ORACLE

Oracle Energy and Water
Customer Edge
Conference

Extend Operations beyond the Control Room

Remote workforce enablement

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March 14, 2023

Speakers

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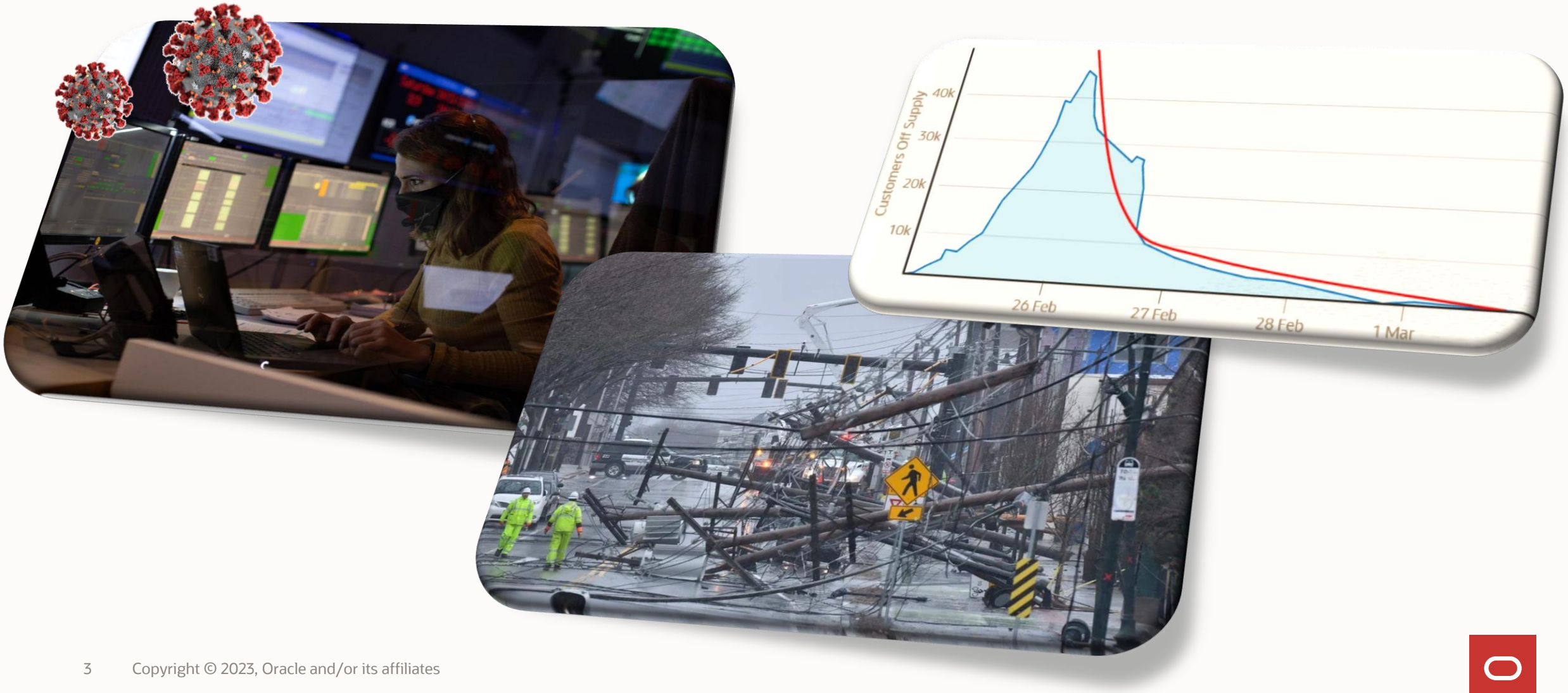
Meeting Today's Challenges with Remote Working



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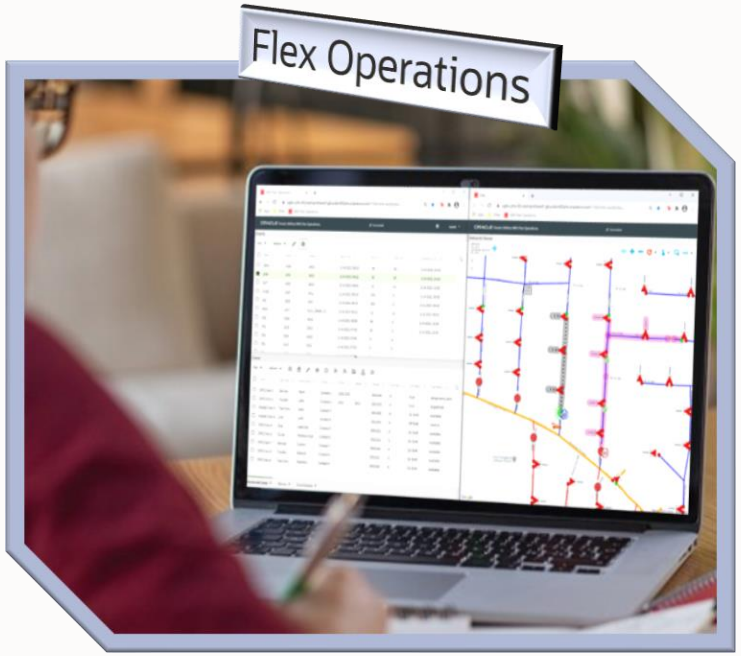
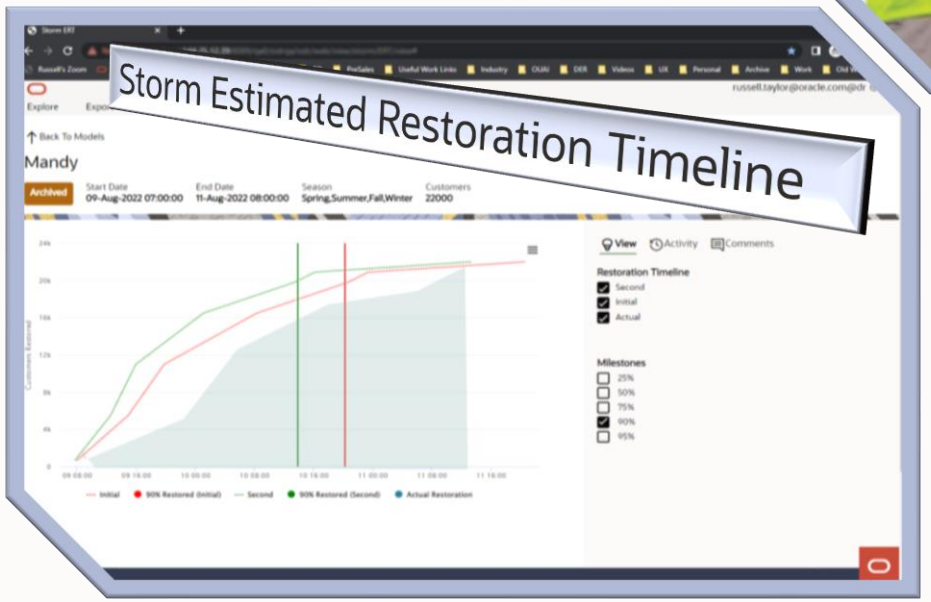
Agenda





