Pulse2011

Smarter Event Management, better Service Management

Don Wildman
Product Manager
Tivoli Event Management

Please note:-

- IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.
- The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

© 2011 IBM Corporation

Agenda

- Monitoring and Event Management?
- Network and IT Challenges
- IBM Tivoli Netcool/OMNIbus
  - Key new features and benefits
- Futures including TEC update

© 2011 IBM Corporation

Monitoring

Analytics

Situations

Event Management

© 2011 IBM Corporation

Overload and Storm in Event Management

- Overload
  - more raw events than the business can handle
- Storm
  - unusual burst of events exceeding normal capacity

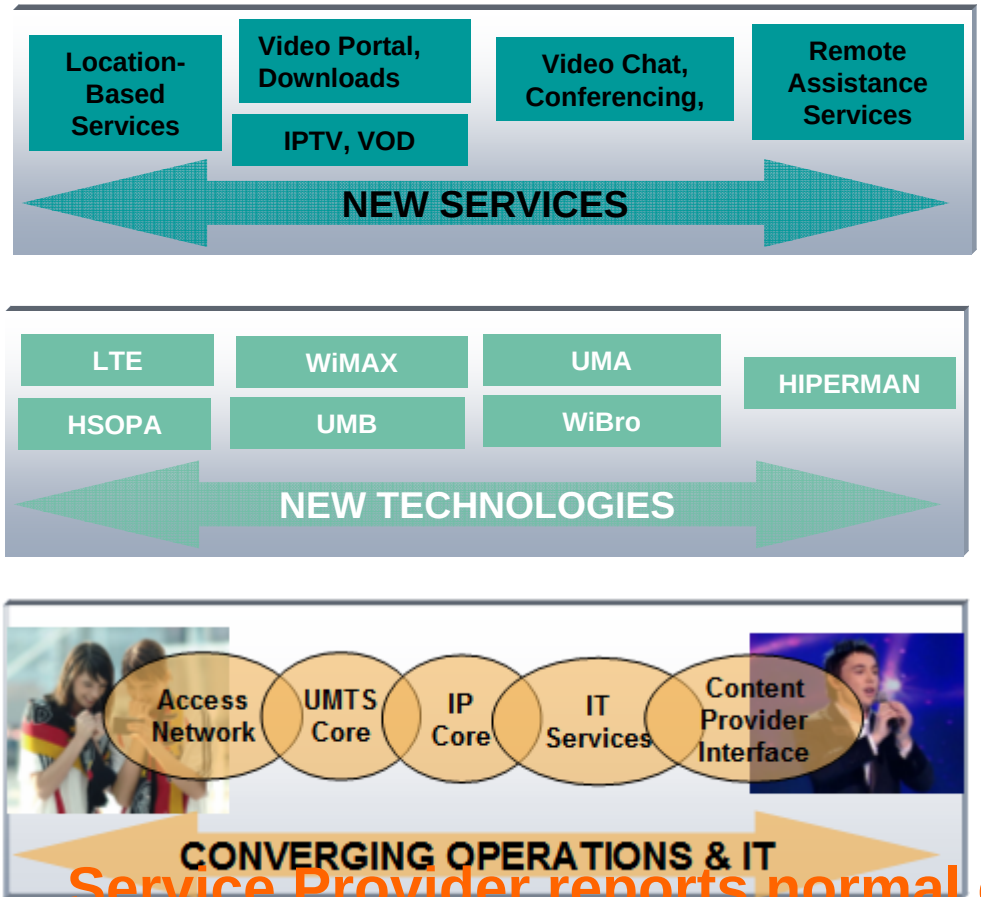
© 2011 IBM Corporation

Service Delivery Challenges for IT and Operations

Complex Current Environment
+

=

Current Issues
+
New Challenges



Overload

- **Complex content-based services management**
- **Rapid, quality rollout of critical new services and new sources of revenue Steep and rising costs of fragmented infrastructure**
- **New security risks**
- **Continued cost and efficiency pressures in IT and Operations**
- **Quickly identify and fix network issues with service/customer impact**

Service Provider reports normal event rates of 1 billion raw events per week

© 2011 IBM Corporation

Building a Smarter Planet

Thinking and acting in new ways to make our systems more efficient, productive and responsive

New Intelligence	Green and Beyond	Smart Work	Dynamic Infrastructure
"Data is exploding and it's in silos"	"Our resources are limited"	"New business, process and collaboration demands"	"My infrastructure is inflexible and costly"
I Need Insight	*I Need Efficiency*	*I Need to Work Smart*	*I Need to Respond Quickly*

Smarter Government

Smarter Transportation

Smarter Education

Smarter Public Safety

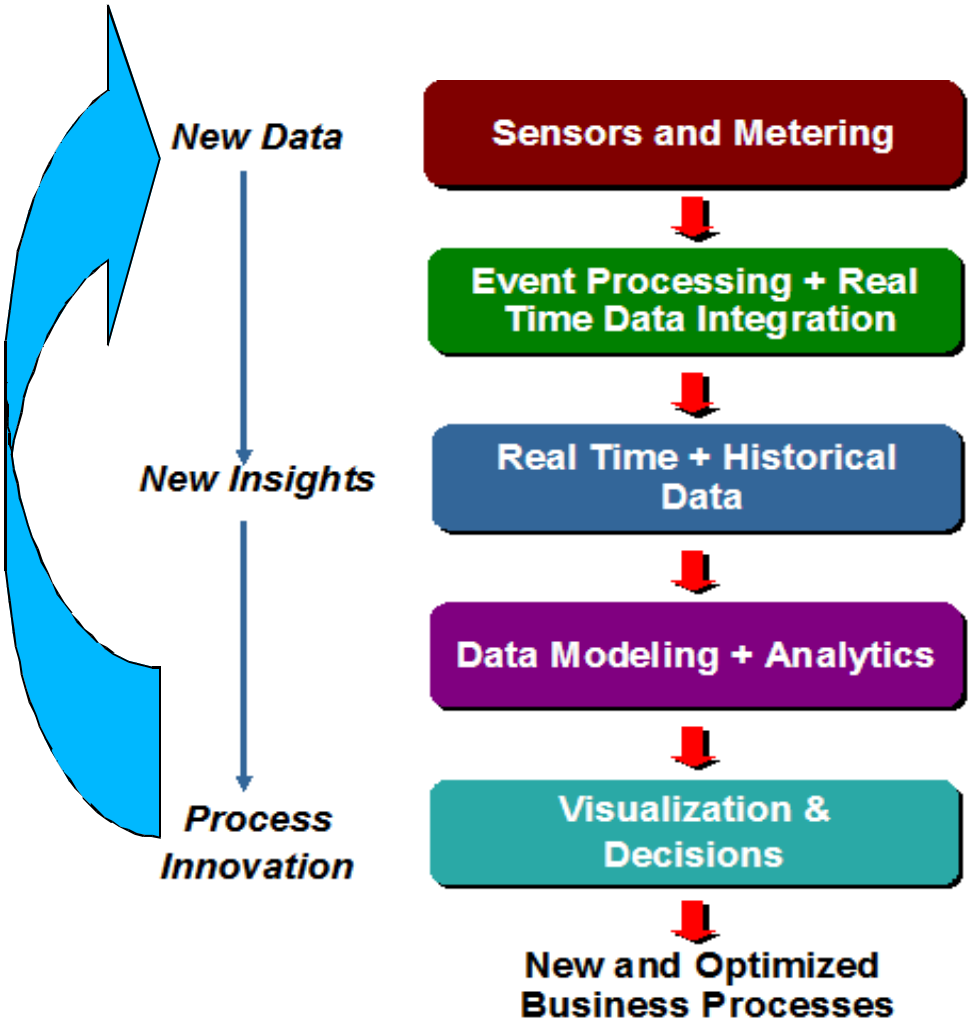
Smarter Cities

Smarter Energy & Utilities

© 2011 IBM Corporation

What does it mean to become Smarter ?

