

# Rich Consulting AMI Experience

Presented by:



*Energy. Knowledge. Results.*

# Discussion Topics

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- AMI Overview

# AMI Overview

## Advanced Metering Infrastructure (AMI)

**AMI Comprises a System of Multifunctional Meters and Communication Technologies that Provide Significant Benefits to Both Customers and the Utility**

### Two-Way Communication

- Real-time usage information
- Grid load conditions
- Time differentiated rates and demand response incentives
- Outage notification

### Utility Operations

- On-demand meter reading
- Remote turn off/on
- Load control
- Improved reliability and restoration
- Asset utilization and labor efficiency

### Energy Conservation

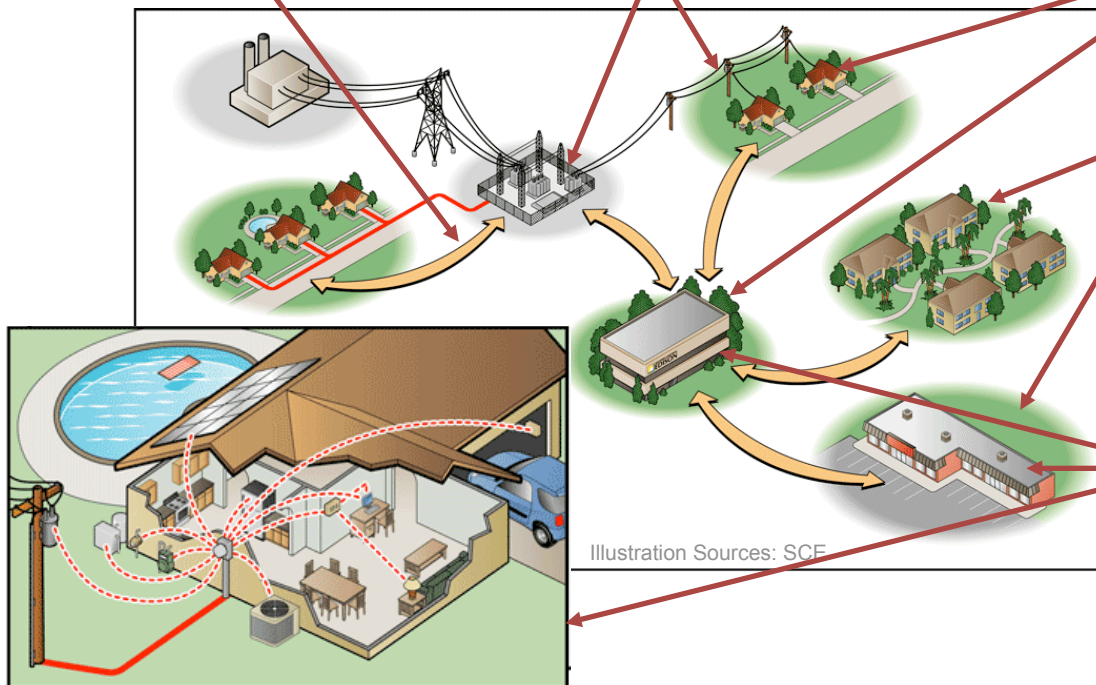
- Information enabled behavior change to conserve and reduce energy costs
- Usage data integrated with in-home energy devices and web portals
- Increased efficiency of power delivery
- Customer awareness and resource efficiency

### Demand Response

- Communication of peak events to customers and automated equipment
- Net metering to support distributed generation

### Customer Engagement

- New utility service offerings and improved outage response
- Frequent and timely monitoring of energy usage through portals
- Customer education & empowerment
- New service opportunities, smart appliances and hybrid vehicles