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Flex Operations and OMA Demo

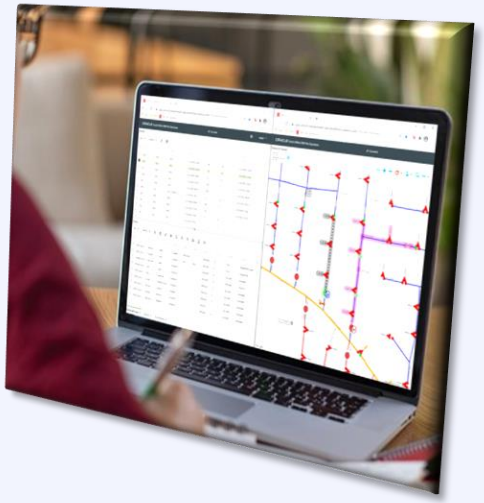
Flex Operations: browser-based NMS client

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

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Demo
Flex Operations & OMA

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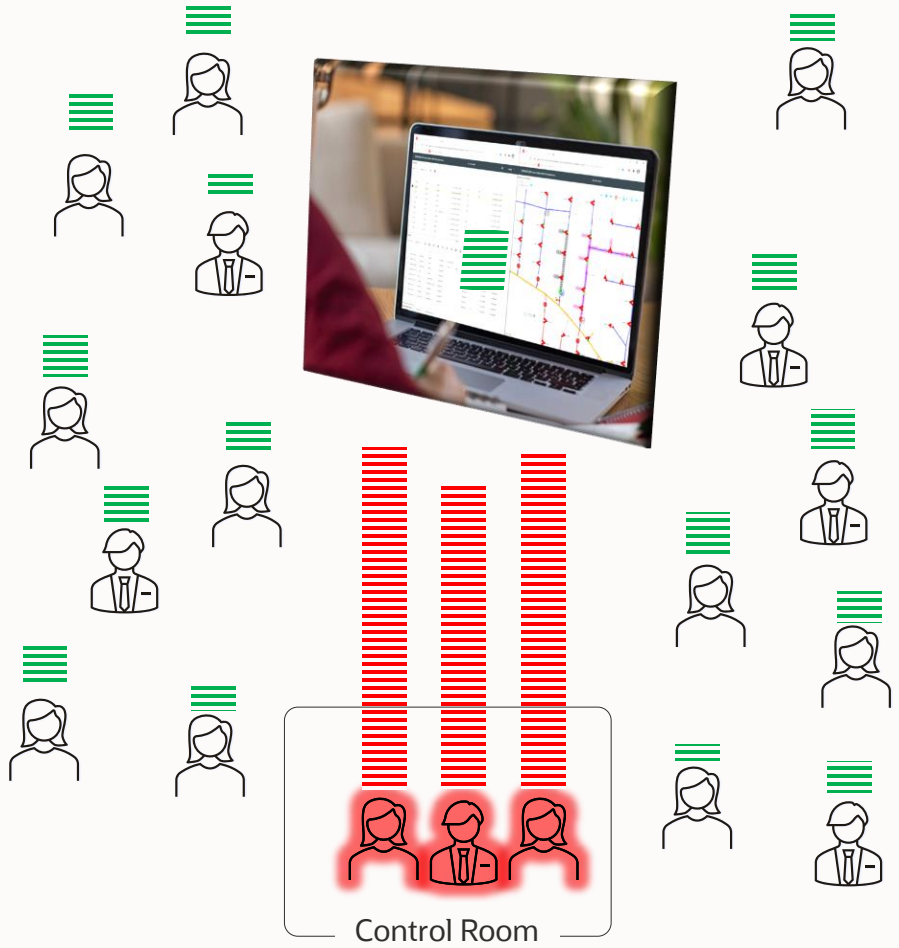
Flex Operations Removes Workload Bottlenecks



