

# Tivoli Netcool for Service Providers: Portfolio Overview and Roadmap

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# Agenda

- Tivoli Strategy for CSP's
- Netcool Solution Overview
- Netcool Product Roadmaps
- Wrap up and Q & A

# Dramatic changes in the communications industry are creating new opportunities for service providers

**Disruptive competitors** - drive down profit margins

- 76% of Telecom CEOs consider **OTT service providers as the greatest competitive threat**

**Advances in technologies** like LTE, cloud and next-gen networks challenge legacy systems' ability to keep pace

- 126 billion potential for cloud-based services by 2015
- Smartphones to hit **1B shipped in 2015...**" (IDC June 11, 2011)

**Mobility and data services growth** - cause an unprecedented network traffic and data explosion

- **50 billion** will be connected to the internet by 2020
- 26x growth in global mobile traffic from 2010-2015, a **92% CAGR**



# However CSPs around the world are feeling the impact of change.

**76%**

of consumers WW cited **poor user experience** as the main reason they were considering switching operators.

Churn rates remain high due to intense competition, quality of service and cost.

**76%**

of Telecom CEOs identify transformation as the one of the biggest market impacting factors



**Operational costs are rising** and continue to consuming a large % of CSPs' expense base

**1.7 million**

Users without mobile service due to a "network glitch" at one Japanese CSP on June 11, 2011

Legacy OSS/BSS hinder the ability to respond rapidly to business changes

# To capitalize on these opportunities and effectively manage change CSPs are focusing on three key imperatives....

Deliver smarter **services** that generate new sources of **revenue**

**Transform operations** to achieve business and **service excellence**

Build smarter networks to optimize and **monetize next-generation networks**



# These imperatives require new approaches to succeed and greater visibility control and automation to address the following issues....

## Smarter Service Delivery



- How can we cost-effectively deliver next gen services?
- How can improve our clients' experience if we have **no real visibility into it?**

## Operational Transformation



- How can operations costs keep pace with the infrastructure changes?
- How can we **shift our OSS from reactive to proactive?**

## Optimized Infrastructure



- How can we get a hold of the resources we have?
- **How can we better leverage our current infrastructure?**

# IBM provides the solutions you need to capitalize on new market opportunities while managing transformation and change.



Visibility	Control	Automation
Realtime visibility of the infrastructure and services to help you ensure quality & customer retention.	Efficient management of network and IT assets to help you make the most of your resources.	Increased efficiency and reduced costs through automated discovery, configuration, and monitoring.

*IBM can help you gather, synthesize, and improve information to help improve the way your bank operates — turning mountains of data into real time decisions.*





# Visibility.

Gain realtime insight of services, infrastructure and your clients' experience

- Service Quality Management
  - Customer Experience Management
  - Service Transaction Monitoring
- Performance Management (IP & Wireless)
  - Event and fault Management
  - Business Service Management

## Visibility

- ✓ Gain realtime visibility of services - from layer 1 – layer 7
- ✓ Service problem impact analysis
- ✓ Customer QoS and SLA Management
- ✓ Pinpoint and prioritize events in realtime
- ✓ Link services to clients, infrastructure & SLAs





# Automation.

Reduce costs by managing faults, performance, quality of service, and SLA compliance.

- Monitoring for 1,000+ resources
- COTs Service Models
- Open and Standards based
- Out of the box OSS/BSS integrations
- 300+ Partner ecosystem
- Telco expertise from 1,000+ customers

## Automation

- ✓ **Consolidate management of NOCs** and converging environments
- ✓ Pinpoint **root cause** of service issues
- ✓ Highly Scalable: 100M+ events per day
- ✓ **Single pane of glass** across silos, department & technologies
- ✓ **Leverage investments** in existing tools and integrates into your infrastructure



Real-time Operational Indicators (KPIs & KQIs)

Service Status Indicators

Auto Service Dependency Mapping

Root Cause & Service Impact

# Visibility Control Automation™ Project Areas

Deliver smarter services that generate new sources of revenue more quickly

Transform operations to reduce costs, improve efficiency can achieve higher service quality

