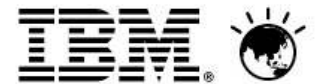# Service Performance & Analytics Case Study: SP AusNet

Iain Waters Program Lead - SP AusNet

Aleks Mitrovic, Jonathan Shaw - DeployPartners

12/06/2013

Agenda

- Customer Perspective – Iain Waters — SP AusNet (A member of Singapore Power Group)

- Solution Detail – Aleks Mitrovic — DEPLOY PARTNERS

- Operational Analytics – Jonathan Shaw — DEPLOY PARTNERS

AMI Service Performance Management

Iain Waters, SP AusNet

06/12/2013
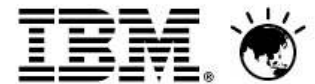
- SP AusNet is Victoria's largest energy transmission and distribution company. We pride ourselves on our commitment to the efficient and reliable delivery of gas and electricity to millions of business and residential customers across the state in a safe and environmentally responsible and sustainable way.

- A publicly listed company on the Australian Stock Exchange (ASX) and the Singapore Exchange (SGX-ST), SP AusNet is majority owned by Singapore Power Ltd and owns and maintains an impressive network of energy infrastructure that ensures efficient and reliable energy delivery to industrial and domestic customers right across Victoria.

- Our assets include 100% of Victoria's electricity transmission network, an electricity distribution network in the state' s east, and a natural gas distribution network in Victoria's west.
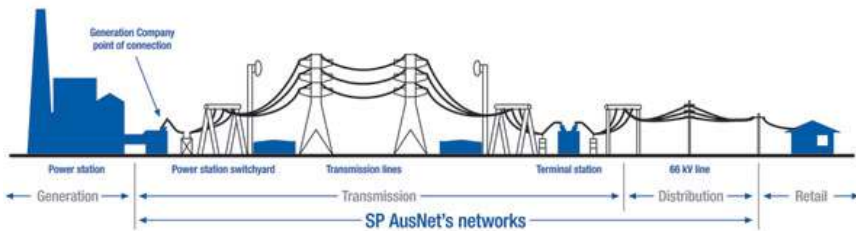
AMI Solution – Problem Outline

AMI provides provides meter data to retailers

- Interval metering data and total accumulated consumption per collected channel, and Specified event data from all meters for a day available to market participants with:
  - No less than 95% being actual data from meters, (with the remainder substituted), to be available by 6am the following day.
  - No less than 99% of actual data within 24 hours of the time in previous point.
  - No less than 99.9% of actual data within ten business days from day the consumption occurred
- This example is one of eight major AMI Performance & Service Level requirement categories.
- Continued conformity to all existing and new AER/DPI and AEMO requirement is the responsibility of SP AusNet.

AMI Solution - Objectives

- Real-time monitoring and display of end-to-end (Meter to Market – M2M) AMI system health
  - Is it all up and ready ?
  - Can transactions and data flow ?
  - Can we correlate business service issues to infrastructure and performance issues ?
  - Can we provide different end users their own dashboards and role based context ?

- Real-time monitoring and reporting on the transaction and data flow through AMI systems (Can transactions and data flow through the AMI system?)

- Allow operators and engineers to identify and resolve problems in AMI systems quickly and efficiently

- Provide contextual views and reports on the health and performance of AMI systems to a variety of business users

- *Ultimately, to ensure that business, regulatory and compliance requirements market is met.*

AMI Solution Selection Influencers

- A credible market leader and looked to leverage a strong partnership with IBM

- Build on an already mature and complex Tivoli Netcool implementation and framework

- DeployPartners an experienced integrator specializing in Tivoli Netcool with a trans-Tasman presence

- A scalable and extendable solution which can evolve with AMI transition.

- Relatively seamless integration into an existing Service Assurance ecosystem for event and Incident Management

- Ability to federate Event Management from dozens of sources

- Agile and quick response to issues encountered

- Solution support and ongoing engagement from DeployPartners

- A local partner with the capability to add value and experience to the solution.

- Strategic, Single-vendor assurance solution in place

- Allows operators to be Incident-driven rather than screen driven

- Successfully consolidate and correlate event data from dozens of different sources

- Foundation platform in place for Event, Network and Performance management and Analytics