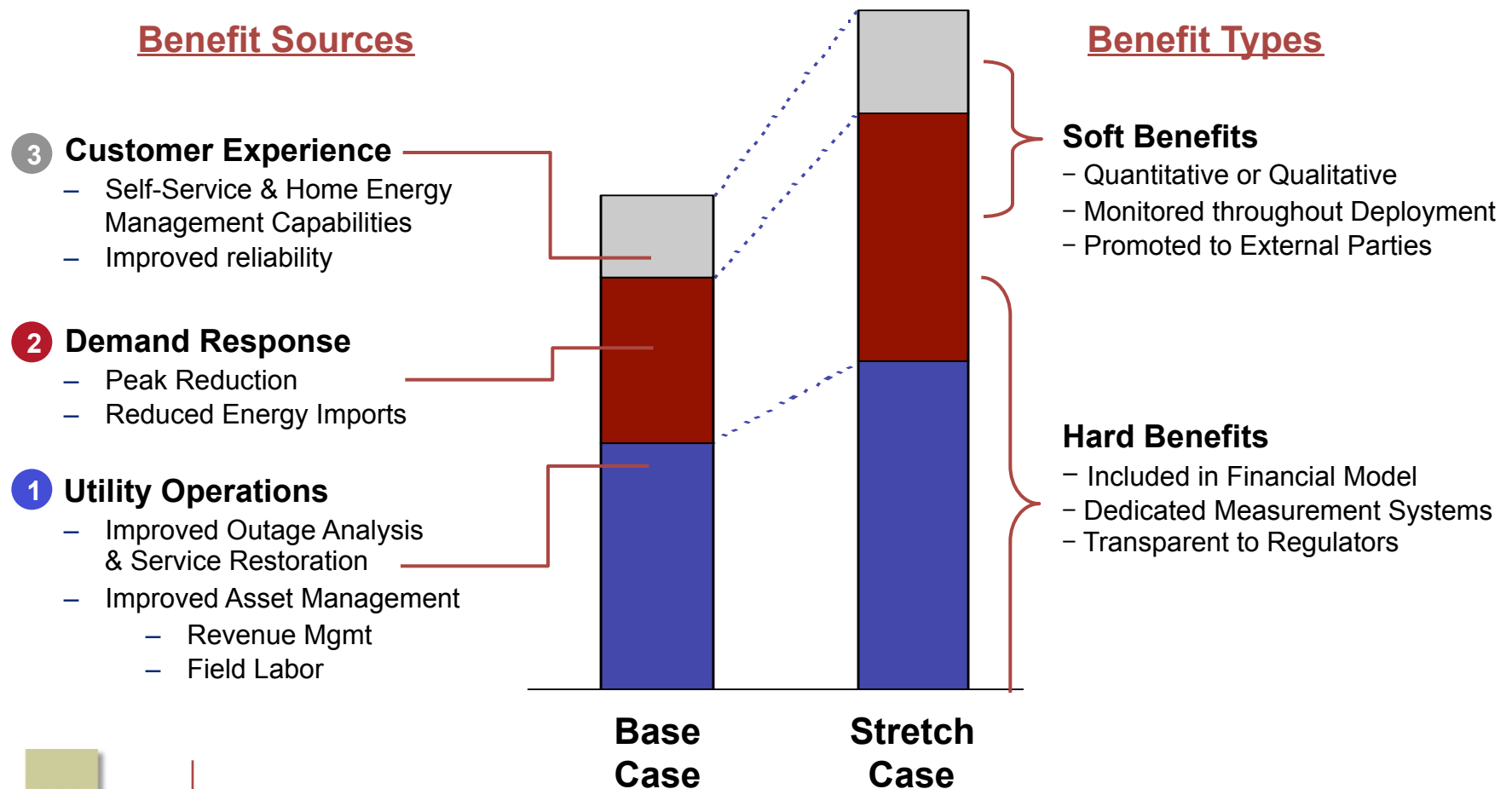


# AMI Benefit Analysis

## Benefit Summary

### **AMI Benefits Encompass All Areas of the Utility**

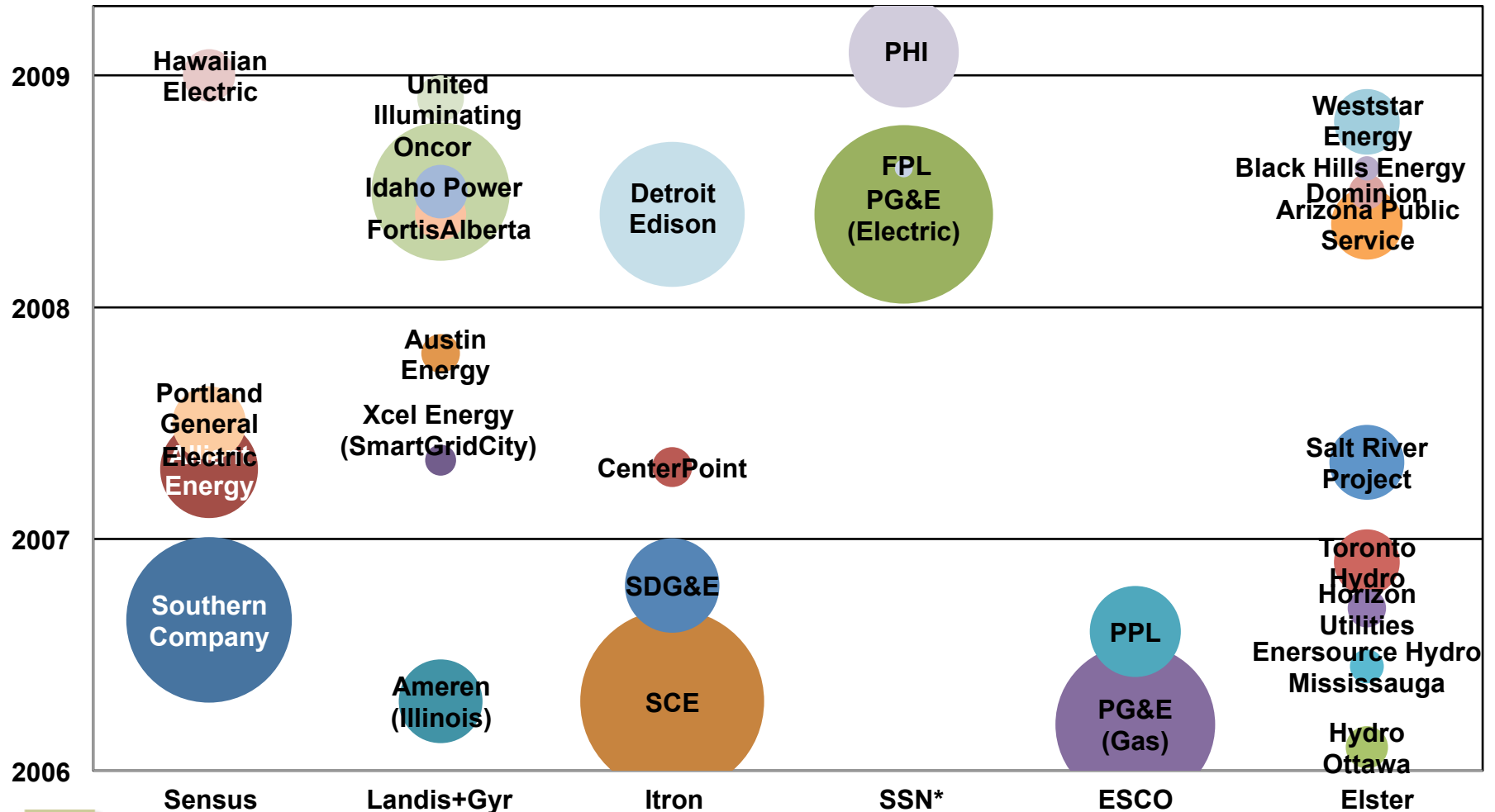
- Benefit sources will vary respective of current utility best practices



