

## Managing Smart Grid Communications Network Interoperability

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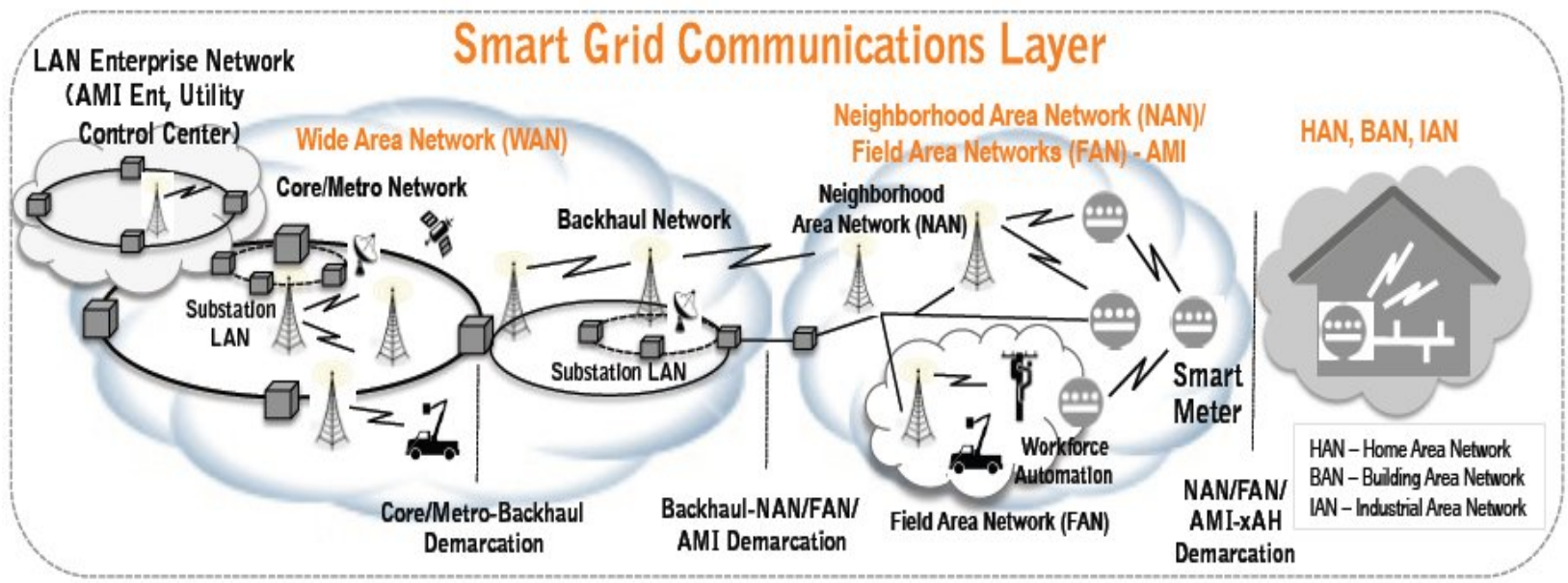
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- Growing Complexity in the Communications Network
- Smart Grid Communications Network Management
- The “Managed Evolution” Approach