Build smarter networks to optimize and monetize next-generation networks

## Mobile Wireless



## Enterprise Managed Services



## Telemedia and Cable



## Satellite



# Enterprise Managed Services

Effectively deliver and manage IT infrastructure and services to help your enterprise clients lower their costs and improve agility

## Delivering Managed Services

- Launch innovative new services quickly
  - Capture market share and boost revenue streams
  - Ensure positive first-time experience to improve new service uptake
- Focus on customer and quality to reduce churn and improve customer satisfaction



## IBM Solutions Provide:

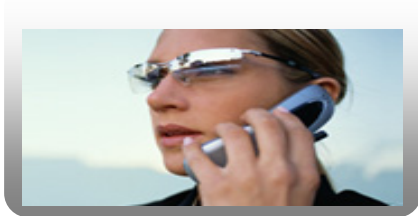
- Realtime management of :
  - Outsourced IT datacenters
  - Network IP VPN services
  - Multi-tenant endpoint & patch management
  - Cloud and application-based offerings
- Ensure infrastructure reliability
- Implement **“zero touch” provisioning**
- Rapidly identify the root cause of outages
- Prioritize problems based on revenue impact
- **Automate and integrate across your OSS functions**

# Mobile Solutions

## *Optimize the availability and performance of your 4G LTE network*

### Delivering Wireless Services

- Expand revenue opportunities and capture new market share
  - Ensure positive first-time experience to improve new service uptake
- Focus on customer and quality to reduce churn and improve customer satisfaction
  - Maintain maximum throughput for every user....high peak rates/low latency



### IBM Solutions Provide:

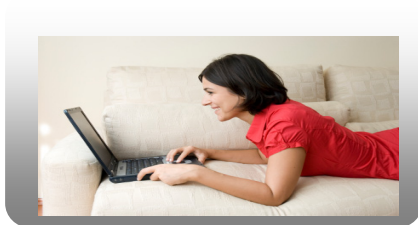
- **Management of the entire infrastructure**
  - LTE and the Evolved UMTS Terrestrial Radio Access Network (eUTRAN)
  - IP backhaul/backbone
  - System architecture evolution (SAE) and evolved packetcore (EPC)
  - The end-to-end network
- Gain **realtime visibility** of connectivity and performance and service-oriented KPIs
- Rapidly pinpoint the root cause of outages with network, accessibility and connector monitoring.

# Telemedia / Cable Solutions

*Manage voice, video and data services - from the network to your customers' site.*

## Delivering Telemedia/Cable Services

- Launch innovative new services quickly to
  - Capture market share and increased revenue
  - Ensure positive first-time experience to improve new service uptake
- **Reduce truck rolls**, increase staff efficiency and lower operating costs
- Launch new IP services quickly, without entailing additional costs

