Emerging Technologies India Should Embrace …

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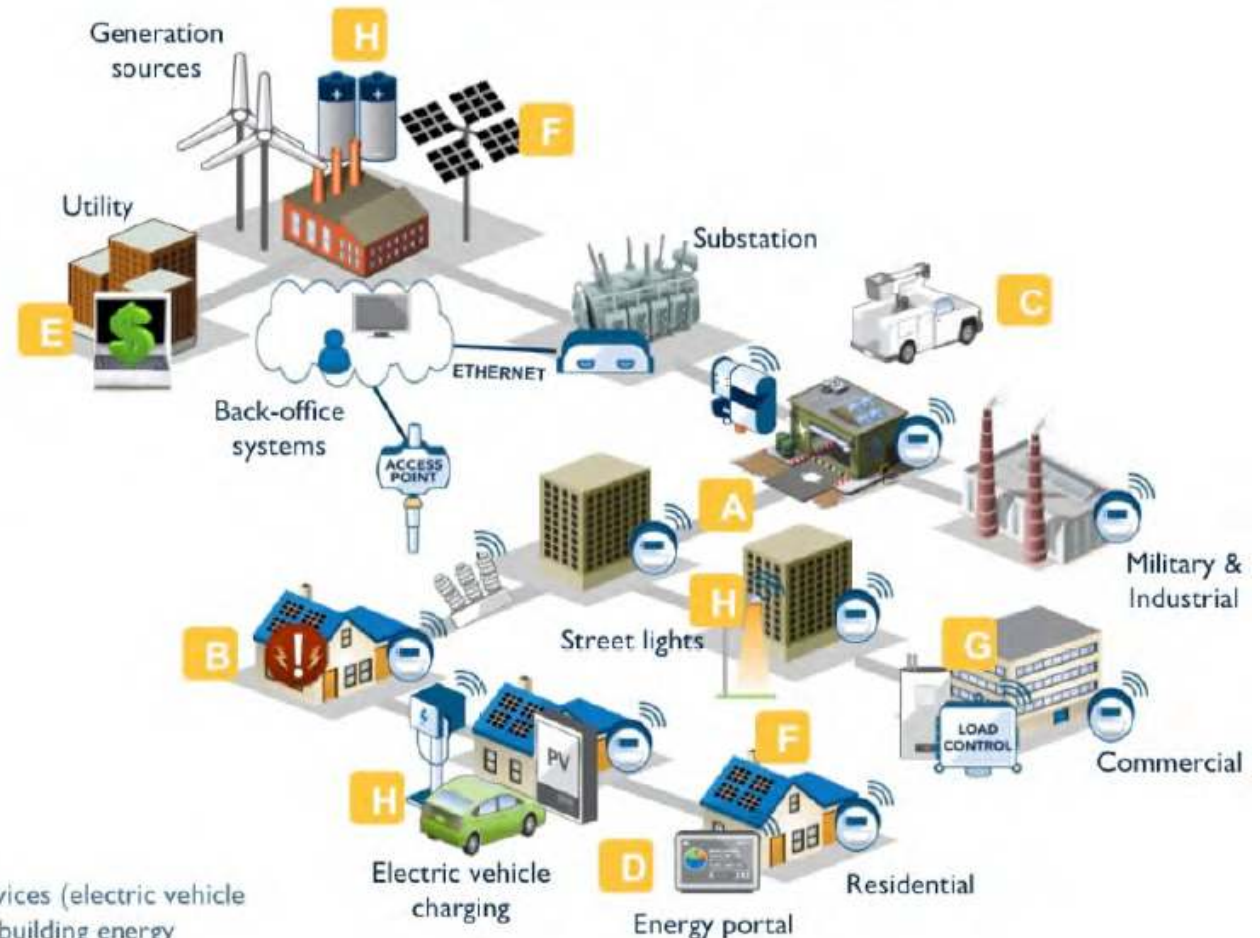
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"Emerging Technologies" ?
Smart Grid Deployment

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

A Reduced electrical losses.

B Improved management of outages.

C Reduced (or eliminated) manual processes.

D Near real-time access to energy information for customers

E Dynamic tariffs and more payment options.

F Better management of renewable distributed generation resources.

G Increased use of Demand Response for grid operations.

H A platform for future applications and services (electric vehicle charging, smart inverters, energy storage, building energy management systems, street lights, and more).