- Millions of new, intelligent devices

- Multiple, integrated communications networks

- Varying degrees of network visibility



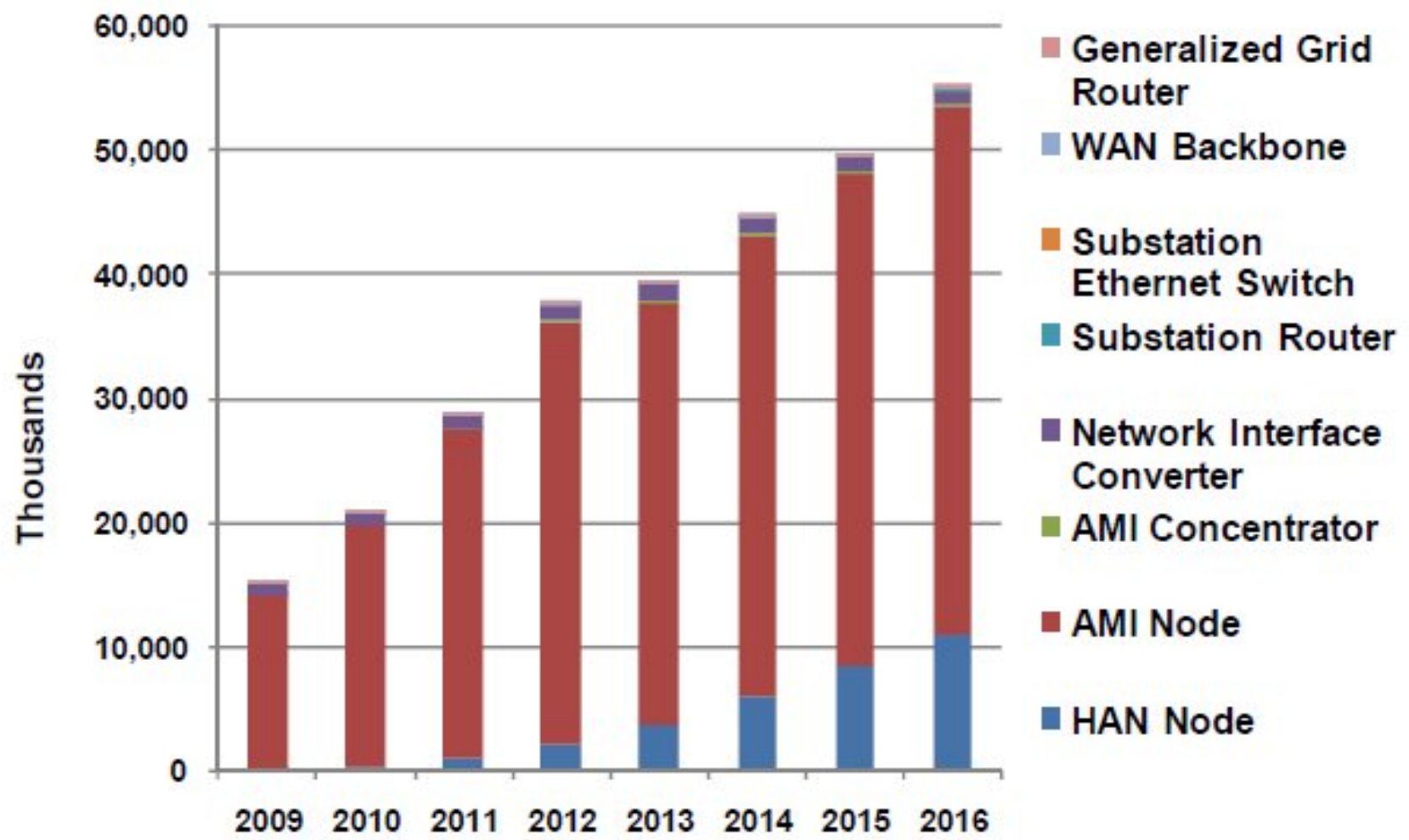
Ref: IEEE

- Growing volumes of data

- Reliability, Ubiquity, Latency, Security

- Network Capacity

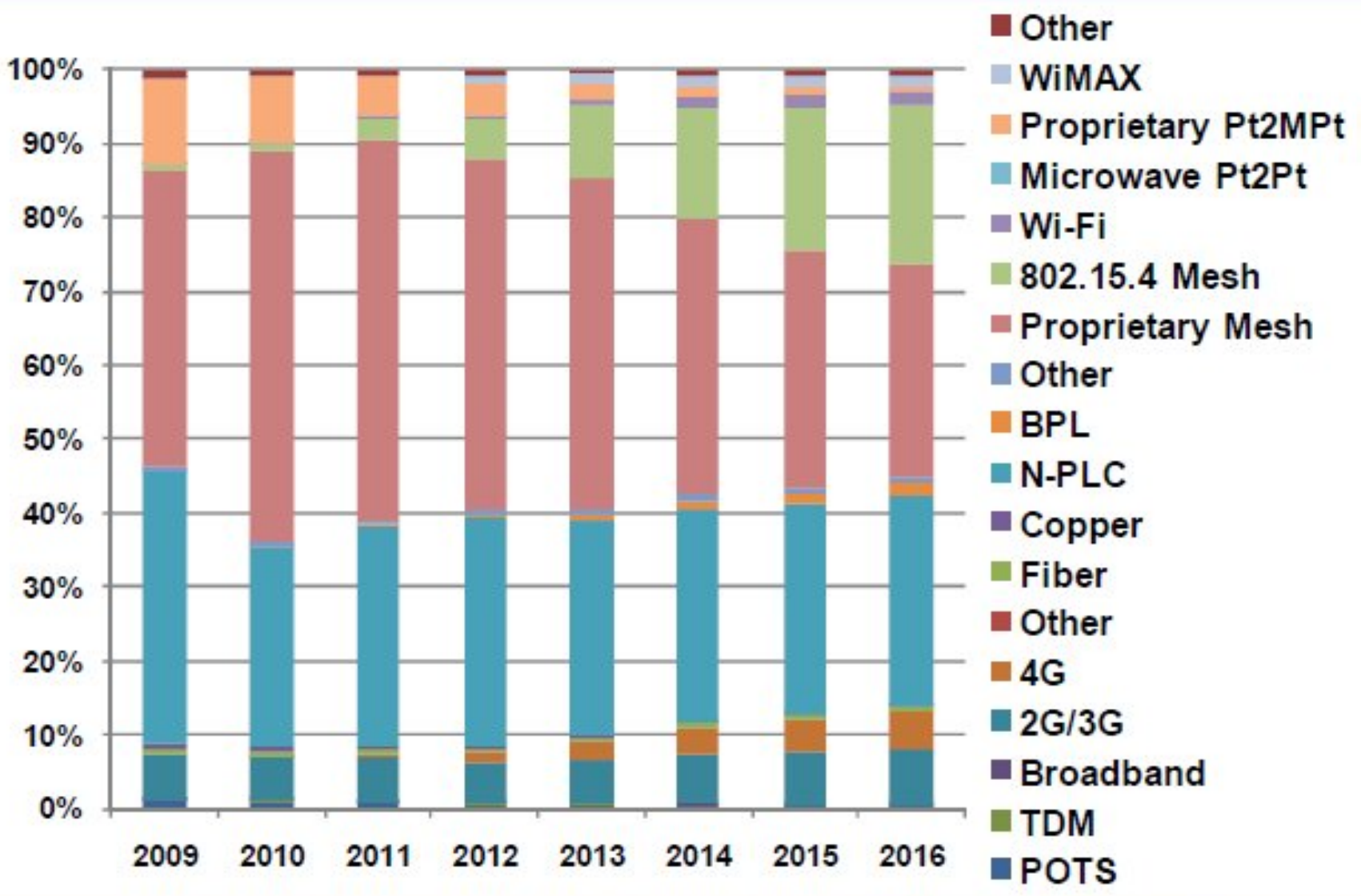
*Communications Device Forecast, Units, World Markets: 2009-2016*



(Source: Pike Research)