- Extensible beyond baseline requirement, capable of extending to encompass the larger service operational requirements and provide clear impact visibility between individual events and business SLA obligations.
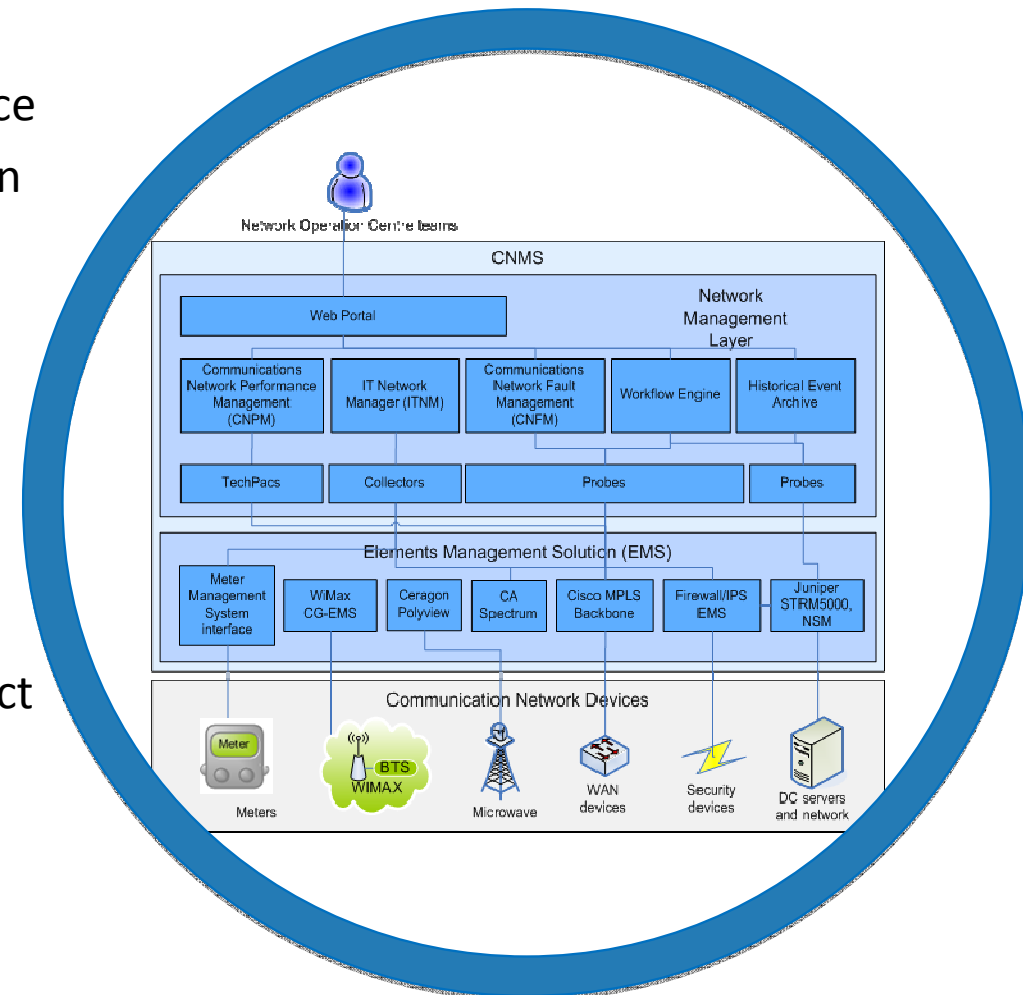
AMI Solution – Planned Expansion

- Next phase scope and requirements under final review
- Multiple further phases expected to encompass service outcome alignment of solution through to business consequence.
    - Connection Point Updates
    - Business Performance Levels – L1 to L7 dependency mapped into Metrics
    - Meter Monitoring & Alerting
    - Regulatory & Compliance Reporting
    - Performance & Service Reporting
    - Security Reporting, capture of security events
    - Meter Security Management, monitoring only
    - Time Management, monitoring only

AMI Solution – Learnings

- Experienced and skilled Systems Integration partner is a key to success

- Knowing the full and specific organizational requirements
  - If it does not have a defined measure it is usually not a requirement

- Structured upon an existing Service Performance framework including;
  - KPI's
  - OLA
  - SLA

- Do not develop the Service Performance Framework as part of deployment.

- Accurate and comprehensive CMDB can significantly de-risk.

- Do not underestimate internal organizational effort with locking down Metrics, Performance Levels and Impact assessments.

Solution Detail

Aleks Mitrovic – DeployPartners
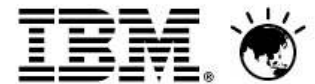
Title – Phase 3 scope
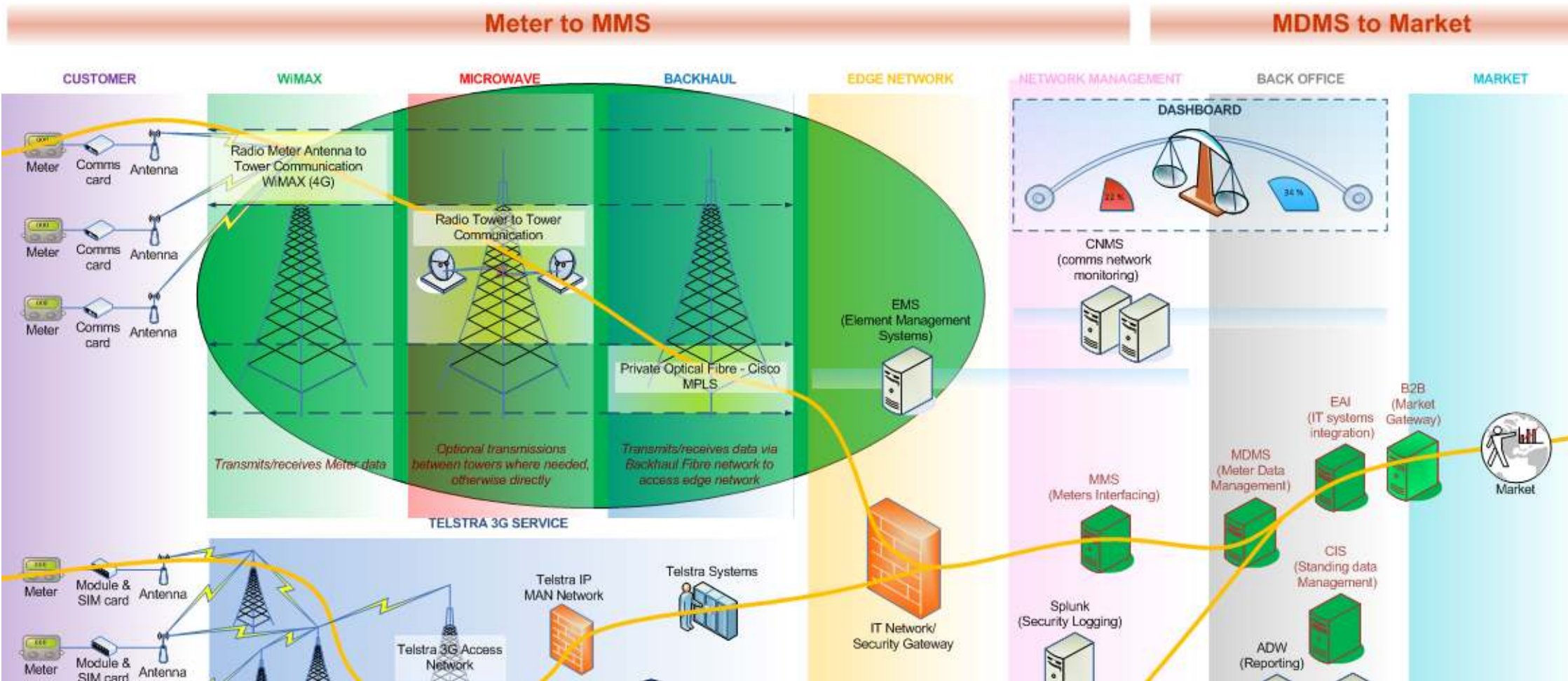
Solution architecture

