



ORACLE

Oracle Energy and Water  
Customer Edge  
Conference

# Extend Operations beyond the Control Room

Remote workforce enablement

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**Joseph Polito, ConEdison**

**Anthony Cassar, ConEdison**

**Russell Taylor, Oracle**

March 14, 2023



# Speakers

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**Joseph Polito**

Project Manager  
Storm Execution &  
Support Ops  
ConEdison



**Anthony Cassar**

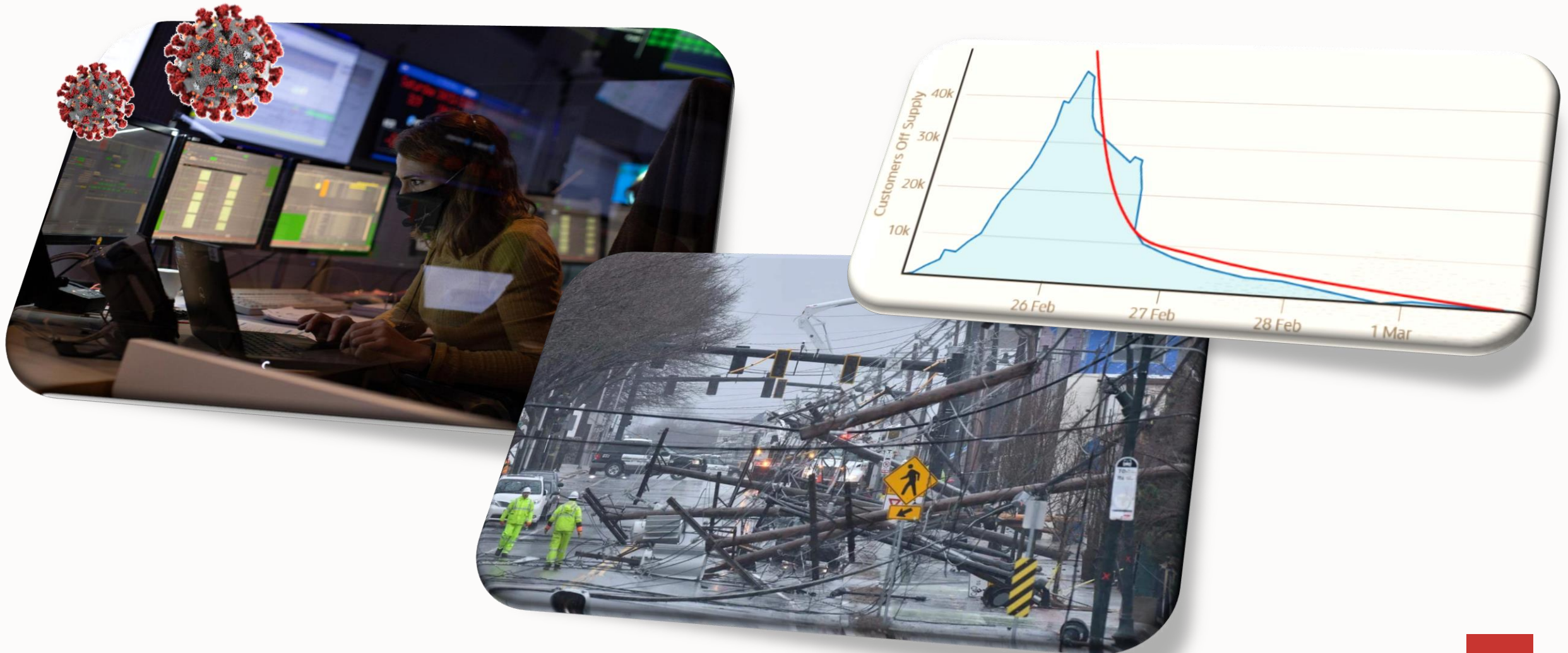
Project Specialist  
Storm Execution & Support  
ConEdison



**Russell Taylor**

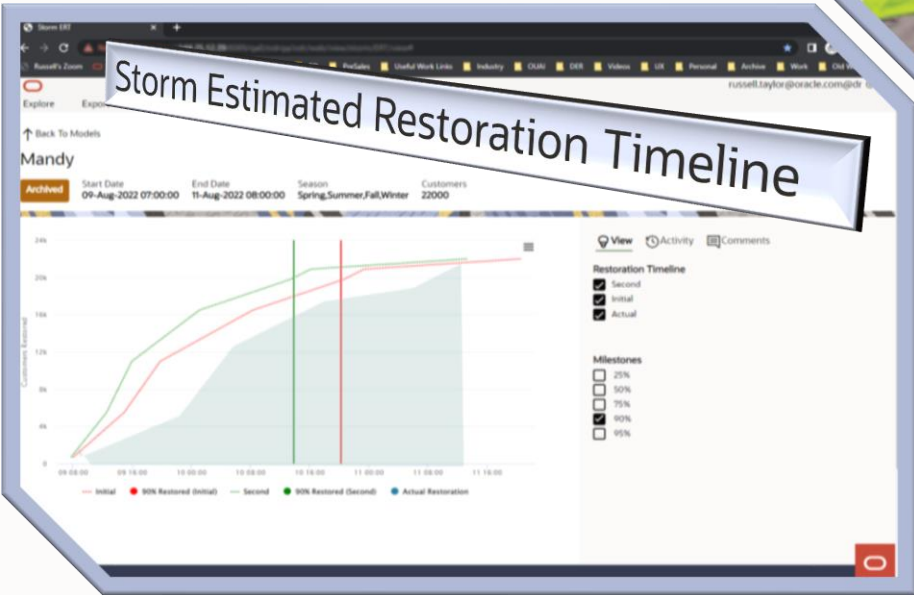
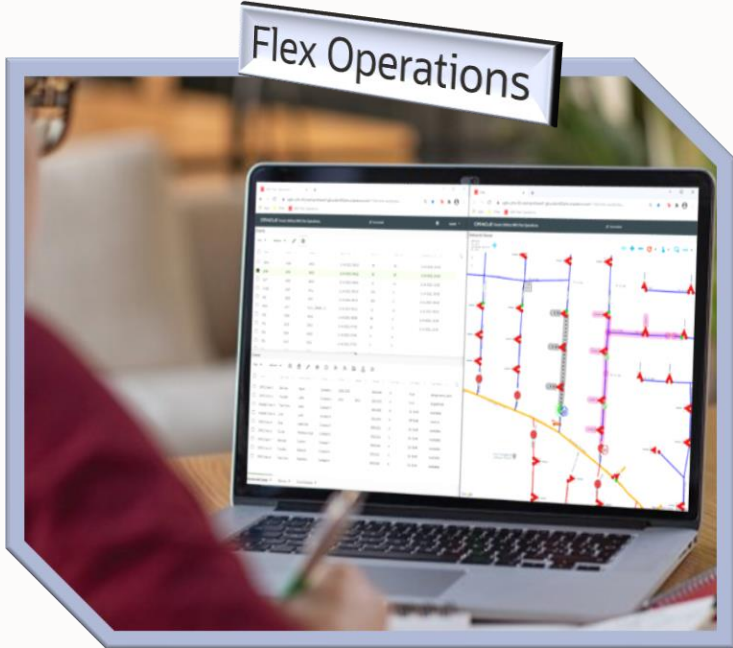
NMS/UX Product Manager  
Oracle

