



# Trends in Standards for Interconnection and Interoperability

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# Agenda

- ▶ Background
- ▶ Distributed Energy Resources Trends
  - IEEE 1547 Series – Interconnection
  - IEEE 2030 Series – Smart Grid Interoperability and energy Storage
  - UL 1741
- ▶ Possible Implications of these changes

# Background

- ▶ Mark Siira is Director of Business Development For ComRent International



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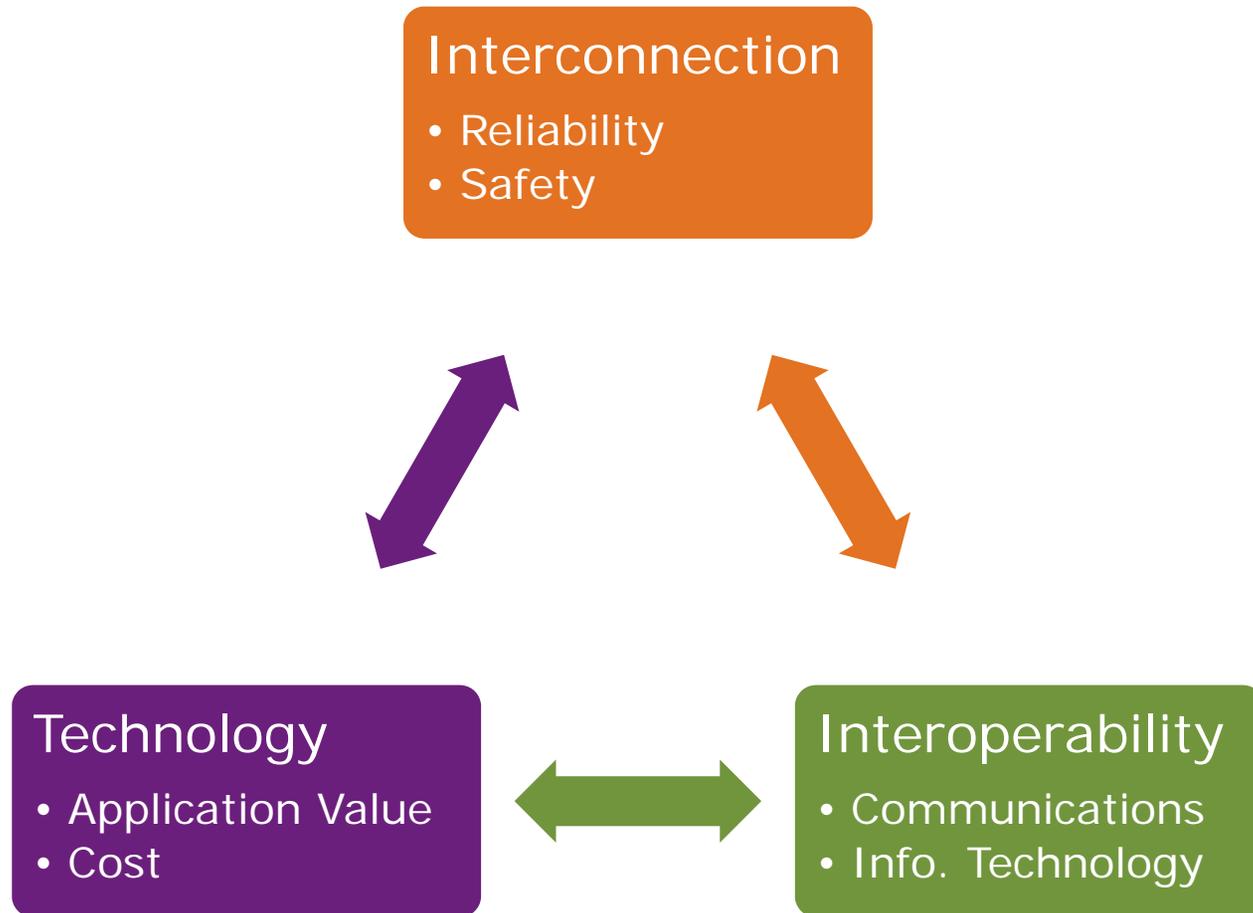
# Background

