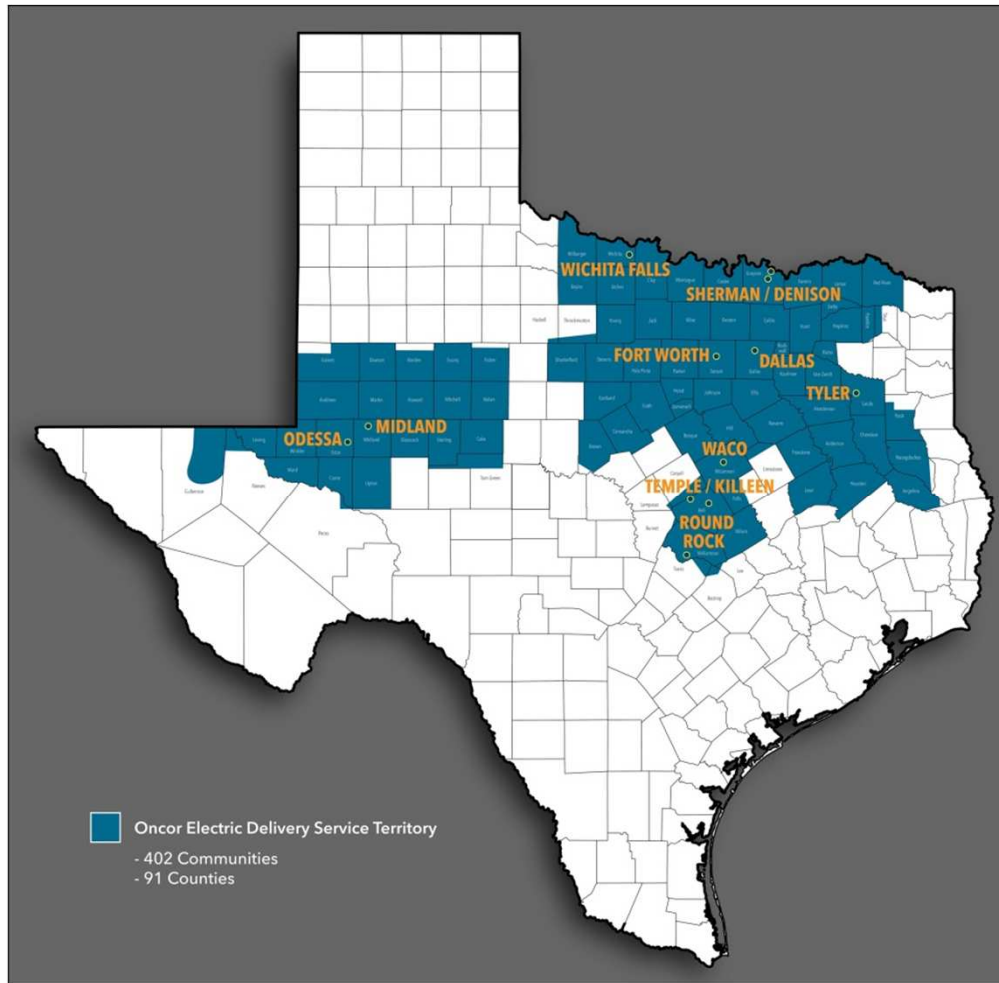# Center of Excellence for Practical Big Data Analytics at Oncor