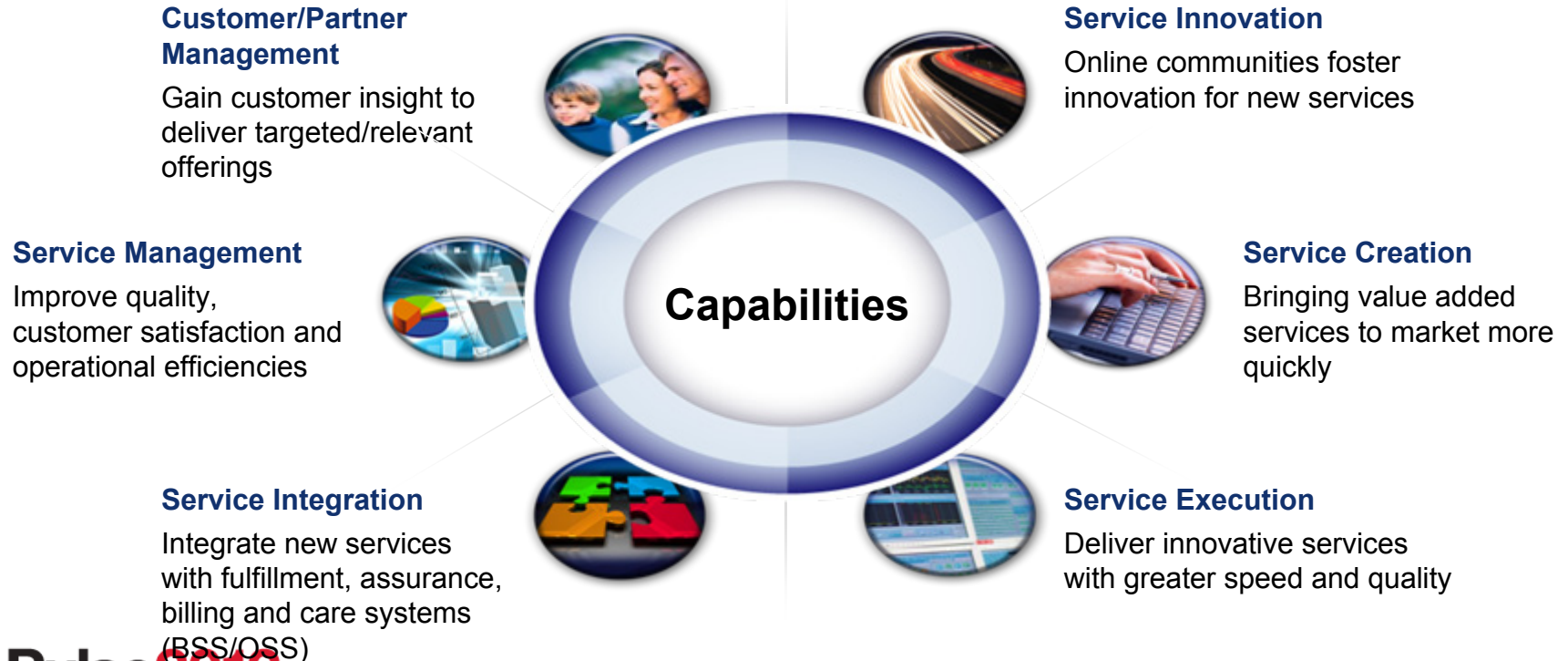


## IBM Solutions Provide:

- Realtime fault and performance management of Voice over IP
  - Mean opinion score (MOS)
  - Grade of Service (GoS)---percentage of calls blocked by the network/platform
  - Drop call rates (normal termination / abnormal)
  - Post Dial Delay (PDD)
  - Traffic Load
- Realtime management of Voice over IP Video on demand quality (VoD)
  - Mean opinion score (MOS)
  - Peak Signal to Noise Ratio
  - Mean Squared Error
  - Channel Surfing Time
  - Channel Surfing Errors
  - Video Stream Utilization

# Service Management is part of a bigger story

*Solution strategy for communications service providers enabled by IBM SPDE Framework*





# IBM is helping customers realize smarter business outcomes

By deploying a  
Tivoli Netcool Solution

## GoGo Air

Delivers reliable **in-flight** Internet services, managing network performance in the air and on the ground



Using Tivoli  
Netcool software and  
trouble-ticketing integration  
**Cablecom**

Reduced time needed to **correlate** a network alarm to the service impacted from **50 minutes to just 10 seconds**



Using IBM Tivoli  
Netcool to monitor business  
and consumer services  
**SmarTone**

Reduced the amount of time it takes to manage the network by 80%



Tivoli Netcool  
monitors existing and future  
wireless networks  
**Swisscom**

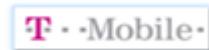
**Tripled the growth** of their services and infrastructure **without** a corresponding rise in **headcount**



The Tivoli Netcool  
end-to-end management  
solution helped

## T-Mobile

To reduce the average number of events by a **factor of 100**



By implementing  
Tivoli Netcool across  
their wireless network

## PT Excelcomindo

Supported nearly 25 percent growth in number of towers to achieve 90 percent population coverage



