Intelligrid Consortium Consumer Portal Project

Public Advisory Group
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Agenda

1. Project Objectives

2. What is a Consumer Portal?

3. Most Important Applications

4. Engaging Key Stakeholders

    • OpenAMI

   • Metering America

5. Discussion

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What is a Consumer Portal?
Many Definitions

- A "*router*" that just forwards messages

- A "*gateway*" that translates technologies

- A "*single point of access*"
  - *From* multiple organizations
  - *To* a variety of customer premises equipment

- A "*virtual device*" that may be located in
  - a meter
  - a thermostat
  - a PC
  - a set-top box
  - all or none of the above

- A "*window*" into the customer site
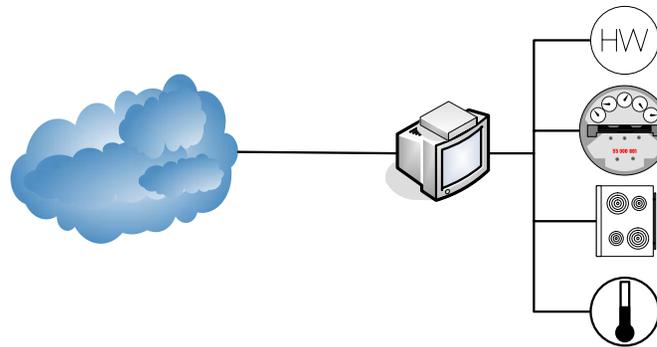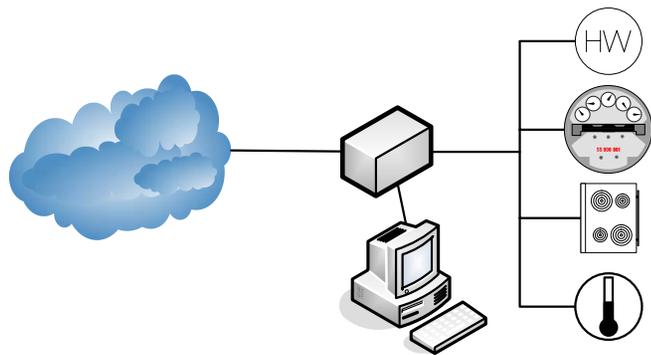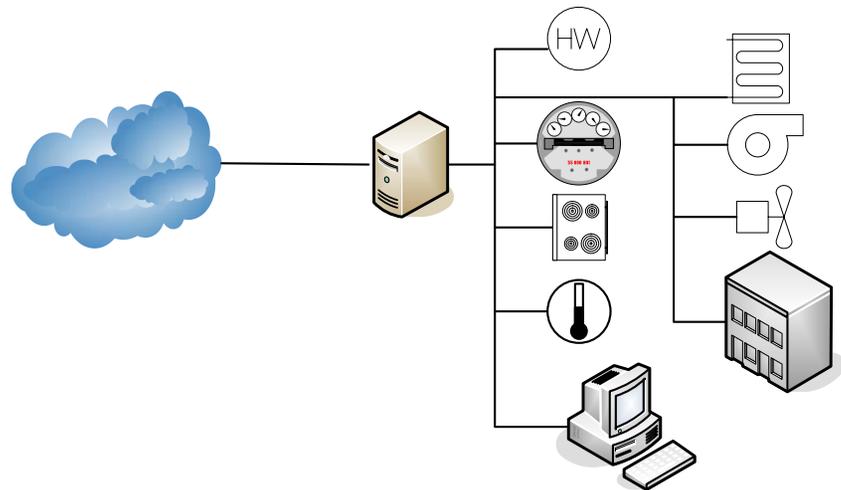

