Journey to Esri's Utility Network

October 20th, 2021

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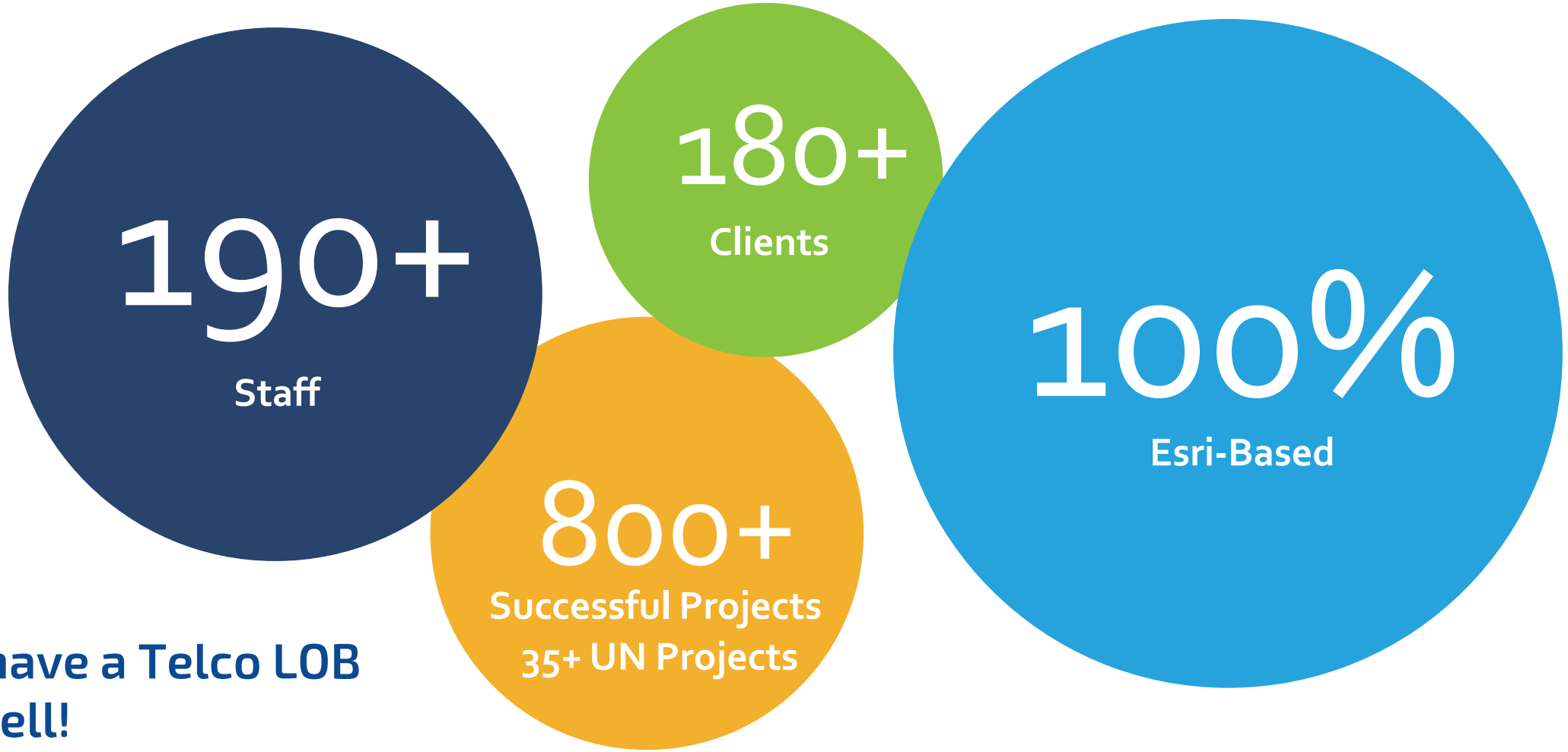
Agenda

- SSP Innovations Overview
- The Esri Utility Network
- How do you prepare?
  - The Data
  - Integrations
  - Organizational Change Management

SSP Innovations in 2021 – Utilities LOB



We have a Telco LOB as well!