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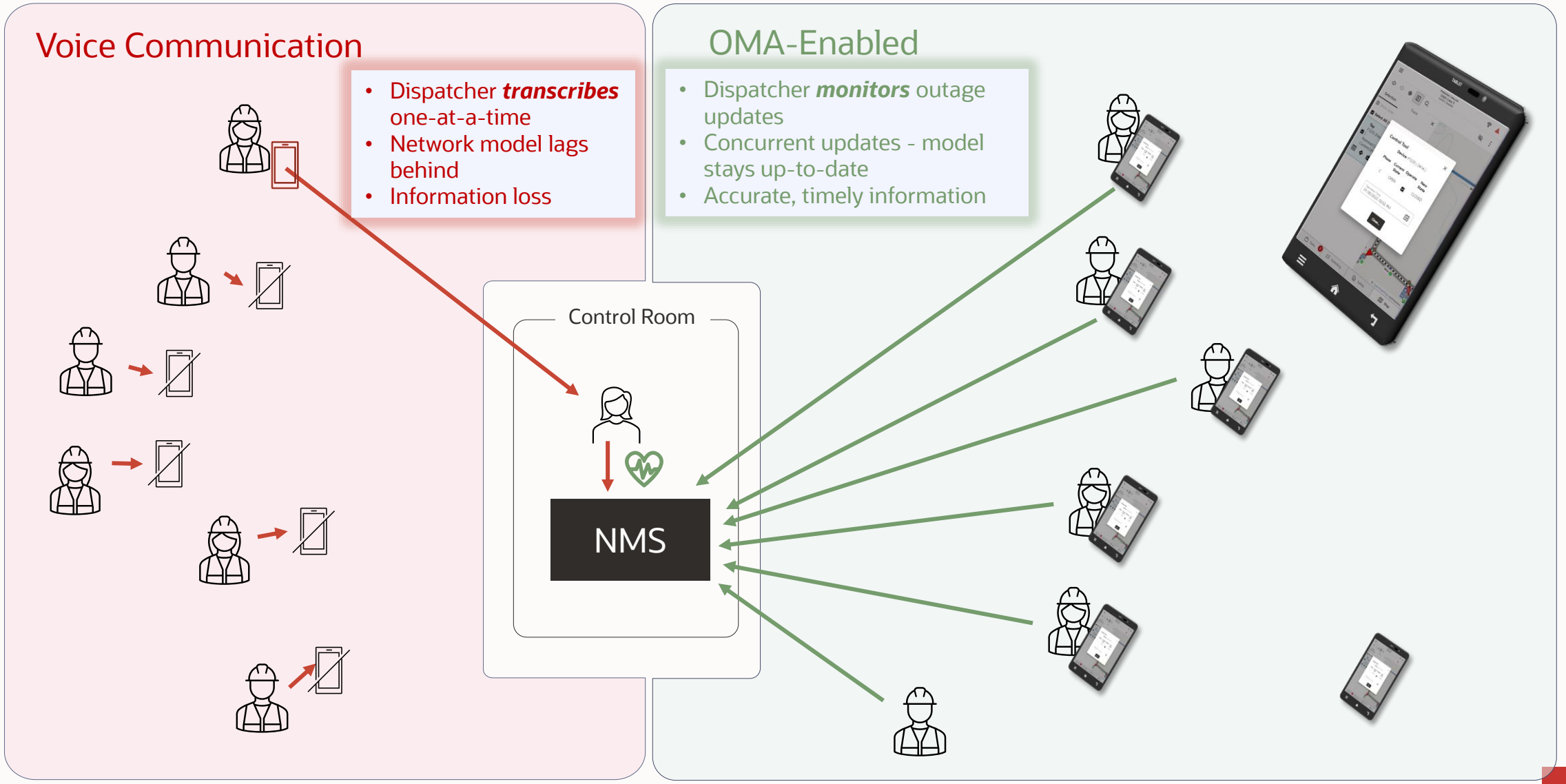
OMA Removes Communication Bottlenecks



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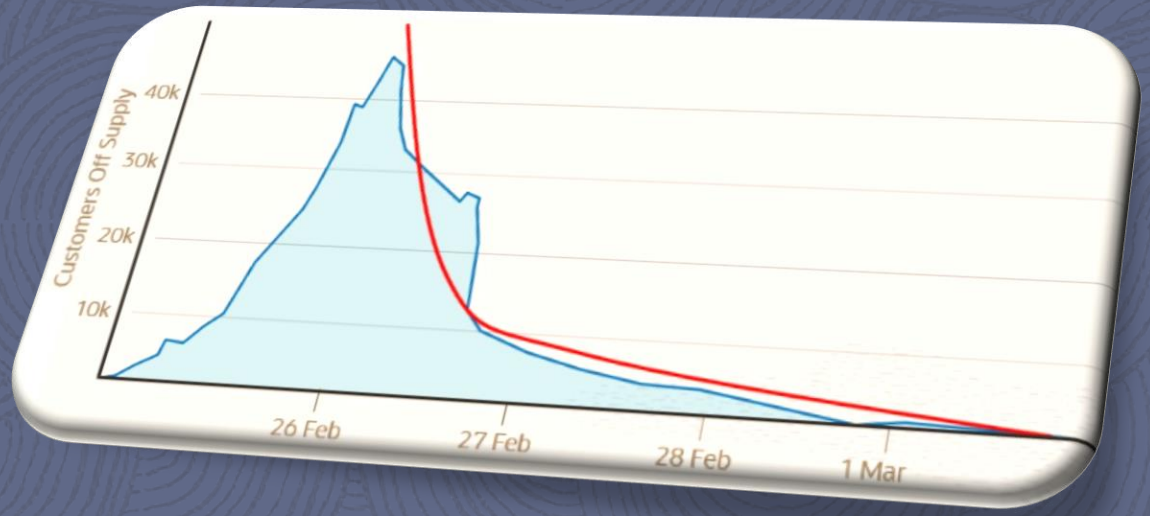
Storm ERT



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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

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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

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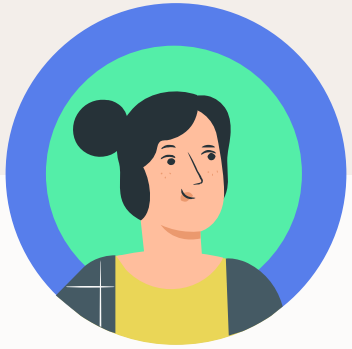
Con Edison Asked:

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

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."

