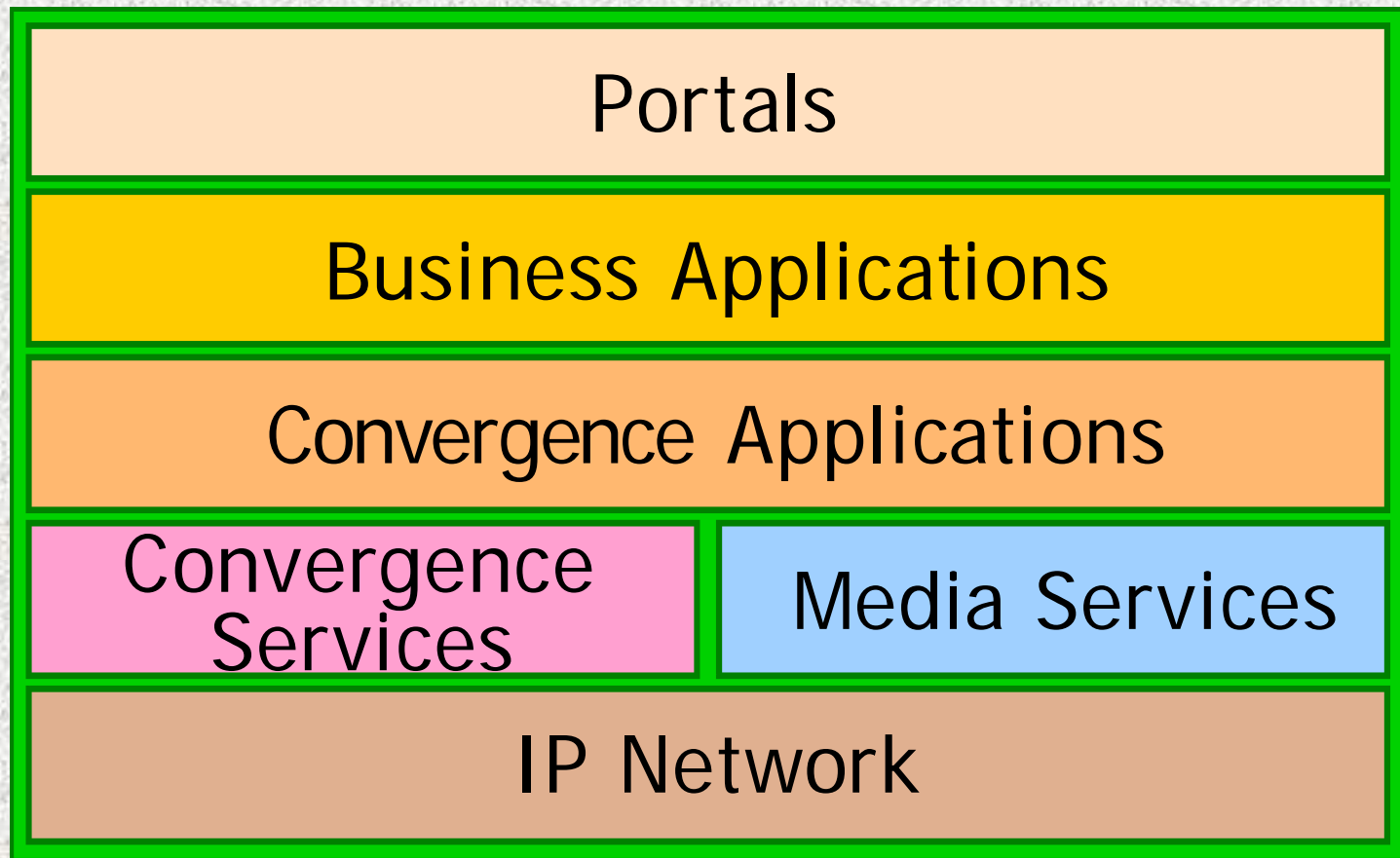


Managing Converged Networks



Presented at INTEROP
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Convergence Applications Architecture



What to Manage

- **Fault and status**
 - Up, down, registered
- **Configuration**
 - Hardware, software
- **Accounting and usage**
- **Performance**
 - Data network
 - Call quality
- **Security**

Managing the IP PBX for Success

- Deploying IP PBXs, gateways and IP phones remotely is part of the new IP network design.
- These resources are more intelligent than the legacy devices they replace.
- The remote device hardware and software require expanded staff knowledge.
- The IP VoIP devices have the attributes of data devices
- The remote staff will not have the ability to manage the VoIP devices
- The central IT staff can manage more resources through intelligent manage tools.

