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Challenges in Managing an ISP

Managing an Enterprise of Enterprises:

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Practice Manager
Melillo Consulting, Inc.



Qwest Internet Solutions Hosting



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- From a ground-zero start-up as a computer reseller and systems integrator, through a couple of twists and turns along the way, QIS has managed to gain the respect and admiration of many industry watchers in building a top-tier Internet access and web hosting firm.
- In combining a solid system infrastructure and impressive network bandwidth with a strong services component, QIS has the analysts buzzing about its competitive advantage in the ISP market.

Business Problems Overview



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- QIS' expanding market share is leading to a complicated IS environment
- QIS is expecting huge growth in the number of hosted systems which must be monitored and managed
- QIS is expanding into potentially thirty Cyber Centers which will require consistent methodology and technology for QIS to be successful
- QIS' current infrastructure management technologies will not easily scale to QIS' expected growth
- Considering the high market demand for talented IT professionals, it will be difficult to staff multiple data centers

Business Goals & Objectives



- Provide an integrated management infrastructure to help maintain QIS' solid reputation with customers while tracking high growth rates in the number of systems under management
- Provide the capability of offering multiple management tiers with differing levels of service as an additional source of revenue
- Establish a system and network management capability as a competitive differentiator
- Improve the effectiveness and productivity of the Operations staff

Why HP OpenView?



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- Qwest/HP Alliance
 - Corporate Partnership
 - CyberCenter Support
 - Commitment to OpenView platform
 - Open integration with other vendors
 - Commitment to Qwest requirements
- Speed of Deployment
 - Typical HP OpenView Deployment
 - Enterprise deployment 10-12 months
 - QIS-Hosting deployment 8-10 months
- Scalability
 - Architecture, hardware and software support to scale to 30 data centers hosting over 450,000 systems
 - Highly redundant management systems



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Project Success Factors

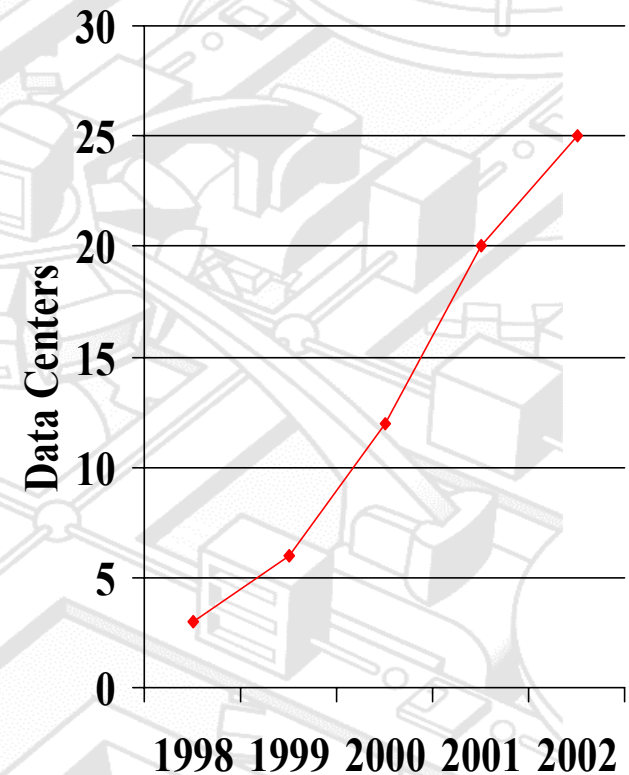
- Provide a successful service strategy that complements the existing expertise rather than replicate or displace it
- The QIS solution can not be implemented in a vacuum
- The QIS Infrastructure Management implementation must integrate into the overall IS strategy
- The NSM strategy will be a continuous evolution based on refining business, technical, and product requirements
- The application and infrastructure management tools must be compatible and highly integrated to ensure a successful enterprise-wide client-server environment

Manageability Requirements



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- Cyber Center Growth
 - Up to 30 Cyber Centers
- System Growth
 - Projected 450,000 Nodes
 - OS Types Include: NT, Solaris, HP-UX, Linux, Windows2000
- Management Metrics
 - Network Availability & Event
 - Network Device: Cisco, Extreme
 - System Availability & Event
 - System Performance
 - Database: Oracle, Sybase, MS-SQL
 - Applications: Various
 - Web Server: Netscape, IIS, Apache
 - Firewall: CheckPoint-1



Other Management Areas



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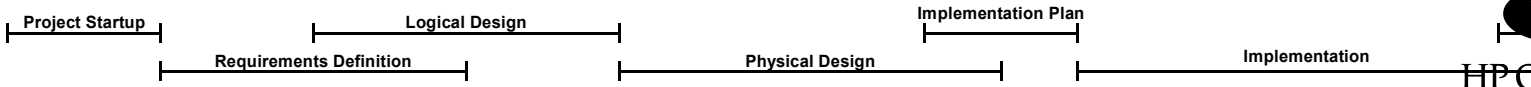
- Event Correlation
- Service Reporting
 - Internal Reporting
 - Product Management
 - Operations
 - Customer Reporting
 - Statistics
 - Status
- Service Views
- Notification
- Help Desk

Management Area	Design	Test Bed
Network Management		
Availability & Event Management	√	
Device Management	√	
Performance Management		√
Policy Based Network Management		√
Systems Management		
Availability & Event Management	√	
Systems, Database, & Application		
Performance Management	√	
Web Server Management	√	
Network & Systems Management		
External Notification	√	
Event Correlation	√	
Service Views	√	
Security	√	
Reporting	√	√
Systems Administration		
User Management/Resource Access		√
Software Distribution	√	