# AMI Overview

## Vendor Market Share

Over 40 Million Smart Meters Have Been Committed to Date, to Various Vendors



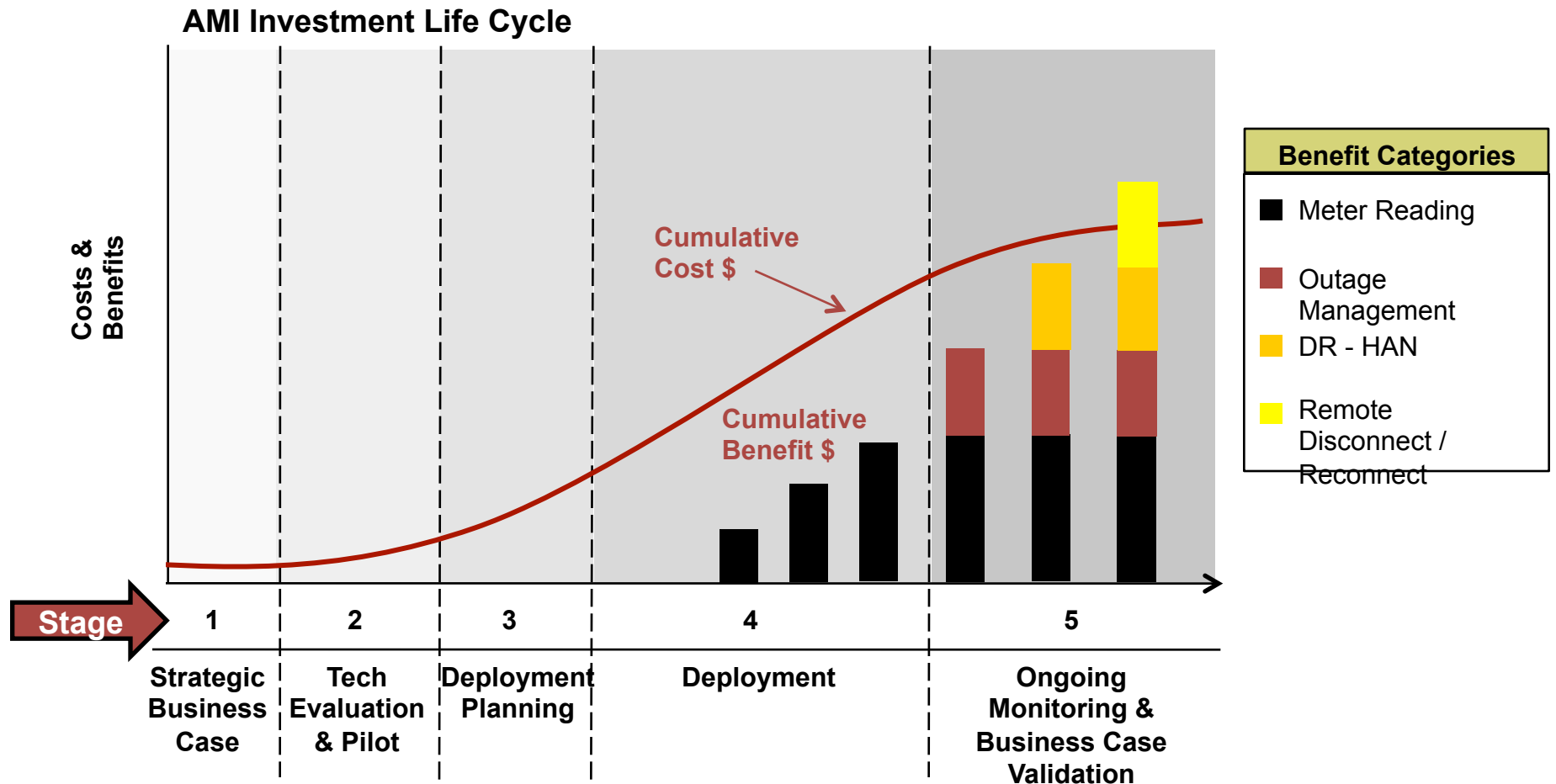
\*SSN awards include communications – meters supplied by third party (i.e. GE, Landis+Gyr, etc.)