- OMNIbus 7.3.1
  - SNMP probe
  - Syslog probe
  - Message bus probe
  - NCKL 3.4
- Integrated TIP 2.2 (Web GUI, Impact GUI, TopoVIZ, DataView, Context)
- Impact 6.1
- ITNM 3.9
- TNPM 1.3.2
- TCR 2.1.1
- Context 2.3
- SCAPM
- TADDM
- TBSM
- TNCM
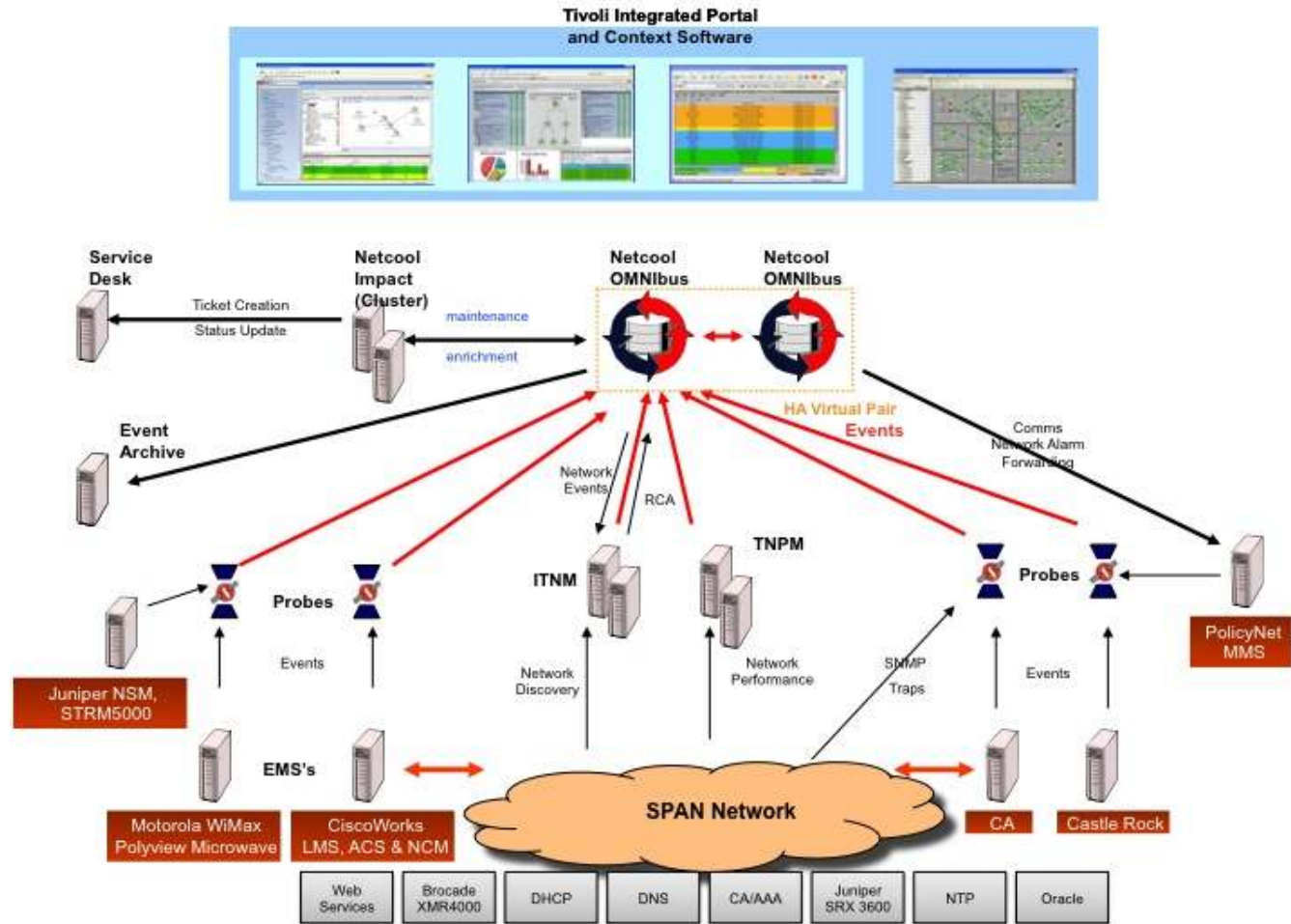
- Collect performance KPI's of the whole AMI environment
- Threshold monitoring
- Custom KPI's
  - Meter count as key performance indicator
  - Meters need connectivity to deliver data
  - Indication of problems in the network
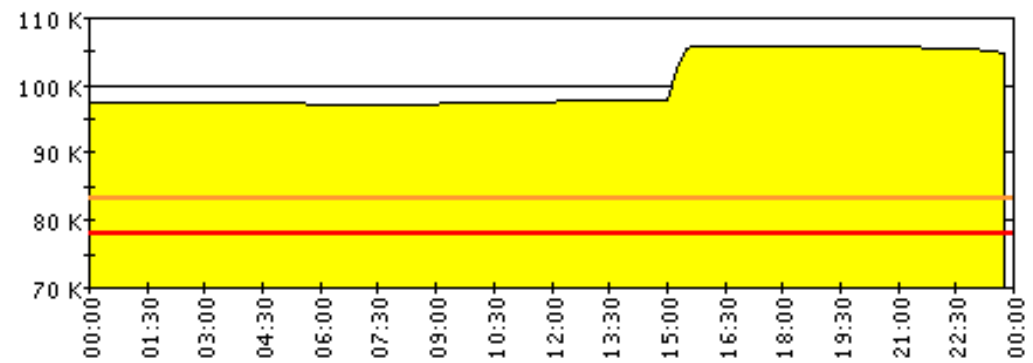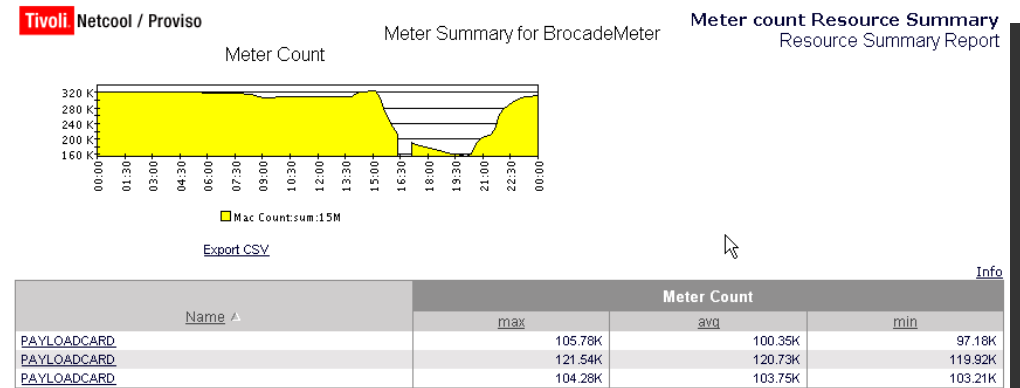
Context