# Meeting Today's Challenges with Remote Working





# Agenda



# Flex Operations and OMA Demo

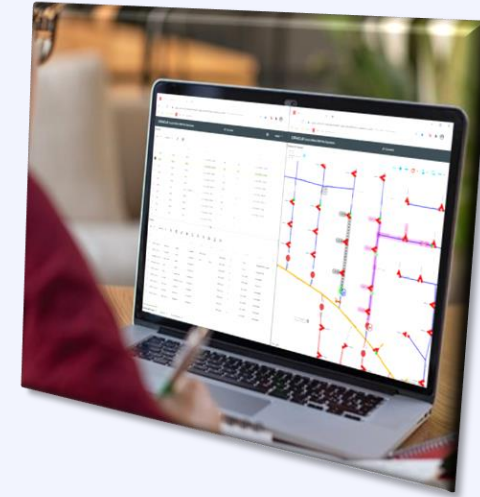
**Flex Operations:** browser-based NMS client

**Primary Users:** Dispatchers, Control Engineers, Field Supervisors

**Designed For:** Flexibility, use inside or outside the Control Room – anywhere with internet connection – laptops and now tablet/touch-enabled

**Functions:** Outage Management, Crew Management, Damage Assessments

Submit switching requests, create and execute switching sheets and safety documents