(more events to manage!)



- Data collection
- Data Integration
- Comparison of historical data, with newly collected data
- Data modeling and analytics to create insights from data to feed decision support and actions

Leading businesses today are benefiting from new sensor data when combined with IBM's business process management, event processing & business optimization capabilities

© 2011 IBM Corporation

Event storm or flood?

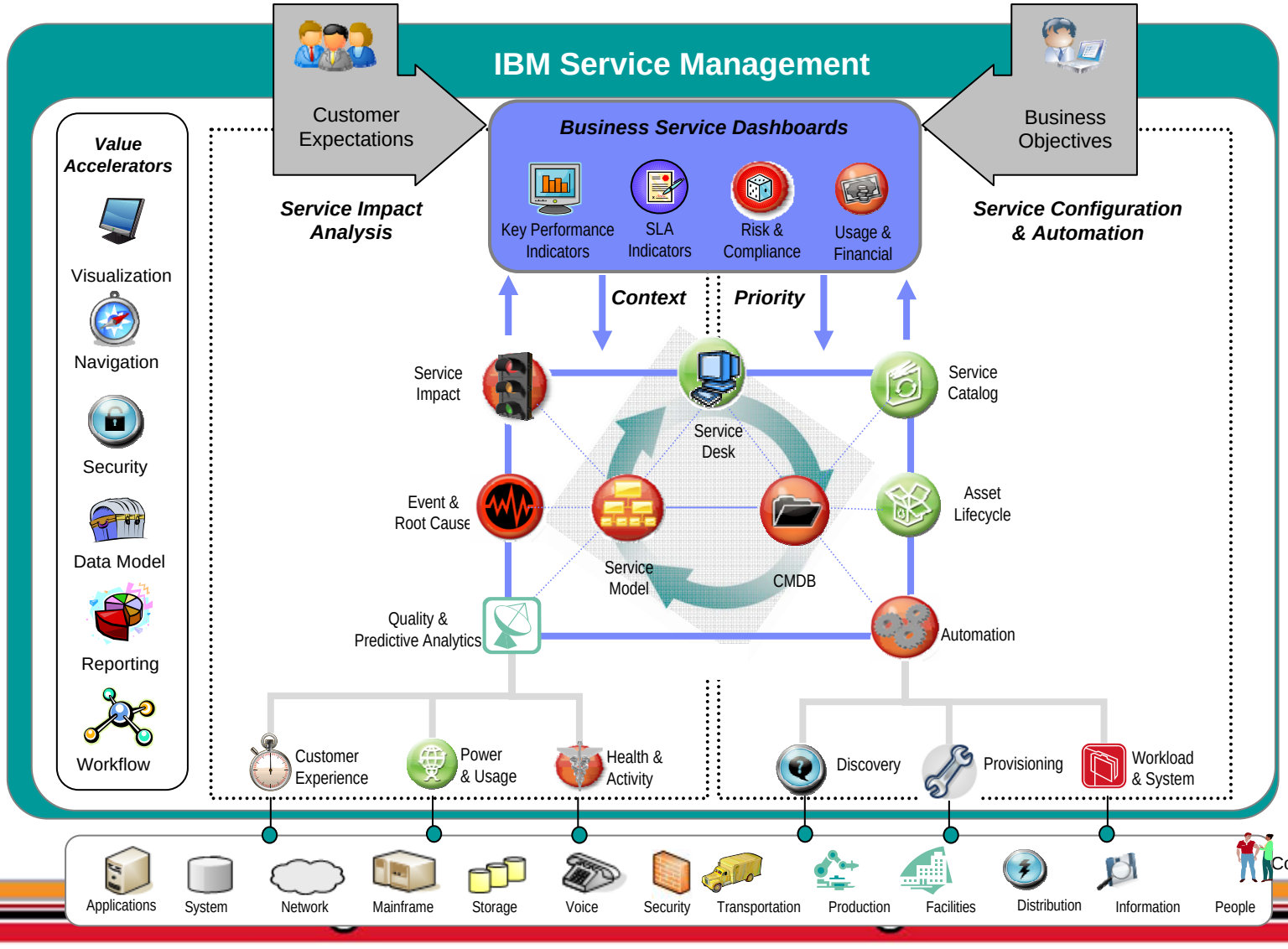
- Many company's event rates are between 10-100 per second.
  - 300 events per second would be deemed a flood

- The largest have bigger challenges
  - >1,600 events/second is BAU
  - >15,000 events/second is a deluge

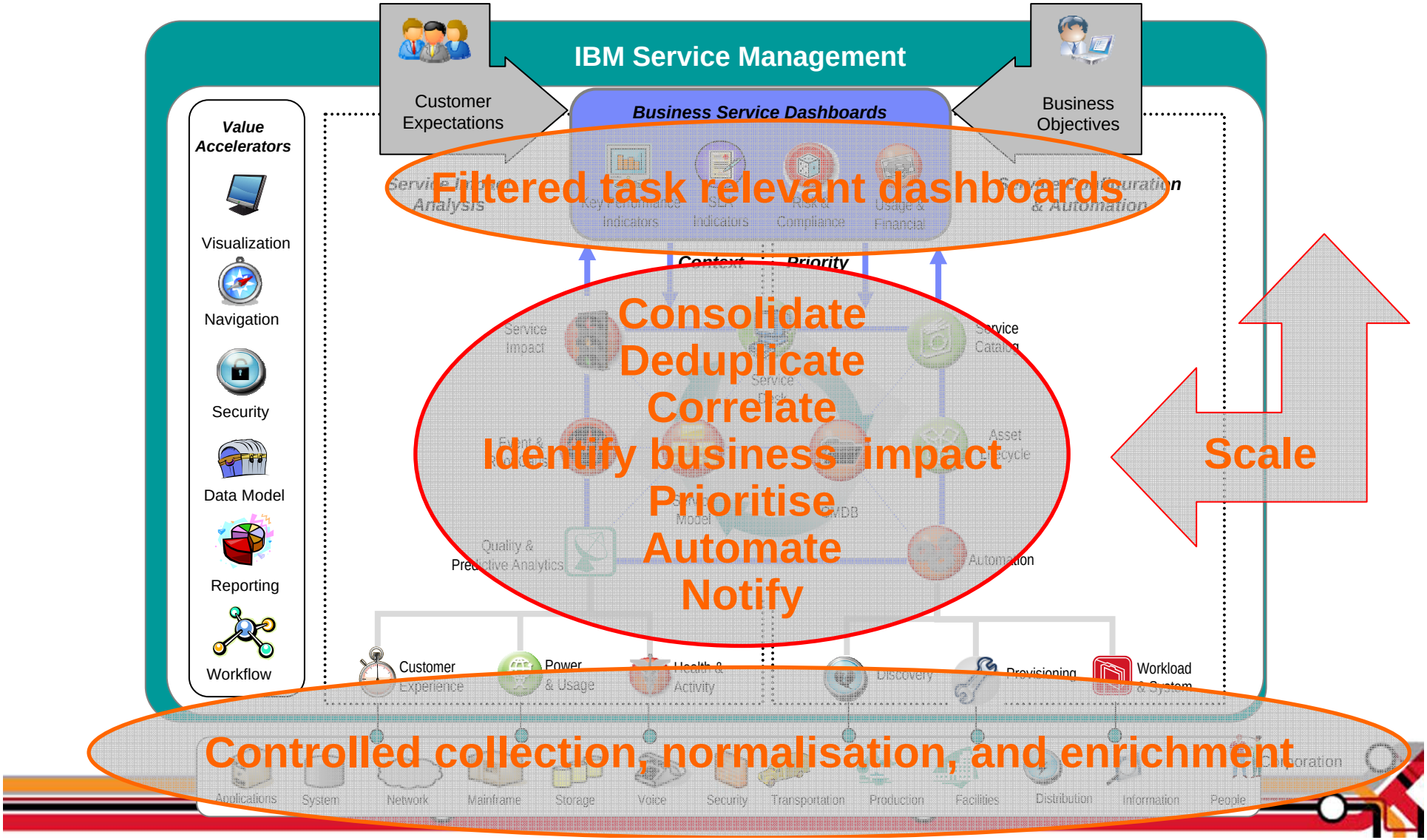
- To the smaller business the overload and storm situations require the same types of attention as the largest environment

© 2011 IBM Corporation

The business needs an integrated approach to managing 'What Matters Most'



Handle the overload – Tivoli Event Management supporting the management of 'What Matters Most'



Tivoli Netcool/OMNIbus Solution

Tivoli Monitoring Suite
ITM, TPM, OMEGAMON..