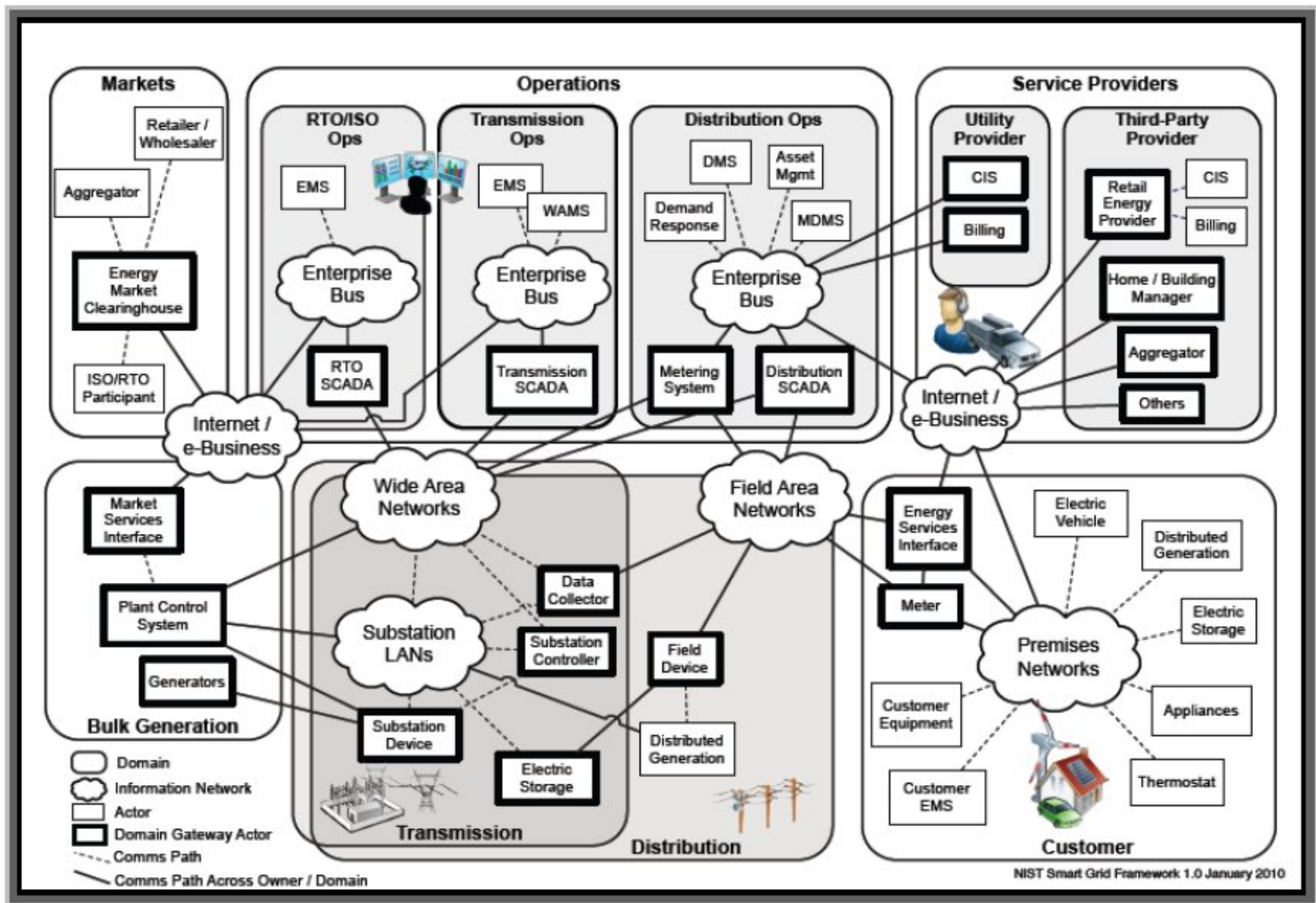


Communications Node Technology Distribution, Units, World Markets: 2009-2016



(Source: Pike Research)

Figure 3-2. Conceptual Reference Diagram for Smart Grid Information Networks.