Key Benefits of Good Management

- Reduced Capital Expenditures
- Extended Asset Usage
- Reduced Cost of Operation
- Fewer Management Personnel
- Manage More Resources
- Fix Problems Faster
- Forecast Changes and Cost
- Ensure Delivery of Acceptable Services

IP Telephony Service Management

- Service Assurance
 - Infrastructure Problems
 - Monitoring Availability, Performance, Accuracy
 - Root Cause Identification and Correction
- Service Verification
 - Performance Targets
 - Service Level Agreements
- Service Forecast
 - Capacity Planning
 - Response to Performance Problems

Management: Do-It-Yourself or a Service

- Do-It-Yourself (There is no single product that does it all)
 - IP PBX Vendor
 - Third Party Vendor
 - Software resident in call server or separate system
- Service Offering
 - IP PBX Vendor
 - Third Party Vendor
- Standards Based
- Proprietary Implementation

Pieces of the Management Puzzle

- Call Quality
- Bandwidth Utilization
- Change Management
- Alerts and Alarms
- Gateway Utilization
- Security Management
- Device Availability
- Asset Management
- Network Assessment

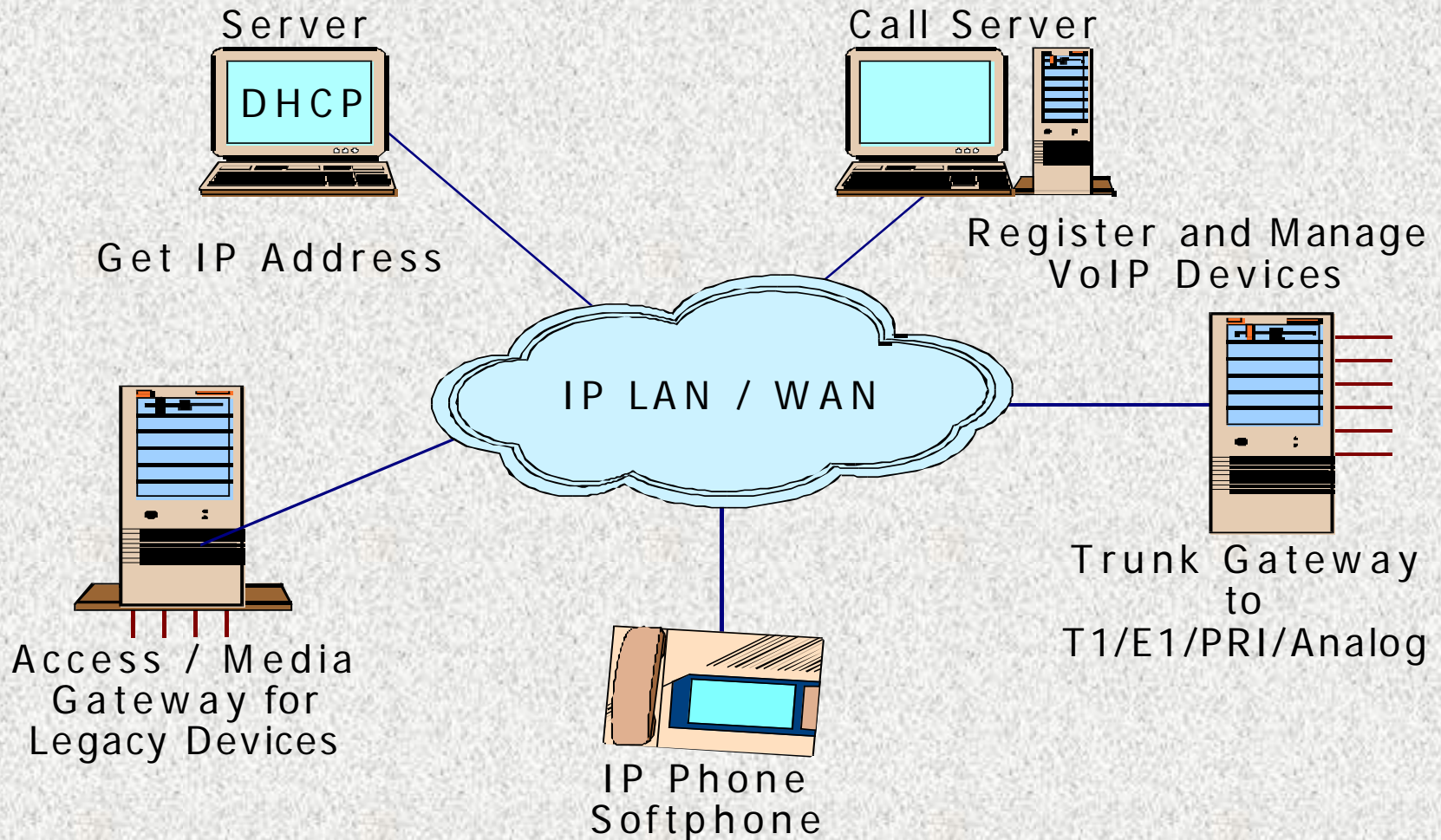
VoIP Service Levels (1)