# Clients Choose IBM Tivoli Service Assurance

- ✓ Selected by over 1000 Communications Service Providers (CSPs) Worldwide
- ✓ World's top 20 CSPs have selected Tivoli Netcool to manage their networks
- ✓ World's 10 largest CSPs have implemented an IBM SOA solution
- ✓ IBM Rational is used by 20 of the top 22 CSPs as listed in the Fortune 500
- ✓ 7 of the top 10 global Communications Service Providers are WebSphere Portal customers



# IBM in the communications industry

- **Service Management Platform**
  - Pragmatic and strategic foundation
  - Common technologies and open, standards-based architecture for lower cost of ownership
  - Comprehensive portfolio and separable components for phased investment and fast results
- **Proven**
  - Selected by over 1000 service providers worldwide
  - Long-standing alliances with major Network Equipment Providers
  - Leading products ranked first in class by analysts
- **Industry expertise**
  - Deep Telco knowledge
  - Extensive services capabilities

IBM

Service Assurance / Management Portfolio  #1 Ranking

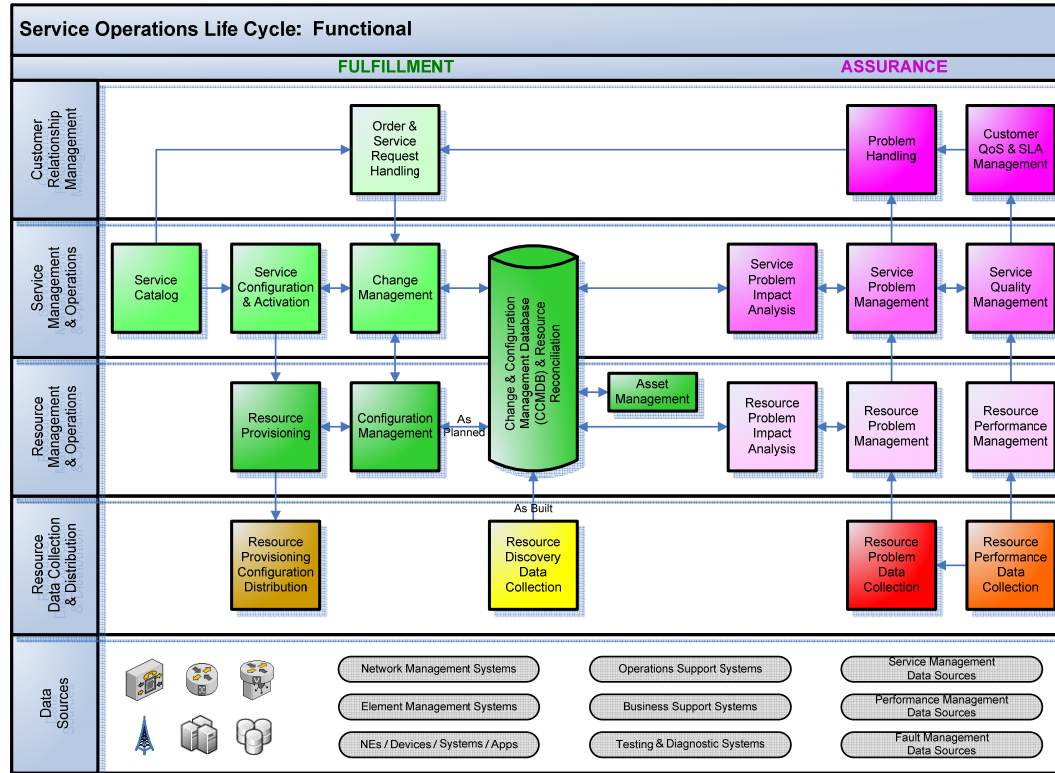


Analysts continue to rank IBM's comprehensive and quality Service Management portfolio #1 in the industry.