- Knowledgebase
- Event enrichment
  - Custom severity
  - Auto ticketing
  - Filter simplification
  - Service impact analysis
  - Event suppression & escalation
- Analytics
- DeployPartners software product

Send email notification

- Custom filter dashboard
- Operator creates filters
  - Filter name starts with "email_"
  - Email addresses are added to the comments field (or left empty to disable email)
- System sends email to recipients when any event in filter is updated
- Can be done on the fly
- Direct feedback through filter builder GUI
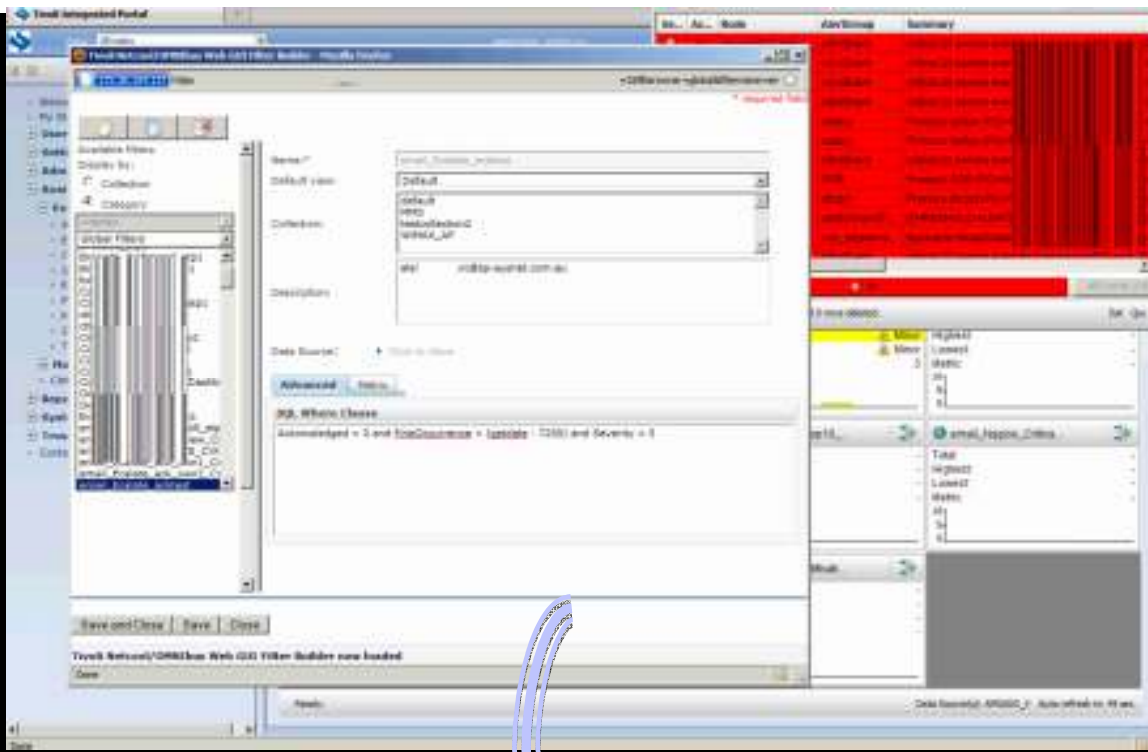
- Tools used:
  - OMNIbus
  - TIP
  - Impact
  - Perl
- Benefits
  - Multiple alarms per email
  - 4 email sent per hour
  - No email storms
  - Focus on filter, not on individual alarm