- Voice Infrastructure
 - End to end connectivity and availability
 - Phone registration and churn
 - Network performance statistics (latency, packet loss, jitter)
 - Survivable call processing

VoIP Service Levels (2)

- Voice Applications
 - Application availability
 - Call quality
 - Gateway utilization
 - Server utilization
 - Call drops

IP PBX Components to Manage



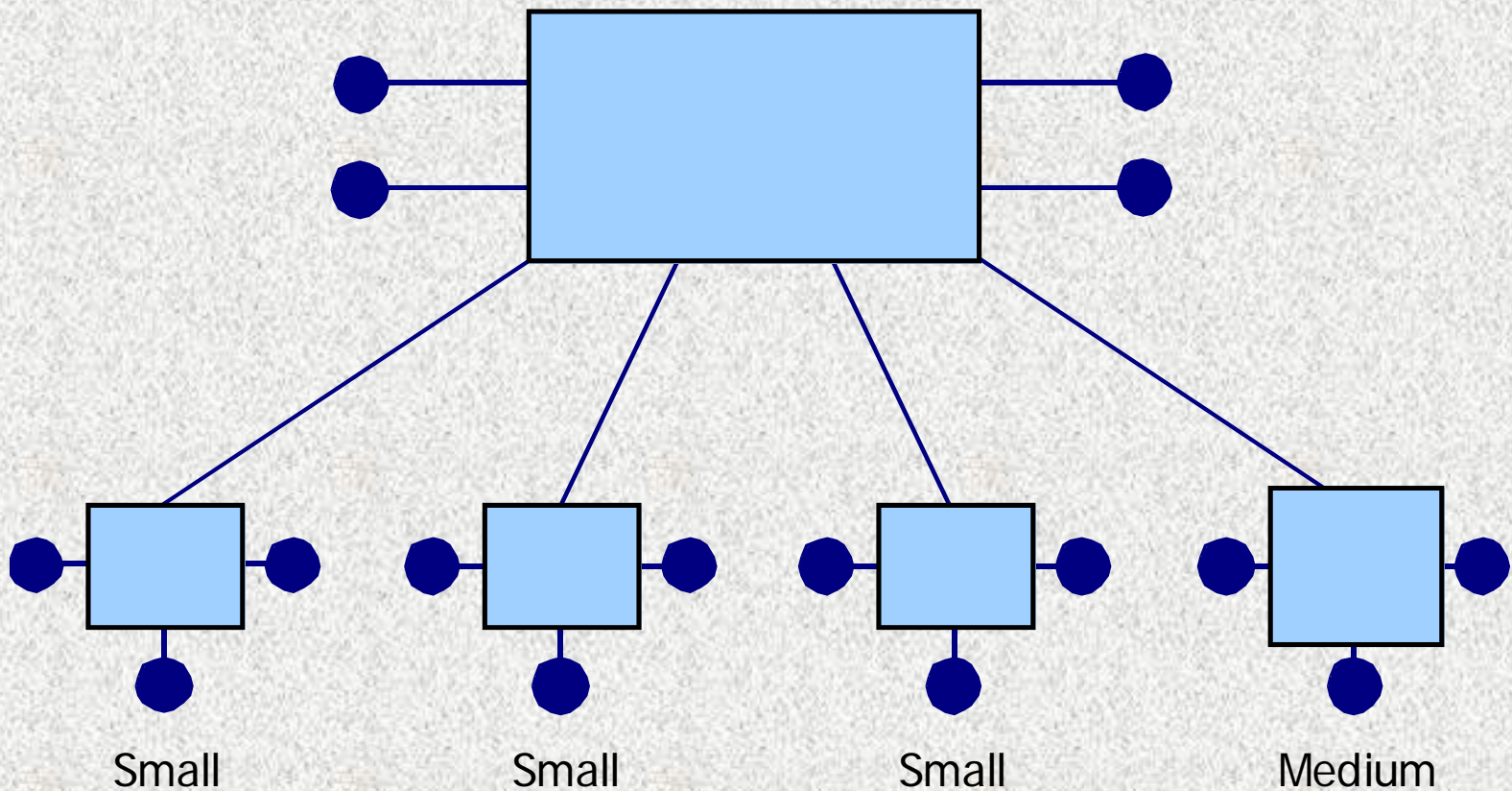
Management System Responsibilities

- Report Network Performance
- Display Network Impairments
- Measure Traffic and Utilization
- Alert to Device Failures
- Notify When Call Quality Impaired
- Operate Through Existing Data Network
- Report Status and Configurations of Registered Devices

