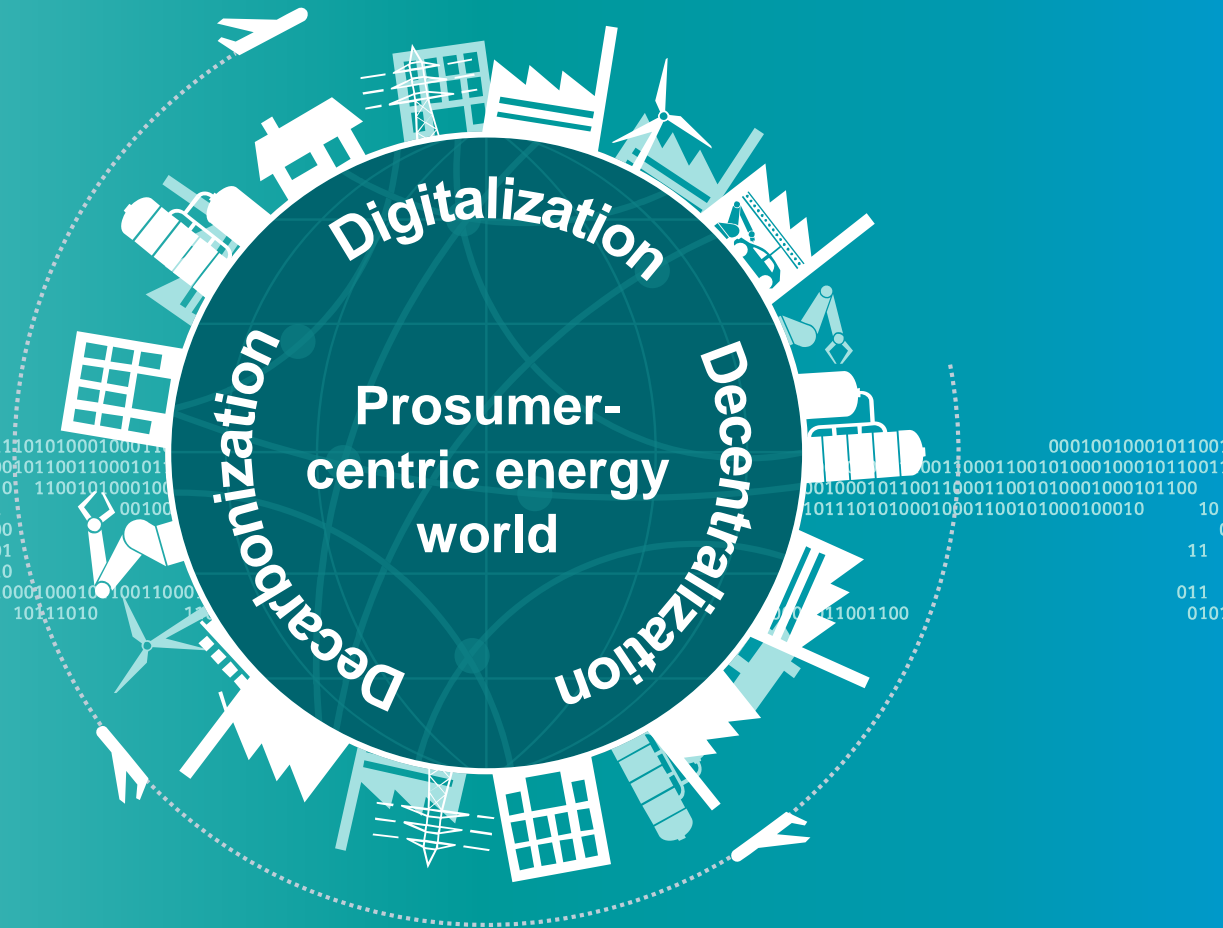


Chicago Climate Charter Clean Energy Commitment

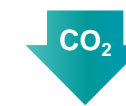
Ken Geisler – VP of Strategy
Siemens Digital Grid

