Asset Management & Inventory Tracking Systems for Metering Services

EEI Edison Electric INSTITUTE

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Agenda

- Asset & Inventory Overview
- Benefits & Return on Investment
- Owners & Perspectives
- Build vs. Buy
- Project Methodology
- Getting Started
- The Portfolio Landscape

- Meter Shop & Field Operations
- Challenges in AMI
- Meter Life-Cycle
- Out-of-the-Box
- Paradigm Shift
- Advancing Business Process Optimization

Asset Management & Inventory Tracking

Asset Management

Asset management refers to tracking unique items of value. They are often called physical assets or fixed assets.

Inventory Tracking

Inventory tracking refers to tracking non-unique items of value. These are often called stock or consumable items that track quantity, disposition, location…

Organizations strive to gain greater control and efficiencies when managing their assets

Benefits & Considerations

Business Drivers

- **Cost Reduction**
- **Increased Revenue**
- **Improved Efficiencies**
- **Increased Traceability**

The system should provide the necessary knowledge both for the warehouse worker to perform daily tasks and management to have product and financial insight.

Owners Perspectives, Needs & Wants

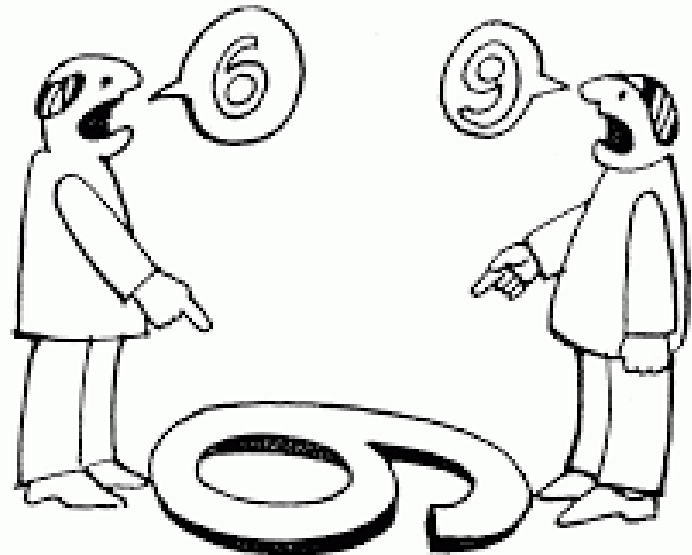**Owners**

Meter Shop

Field Operations

Revenue Protection

Administration

Technology

Each owner will have their own perspective and objectives for the asset/inventory management system.

Ensure a 360 degree view of your organizations is represented

Build vs. Buy

You must consider:

Creating a weighted decision matrix to qualify & quantify vendors
Ensure ALL business owners are included
Always remember It's business FIRST, technology SECOND

BUILD	**BUY**
✓ Speed to market	✓ Vendor's domain knowledge & experience?
✓ Quality	✓ Does the solution meet ALL requirements?
✓ Maintenance & TCO	(Gas, Electric & Water)
✓ Trade-offs	✓ Track record & success stories
	✓ Total Cost of Ownership