IBM
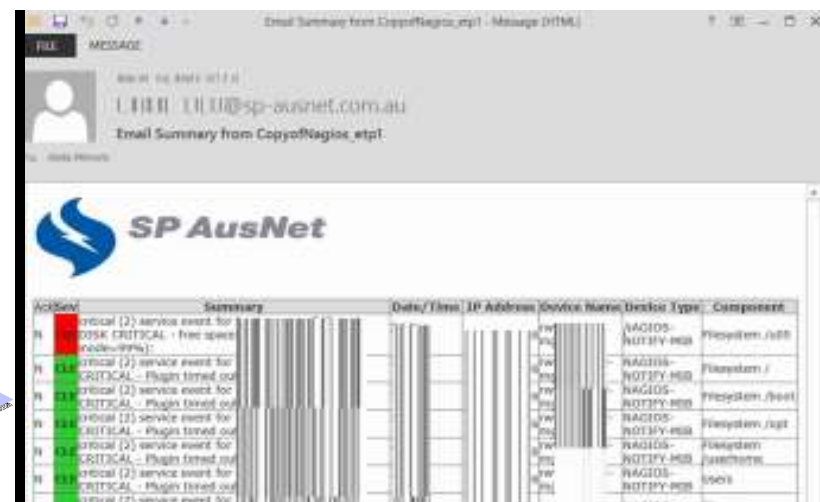
Custom map based dashboard

- Map with zone information
- Select location shows active event list