Challenges and opportunities facing greater Chicago to realize its clean energy and resiliency



Decarbonization

“All electric world” - Fluctuating infeed – e-Mobility



Increased:

- Renewable generation
300% growth between 2010 and 2030
- Energy Efficiency targets

Decentralization

Distributed generation – Microgrids – Energy autonomy



New installations drive distributed power generation

Share of distributed goes up to 67% in 2030

Digitalization

Connectivity - Grid edge - End-to-end



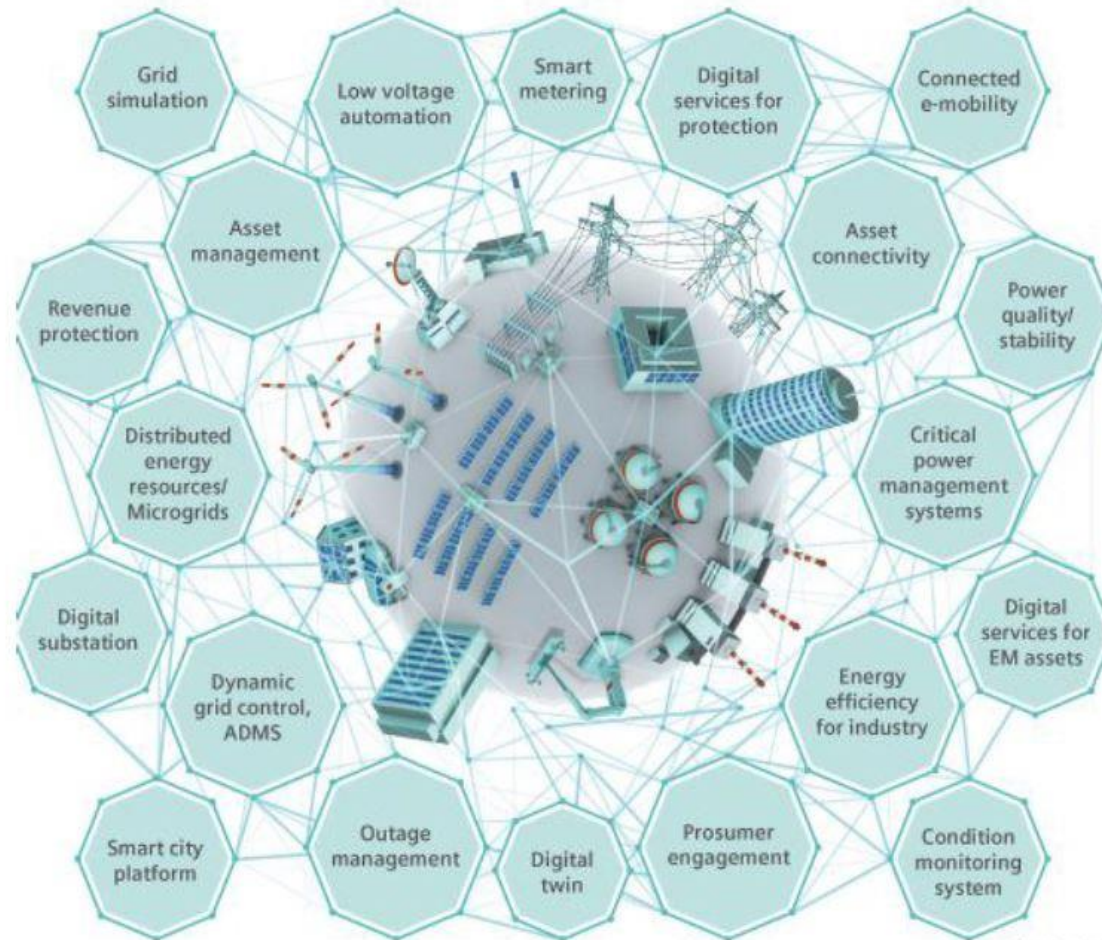