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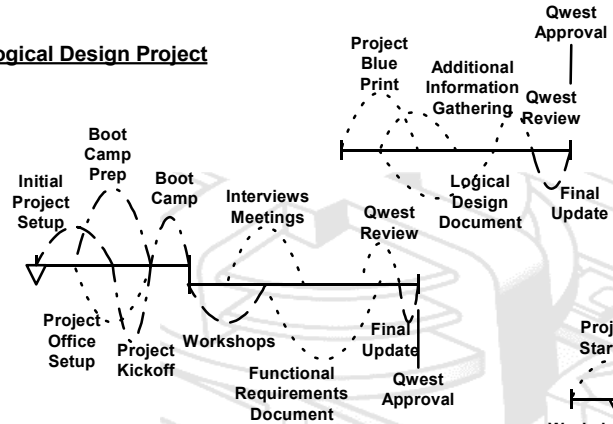
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July	August	September	October	November	December	January	February	March	April
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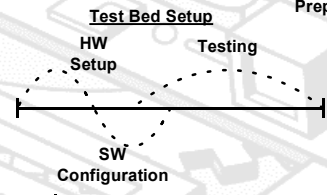
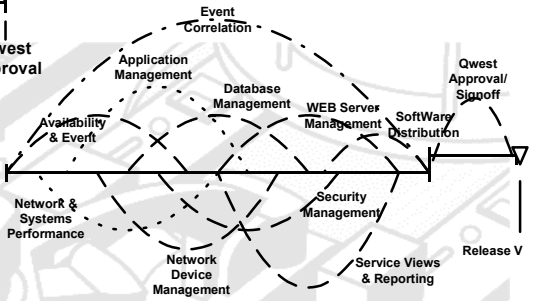
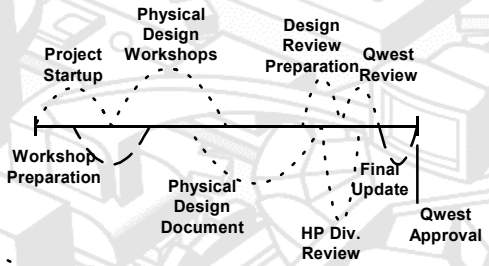


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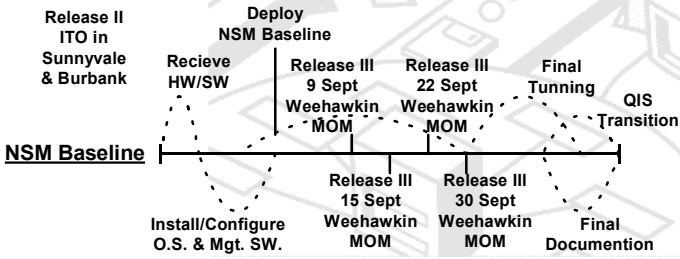
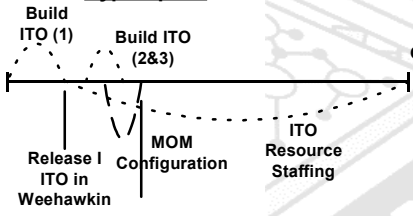
Logical Design Project



Physical Design Project



CyberSpeed



Proposed Project Flow

QIS Cyber Center Management Project Project Time Line

Project Manager
Subhendu Ghosh
Mike Janay

QIS Project Role Chart

Project Sponsor
Paris Georgallis

HP Project Manager
Don Wiles

Overall Integration
Paul Hydrean

Lead Architect
MBatts

HP Asst Proj Mgr
Saundra Salaam

Project Manager
Jim McDermott

Project Lead
Rich Antonick

QIS C²M Project Design Team

NSM Baseline & CyberSpeed Implementation Team

Ntwk Avail & Event
Bob Kelly
(Mark Power)
(Tom Vetter)

Sys Avail & Event
Ken Herold
(Frank Cusack - UX)
(Marty Piccinich -NT)

Notification
Rich Antonick
(Paul Hanley)

Software Mgt.
Greg Vaidman
(Frank Cusack - UX)
(Marty Piccinich -NT)

Network Device
Bob Kelly
(Mark Power)
(Tom Vetter)

Sys Performance
Steve Fowler
(Frank Cusack)

Event Correlation
MBatts
(Nick York)

Time Sync
Rich Antonick
(Frank Cusack)

NetMetrics/ PBNM
Rich Antonick
Bob Kelly

Solution Architect
Bob Kelly

Ntwk Node Mgr
Rich Antonick
Greg Vaidman
Jack McLaughlin

Cyber Implementation
Don Ingels

Network Security
Bob Kelly
(Frank Cusack)

Web Server Mgt
Greg Vaidman
(Dave Wysocki)

Sevice Views
Paul Hydrean
(Subhendu Gosh)
(Nick York)

DNS
Rich Antonick
(Frank Cusack)

SoftDist
Greg Vaidman

Process Definition
Ken Herold

IT/Operations
Don Ingels
Greg Vaidman
Kevin Kelly
John Kelleher

Cyber ITO Admin
Don Ingels
Elwood Lewis

TelAlert
Rich Antonick
Elwood Lewis

Sys Security
Mark Fresolone
(Frank Cusack - UX)
(Marty Piccinich -NT)

Reporting
Bob Kelly
(Subhendu Gosh)

Sys Performance
Kevin Kelly
Steve Fowler

Application Mgt
Ken Herold
(Marty Piccinich -NT)
(Dave Wysocki -UX)

Sys Installation & Configuration
Brian Rock

Data Base Mgt.
Ken Herold
(Dave Wysocki)

