

Optimizing the Performance of Cisco IP Communications

Managing IP Telephony as a Service

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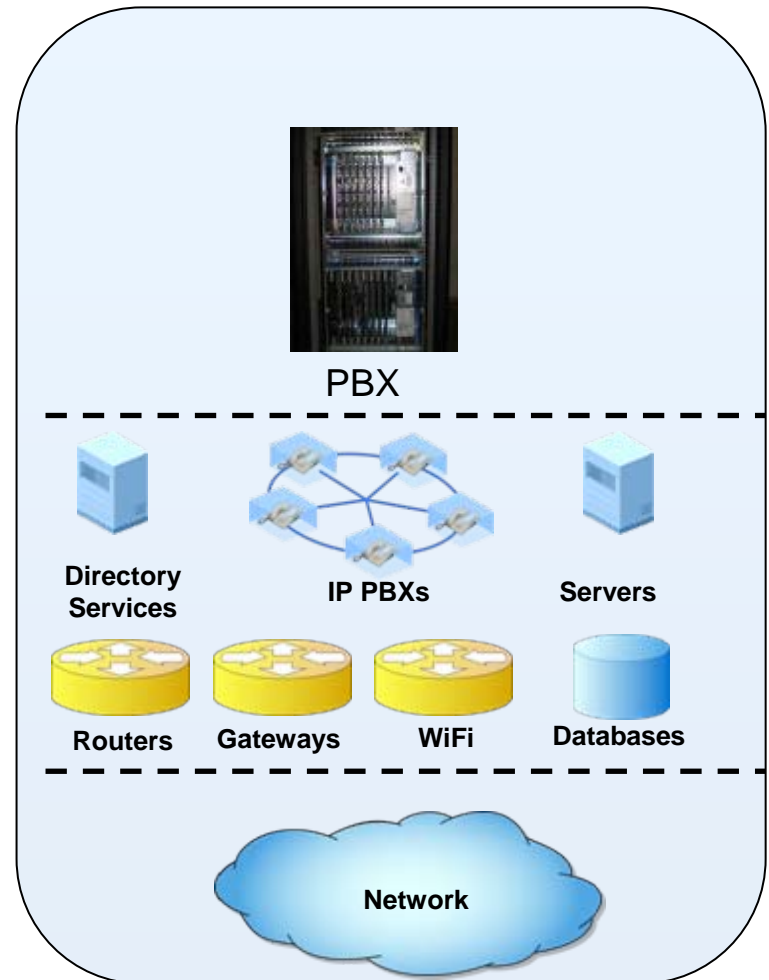
Overview

- ☒ Managing IP Telephony as a Service: Key Challenges
- ☒ Introducing Service Centric Management

Managing IP Telephony as a Service: Key Challenges

New Technology...

- ✎ Whereas legacy telephony systems were single element based entities...
- ✎ ...IP Telephony systems consist of distributed components that require individual attention to resources and their interactions
- ✎ IP Telephony brings new concerns of managing the quality and reliability of a mission-critical business application over a data network

