Agenda

- IBM Service Management-Visibility, Control, Automation
- IBM Leadership in Service Assurance
- Overview of Service Assurance
  - How Tivoli is already leading in Service Assurance
  - Customer Challenges
- 3 Solutions for 5 Challenges
  - Solution overview
  - Case Study
- Why IBM?
  - Customer Successes in Telecommunications Service Providers
  - World Class Partnerships & Alliances
IBM Service Management (ISM)
An Integrated Approach to Getting Business Results

Visibility
See your business

Control
Govern your assets

Automation
Build agility into Operations

Only IBM delivers integrated visibility across Business & IT Audiences.

e.g. Contextual LoB, Compliance, Security, Service, & Domain Dashboards

Only IBM delivers integrated control across Business & IT Assets.

e.g. EAM, IT Asset Mgmt, Change & Config, Access & Identity Mgmt, Data Mgmt.

Only IBM delivers integrated automation across Business & IT Operations.

e.g. Enterprise Ops, Service provider Ops, IT Ops, Security Ops, Storage Ops...
### ISM - Overcoming the Barriers

*‘Operations’-specific focal points based on real-world pains*

<table>
<thead>
<tr>
<th>IT Operations</th>
<th>Service Delivery &amp; Process Automation</th>
<th>Control cost and quality of service delivery through process automation and optimization.</th>
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<tr>
<td></td>
<td>Service Availability &amp; Performance</td>
<td>Optimize infrastructure utilization and service availability by moving from re-active to pro-active management.</td>
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<td>SOA Management</td>
<td>Deliver a web-services infrastructure that is agile, high-performing and secure.</td>
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<td>Storage Operations</td>
<td>Storage and Information Management</td>
<td>Create highly resilient storage infrastructures, protect valuable information assets and comply with data protection policies.</td>
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<td>Enterprise Operations</td>
<td>Asset and Financial Management</td>
<td>Maximize the performance and lifetime value of all business assets across the enterprise.</td>
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<tr>
<td>Service Provider Ops.</td>
<td>Service Assurance</td>
<td>Improve flexibility, reduce operating expenses, improve customer satisfaction and successfully integrate future network technologies.</td>
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Service Assurance – Service Provider Management solutions with Enterprise added value

- **Delivering Convergence**
  - Not just Fixed and Mobile but IT and Network Operations
  - Inclusive of the Data Center
  - Next Generation Services delivered with Applications on Servers as part of the core infrastructure
  - Building on eTOM and ITIL frameworks

- **Interoperability and Flexibility**
  - Leveraging Service Oriented Architectures and Service Delivery Platforms
  - One open architecture yet tightly integrated for optimised assurance.

- **Unrivalled Coverage**
  - Collect, process, analyze and prioritize data from more sources than ever before including optical, radio, and wired networks through to servers and applications.

- **Unrivalled Scale**
  - Huge event processing capabilities
  - Huge data volume processing for performance
  - Real-time reporting and visualisation
What Tivoli Delivers for Service Providers
Manage the services infrastructure thru operational efficiency interlinked to business context

<table>
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<tr>
<th>Service Excellence</th>
<th>Realtime visibility and monitoring to ensure service availability and quality</th>
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<tr>
<td>Competitive Advantage</td>
<td>Faster time to market, increased responsiveness to business and technology changes</td>
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<tr>
<td>Operational Efficiency</td>
<td>More efficient and productive deployment of human and technology resources</td>
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<td>Risk Mitigation</td>
<td>Security incident response and reporting for compliance across Next Generation network and service infrastructure</td>
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<tr>
<td>Revenue Protection</td>
<td>Realtime end-to-end service visibility and predictive intelligence for problem avoidance</td>
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“As our business grows, we must deal with increasing complexity while delivering high-quality IT services to our business users. The combined Netcool and Tivoli suite will help us meet the challenge.”
— Mr. Yuan Jun De, Deputy General Manager, Bank of China Information Center

