Electric Energy T&D MAGAZINE

Volume 7, No. 3 www.electricenergyonline.com May-June 2003 Issue

Customer Information Systems

Billing • Pricing • Settlements

2003 Key Women in Energy Americas

Page 51

For Details on

Metering/Billing/CRM/CIS Americas, see page 22
CIS Conference, see page 46
EEI Annual Convention, see page 60

When it comes to excellent customer service, it's all about connections.

When it comes to metering, billing and CRM/CIS, do you and your customers and suppliers really connect? The energy specialists at KEMA can help make sure you get the most from your IT investments. We'll also make sure that the information you're collecting about your customers is being used to provide them with newer, better, more competitive services.

With 75 years of energy experience and 1,400 specialists covering all sectors of the utility market, KEMA's metering, billing and customer management expertise brings you the greatest possible business value through:

- **Quality assurance for metering communications protocols.** We'll help you select the system with the best ROI and protect you from interoperability risks in the open systems protocols used by your various suppliers.
- **Increased customer service options.** Our customer management services will enable you to leverage customer billing data from your CIS, sophisticated energy engineering models and customer supplied survey data to make more intelligent energy decisions—and leverage the energy savings programs and products offered by your utility.
- **Consulting and technology expertise.** The combination of our demand response consulting and technology expertise will help you fully leverage advanced building automation, metering, and billing technology to enable flexible pricing and energy management programs for your customers.

Find out why utilities around the world select KEMA for their consulting, systems integration, testing, inspection and certification needs—from generation to the customer meter.

KEMA

Experience you can trust

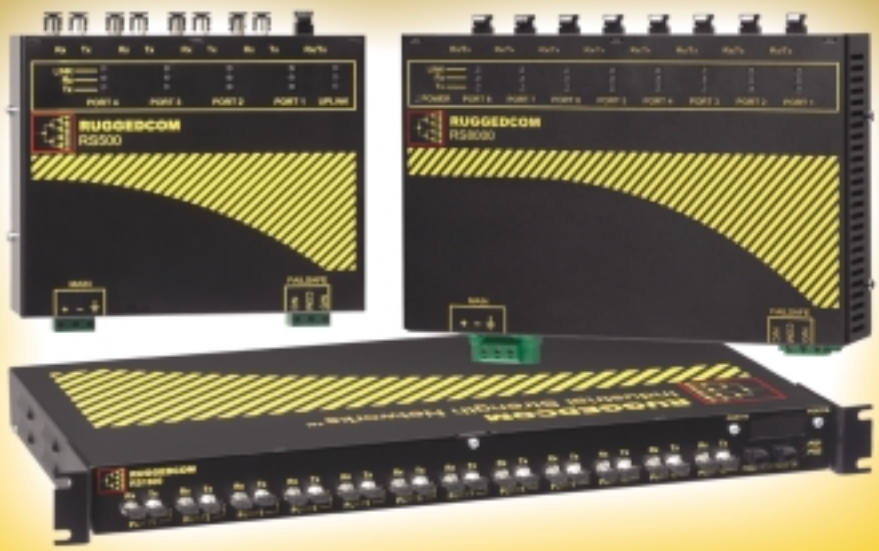
www.kemaconsulting.com • www.xenergy.com

RuggedCom
Industrial Strength Networks

RuggedSwitch™

Family of Substation Hardened Fiber Optical Ethernet Switches

- Meets the new *IEEE P1613* Class 2 "Error Free" networking device qualifications for substations!
- Exceeds the new *IEC 61850-3* standard for communications equipment in substations.
- *Zero - Packet - Loss™* technology under EMI Stress!
- Wide Power Supply Options: 24Vdc, 48Vdc, HI= (88Vdc-300Vdc /85Vac-264Vac)
- Redundant Power Supply Options
- Advanced Layer 2 & 3 Management Functions
- -40 to 85°C with NO FANS!
- 5-Year Warranty