- Use of Google maps with GIS information for locations
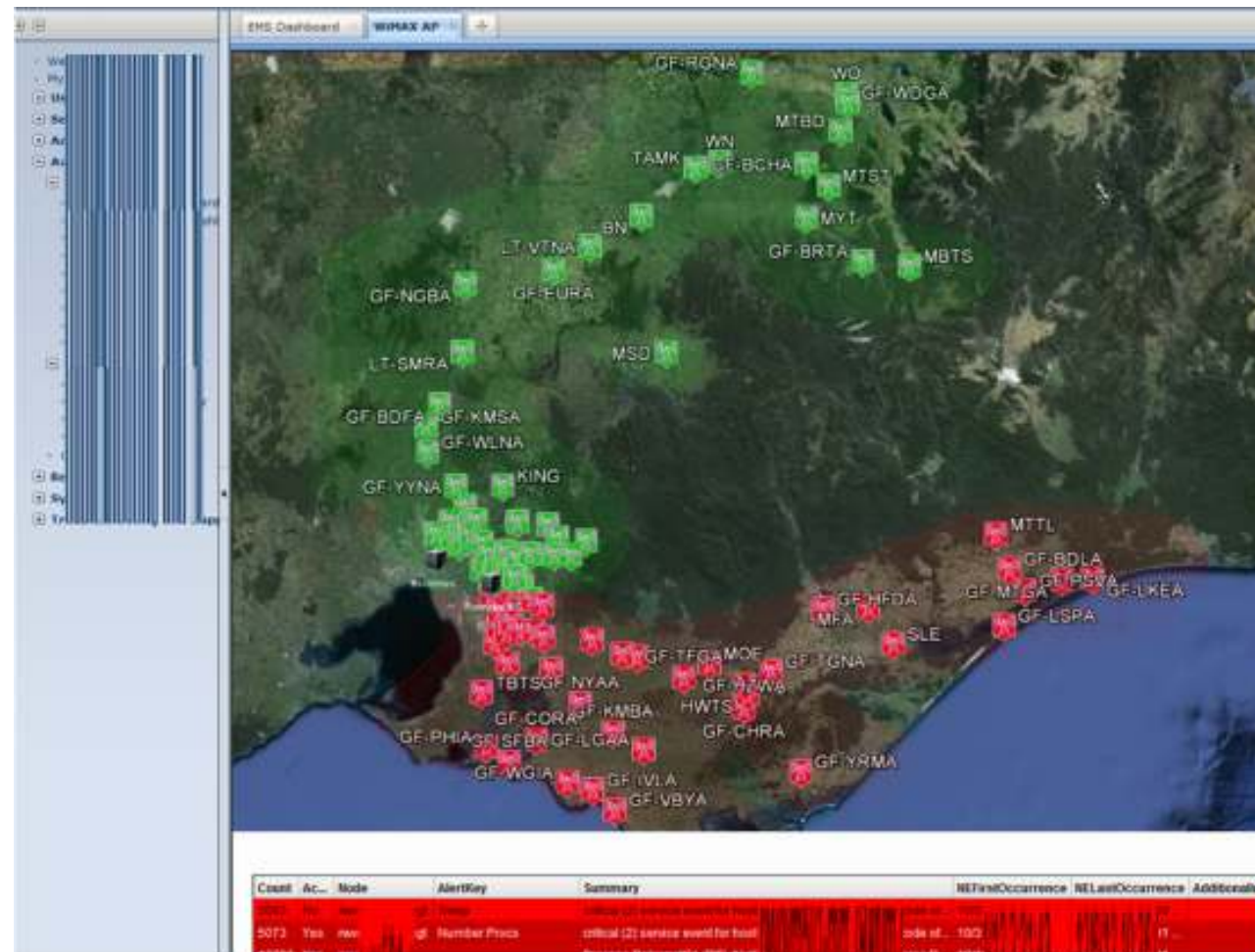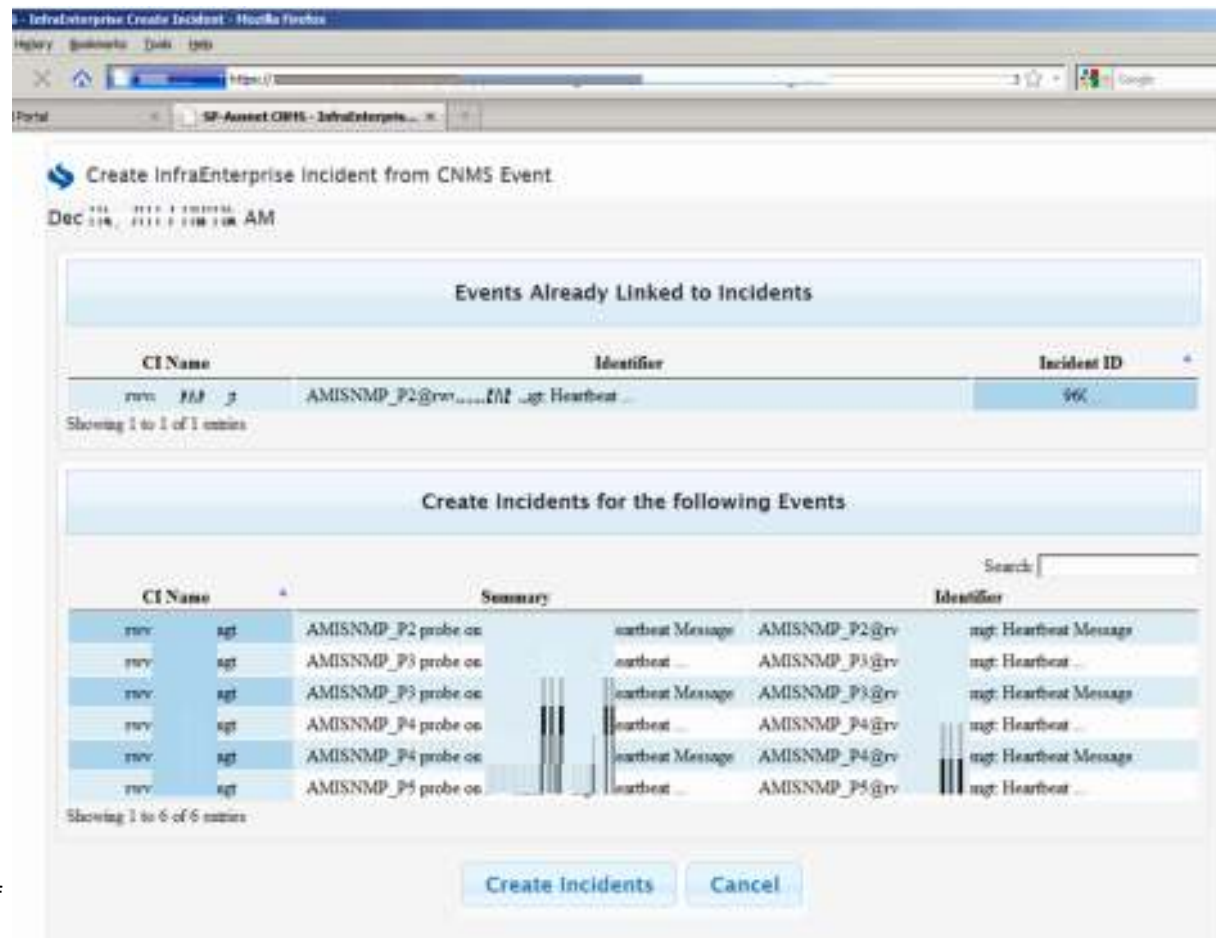
- Tools used:
  – TIP
  – GIMP