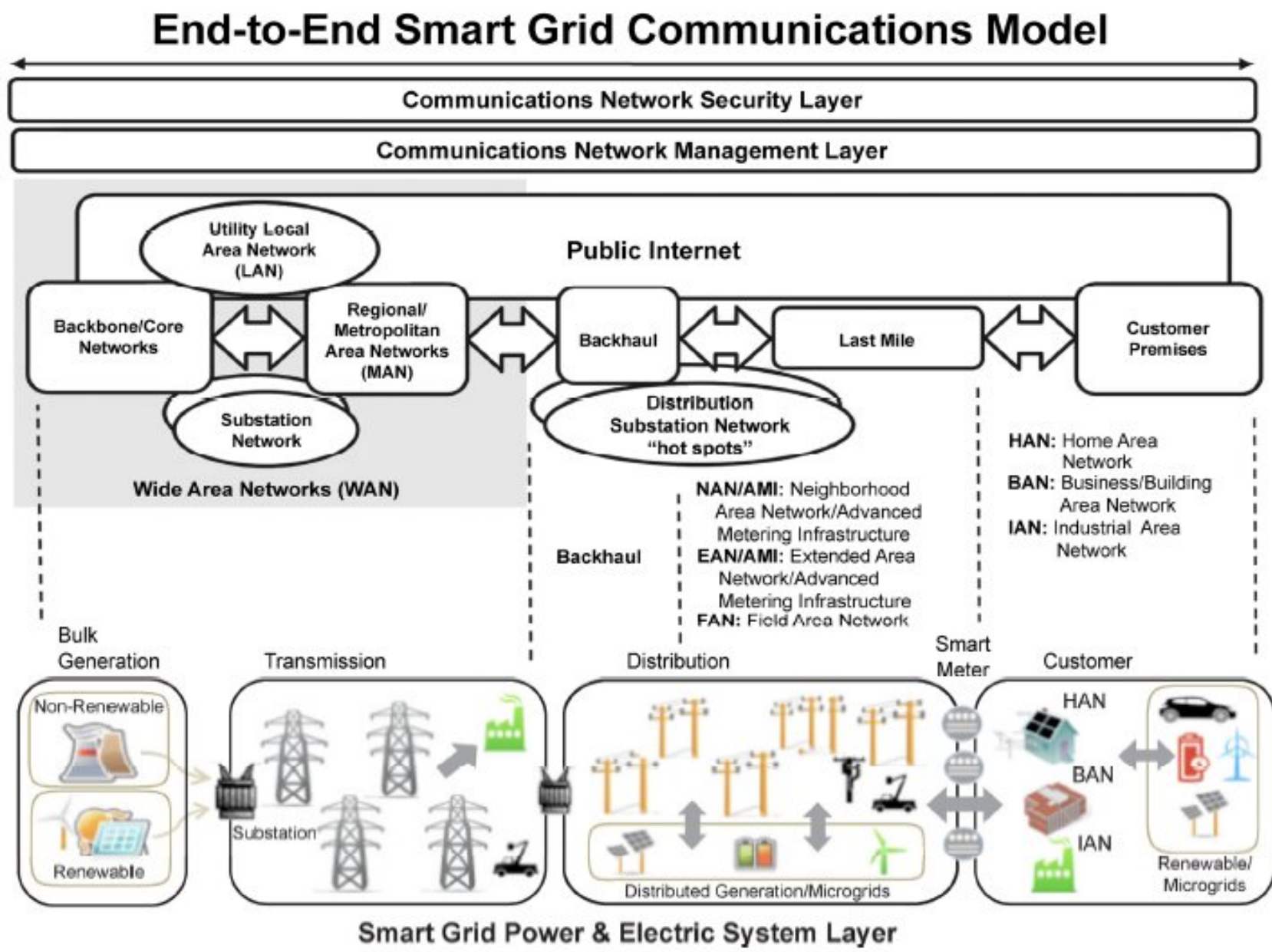
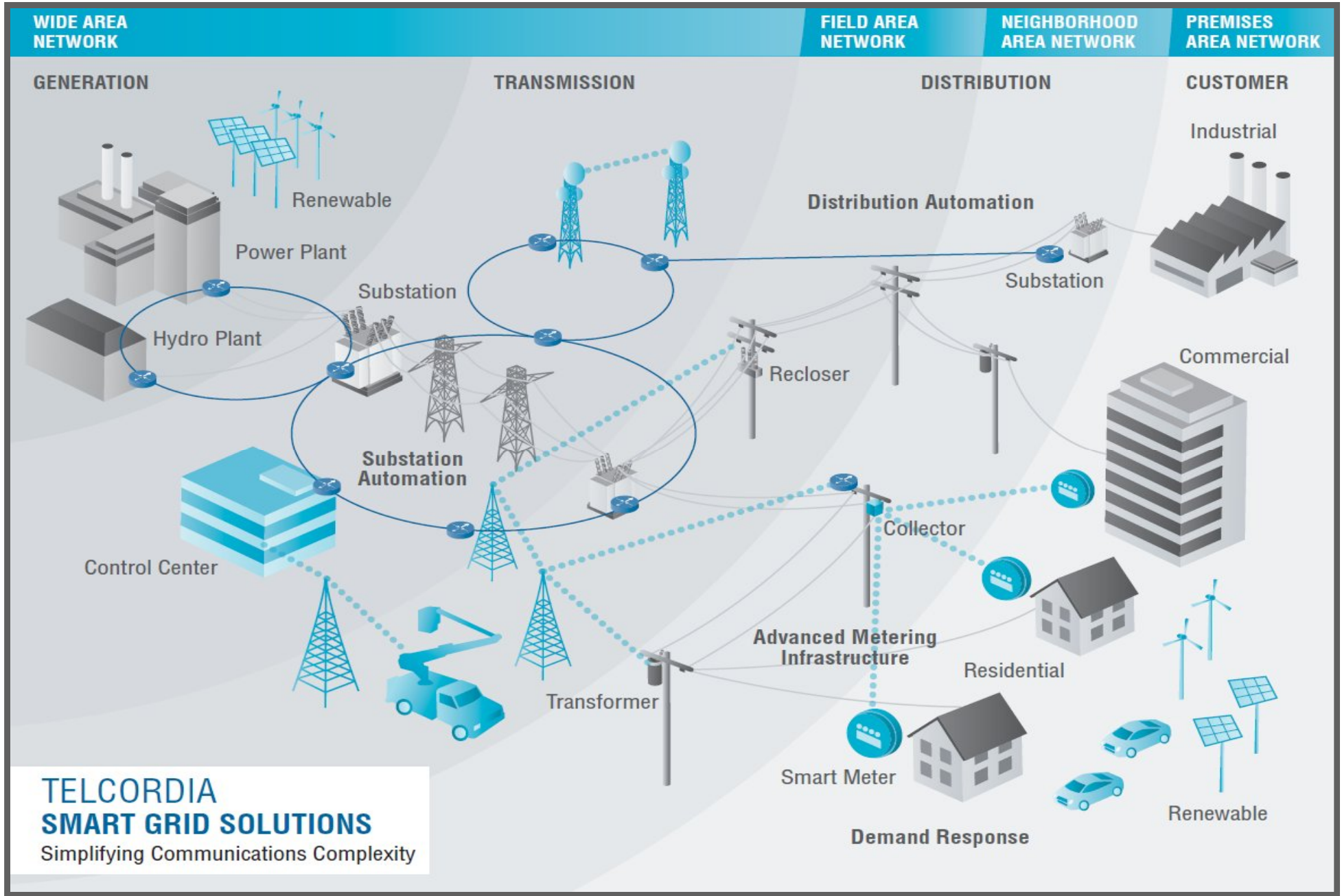