Esri Utility Network

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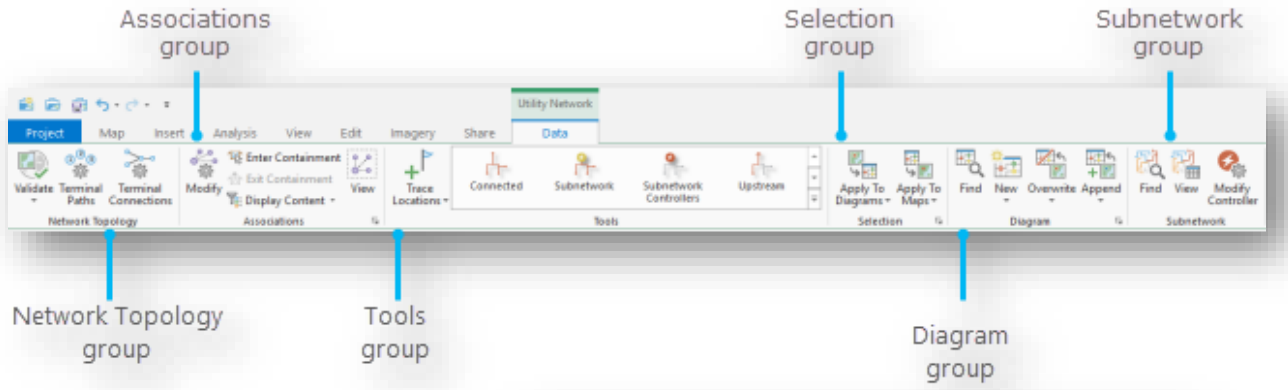
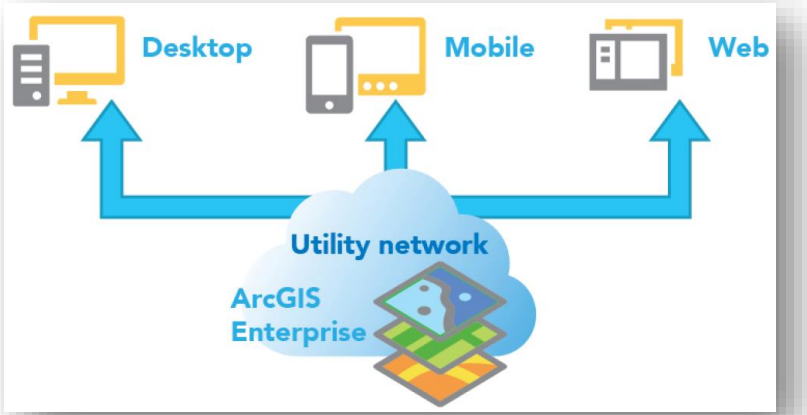
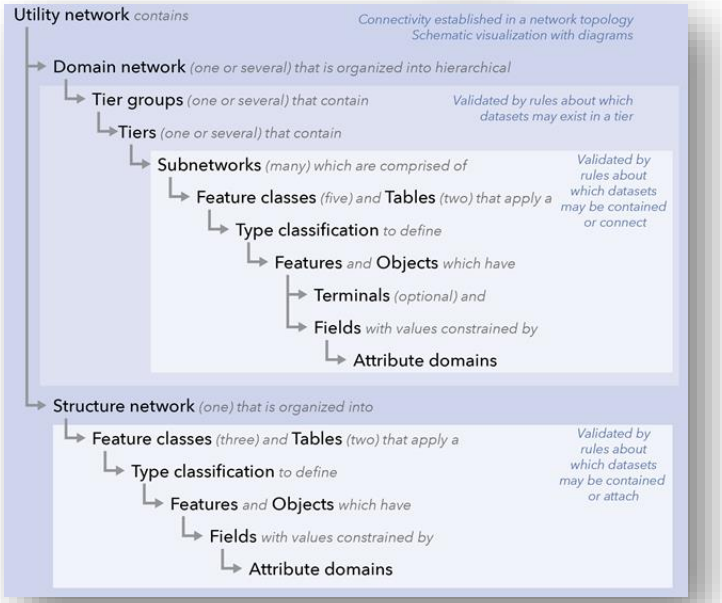
What is the Esri Utility Network?