Power Zhao   Younus Mulla

Oncor Big Data Analytics CoE Team

August, 2018

Oncor – By the Numbers

Oncor Electric Delivery Service Territory
- 402 Communities
- 91 Counties

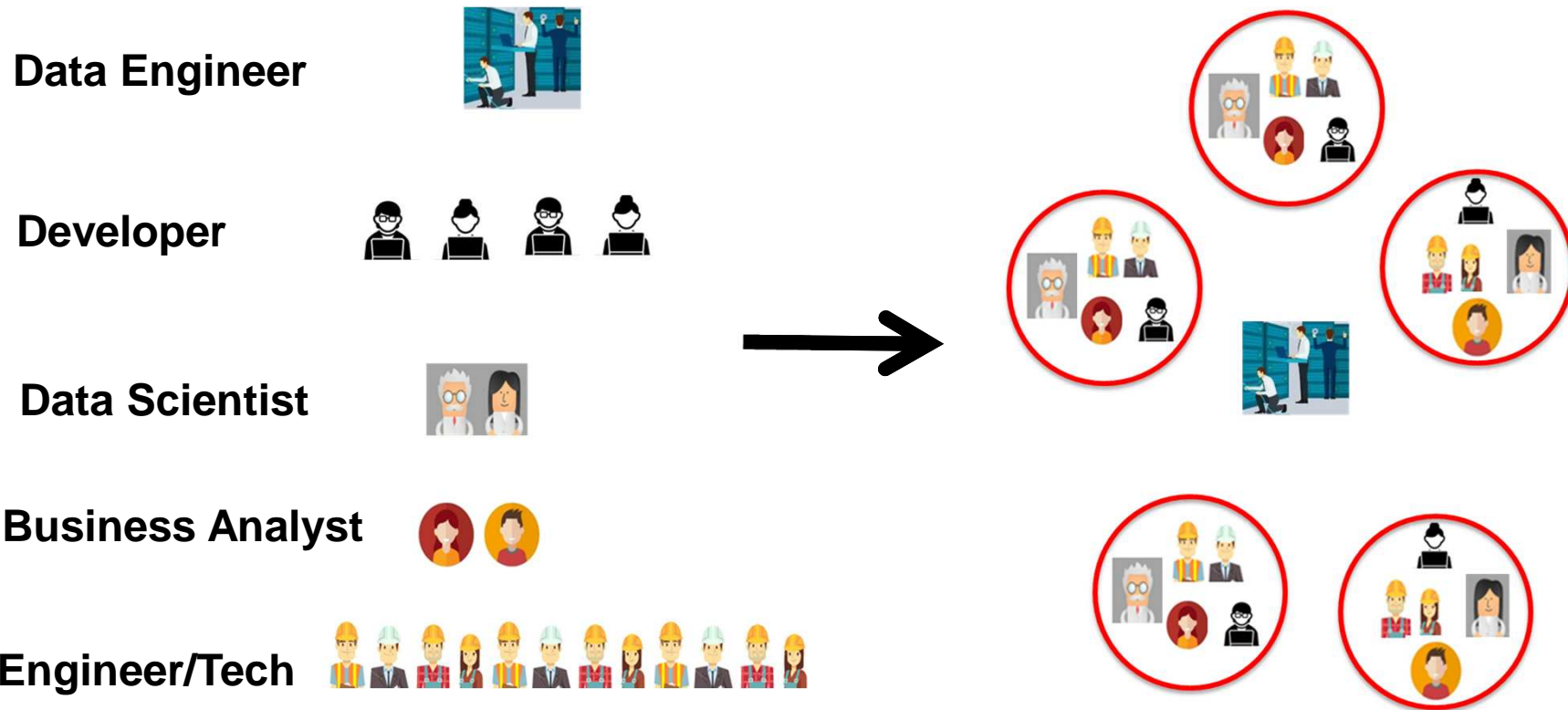|	
3.4M	AMS Meters
122k	T&D Circuit Line Miles
500k	Switch Points
250k	SCADA Points
1.5 B	SCADA X-actions / month
60 TB	New Data Records/month
250 TB	Current EDW Data storage