Managing Software

- Operating system
- Applications (features and functions)
- Non telephony applications
- Versions, releases and patches
- Keeping OS and applications coordinated among many sites

Hierarchical/Distributed Management



Local Management View

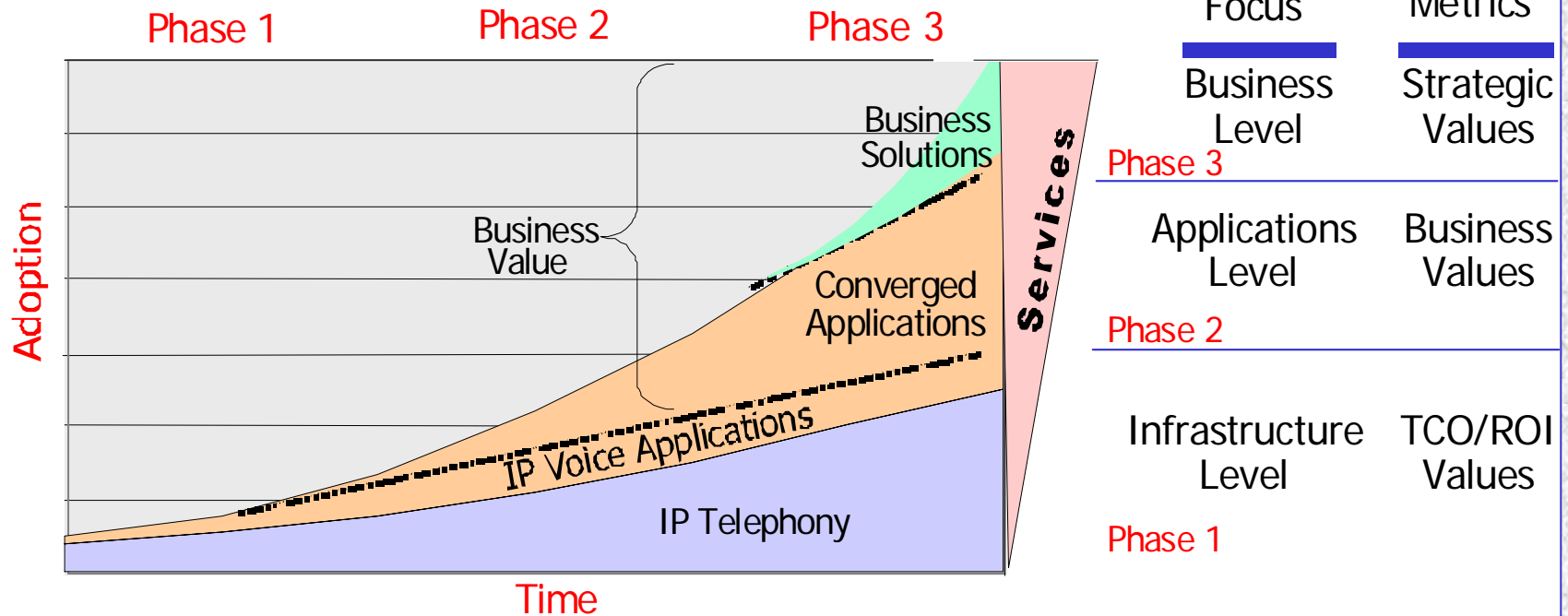
- Be Simple to Understand
- Provide an Intuitive and Simple Information Display
- Require Little Training to Use
- Allow Non-Technical Staff to Understand the Meaning of the Information and Take Appropriate Action
- Allow Limited Control Over Local Resources

Global Management View

- Have All of the Local Views
- Be Able to Override Local Control
- Backup Local Management
- Organize Information by Geographic Area
- Set Thresholds
- Customize Information Collection
- Customize Information Display
- Analyze the Information by Department and Division

Converged Applications Residence

IP Telephony and Convergence Evolution



Converged applications can reside almost anywhere.

Courtesy of InfoTech

THE END

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