**OMA:** Mobile application, complements NMS and Flex Operations

**Primary Users:** Restoration crews, switching crews, damage assessors, hazard responders

**Designed for:** Smart phones, tablets, tough-books, laptops – all touch enabled

**Functions:** Enables crews to record outage updates, damage assessments, confirm instructed switching tasks



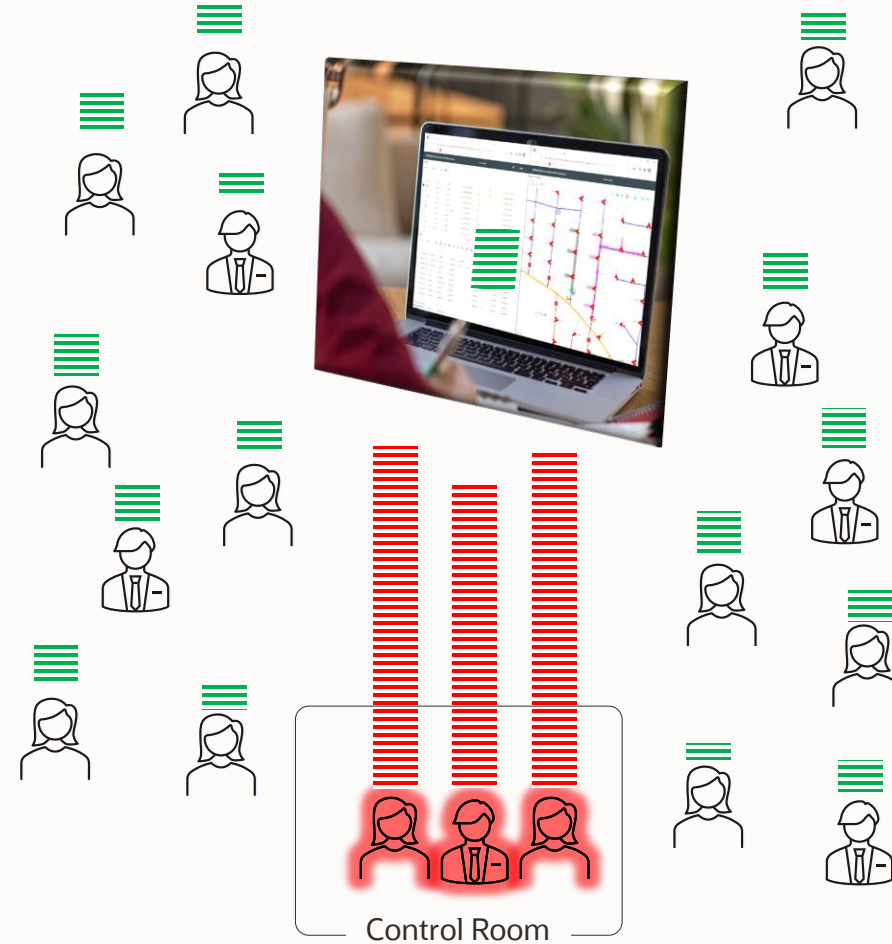
# Demo Flex Operations & OMA

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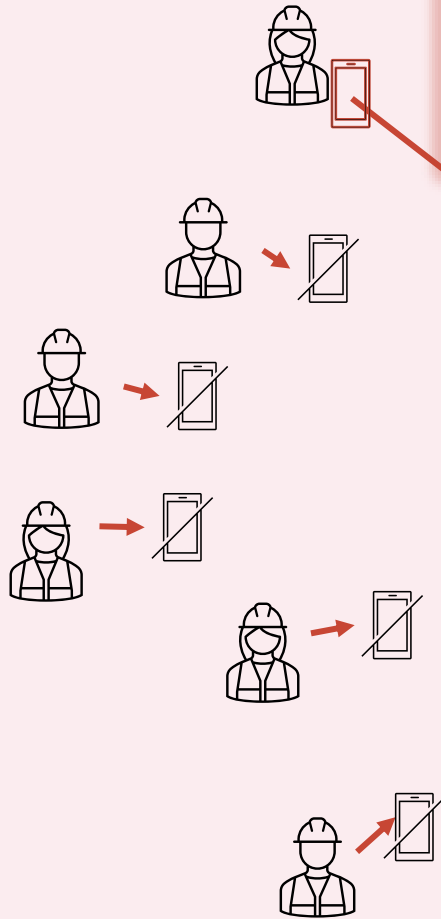
# Flex Operations Removes Workload Bottlenecks



# OMA Removes Communication Bottlenecks

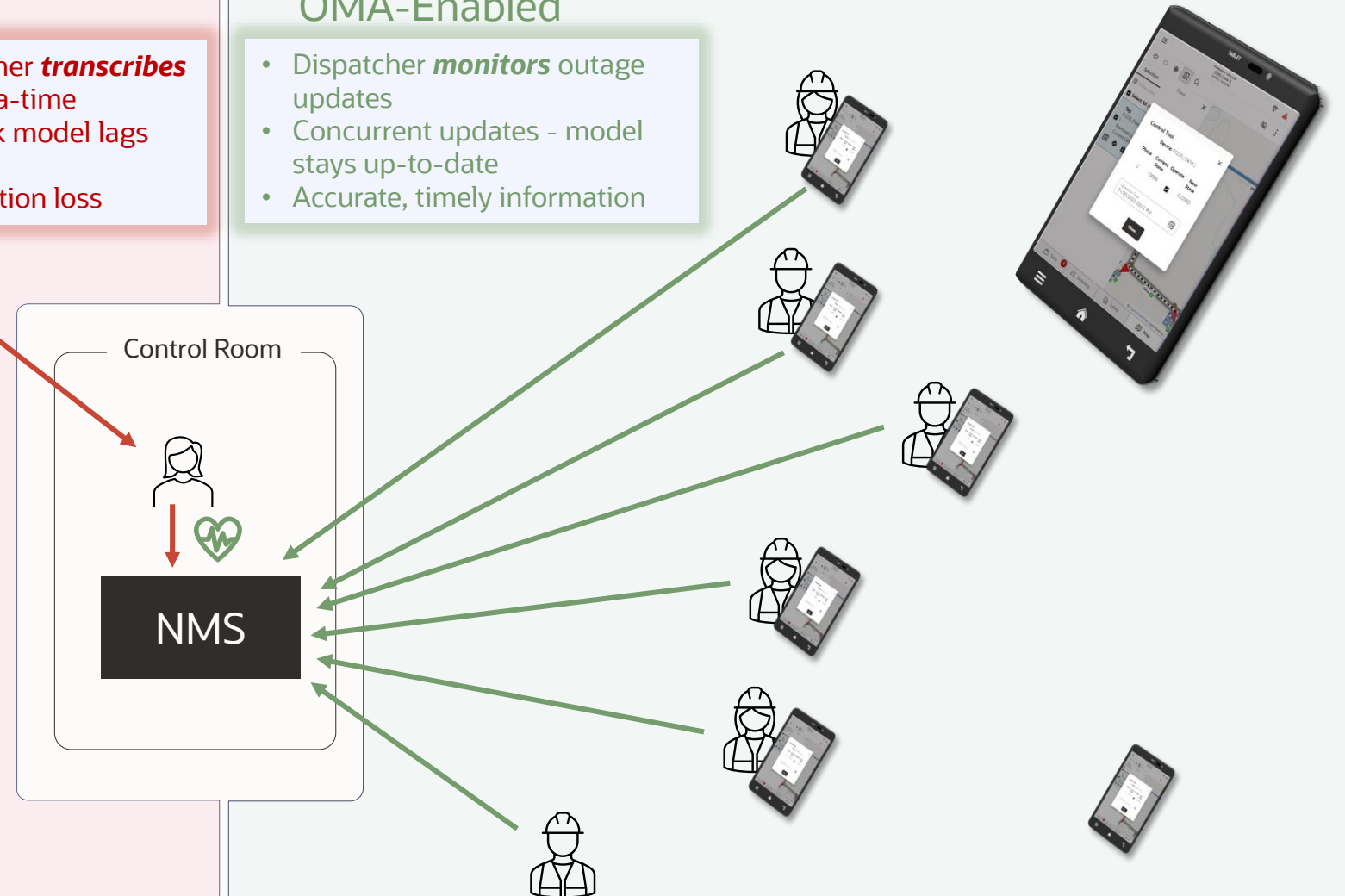
## Voice Communication

- Dispatcher **transcribes** one-at-a-time
- Network model lags behind
- Information loss



