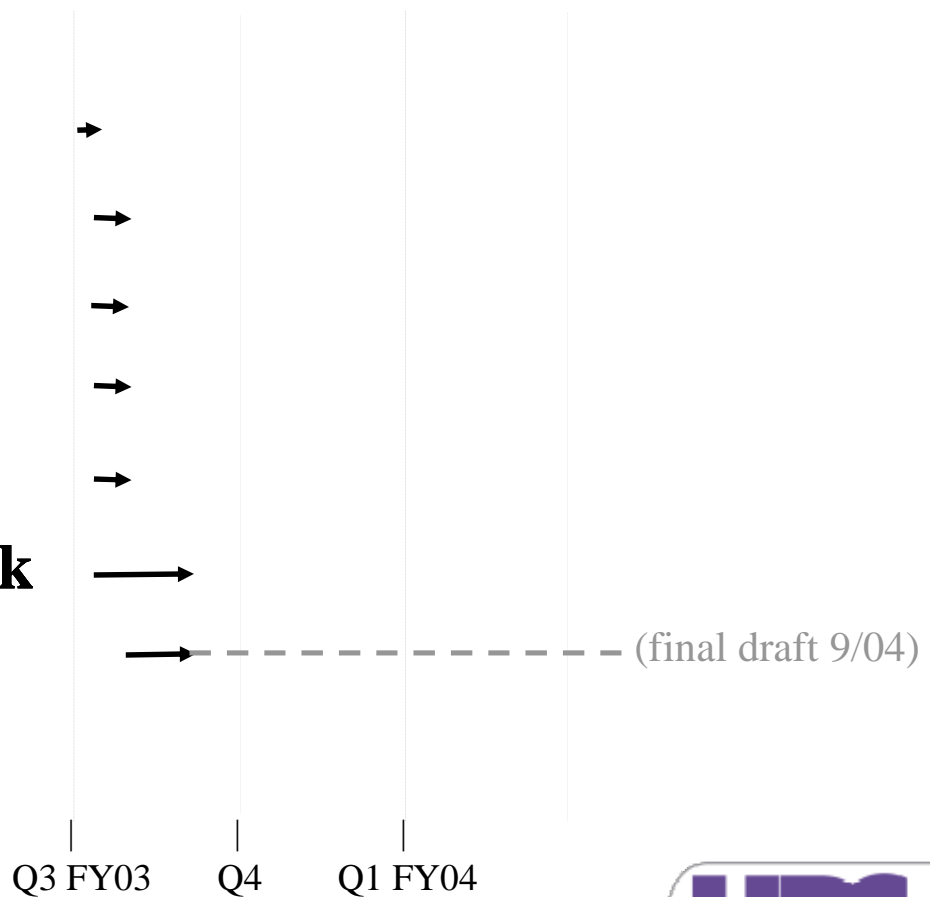http://www.sei.cmu.edu/library/abstracts/news-at-sei/feature44q01.cfm

Preparation for IPv6 deployment
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Enterprise TransPlant Program planning timeframe:

1. **Define Problem**
2. **Decide on Strategy**
3. **Characterize Adopters**
4. **Identify Mechanisms**
5. **Select and Synthesize**
6. **Prepare to Manage Risk**
7. **Document the Plan**   (final draft 9/04)

Q3 FY03   Q4   Q1 FY04

Preparation for IPv6 deployment
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Enterprise TransPlant Program planning activities:

Model	DREN IPv6 pilot
1. **Define problem, solution, and scope for planning.**	**Problem = Implement IPv6 on a wide area network and its applications in FY04. Solution = Dual stack pilot. Scope = DREN WAN, HPC Centers and program/project sites.**
2. **Decide on a transition strategy.**	**Starting now, take all of FY04 to accomplish in stages by site.**
3. **Characterize adopters.**	**Start with R&D community where future systems are developed. Then extend to testers and evaluators.**

Preparation for IPv6 deployment
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Enterprise TransPlant Program planning activities:

Model	DREN Ipv6 pilot
4. Identify effective transition mechanisms.	**Products = DREN IPv6 pilot Commitment = HPCMP policy, personal on-site visits, competitive advantage for early adopters.**
5. Define desired end state; select and synthesize.	**DREN WAN and small sites, then HPC centers, then user sites. All earlier lessons learned available to later sites via HPC community web site. As applications are converted, plans are refined.**

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Enterprise TransPlant Program Planning activities:

Model	DREN IPv6 pilot
6. **Prepare to manage risk.**	**Network security for pilot will be at least a good as IPv4-pnly network. At a site, if something doesn't work, reversion to pre-pilot IPv4 environment is practical and known to work.**
7. **Document the plan.**	**HPCMP IPv6 Pilot Implementation Plan (first draft Aug 15, 2003). Revised as experience is gained and lessons learned. (last draft Sept 28, 2004)**