Data Network
(SNMP, Syslog)

Systems & Applications
(Mainframe, Unix, Windows)

Other Management Systems
(HP OpenView, BMC, …)

Voice Network
Wireline, Wireless, VoIP

Standards based
SOA, MTOSI

Virtual environments

Security/Firewalls

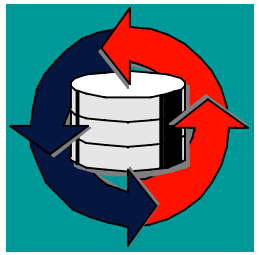
Non-IT Resources
(HVAC, UPS's, Physical Security)

Future

End to end service monitoring

Intelligent probes
Control, Normalize, and Enrich

Consolidated Operational And Business Views / Reports



Integration
Consolidation
Deduplication
Correlation
Automation

Put Events in a business context

Tivoli Business Service Manager
Tivoli Netcool/Impact

- Provisioning/Inventory Systems
- Customer Care / SLA Management
- Databases / Directories
- Messaging / Web Services

Event Enrichment, Archival and Process Automation

Gateways

Trouble Ticketing (TSRM, Remedy, Peregrine, Vantive, Clarify)
- RDBMS (Oracle, MS-SQL, DB2, MySQL, Informix, Sybase)

IBM Tivoli Network Management

Network Manager
(Discovery and Availability)
Configuration Manager
Performance Manager

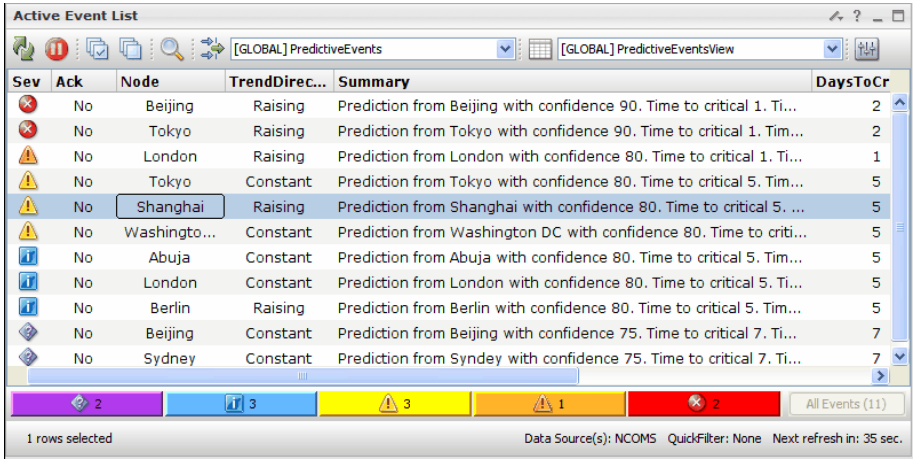
© 2011 IBM Corporation

Recent features and best practice to manage the overload and optimise time to resolution of business impacting events

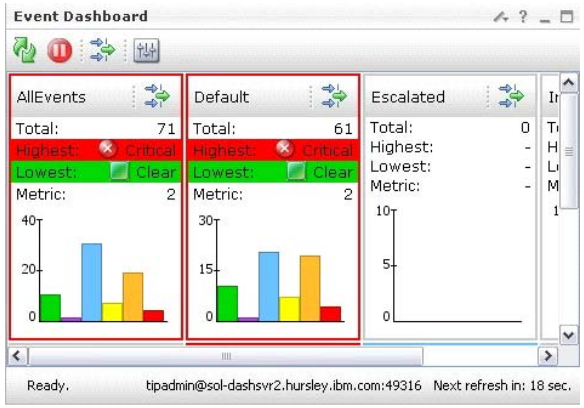
- Netcool Knowledge Library
  - Best practice guidance for preparation of additional rules driving ObjectServer and ITNM correlation
- Detect and respond to localised storms
  - Best practice configurations and guidance based on user experience
  - Reroute and filter sensibly starting at the probe
- Normalise event data at the probe to exploit generic server rule based processing
  - New commands
  - Faster Array processing with reduced memory footprint
  - Event creation for heartbeat and performance data generation
- More powerful ObjectServer capabilities
  - Enhanced Multi-processor usage
  - Query optimiser
  - User indexes
  - Faster resynch
- Accelerate highest priority incidents
  - Accelerated Event Notification exploited by Tivoli Netcool/Impact (from 5.1)
- High performance enhanced visualisation with seamless views of multiple aggregation domains
- Analyse event rate trends for anomalous behaviour and capacity planning (ITM/TPA integration)
- Tools and Key Performance Indicators (KPI) to proactively monitor and assess deployment health

© 2011 IBM Corporation

The Web GUI is more than just an Event List…

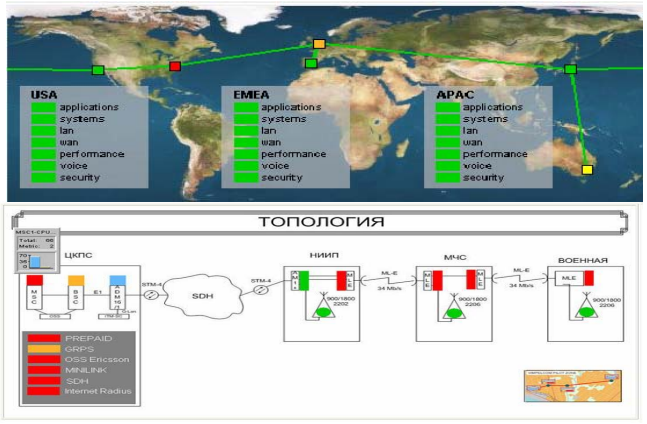


Active Event List (AEL)



Event Dashboard and Charts

+



Web GUI Maps

+

Web GUI Gauges

+ a dedicated XML based API for additional flexibility (WAAPI)