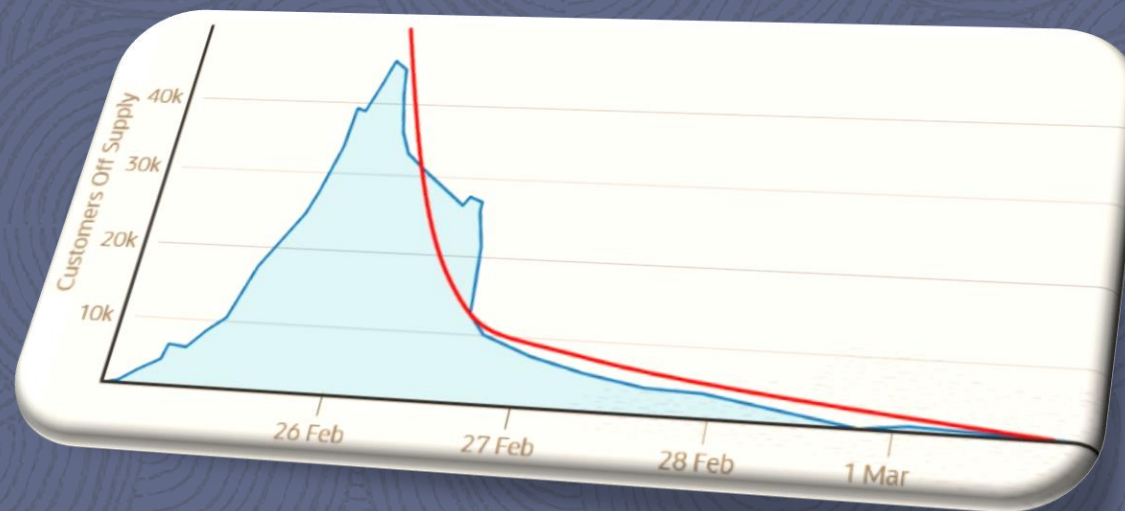
## OMA-Enabled

- Dispatcher **monitors** outage updates
- Concurrent updates - model stays up-to-date
- Accurate, timely information





# Storm ERT



# Regulator Requirements

## Con Edison ETR Protocol – Small Storm (48 Hours or Less)

### Reporting Requirements:

- Communicate updates to our regulator every four hours from 7A-7P
  - Includes Event summary, Outage summary, ETRs, Resource summary
- Within the first 6 Hours
  - Notifications to our regulator the projected length of the storm
  - Provide public all available information
- Within the first 12 Hours
  - Provide our regulator any ETRs at all levels of reporting
  - Issue a press release with known ETRs

# Regulator Requirements

## Con Edison ETR Protocol – Large Storm (48 Hours or More)

### Reporting Requirements:

- All reporting requirements of a small storm apply
- Additional Pre-Event notifications must be made including:
  - Outbound calls to critical facilities
  - Communications to employees, media, social media sites and elected officials
  - Pre-Event Conference calls with municipal representatives
  - Public statements/Press Releases
- Within 12 hours of Starting Restoration
  - The first post weather municipal calls must be scheduled to be completed within 24 hours of the start of restoration to communicate system damage, outages, restorations and ETRs
- Within 24 hours of starting restoration
  - Provide our regulator with a global ETR and available regional/county level ETRs with remainder to be made available within 48 hours



## Con Edison Asked:

Besides not losing power, how else could Con Edison improve your outage experience?

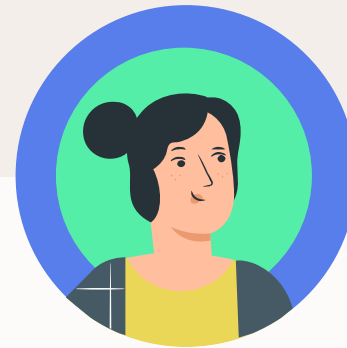
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Here's what customers are saying:

*“Accurate information updated in a periodic and timely manner.”*



*“Communicate more frequently and provide realistic expectations.”*



*“Timely and accurate information as best you can.”*

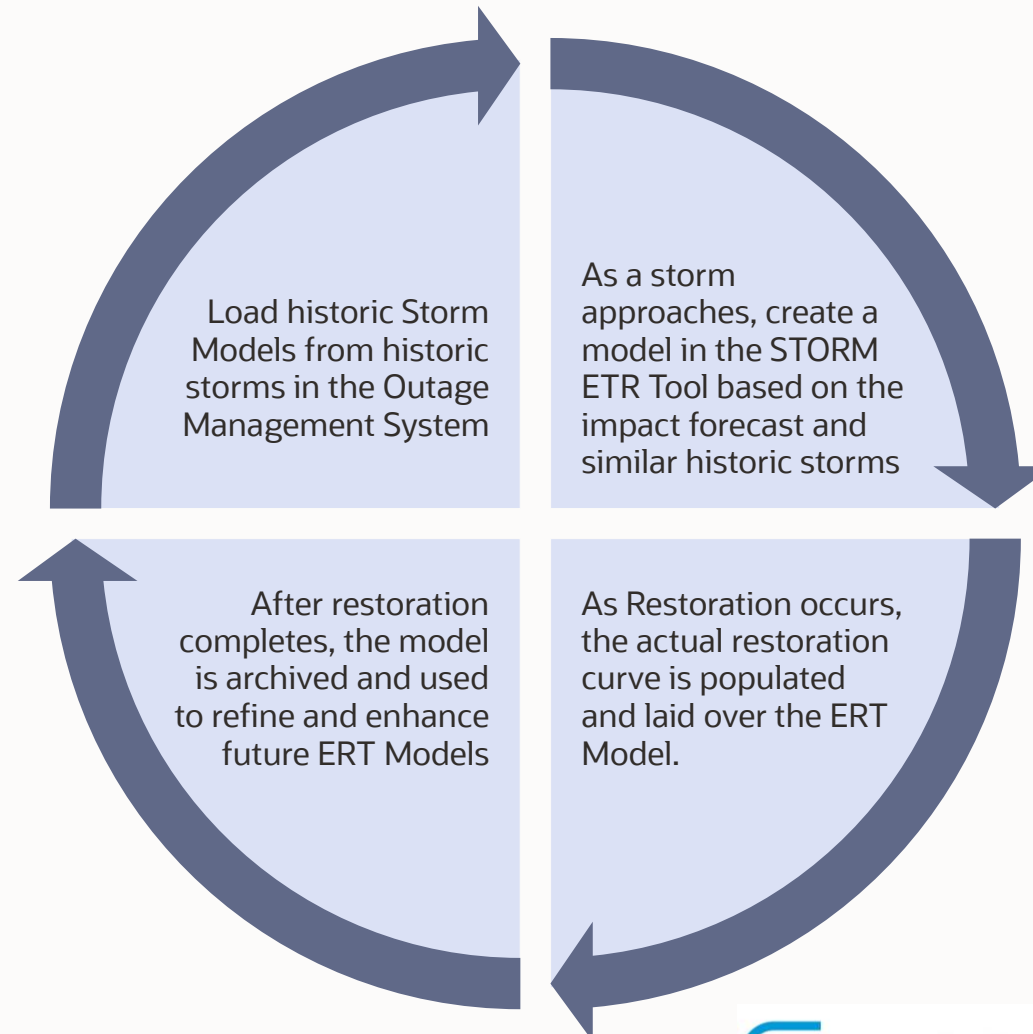


# Storm ERT Tool

Leveraging Data and Machine Learning to enhance the operational response and customer experience

How It Works:

- Inputs:
  - Historic NMS Data
  - Weather Forecast (Future)
  - Impact Forecast
- Output:
  - ERT Model
  - Restoration Milestones



# Storm ERT Tool

## Creating a New Storm

- Storm Portal
  - List of Storms
  - Parameters of Storms
  - Storm Status
- New Storm Model

The screenshot shows the Oracle Utilities Analytics Insights (OUAI) interface. The top navigation bar includes the OUAI logo, a search bar, and a user profile for Joe Bloggs. Below the navigation bar, the 'Storm ERT' section is active, with a 'New Storm Model' button highlighted by a red circle. The main content area displays a table of storm models with 5 results. The table columns are Model Name, Operating Company, Start Date, Cut-Off Date, Season, Customers, and State. The states are color-coded: Historic (purple), Archived (brown), Cancelled (red), Draft (blue), and Confirmed (yellow).

Model Name	Operating Company	Start Date	Cut-Off Date	Season	Customers	State
David	ORU	22 Aug 2010 14:34	23 Aug 2010 19:13	Winter	20000	Historic
Freya	CECONY	12 Jan 2017 12:24	15 Jan 2017 23:20	Winter	20000	Historic
Ruby	ORU	27 Jan 2017 15:03	30 Jan 2017 11:00	Winter	20000	Archived
Amy	CECONY	15 Feb 2018 08:00	20 Feb 2018 06:00	Winter	20000	Cancelled
Helen	ORU	15 May 2018 08:09	16 May 2018 10:01	Winter	20000	Draft
Belinda	ORU	23 Sep 2022 07:00	24 Sep 2022 11:00	Autumn	36675	Confirmed



# Storm ERT Tool

## Creating a New Storm

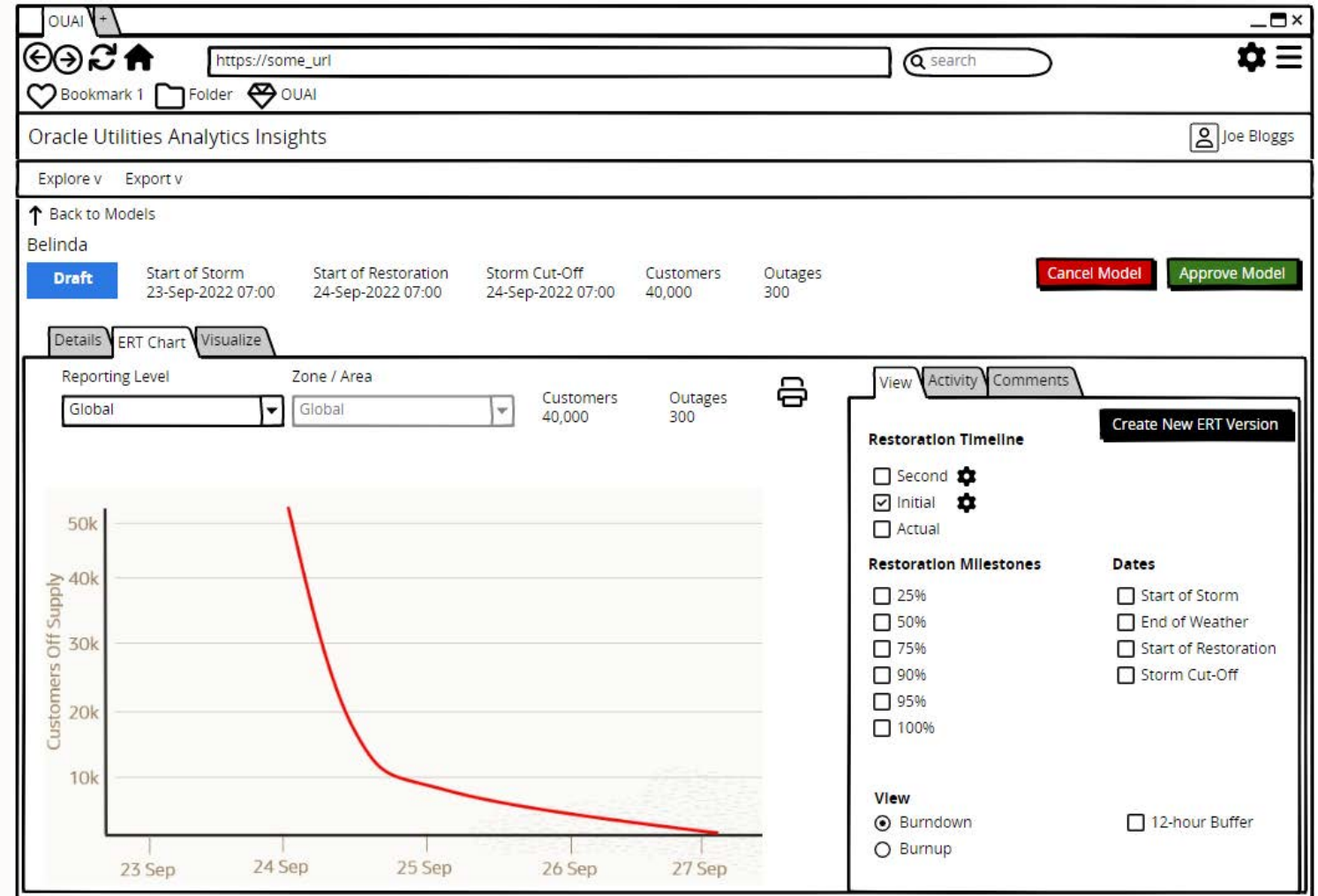
- Define Parameters
  - Estimated Jobs
  - Estimated Customers Affected
  - Crewing
  - Weather Forecast (Future State)
  - Zones Affected

