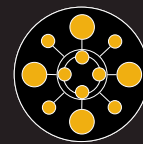


**The power of  
integration**



*Utility Integration Solutions, Inc.*



**DRBizNet**

Demand Response Business Network

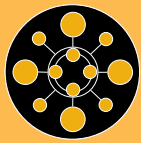
Ali Vojdani, Ph.D.  
President, UISOL

June 11, 2007

# DRBizNet Project



- **Funded by the Demand Response (DR) Enabling Technologies Development Project**
  - Public Interest Energy Research (PIER) Program of the California Energy Commission (CEC)
- **Managed and Administered by the California Institute for Energy and Environment (CIEE)**
  - Part of the Office of the President, University of California (UCOP)
- **Guided by CAISO, PG&E, SCE, SDG&E and Industry Advisors**
- **Multidisciplinary Collaborate Team**
  - UISOL (Prime Contractor)
  - Dynamic Networks
  - Menlo Energy Economics
  - Michigan Group
  - NEXANT
  - SAVVION
  - TIBCO



# DRBizNet

Demand Response Business Network

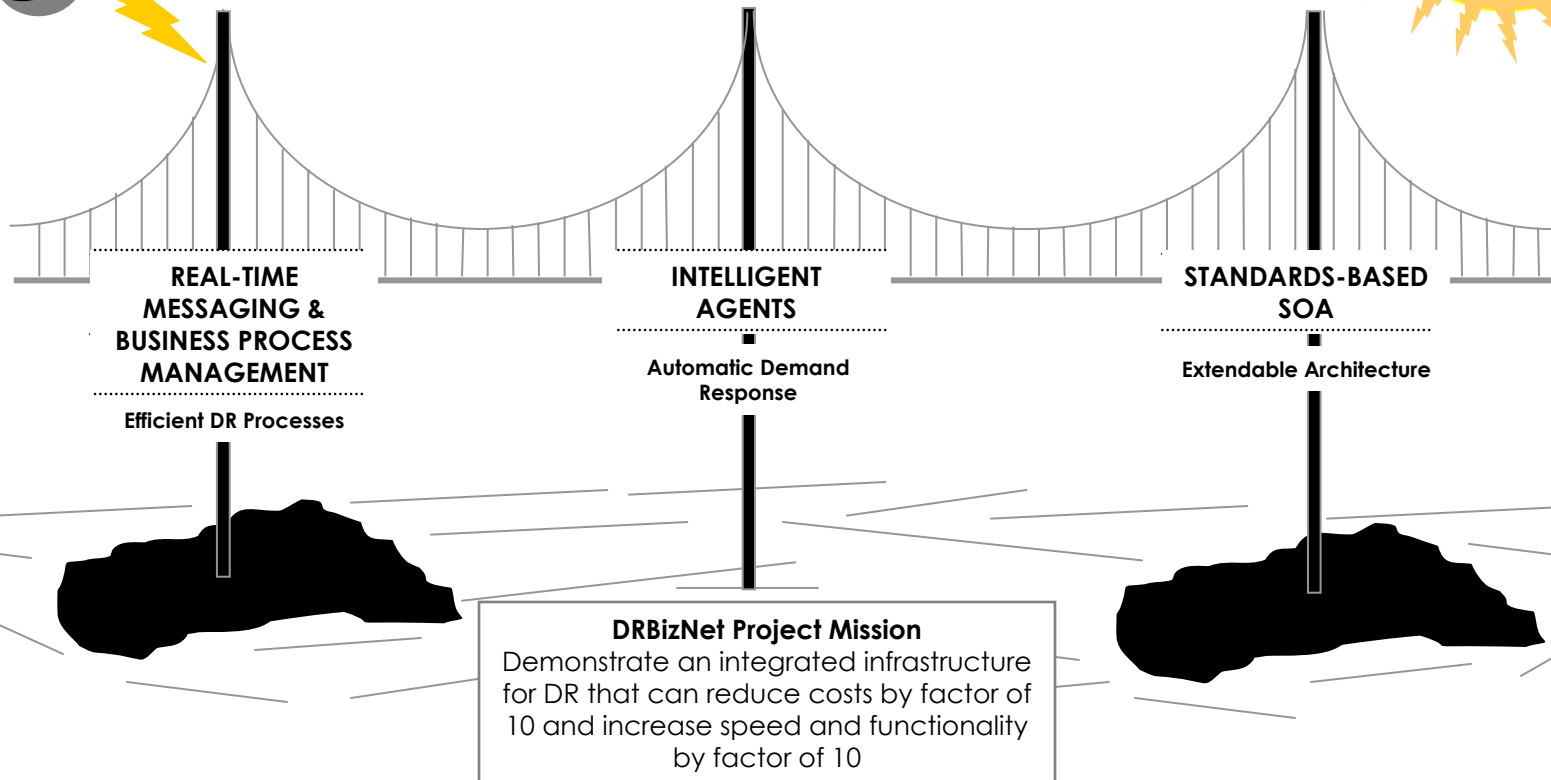


**AS-IS STATE**  
Inefficient, error-prone,  
slow, inflexible, and  
non-scalable.

**DRBizNet** is a distributed business network ("eCommunity") designed to facilitate communications and business transactions among a large number of DR stakeholders



**TO-BE STATE**  
Efficient, error-free, fast,  
flexible, and scalable.



