Enabling IoT Insights and Voice Services for Power and Utility Companies

The power and utilities industry is going through a major evolution. While historically there has been regulated, centralized energy generation and steady transmission to distributors and consumers, there is now a decentralized supply model driven by consumers and their needs. Consumers continue to fill their homes with connected devices, and they want to manage energy consumption from those devices to avoid paying for inefficient energy usage. In some cases, savvy consumers are turning to smart devices to manage energy use themselves. Ultimately, consumers are demanding better services from their utility providers, while seeking more choices, optimization, simplification, more predictability, and regular feedback on their energy usage.

66 PERCENT

13.3 BILLION

Power and utility companies are feeling the urgency of this move from the utility-controlled grid to the consumer-controlled edge.

Sixty-six percent of utility executives expect their companies to evolve toward optimizing how and when customers use energy,[1] integrating distributed energy resources, and facilitating the market for these services.

Power and utilities executives need to guide their companies through this evolution by capturing the energy value of devices on the edge, a move that is estimated to be worth $13.3 billion in annual avoided costs in the U.S.[2]

By capturing the value of edge devices and forming IoT connections with their customers, power and utility companies can:

✓ Decrease marginal energy costs

✓ Develop new revenue streams

✓ Reduce churn in the energy retail market

✓ Increase customer satisfaction (C-SAT) scores

✓ Be prepared for new market competitors

AWS AND INTEL:
PARTNERING TO DRIVE ANALYTICS AND EFFICIENCIES

Expanding on a long history of collaboration, AWS and Intel are working together on technology initiatives in the power and utilities industry to advance the adoption of the connected home, improving customer experience and increasing energy efficiency. These initiatives will enable power and utility companies to better understand, engage with, and provide value-added services to their customers behind the meter.

Taking advantage of AWS and Intel technologies, power and utility companies can ingest complex IoT datasets, extract new data insights from the grid, manage load demand/response, and engage customers using Alexa Voice Service in a secure, compliant, cost-effective way.

1 "Digitally Enabled Grid," Accenture, 2016. | 2 "The Economics of Demand Flexibility," Rocky Mountain Institute, 2015.

AWS IOT TECHNOLOGIES HELP POWER AND UTILITY COMPANIES:

- Process data at the edge without connectivity using **Amazon Greengrass**.
- Securely ingest massive IoT datasets through resizable compute capacity to measure the energy demand and generation of millions of homes through **Amazon IoT Analytics, Amazon IoT Core, and Amazon Elastic Compute Cloud (Amazon EC2)**.
- Identify inefficient applications using **Amazon Machine Learning** and **AWS Analytics Services**.
- Build conversational interfaces into any application using voice and text via **Amazon Lex**.
- Improve device security and anomaly detection and protect customers from service interruptions using **AWS IoT Device Defender**.

INTEL IOT SOLUTIONS GIVE POWER AND UTILITY COMPANIES THE ABILITY TO:

- Balance performance, function, thermal, and cost demands with **Intel® Atom® CPU** and **Intel® Cyclone® FPGA** offerings.
- Optimize demand/response across the grid and effectively manage loads during peak times through **Intel® Energy Collective Optimization software**.
- Enable secure and stable data monitoring and analytics at the edge and in the cloud.
- Support simple integration of services from a range of vendors through a multi-tenant services architecture and services marketplace, empowering customers with the flexibility to manage their energy consumption.
- Use Alexa Voice Service to enable the Intel gateway—a scalable, security-enabled intermediary between devices—and the services that Smart Home ISV partners are bringing to the energy marketplace.

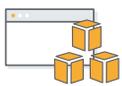## EXTRACT NEW INSIGHTS, OPTIMIZE EFFICIENCIES, REDUCE ENERGY COSTS

Relying on the innovations of AWS and Intel, power and utility companies can:

Engage customers in a secure, compliant, and cost-effective way through driving optimization and cost-effective services delivery.

Ingest heterogenous IoT datasets and extract data insights from the grid, enabling demand flexibility and management of load demand/response.

Identify inefficient applications and hardware to extract new data insights.

Use flexible, function-specific compute capabilities to enable secure and stable edge data computing without connectivity.

Aggregate the energy flexibility of everyday devices that reside beyond the electric meter, as well as electric vehicles, and use that flexibility to integrate distributed energy sources (e.g., wind, solar, storage) and reduce marginal energy cost.

Speed data processing and act on edge data in real time to improve equipment monitoring and management, reducing downtime.

Gain a 360-degree view of the customer and detailed insights into how to optimize efficiencies for the customer and the utility.

Get started today.

Contact us at aws-intel-oppty@amazon.com or visit aws.amazon.com/power-and-utilities.

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