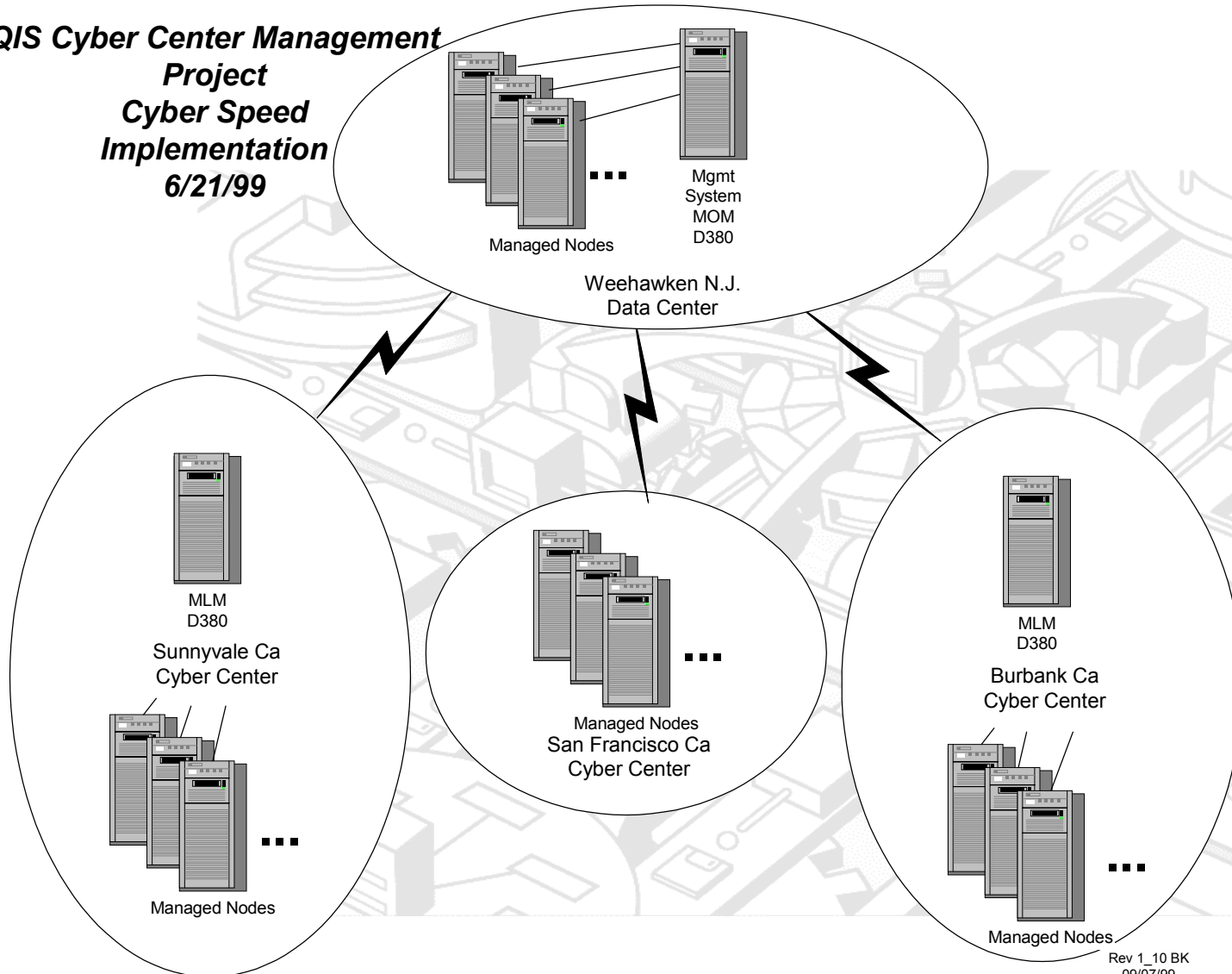
Test Bed

Initial Plan: CyberSpeed



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**QIS Cyber Center Management
Project
Cyber Speed
Implementation
6/21/99**