Figure 7-1—End-to-end smart grid communications model

Ref: IEEE Std 2030™- 2011

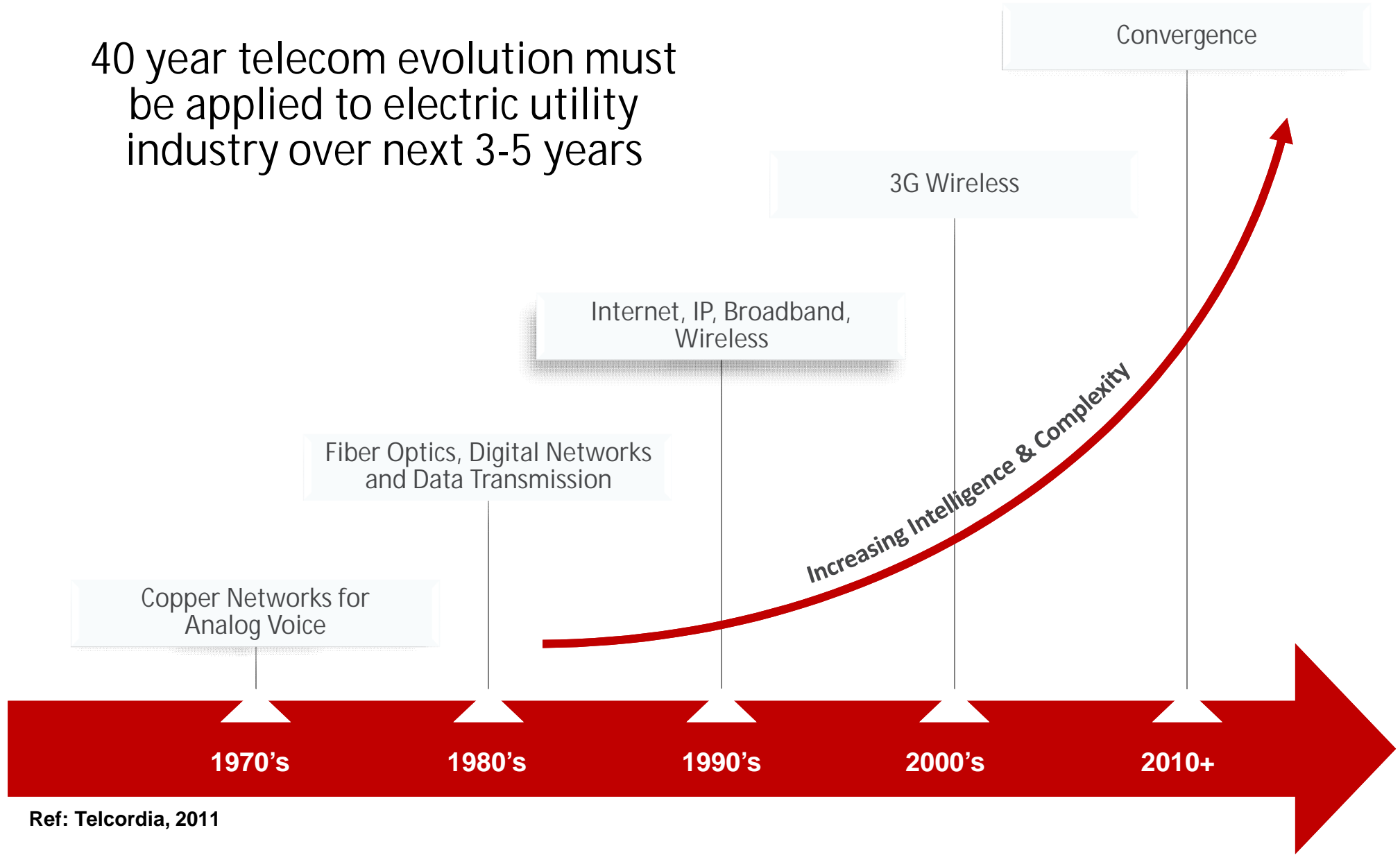




**TELCORDIA**  
**SMART GRID SOLUTIONS**  
 Simplifying Communications Complexity



40 year telecom evolution must be applied to electric utility industry over next 3-5 years