"We rely on Netcool to help us assure the services, end-to-end, that we deliver to our customers. We look forward to continued innovation from IBM as we tackle next generation service assurance challenges."
— Peter Hascher, Head of Development at BT

“We are excited about the opportunity for increased synergy between the Tivoli and Netcool suites. The combined IBM solution is an important foundation for our IT & network service assurance management roadmap."
— Yves Vlamijnck, Team Mgr, Network and IT Monitoring, Belgacom
Converged Services require Converged Manageability

- New services “Triple Play” (voice / video / data)
- Converged services include applications (VoD, music)
- Revenue based service management

- Fixed Mobile Convergence
- Converged service assurance (fault / performance / security)
- Business / service alignment (deploy / monitor / manage / SLM)

An integrated, component-based operations environment drives efficiencies and enables management of the customer’s experience
5 Common Customer Challenges

**IMPROVE CUSTOMER RETENTION** – Next Generation Services must deliver on Enterprise SLAs and deliver consistent quality with each new service to minimise churn.

**REDUCE DELIVERY COST** – Lack of integration between service creation, service execution and service assurance and their individual components makes service introduction expensive.

**INCREASE OPERATIONAL EFFICIENCY** – Network and services infrastructure needs to be viewed as a holistic entity with all events consolidated and viewed by operators with a complete view of the service provider global deployment.

**MANAGE COMPLEXITY** – NGNs create multiple new potential points of failure, bottlenecks and interoperability challenges including new technology integrations.

**MINIMISE NEW CAPEX** – Failure to fully utilise existing equipment is commonplace, improving existing operational efficiency requires higher levels of automation.
Service Quality Management
Improve Customer Retention

*With the Tivoli solutions, service providers have real-time and historical status of services being delivered with a business context highlighting potential costs and revenue impact*

**Highlighted Capabilities**

**Customer Experience Management**
- Pre-defined analytics views: individual, service, customer group, handsets, networks
- Per session information for quality assessment

**SLA and Service Performance Management**
- Manage *external* SLAs and summarized service quality for enterprises and subscriber profiles

**Root Cause Analysis**
- Rapid problem isolation leveraging per session information for linkage to improved customer care responsiveness and accuracy.

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**Service Quality Management Solution Checklist**

- **Real-time view of individual customer experience**
- **Prepackaged service metrics**
- **Collated individual quality metrics for per Enterprise summary information**
- **Proactive SLA Management ensuring service quality levels are achieved**
Service Quality Management
Reduce Delivery Cost

With the Tivoli solutions, service providers have real-time and historical status of services being delivered with a business context highlighting potential costs and revenue impact.

Service Quality Management Solution Checklist

- Real-Time and Historical view of service quality summarized across service infrastructure
- Predictive view of service quality trends
- Business context (revenue, cost and customer) applied to service summary information
- Management of internal and external committed service levels and agreements and financial impacts

Highlighted Capabilities

Real-Time Service Status Monitoring
- Unified Operational Dashboard
- Real-Time Service Availability & Performance

SLA and Service Performance Management
- Manage *internal* OLAs and summarised service quality for enterprises and subscriber demographics
- Identify service degradations with highest business impact and track improvement

Root Cause Analysis
- Visual root cause analysis based on service dependency models driving improved speed of diagnosis and remediation
Large US Carrier

Service Management and Network Performance Optimization

Business challenge
They had identified a business requirement to manage services and improve network performance via:

- SLA management, conformance monitoring and reporting
- Prioritization of network restoration activities
- Prioritization of network evolution based on measured service impacts
- Benchmarking of service quality across a broad service offering

Solution
The deployment of a SQM/SLA solution addressed these needs and satisfied the following key business drivers:

- Prioritization of network restoration activities
- Efficient management of service QoS and SLAs
- Increase enterprise and overall customer satisfaction
- Increase efficient use of resources based on business impact

ROI / Value Achieved

- Increased enterprise customer retention and growth through the provision of commercial SLAs.
- Evolution toward a more customer-centric organisation by enabling integration of customer-facing and internal operations’ business processes.
- Establishment of strong end-to-end service quality benchmarks
- Rapid detection, localization and causal analysis of service-affecting problems.