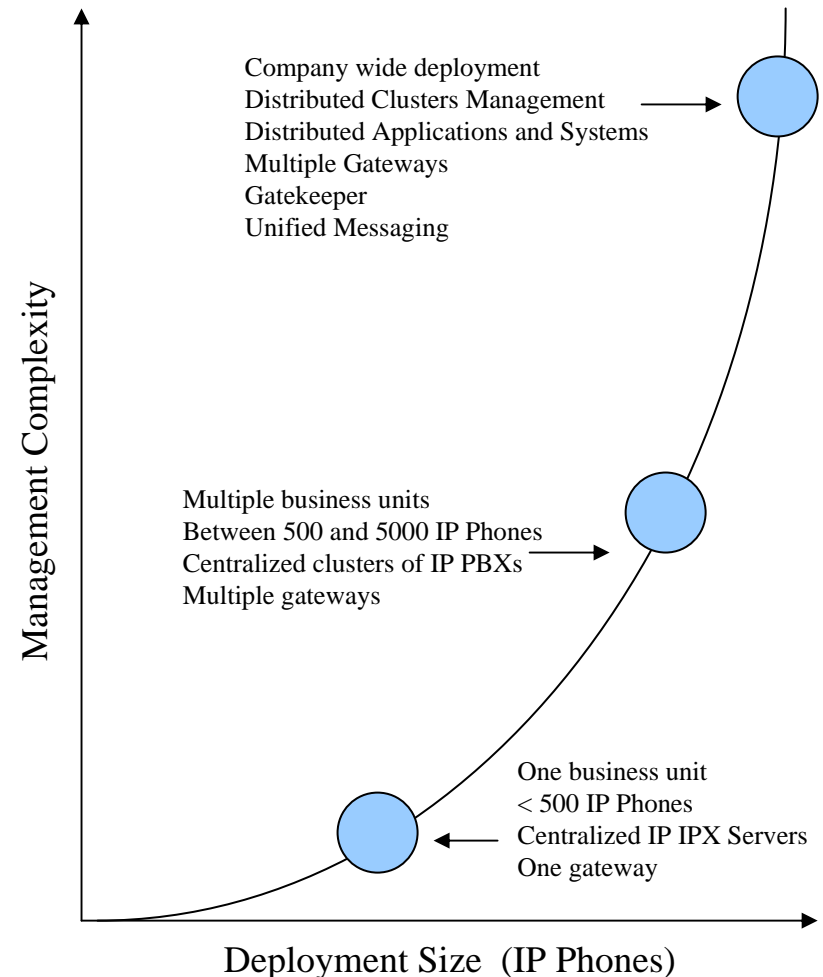


...Creating New Challenges

- ✎ How to expand your infrastructure capabilities without jeopardizing the existing services?
- ✎ How to get the big picture when infrastructure seems to be so fragmented and diversified?
 - ✎ Ability to make the right decision (action) based on the right information
 - ✎ How to commit to service availability and quality for a given number of VoIP users ?
- ✎ How to define new set of best practices
 - ✎ No time to reinvent the wheel
 - ✎ Can't afford risk to experiment

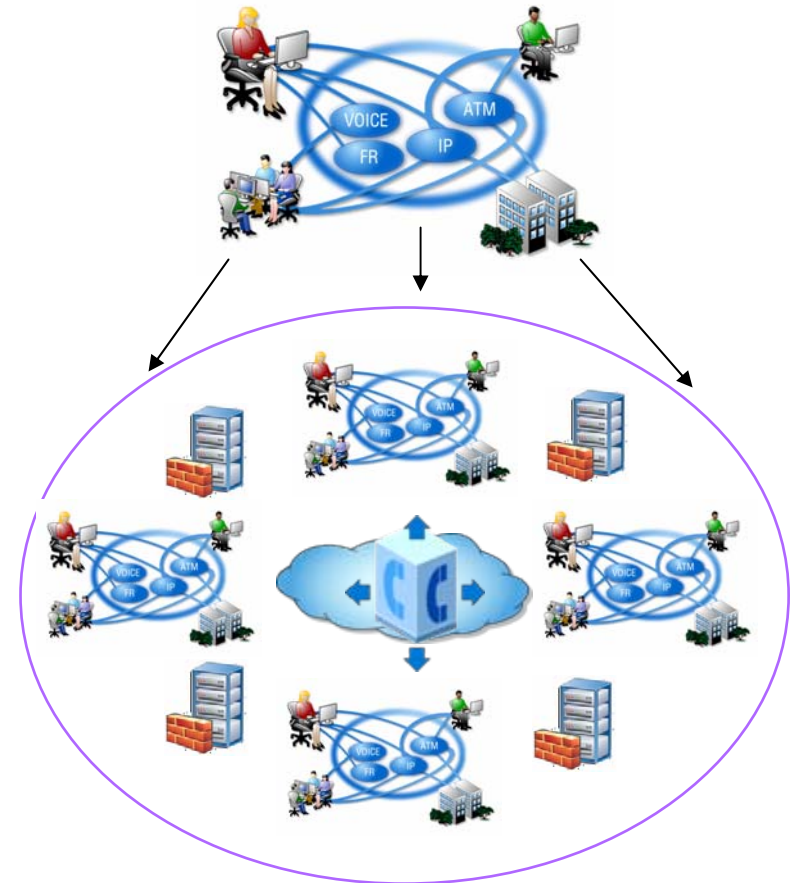
From Pilot to Production: Leaving the Comfort Zone