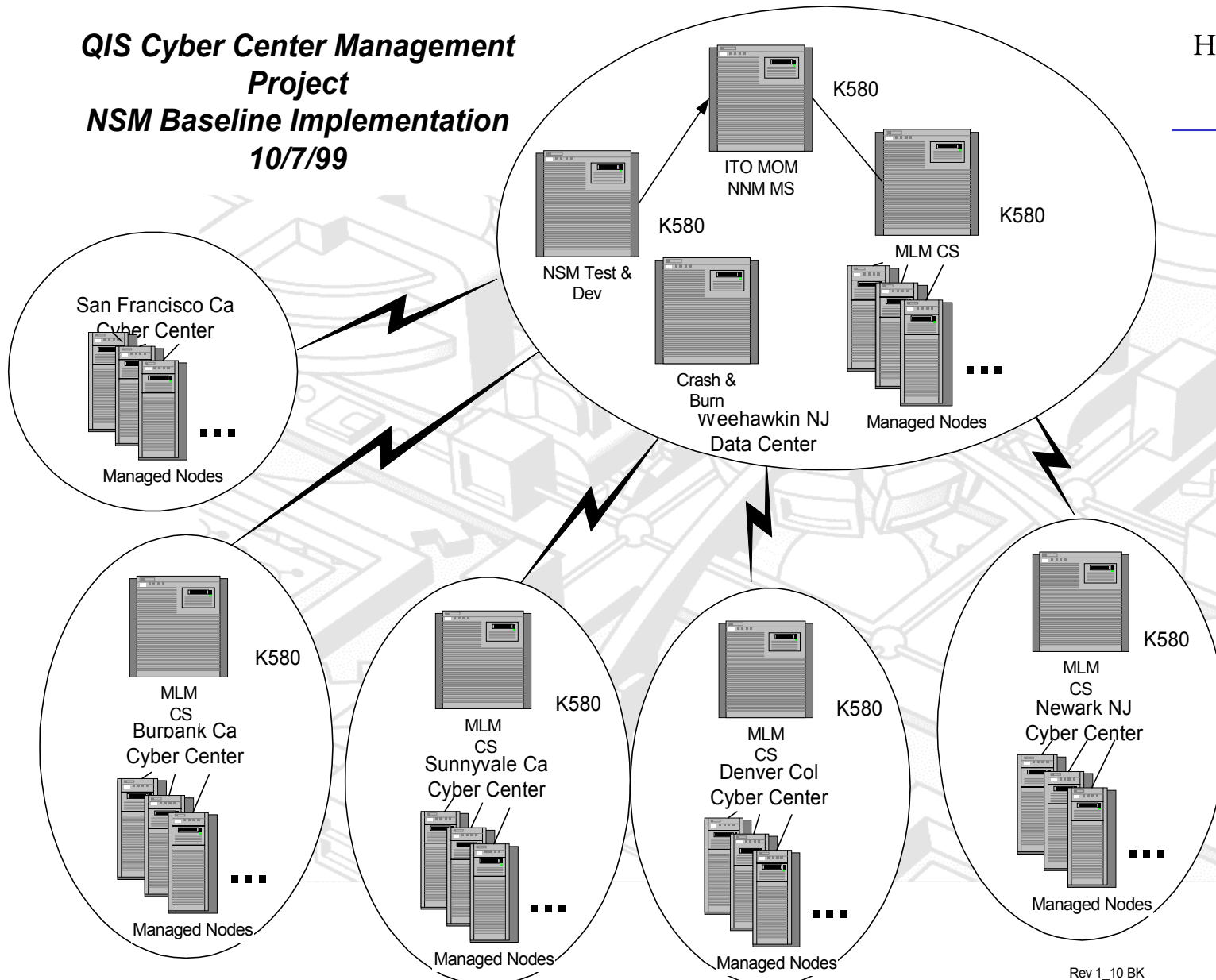


Rapid Deployment: NSM Baseline



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**QIS Cyber Center Management
Project
NSM Baseline Implementation
10/7/99**



Design Project Methodology



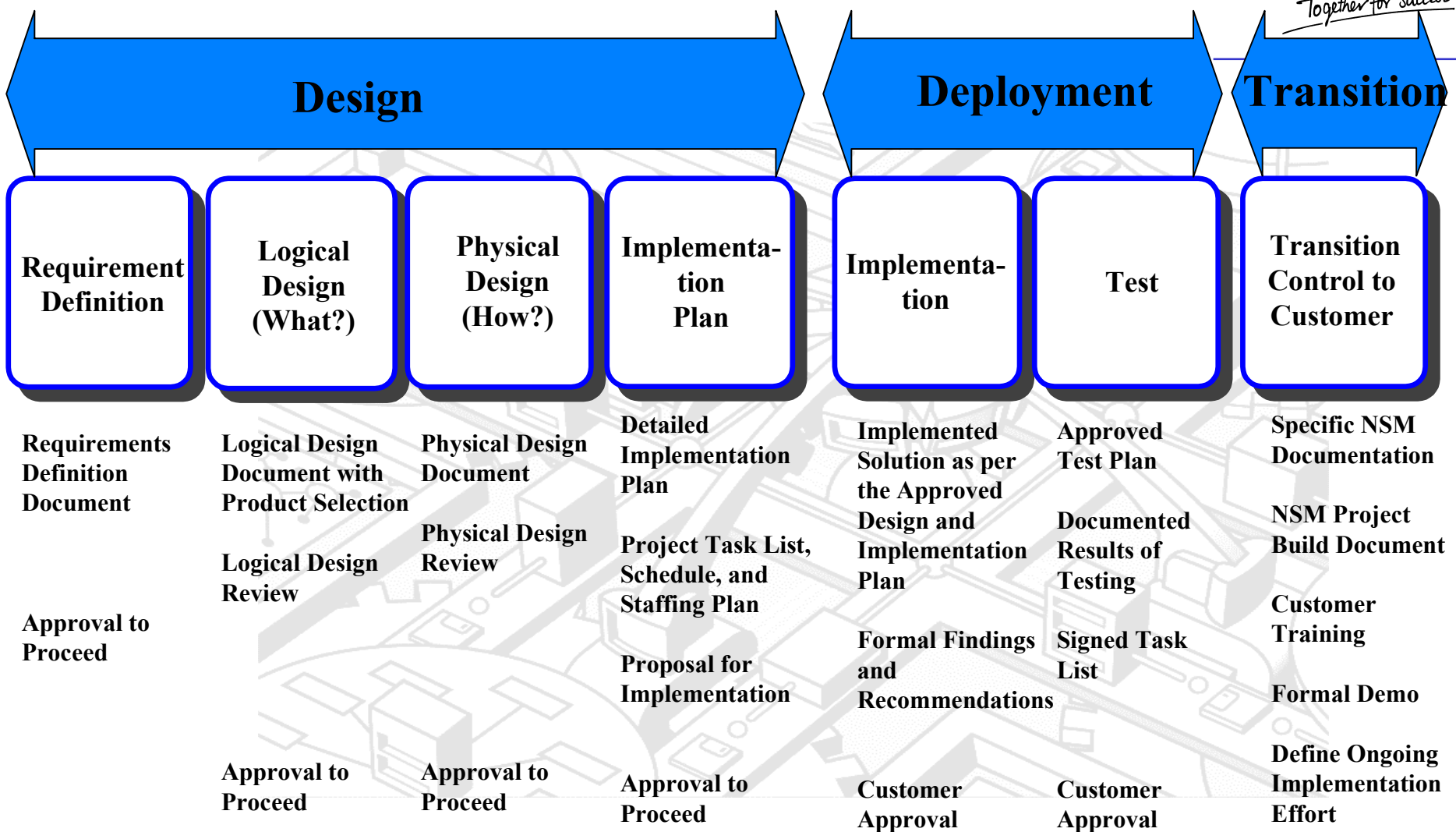
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- Design Phase
 - Requirements Definition
 - Logical Design
 - Physical Design
 - Implementation Plan w/Project Schedule
 - Deployment Phase
 - Implementation
 - Test
 - Transition Phase
 - Training
 - Go Live
-
- A faint, grayscale illustration of a server room or data center, showing rows of server racks, cables, and network equipment, serving as a background for the text.