The screenshot displays the 'Storm ERT Tool' interface in a web browser. The browser's address bar shows 'https://some\_url'. The page title is 'Oracle Utilities Analytics Insights' with a user profile 'Joe Bloggs' in the top right. Below the title bar, there are tabs for 'Explore v' and 'Export v'. The main content area is titled 'Back to Models' and features a 'Name' field with the value 'Belinda'. To the right of the name field are buttons for 'Draft' (highlighted in blue), 'Start of Storm', 'End of Weather', 'Start of Restoration', 'Storm Cut-Off', and 'Customers'. Further right are 'Cancel Model' (red) and 'Approve Model' (green) buttons. Below the name field, there are three tabs: 'Details' (selected), 'ERT Chart', and 'Visualize'. The 'Details' tab contains several input fields and a 'Control Zones' section. The 'Storm Duration (days)' field is set to 3. The 'Start of Storm' field is set to '09/23/2022 07:00 AM' and the 'Storm Cut-Off' field is set to '09/24/2022 11:00 AM'. There is a checkbox for 'Exclude Single Customer Outages'. The 'Estimated Customers' field is set to '60,000', the 'Estimated Outages' field is set to '300', and the 'Customer to Outage Ratio' field is set to '200'. The 'Actual Customers', 'Actual Outages', and 'Actual Customer to Outage Ratio' fields are empty. The 'Control Zones' section is titled 'Global' and contains a list of five electric zones: 'Electric Zone 1' (unchecked), 'Electric Zone 2' (checked), 'Electric Zone 3' (unchecked), 'Electric Zone 4' (checked), and 'Electric Zone 5' (checked). At the bottom right of the form are 'Save' and 'Cancel' buttons.

# Storm ERT Tool

## Create the Model

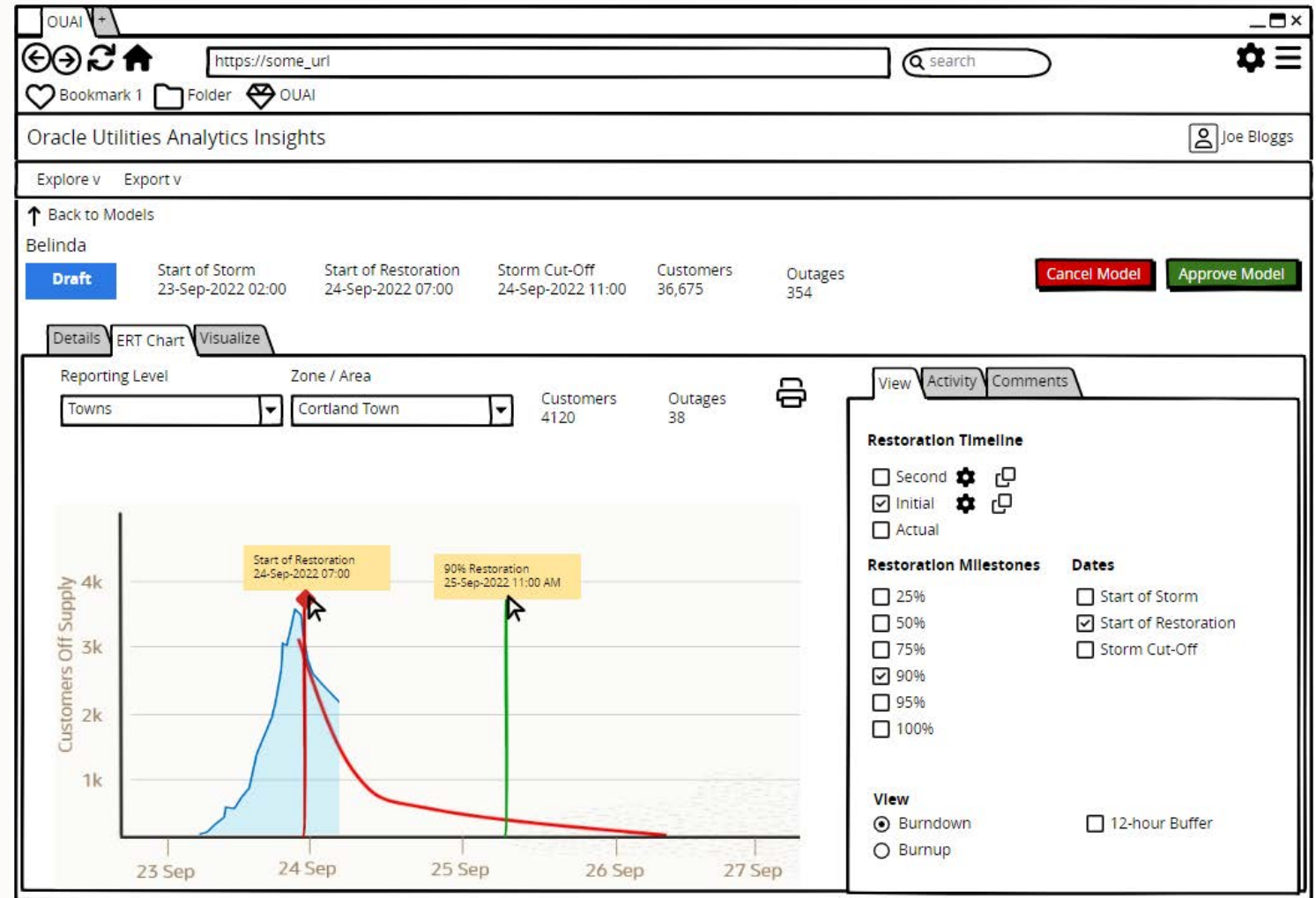
- Display Projected ERT Curve
- Display Projected Milestones
- Burn up or Burn Down