- ✿ IP Telephony has become increasingly popular among large enterprises and Service Providers
- ✿ Through pilots, IT organizations have developed awareness and understanding of new IP based architectures
- ✿ Proof of concepts are now common among enterprises and vendor selection is currently taking place or has just been completed
- ✿ But as IT organizations advance towards production, new challenges emerge, slowing down implementations and exposing management shortcomings



Moving to Production requires Full Visibility

- ☞ While scaling, will you continue to be:
 - ☞ Do you have full visibility on your infrastructure ?
 - ☞ Reacting quickly to problems ?
 - ☞ Proactive based on capacity management ?
 - ☞ Customer centric when supporting thousands of users ?
 - ☞ Efficient when facing with an ocean of alerts, KPIs and KQIs ?
 - ☞ Continue to commit to demanding SLAs



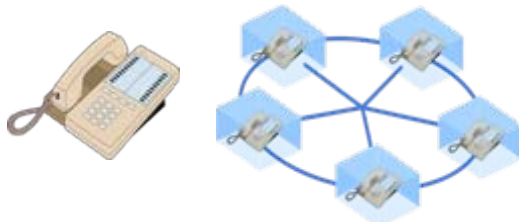
VoIP Management Requires A Step By Step Approach



Introducing Service Centric Management

IPT Service Centric Management Principles

Technology



Call Manager



Directory Services Router Gateway Wifi



Database Server Web Server TFTP Server

Workflows

Cross Silo

Reveal IT component interdependencies among the service delivery chain

Top Down

Tie service levels to the performance underlying infrastructure