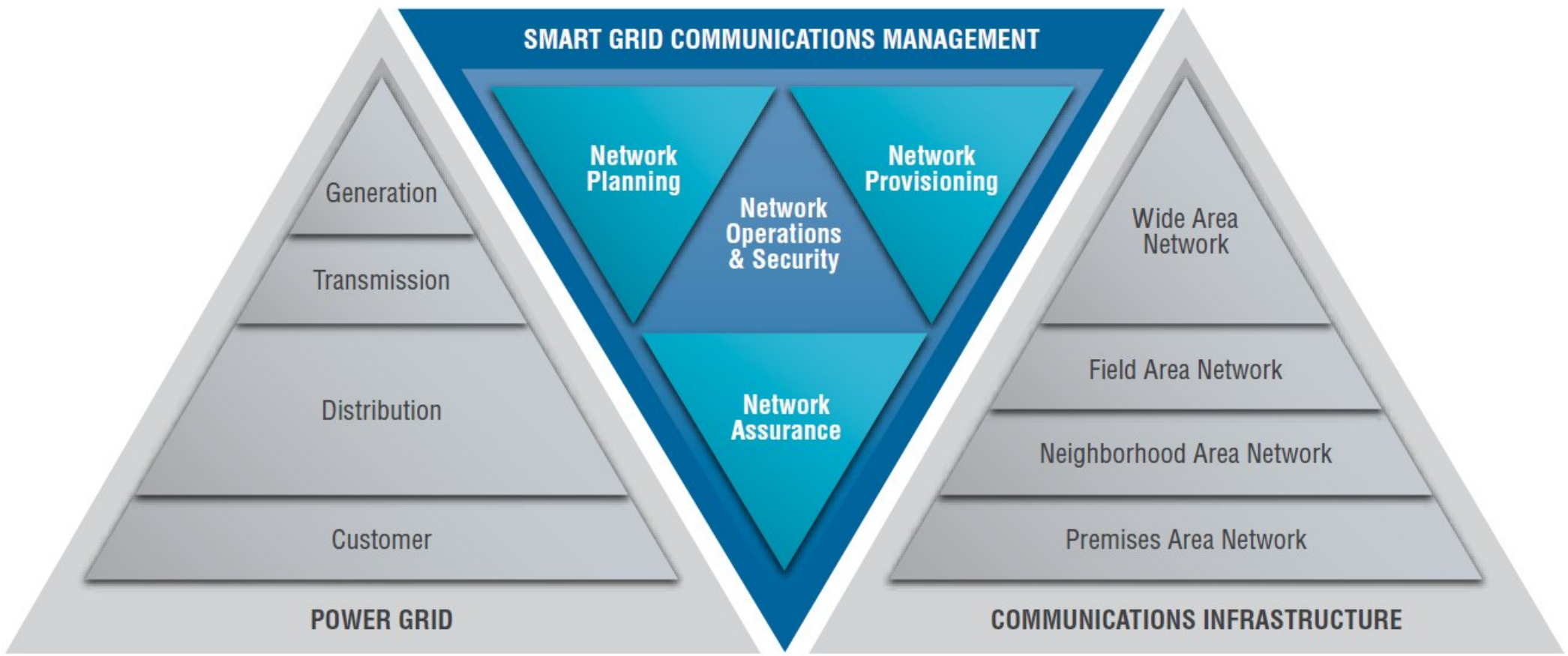
Ref: Telcordia, 2011

How can I manage growing complexity while maintaining reliability, safety, and security?



- Know your network
- Configuration & control
- Maintain accuracy
- On-going operations & maintenance

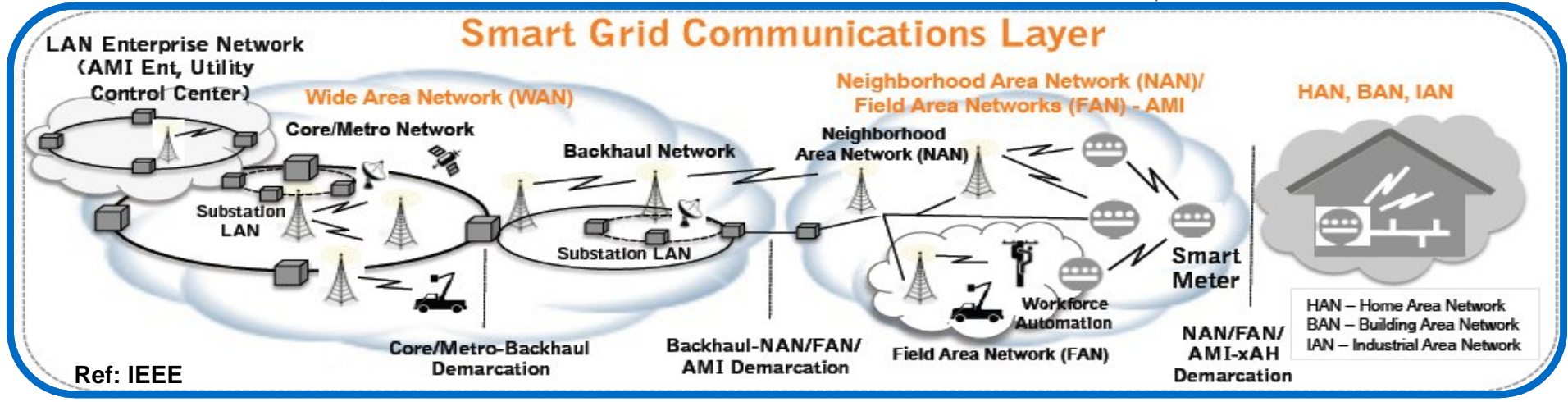
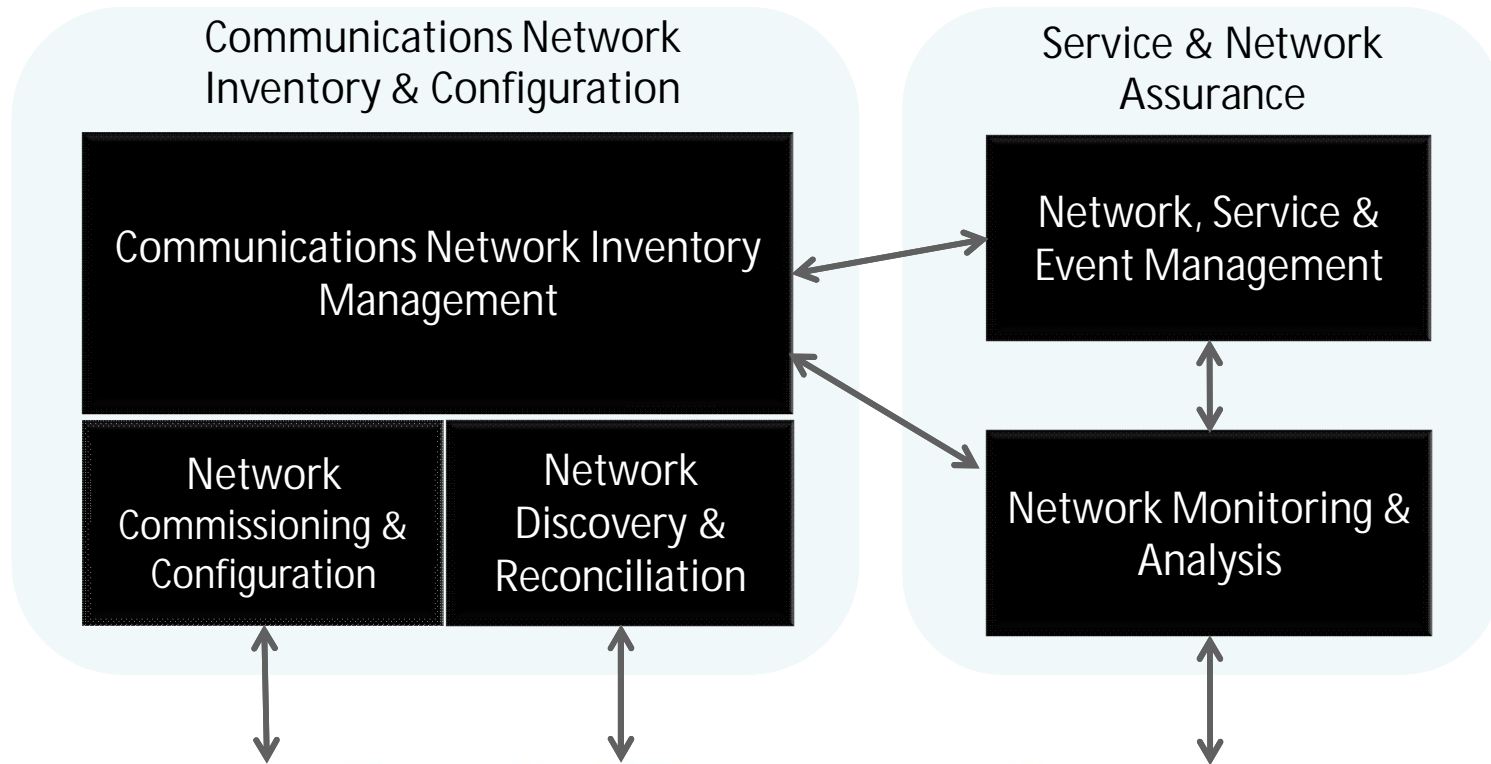