Outlines

- **Oncor Data Analytics Current State and Platform**

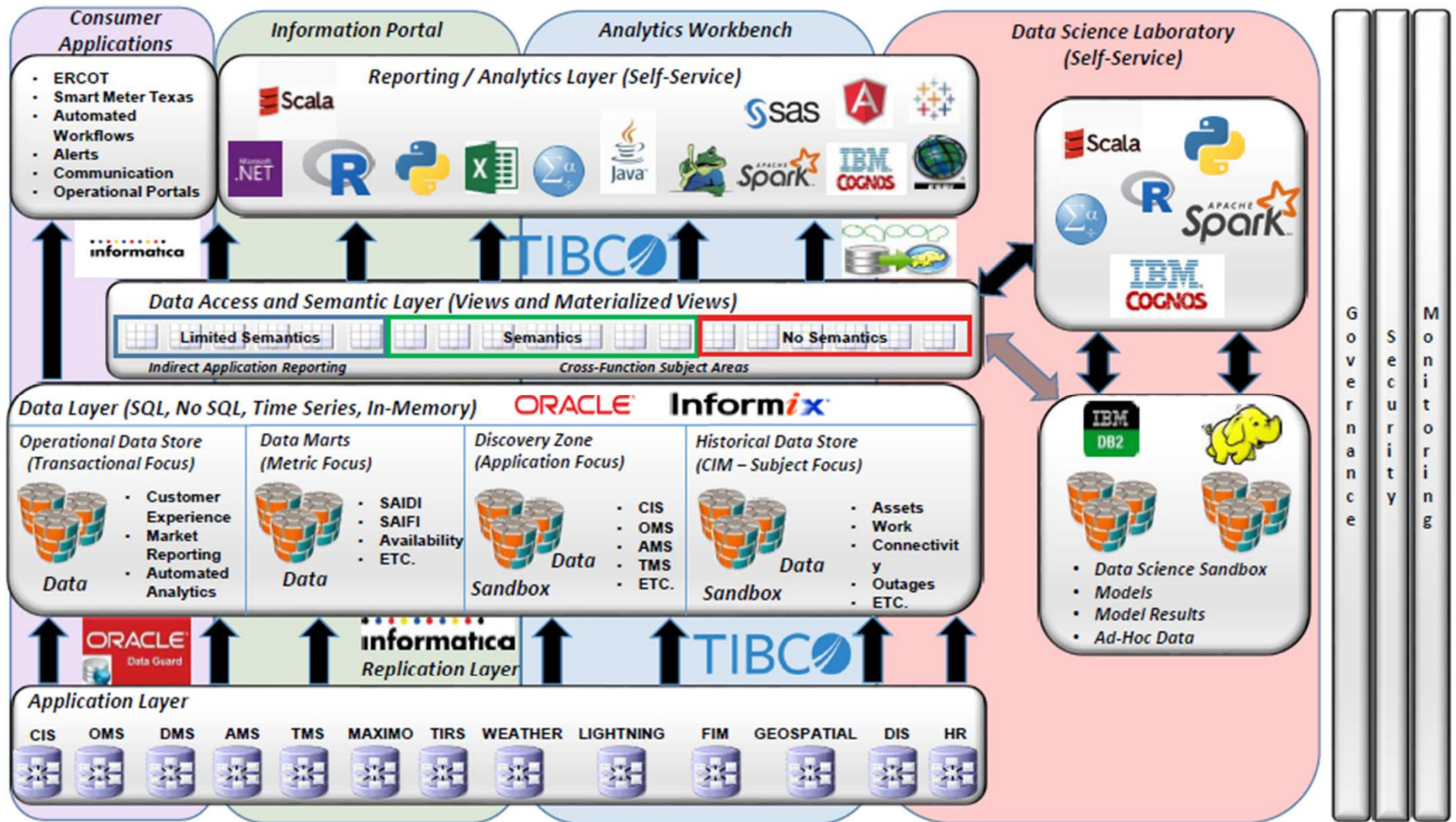- **Build Center of Excellence for Data Analytics at Oncor**

- **Use Case Examples**

Oncor Data Analytics Current State and Platform

Use Case Driven Analytics Team Work

A more expanded view of Oncor's Analytics Platform

Build Center of Excellence (CoE) for Data Analytics at Oncor

Oncor CoE for Data Analytics

- Support and educate multiple organizations' key business objectives
- Establish enterprise-wide definitions, calculations, business rules
- Encourage "self-service" analytic models and reporting for business
- Define data analytics directions and technologies for better business outcomes

Oncor CoE for Data Analytics
--- Focus Areas

- Business Strategy Alignment

- Best Practices and Standards

- Advise and Consult

- Technical Architecture

- Training and Support
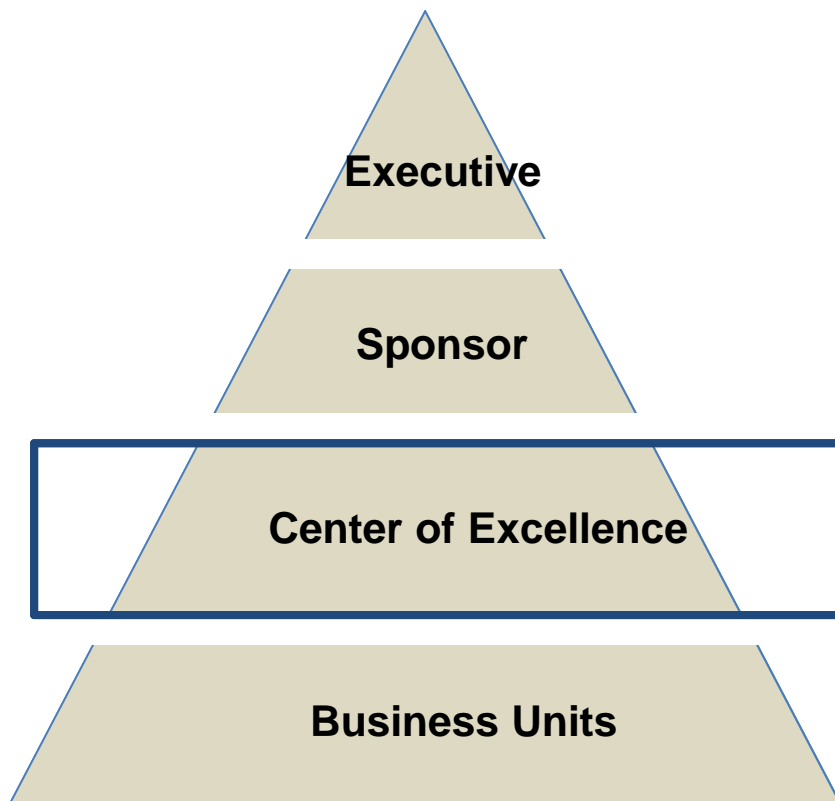
- Data Governance Alignment