New installations global smart meters

Increases by 200% between 2015 and 2025
Reaches 100 million p.a. in 2025

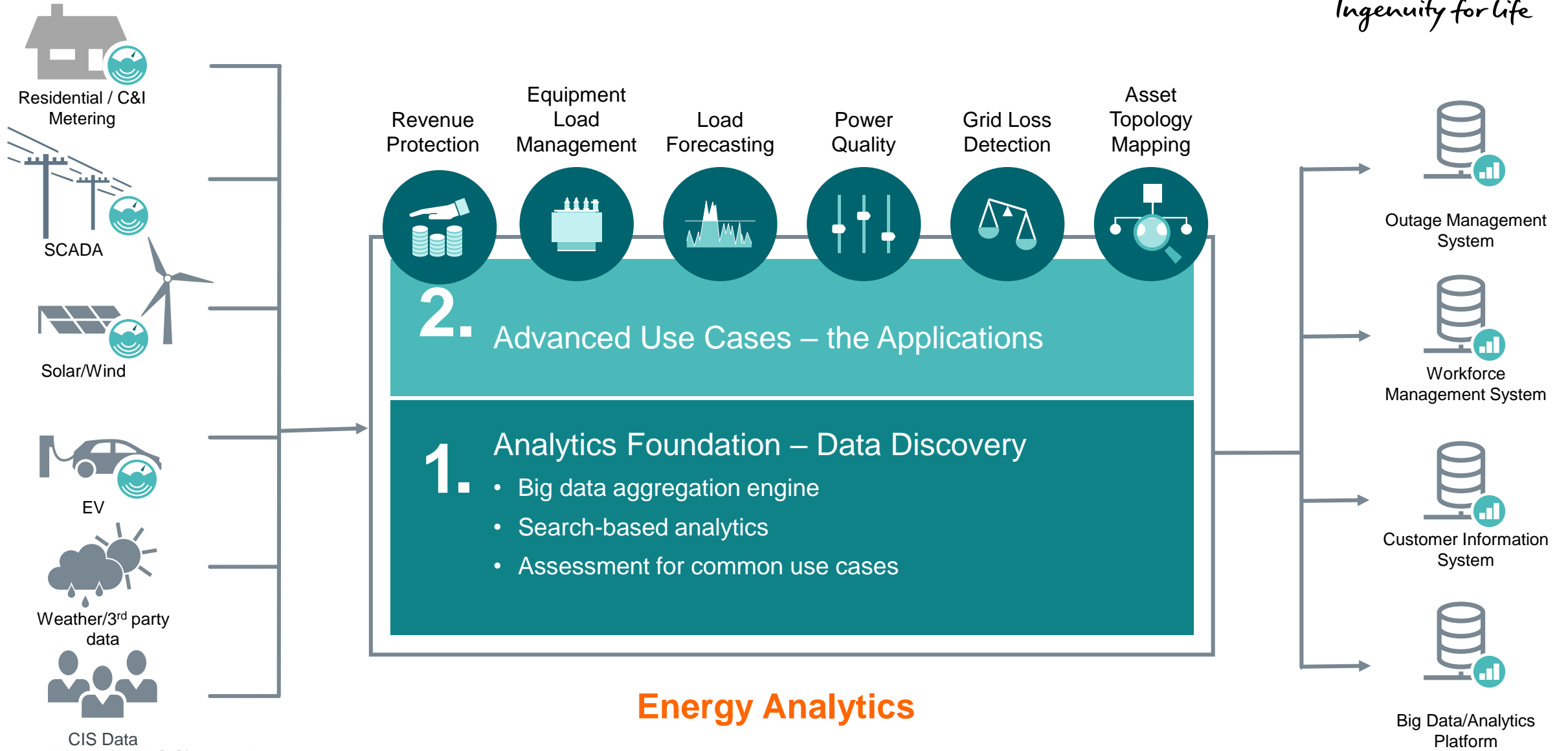
Challenges and opportunities facing greater Chicago to realize its clean energy and resiliency

From the Internet of Things (IoT) to the Internet of Energy (IoE)

The use of IoT technologies offers grid operators the opportunity to adapt to the relevant conditions and take suitable action - always with the aim to optimize operational efficiency.