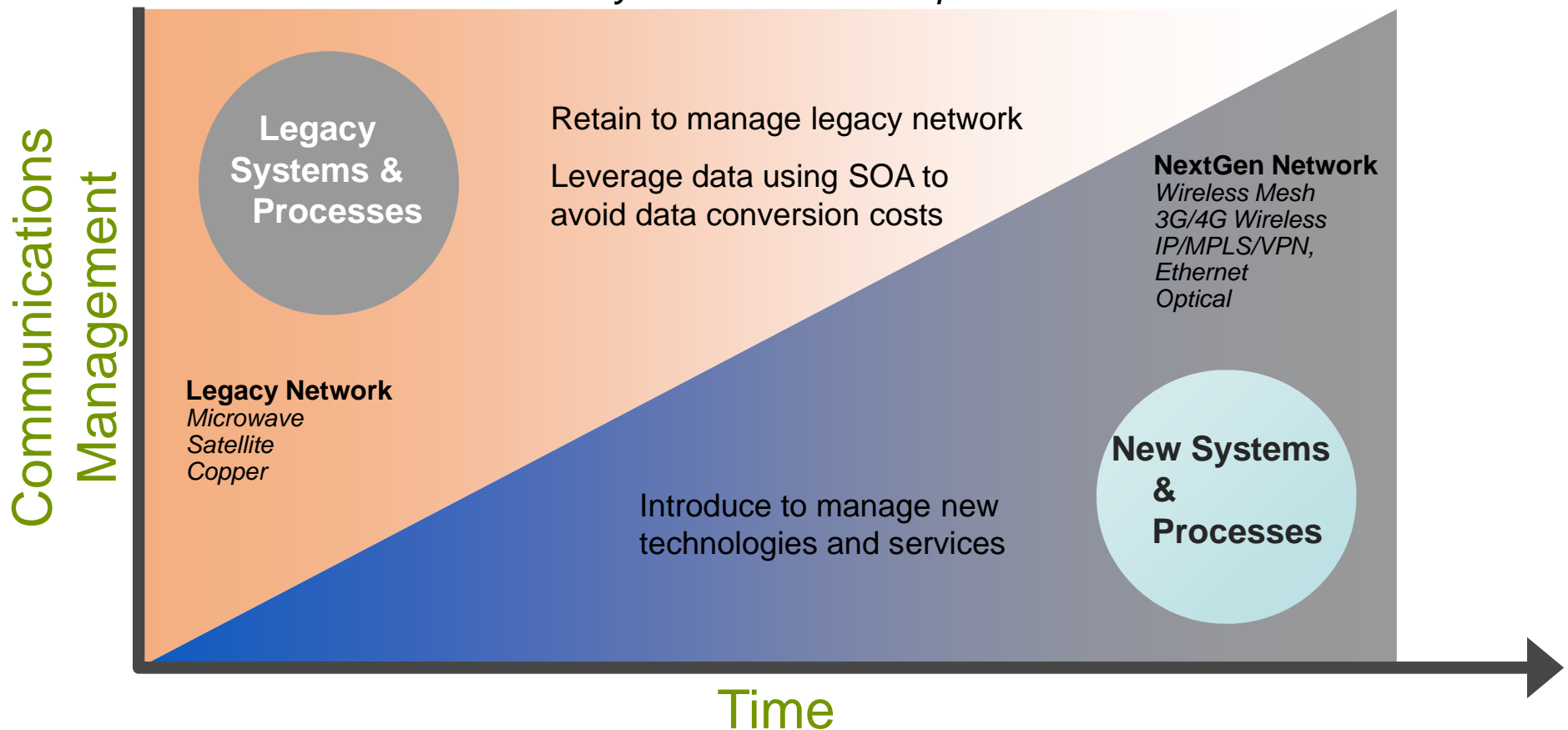
Ref: Greentech Media – “The Missing Chapter in Every Smart Grid Plan”