- Platform that encompasses:
  - Data Model
  - Business Rules
  - Tools
  - Architecture

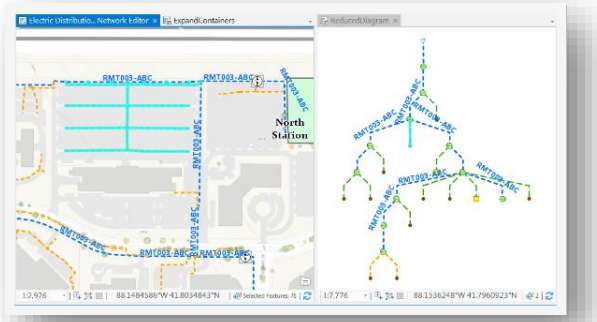


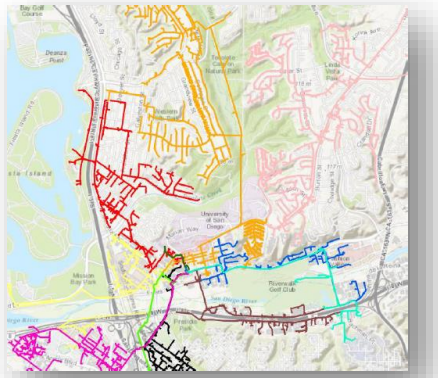


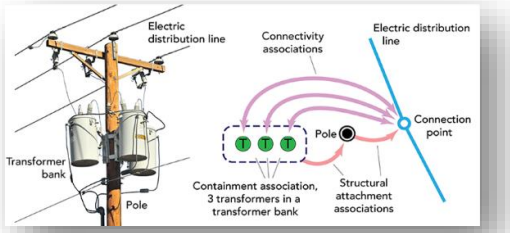


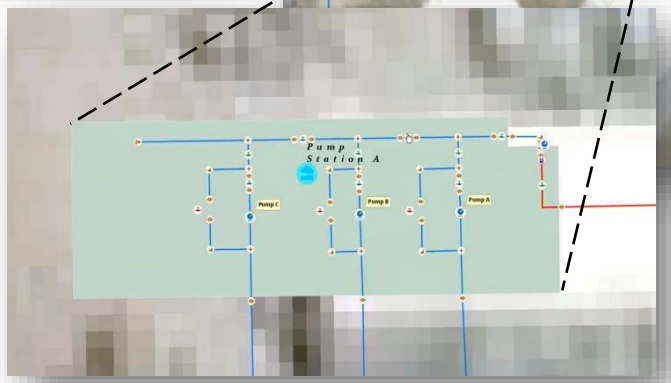
Features of the Esri Utility Network

- >Support for Radial & Mesh Networks
- >Network Management (editing)
- >Network analysis (tracing)
- >More realistic representation of “real-world networks”
- >Containment (e.g. Substation, Reg Station)
- >Integrated Schematics (Diagrams)
- >3-D Support