Bottom Up

Assess resource performance degradation impact on service delivery

Actions

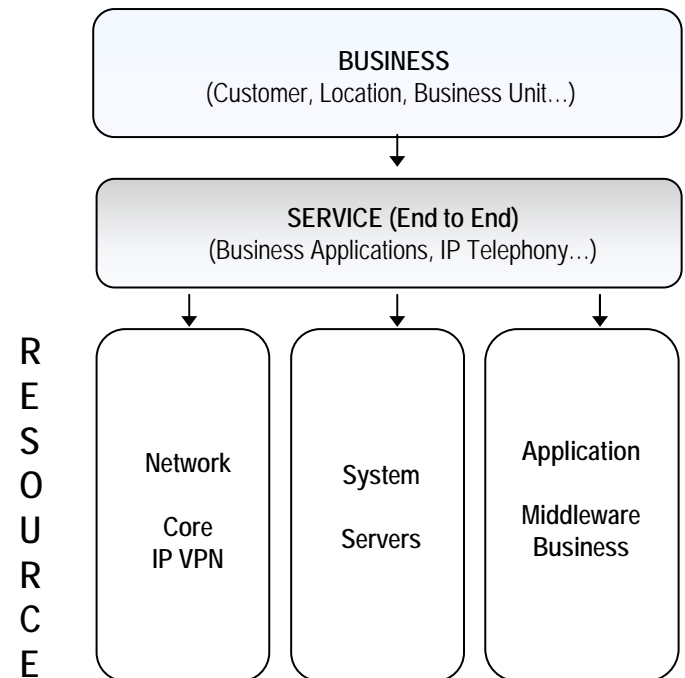
Predictive Problem Resolution

End-to-End Service-Level Management

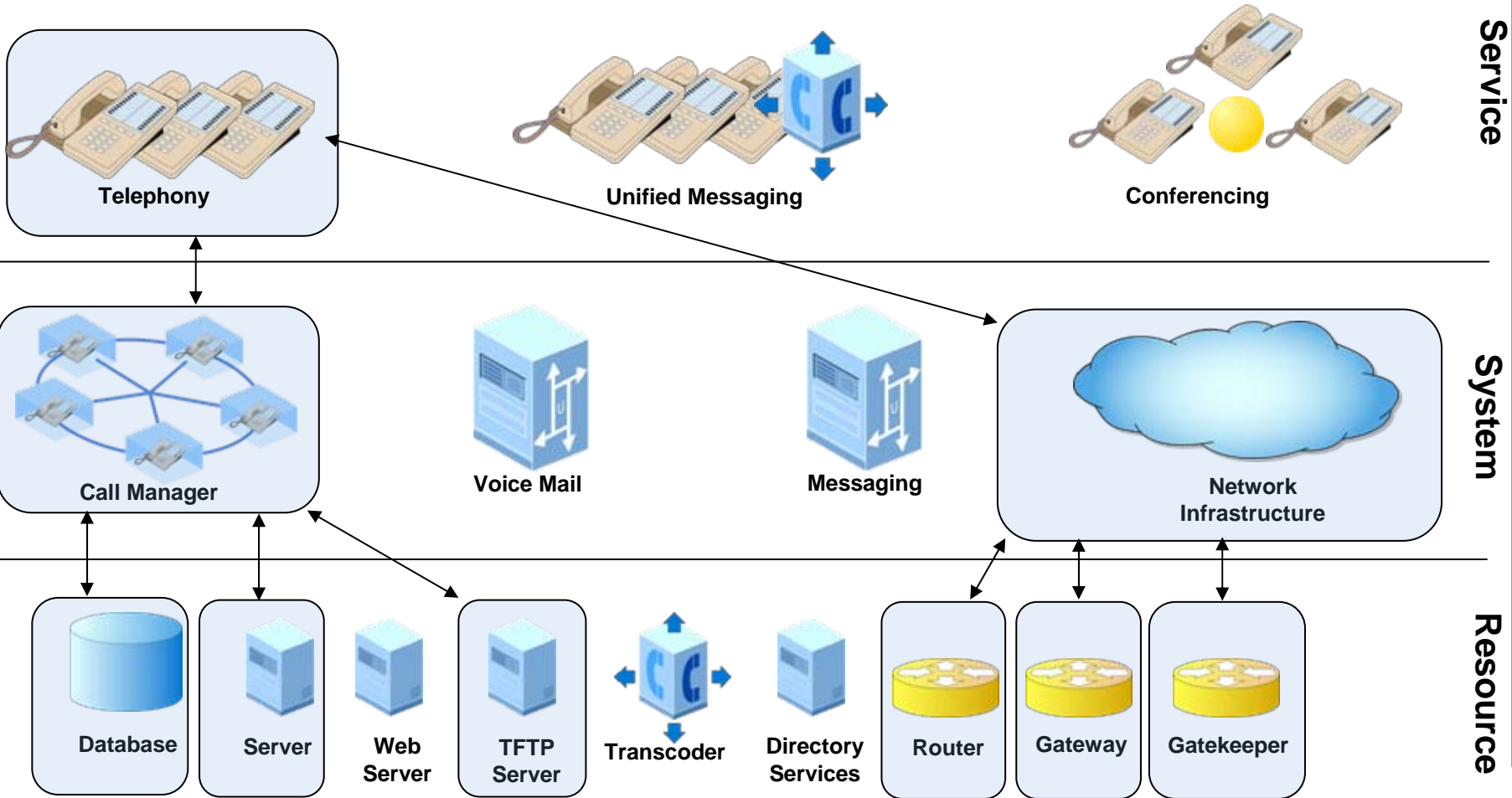
Service-Driven Capacity Planning

Aligning Service Levels to IT Performance

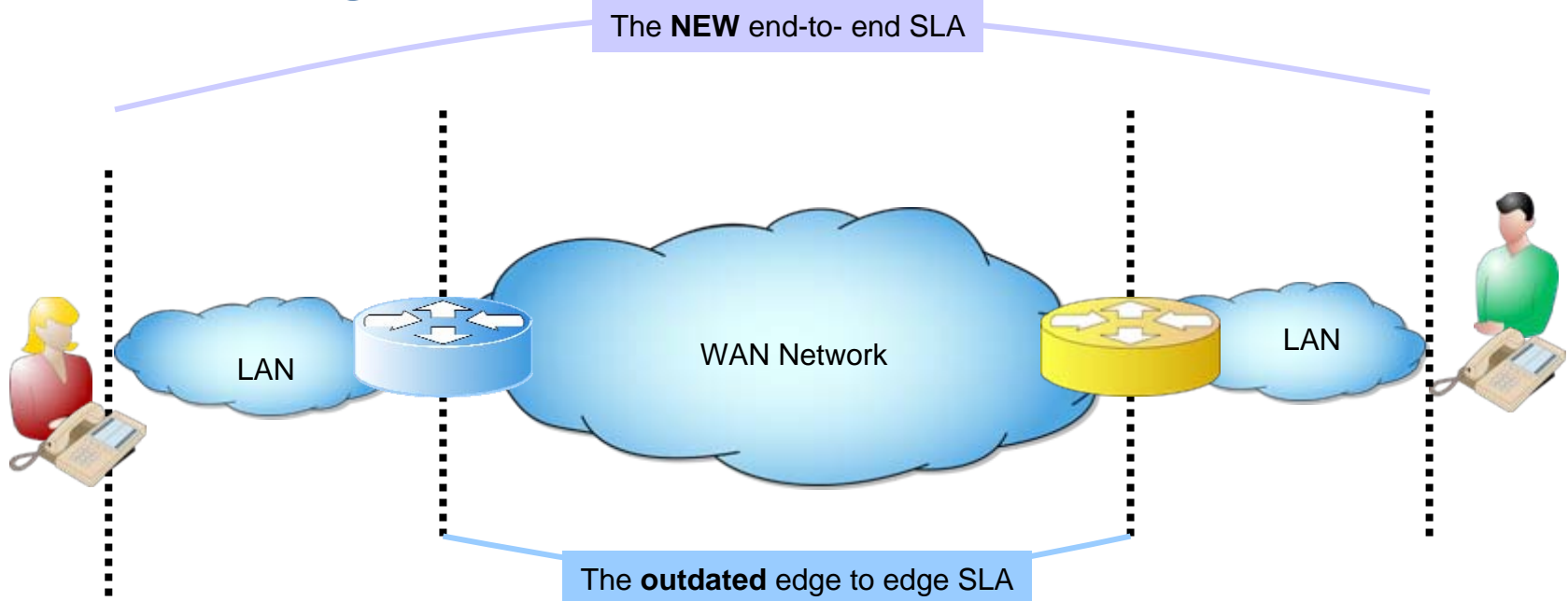
- ✎ Offer multiple perspectives
 - ✎ Cross-service
 - ✎ Cross-silo
 - ✎ Cross-functional
- ✎ Provide top-down visibility from business to service to infrastructure
- ✎ Ensure service delivery for lowest risk and lowest possible cost
- ✎ Prioritize problem resolutions according to business priority



