

# UC Berkeley

## Energy Use in Buildings Enabling Technologies

### Title

DRBizNet: Demand Response Business Network

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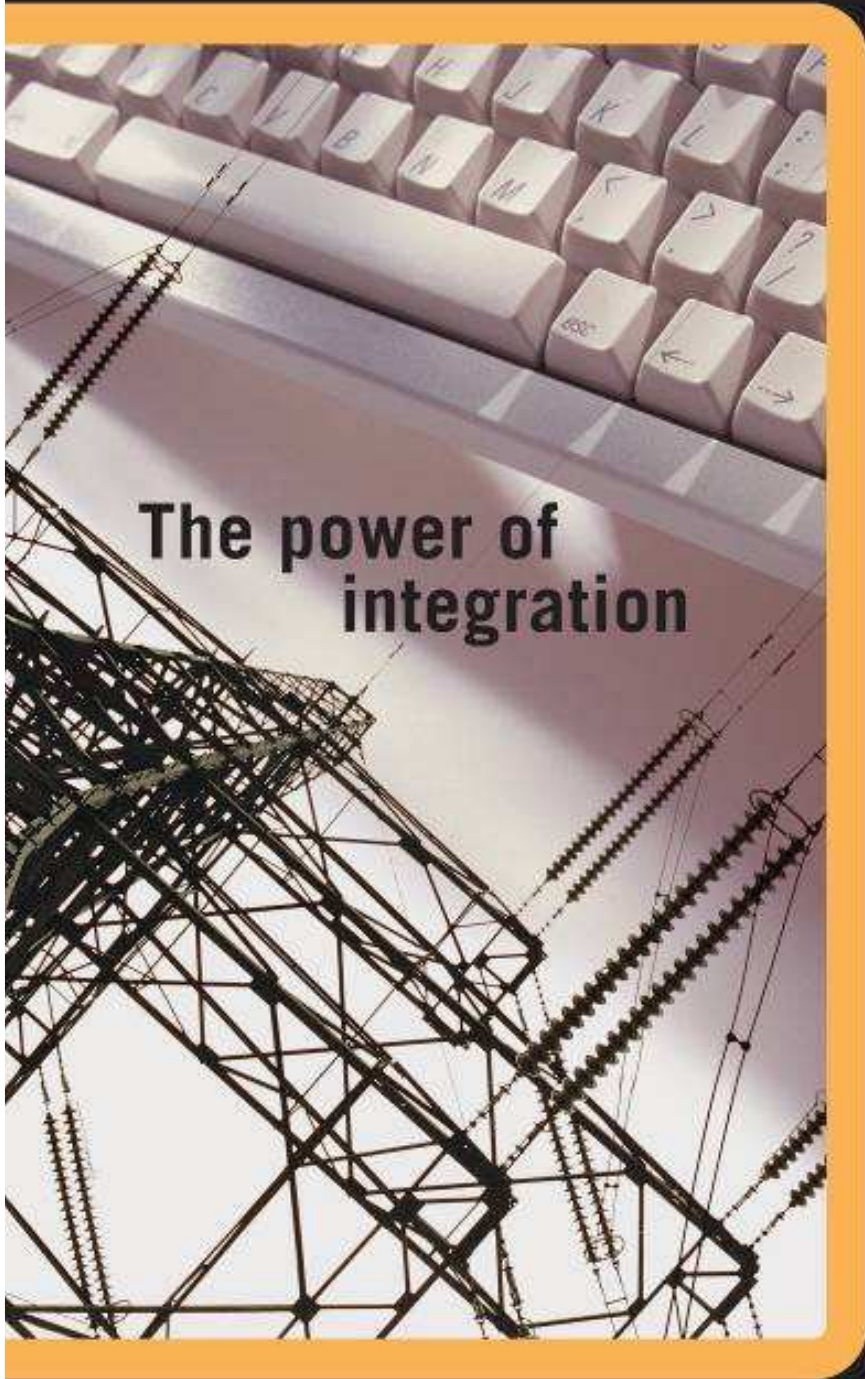
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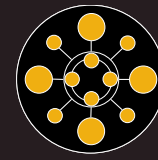
2008