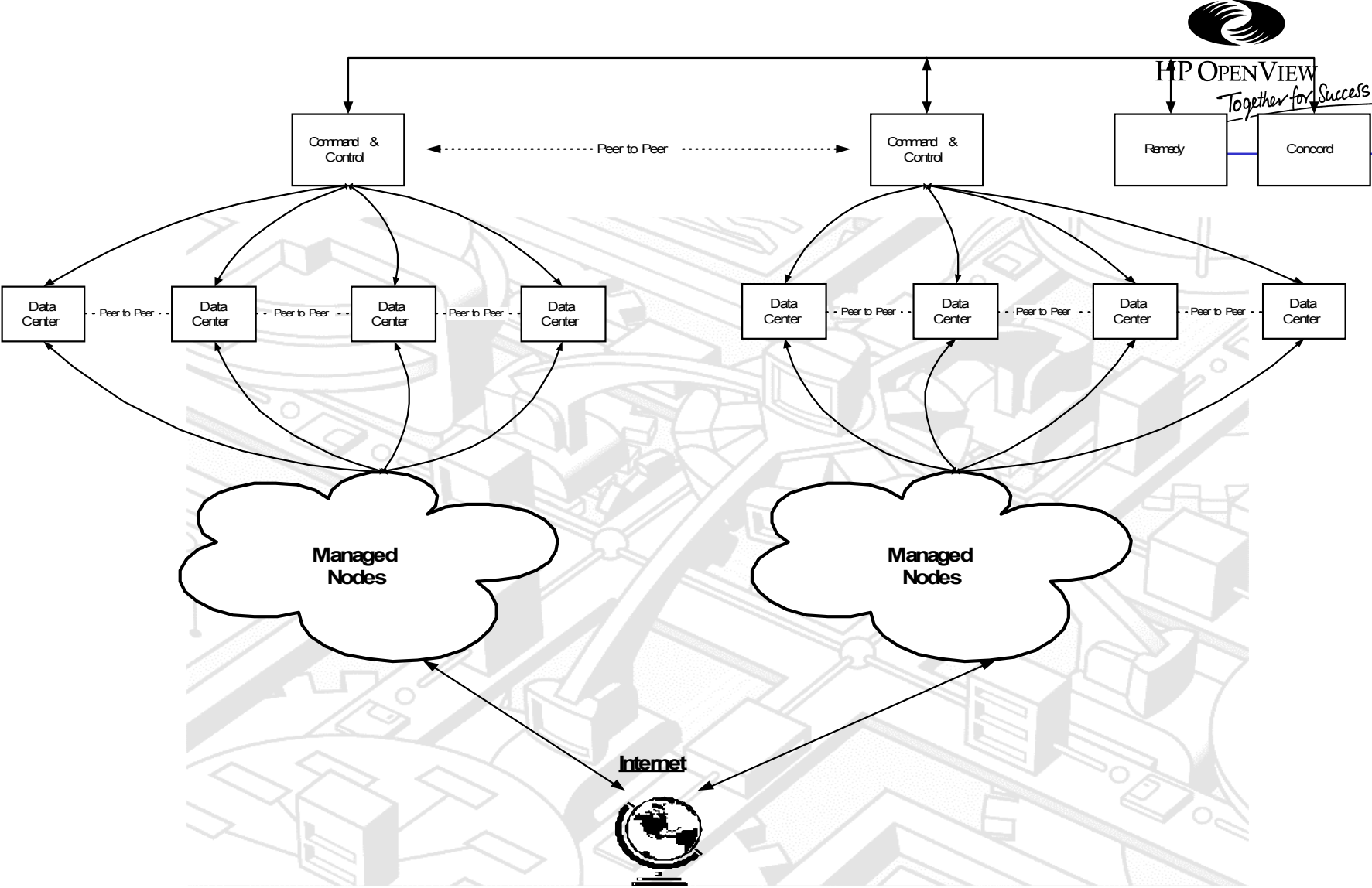


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Design Project Deliverables

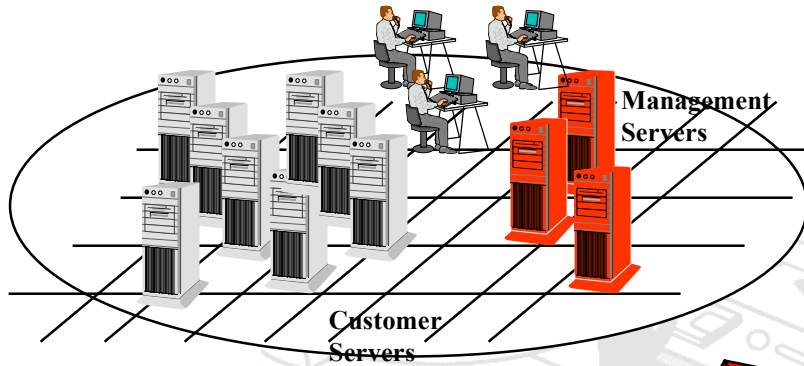


Architectural Model: Original



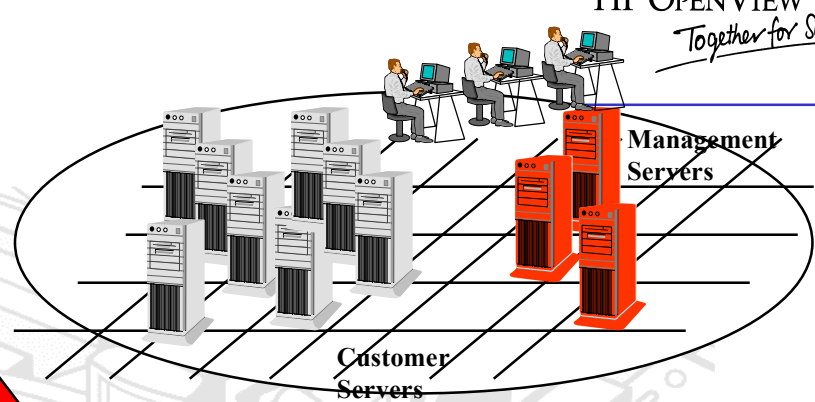
Regional Cyber Center (i.e. Newark)

Stationed in High Density Regional Cyber Center
Configured under the MoM in Command & Control
Pier Relationship with Other Regional Cyber Center