# AMI Benefit Analysis

## AMI Project Timeline

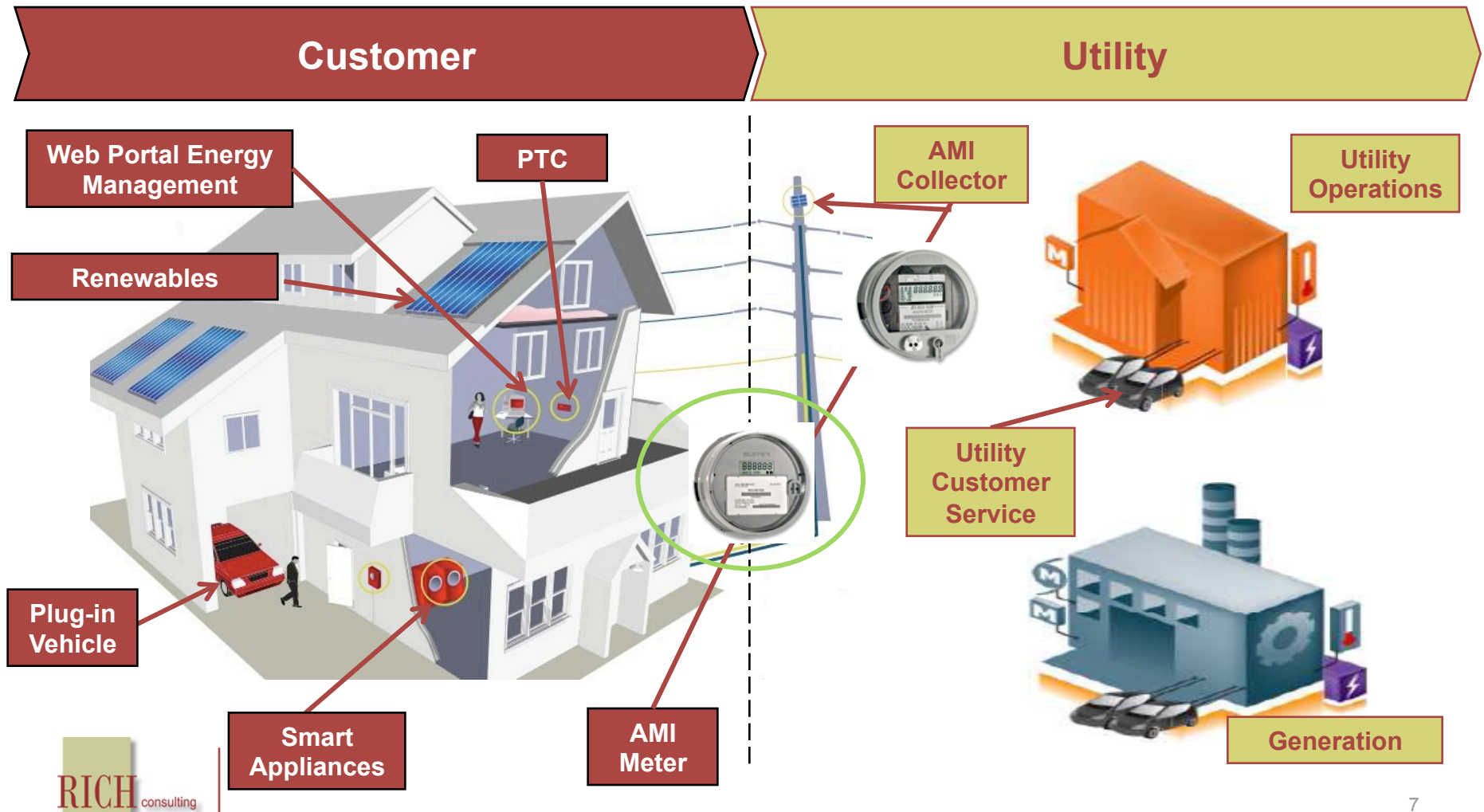
**AMI Benefits are not Typically Realized Until Later in the Implementation**



# AMI Benefit Analysis

## Customer Experience

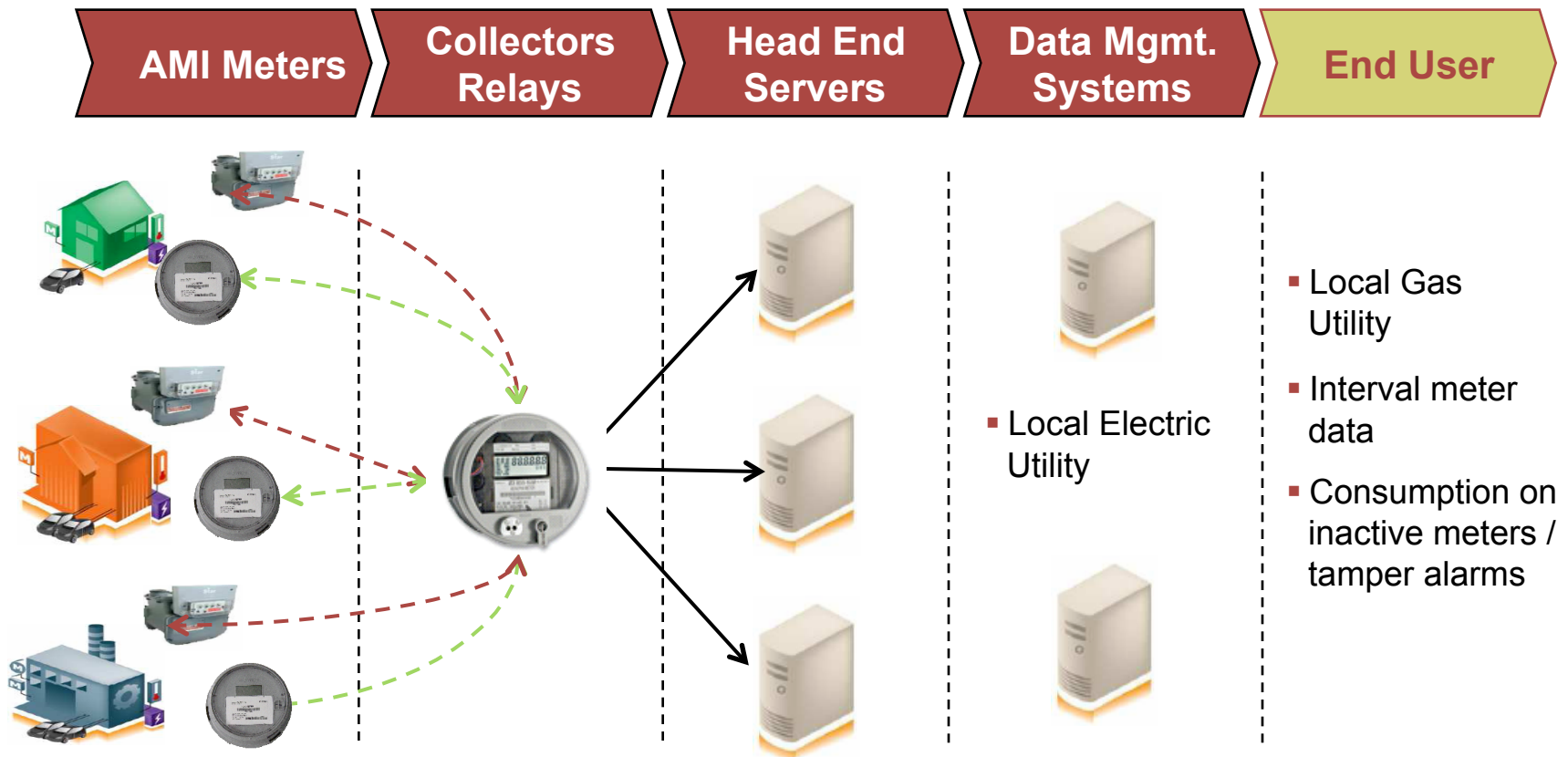
***AMI Enhances the Customer Experience with Real-Time Information and Two-Way Energy Management Capabilities***