“Vallent’s wireless technology expertise coupled with their understanding of our business objectives convinced us to select ServiceAssure. Their ability to provide a solution that integrated our disparate OSS systems together for a complete-end-to-end solution was a key factor in our decision process. With Vallent, we now have the ability to implement the newest technology available to profitably manage our networks and customers.”

Name withheld for customer slides.

Solution Components

- IBM Tivoli Netcool Service Quality Management offering
5 Key Challenges for Optimized Performance

**IMPROVE CUSTOMER RETENTION** – Next Generation Services must deliver on Enterprise SLAs and deliver consistent quality with each new service to minimise churn.

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Consolidated Operations Management
Increase Operational Efficiency

With the Tivoli solution, service providers reduce the # of events so operators can focus on the real problem at hand. Typical event reduction rates for fully tuned systems are between 100:1 and 1000:1.

Consolidated Operations Management Solution Checklist

- Close integration between discovered topology and event management for rapid root cause analysis
- Proactively monitor entire services infrastructure to ensure uninterrupted availability of services
- Collect, filter, correlate and enrich events to reduce MTTR
- Escalation to all major trouble ticket systems

Highlighted Capabilities

**Business Correlation**
- Real-time business context providing customer and service level validation

**Event Consolidation**
- Throughput of greater than 100 million events/day
- Over 1000 probes and gateways targeted at event collection

**Root Cause Analysis**
- Collect and validate discovered services infrastructure inc networks, servers and apps
- Visualise topology and target fault isolation
T-Mobile Austria

End-to-end visibility of the wireless network

Business challenge

T-Mobile Austria sought operational efficiencies by incorporating several regional Service Operation Centers into a single center based in Bonn, Germany. T-Mobile needed a central management tool with the flexibility to integrate with a diverse number of third-party applications and devices, and with the scalability to consolidate hundreds of thousands of events in real time.

Solution

T-Mobile Austria uses Tivoli Netcool software as an end-to-end management solution with the scalability to consolidate and visualize a vast and complex network environment.

ROI / Value Achieved

- Maximised operational efficiency thru cost reduction achieved by removing regional SOCs
- Reduced average number of events by a factor of 100
- Improved SLA adherence
- Increased customer retention

“Tivoli Netcool service monitors manage our Internet services, our mobile radio networks, and most importantly, provide round-the-clock management of our host and server devices. This ensures that important applications will never fail without being noticed.”
–Dr. Sabine Ringhofer, Senior Manager, Network Operations, T-Mobile Austria

Solution Components

- IBM Tivoli Netcool software
5 Common Customer Challenges

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Network Performance Management
Manage Complexity and Minimise New Capex

Allows network operations to analyze the ever-increasing volumes of data and to make it available to a wider audience for wireless and wireline services infrastructure owners.

Performance Management Solution Checklist
• Provide assessment of network performance for services run over IP and Radio environments
• Identify current and future network bottlenecks and capacity planning issues
• Seamless integration to Fault solutions for immediate alerting to operations center personnel
• Provide key customer visibility of network utilisation and trending

Highlighted Capabilities

Integration to Consolidated Operations
• Automated alerting based on thresholds to facilitate both proactive and reactive actions

Capacity Planning
• Provide historical and predictive detail of service and component utilisation across entire infrastructure to maximise ROI

Service Performance
• Track complex services across entire infrastructure for quality and adherence to agreed service levels
• Provide portal access for customer reporting
NII Holdings Inc (Nextel Mexico)

Centralised Performance Management & Historical Reporting

Business challenge
Nextel required the new centralised performance management system to support the introduction of the iDEN network. Proactively they wanted to improve service quality but within a restricted budget and short timeframe for implementation so vendor expertise was paramount.