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# Tivoli Solutions for Service Providers



# Tivoli Service Assurance (Netcool) Portfolio – Components



**Broad Network, Service, IT, Transactional and Operational Data Source Support**

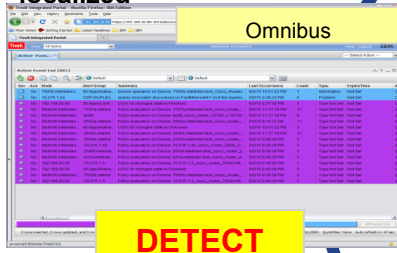
# Closed Loop Problem Resolution

## - Automate the correction of common problems

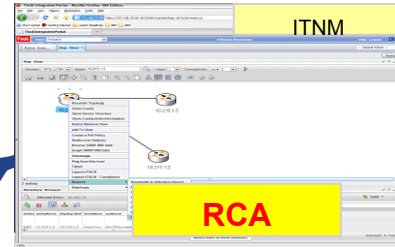
• Out of the box integration with Tivoli's Network Management portfolio (i.e. OMNIBUS and Network Manage).

- See an example of this integration:
- <http://www.youtube.com/watch?v=lcmFKJKq6A4>

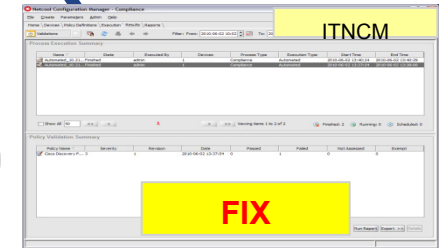
Today events come into Omnibus and faults are localized



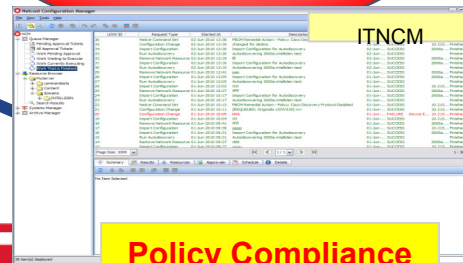
Triggering traps to Omnibus for policy breaches



ITNM enables RCA and impact analysis of problem



TNCM enables automated correction of common problems through automated remediation



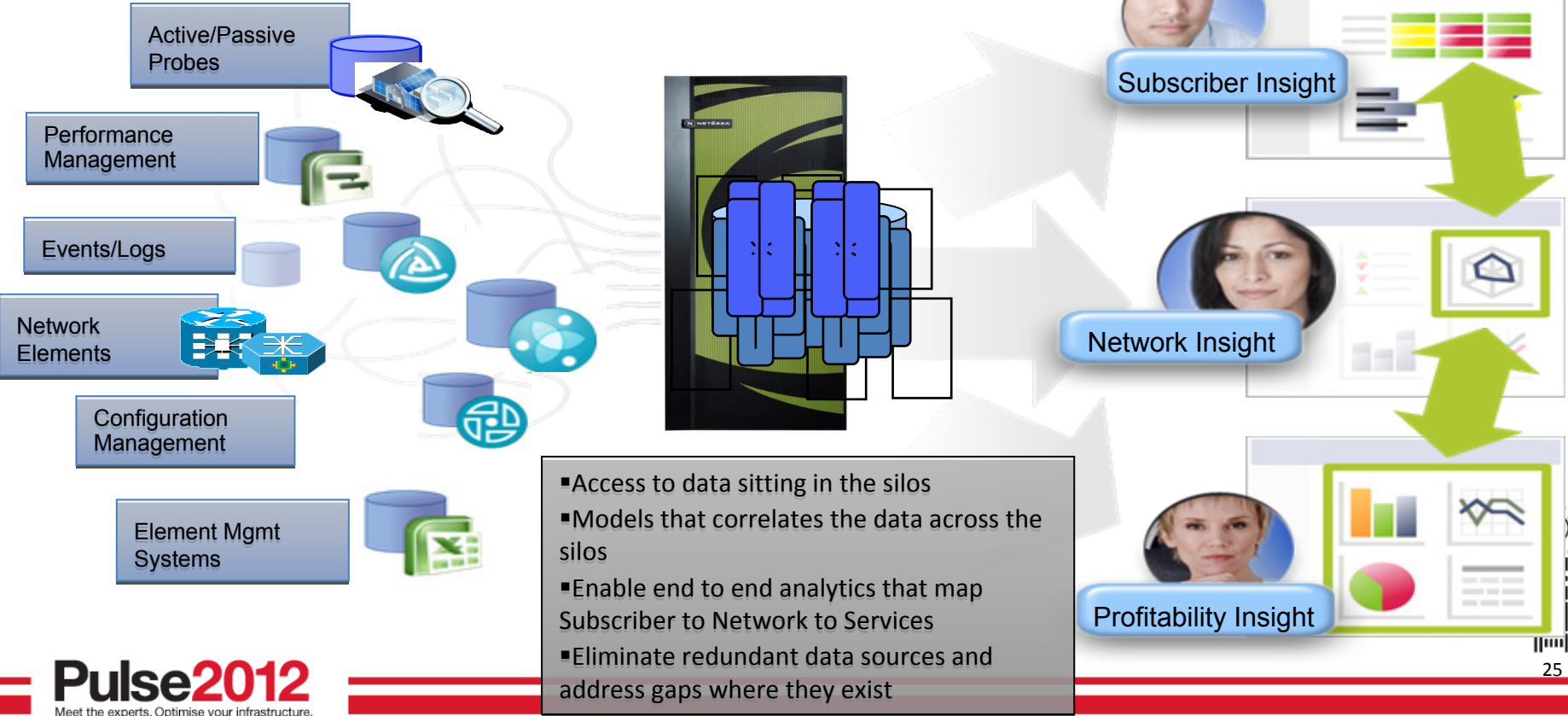
Check if Network devices are compliant to best practices.