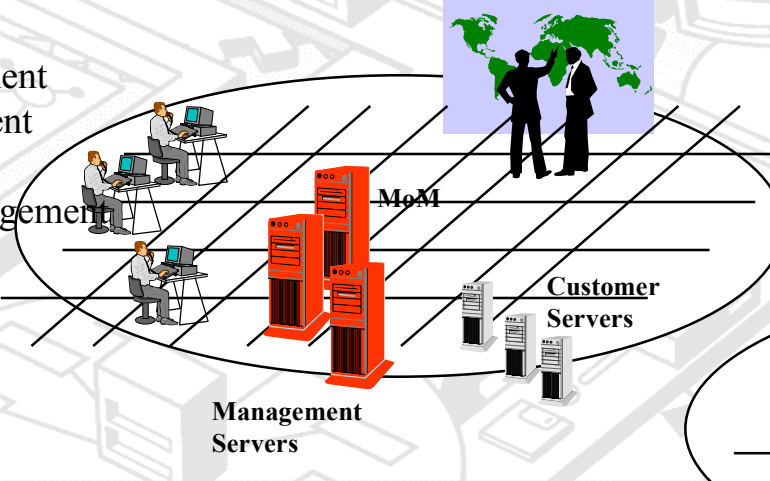
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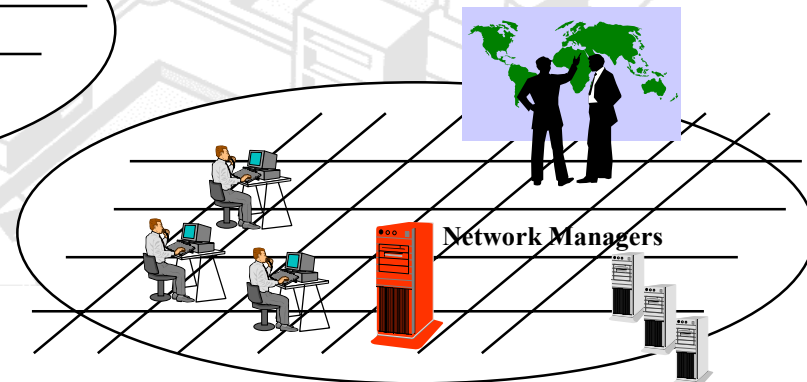


Weehawken Command and Control Center

Systems Management
Performance Management
Application Management
Database Management
Internet Services Management
Software Management
Security Management
Service Reporting
Service Views
Backup & Recovery
Help Desk (Denver)