# Inter-Utility Opportunities Meter Data Sharing

## ***AMI Also Allows Integration and Interoperability of Data Between Multiple Utilities***

- Meter reading can be automated, and read date / cycle dependency can be eliminated. Theft and tamper alarms can also be provided through the AMI network

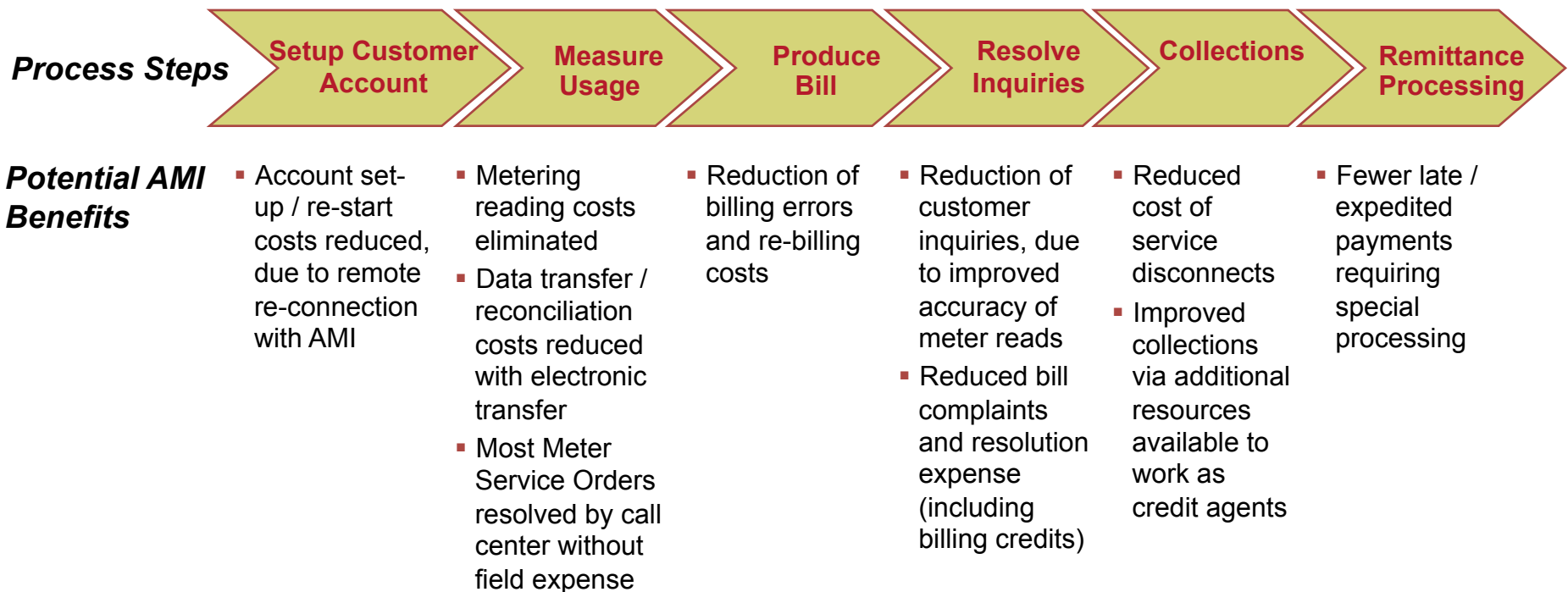


# AMI Benefit Analysis

## Utility Operations - Revenue Management

### **Benefits Can be Identified Across the Entire Revenue Management Process**

- Each of the steps in the overall process presents potential benefit opportunities, as illustrated below. These benefits can be quantified using available utility data.