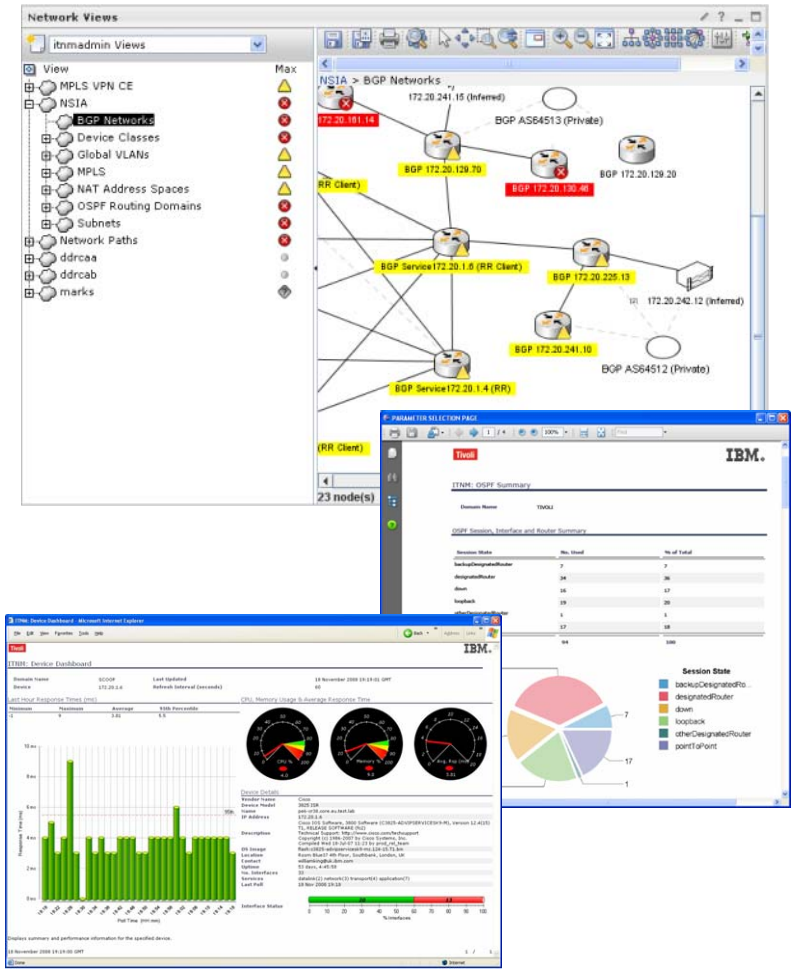
1 IBM Corporation

Enhanced visualization with Tivoli Netcool/OMNIbus WebGUI
Focussed service views driven by event enrichment

© 2011 IBM Corporation

IBM Tivoli OMNIbus and Network Manager
Industry-leading network availability solution

- **Maximize Service Availability**. By reducing the mean time to resolution of faults with event enrichment, correlation and root cause analysis
- **Lower Operational Costs.** Simplify and automate the management of complex networks including Converged IP, MPLS, Carrier Ethernet
- **Lower Capital Expenditure**. Better utilization of network resources through network discovery, reporting and reconciliation
- **Leverage Comprehensive Network Visibility…**



Unique technology advantages

- #1 Fault Management Solution fully integrated with discovery, monitoring and root-cause analysis
- Flexible Network Discovery with broadest technology coverage
- Open standards-based Network Topology Model

© 2011 IBM Corporation

IBM Tivoli Netcool Configuration Manager

INTELLIDEN®
Acquisition

- Automate routine configuration management task
- Understand how network changes may affect service and your customers, and proactively manage the impact of these changes
- Improve adherence to corporate and regulatory standards through ongoing network policy enforcement
- Comprehensive provisioning of networks, servers, storage and applications

Unique technology advantages

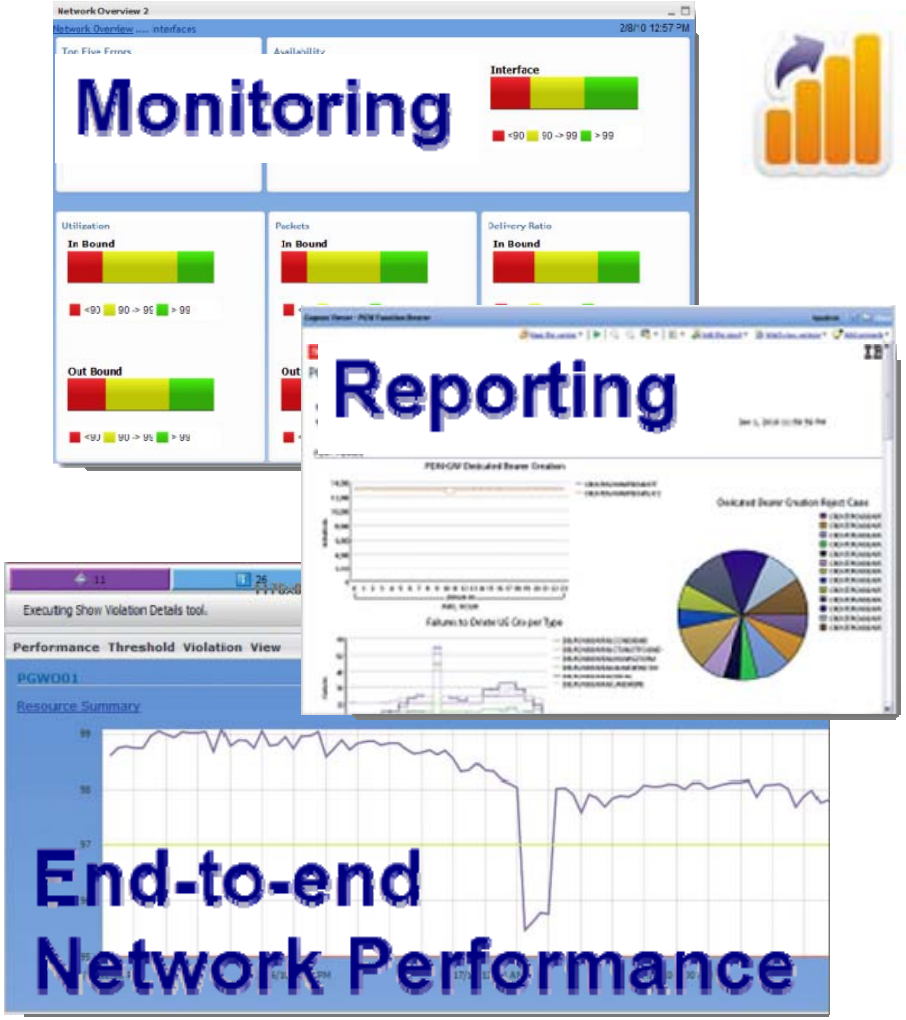
- Proven Scalability
- Revolutionary SmartModel™ Technology
- Multiple Automation Modes for different skills and needs
- Comprehensive Compliance Management
- Open APIs

© 2011 IBM Corporation

IBM Tivoli Netcool Performance Manager

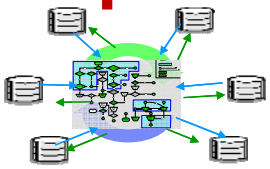
#1 Vendor Performance Mgmt

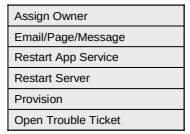
- Network performance solution that addresses both operational and business intelligence requirements:
  - **Operational requirement** - provide real-time operational data and monitoring views using the operations console
  - **Business Intelligence requirement** – provide business intelligence through ad-hoc reporting with TCR/Cognos
- Expansive performance management scope
  - **End-to-end** network performance reporting
  - **Cross domain** performance reporting (network, server and application) with ITM's Tivoli Data Warehouse
  - **Converged** wireless and wireline (fixed/IP) networks
- Streaming analytics for real-time aggregation and threshold monitoring
  - Temporal and Spatial capabilities
- Proven, scalable distributed architecture