Solution
The deployment of the Vallent performance management solution addressed these needs and satisfied the following key business drivers:

- Integration with existing systems
- Reduce total cost of ownership
- Customisable reports for future requirements
- Local professional services to work closely with the in-house team.

ROI / Value Achieved

- Assured delivery from vendor working closely with Motorola/Nortel iDEN technology.
- Existing expertise in deploying iDEN management solutions reducing implementation time.
- Delivered functionality within the available budget and timeline.

“NII Holdings is committed to offering the most advanced and high quality communications solutions to business customers through iDEN technology, which provides unparalleled reliability of voice and data services. Due to our success in profitably building and growing our subscriber base, we are expanding in the Latin American markets where we operate. As a result, we need a real-time performance management solution that will enable us to maintain the highest possible service quality throughout the entire network. Thus, we selected Vallent based on their expertise in wireless service quality, which includes a unique and detailed understanding of iDEN.”
Allan Strauss, CTO NII Holdings Inc

Solution Components

- IBM Tivoli Netcool Performance Management solution
## IBM Solutions Solving 5 Service Assurance Challenges that Impact your Company’s Bottom Line

1. Improve Customer Retention
2. Reduce Delivery Cost
3. Increase Operational Efficiency
4. Manage Complexity
5. Minimise New Capex

## 10 Technology Capabilities to Optimize Service Assurance

1. Service Quality Management
2. Service Level Management
3. Service Performance
4. Root Cause Analysis
5. Event Consolidation
6. Business Correlation
7. Customer Experience Management
8. Historical and Predictive Trending
9. Capacity Planning
10. COTS Service Metrics & Reports
<table>
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<th>Why IBM?</th>
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<tr>
<td><strong>Unified Solution</strong></td>
<td>✓ Only vendor with leading solutions across performance, service and fault management all integrated to maximise operational effectiveness</td>
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<tr>
<td><strong>End to End Solutions</strong></td>
<td>✓ Delivery of End to End Solutions linking service creation, service execution, service delivery platforms and service assurance from our own software capabilities</td>
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| **Breadth of Offering**   | ✓ Integration to Element Management Systems and thousands of device types across network, server and application environments.  
  ✓ Integration with IBM & 3rd party service desks, CMDBs & event consoles  
  ✓ Latest generation technology integrations Service lifecycle management integration with Rational and WebSphere |
| **Ease of Navigation & Use** | ✓ Standardization of navigation and user interface through common components being rolled out across entire service assurance portfolio |
| **Scalability**            | ✓ Proven record delivering throughput across wireless and wireline  
  ✓ Event engine proven at more than 100 Million events in largest carriers |
| **Industry Expertise & Partnership** | ✓ Deep Telecoms expertise from Micromuse & Vallent bringing market leading technology and 1200 service provider solution experts together  
  ✓ Key Service Assurance partner to major NEPs including Alcatel-Lucent, Cisco, Huawei, and Nortel as well as segment leaders like Amdocs |
Tivoli Netcool - Managing World’s Leading Service Provider Networks

**AMERICAS**
- AT&T
- BCE (Bell Canada)
- Cablevision
- Comcast
- Cox Comm
- Earthlink
- Sprint Nextel
- Suncom
- Telus
- Time Warner Cable
- Verio
- Verizon
- Qwest

**EMEA**
- Belgacom
- British Telecom
- Cable & Wireless
- Cablecom
- Deutsche Telecom
- France Telecom
- KPN
- O2
- Swisscom
- T-Mobile
- Telecom Italia
- Telefonica
- Telekom Austria
- Telenor
- TeliaSonera
- Telkom South Africa
- Virgin Media
- Vodafone

**ASIA PACIFIC**
- China Netcom
- China Telecom
- Hong Kong CSL
- KDDI
- NTT
- Singtel
- SmarTone
- Softbank Telecom
- Telstra
- Telecom New Zealand
World-Class Partnerships and Alliances

PLUS...

- Over 100 expert channel partners take our solutions to market worldwide
- A robust technology alliance program that increases Tivoli’s broad reach