Integrated service management for energy and utilities

Enabling infrastructure transformation

Highlights

- Manage complex smart metering networks with topology mapping, alarms management, root cause analysis, and change and configuration management
- Mitigate threats and vulnerabilities with a centralized security approach across all business domains
- Optimize plant, transmission, distribution and meter asset lifecycle decisions including procurement, deployment, operation, maintenance and disposal

The world's utility infrastructure will change more in the next 10 years than it has in the last 100.[1]

Market forces are driving the transformation of traditional industry business models due to:

- Climate change and the environment
- Aging asset performance combined with increasing expectations on reliability, operational efficiency and workforce productivity
- Growth in renewable and distributed power generation resulting in a bidirectional grid that is less predictable.
- New entrants and disruptive technologies.

We are clearly at a turning point in the history of traditional utility operations and information technology. These disciplines must merge to address today's challenges.

Today's intelligent utility network is different from the communication infrastructure of the past. It is digital, high speed, two-way and increasingly populated with IP enabled distributed devices. The number of endpoints is exploding—expanding network coverage from the substation into the home or business. As utilities implement smart grid initiatives, these networked devices have created a new and evolving security risk. Furthermore, many utilities must address aging assets, an aging workforce, and investment in new smart grid infrastructure. IBM's Integrated Service Management for Energy and Utilities solutions help address these challenges.

Manage complexity across a smart grid

As utility companies deploy IP-enabled networks with smart meters and sensors, the integration of what were once separate IT, grid and communication networks drives the requirement for integrated network visibility,

control and automation. Smart meter deployment and communication network implementation from the substation to the customer require sophisticated operational management to keep track of changes plus monitor alerts and ever-changing network events. How well this is done impacts service levels and the customer's perception of their service availability.

IBM Intelligent Metering Network Management provides capabilities to collectively monitor and manage many linked devices with their highly complex flow of information. The core capabilities enable utilities to:

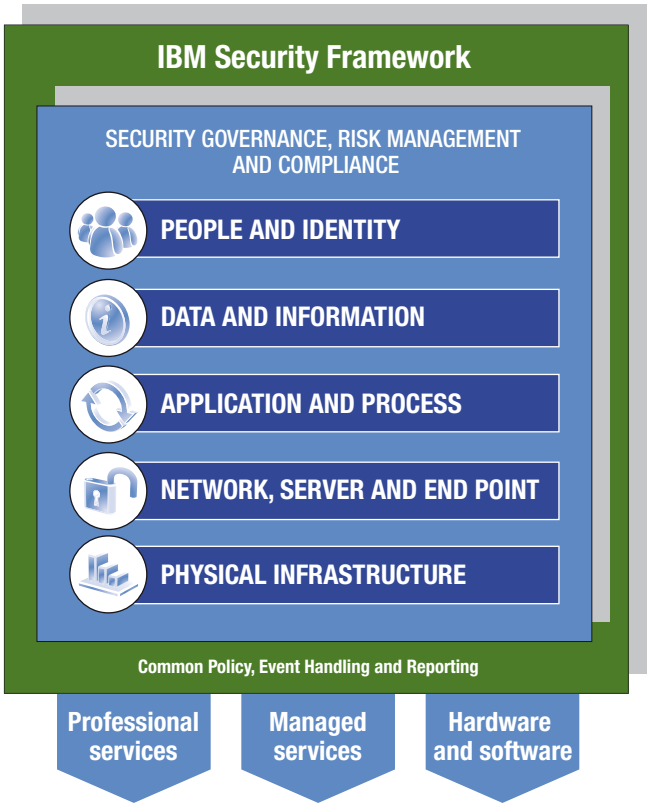
- Consolidate events and alarms in a "manager of managers" environment through IBM Tivoli® Netcool®/OMNIbus.
- Correlate event and problem management with IBM Tivoli Netcool/Impact.
- Enable network discovery, topology visualization and root cause analysis with IBM Tivoli Network Manager.
- Manage configurations and changes to remote devices with security policy and intelligent backup through IBM Tivoli Netcool Configuration Manager.

Your utility can add additional capabilities with IBM software to:

- Secure integration of the data with IBM WebSphere® DataPower®.
- Simplify the management of the business events and rules in one simple-to-use engine though IBM WebSphere Decision Server.
- Analyze high volume real-time data with IBM InfoSphere® Streams.

