

Electricity Distribution Systems

How information will
lead the transformation

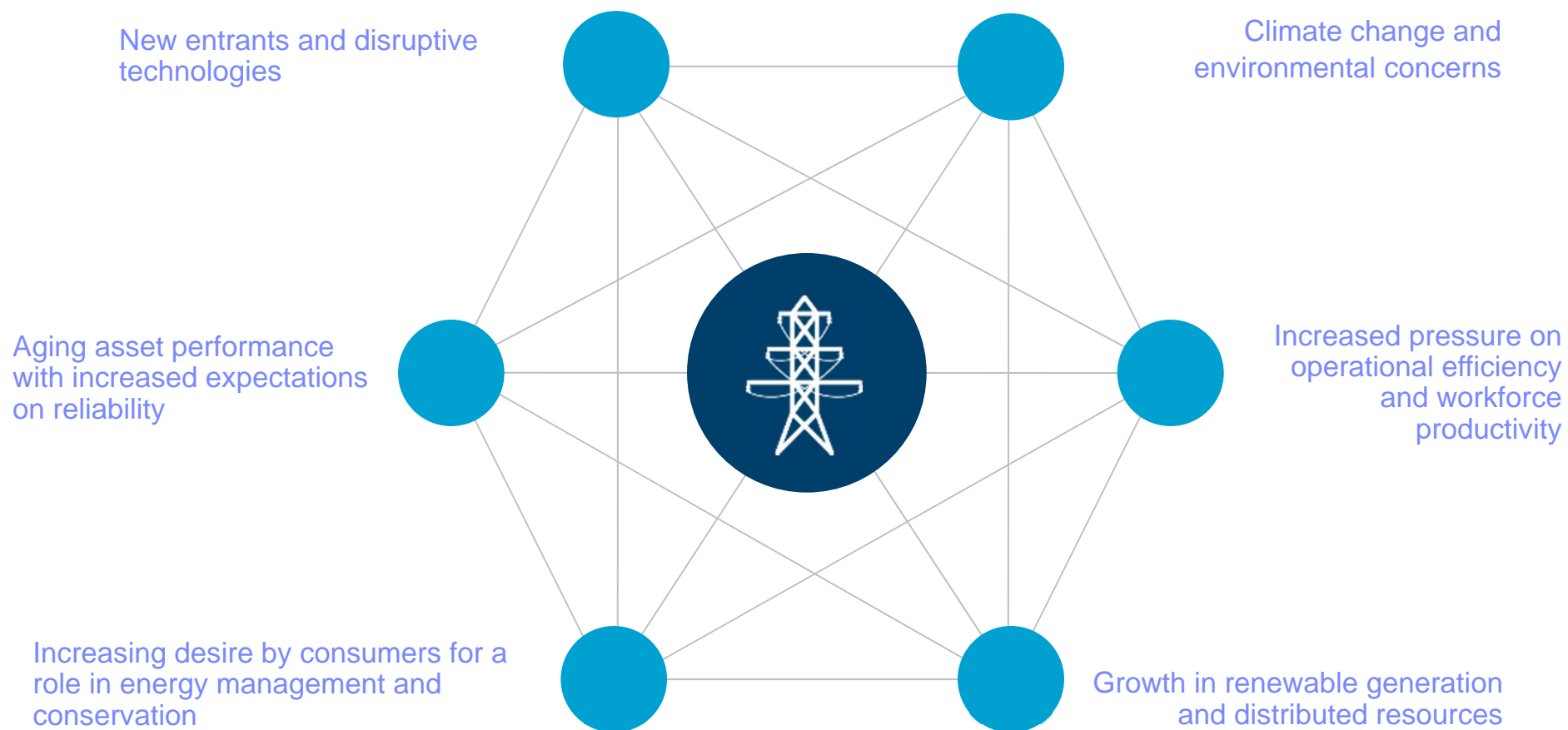
Allan Schurr

VP Energy and Utilities

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Challenges facing the energy grid



Other transformed industries have lessons for the power grid



Common Themes

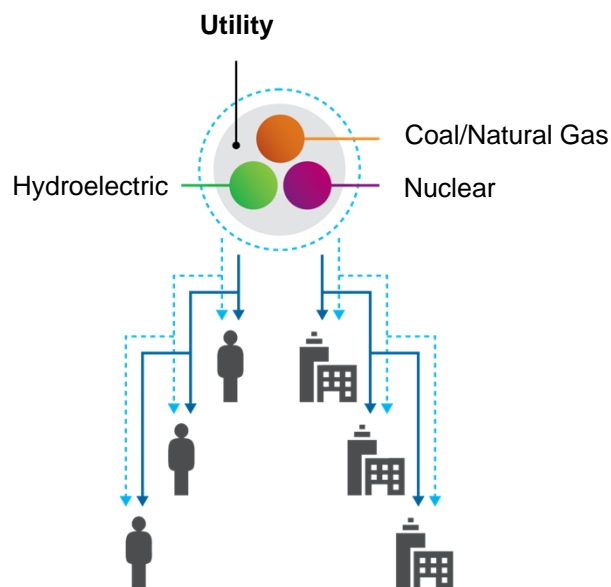
- Technology innovation
- Disruptive new entrants
- New business models