© 2011 IBM Corporation

Netcool/Impact provides core functionality in three areas



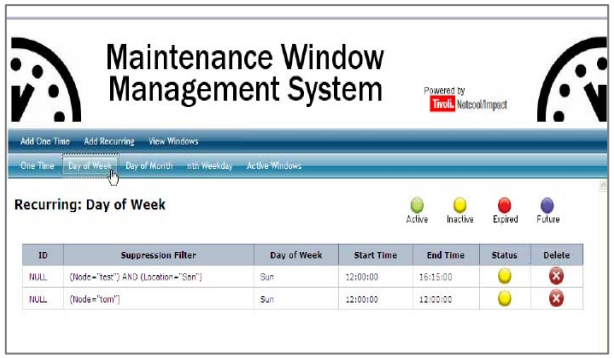


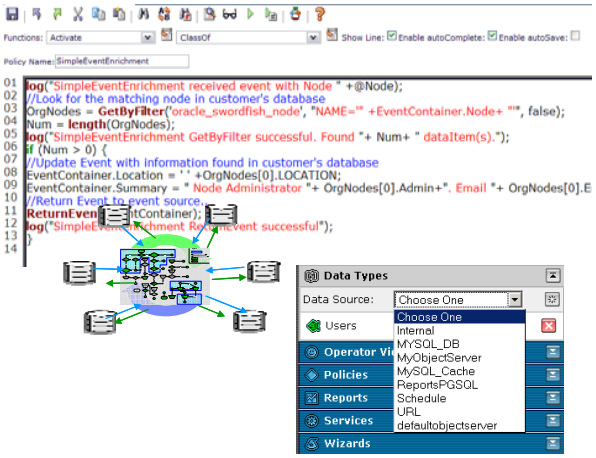
Operational Function	Event / Problem		Integrated Info		Workflow	
Netcool/Impact Automations	Enrich	Correlate	Intelligence	Interactive	Right-click	Runtime
Functions Provided	Collects & injects vital details directly into events, incidents & problems for better context.	Allows for advanced, custom correlation based on unique criteria.	Collects & displays information from multiple data sources & tools in single view.	Allows operators to trigger automated actions directly from a virtual view.	Allows for simple triggering of automated workflow actions from any tool.	Automatically runs workflow actions without the need for manual intervention.
Benefit	1 Speeds mean-time-to-resolution.		2 Improves decision-making and staff effectiveness.		3 Maximizes operational staff productivity.	

IBM Tivoli Netcool/Impact provides the context-driven correlation, intelligence and automation functionality that the operations staff needs in order to streamline event and alert management, business service management, and incident and problem management

Tivoli Netcool/Impact v5.1.1 Highlights

Released: Oct 2009



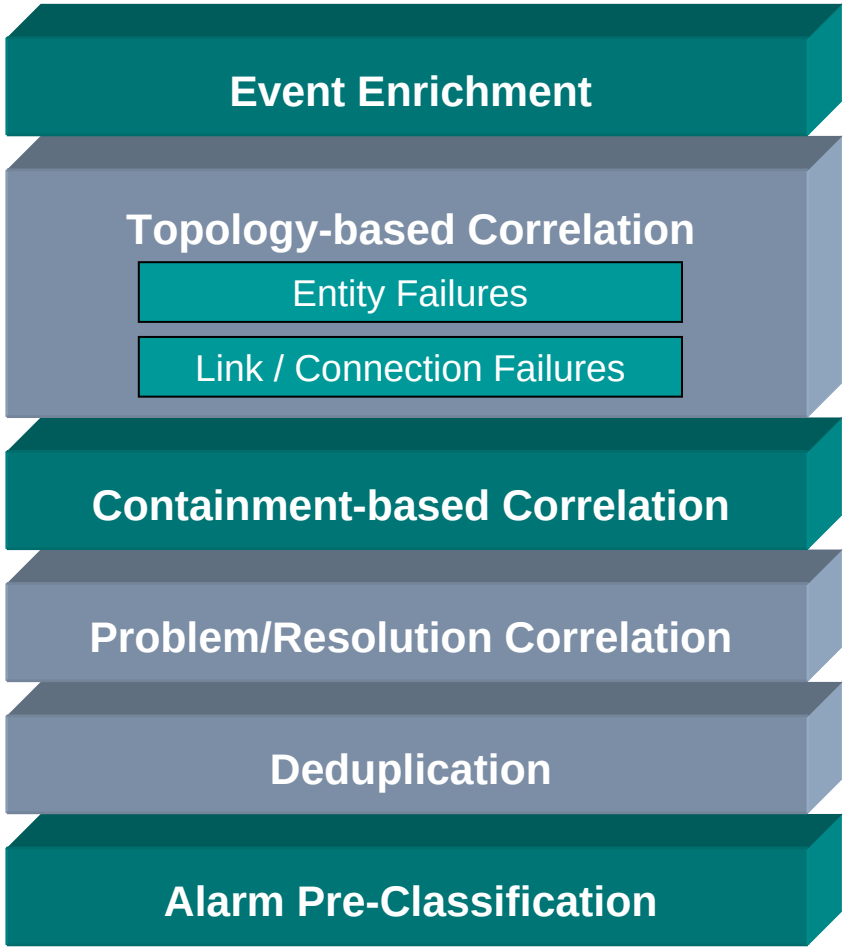


Highlights of Version (v5.1.1):

- New, out-of-the-box Maintenance Window Mgt Add-on
- Java Call Enhancements to Impact Policy Language
- Enhanced GUI usability
  - Policy organization and management
  - Real time service log viewer
  - Operator View to match TIP look & feel
- Added Policy Editing Flexibility and Time to Value
- Expanded data integrations; data access enhancements

© 2011 IBM Corporation

Tivoli Multi-layer Event Correlation

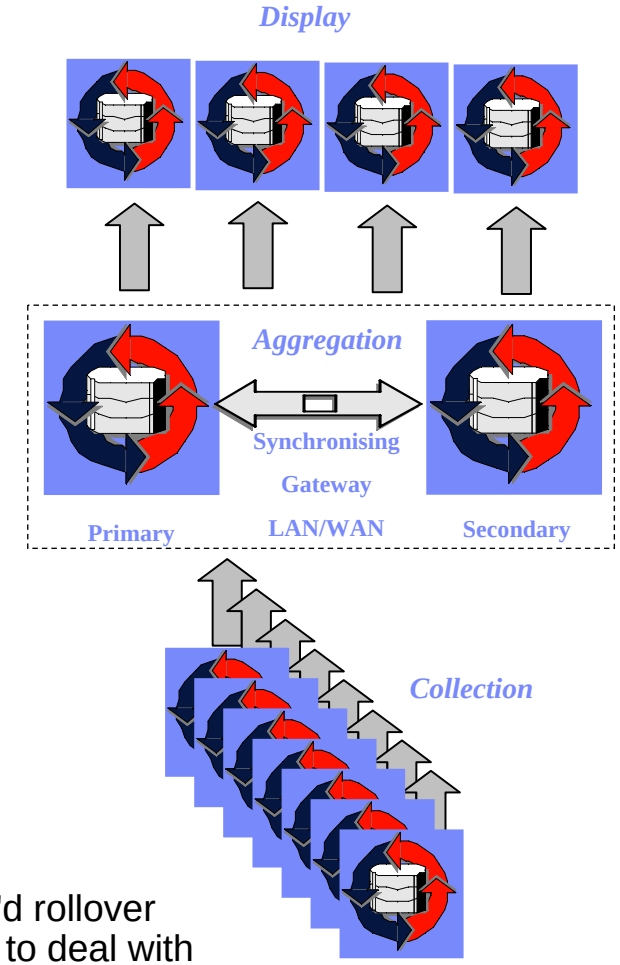


- **Multi-pass parallel event correlation**
  - Can be optimised for different types of problem
- **Combines model-based & rule-based correlation**
  - Different correlation techniques address different classes of problems
- **Supports inclusion of information from external systems and databases**
- **Techniques are independent of technology & alarm source**
- **Uses open, extensible and customisable models & rules**
  - Users can extend to support evolving business processes & management
  - Supports auditing & traceability

© 2011 IBM Corporation

Control the flood procedures and Performance and Scalability to support ultra-high rate event processing

- Resilient in-memory “ObjectServer” event processing engine hosted on single server (or resilient pair) for typical environments
- Best practice configurations and documentation for Tiered ObjectServer architecture
  - fast to deploy and extend
  - Collection of high volume event feeds
  - Aggregation focussed on correlation and automation
  - Aggregation may be zoned for greater capacity (e.g. by geography or technology domains)
  - Display supporting 100s of users with Single seamless view over multiple aggregation domains
- Tools and documented Key Performance Indicators (KPI) to proactively monitor and assess deployment health
- Probe level rule based event rate monitoring and best practice flood handling options
  - Rerouting to other ObjectServers and/or tables
  - Optional Suppression and summarisation
  - reducing impact of flood conditions on the server level