## Strategic Priorities

- Exponentially large, complex networks
- Getting value out of the software in a shorter amount of time
- Supporting our customer's business goals (ie, drive revenue!)
- Getting better, integrated, relational value from the Netcool suite
- Keep up with the mobile device wave
- Support all of the various SaaS and outsource models
- Virtualization and Cloud computing
- Policy and Compliance
- Analytics (Network and Predictive)



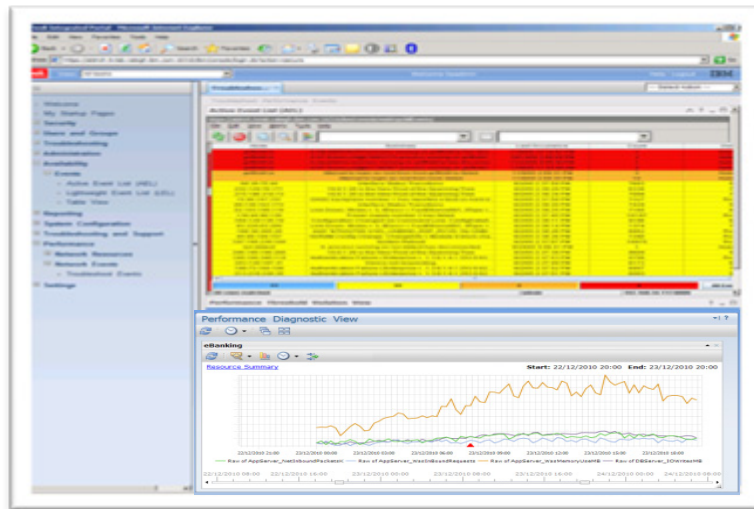
# IBM Network Analytics – consolidate myriad of data into one central source (leverage the power of Netezza)



# Coming Soon: Service Performance Analytics

*Proactive and self-learning performance and bsm intelligence*

- Real-time analytics for detecting and avoiding service disruption.
- Uses advanced multivariate analytic algorithms; providing all the advantages mentioned previously.
- Correlates metric across multiple domains and heterogeneous data sources.
- Ultra scalable; analyzing massive volumes of metrics in a single multivariate instance.
- Leverages key IBM analytic engines and mediation
- Works in non-Tivoli environments, as well as integrating tightly with Tivoli suite.