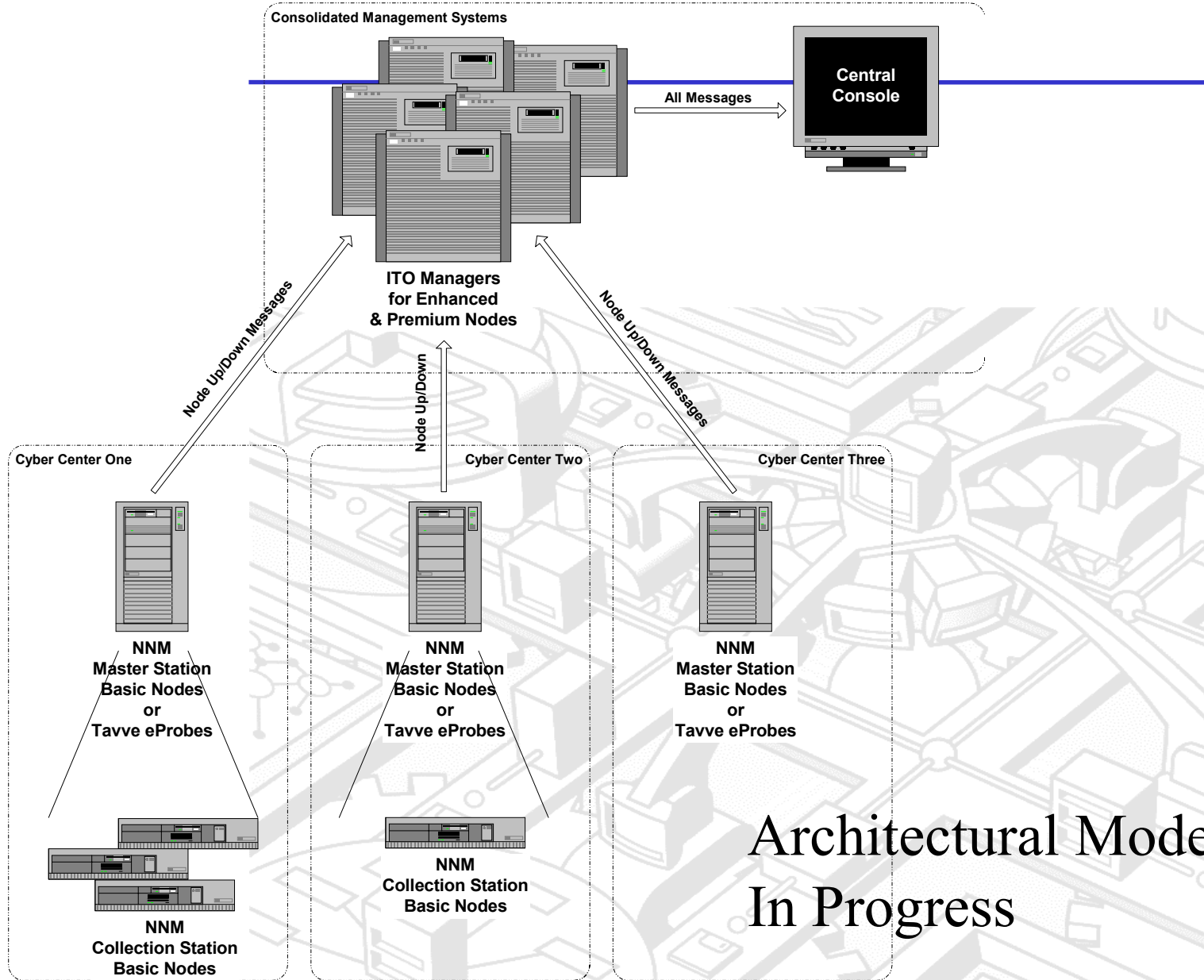


Architectural Model: Current Arlington Network Operations Center





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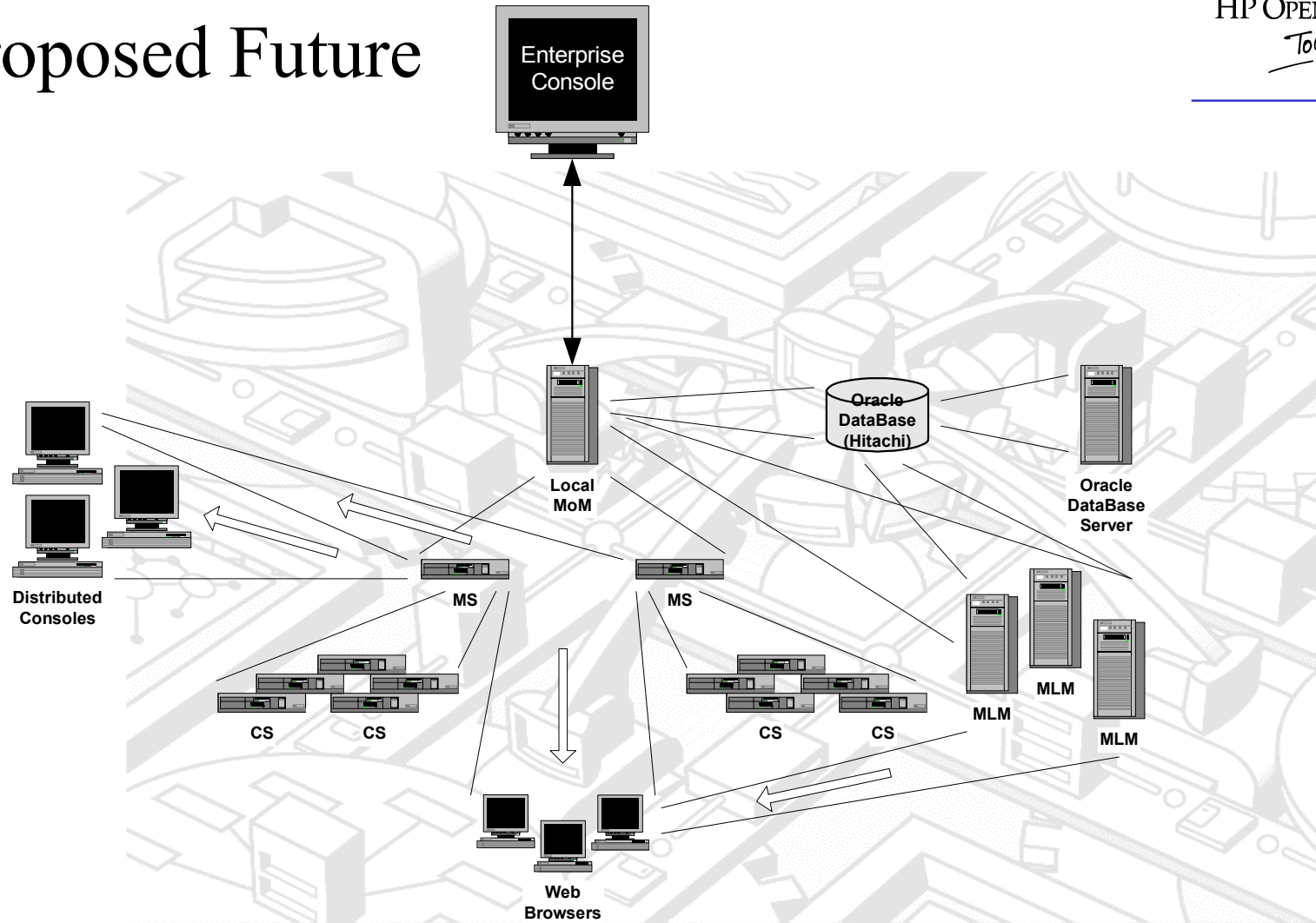