SaaS

On-Premise

Project Methodology

Your vendor should realize that there is **<u>no</u>** "one-size-fits-all" that works for all business types, sizes or industries.
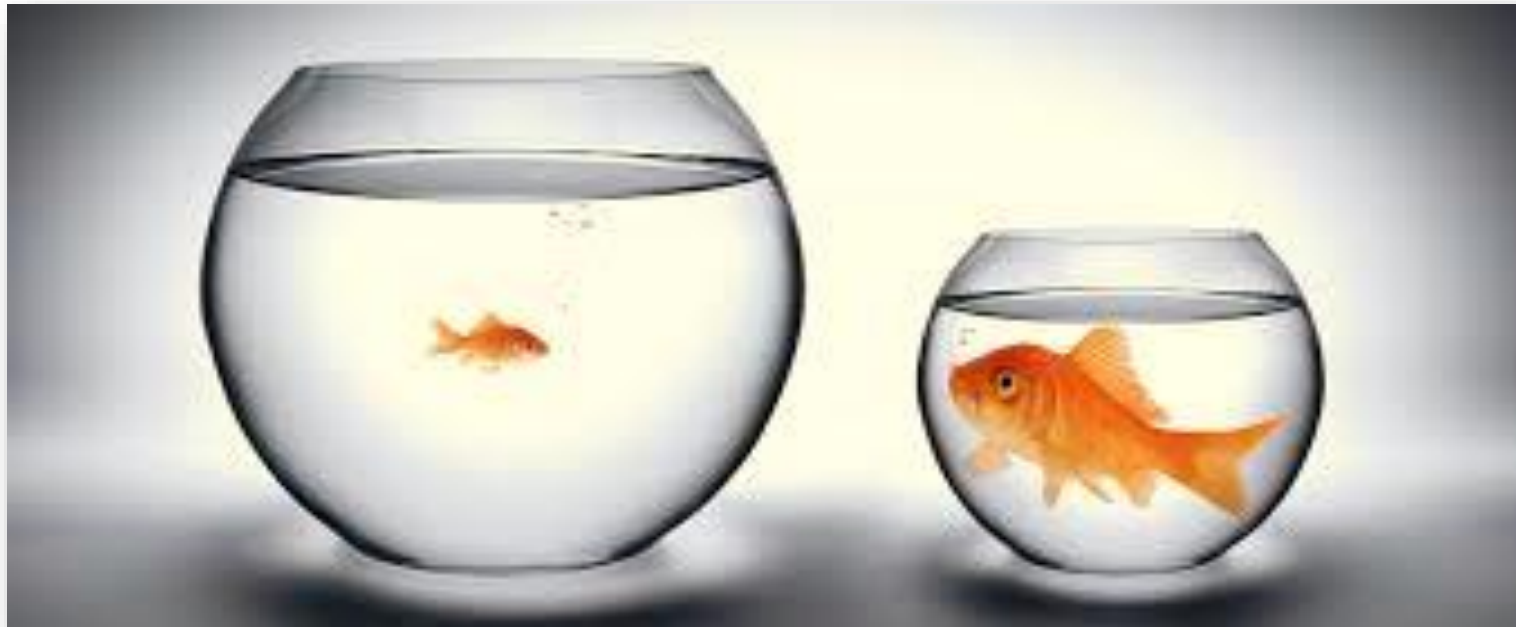
The vendor should be ready to assist and guide you through every phase of the initiative
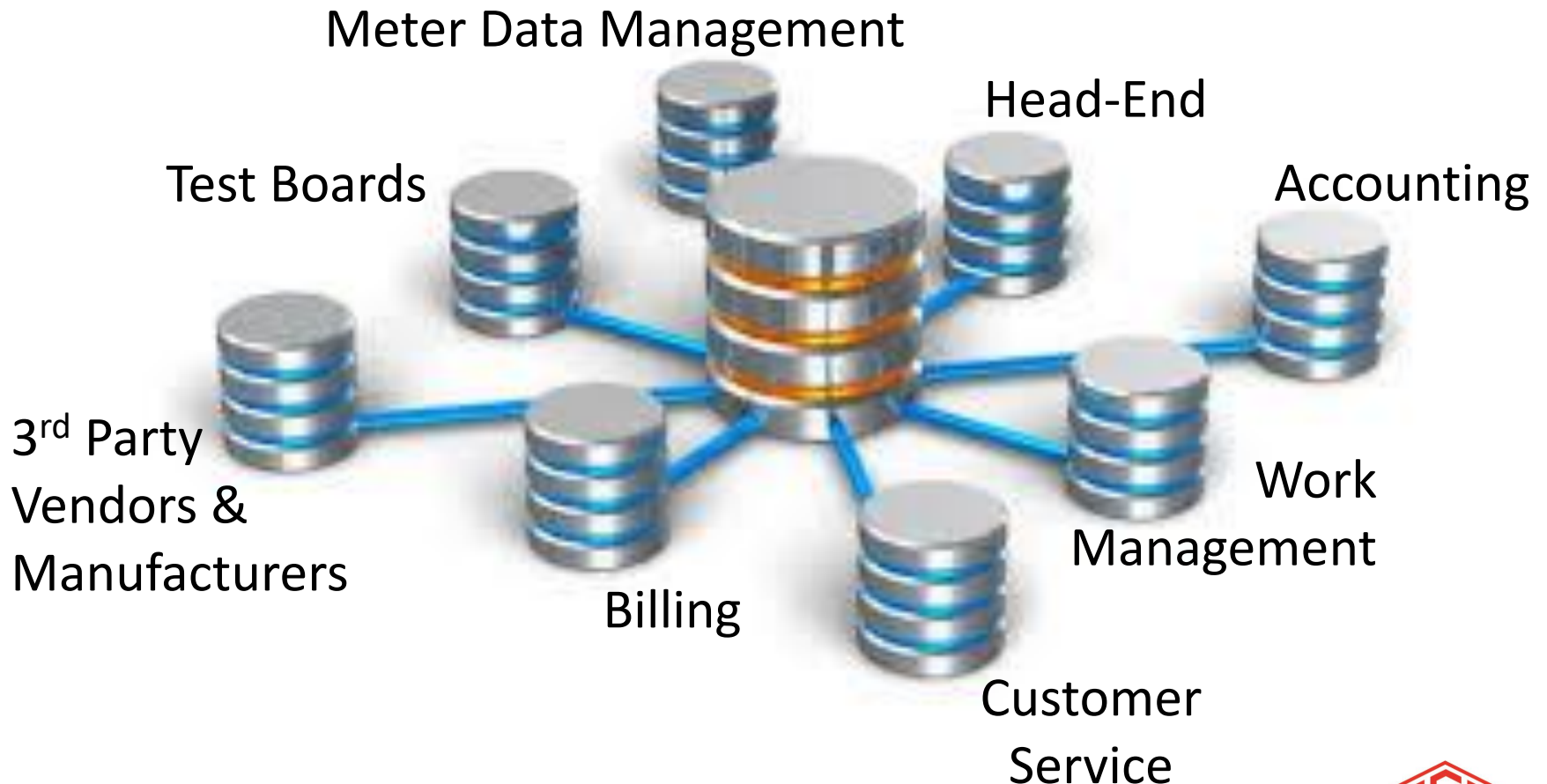
Getting Started

