



INTERNATIONAL
TRADE
ADMINISTRATION

Global Trends in Smart Grid Deployment for Smart Cities

Open Geospatial Consortium's Energy & Utilities Summit

Harnessing the Power of Geospatial Information for Smart Energy Communities and Utilities

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What We Do

Shaping the Global Trade Policy Environment

International Agreements

Industrial/Energy/Trade
Policies

B2B

Deal



Four Energy Sector Megatrends



1. **Shift to Emerging Economies:** More electricity capacity will be installed by 2040 than is installed today, **97%** of that will be in non-OECD countries
2. **Focus on Clean Energy:** Through 2040, **60%** of new power plants spending and more than **50%** all new generation will be from renewables
3. **Emphasis on Efficiency:** Global economy will grow **150%**, but energy demand will grow only by **33%**
4. **Centered in Urban:** **2/3** of global energy is consumed in cities



Source: International Energy Agency (IEA), World Energy Outlook 2016; <https://www.export.gov/smartcities>

Moving Beyond Nomenclature

What is a “smart grid”?

What is a “smart city”?



Many Industries Play a Role

Bringing New Technologies That Offer Solutions to Urban Challenges

Smart Cities

Transportation

- Save time
- Comfort or productivity
- Universal access
- Reduced operating expenses
- Zero emissions, collisions, & fatalities
- Noise reduction

Energy

- Energy efficiency
- Zero air pollution
- Synergistic resource management
- Increased resilience against climate change and natural disasters

Building & Housing

- Affordable housing
- Healthy living and working environments
- Inexpensive innovation and entrepreneurial space
- Thermal comfort
- Increased resilience

Water

- Active ecosystem integration
- Smart integration of water, sanitation, flood control, agriculture, and the environment as a system
- Increased resilience

Urban Manufacturing

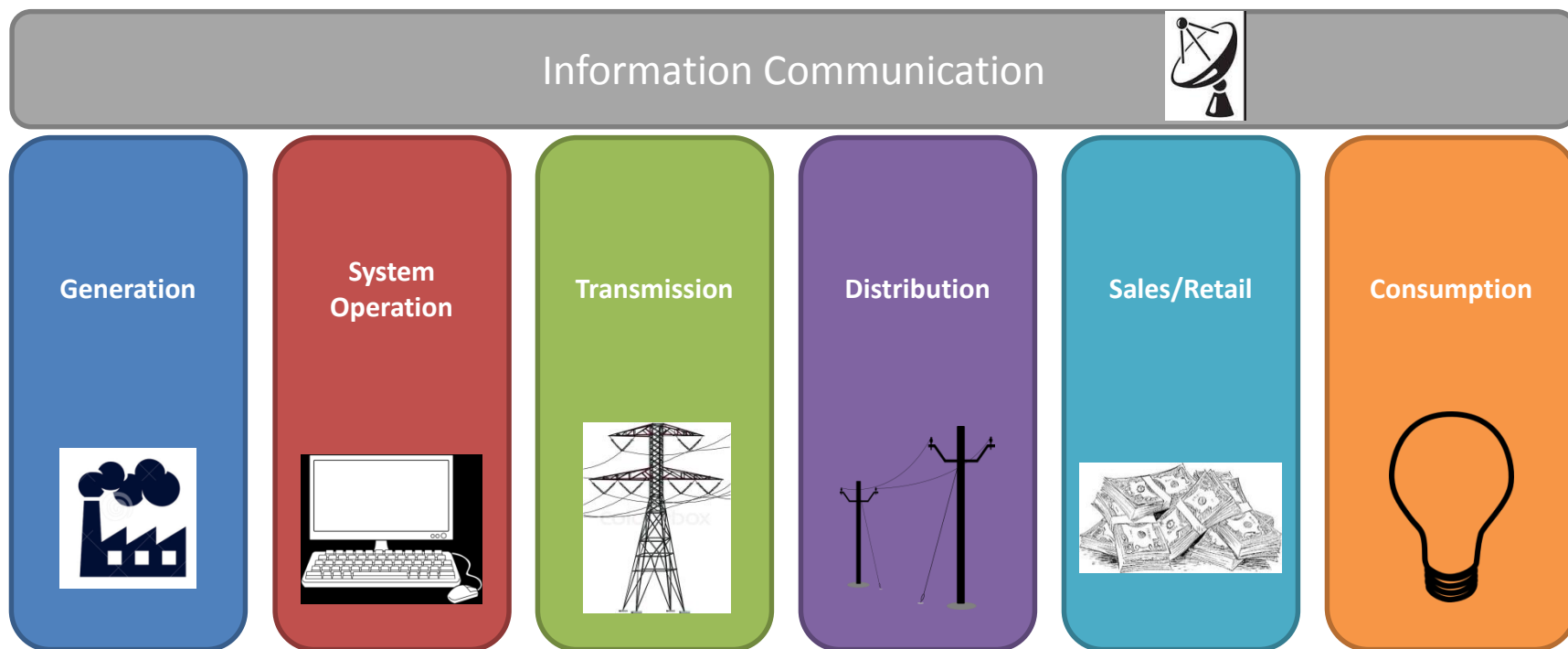
- New job creation
- Training and education
- Urban space conversion and re-use
- Close integration of living and work

