Assuring Quality Performance and Availability of Energy Services

The energy industry is undergoing a huge digital transformation. One of the biggest drivers of the digital transformation is the move to the smart grid, although that is not the only example. Hybrid cloud, next generation contact centers and web-based services are all improving business processes, customer service, and costs for energy companies.

There are requirements in locations around the world to move to smart grid with some governments providing incentives to help promote the transition.

The goals of the smart grid include reducing costs, increasing reliability, utilizing more green energy (including that generated by customers), complying with safety and security regulations, and providing better customer service. Meeting these goals requires high-performance communications throughout the Advanced Metering Infrastructure (AMI), with the sensors distributed throughout the supply and distribution network, as well as applications used for energy management by both the utility and its customers.

In many locations, government regulations are forcing utility companies to implement the smart grid. Although the smart grid provides many benefits for utilities and consumers alike, it adds new technical challenges for the utilities and increases the criticality of their IT infrastructures. If there are communications outages or degradations with sensors in the generation and distribution system, it can lead to business impact such as inaccurate billing or worse yet, safety issues by not properly rerouting

around failures or not accurately accounting for distributed power generation, such as solar and wind farms resulting in improperly controlling the amount of power generated.

In addition to the smart grid, utilities must continue to provide service assurance for a host of other IT services, such as Supervisory Control and Data Acquisition (SCADA), Customer Relationship Management (CRM), Outage Management Software (OMS), Crew Management applications, Unified Communications & Collaboration (UC&C), and other business applications. To complicate matters, many of these systems are spread across distributed locations. SCADA is used to control power generation and distribution and any SCADA service disruptions can cause regulatory and safety issues as well as financial risk. Any degradation in CRM, OMS, Crew Management, UC&C, etc. can cause customer satisfaction issues, as these services are used to minimize impact of service outages, communicate with customers, and provide appropriate billing.

With energy businesses relying so heavily on IT service delivery, the availability and performance of these IT services is paramount. If significant inefficiencies are introduced, customer service, compliance, revenue, and profitability all suffer. NETSCOUT® provides the end-to-end service assurance required to drive business success in the energy sector.

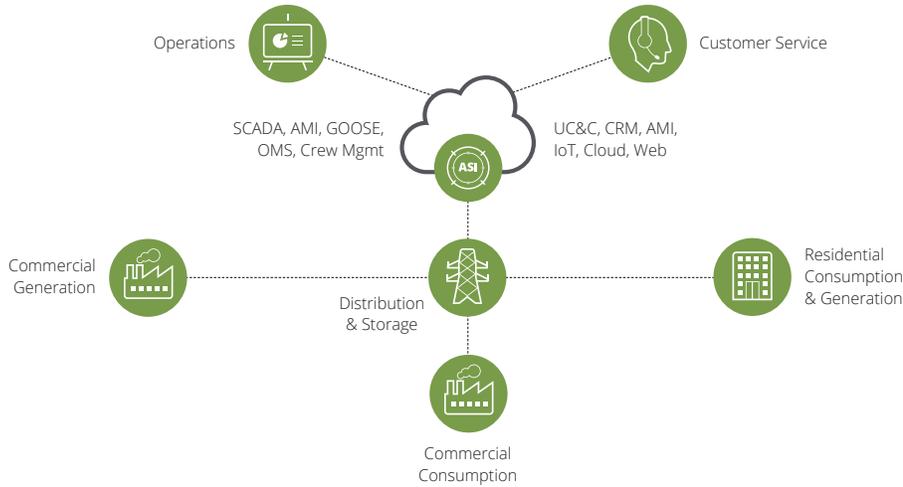*Compliance violations can result in fines of up to $1 million per day.*

Figure 1: The applications managing power generation, distribution, and consumption require high availability and performance, as well as security to maintain safety, compliance and customer satisfaction.