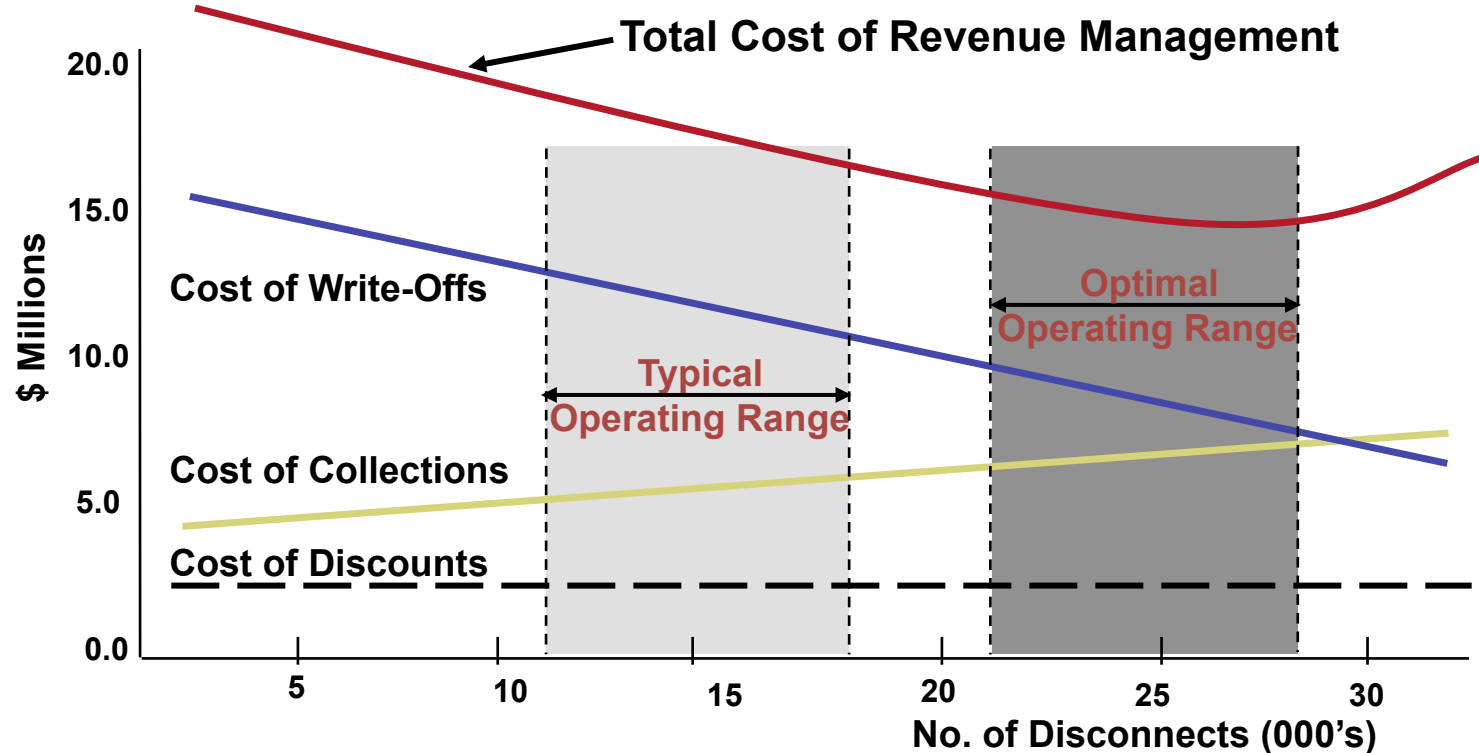


# AMI Benefit Analysis

## Utility Operations - Revenue Management (cont.)

### Remote Service Switch Enables Substantial Collections Benefits

- As shown in the illustration below, write-offs tend to vary inversely with the number of disconnects completed each year. The remote disconnect / re-connect capabilities of AMI enable the utility to optimize the number of disconnects and reduce write-offs.