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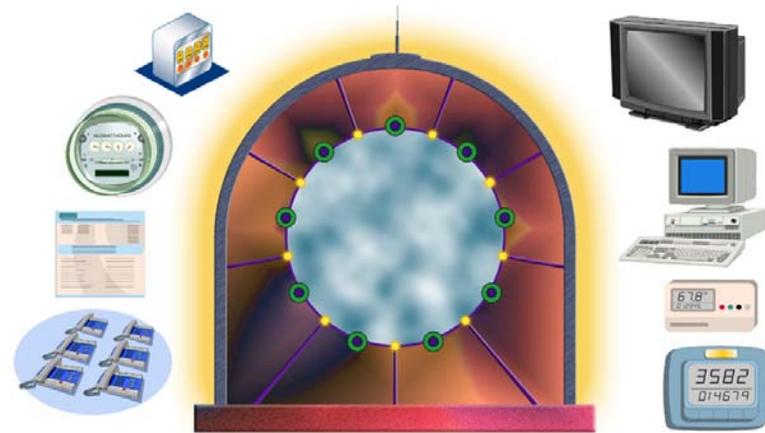
What could a portal look like?
Some Options:
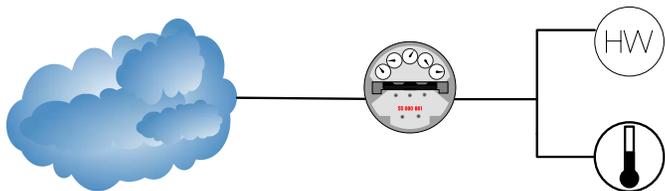
Portal in a meter

Portal in a set-top box

Portal in a stand-alone device or PC

Portal in a local energy management system

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Consumer Portal Drivers and Obstacles

- Heaviest Drivers :

  - demand response – consumers response to prices is an untapped reserve

  - "Avoided Cost" benefits are compelling

  - Significant Energy Savings and Optimization are achievable

  - Strong total package of 'Economic Value' does exist

- Portal Technology is developed for other services/industries

- The consumer portal is not a readily understood product

- No consistent demand for related services

- High investments without good model to achieve rate of return

There is a market, but it will develop through private sector infrastructure/applications and with public sector drivers for pricing/demand response
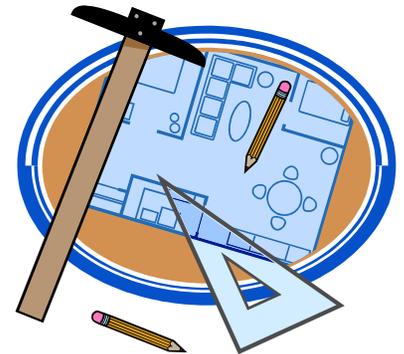
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Lessons Learned –
from dozens of past attempts

- **The technology exists.**
  - No breakthroughs are necessary

- **Make it simple.**
  - Functions should not require customer intervention

- **Standardize.**
  - Don't try to "lock in" customers to proprietary systems
  - Achieve economies of scale and reduce costs

- **Share the infrastructure.**
  - Use portal-like services from other industries

- **Build an architecture.**
  - Integrate the portal with the whole energy system
  - Don't create "islands of automation"

- **Don't strand assets.**
  - Make it easy and inexpensive to upgrade
  - The best applications may be yet to come