Urban Farming

- Lower water use
- Cleaner delivery
- Fresher produce



Smart Grid & Smart Cities = Similar Challenges

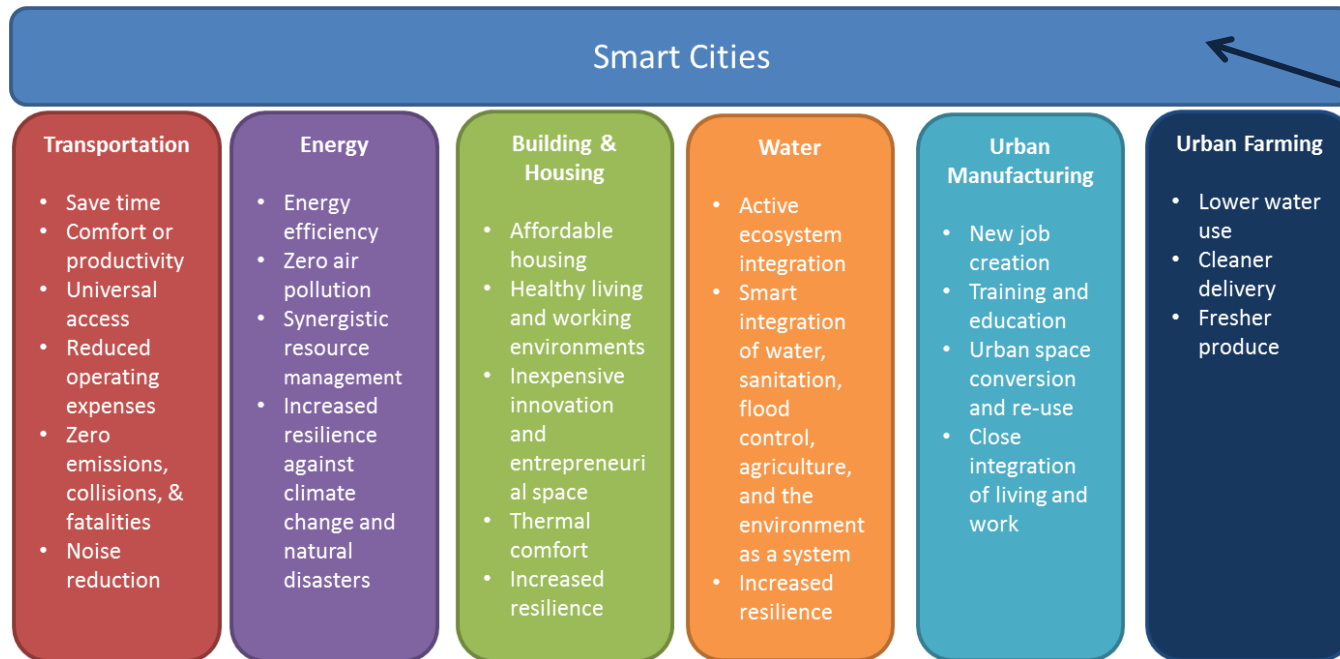


Three Fundamental Smart Cities Business Questions Firms Should Ask

1. Did my buyer (or decision-maker) change as a function of a smart cities initiative?
2. Can I leverage multiple value streams to reduce individual costs for any one use case?
3. What am I fundamentally selling?



#1: Did my buyer (or decision-maker) change as a function of a smart grid/cities initiative?