- Benefits
  – Instant overview of problem hotspots
  – Easy to maintain and update

Incident creation tool

- Simplified workflow through use of default mappings
- Create incidents for 1 or multiple events in 3 mouse clicks (select events -> menu create incident -> button create incidents)
- Asynchronous ticket creation
- Advanced ticketing workflow with state recorded in event

- Tools used
  - TIP
  - Impact
  - jQuery

- Benefits
  - Focus on identifying issues, let the system handle ticket creation
  - System handles a number of error and retry scenarios
  - Operators can escalate incidents during off peak time
 - Support for complex workflows (parent child, advanced error/retry,)

System alarm throughput reporting

- Periodical reports on system alarm throughput
- Performance files are loaded into excel periodically
- Graphs and KPI's are automatically calculated

Metric	Average	Median	Max	Min
Events /sec	19	17	113	2
Events /min	1,158	1,012	6,786	104

- Tools used
  - ROI rules files
  - Excel

- Benefits
  - Keep track of system through put rates
  - Identify architected limitations
  - Can be integrated with TCR

Events per sec
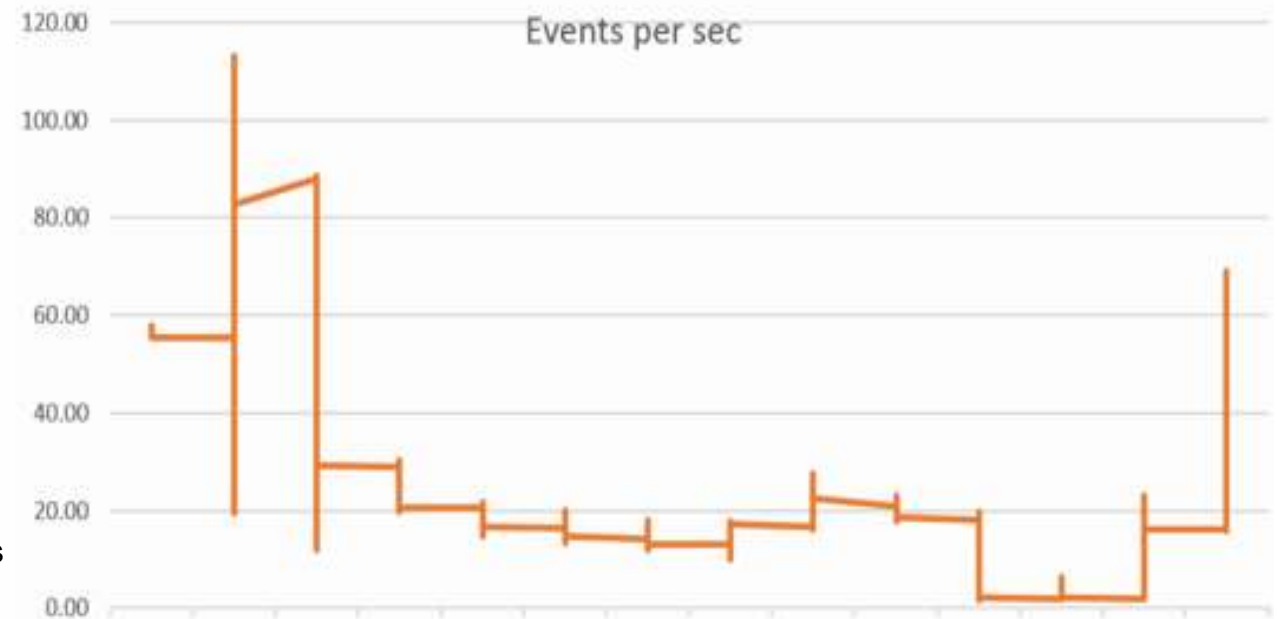
- Provide visibility into the health & performance of IT applications

- Discover application relationships and dependencies

- Configuration discovery & management of all network devices

- Provide auditing and compliance checks against configuration of both network devices and applications