Architectural Model:
In Progress

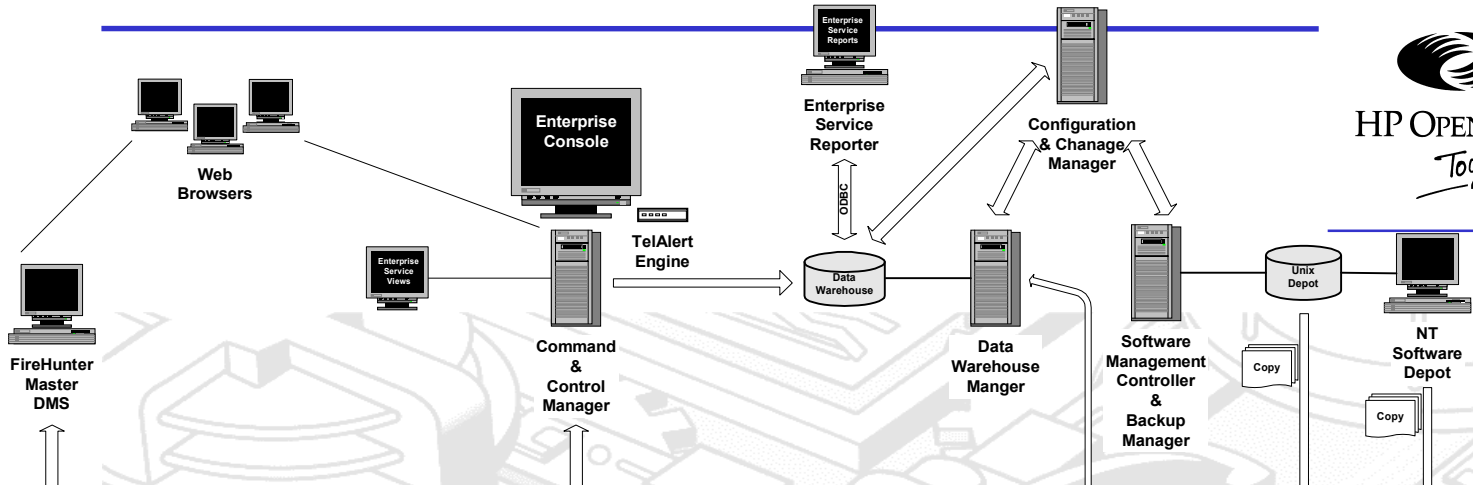
Architectural Model: Proposed Future



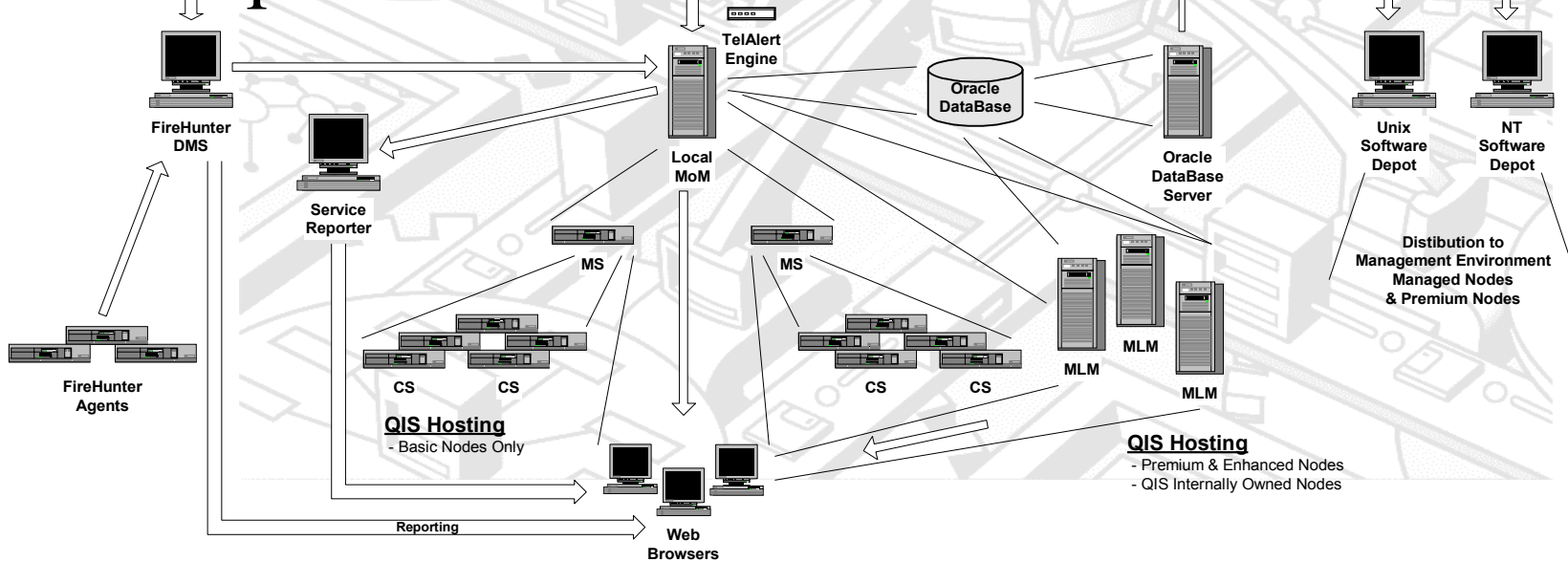
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Command & Control Physical Configuration



Managing an Enterprise of Enterprises



Individual Cyber Center Physical Configuration

Thanks for Attending



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