Big Data in Smart Grid

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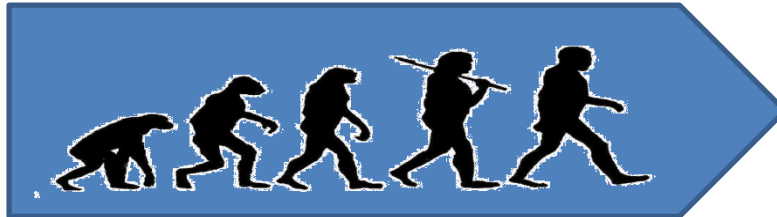
IEEE PES
Power & Energy Society®

Big data technologies describe a new generation of technologies and architectures, designed to economically extract value from very large volumes of a wide variety of data, by enabling high-velocity capture, discovery, and/or analysis.
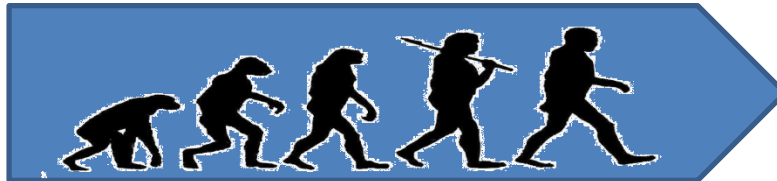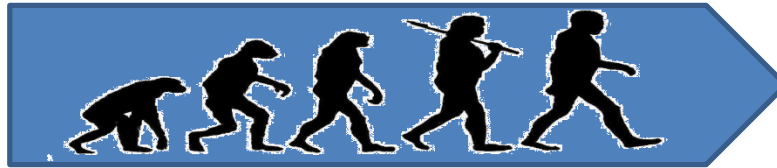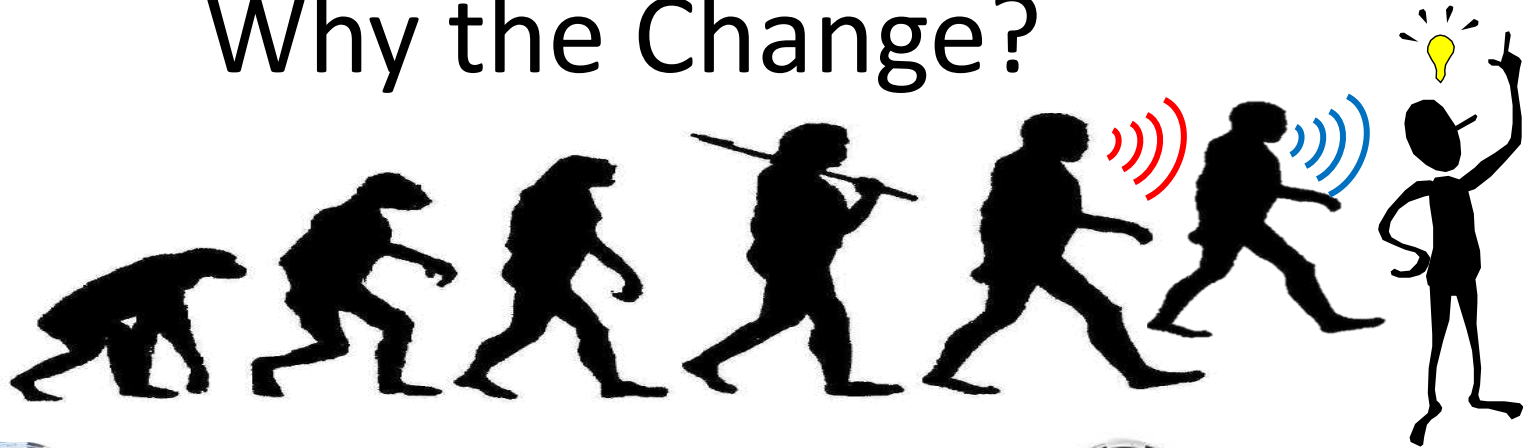~ *International Data Corporation*

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~ International Data Corporation

How much data are we collecting?