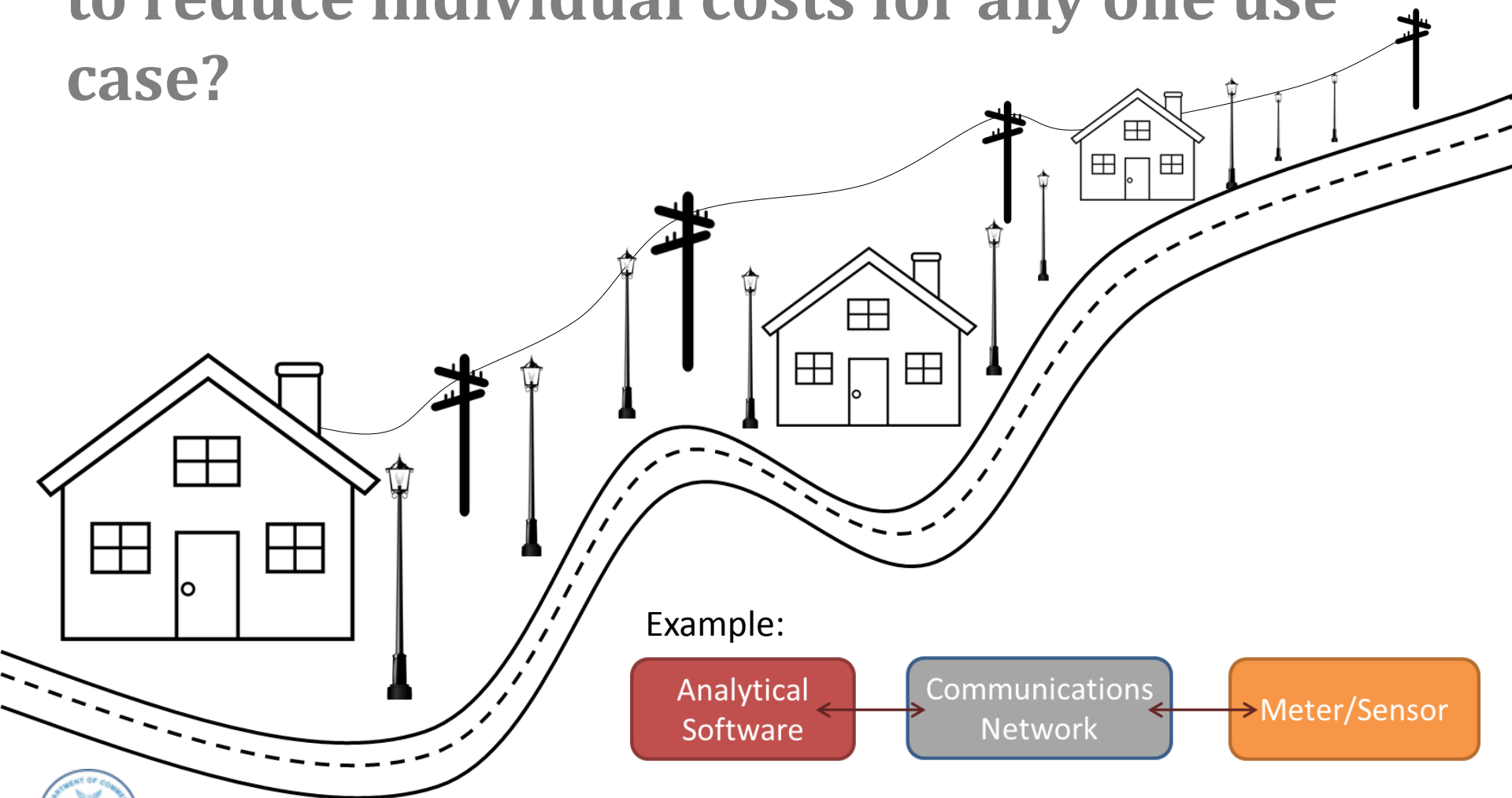
Does this entity have budgetary or regulatory control over the verticals?

Is there new money to access?

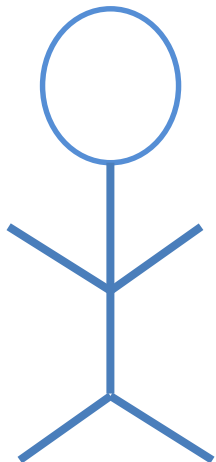
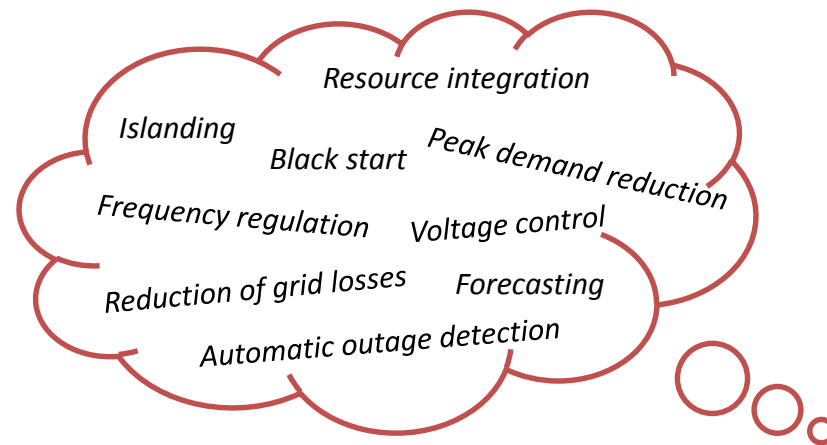
Are there regulatory controls or policies that force verticals to cooperate?