Oncor CoE for Data Analytics
--- Key Factors

- People
  - Create virtual teams and corresponding role maps
  - Cultivate a data and decision science practice
  - Encourage people to develop cutting edge skills

- Process
  - Develop analytics oriented BI architecture
  - Develop data quality process
  - Develop best practices
  - Review and revise processes regularly

- Technology
  - Assess the business needs
  - Engage vendors to build POC for the business case
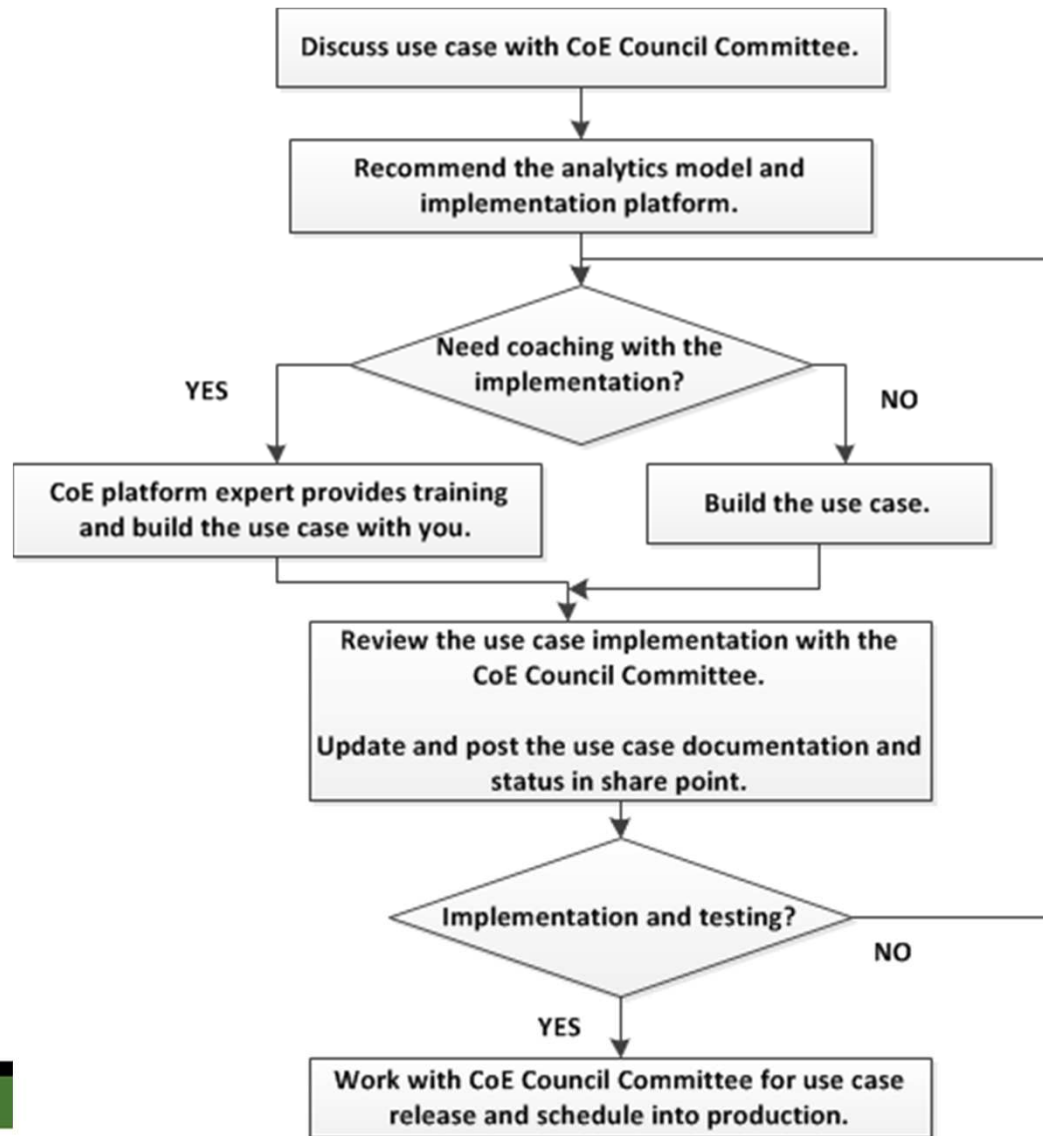 - Architect the solution to promote self service