Hawai'i's Energy Future

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"Emerging Technologies" ?
Smart Grid + Smart City Deployment

AMI, DA, DR, Street lighting on one network

A. Capacitor Bank Controllers

B. Automated Feeder Switches

C. Teaming Reclosers

D. Fault Current Indicators

E. Voltage and Current Sensors

F. Transformer Monitors

G. Commercial and Industrial Meters

H. Residential Meters

I. LED street lighting

J. Networked city lighting

Proven Foundation to Match India's Approach

- 850K IPv6 electric meters, world's largest res. DR project, smart inverters
- 33% peak electricity reduction, $550M in avoided costs

- 4.5M IPv6 electric meters, 3B+ readings per month
- 100M+ data points / day, combined AMI, DA, streetights

- First IPv6 radio mesh IEC 61850 network in Europe, world
- Interconnecting distributed wind, saving > £6M on network reinforcement

- Over 5 million IPv6 devices—one of largest IPv6 networks on Earth
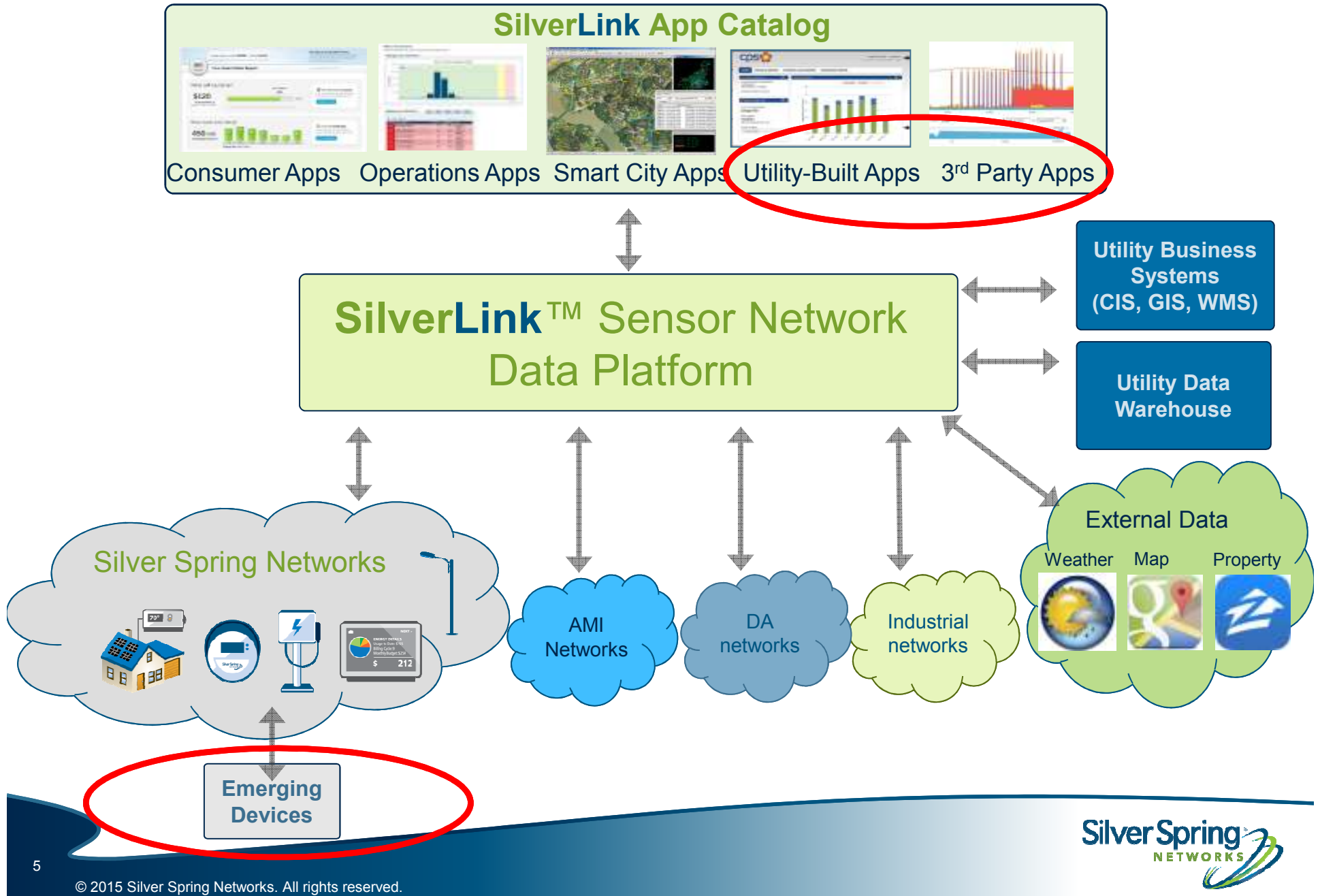- Service territory equivalent to size of Great Britain

- AMI with huge NTL benefits, DA reliability focused
- Expecting > 500K interruptions / year avoided, US$90M+ societal benefits

But isn't India "Different" ?

A Platform for Value Creation

Existing Technologies India Should Embrace … To Yield … Emerging Technologies India Should **Create**

"Make in India" → "Create in India"

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Thank you