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# Fault and Event Roadmap – OMNIbus (1 of 2)

- Intelligence-driven automation reducing complexity
  - Integrate and exploit streaming technology for event analytics
  - Event anomaly and common event pattern detection
- Eye-catching visuals that create additional customer value
  - **Historical views** and/or event playback from within the user interface
  - **Non-plugin** web based user interface, enables support for tablet devices
  - Ultra **scalable event list**, fast to deploy, optimised for the operations center
  - Enhanced dashboard and mapping
  - Consistent Administration interface
- Improved Ease of Use, Time To Value, and Return on Investment
  - Accelerate TTV and ROI with additional **best practice default configurations** and enhanced cross-Tivoli solutions
  - **Central Configuration Management** and deployment
  - Common Criteria EAL4+ accreditation
  - **Wizard driven rules creation**
  - Enhanced automation and Remote Tasking
  - Improve **event correlation across domains**
  - **Align technology support** across portfolio to support industry solutions



# Fault and Event Roadmap – OMNibus (2 of 2)

- Expanded management of technology and leveraging our technology
  - Extend support for Green Data Center, **Smart Metering**, and other Energy initiatives
  - Integrated with Network Change Management and **L1-L3 Network Management**
  - Integrated end-to-end service assurance including networks, storage, servers and applications
  - Including extended event correlation across network faults, performance alerts and configuration changes.
  - Extend SOA/MTOSI capability
- Performance Scalability and HA to maintain our market leadership
  - Improved horizontal and vertical scalability
  - Exploit **64bit platform** options
  - Enhanced **High Availability** for Web server

# Network Manager (ITNM) Roadmap (1 of 2)

- Remote discovery/polling worker
  - All tooling hosted on local server
  - **Small footprint supporting headless worker**
  - Secure communication to central server
  - Centralized administration; Rollout 'standard' remote image/install
  - Automate multi-domain partitioning based on network discovery
- End2End network visibility and control
  - **Single combined view of all remote discoveries (domain stitching)**
  - End2End event correlation/reduction
- Advanced discovery as a shared component
  - **Immediate feedback** and monitoring as devices are first discovered
  - Just-in-time discovery
  - **Leverage other discovery technologies** including EMS integrations, L1 discovery, provisioning tools
  - Reuse ITNM discovery in STG, NCM, TADDM, TNPM, etc.
  - Import server/application data from TADDM/NMAP
  - Common security model for network credentials
- **High Availability** / Clustering of web UI

# Network Manager (ITNM) Roadmap (2 of 2)

- Strategic **network technologies** including Carrier Ethernet, IP Multicast and LTE
- Enhanced monitoring and visualization of existing technology support: IS-IS, HSRP/VRRP, SMLT
- DataCenter, Virtualization and Cloud
  - Additional device support including Juniper, Brocade and Blade
  - Support discovery of virtual network devices, their connectivity with the VMs (hypervisor and physical host) and connectivity with the physical network
  - Apply RCA algorithms to connectivity between virtual infrastructure components
- **Optical network technology support**
  - Extend core network topology model tables to support modeling optical technologies
  - Leverage existing TL1 device support
  - Extend with additional transport device/technology support
- Enhanced Security Support
  - HTTPS support

# Network Configuration (NCM) Roadmap

- Goals:
  - Drive the **integration** of Netcool Configuration Manager as a **natural extension of OMNibus & Network Manager** and also as a close adjacency to **cloud service provisioning** (e.g. TSAM and TPM) and **service activation** solutions
  - Extend the use of ITNCM into other market segments (e.g. **4G wireless – LTE**, Smart Grid ...)
- Common user/role definition and authentication supporting single sign-on
- Bring Fault, Network Management, Configuration and Compliance data together, and support a seamless flow across the functional components.
  - Expose key **NCM UI components within the Tivoli Integrated Portal (TIP)**
- **Common and consistent approach to network discovery**
- Automatically correlate Fault, Performance & **Configuration Change events to identify root cause**
- **Portfolio Integration**, for common technology support (e.g. AIX, DB2, FIPS, TCR)
- Enhanced support for virtualized environments (e.g. Improved visualization of virtual devices)
- **Enhanced ITNCM API's**, with improved abstraction which will limit the amount of network specific information needed.



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