# DRBizNet Benefits

## 10x10 Improvements in DR Performance

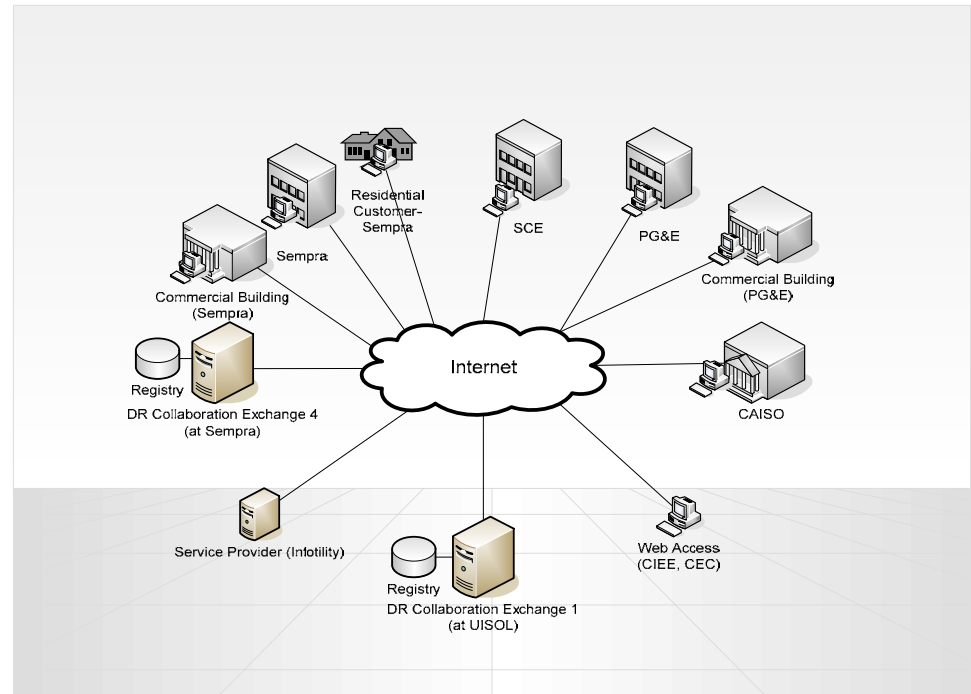


- Efficient building blocks for an open and efficient DR e-Community
- Real-time communication and visibility
- Complete documentation/audit trail for all transactions
- Comprehensive platform for efficient and consistent end-to-end DR process management/collaboration
  - Electronic workflow mgt with powerful features (e.g., portal inboxes, deadline monitoring, escalation, substitution, e-mail notifications)
- Drastically reduces manual steps and errors
- Reduces need for training of process actors
- DR process optimization tools
  - DR process repository, DR process metrics/management dashboards, process simulation & forecasting, process bottleneck detection, what if analysis)
- Eliminates need for multiple systems for managing different DR programs
- Easy DR program creation
- Easy interface with other corporate systems through standard adaptors
- Easy, standards-based, interface with external parties
- Secure communications with DR resources
- Option for automating customer response through Intelligent Agents
- Dramatically reduces cost of making process changes through graphical process editors, integrated business rules engine, and rapid prototyping tools.
- Reduced O&M cost by replacing coding with configuration & empowerment of business users