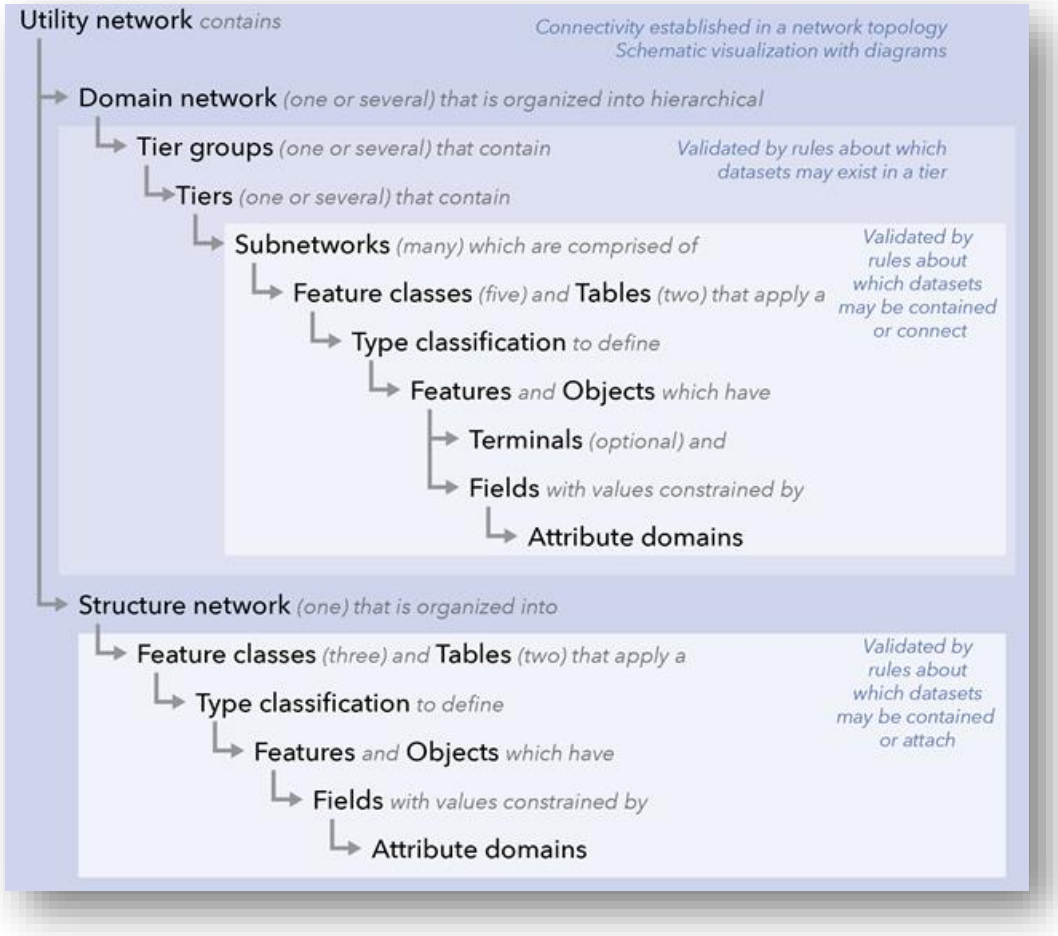








The Utility Network Data Model

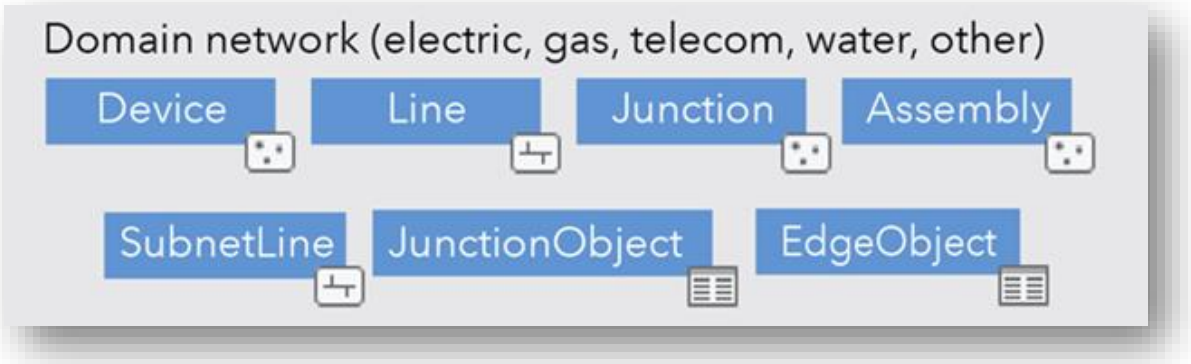


- Domain network:
  - All the assets that control and allow the flow of electricity/gas/water/etc.
  - Basically, all the stuff that was in the Esri Geometric Network
- Structural network:
  - All the assets that support or hold up the domain network assets
- Tier Groups
  - The different voltage or pressure levels
    - High, Medium, Low
  - Can be further broken down to specific voltages and pressures
- Subnetworks
  - Circuits and pressure zones

The Utility Network Data Model – Cont.

5 Types of Feature Classes

> Devices
  > All asset point features
    › Transformers, valves, pumps, etc.
> Line
  > All conductors, wires, and pipes
> Junction
  > Attachment and connection points
> Assembly
  > “Banks” of devices
> Subnetline
  > Information about circuits and zones



2 Tables

- Non-spatial Objects for telco and conduit management
- Edge Object
- Junction Object

How do you prepare for this?

- Great Question!
- It depends:
  - How are you structured now?
  - What do you want from the UN?
  - Do you have data for stuff now?
  - What do you want to change?
  - And lots more
- What pre-work can you do now?