“While things were hyperscaled, when event storms did occur, I'd rollover TCP Port probes to different ObjectServers.. Not everyone gets to deal with a **million** events a minute sustained for several hours.”
[customer quote from the International Netcool User Group]

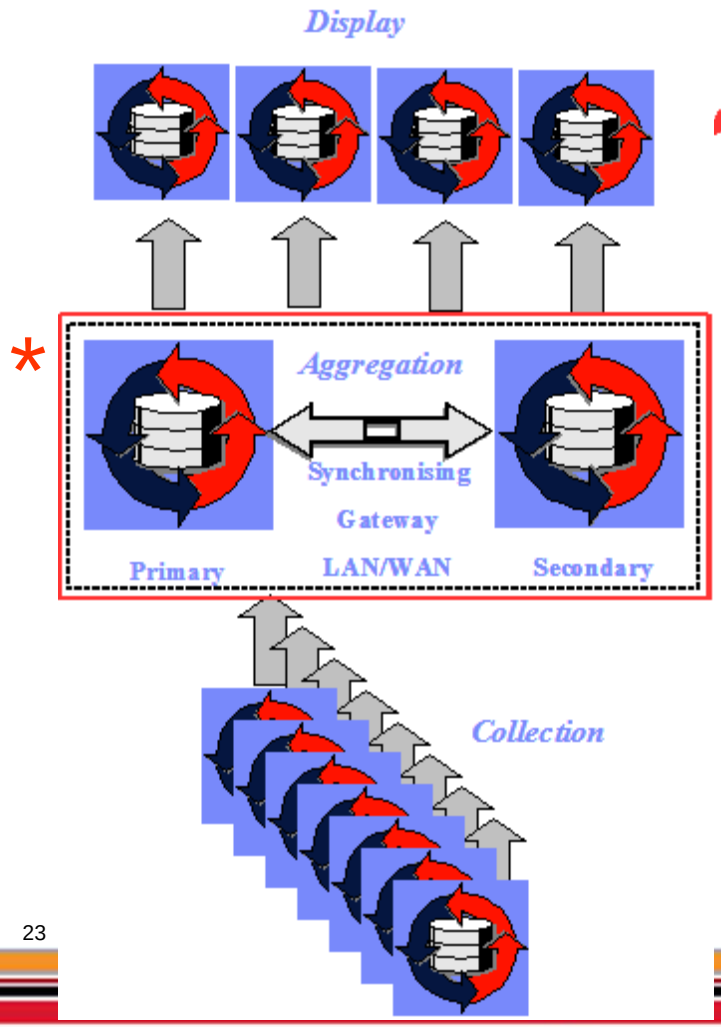
© 2011 IBM Corporation

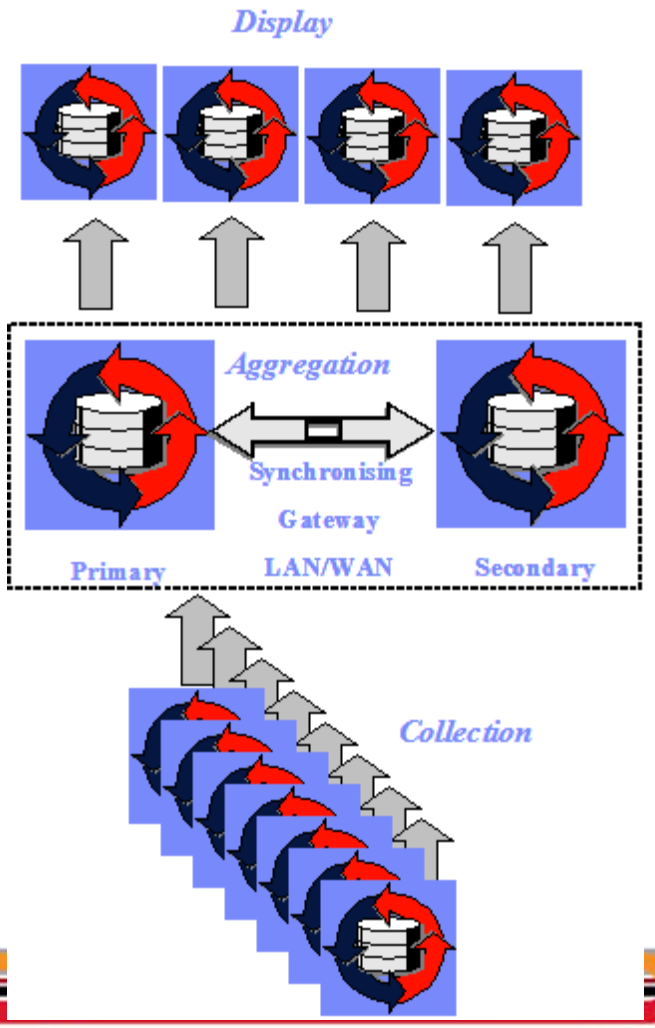
Tivoli Netcool/OMNIbus options

* ***Typical deployment***

* WEB Server

High performance
Multiple connections
Multiple domains
Seamless view



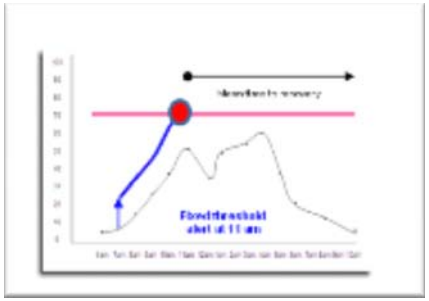


Enhanced Multi-processor usage
Query optimiser
User indexes
Faster resynch
KPI monitoring and tuning

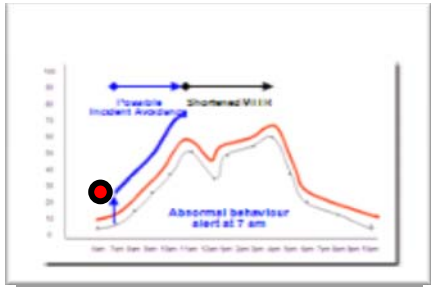
Futures

© 2011 IBM Corporation

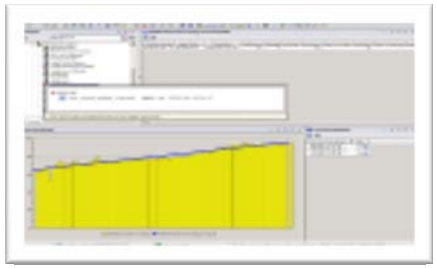
Evolving analytics capability



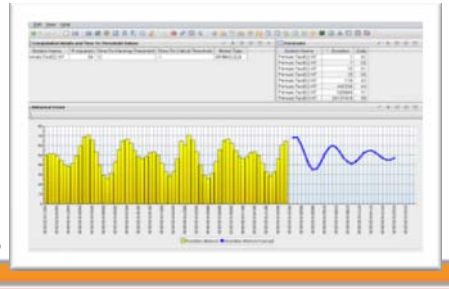
Static Thresholds
(univariate)



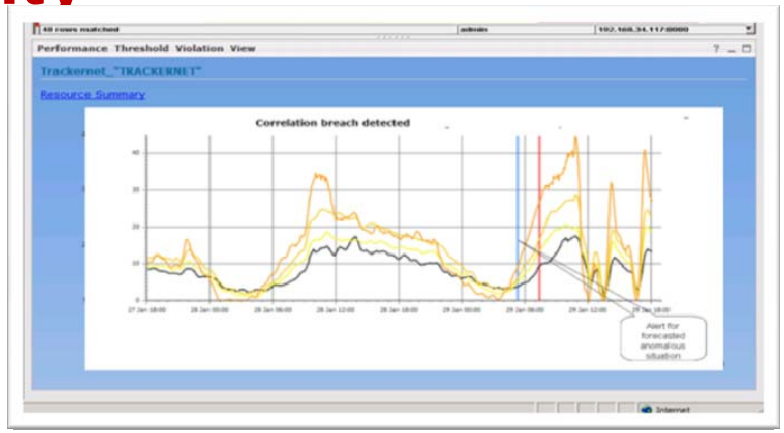
Dynamic Thresholds
(univariate)