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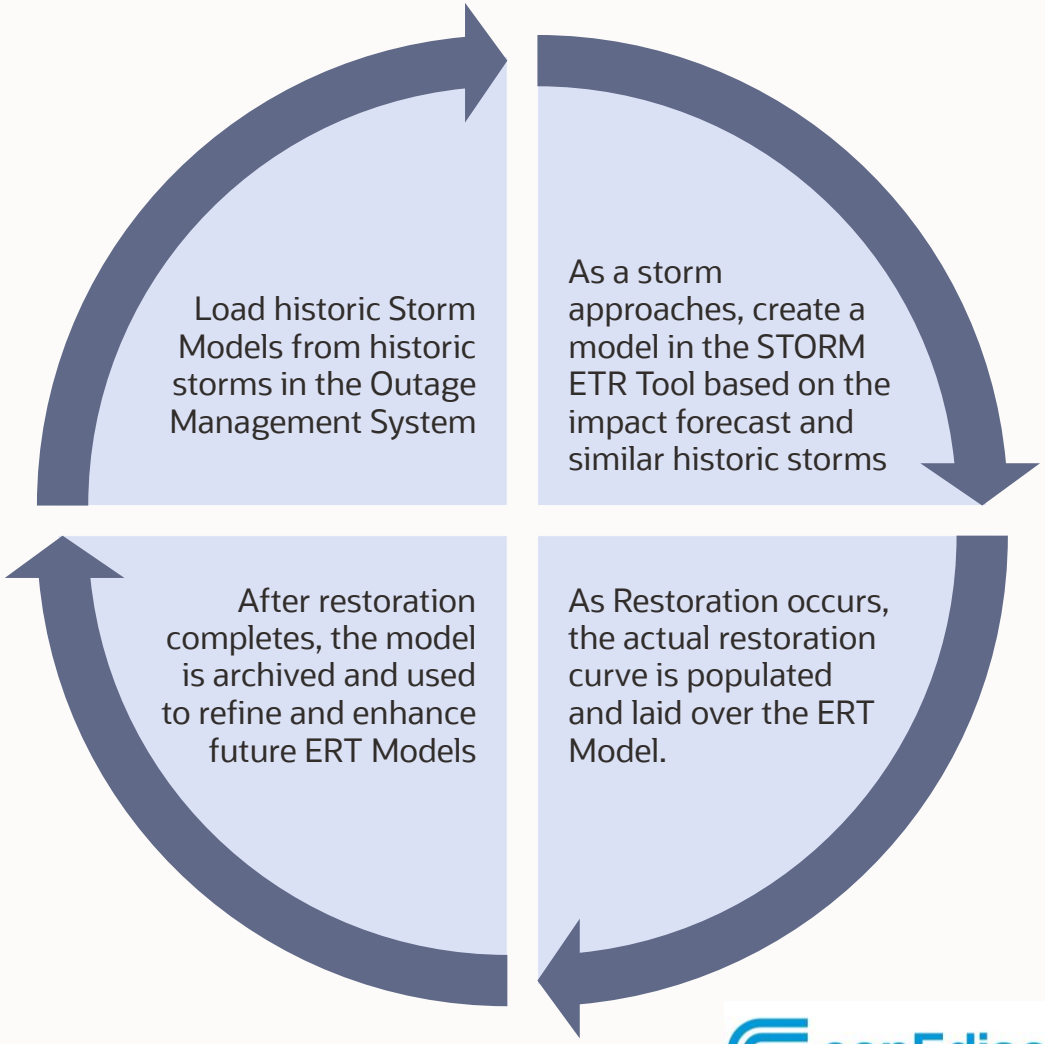
Storm ERT Tool