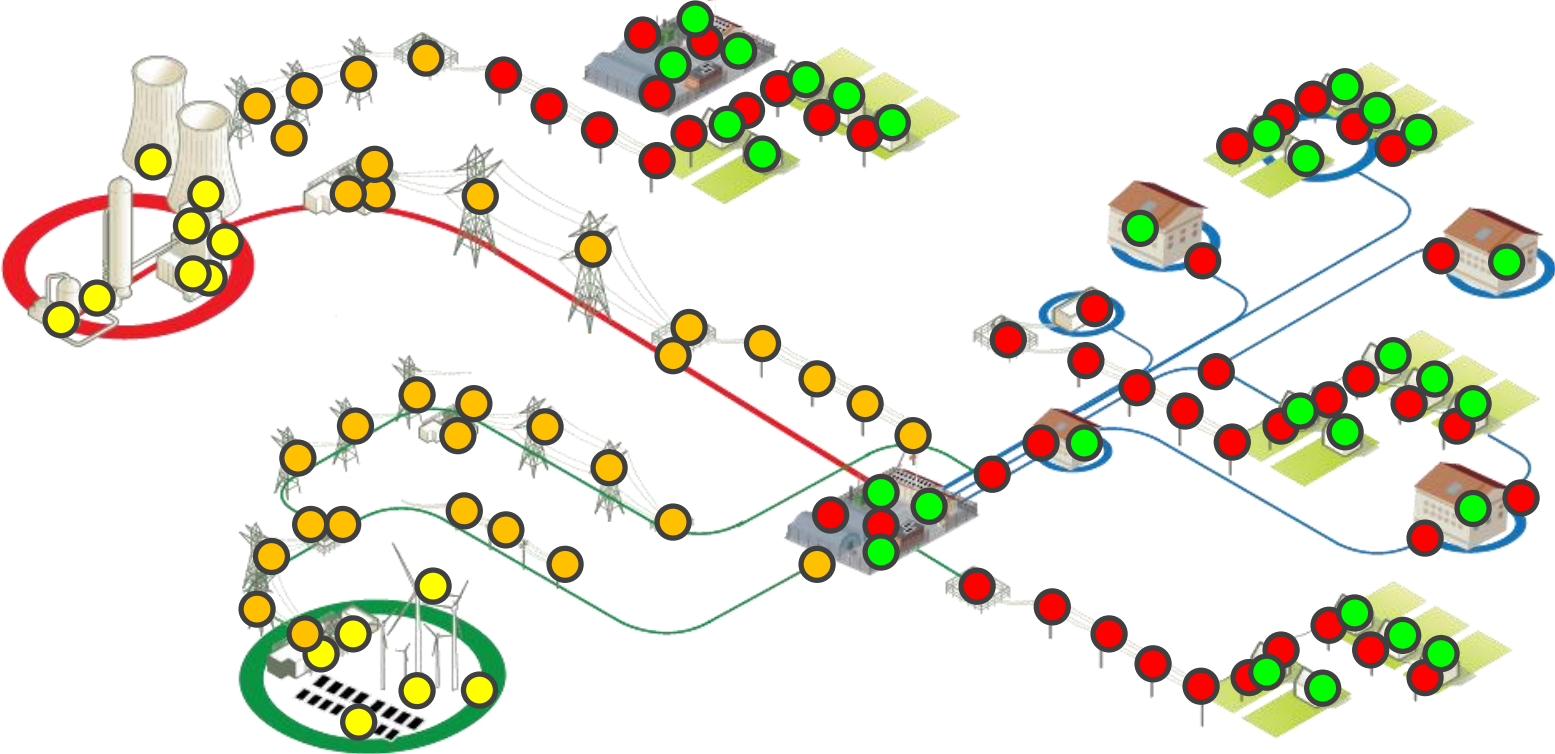**How quickly are we collecting data?**

How many different types of data?
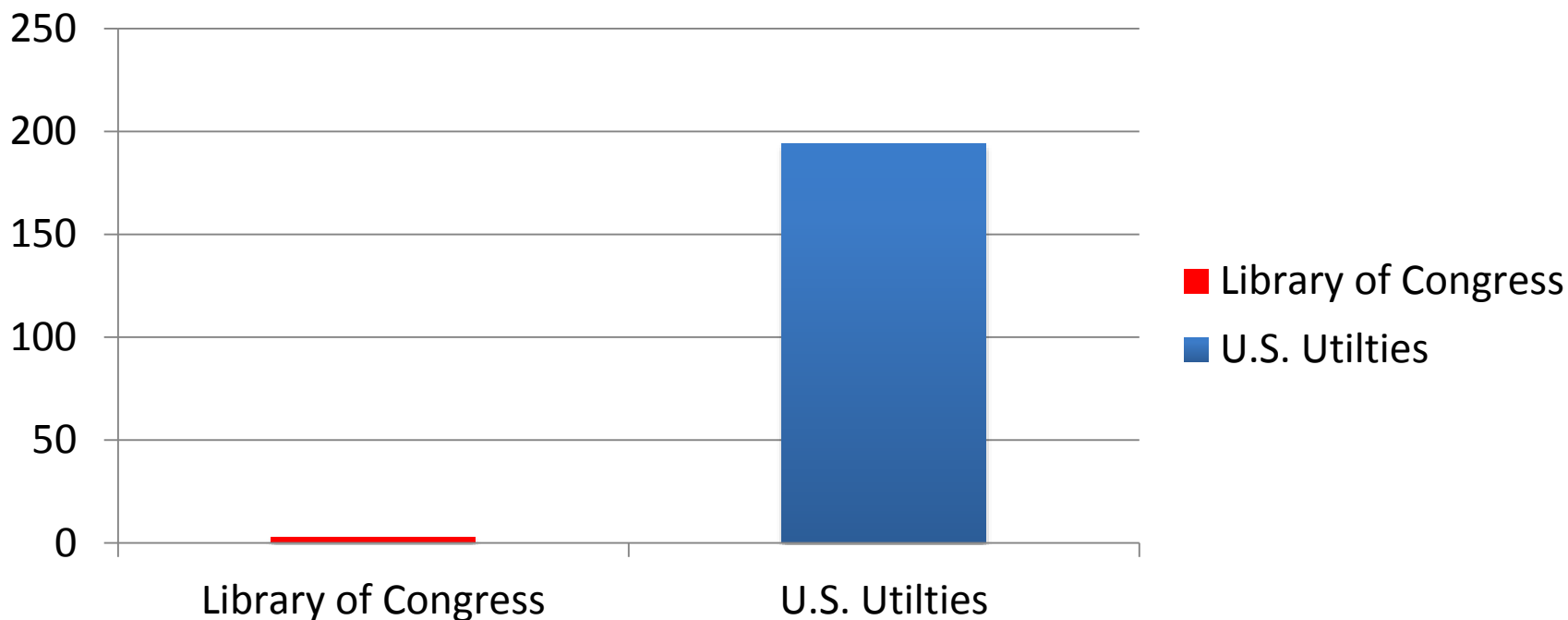
Why the Change?

KEY

- ○ = Generation Data Points
- ○ = Transmission Data Points
- ● = Distribution Data Points
- ● = Load Data Points

Source: S&C Electric Company

As of 2009, Utilities had **194 Petebytes** **(10^15)** of Stored Data

1,507 Terabytes of Data…per utility company

Petabytes of Data Stored to Date

Legend:
- Library of Congress
- U.S. Utilties

Source: IDC; US Bureau of Labor Statistics; McKinsey Global Institute Analysis

Big Data in Smart Grid - Panel

How Big Data is Changing...

- **Reliability in North America |** Jessica Bian, NERC

- **Our Transmission System |** Paul Myrda, EPRI

- **Our Distribution System |** Mel Gehrs, Silver Spring Networks

- **The Way We Plan our IT Infrastructure |** Dan Rosanova, West Monroe Partners