Challenges and opportunities facing greater Chicago to realize its clean energy and resiliency



Energy Analytics

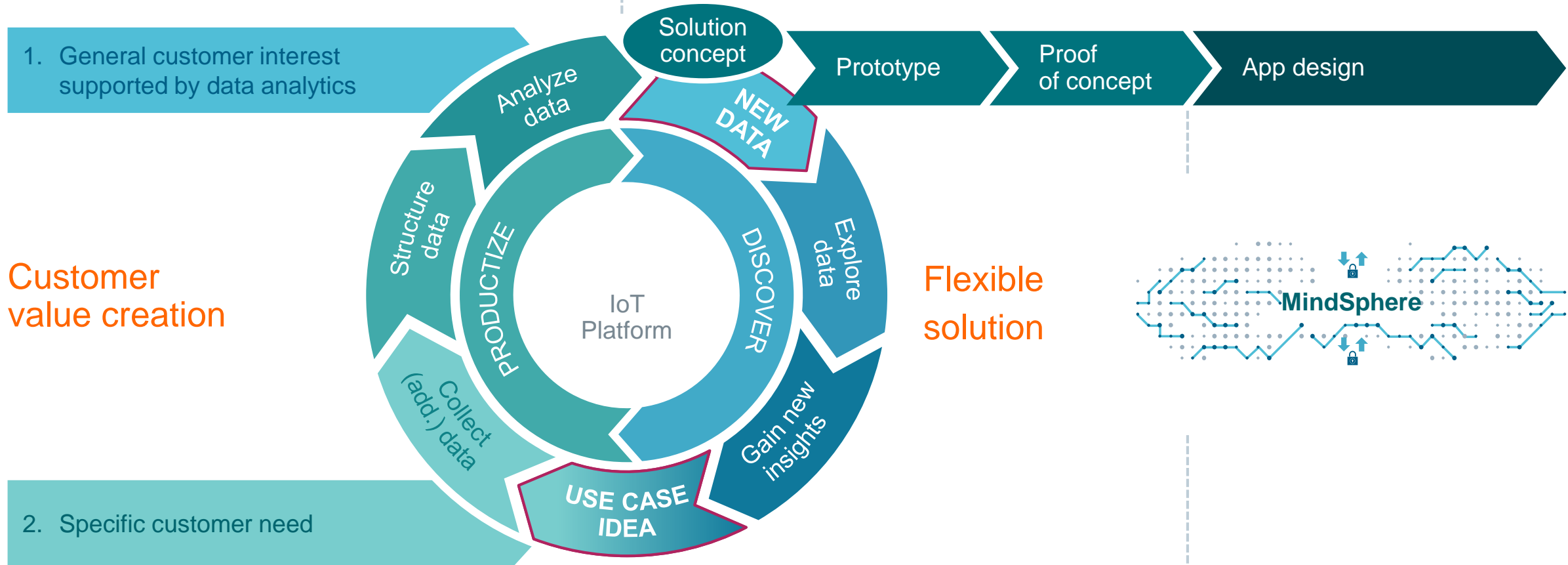
Challenges and opportunities facing greater Chicago to realize its clean energy and resiliency



Why?

What?

How?



Customer value creation

Flexible solution

**The Co-creation method:
Creating value out of data jointly with the customers**

Siemens' Technology Contribution to the Chicago Climate Charter 80x50 Clean Energy Commitment



The most critical obstacle preventing IoT, technology and innovation from expediting the achievement of Chicago's 80x50 clean energy commitments is bringing all regional partners (e.g. community, regulators, utilities, business stakeholders, and industry/technology providers) to a collaborative (mutually supportive) common objective, business model(s) and plan for implementation of intelligent distributed technologies. All of these investments in resources must be manageable - measurable stages of improving efficiency, sustainability and resilience.



Chicago is on the road to cut greenhouse gas pollution 80 percent and usher in a clean energy future for the United States by 2050.