Esri Utility Network: Data

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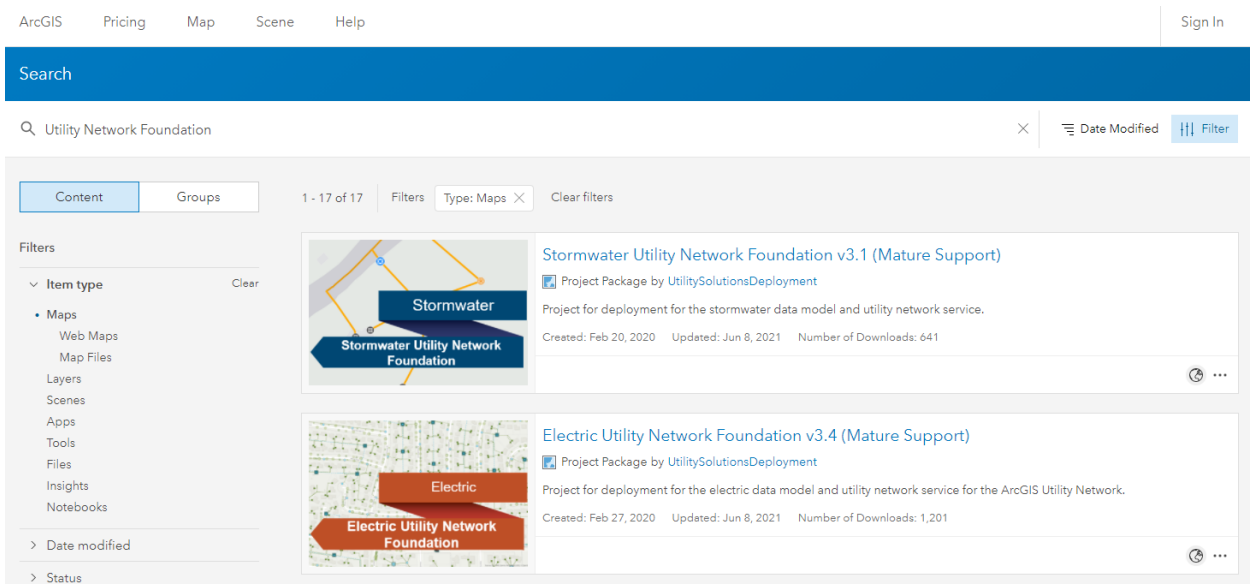
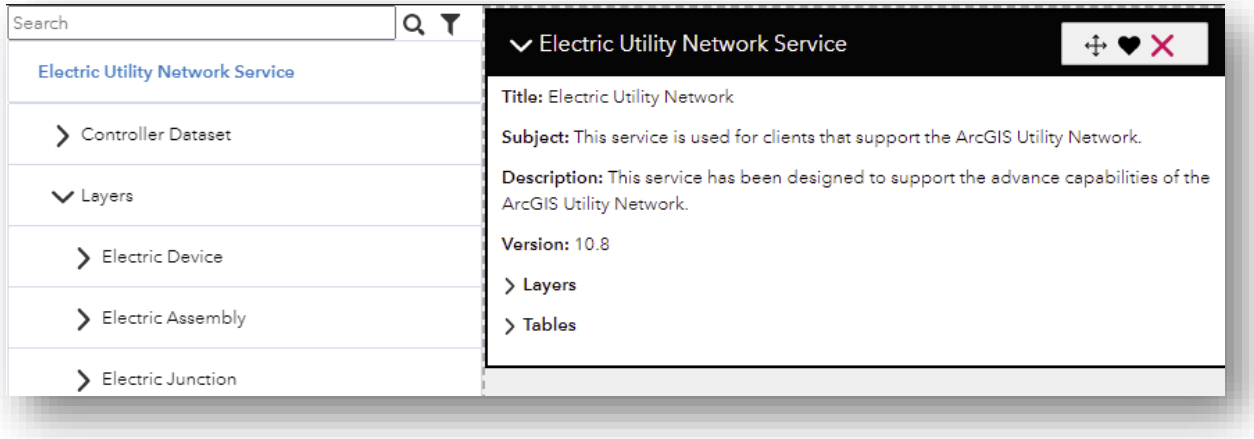
Data: Start Learning Now!

- Very different data schema
- Requires new ways of thinking
- Opportunities galore
- Can be transformative ***if you let it be***
  - Persisting old ideas/processes may be costly

Get your Foundation Asset Package and Data Dictionary!

- Go to arcgis.com and download the Foundation for your specific business:
  - Gas
  - Electric
  - Telco
  - Etc.
- Find the data dictionary for your utility on arcgis.com
- Use that FGDB and data dictionary to review the data structure





Caveats on the Asset Package

- It can be overwhelming to review
- Meant to be used as guidance
- You do NOT have to use it as-is
- It should be adjusted to YOU

How much data do you want about assets?

- The data model can be DENSE
  - Gas heavy on regulatory needs
  - Electric heavy on ADMS and modeling needs
- You do NOT need to use all the attributes and asset types
- You CAN add/modify/delete attributes, asset types, and data domains
- If you do want to use an attribute, do you have a data life cycle management process for it?
- What are your future data needs?
  - Track and Trace?
  - ADMS?