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



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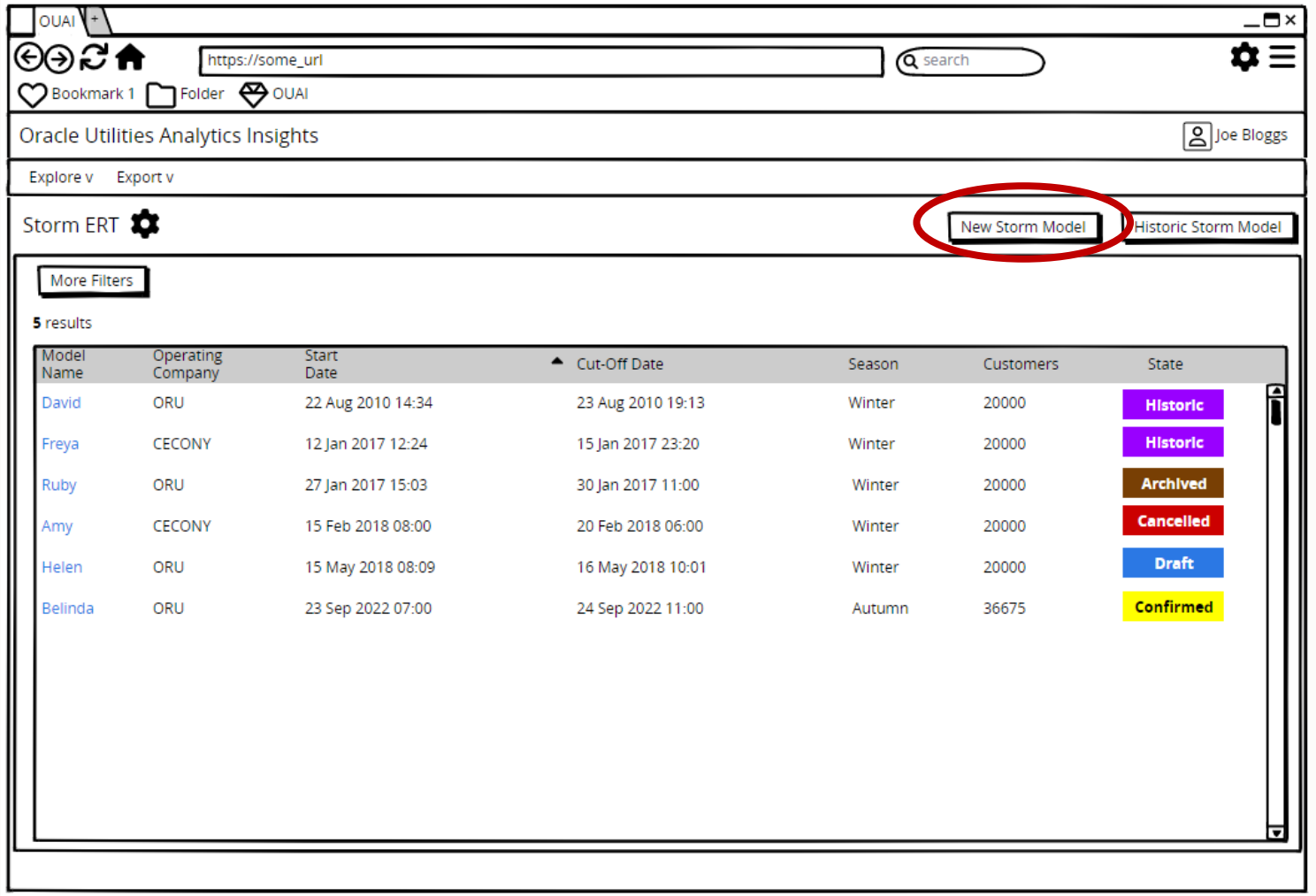
Storm ERT Tool

Creating a New Storm

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



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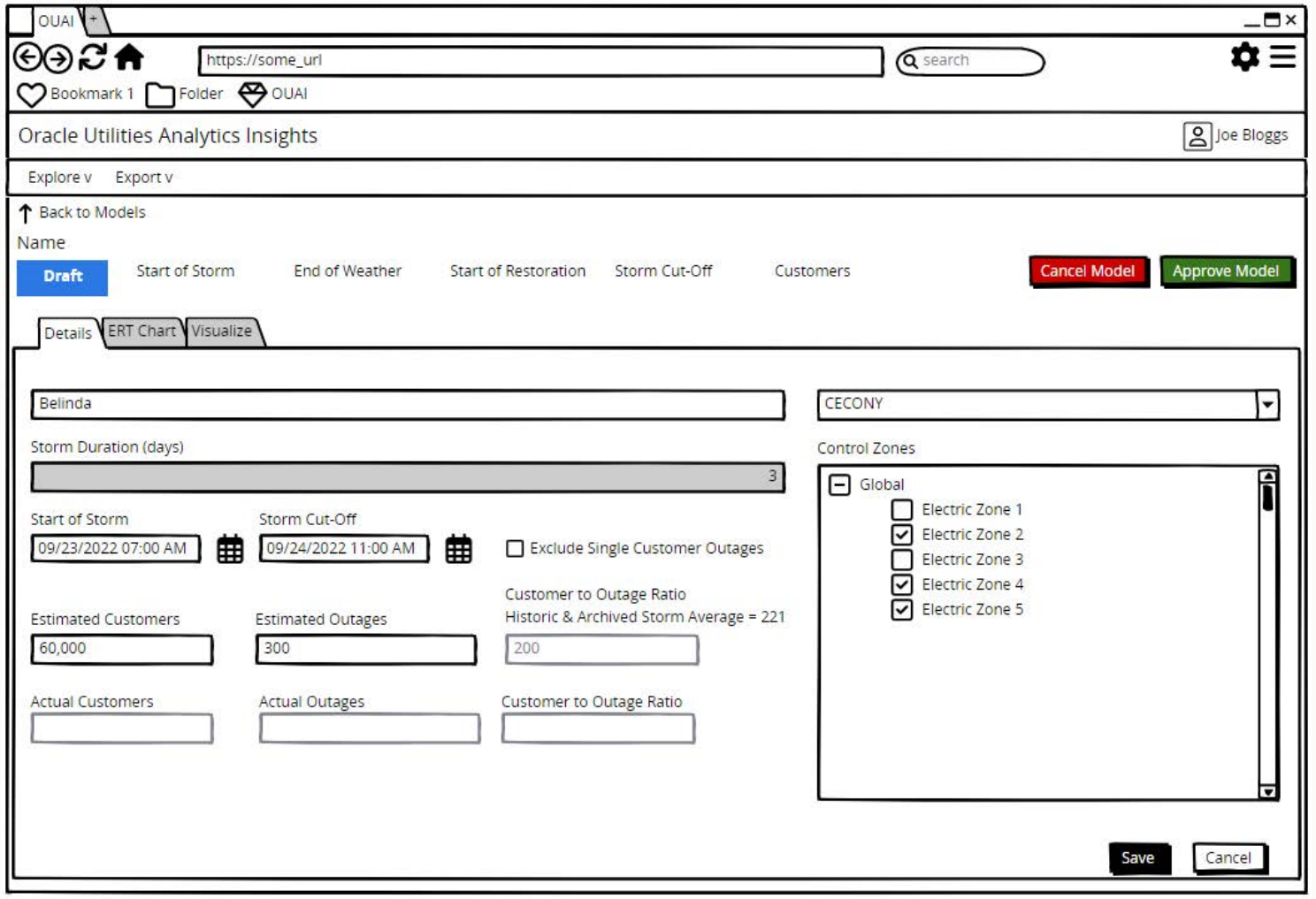
Storm ERT Tool