#2: Can I leverage multiple value streams to reduce individual costs for any one use case?



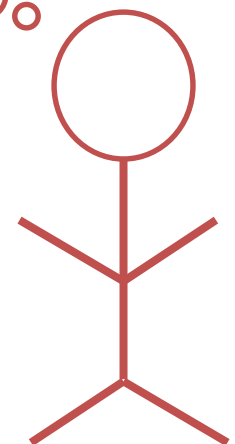
#3: What am I fundamentally selling?



What are the biggest challenges facing electric utilities that they are seeking to procure solutions?



Can we improve utilities/policymakers/regulators understanding of the range of technologies that can be deployed to address a particular need?



Common “SMART” Trends

Informed By The Three “Fundamental Business Questions”

1. Did my buyer (or decision-maker) change as a function of a smart cities initiative?

Increase system efficiency by breaking down sector stove-piping (electric utilities are early movers, munis especially)

1. Can I leverage multiple value streams to reduce individual costs for any one use case?

Lease a physical asset to reduce capital costs and fund the project from operational costs (avoid rate-basing!)

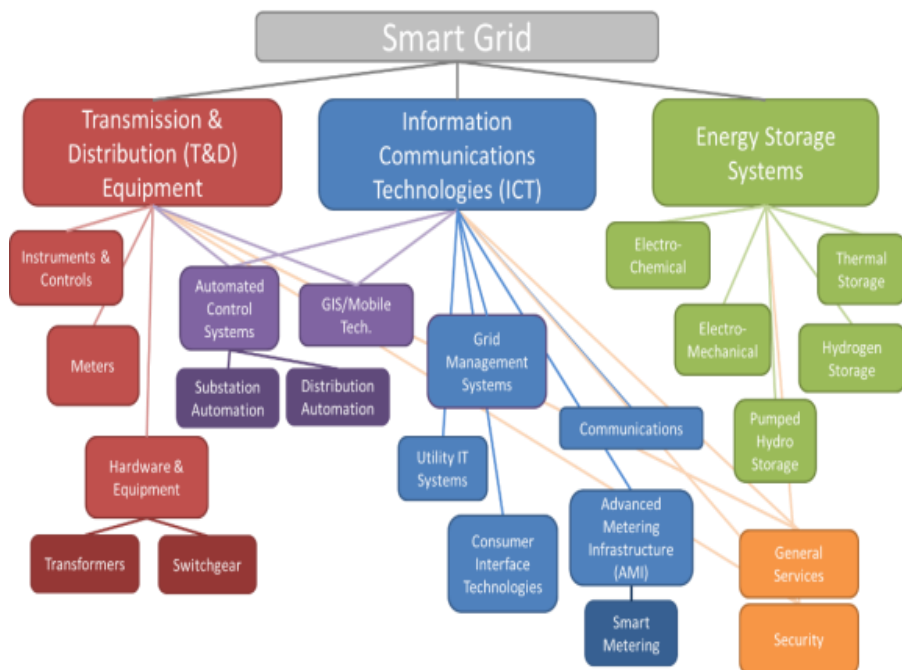
2. What am I fundamentally selling?

Identifying ways to leverage insights gained from data securely and via interoperable devices



Global Opportunities Vary Significantly

Smart Grid Top Market Report



RANK	T&D Equipment	Smart Grid ICT	Energy Storage
1	Mexico	Canada	UK
2	Ethiopia	UK	Canada
3	Kenya	Mexico	Germany
4	Vietnam	Japan	Japan
5	Egypt	Finland	Australia
6	India	Australia	Denmark
7	Indonesia	Sweden	Korea
8	Canada	Germany	China
9	Malaysia	France	Mexico
10	Saudi Arabia	Ireland	India

Download report:

<http://trade.gov/topmarkets>



THANKS!

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