How good is your data quality?

- Are you missing key data for what you want for UN functionality?
  - Connectivity
  - Device Status (Open/Closed)
  - Electric Phasing
  - Wire and pipe sizes and types
  - MAOP values
- If you are missing data, can you remediate it before you migrate?
  - Cleaner data is easier to migrate
- Check with your planning engineers on what they are cleaning up when they get GIS data!

Does all your data need to be in GIS?

- Does your GIS truly need all the asset data or just the operational data?
  - May apply more to electric than gas
    - Equipment size vs manufacturer info
- Opportunity to stop GIS from being a data dumping ground
  - Utilize integrations to systems of records instead of re-entering data
- Re-verify/validate why you have data in GIS?
  - What is it being used for?
  - Does it belong there?
  - Is it being maintained?

Does all your data need to be in GIS?

Utility Network data is NOT all your GIS data!

- Utility Network data is your Geometric Network participants!
- What data it is not:
  - Landbase
  - Customer Information
    - Outside of meter/service locations
  - Inspections
  - Maintenance
- Split up data for ease of maintenance/management!

Esri Utility Network: Integrations

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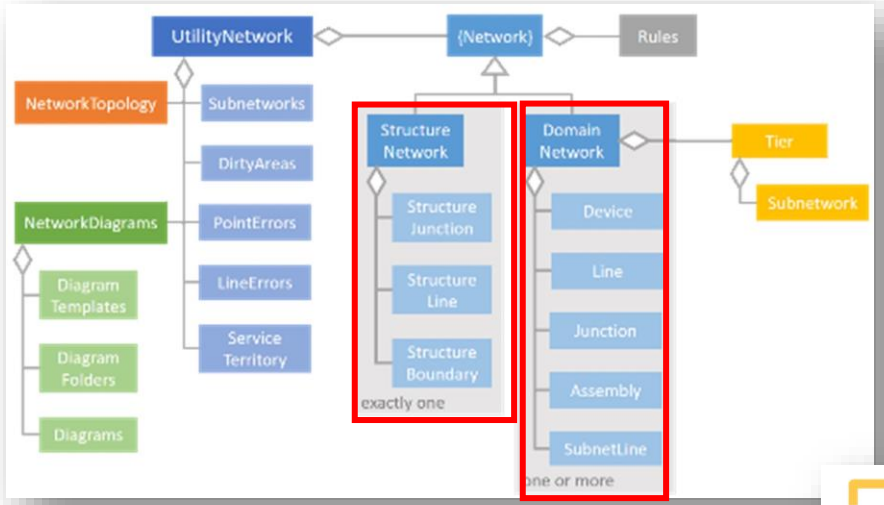
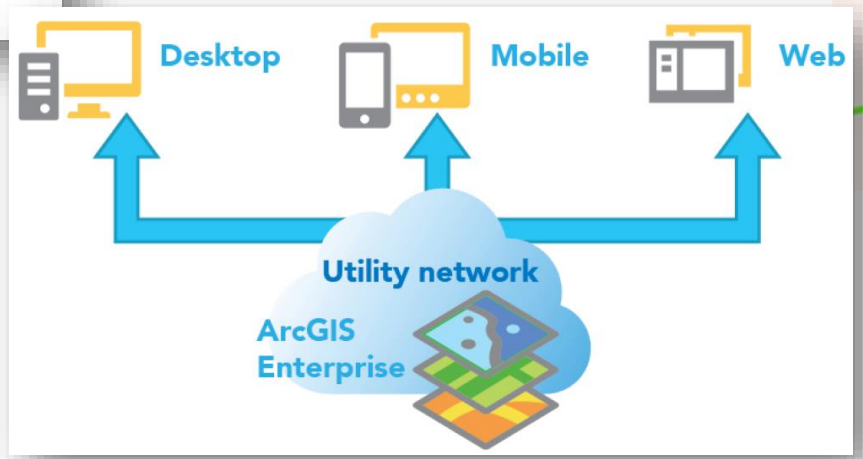
Integrations | the base is changing