- **Share the benefits.**
  - Distribute the "societal benefits" to everyone
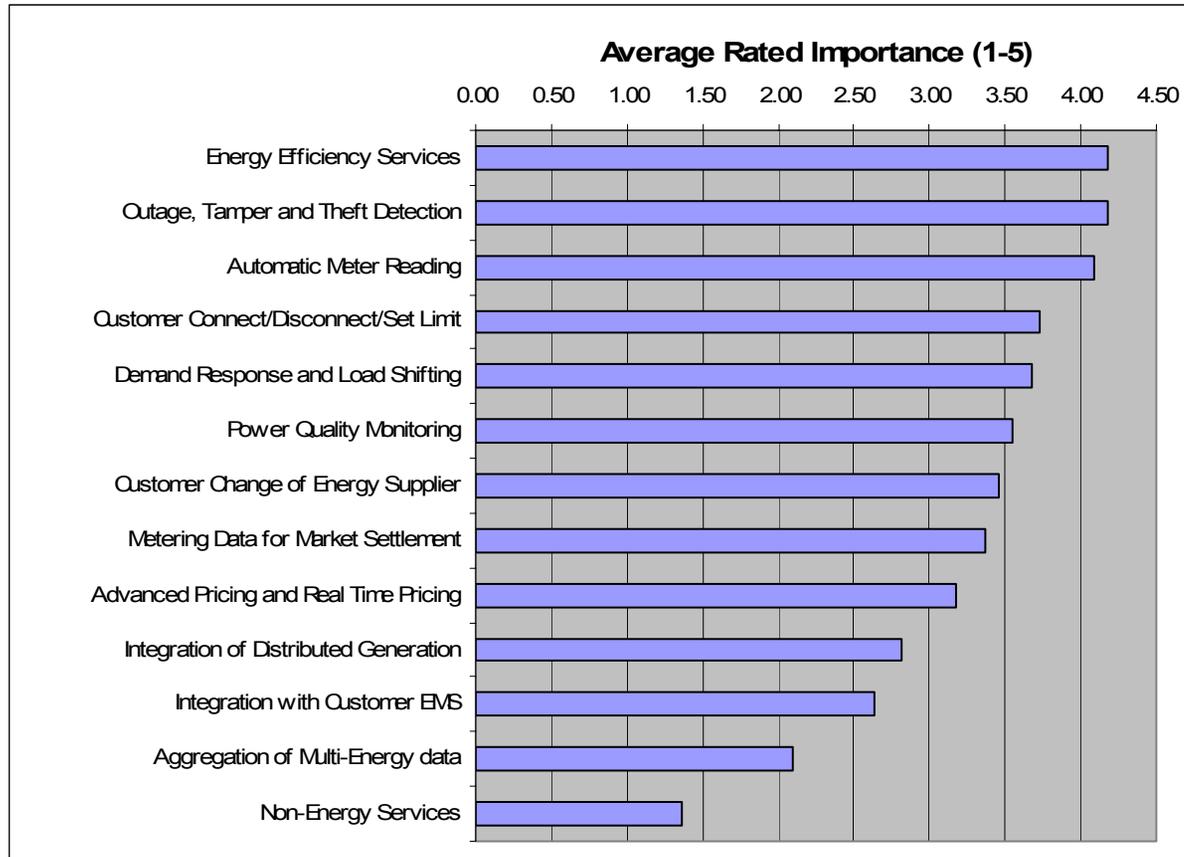
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What could a portal look like?

- A consumer portal is an *idea*, not a particular device!

- IntelliGrid is developing a *reference design*
  - A standard "virtual appearance" for a portal
  - A clearly defined set of interfaces
  - May be incorporated into a variety of devices
  - May be *distributed* among several devices

- The physical device(s) may vary, but the virtual device *must be standardized* to ensure
  - Interoperability between vendors
  - Reduction in cost due to economies of scale