Creating a New Storm

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



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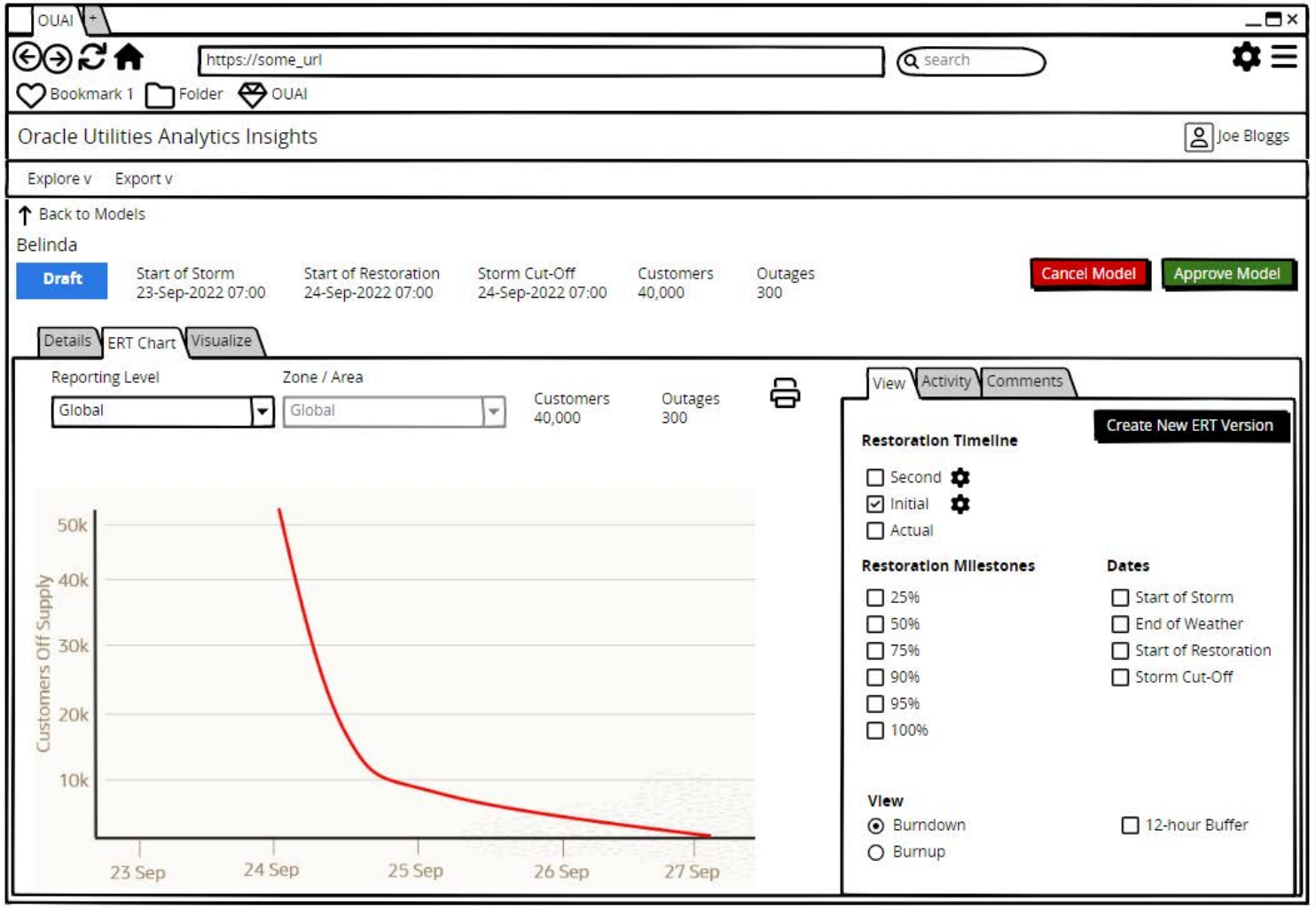
Storm ERT Tool