A centralized security approach

Security solutions for smart metering from IBM address traditional security challenges and new exposures with tools for identity and access management, business-based security policy management, regulatory compliance and risk management. With security software solutions for smart metering, you can



IBM takes a holistic approach to cyber security.

address the evolving security risks associated with technologies that enable remote connections and disconnections, automated meter reading and other new IP-based smart grid innovations. We deliver a breadth of security and compliance capabilities to address infrastructure, applications, information, people and identities. The IBM Security Framework provides an integrated structure to help ensure consistent application of security policies and practices in the increasingly complex utility network. A unified approach to security across IT and utility operations

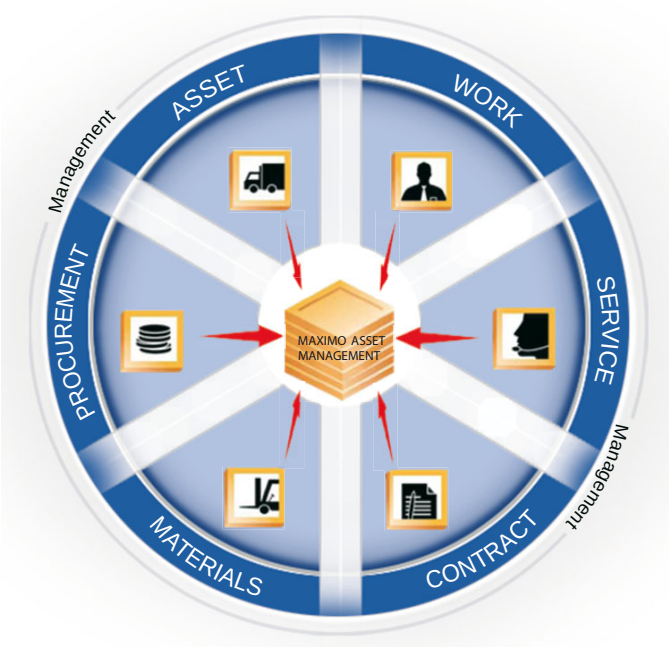
enables your company to better understand and prioritize risks and vulnerabilities based on their potential to disrupt critical business processes.

Security software solutions for smart metering provide key capabilities for your environment:

- Identity and access management: IBM Tivoli Identity and Access Manager
- Policy management for critical infrastructure protection: IBM Tivoli Security Policy Manager
- Regulatory compliance and reporting management: IBM Tivoli Security Information and Event Manager
- Web services policy enforcement at XML level for access control and message protection of metering data: IBM WebSphere DataPower
- Database and field level tools for message protection that secure the meter data management system (MDMS): IBM InfoSphere Guardium®
- Vulnerability assessments of new applications like DMS and MDM, and pre-emptive protection throughout the entire development lifecycle for all new applications being developed: IBM Rational® AppScan®
- Intrusion detection across IP enabled devices: IBM Security Network Intrusion Prevention System

Work and Asset Lifecycle Management

Today's utilities often have siloed operations that operate inefficiently. With IBM's Maximo® Asset Management, utilities are able maximize the performance and lifetime value of complex assets and closely align them with your overall business strategy. Consisting of six key management modules—asset, work, service, contract, materials and procurement management—the Maximo solution helps optimize the performance of every asset including power generation and transmission and distribution for water, gas and electric. The solution helps provide end-to-end information around a utility's assets throughout all phases of an asset's life, from planning to procurement through retirement. The utility, therefore, can be more proactive rather than reactive in the development, implementation and subsequently the maintenance cycle, reducing downtime and enhancing customer satisfaction. Together, these programs contribute to your goals of reducing costs and increasing asset uptime.



Maximo Asset Management integrated modules

IBM Solution Architecture for Energy and Utilities

IBM Intelligent Metering Network Management, Maximo for Utilities and the IBM Security Framework are customized for utility companies via the IBM Solution Architecture for Energy and Utilities (SAFE) industry framework. As utility companies transform their networks and respond to challenges like security, the IBM SAFE framework helps to integrate and optimize

systems across the energy value chain by leveraging industry best practices, repeatable business patterns and open standards. Utility companies can reuse software components, lower total cost of ownership (TCO), improve time-to-market and deliver stronger bottom-line results.

These Integrated Service Management for Energy and Utilities solutions help improve service, reduce cost and manage risk through Visibility.Control.Automation.™

Trust our experience for success

IBM has developed the trusted experience, skills and technology by delivering more than 150 smart grid projects around the globe. IBM Maximo leads the energy and utilities market for enterprise asset management. Furthermore, with more than 40 years of security development and innovation, IBM is one of the only companies with the breadth and depth of research, products, services, consulting and global business partners to deliver end-to-end security.

Gain better visibility, control and automation with Integrated Service Management for Energy and Utilities from IBM.

For more information

To learn more about Integrated Service Management for Energy and Utilities, please contact your IBM marketing representative or IBM Business Partner, or visit the following website: **ibm.com**/servicemanagement/industry

[1] "Switching perspectives: Creating new business models for a changing world of energy." IBM Institute for Business Value. March 2010. http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=XB&appname=GBSE_GB_TI_USEN&htmlfid=GBE03289USEN&attachment=GBE03289USEN.PDF

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