

Integrated Grid Planning: Observations from Around the Industry

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Enabling IGP: Observed Industry Gaps

Data/Models

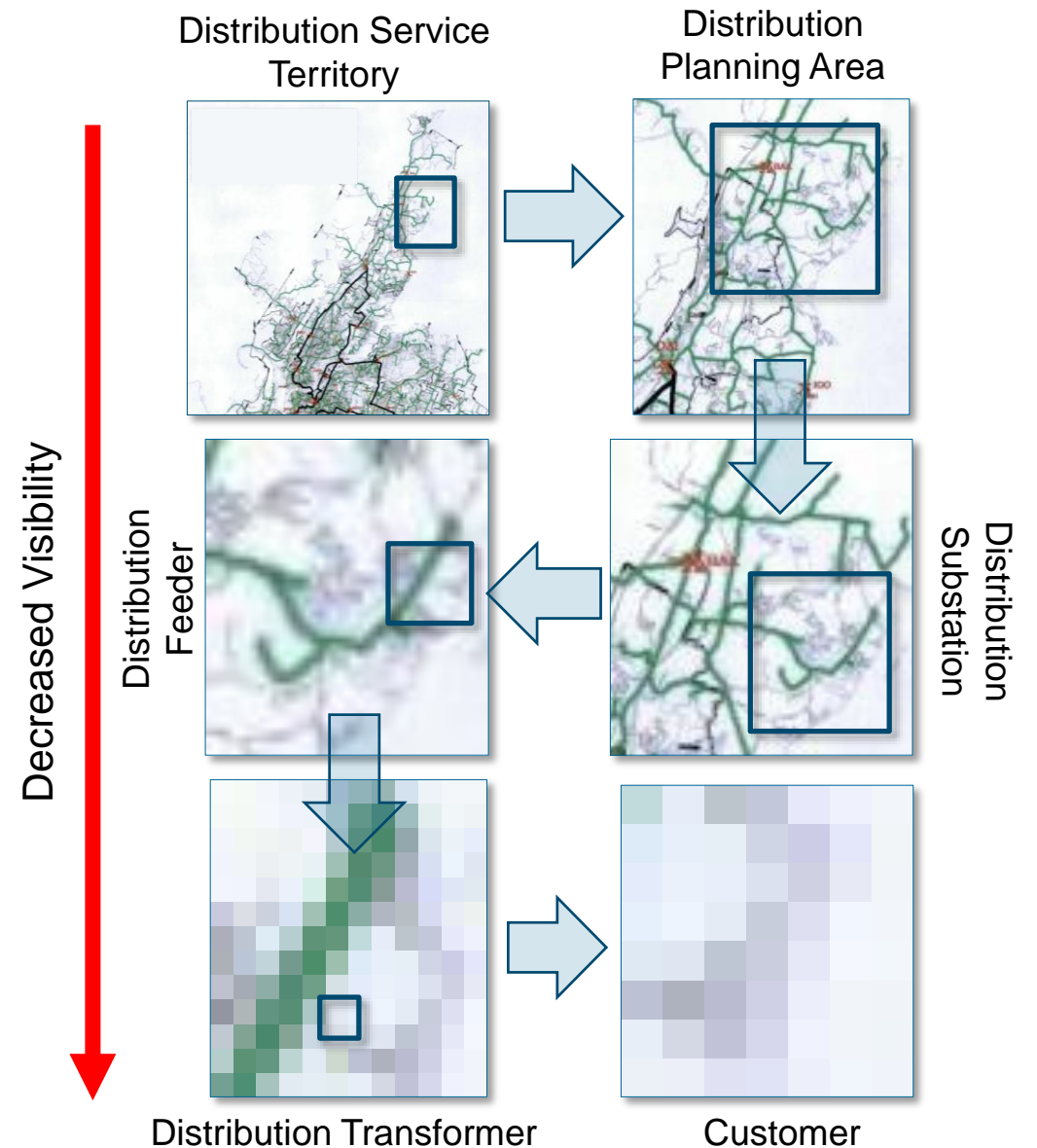
Processes/Tools

Experience/field trials

Engineering expertise/resources

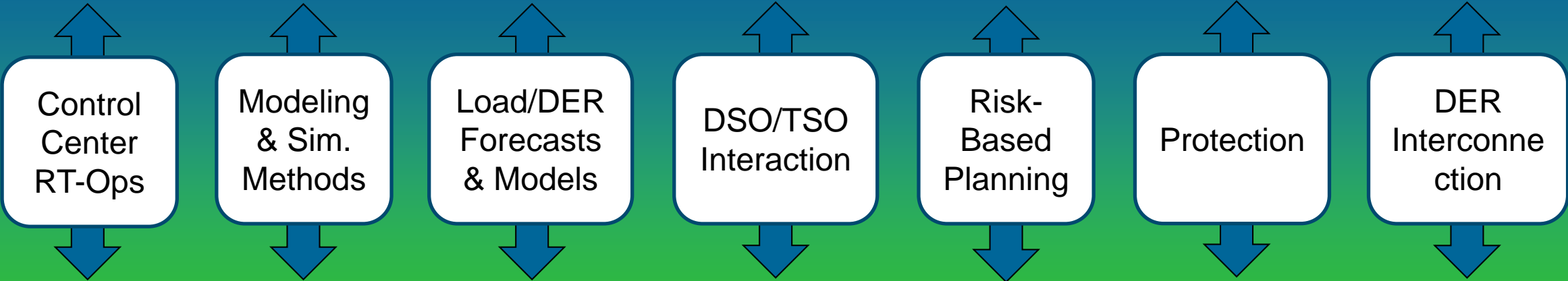
Gap: Data and Models

- Grid-edge is where utilities have the least amount of visibility
 - Planning models
 - Operational visibility
- Grid-edge models will need to improve
 - AMI can help but is only part of the answer
 - Requires diligent maintenance (like pulling weeds)
- Grid-edge solutions for true integration will require coordination all the way “up stream” (Bulk system) as well