Inadequate communications network operations a major threat



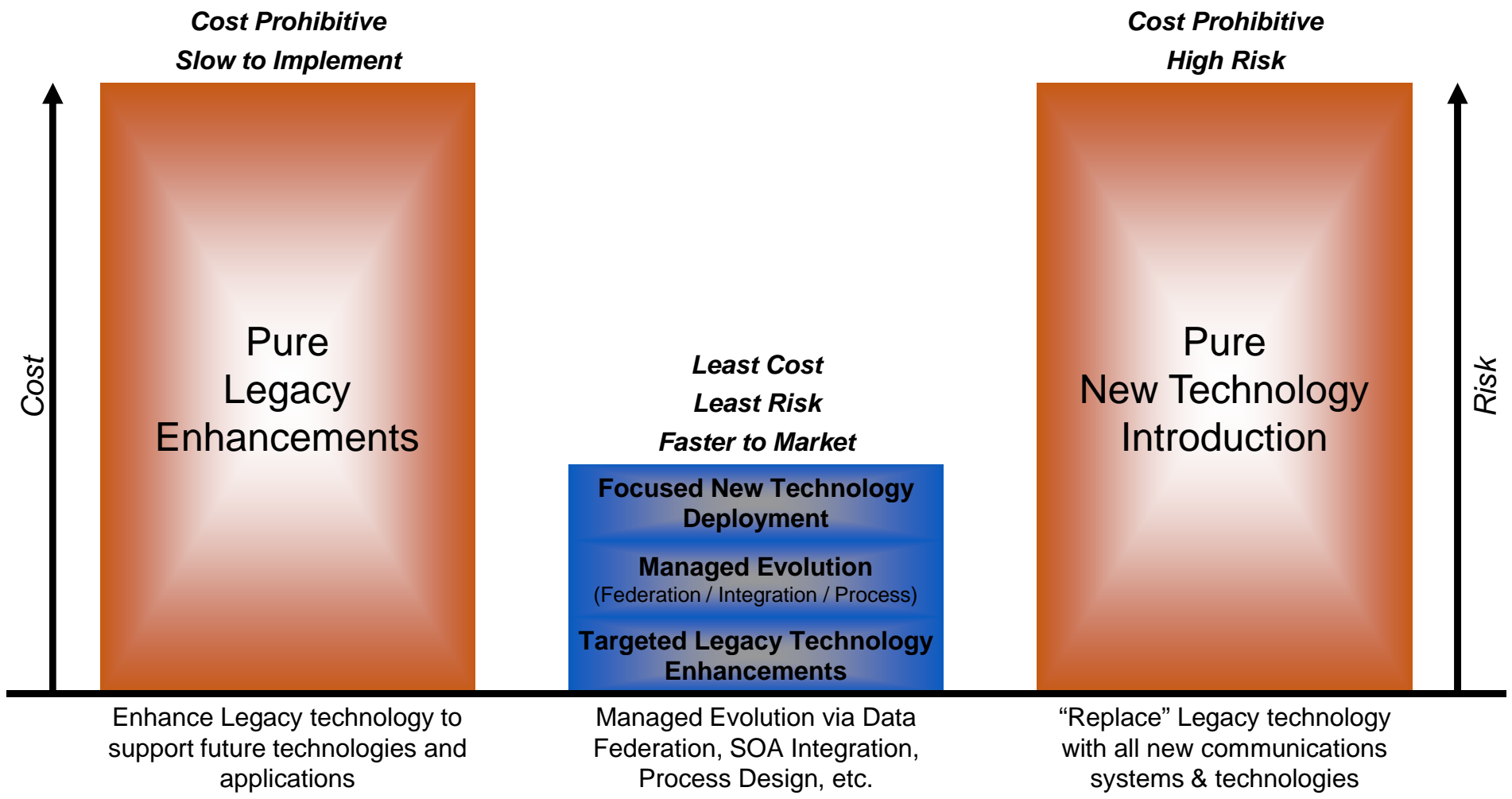


*Leveraging existing while introducing new communications technologies via a systematic evolution process*



- *SOA provides an approach that supports “open” and “evolve” tactics and mitigates data migration/management issues*
- *Federated data techniques demonstrate the viability and value of an evolution strategy*

*Managed Evolution provides lower cost, & lower risk by leveraging both legacy communications technology investments and new technology introduction*





- Include Communications Network Management as part of your Smart Grid strategic planning
- Seize this opportunity to plan and design a future-proof communications network management architecture
- Introduce a Managed Evolution approach to integrate legacy & new business process, data management, systems evolution and new technology introduction



Leverage cross-industry processes, systems & technology best practices to assure Smart Grid reliability, safety, security

The trusted expert for solving the most complex communications challenges.