SUBSTATION HARDENED

Circle 22 on Reader Service Card

For more information visit our web site... www.ruggedcom.com
TOLL FREE: (888)-264-0006 TEL: (905)-760-7799

Publisher
Jaguar Inc

Editor
Gordon McCormick: gordon@jaguarpublications.com

Contributing Editor
Francis Bradley: bradley@canelect.ca

Publication Manager
Steven Desrochers: steven@jaguarpublications.com

Account Executive
Joanna Mayoff: joanne@jaguarpublications.com

Production Assistant
Danielle Bernier: danielle@jaguarpublications.com

Art Designer
Linda Fleury: info@jaguarpublications.com

(MIS) Management Information System
Frederic Allard: fred@jaguarpublications.com

Electric Energy Magazine is published 6 times a year by: Jaguar Publishing Inc.
8040 St. Hubert Street
Montreal, Quebec Canada H2R 2P3
Tel.: (888) 332-3749 • Fax: (888) 243-4562

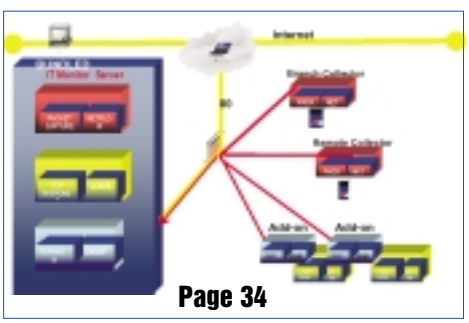
E-mail: info@jaguarpublications.com
Web: www.electricenergyonline.com

Electric Energy T&D Magazine serves the fields of electric utilities, investor owned, rural and other electric cooperatives, municipal electric utilities, independent power producers, electric contractors, wholesalers and distributors of electric utility equipment, manufacturers, major power consuming industries, consulting engineers, state and federal regulatory agencies and commissions, industry associations,communication companies, oil & gas companies, universities and libraries.