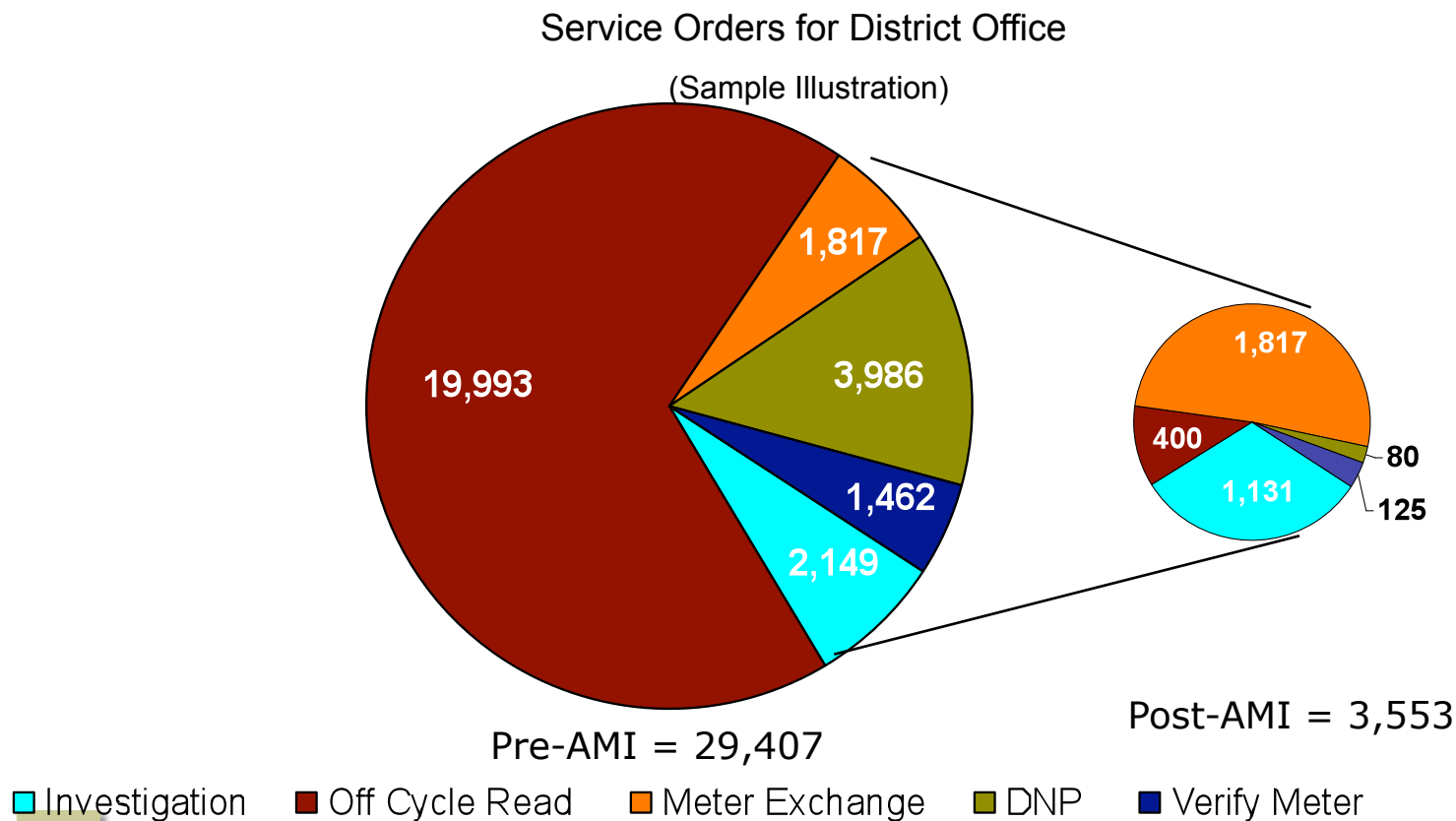


# AMI Benefit Analysis

## Utility Operations – Field Resource Utilization

### **AMI Automation Enables a Transitioning of Metering Resources to Other Tasks**

- The chart below shows the change in numbers and types of field service orders occurring with the AMI implementation. In this case, the significant shift is from ‘off-cycle reads’ and ‘turn-offs’ to ‘meter exchanges.’