- Some vendors already provide portal-like devices, but they are generally *not standard* and *not interoperable*.
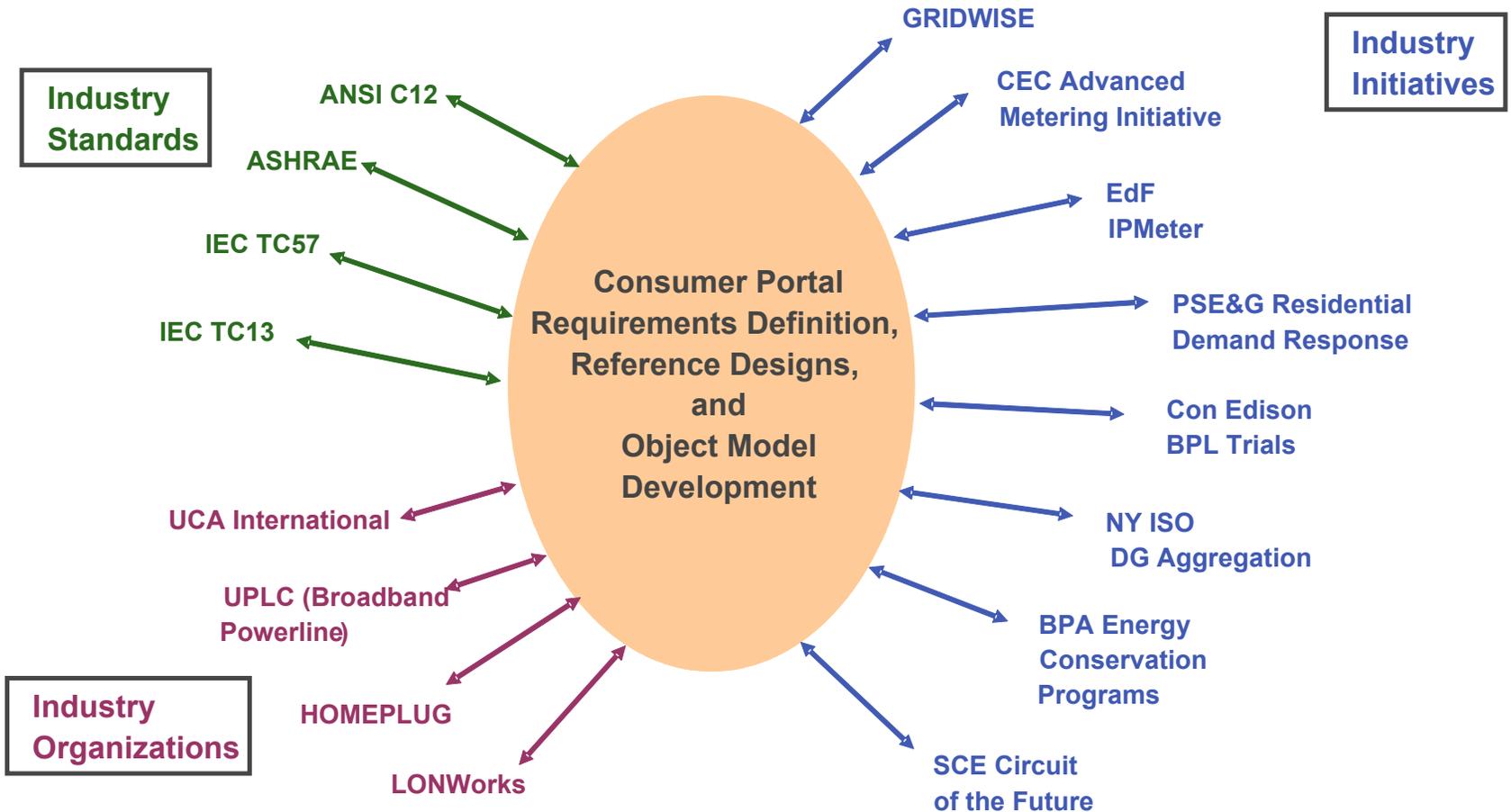
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IntelliGrid Partners –
Priorities for Consumer Portal

Average Rated Importance (1-5)

Category	Value (approx)
Energy Efficiency Services	~4.15
Outage, Tamper and Theft Detection	~4.15
Automatic Meter Reading	~4.10
Customer Connect/Disconnect/Set Limit	~3.70
Demand Response and Load Shifting	~3.65
Power Quality Monitoring	~3.55
Customer Change of Energy Supplier	~3.45
Metering Data for Market Settlement	~3.40
Advanced Pricing and Real Time Pricing	~3.15
Integration of Distributed Generation	~2.80
Integration with Customer EMS	~2.65
Aggregation of Multi-Energy data	~2.10
Non-Energy Services	~1.35

- Preliminary feedback from eleven IntelliGrid Consortium partners

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Important Categories of Stakeholders

- IntelliGrid Public Advisory Group

  – Regulators and public agencies

- Industry organizations

  DLMS User Association, OSGI Alliance, CableHome, Zigbee Alliance, HomePlug, Universal Powerline Asssociation, UPLC, Wimax Forum, Gridwise, UCA Users Group, Peak Load Management Alliance (PLMA)

- Standards organizations

  ASHRAE, ANSI C12, IEC TC57, IEC TC13

- Technology Providers

  Metering, communications, networking, systems management, integrators, end use equipment

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Stakeholder Engagement (examples)