# Storm ERT Tool

## Associate Outages and Actual Restoration Curve

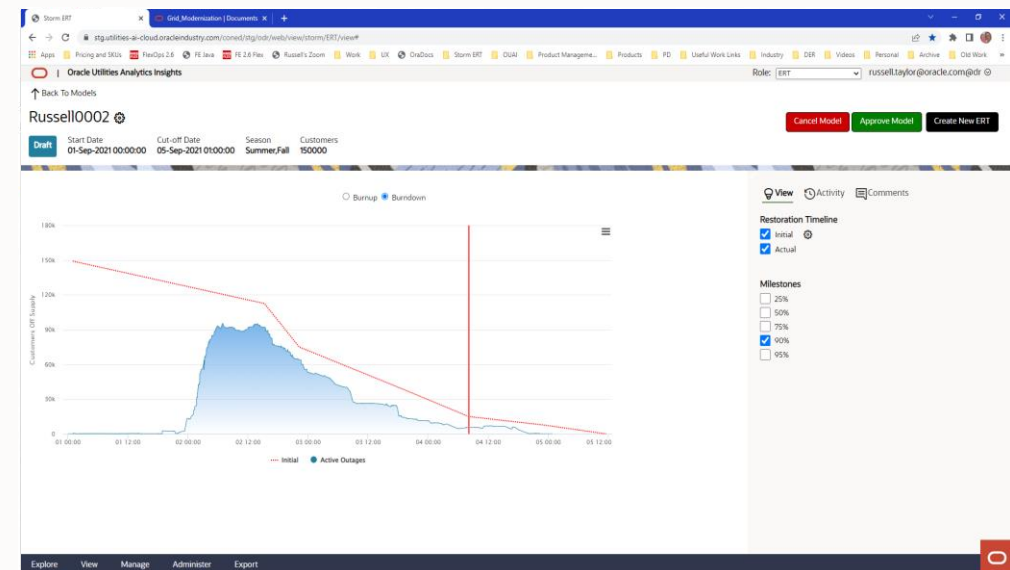
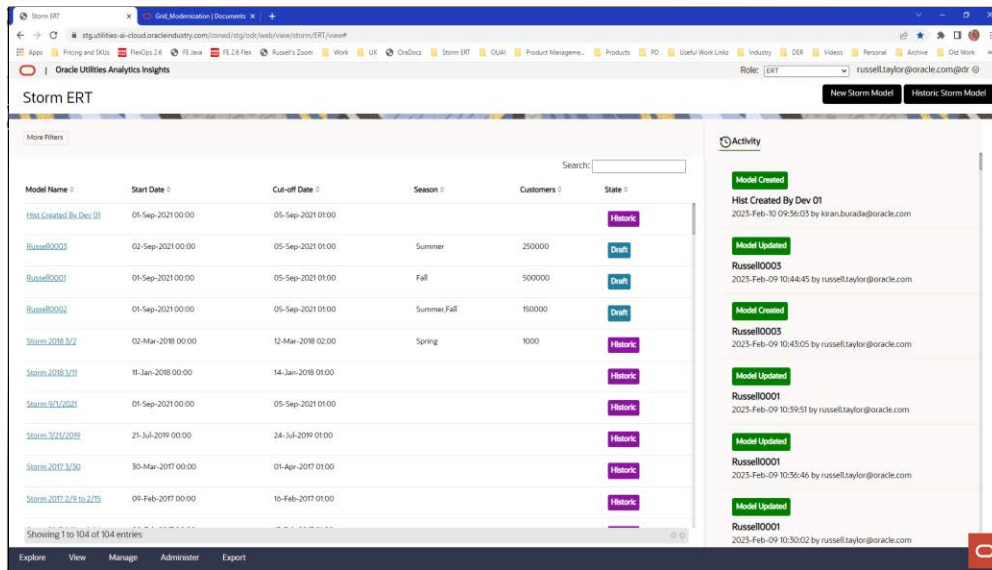
- Associate Realized Storm Outages and Customers
- Display Actual Restoration Curve





# Storm ERT Tool

Turning Designs into product...