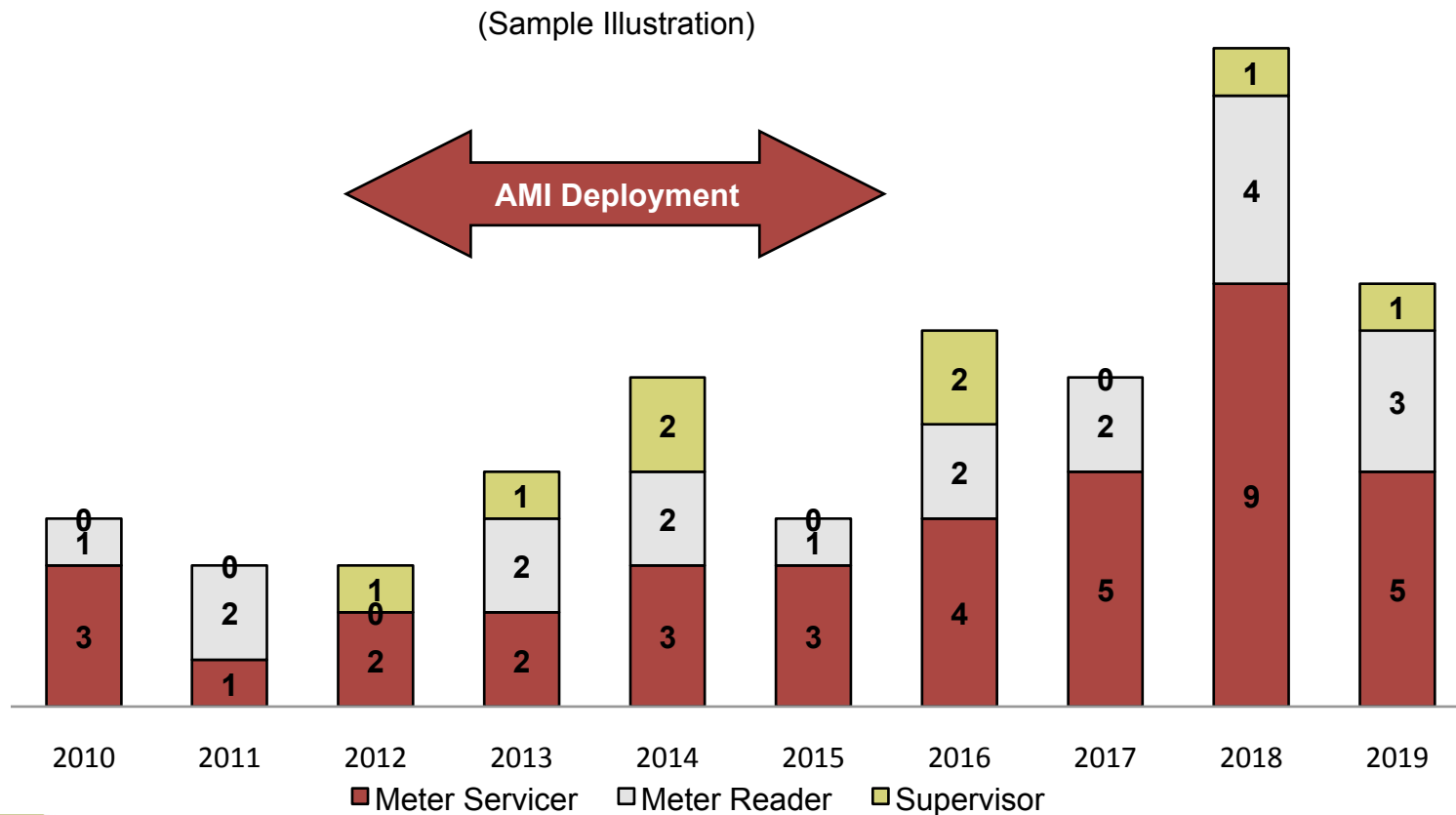


# AMI Benefit Analysis

## Utility Operations – Field Resource Utilization (cont.)

### *Metering Field Labor Aging Workforce Analysis*

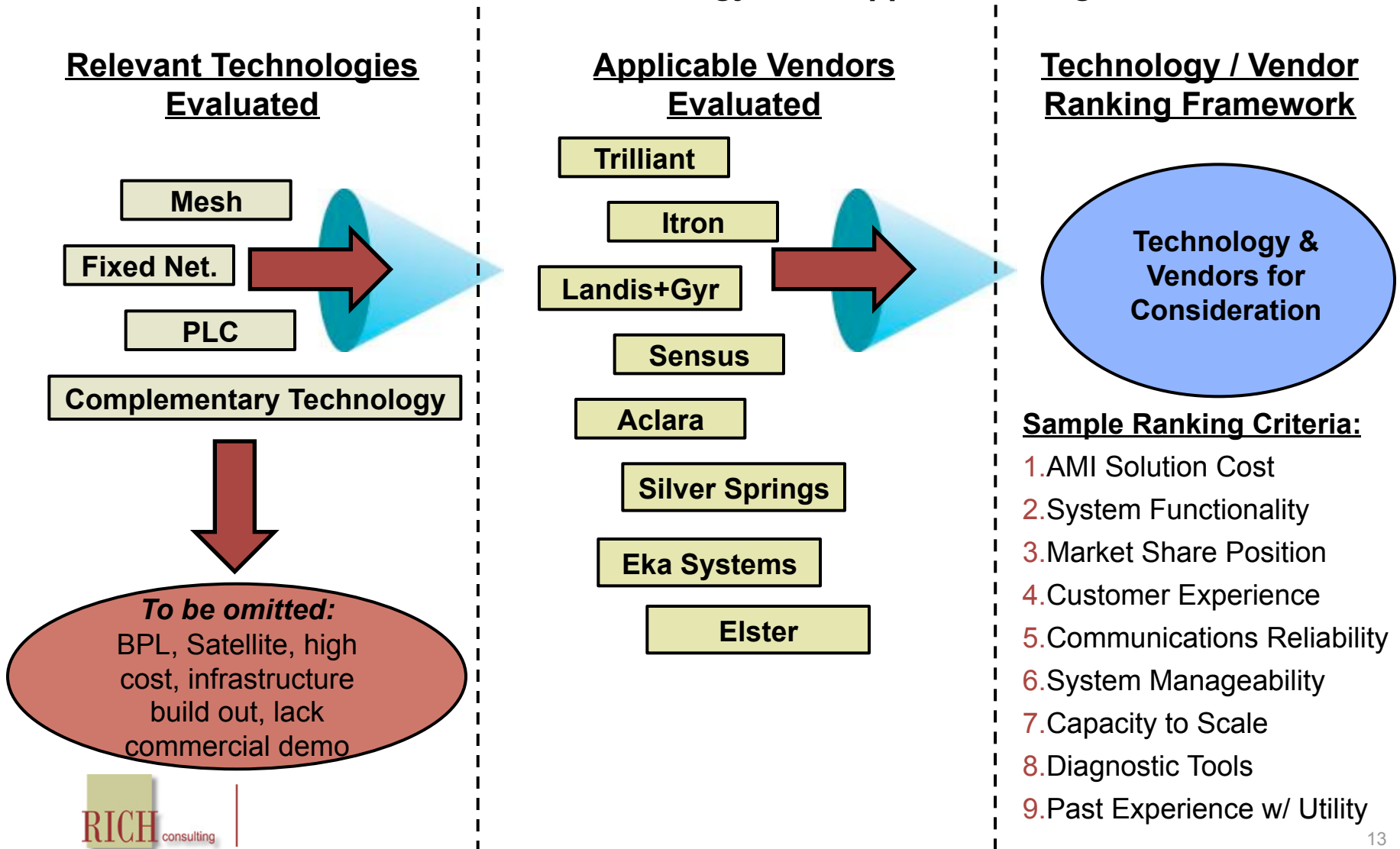
- AMI may help offset attrition of aging resources



# AMI Supplier Technologies

## Sample Technology & Supplier Evaluation

*There is a Multitude of Diverse Technology and Supplier Offerings*

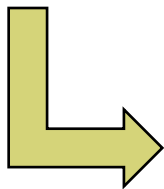


# AMI Supplier Technologies

## Sample Technology & Supplier Evaluation (cont.)

**Specific Criteria Will be First be Evaluated in Detail and the Results will be Summarized in an Executive-level Score Table**

Market Share Position	AMI Segment Market Analysis			Secondary Criteria	Market Share (000s Meters)	Notable Utilities	Total Score
	Hardware	Software	Comms.	Turnkey / Complements			
Vendor A	Vendor Meter	Vendor MDM	Mesh	Proprietary	3,000	Utility A Utility B	4
	5	2	2	5	7	8	



Vendor	Primary Evaluation Criteria Summary				Other (See Previous Slide for Additional Criteria)
	AMI Solution Cost	System Functionality	Market Share Position	Customer Experience	
Vendor A	4	3	4	5	6

# Managing the AMI Implementation

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## ***Our Experience Encompasses Every Aspect of the AMI Life Cycle***

- Stage 1 – Strategic Business Case
  - Tracking of industry developments and market awards
  - Multi-scenario business case evaluations (C&I, Credit & Collections, Circuit Reliability)
  - Regulatory treatment of metering assets
- Stage 2 – Technology Evaluation & Pilot
  - Evaluation of AMI technologies and vendors
  - AMI pilot and metrics design
- Stage 3 – Deployment Planning
  - AMI field operations labor strategy
  - Installation planning and analytical tools
  - AMI field operations labor strategy
- Stage 4 – Deployment
  - Program Management Office (PMO) support for AMI design and implementation
- Stage 5 – Ongoing Monitoring & Business Case Validation
  - Research and monitoring of Smart Grid & AMI initiatives (i.e. Intelligrid, Gridwise)
  - Smart Grid investment strategy



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