Gap: Integrated Grid Operations and Planning Tools, Methods, and Processes

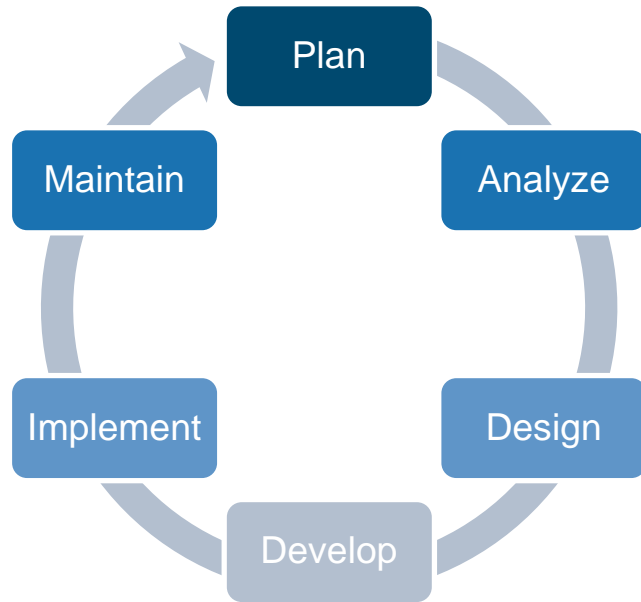
Transmission Ops & Planning



Distribution Ops & Planning

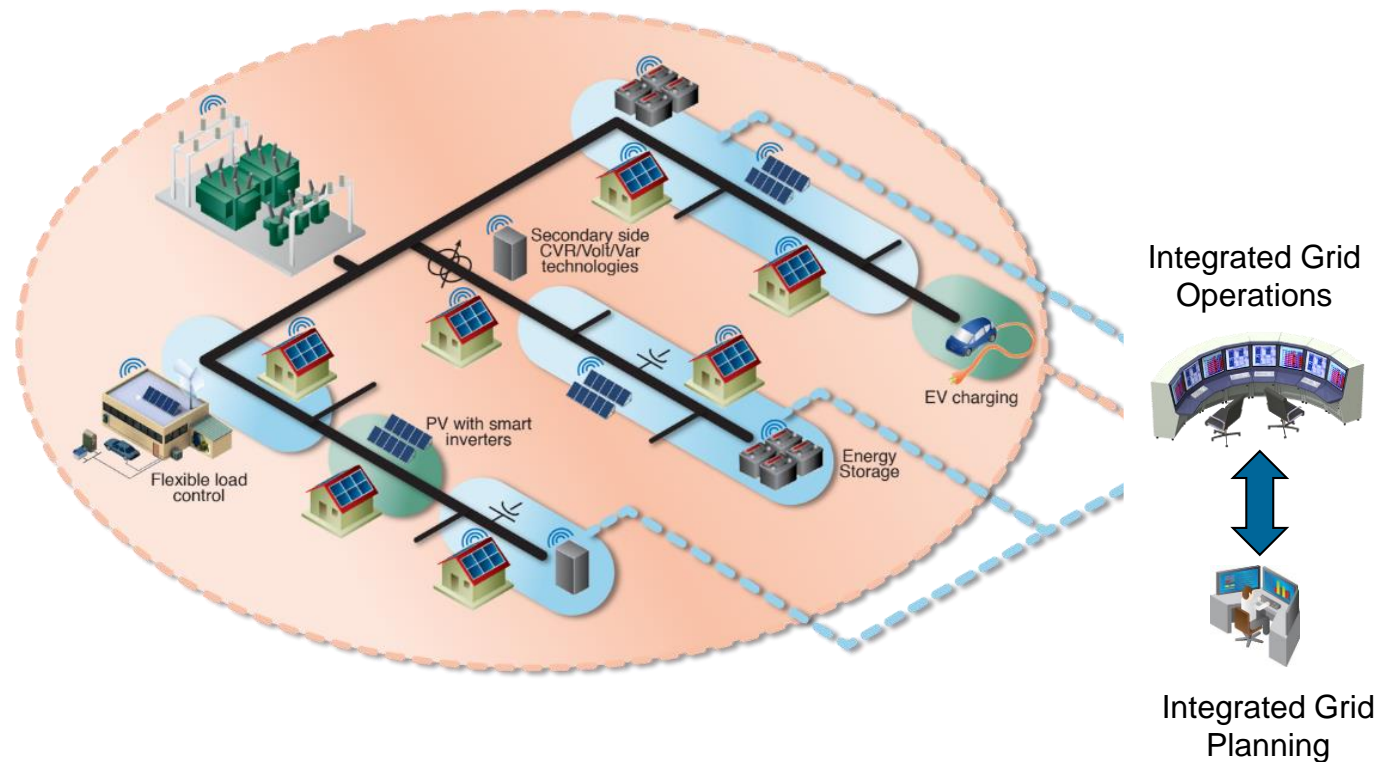
Gap: Broad Field Trial Experience

- Various field trials/demos currently underway



Lack of extensive field trial experience across entire development cycle

Lack of extensive experience “connecting the dots” – technology, processes, data, methods, tools, resources, etc.



Gap: Engineering Resources

- Knowledge base is retiring
- New skillsets will be needed for
 - Planning engineers
 - Operational engineers
- A few new skillsets needed for distribution planning...
 - Software coding
 - Analysts
 - Power system modeling
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