# August 11, 2006, DRBizNet Field Simulation

Proved the concept of DRBizNet as a DR enabling technology to efficiently execute DR processes such as:

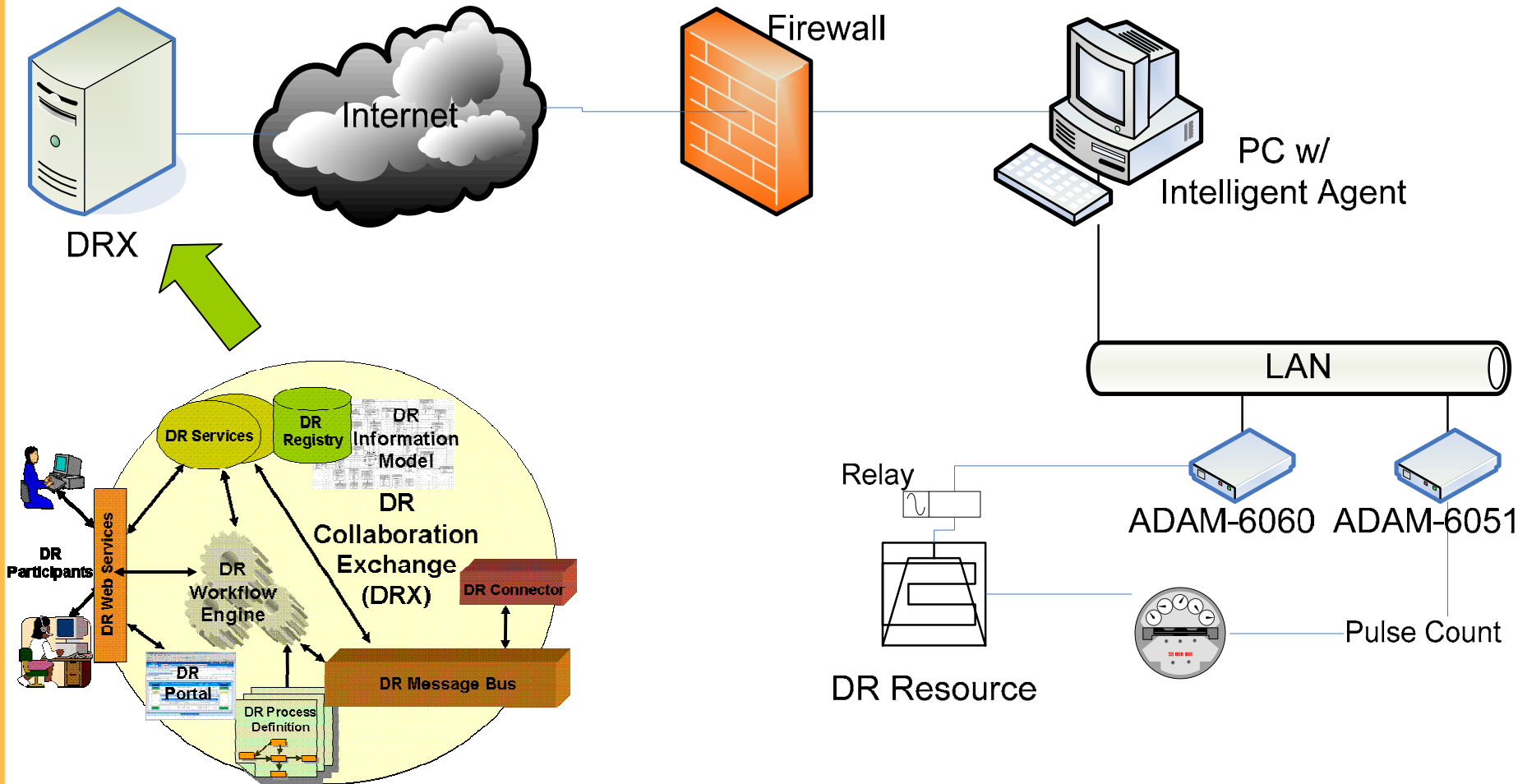
- Create new DR programs
- Update existing DR programs
- Register for DR
- Enroll in DR programs
- Process DR applications
- Query how much DR is available
- Invoke DR programs
- Notify DR participants
- Automatically respond to DR requests