- ▶ Mark Siira volunteers time on committees
  - **IEEE 2030-2011** (Smart Grid Interoperability)
  - **IEEE P2030.2** (Energy Storage Interoperability)
  - **IEEE 1547 Amendment**
  - **UL 1741** STP (Inverters)
  - **UL 6171** STP (Wind Turbine Interconnection)  
*STP = Standards Technical Panel*
  
- Direct experience with relevant technology:
  - Reciprocating engine generators, paralleling switchgear controls, microturbines, combined heat and power systems, solar PV and inverters

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# Trends



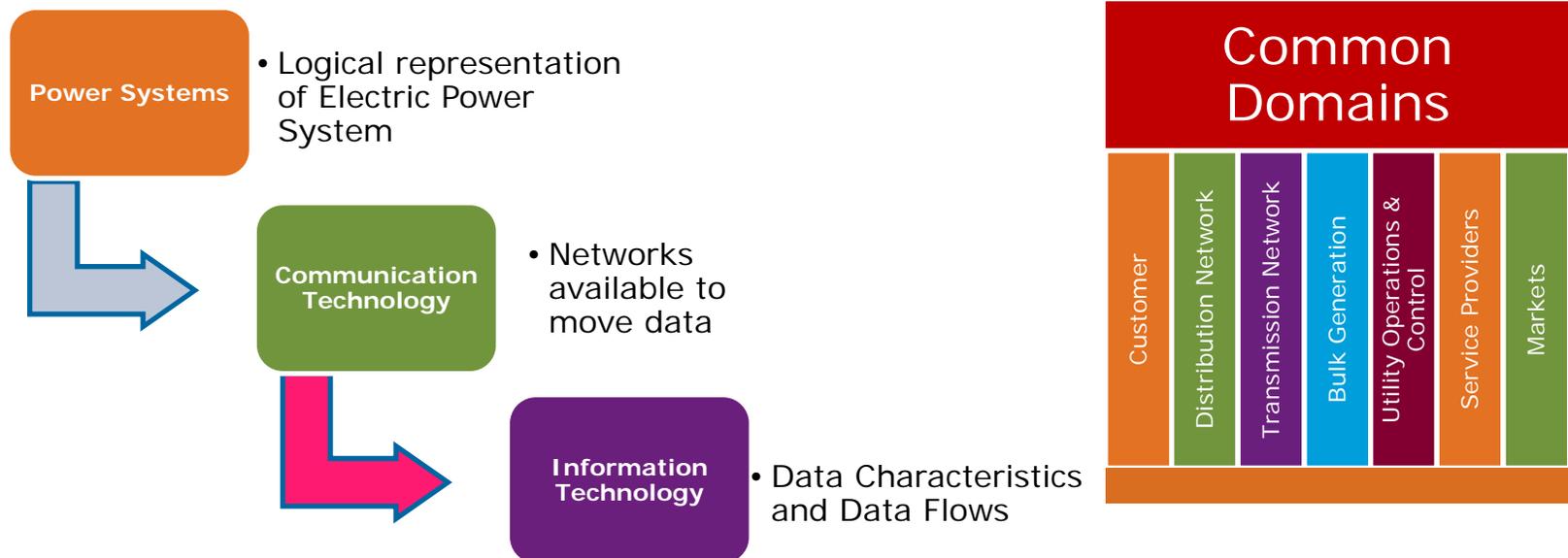
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# Trends

## ▶ IEEE 2030-2011 - Guide for Smart Grid Interoperability

- More commonality and completeness in communications and information technology requirements



# Implication of these Developments

- ▶ Interconnection rules, interoperability guides and definition of high value applications have made progress in the recent past
- ▶ Standards are being modified and created to support this trend
- ▶ New applications and sources of value will continue to emerge