- Provide end-to-end views of the business services

- Provide reporting on system health using analytics to provide the business with performance trends and the ability to anticipate future performance issues
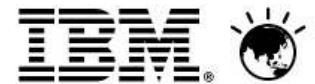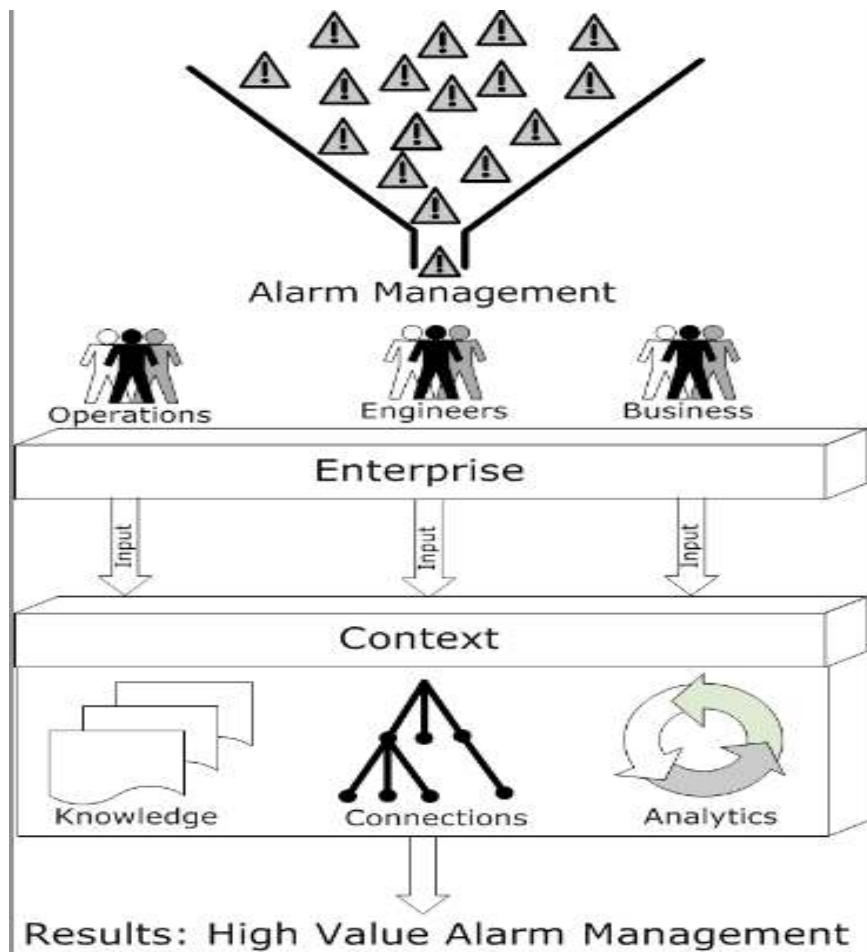
Operational Analytics

Jonathan Shaw – DeployPartners

Operational Analytics – Purpose

Capture and understand Network behaviour

+

Alignment with business objectives and service KPIs/SLAs

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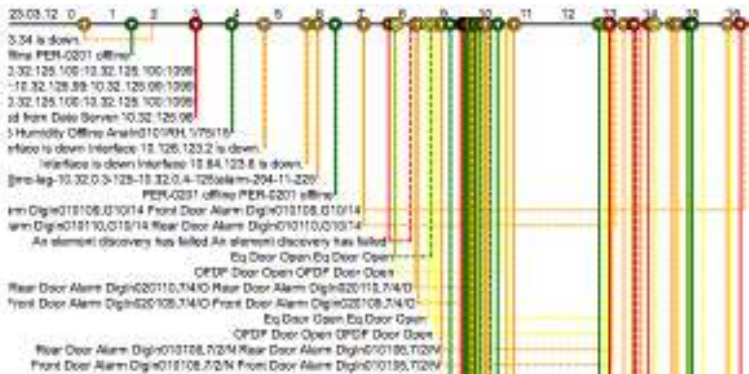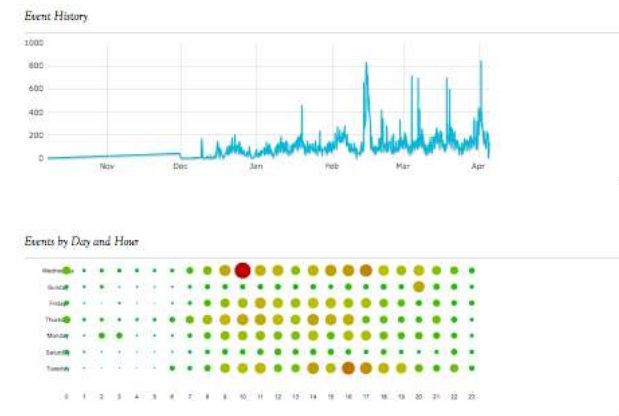
Knowledge capture and fast, flexible alarm management

It is critical that operations teams are working on the things that matter

Operational Analytics – Noise Reduction

Top Level View – where are the bulk of our alarms coming from?

Detailed View – what is the general pattern of behaviour for high-frequency alarm types?

Deep Dive – What is the behaviour of particular problem nodes? Can we take automatic actions? Do we need to care about the majority of these alarms?

Link Context to parameterised alarm management policies in Netcool/Impact

GREATLY increase speed of response and the scale of alarm management actions that can be undertaken directly by Operations – *without the need for change requests!*

Actionable Alarms

Manage Alarm LifeCycle

Operations feedback

Netcool

Alarms

Historical DB

Context

Create Model
- Nodes, Sites
- Alarm Types

Suppress / Escalate

Impact

Enrich Alarms

Understand your network and alarm behaviours

– *Context is a tool that both augments and utilises the capabilities of Tivoli Netcool*

Service Performance Analytics

– *MTTR, MTBF*

– *Business critical SLA's and KPIs*

Immediate Operator Control of Alarm Behaviour

– *Allows input to parameterised Alarm Management policies in Tivoli Netcool*

Operator Knowledge Base

– *Captures organisational knowledge to assist in advanced analytics and alarm management*

- **All OSS systems suffer from alarm noise**
  - Fault, Network and Performance Management tools collect a lot of data!

- **This data can be analysed to help reduce noise and improve the effectiveness of operations**
  - Understanding the *nature* of your IT environment is key to managing it

- **Operational Data Analytics helps you solve difficult problems and take control of your network and services**
  - Understand the performance of critical business services

Thank you!

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Pulse

IBM