Linear Prediction
(univariate)



Non-Linear Prediction
(univariate)



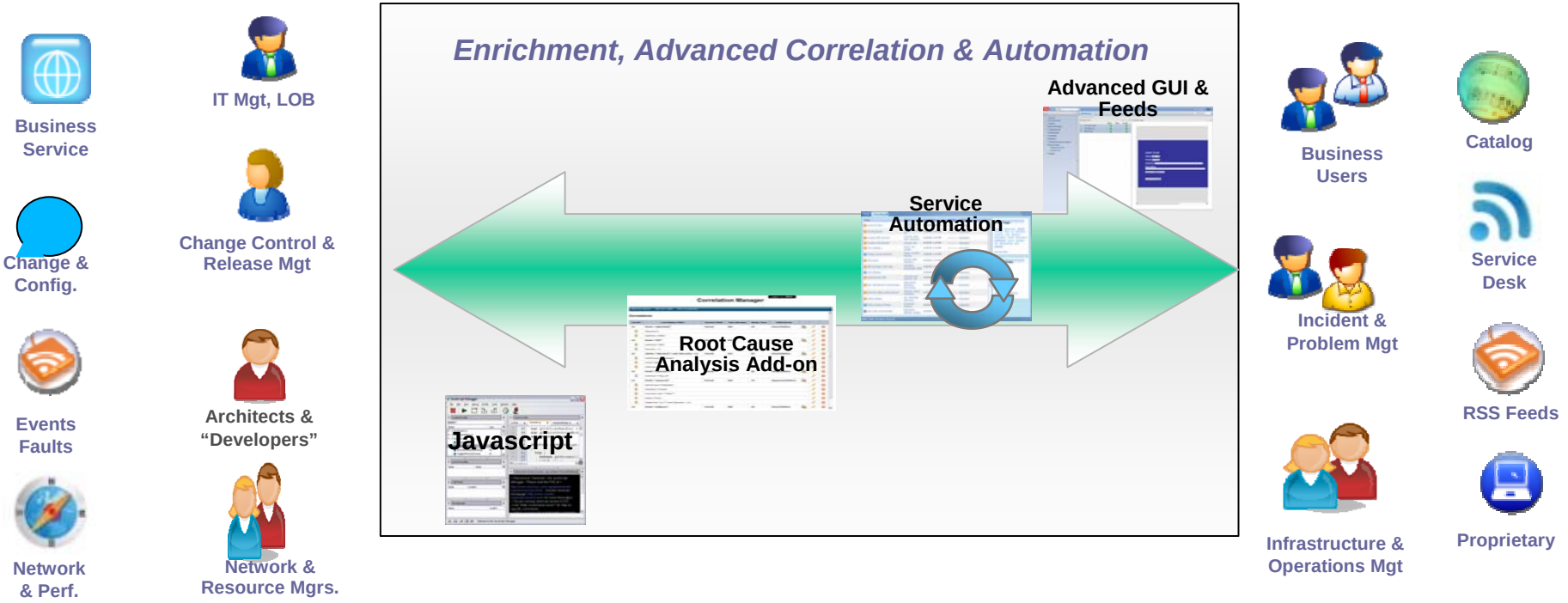
Multivariate Analytics

- New analytics provide predictive alerts enabling proactive steps to reduce outages and event storms
- Based on proven IBM streaming engine and probe style integration to Tivoli Netcool/OMNIbus
- Consider behaviour of multiple metrics together.
- Learn normal behaviour.
- Discover which metrics are related to each other.
- Detect anomalies rapidly, as metrics deviate from normal behaviour individually and from the correlated group.
- A combination of univariate and multivariate techniques to produce fast and reliable anomaly detections and predictions.
- Identifying metric relationships enables faster root cause identification

© 2011 IBM Corporation

Netcool/Impact: Empower expanding user community

Key Themes of Tivoli Netcool/Impact v*Next*



Complementing Key Service Management Routes to Value

- Enables broader primary user base for enrichment, correlation, & operational automation
- Expanded tangible value: immediately visible OOTB root cause analysis content
- Accelerates Routes to Value for Event Mgmt, BSM, Monitoring, and Network Mgmt.

© 2011 IBM Corporation

Event Management – Strategic Direction

- OMNIbus and TEC are converging to a single, strategic Event Management product
  - –Industry leading solution for event management of any type or size of infrastructure.
  - –Integrate the positive qualities of both systems, preserving customers investments in deployed assets.
  - –There is existing integration between the two products

- Our Converged Event Manager is based on the OMNIbus architecture including features provided with TEC
- We will continue TEC 3.9 support until at least ~~April~~ Sept 2012.

© 2011 IBM Corporation

Supporting Unification and Upgrade

- Tivoli has delivered in 2006 through 2011 features that help and make easier for customers to integrate and upgrade TEC to OMNIbus in an integrated Tivoli environment
- Co-existence between TEC and OMNIbus is provided and supported (OPAL Whitepaper)
- Key features
  - Health & Performance agents for TEC and OMNIbus
    - Availability and performance of TEC and OMNIbus components
    - Event flows and rules statistics for TEC and OMNIbus
  - Best practices integration between Tivoli and Netcool portfolio including:
    - Support of TEC class hierarchy in OMNIbus
    - Full mapping of TEC events into OMNIbus event tables
    - Event flows integration between: ITM-TEC, ITM-OMNIbus, TEC-OMNIbus, OMNIbus-TEC, dNetView-OMNIbus
    - Integration of TEC and ITM with Netcool/Impact
    - Integrations with Tivoli Service Request Manager
    - Integration with SOA applications
    - Redbook on best practices for upgrading TEC environment to OMNIbus
    - EIF libraries and non-TME postmsg included in OMNIbus 7.3
    - Replacement for TEC Log File Adapter in OMNIbus
      - » Consumes LFA format and configuration files. Forwards events in SNMP or EIF format
    - New Active Event List configuration options providing familiar look and feel options for TEC/ITM users

© 2011 IBM Corporation

Customer experience - CIO of a US manufacturer.....

- reporting one year after upgrade
  - Critical Events decrease 91%
  - Downtime Decreased by 29%
  - Overall Availability Increased by 3 %
  - Root Cause ID’ed and resolved 17% Faster

© 2011 IBM Corporation

Interim features 2011

- Common Criteria EAL 4+
- TCR/Cognos reporting schema and sample reports
- TIP 2.2 compatibility (64 bit)
- WebGUI best practice guidance and sample service views

© 2011 IBM Corporation

Analytic, Time to Value and Cloud Management

- Provide analytic capability for event data
- Time to value and innovation:
  - Provide 7 days windows visibility onto events in a seemingly and integrated way between real time and historical views
  - Being able to analyze sequence of events (Historical views and/or event playback from within the user interface)
  - Capability for users to quickly and easily implement business and services event dashboards
  - Provide tooling to support users in implementing rules files
  - Assist user in post installation and configuration tasks
  - Support deployment and operation of OMNIbus over low bandwidth network
  - Exploit 64bit platforms
- Cloud management:
  - Extend management of virtual environment
  - Support multi tenancy
  - Provide distributed capability with centralised configuration and version control with deployment to multiple targets

© 2011 IBM Corporation

Focus Areas for OMNIbus Integrations

- LTE / 4G - Long Term Evolution
  - Synergized effort across Tivoli to provide ready integrations for LTE deployments
  - Probes already available for LTE products from Huawei, Alcatel-Lucent and ZTE

- Energy Management
  - Provide OMNIbus probes and rules files for correlating IT events with events from Energy Management, Building Management Systems and data center infrastructure components.