Create the Model

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



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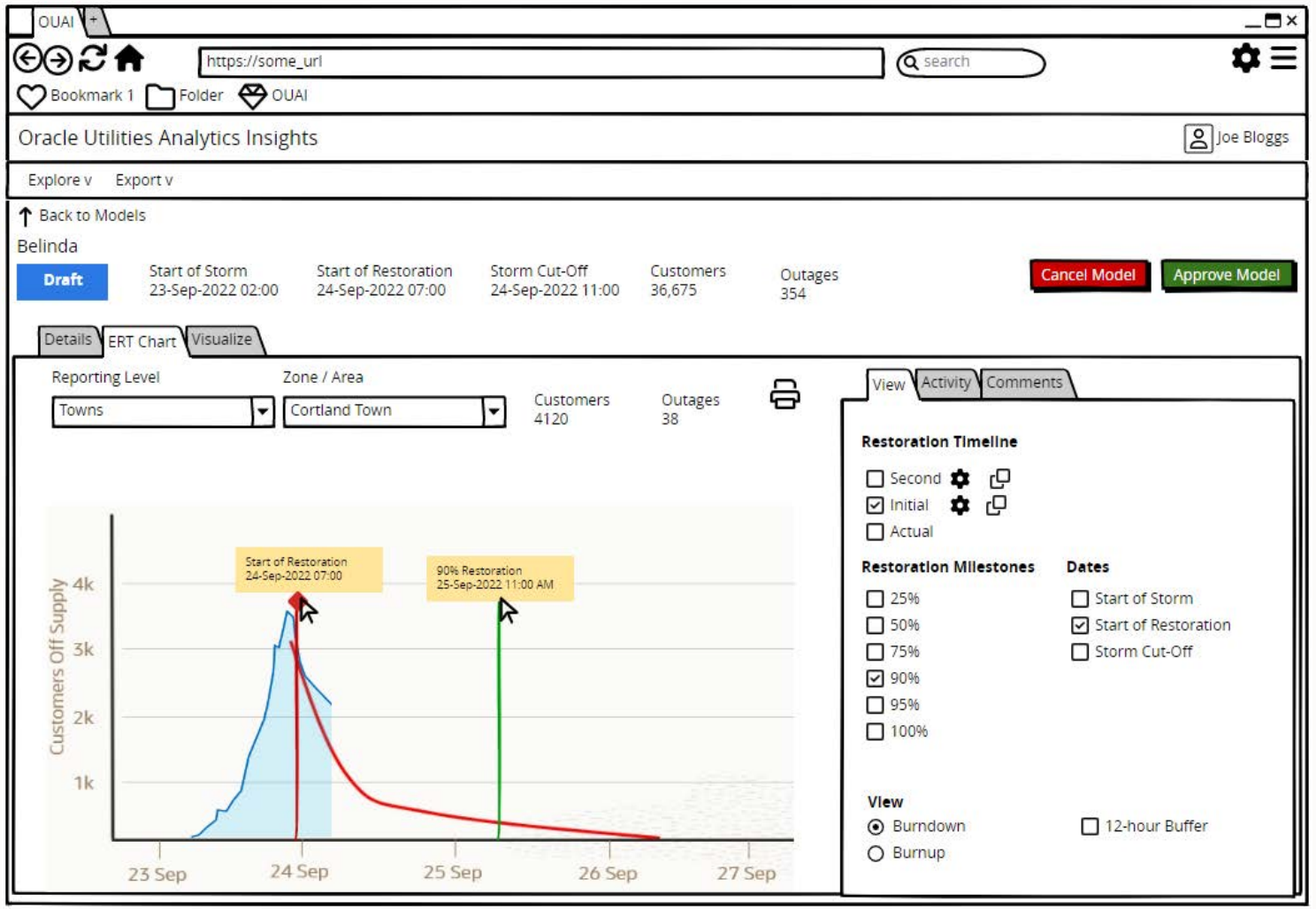
Storm ERT Tool

Associate Outages and Actual Restoration Curve

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



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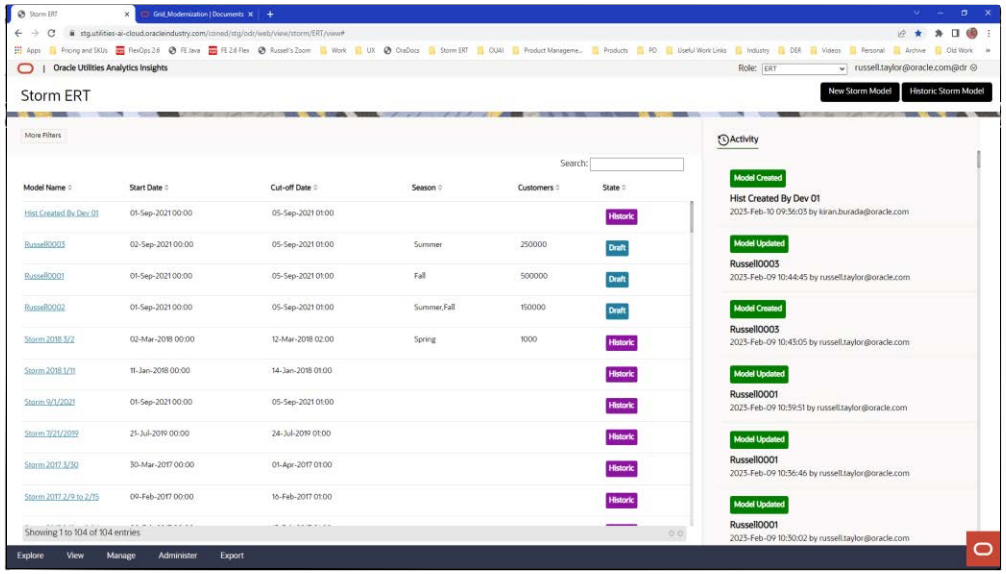
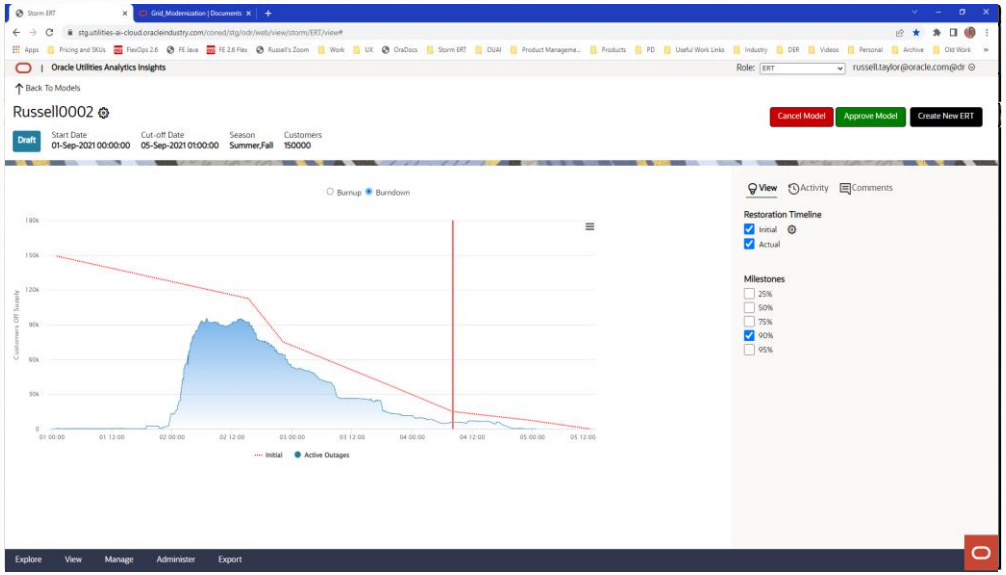
Storm ERT Tool