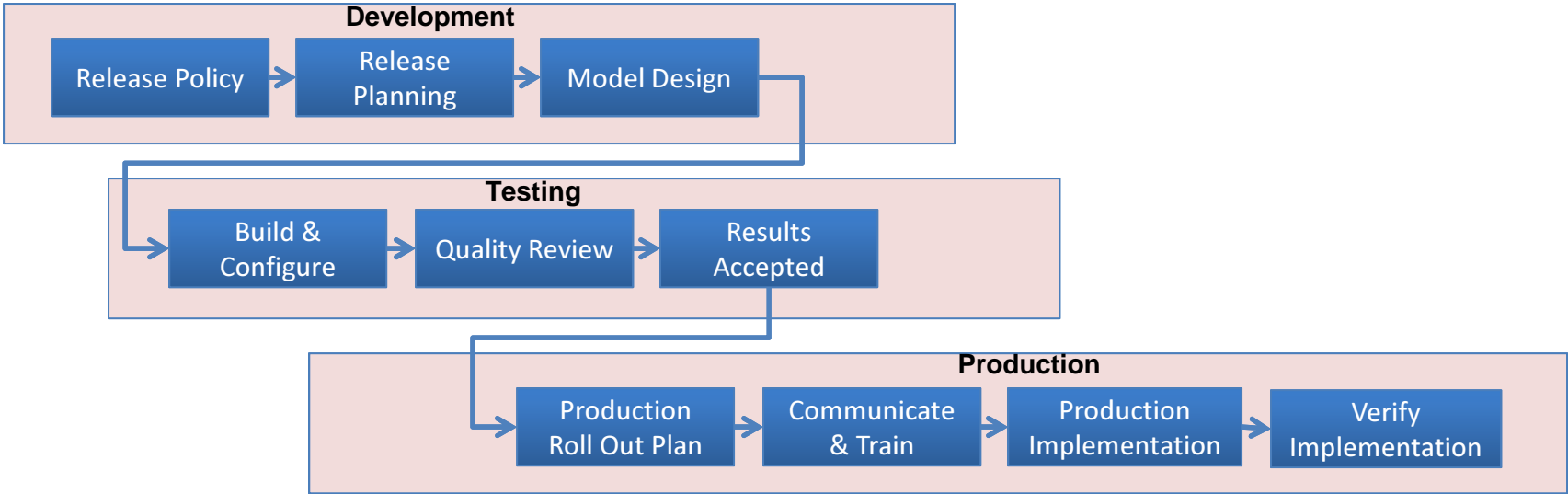# Oncor CoE for Data Analytics -- Structure

- **Committee Chairs**

- **Committee Experts**
  - Data Science
  - Data Management
  - SPARK Implementation
  - SPSS Implementation
  - R Implementation

- **Committee Secretary**

Pyramid levels (top to bottom): Executive, Sponsor, Center of Excellence, Business Units

Oncor CoE for Data Analytic -- Implementation Process

Production Release Process and Governance

Development

Release Policy → Release Planning → Model Design

Testing

Build & Configure → Quality Review → Results Accepted

Production

Production Roll Out Plan → Communicate & Train → Production Implementation → Verify Implementation

Change Management Process

Use Case Examples

Implemented Use Cases at Oncor

- [SPARK] Meter-Transformer Connectivity Errors Detection

- [SPARK] Distribution Transformer Load Forecast & Over Load Detection

- [R] Feeder Load Forecast

- [SPSS] Prediction of Weather-Related Damage in Distribution System

- [SPSS] AMS Based SAIDI Calculation

- [SPSS] Non-Technical Losses Detection

- [SPARK] Distribution Transformer Phase Error Detection

- …

Thank You!

qing.zhao@oncor.com
Younus.Mulla@oncor.com