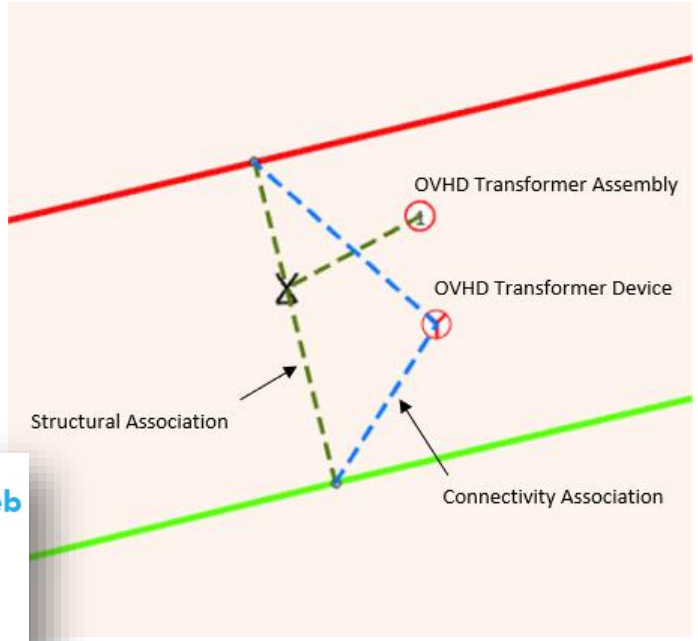
Data Structure



Architecture

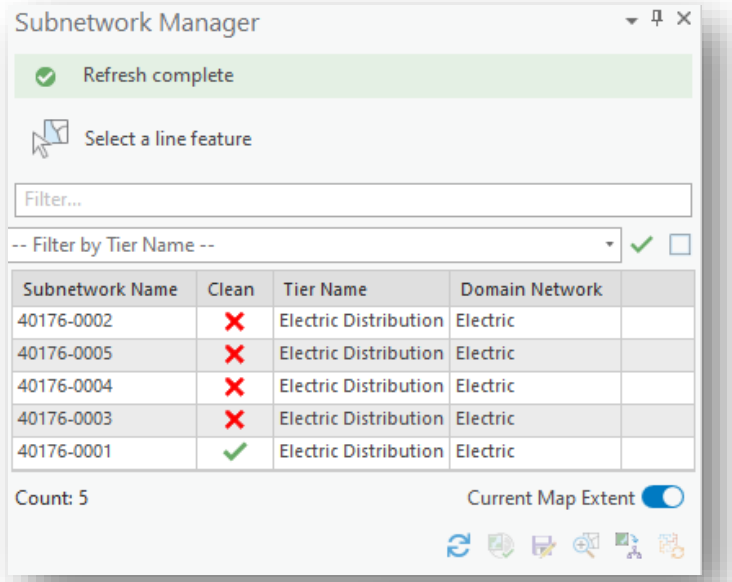


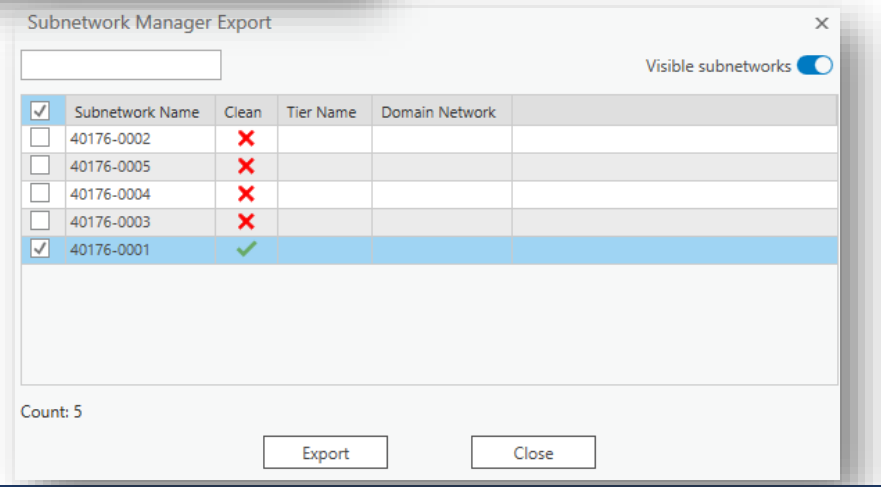
Network Connectivity



Integration | need to approach differently

- Esri recommendation:
  - Stop integrating at the database
  - Leverage service-based integrations
- Why:
  - To leverage the powerful network management tools enabled by web services





Integration | next steps

What's Next:

> Catalog your integration business processes

> Catalog all your inputs/outputs

> Check with your integration and 3rd party software partners if they have a UN strategy

> Understand your options and the change in front of you

> Continue to learn more about the Utility Network

Esri Utility Network:
Organizational Change Mangement

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Why deploy OCM?