Service Modeling



Extending Service Levels to the End User



End-to-End Value driven KQIs and KPIs

Resource and Site to Site Performance

- ☛ Reachability
- ☛ MOS, Delay, Jitter, Loss

Application Monitoring on the Access Link

- ☛ Traffic Distribution by Protocol
- ☛ Applications
- ☛ QoS

IP Phone to IP phone

- ☛ Reachability
- ☛ Serviceability
- ☛ Call Quality

How to Represent and Measure a Service Level

Different levels and many perspectives

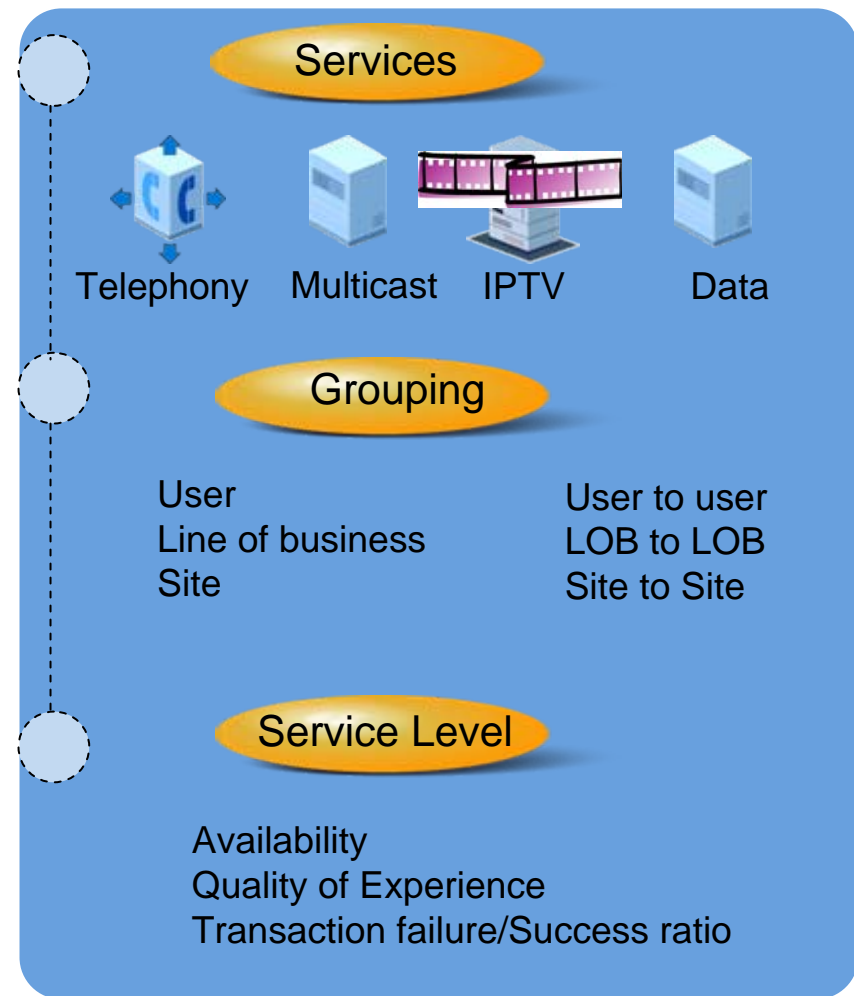
- ☞ Aggregated view
 - ☞ Organization
 - ☞ Users
- ☞ End-to-End view
 - ☞ Organization to organization
 - ☞ User to user

Key metrics

- ☞ Availability
- ☞ Quality of experience
- ☞ Reliability

Defining service levels

- ☞ Leveraging industry standard
 - ☞ The MOS (mean opinion score)
 - ☞ Delay to dial one
 - ☞ Busy signal
 - ☞ ...

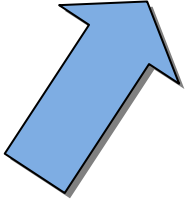


Measuring Service Levels: Active vs. Passive

Active Measurements	Passive Measurements
<ul style="list-style-type: none"> ✘ Intrusive; impacts infrastructure capacity and performance 	<ul style="list-style-type: none"> ✘ Non-intrusive as they do not add any artificial voice or signaling traffic to the environment nor do they stress the system
<ul style="list-style-type: none"> ✘ Provides the ultimate data source for predictive analysis and network readiness assessment 	<ul style="list-style-type: none"> ✘ Reports on service quality in a most meaningful way by capturing actual quality of experience ✘ Legitimate data source for service level reporting
<ul style="list-style-type: none"> ✘ Consistent measurements feed forecasting and baselining reports ✘ Anticipates risk of service degradations and service level violations 	<ul style="list-style-type: none"> ✘ Collect information only as-it-happens, which disqualifies them for predictive analysis (no measurement if no call) ✘ Informs of service level violations, after the fact