Turning Designs into product…





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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?

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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?

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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…

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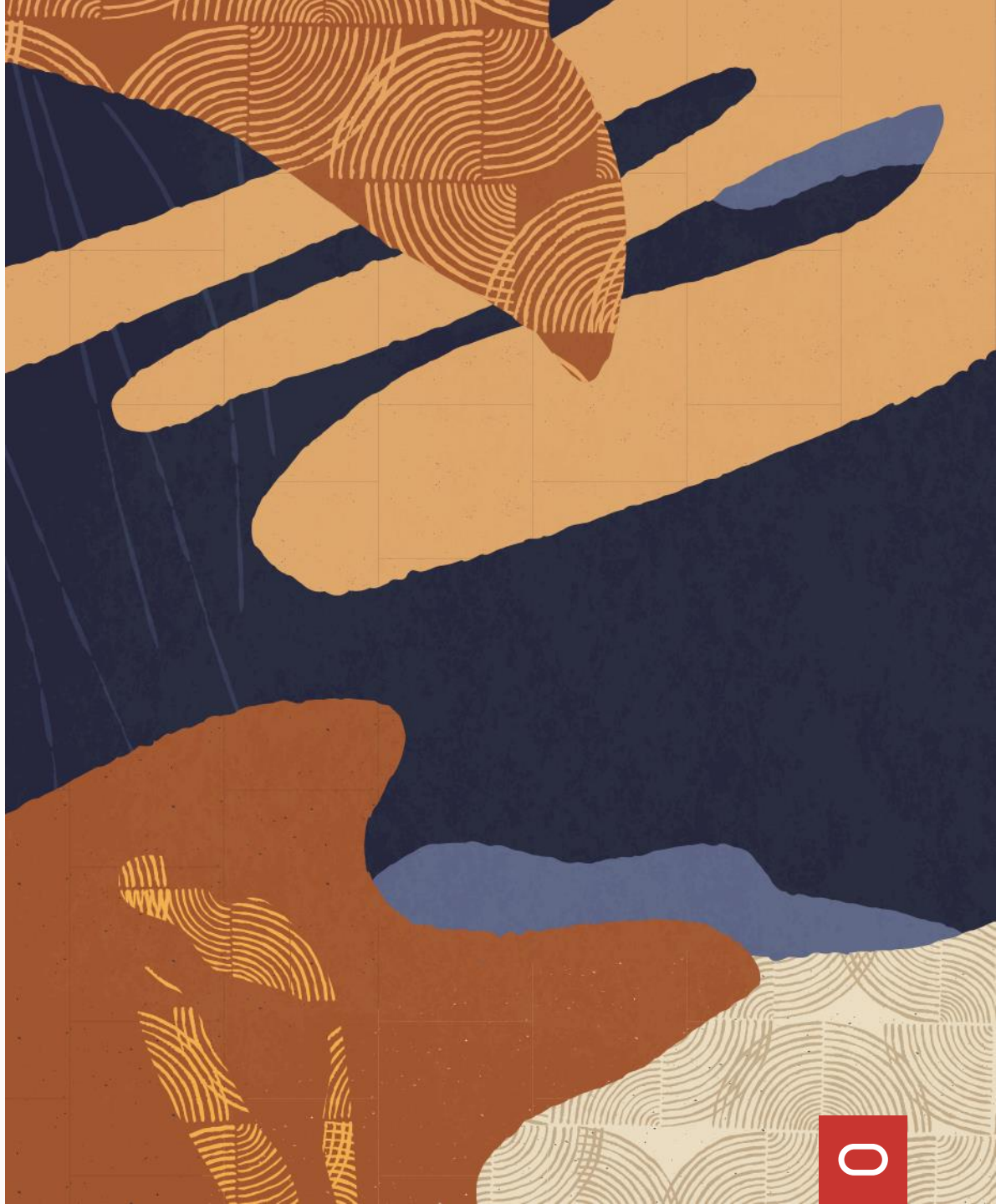
Thank You



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