- SMART Meters and SmartGrid Management
  - Smart Meter and AMI Management
  - IUN/Energy Transmission monitoring

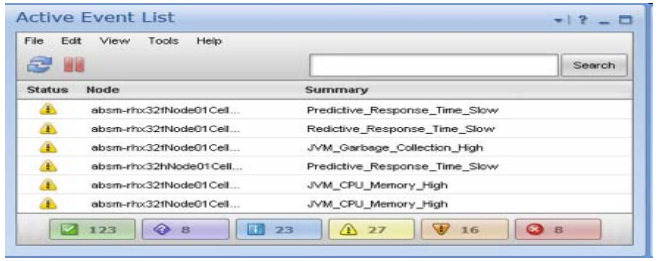
- IBM Smarter Planet
  - Smart City operations
  - Support for Common Alerting Protocol(CAP)
  - Smarter Water

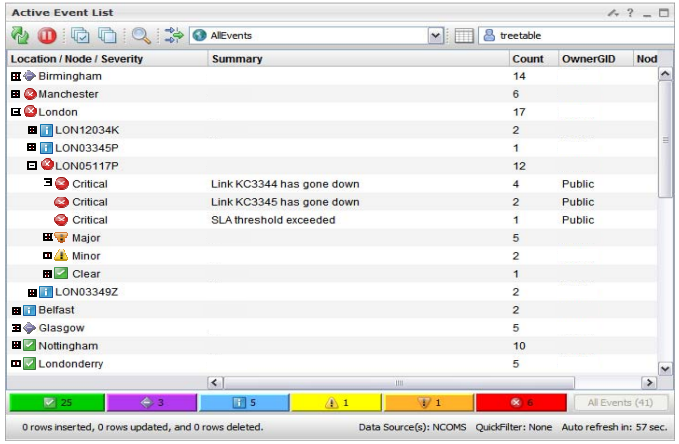
- SCADA & Industrial Appliance management
  - Transportation
  - Utilities
  - Industrial Automation

© 2011 IBM Corporation

Coming sooner rather than later…the Next Generation Web GUI

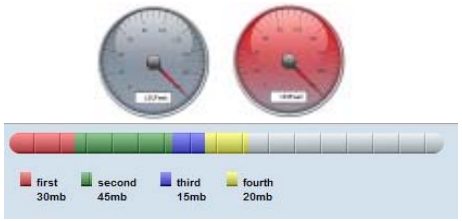
- Increased serviceability, no Java plug-in required
- Introduce never seen before features
- Initially a full replacement for the LEL
- Eventually completely replace the need for AEL
- iWidget enabled, re-use in other products





Tree table views / Hierarchical navigation

Next Generation Event List…phased release…



Widget Gallery & TIP Charts

+

Self Service Dashboard
(Map replacement)

+

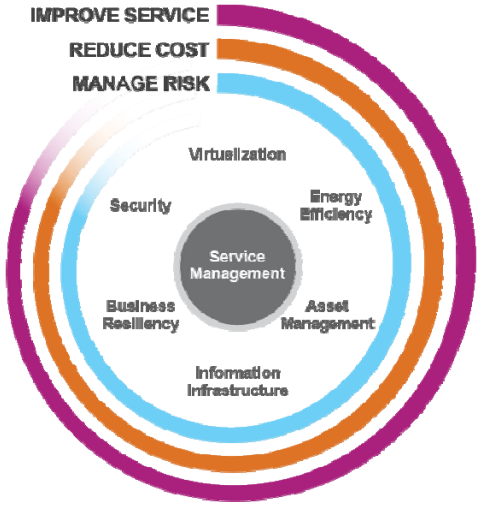
Multiple Platforms
(HTML / non-app strategy)

+ enhanced WAAPI plus the introduction of a REST based API

© 2011 IBM Corporation

Hot topics

- Smarter Planet
- Cloud Computing
- Green/Energy Management
- Dynamic Infrastructure
- End to End Service Assurance
- Integrated Service Management

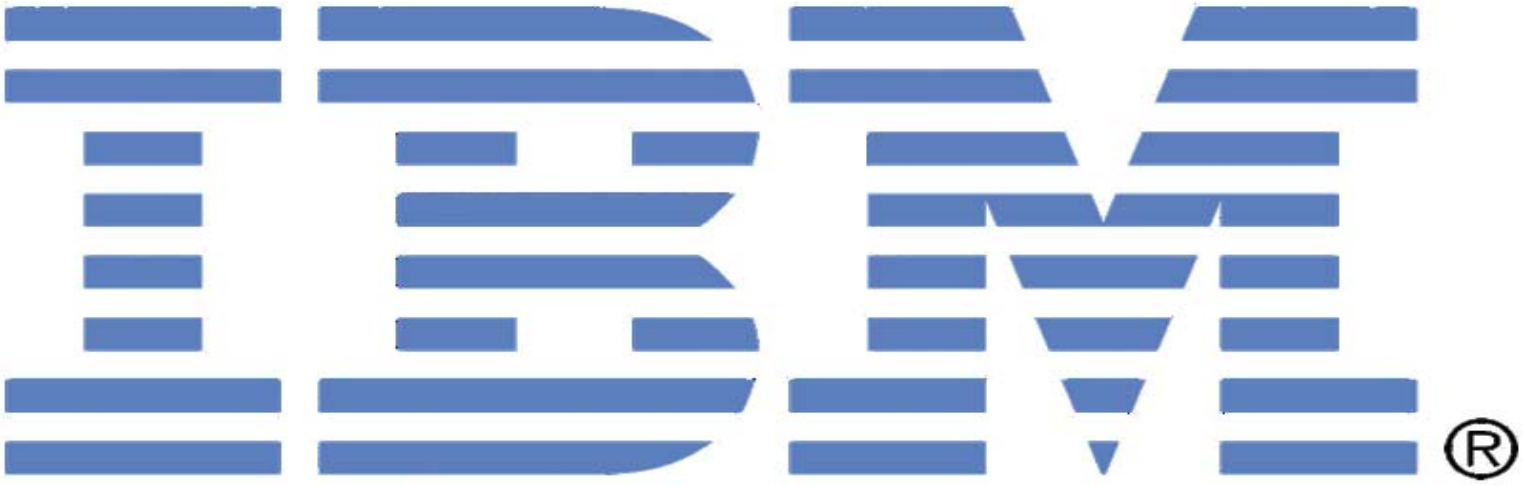


Event Management is the Foundation

© 2011 IBM Corporation

Thank you!

© 2011 IBM Corporation



© 2011 IBM Corporation

Trademarks and disclaimers

© Copyright IBM Australia Limited 2011 ABN 79 000 024 733 © Copyright IBM Corporation 2011 All Rights Reserved.
TRADEMARKS: IBM, the IBM logos, ibm.com, Smarter Planet and the planet icon are trademarks of IBM Corp registered in many jurisdictions worldwide. Other company, product and services marks may be trademarks or services marks of others. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml

The customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

Information concerning non-IBM products was obtained from a supplier of these products, published announcement material, or other publicly available sources and does not constitute an endorsement of such products by IBM. Sources for non-IBM list pricesand performance numbers are taken from publicly available information, including vendor announcements and vendor worldwide homepages. IBM has not tested these products and cannot confirm the accuracy of performance, capability, or any other claims related to non-IBM products. Questions on the capability of non-IBM products should be addressed to the supplier of those products.

All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Some information addresses anticipated future capabilities. Such information is not intended as a definitive statement of a commitment to specific levels of performance, function or delivery schedules with respect to any future products. Such commitments are only made in IBM product announcements. The information is presented here to communicate IBM's current investment and development activities as a good faith effort to help with our customers' future planning.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

Prices are suggested U.S. list prices and are subject to change without notice. Starting price may not include a hard drive, operating system or other features. Contact your IBM representative or Business Partner for the most current pricing in your geography.

Photographs shown may be engineering prototypes. Changes may be incorporated in production models.

© 2011 IBM Corporation