Industry Standards
- ANSI C12
- ASHRAE
- IEC TC57
- IEC TC13

Industry Organizations
- UCA International
- UPLC (Broadband Powerline)
- HOMEPLUG
- LONWorks

Consumer Portal Requirements Definition, Reference Designs, and Object Model Development

Industry Initiatives
- GRIDWISE
- CEC Advanced Metering Initiative
- EdF IPMeter
- PSE&G Residential Demand Response
- Con Edison BPL Trials
- NY ISO DG Aggregation
- BPA Energy Conservation Programs
- SCE Circuit of the Future

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OpenAMI – Stakeholders already contributing
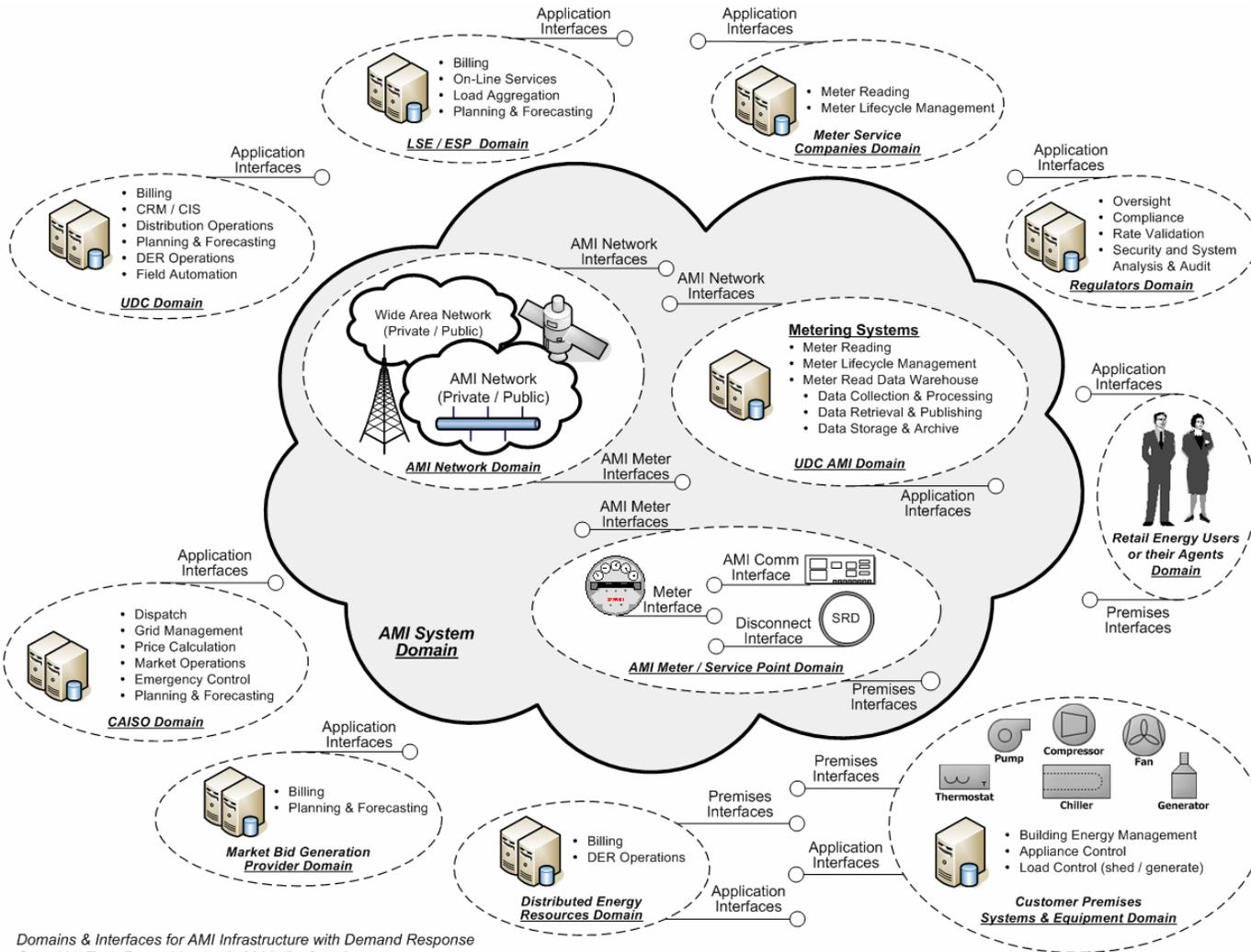
Mission Statement