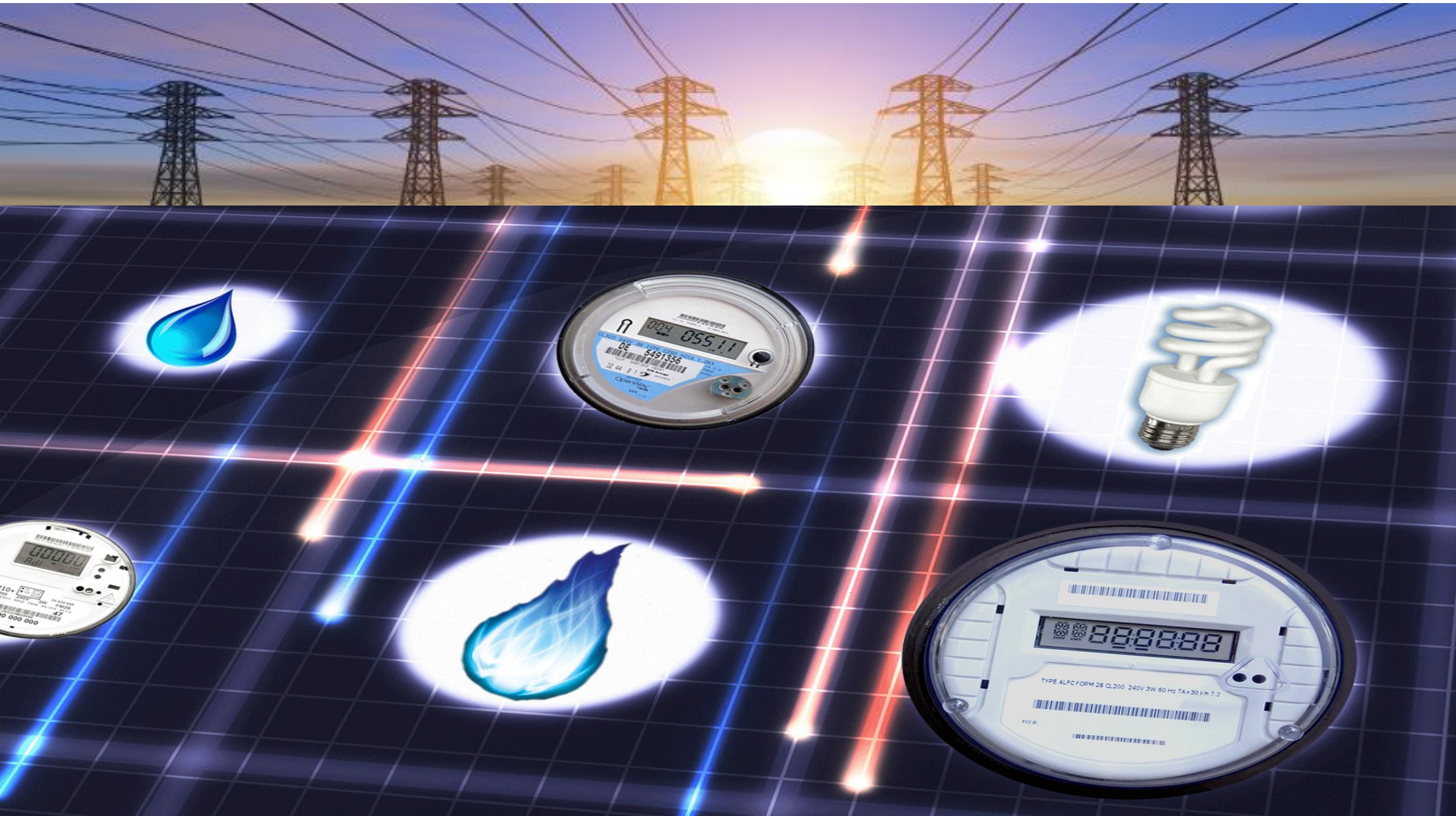**Their approach should include:**

- An initial discovery session to understand your goals, requirements, timeline and budget
- An assessment review of your existing environment, definition of project requirements, and success criteria
- Defining which systems will be the "system of record"
- Offer recommendations for business process improvements
- Data conversion, cleansing and migration
- Interfacing with other systems
- Configuration, and deployment of the final solution
- Product lifecycle support

The Portfolio Landscape

Meter Data Management

Head-End

Accounting

Test Boards

3rd Party Vendors & Manufacturers

Billing

Customer Service

Work Management

Utility 2.0 – Asset/Inventory Mgmt. Systems for Metering Services

Meter Shop & Field Operations

Traditionally Meter Service Departments have typically been tasked with tracking:

- Meters on the system (inventory and installed)
- Meter test records (accuracy)
- AQL Sample
- PSC/PUC Random and Periodic Sample
- Instrument transformers
- Site Verification
- Personal Protective Equipment (PPE)
- Tools & Instruments

Challenges Introduced by AMI

- Track multiple serialized devices under the cover of a single meter
- Swap out and/or add additional devices at some later date to an installation
- Track and update Program ID

- Track both the hardware and firmware version for the meter and AMI Modules
- Tracking network devices (bridges, relays, extenders…)
- Ability to track functional test results as well as accuracy/demand results
- Track complete site information for transformer rated customers
- Seamlessly handle PPE i.e. rubber goods, tools and instruments
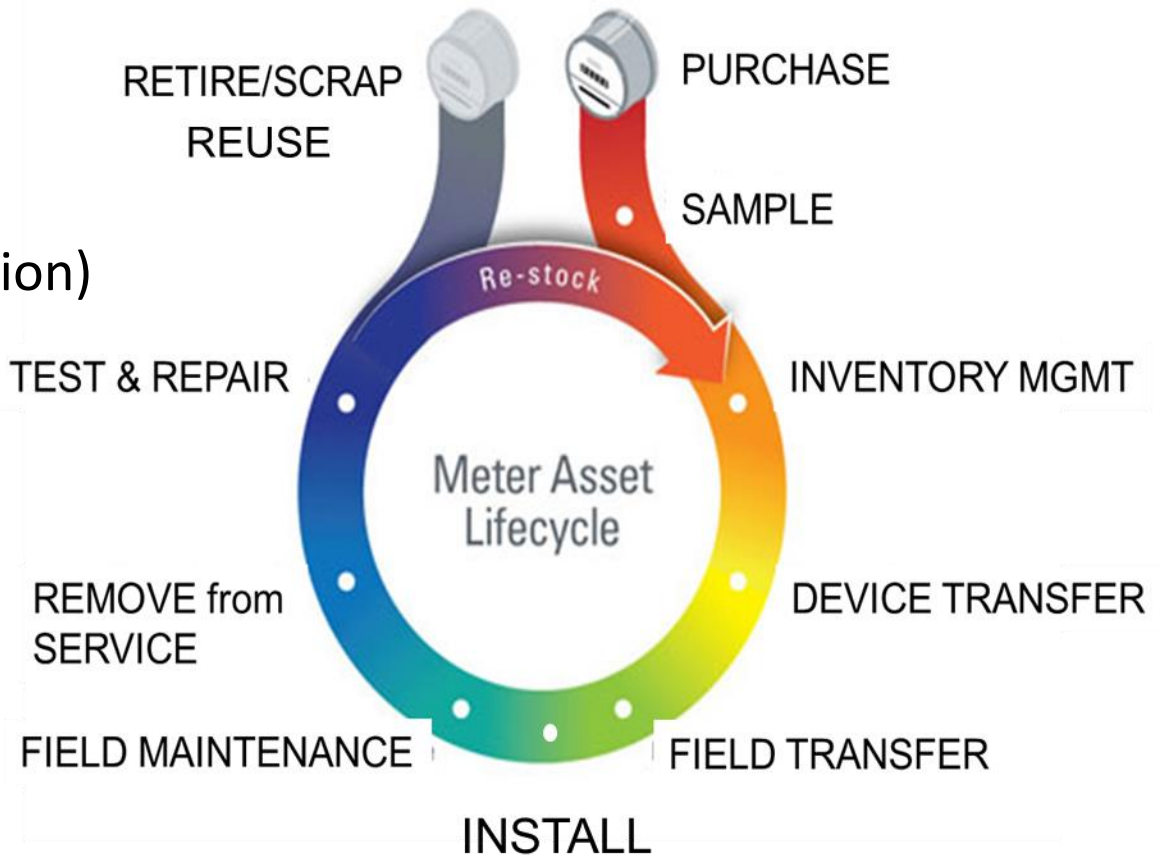- Deployments require robust RMA processing & tracking

