What Is An Outage Management System and How Can It Help Me?

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What Is OMS?

A system of:
- Computer Software,
- Hardware,
- Telecommunications, and
- Operations policies and practices

that enables electric utility employees to better manage their response to customers’ power outages.
What Does OMS Do?

OMS enables electric utility employees to discover, locate and resolve power outages in a more informed, orderly, efficient and timely manner.
What Does OMS Do?

- Makes utility employees aware of power outages sooner and with greater precision
How Does OMS Work?

• Make utility employees aware of outages.
  – Collect, organize, and display data from the field
    • Customers
    • Field crews
    • SCADA & Smart Meters
    • Other sources
How Does OMS Work?

- Data from customers
  - Live / recorded calls via employees
  - Live / recorded calls via call center(s)
  - Calls via IVR
  - Emails
  - Text messages
  - Social media
  - Web portal
How Does OMS Work?

• Data from mobile workforce
  – Live communications
  – Remote data input
How Does OMS Work?

- Data from automated monitoring devices
  - Supervisory control & data acquisition (SCADA)
  - Distribution management system
  - Smart Meters
How Does OMS Work?

- Other sources
  - Storm tracking
  - Power pool / ISO
  - Public safety entities
What Does OMS Do?

• Helps employees to locate and diagnose the cause
How Does OMS Work?

- Help employees to more quickly and accurately locate and diagnose the cause of outages.
  - Combine field data with the detailed distribution circuit model
    - Precisely locate each reported outage point
    - Identify the circuit, phase,
    - Predict most likely common line or device that would cause the reported results,
    - Display results on system map / GIS system,
    - Automatically update as new data is received.
How Does OMS Work?
How Does OMS Work?

• Help employees to more quickly and accurately locate and diagnose the cause of outages.
  – Combine field data with the detailed distribution circuit model
    • Employees can verify / refine prediction by querying (“pinging”) proximate SCADA, Smart Meters
    • Employees can ascertain likely line fault location using engineering analysis
    • Employees can evaluate switching, sectionalizing, restoration schemes using engineering analysis
How Does OMS Work?

- Affected utility facilities can be quickly and accurately identified
- Field employees and equipment can be dispatched quickly and safely
- Field crew location, progress and safety can be monitored
What Does OMS Do?

- Enables employees to identify all affected customers
  - and maintain communications with customers,
  - and keep other stakeholders informed.
How Does OMS Work?

- Communicate with customers / others about outages and restoration.
How Does OMS Work?

- Keep customers safe
What Does OMS Do?

• Maintain a complete, accurate, time-synched record of all data collected and produced by the OMS during an outage event.
  – Useful for forensic analysis to determine underlying causes.
  – Useful for system planning studies
  – Useful for operations analysis and planning
  – Litigation defense
What Does OMS Do?

NERC Adds Heavier Fines, CIP Violations to Latest Enforcement Actions
More Benefits of OMS

- Information Management
  - More timely data
  - More accurate data
  - Handle much more data
  - Data better organized and displayed
  - Easier access to review, use, update data
More Benefits of OMS

• Work Management

  – Better working conditions
  – Improved organization and efficiency in dispatch center
  – Greater certainty and accuracy in decisions and actions
  – Increased employee productivity
  – Faster and more effective new employee training
More Benefits of OMS

• Disaster Management
  – Better prioritization and triage for restoration
  – Better information and communications for 3rd party assisters
  – Better information and communications for employee and public safety
More Benefits of OMS

- Enterprise Management
  - Increased visibility and clarity for executive management
  - Better utilization of all enterprise systems and applications
  - Improved organizational efficiency and effectiveness
More Benefits of OMS

- 21st Century Customer Service!
  - More reliable electric service
  - Situational awareness
  - Timely, accurate communications
  - Personalized response
More Benefits of OMS

• There is no quicker, more economical or more certain way of as significantly improving reliability, safety, organizational efficiency, and customer service
Is It Prudent Utility Practice to Not Have OMS?

- OMS is a mature, proven application used successfully by hundreds of electric utilities and benefits are demonstrable and quantifiable
- Some (many?) electric utility experts would agree that OMS represents prudent utility practice
- Customers could claim they would have been impacted less adversely by an outage had their utility been using OMS
OMS Is A Cornerstone of the Smart Grid

- An electric power outage is just one, albeit the most extreme event that electric utilities need to better monitor and manage.
- There are other events that electric utilities will need to monitor and manage including:
  - Distribution fault anticipation
  - Voltage/VAR control
  - Distributed generation / storage
  - PHEV connection / charging
  - Customer demand and energy management
  - Microgrid operations
OMS Is A Cornerstone of the Smart Grid

- OMS will evolve into EMS (event management system)
- With real-time grid monitoring, analysis and control, utilities will be capable of active grid management, not just outage response
MILSOFT CORE E&O SYSTEM

- Weather
- GIS
- AMR
- SCADA
- AVL
- WORK MGMT

- CIRCUIT MODEL SERVER
- INTEGRATION SERVER
- Communications (IVR) SERVER

- PROJECT MANAGEMENT
- PM / EA
- PM / OMS
- PM / GIS
- PM / FE

DATA BUS

Open Platform API