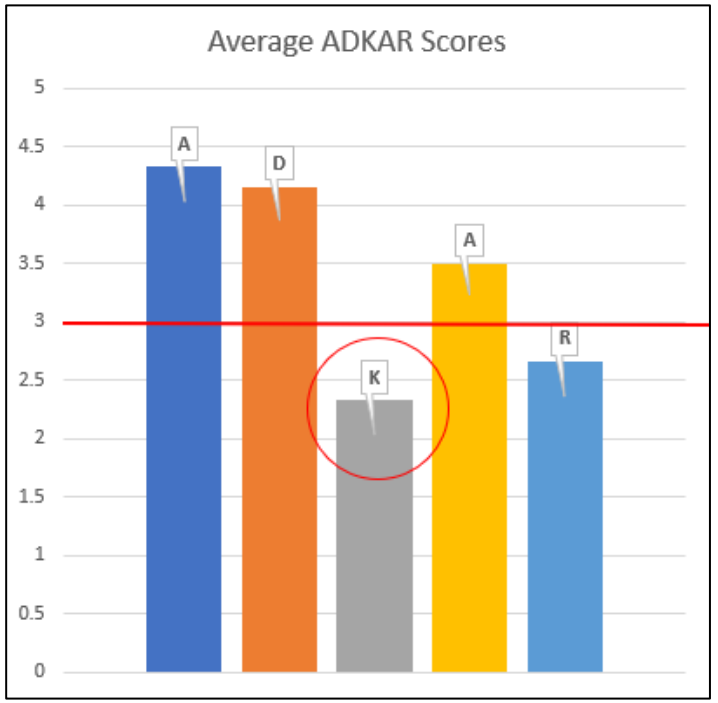
- **OCM Delivers**
  - Speed of Adoption
  - Higher Utilization
  - Increased Proficiency
- **Criticality to UN Migration**
  - ArcGIS® Pro
  - Toolsets/Workflows
  - GIS Stability
  - Symbology

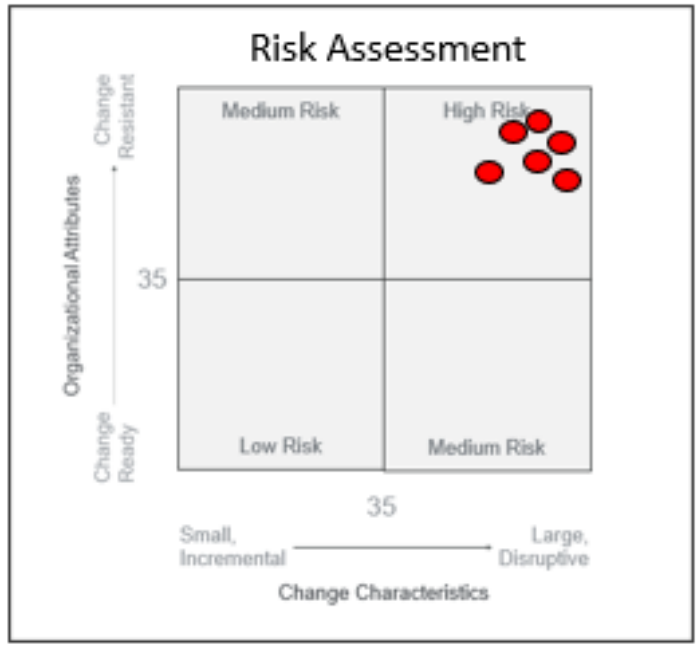
OCM - Sponsorship

- **Executive Sponsor – primary success factor**
  - Active and Visible
  - Build change coalition
  - Engaged (PM and CM)
- **Sponsorship Model**
  - Stakeholders first
  - Direct Manager/Supervisor
  - Named Members Scored

OCM – Managing the Change

- **Reinforce Change**
  - Analyze for Barriers
  - Resistance Management
  - Celebrate Success
- **Key Resources**
  - Communications Team
  - Certified Change Practitioner
- **Strategy for Success**





In Closing

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The Utility Network takes planning!

- Study how your data will migrate
- Think about the new data structure
  - How do you take advantage of it?
- How do you evolve your GIS for the future?
  - Integrations
  - Business Process
- Is it time for a change?
  - How do you manage that change?

SSP can help!

- Consulting efforts for data modeling, integrations and business process discussions
- SSP Data Services for data studies and pilots

QUESTIONS

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