Typical Meter Life-Cycle
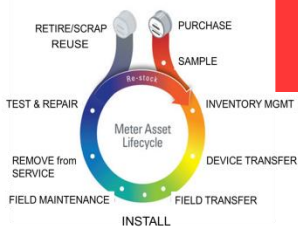
New Meter Purchase
- First Article
- Purchase Order
- Vendor File (device creation)
- Meter Receiving
- Acceptance Testing
- Device Release to Stock

Used Meter Processing
- Meter Check-in
- Meter Testing
- Device Restocking
- Retirement

RETIRE/SCRAP REUSE

PURCHASE

SAMPLE

Re-stock

TEST & REPAIR

INVENTORY MGMT

Meter Asset Lifecycle

REMOVE from SERVICE

DEVICE TRANSFER

FIELD MAINTENANCE

FIELD TRANSFER

INSTALL

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Inventory Tracking

✓ Track Inventory within shops, warehouses, storerooms, down to the container and/or shelf

✓ Track Inventory to the person or truck
- Meters are assigned to the person / truck
- As meters are set, they are removed from inventory
- Used meters are tracked from removal to meter shop
- Physical inventory counts may be performed at any time

✓ Quality management
- Detailed analysis of meter performance
- In-service, random sample, and periodic test plans
- Full RMA tracking

Configurable & Customizable – Out of the Box

The software must be able to turn features on/off, based on security but also ensure the workflows are aligned with how your organization operates.

Reference Tables
- Operating Areas
- Inventory Locations
- Meter shops
- Container types
- Test Boards
- Scanners

Operational Tables
- Item Models
- Device Types
- Failure Reasons
- Test Types (work-orders)
- Retirement Reasons
- Test Sequences & Limits
- Warranty

Security & Users
- People
- Users
- Roles
- Modules

The software must support user defined fields and customizable workflows. These are essential to minimizing disruption to existing systems

Paradigm Shift – Meter Testing

AMI has fundamentally changed what is tested, recorded and tracked. Accuracy Testing is only one component

FUNCTIONAL TESTING – Need to Verify
- ✓ Display and program ID
- ✓ Seals
- ✓ Soft switches
- ✓ AMI module hardware & firmware
- ✓ Meter hardware & firmware
- ✓ Master reset
- ✓ Communications Check
- ✓ Disconnect switch (if applicable)
- ✓ Security Check

Advancing Business Process Optimization

- ✓ AMI Inventory & Asset Management
    - Bridges, Range Extenders
    - Warranty & Battery Replacement
- ✓ Integration with Test Boards
    - WECO, RFL, KNOPP, TESCO, GAS PROVERS
- ✓ Kiosk workstation to accelerate meter shop & stores operations
- ✓ Automated Meter Manufacturing File processing
- ✓ Barcode scanning for managing shipments and inventory movements
- ✓ Configurable Workflows
    - Test Sequences, Tasks & Limits
    - Work orders & test types
    - Role based security
- ✓ Inventory Forecasting & Procurements
- ✓ Regulatory Compliance
- ✓ Reporting

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The Promise of AMI

The introduction ten years ago and the continued development of an Advanced Meter Infrastructure (AMI) system promised more effective and more efficient Meter Service Operations.

This was to be accomplished in a variety of ways starting with:

- No need to read meters (if AMR had not previously been deployed)
- No need to roll a truck to perform a disconnect or a reconnect
- Better ability to detect and respond to outages
- Better ability to detect theft
- Better ability to detect (and eventually capture) unbilled energy
- Better understand customer usage and make better energy buying decisions

What Data Are We Getting and How Are We Using It?

Meter Quality Assurance:

Focusing on meter reading performance enables utilities to ensure AMI reliability. For instance, when meter readings are expected but not delivered, the system takes note, and calculates overall performance statistics for the AMI system. Utilities are made privy to problems they never would have been able to identify in the past.

AMI will end a century of metering

Questions and Discussion

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This presentation can also be found on the TESCO website:

www.tesco-advent.com