Foster enhanced functionality, lower costs and rapid customer adoption of Advanced Metering networks and Demand Response solutions through the development of a recommended open, standards-based information/data model, reference design and interoperability guidelines

OpenAMI – Concept of interfaces between different domains

Domains & Interfaces for AMI Infrastructure with Demand Response
OpenAMI Task Force, March 18, 2005, Draft v1.0

OpenAMI - Update

- March 17, 2005- OpenAMI Task Force's Draft Report on Functional Requirements Specifications for an AMI Infrastructure with Demand Response

- Submitted to the California Public Utilities and Energy Commissions

- Content
  - Principles of AMI Infrastructure with Demand Response (Shareability, Ubiquity, Integrity, Ease of use, Cost effectiveness, Standards, Openness, Security)
  - Reference design domains & interfaces
  - (Draft submissions) Functional requirements specifications

http://www.openami.org/twiki/bin/view/Main/CpucCecReport

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Stakeholder Engagement - CERTS

- Dave Watson from LBNL will contribute to Use Case development and reference design development, representing CERTS

CERTS is developing technology solutions that support competitive markets while protecting the public interest in reliable electricity service.

Conferences and Articles

- **02/01   CEC Demand Response symposium on reference design**
- **02/02   OpenAMI 1st working session**
- **02/21   Informal presentation at the ANSI C12 group**
- **03/01   OpenAMI 2nd working session**
- **03/21-24 BuilConn, Dallas Texas**
- **04/11-12 Mobility Exchange, April 11,12, Frankfurt Germany**
- **04/13   Metering America, April 13, Las Vegas**
- **04/19   OpenAMI 3rd working session, hosted by EPRI in Palo Alto**
- **04/26-28 Distribution Europe, Berlin, Germany**
- **05/9   ANSI C12 meeting**
- **05/11   PRIMEN Outlook: Beyond the meter**
- **06/6-9   CIRED, Turin, Italy**
- **08/15   OpenAMI 4th working session in San Francisco**
- **9/18-21   AMRA international symposium**
- **09/20-22 Metering Europe**
- **10/10-14 IEEE T&D show– Panel session**

Papers - Joe Hughes, Metering International Issue 1, 2005- need for an architecture for advanced metering developments

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Consumer Portal FAQ and survey

- Provide a better understanding of the concept

- Get input on strategy, consumer needs and technologies
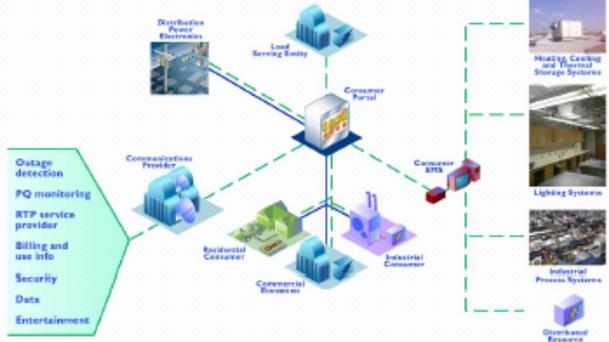

Figure 1 The Consumer Portal Concept

Next steps

- Technical developments
  - Use cases
  - Telecom Assessment
- May 17 workshop with partner utilities
- T&D Show panel session arrangements
- Continued stakeholder engagement activities
  - Interface with OpenAMI, ANSI, IEC, and other organizations
  - Coordination with Gridwise
- Identify and start demos

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Discussion

- What do you see as the value of the consumer portal
    - For electricity consumers?
    - For utilities?
    - For society?

- What if we don't standardize?

- How can the Public Advisory Group support implementation of the Consumer Portal?

Contact information

Thank you!

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