# Discussion

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# Storm Estimated Restoration Timelines

## **Initial thoughts on Storm ERT**

Do you have the same challenges as ConEd? Different challenges?

How do you calculate and communicate Storm ETRs today?

What inputs do you use to work out estimated restoration times?

What's missing from the Storm ERT application?





# Remote Working Discussion

## Initial thoughts on remote working...

How open is your utility to devolving traditional Control Room functions outside of the Control Room or Dispatch Center?

## Customer Service Agent – Call Taker

Logging calls, providing caller feedback, other?

## Outage Dispatcher using Flex Operations

- Full Outage Management - Dispatching Crews, recording outage updates and outage completion.
- Which kinds of outages? Complex outages, single customer outages?
- Occasional Dispatchers? How do you do it now in high volume situations?
- Damage assessments

## System Operator / Control Engineer using Flex Operations

- Submitting switching requests for planned switching
- Preparing switch plans
- Executing switching plans
- Preparing, issuing safety documents
- SCADA switching

## What's missing from FlexOps?

What which traditional NMS functions would you like to see added to Flex Operations? Call Entry, Alarms, Other?

## Outage Crews

- Recording outage updates
- Damage Assessment
- Hazard response Work

## Damage Assessment Crews

- Recording outage updates
- Damage Assessment
- Hazard response Work

## Switching Crews

- Confirming instructed switching instructions
- Issuing, cancelling safety documents
- Should crews be allowed to execute SCADA switching steps directly from OMA?

# Remote Working Special Interest Group

*As the way we work changes, Oracle is enabling remote working **now** – developing solutions to help utilities face the challenges of **tomorrow**.*

Will you help guide and influence our strategy?

We invite you to join a “Remote Working” Special Interest Group.

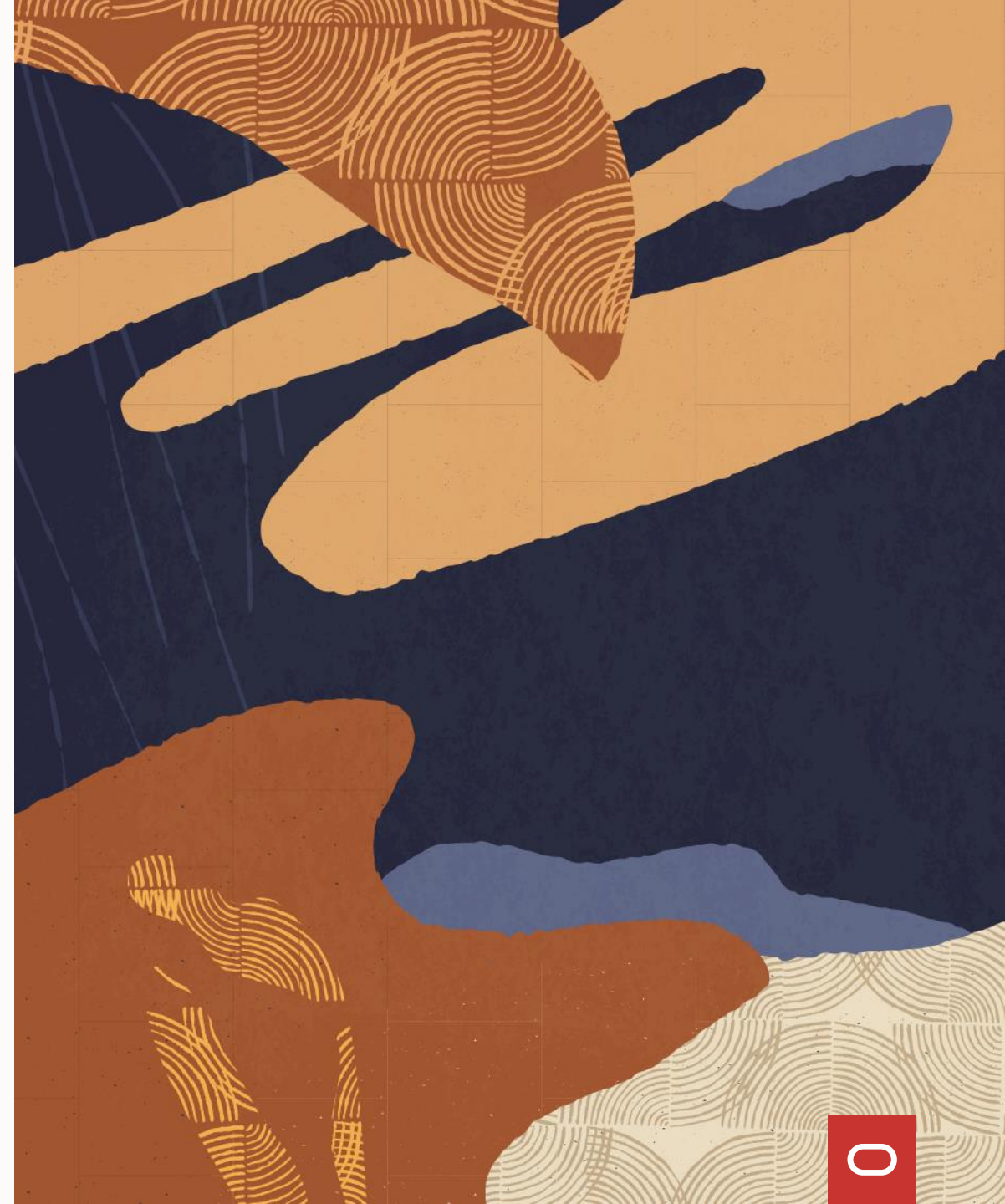
Quarterly meetings to discuss relevant topics, share experiences, and showcase solutions.

Please let us know if you would like to be involved...



# Thank You

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