

# When Analytics-by-Design is the Right Answer

## Oracle Utilities Analytics

For every utility, analytics is an answer to solving very specific business problems. For instance, for one U.S. utility, analytics helps with reducing sustained outages by finding locations of transient faults faster.<sup>1</sup> Similarly, using immense amount of Advanced Metering Infrastructure (AMI) information with distribution grid data helps find failing equipment faster. Often, earliest stage of analytics is data gathering and putting it to the right use. But often their projects are stalled by constrained budgets and justifying the return on investment according to Black and Veatch.<sup>2</sup> Lack of analytics and data science skills further complicates utilities adoption. Analytics-by-Design approach ensure utilities minimize time and cost on staging upfront business process while gaining maximum value by taking action.

### Four-Step Approach to Maximizing Analytics Value

In order to run the distribution network reliably, utilities need information from numerous sources such as AMI, distributed energy resources (DERs), grid sensors, and home energy management devices. This is not a simple task for grid operations organization. They have to visualize this information in a timely manner to make decisions and improve predictability of events.

#### Step1: Gather Data

One U.S. utility collects data from smart meters and DERs, marries that with the weather system to create a much accurate load forecast for the distribution network. This data is analyzed with built-in analytics in Oracle Utilities Network Management System (NMS).

#### Step 2: Visualize

Oracle Utilities Analytics along with Oracle Business Intelligence provide a single pane of glass to all the outage and grid management information. Grid operations can prioritize restoration efforts and manage resources based on the number of customers impacted, locations of emergency facilities, size of outages, duration of outages, and more. Oracle Utilities customers create CAIDI, SAIFI, SAIDI, and MAIFI reports very quickly instead of waiting for data and going to spreadsheets.

#### Step3: Predict

Once grid operations have mastered data management and have identified where

<sup>1</sup> [Key Trends Driving Change in the Electric Power Industry Volume III \(Washington, D.C.: The Edison Institute, 2016\)](#). P 45.

<sup>2</sup> [2016 Strategic Directions: Smart City/Smart Utility. \(Overland Park: Black & Veatch Corporation, 2016\)](#). P 52.



#### BENEFITS

- Pre-built content and data mapping avoids designing from scratch
- One workflow with Oracle Utilities Analytics and Oracle Utilities Network Management System making business-driven intelligence actionable
- Identify asset conditions that lead to overloads and outages
- Communicate more effectively with executives and public officials
- Improve network model accuracy and ability to serve customers

faults could occur, machine learning and advanced data science enables them to forecast failures ahead of time. Grid operations can automate many manual tasks related to finding recurring faults on feeder lines. Historical and real-time data enable grid operations to map future scenarios faster and accurately.

**Step 4: Optimize in Real-time**

Once grid operations have mastered data management and have identified where faults could occur, machine learning and advanced data science enables them to forecast failures ahead of time. Grid operations can automate many manual tasks related to finding recurring faults on feeder lines. Historical and real-time data enable grid operations to map future scenarios faster and accurately.

**RELATED SOLUTIONS**

- Oracle Utilities Network Management System
- Oracle Utilities Analytics
- Oracle Utilities DataRaker
- Oracle Business Intelligence Enterprise Edition

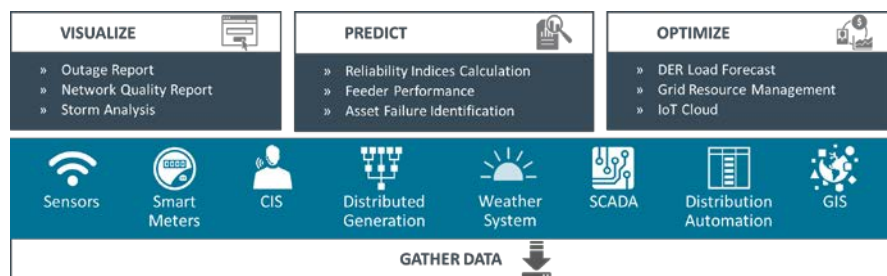


Figure 1: Comprehensive data with built-in visualization and analytics at your fingertips

**Use-case: Current Outage Dashboard**

Grid operations can analyze grid performance during storms via Storm Dashboard. This dashboard analyzes impact to the customer due to a storm. Grid operations calculate their performance against reliability metrics and progress in restoring outages. Storm Dashboard provides various options to prioritize restoration of critical customer types as well.

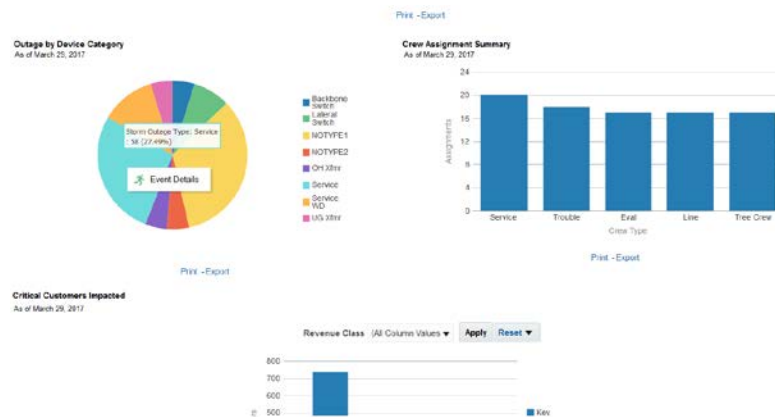


Figure 2: Storm Dashboard – Event details with crew assignment. Drill into critical customer types and prioritize restoration efforts based on that information

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