Dynamic Networks



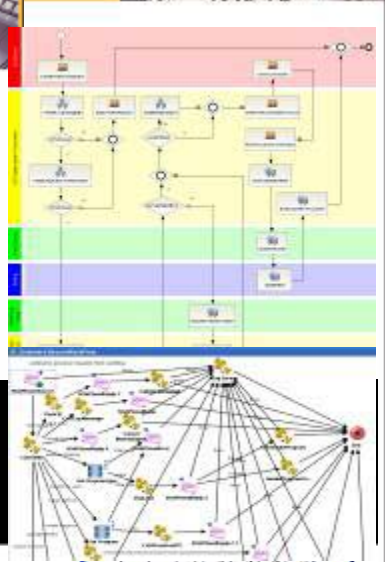
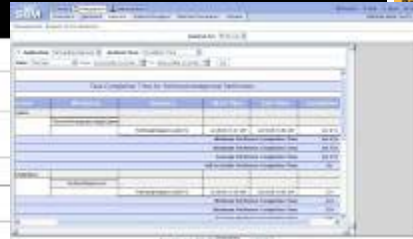

# Architecture







## Inquiry



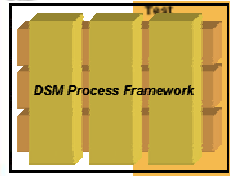
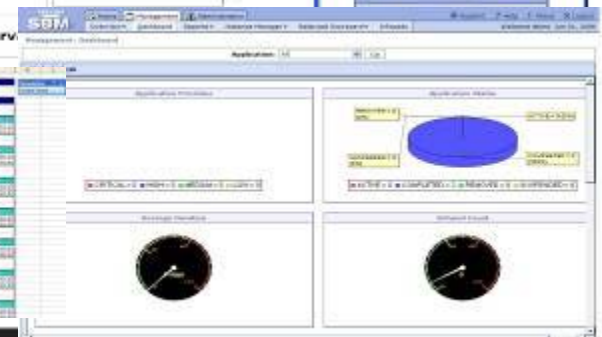
# DRBizNet

Program
Program type
Start time*
End time*
Market close time*
Number of bid (= price) slots in this interval

15: PG&E E-DRP	
DemandBid	

6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Time: 11:00 AM



## DSM Process Framework

**UISOL**

# DRBizNet Benefits in Utilities' Words...



- Manual processes for notifications have too many “off-ramp” failure loops to ensure high reliability
- Automation of DR program notifications can be accomplished using DRBizNet.
- DRBizNet enhances ISO – IOU - customer communications when load drop is requested – faster notifications enhance demand response
- Intelligent agents enable more DR
- Easier DR program Implementation
  - Increased efficiency in DR management
  - More reliable DR
  - Enables implementation flexibility (by load, zone, service area, etc.)



# DRBizNet Benefits in Utilities' Words... (cont.)



- Advantages of DRBizNet approach:
  - Targeted response
  - Automated process
  - Timely invocation
- Workflow engine coordinates tasks for both manual and automated tasks.
- Workflow engine enters status for automated tasks.
- Users enter status updates for only manual tasks.
- Task reports are an inherent component of the workflow engine.
- Process changes are easy to implement using a graphical user interface.

# DRBizNet Field Simulation R&D Results



- Participants grasped the innovations introduced in the DRBizNet project through hands-on experience.
- Successfully demonstrated the feasibility of applying the DRBizNet reference architecture to:
  - simplify DR processes for all stakeholders
  - simplify DR infrastructure development and maintenance
  - securely communicate with potentially many DR resources
- Field Simulation project sparked interest among the participating DR stakeholders. Some of them are now asking for DRBizNet-like enabling technology from the DR vendor community.
- At least one of the California utilities has already started implementing a DR business process management capability based on the concepts that were introduced and successfully demonstrated in the DRBizNet project.
- A number of vendors have expressed interest in commercialization of DRBizNet enabling technology.

# DRBizNet Commercialization



- Sempra, CIEE, and CEC have been encouraging UISOL to commercialize DRBizNet.
- UISOL started actively marketing DRBizNet implementations in California over a year ago.
- To accelerate commercialization, UISOL has had conversations with a number of potential commercialization partners, including SAIC.
- UISOL and SAIC are currently working through details of teaming/commercialization model for DRBizNet
- Critical to commercialization of DRBizNet is a committed first customer. Sempra is stepping up to the plate.