Our Approach

NETSCOUT's approach to business assurance is built on a foundation of high quality data and real-time analytics. Based on network traffic, NETSCOUT's patented Adaptive Service Intelligence™ (ASI) technology provides the most robust data source available to ensure services are delivered by measuring the actual transactions and dependencies of the service. NETSCOUT analytics are the industry-leading standard for scalability and ease-of-use, enabling proactive service triage to keep combined aspects of the manufacturing process running smoothly end-to-end. Leveraging ASI, the nGeniusONE® Service Assurance platform provides unmatched capabilities that ensure the reliable and uninterrupted delivery of critical application services, ensuring they do not cause process delays or quality issues.

The benefit of this approach is getting the right information to the right people at the right time, resulting in faster Mean Time to Resolution (MTTR) for any issues that may arise. Logical, intuitive workflows have been developed with data reduction in mind to reduce the mountain of data and statistics found in high-volume, globally distributed, complex IP networks down to actionable intelligence generated from ASI metadata. By minimizing noise and maximizing

essential information, IT organizations have greater effectiveness in troubleshooting complex service-impacting issues with the NETSCOUT solutions.

The cost of IT downtime for energy companies averages $2.8 million per hour.

Our Solutions

NETSCOUT solutions deliver the flexibility to support both energy specific services, such as AMI, SCADA, etc. as well as general business services, such as CRM, email, and UC&C, all over distributed networks, including cloud and hybrid cloud. The nGeniusONE platform provides unrivaled visibility into IP-based services along with contextual workflows to speed problem resolution that is both easy for Level 1 responders to use and powerful for an expert to operate. Powered by ASI, NETSCOUT's patented Deep Packet Inspection engine, the nGeniusONE platform delivers real-time performance metrics including Key Performance Indicators (KPIs) from analysis of traffic utilization, application and database servers, and network errors.

Rather than look at individual elements in isolation, nGeniusONE provides an overarching view into the performance characteristics of the components associated with service delivery across the entire infrastructure. This exposes underlying service dependencies between services, such as AMI, SCADA, CRM, and UC&C, along with the individual application servers, their backend databases, and the necessary service enablers, such as DNS and DHCP, and authentication, like LDAP, Active Directory, or RADIUS. A single solution providing service assurance for the entire service, including all the components and relationships, allows IT operations to effectively manage health and availability of critical services and proactively identify the root cause of problems.

For the wireless environment, NETSCOUT offers the nGeniusPULSE and nPoint 3000 that supports advanced service testing over Wi-Fi and Ethernet connections providing IT a way to compare the trended results for fault isolation and determine if any service impact is, or is not, due to Wi-Fi. These tests will help identify the cause of the issue as the Wi-Fi network, a device or the wired network say from a remote billing office or transmission sub-station.

Visibility to protect the power company from enterprise-wide network threats to the business can be accomplished with Arbor Threat Analytics (ATA). With the ability to promptly and efficiently detect, validate, and respond to threats, it serves as an early warning system of damaging incidents. Leveraging the same ASI data for analytics, energy companies can reduce the time cyber criminals can lurk in the network, thus reducing exposure to the company's resources and reputation.

Our Value to Energy Companies

For energy companies, NETSCOUT solutions are designed to ensure the IT services supporting business processes from generation, distribution, customer service, and billing, run smoothly through proactive service assurance.

If problems do arise, NETSCOUT solutions ensure the proper information is available to troubleshoot them quickly to keep the business moving. With NETSCOUT, energy companies can:

- Roll out AMI and smart grid with confidence by investing a small portion of the cost in service assurance to ensure performance and availability of the application services and infrastructure for business success
- Lower operational costs through proactive management and reduced MTTR, as well as enabling successful deployments of smart grid elements
- Ensure efficient operation of business-critical applications, such as SCADA, OMS, Crew Management, CRM, and more, whether used locally or distributed across the infrastructure
- Maintain both compliance and high-performance customer communications infrastructure in order to limit the impact of power outages, create high-quality customer satisfaction, and avoid costly penalties
- Proactively triage and reduce MTTR for issues contained to a single site or across many sites, including substations

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