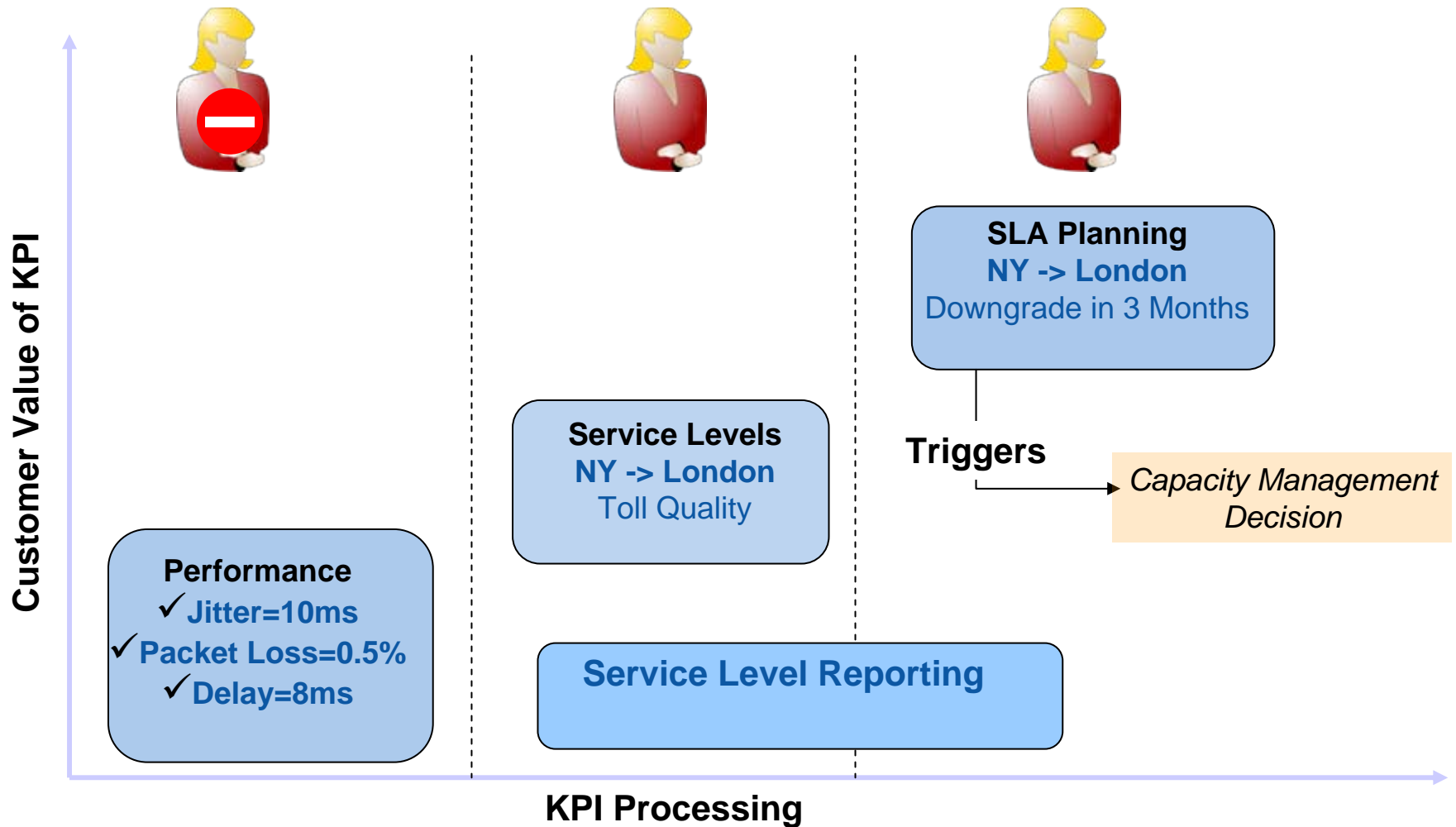
Combining Active and Passive measurements bring strategic value

Optimizing Service Levels



- ✎ Assess capacity needs to deliver high quality user experience
 - ✎ Manage IT capacity to forecast service impacting resource exhaustion date
- ✎ Measure and forecast end-to-end performance for converged applications
 - ✎ Measure Delay, Packet Loss, and Jitter to forecast transaction time out and quality of experience degradation
- ✎ Provide insight into class-based quality of service around differentiated traffic
 - ✎ Increase VoIP quality of experience without impacting current data services
- ✎ Identify underutilized resources that can be reallocated to better contribute to overall service delivery

Service Level Reporting: Transforming Data into Information



Service-Centric Management Benefits

- ✎ Helps IT Organizations to harness the value of converged networks
- ✎ Starting from the business requirements, provide confidence and methodology to deploy new applications and services through one unified management framework
- ✎ Build long-term cross-silo operational processes that will adapt to new opportunities
- ✎ Provide a business justification to infrastructure upgrades