The power of  
integration

**UISOL**

*Utility Integration Solutions, Inc.*



**DRBizNet**

Demand Response Business Network

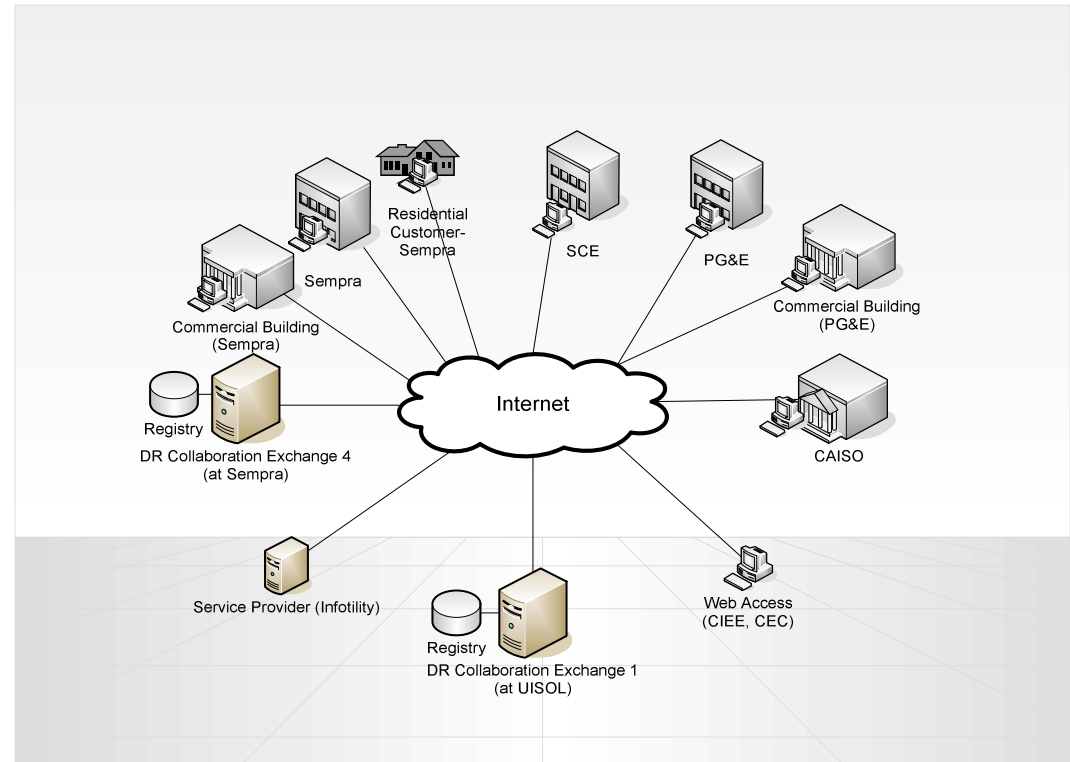
Ali Vojdani, Ph.D.  
CEO, UISOL

September 2008

# History: DRBizNet Field Simulation

Demonstrated DRBizNet efficiently executing 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
- Intelligent Agents automatically receive and respond to DR signals



# DRBizNet Commercialization

- UISOL started commercializing DRBizNet in 2007
- UISOL is partnered with two major Silicon Valley software companies, Savvion & TIBCO
- UISOL landed the first DRBizNet customer (PJM) in 2008
- UISOL has opened a new solution development center in Silicon Valley dedicated to DRBizNet



UISOL Solution Center  
4699 Old Ironsides Dr., Suite 270  
Santa Clara, CA 95054



# DRBizNet at PJM



- **Functionality**
  - Registration
  - Notification
  - Meter Data Management
  - Measurement & Validation including Customer Base Line (CBL) calculation
  - Settlements
  - Reporting
  - Administrative module
  - User portal
  - Interfaces with PJM Systems
- **Scheduled for production in summer of 2009**



PJM Interconnection coordinates the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. This service area has a population of about 51 million and a peak demand of 144,644 megawatts.

*Source of statistics and map: PJM.com*

# Key Challenges

Source: Presentation of Pete Langbein of PJM at UIC2008



- Work Queue – Transparency & Execution
  - Who, what, when, where & how
    - Email notification overload
    - Inefficient navigation (email notification to task)
    - Lack of information to screen/prioritize tasks
    - All tasks done on a transactional basis
  - Flexibility
    - Difficult to implement new business rules & wholesale market opportunities
  - Aggregation
    - Cumbersome process to administer aggregation of small resources
- System-to-System Integration
  - Energy, capacity & ancillary markets, unit dispatch system, settlements and a variety of other systems (performance compliance, notification for operations)

# Key Automation Features

Source: Presentation of Pete Langbein of PJM at UIC2008



- Registration
  - Automate ancillary service qualification
  - Enable batch approval process
    - Expose key information
  - Minimize denials – allow field level edits with final approval
- Notification
  - Consolidate resource notification across multiple systems & technologies
    - Energy (day ahead, self schedule, ISO dispatch)
    - Capacity – emergency notifications
    - Ancillary Services – synchronized reserves
  - Migrate from email to web service

# Key Automation Features (con't)

Source: Presentation of Pete Langbein of PJM at UIC2008



- Validation
  - Meter data check based on CBL method
  - CBL methods assigned to resources & products
  - CBL calculation broken to logical modules
  - Ability to introduce new CBL methods & manage the associated approval process
- Pre-Settlement
  - Enable batch review and approval process
  - Tighter integration with settlement system
    - Improve transparency from DR activity to billing line item
  - Automate adjustment process
    - E.g., meter data issue



# Expected Process Automation Benefits

*Source: Presentation of Pete Langbein of PJM at UIC2008*



- Quicker participation of DR resources in markets
- Improved transparency for all participants
- Reduce time and administrative costs
- Scalability for higher volume of participation (number of participants and number of transaction per participant)
- Simplify the process to provide more opportunity to participate for small resources