Benefits for the consumer

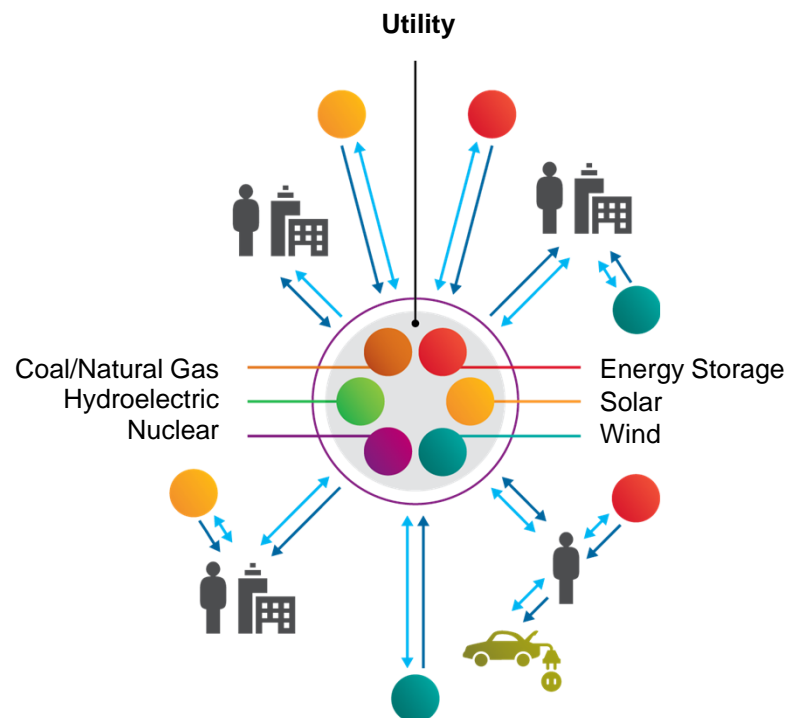
What does a smarter energy system look like?

Traditional

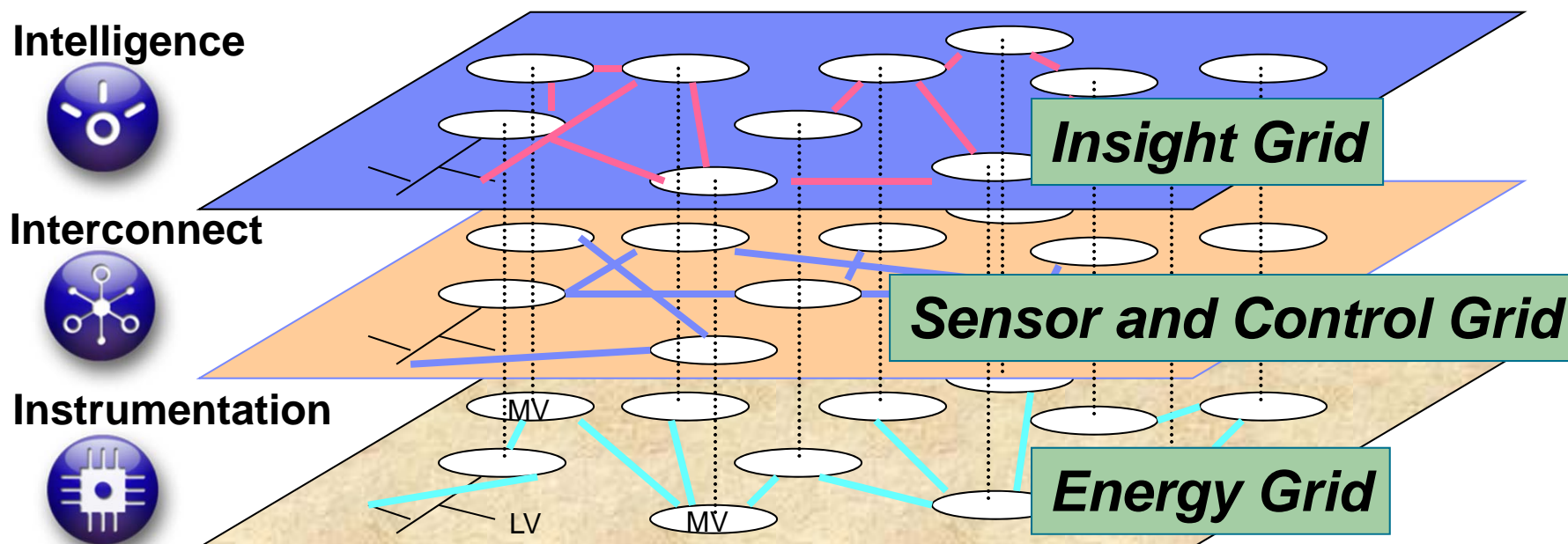


- Power Flow
- - - Periodic Information Flow
- Continuous Information Flow

Transformed

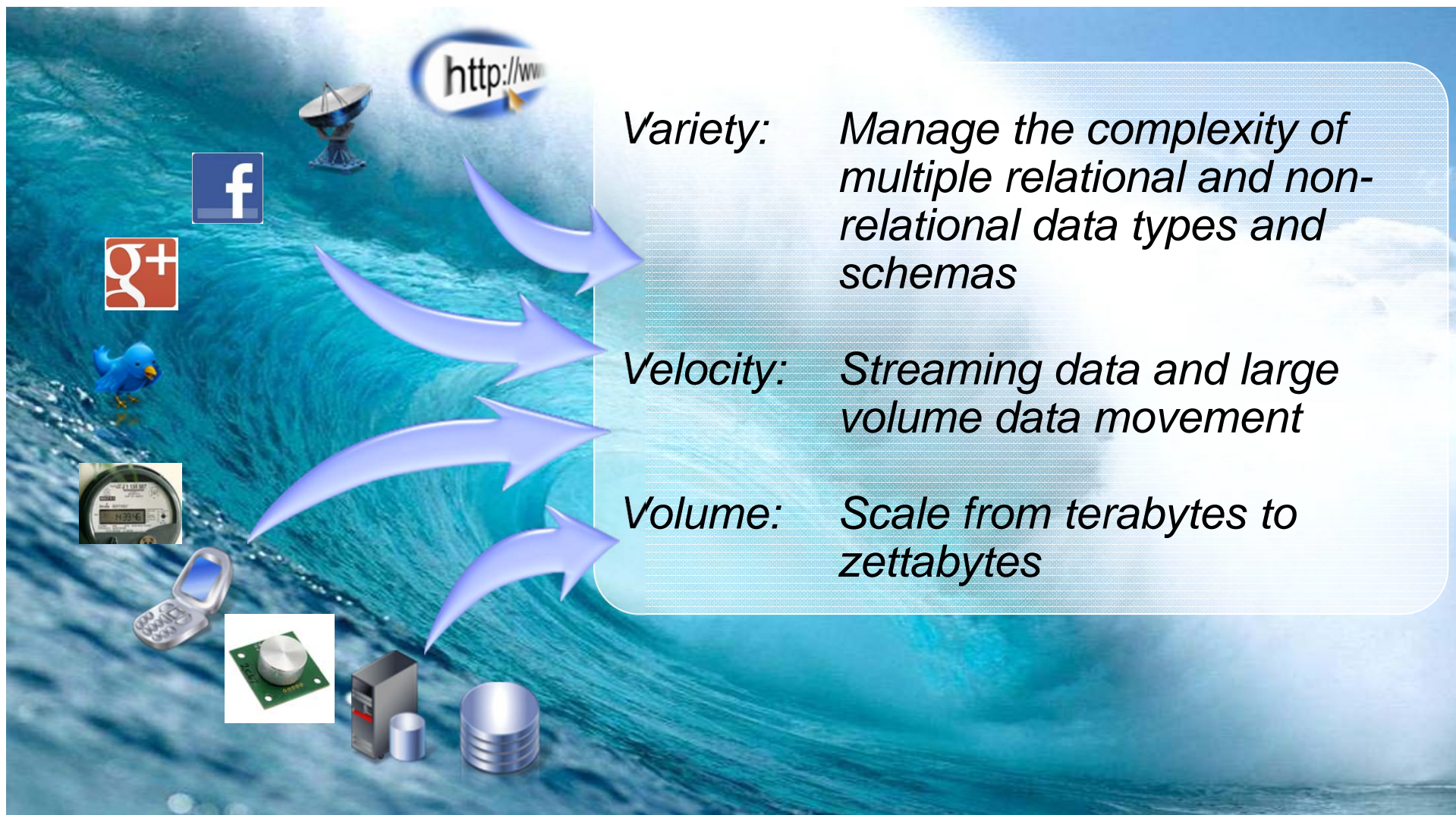


The distribution network is really multiple grids



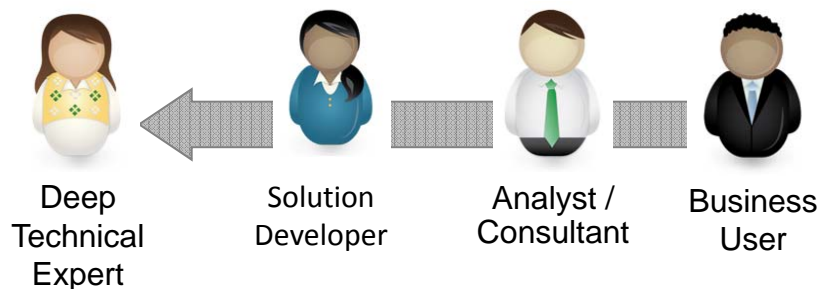
The Big Data Opportunity

Extracting value from an immense volume, variety and velocity of data, in context, beyond what was previously possible.

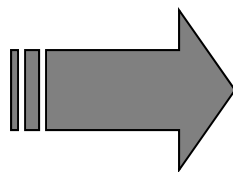


Analytics Vision

- **Starting with value, not the data.**
Then support with technology investments
- **Accelerating collaboration between stakeholders in the solution process**
- **Integrating the best of breed into tailored solutions**



Descriptive, Predictive, Prescriptive, Big Data



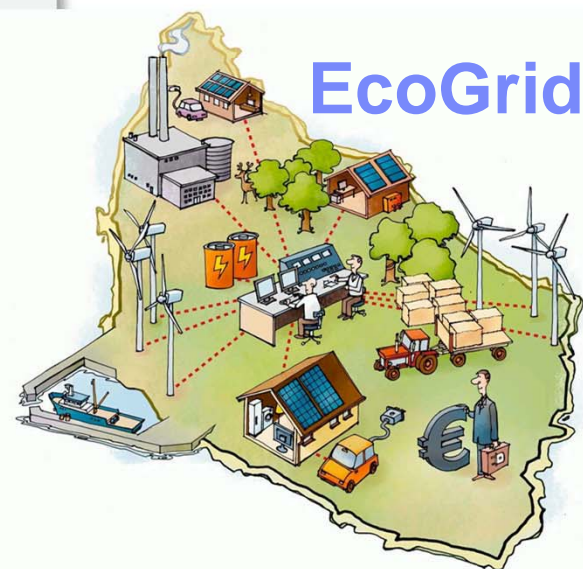
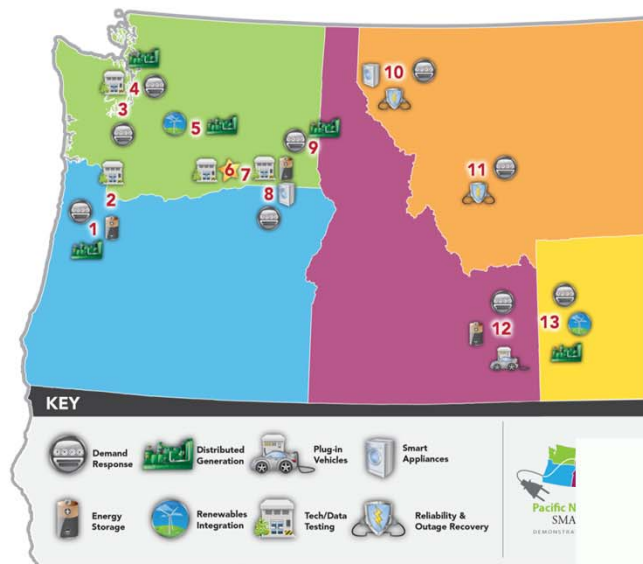
Tools for different stakeholders

| Customer Name | Revenue (Millions) | Customer Profit Margin (%) |
|-------------------|--------------------|----------------------------|
| World of Warcraft | 115,000,000 | 20 |
| World of Warcraft | 90,000,000 | 20 |
| World of Warcraft | 26,000,000 | 20 |
| World of Warcraft | 18,000,000 | 20 |
| World of Warcraft | 18,000,000 | 20 |
| World of Warcraft | 18,000,000 | 20 |
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What can DOE do?

- More “Systems”
 - Comprehensive, cross discipline, across the value chain but including workers and customers in a total system
- More Scale
 - Not plant scale, not substation scale, but control area and larger scale
- Business Models matter
 - To drive sustained investment
 - To manage risk
 - Must be included in DOE plans

Pacific Northwest Demonstration Project



To succeed at scale, avoid unnecessary complication



or



Thank You

aschurr@us.ibm.com