Post Publication mail agreement # 1898116
Customer # 0189924499

Electric ENERGY T&D MAGAZINE

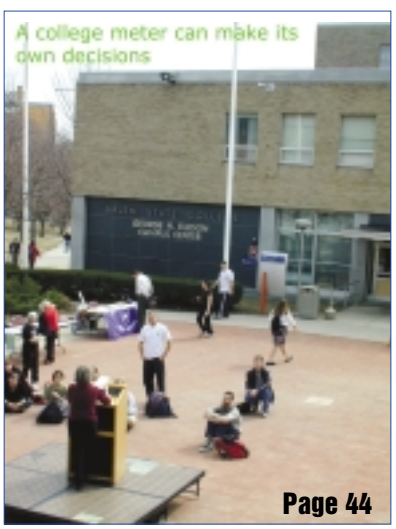
In this Issue



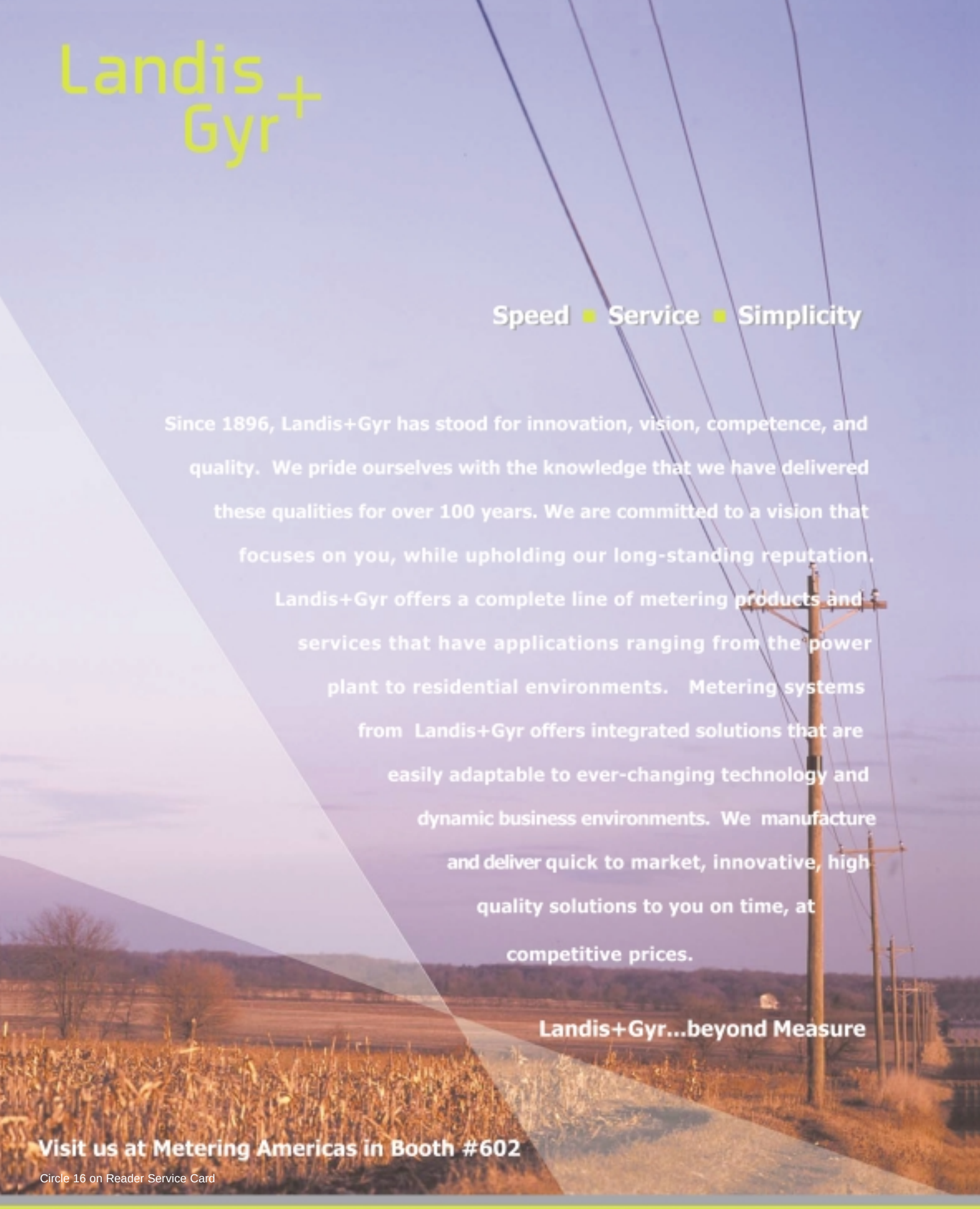
Page 34

Cover Photo:

Lodestar Corporation



Page 44


Landis+Gyr
Speed ■ Service ■ Simplicity
Since 1896, Landis+Gyr has stood for innovation, vision, competence, and quality. We pride ourselves with the knowledge that we have delivered these qualities for over 100 years. We are committed to a vision that focuses on you, while upholding our long-standing reputation. Landis+Gyr offers a complete line of metering products and services that have applications ranging from the power plant to residential environments. Metering systems from Landis+Gyr offers integrated solutions that are easily adaptable to ever-changing technology and dynamic business environments. We manufacture and deliver quick to market, innovative, high quality solutions to you on time, at competitive prices.
Landis+Gyr...beyond Measure
Visit us at Metering Americas in Booth #602
Circle 16 on Reader Service Card
Landis+Gyr | 2800 Duncan Road | Lafayette, In 47904 | 765.742.1001 | www.landisgyr.us

North American Electricity:
Enhancing Opportunities

By: Francis Bradley, Vice-President, Canadian Electricity Association, bradley@canelect.ca

Each year, the Canadian Electricity Association brings together industry executives and policy specialists to review the state of the North American Electricity market and develop policy proposals aimed at improving market functioning, reliability and security. While this year's forum has been delayed due to international events, CEA nonetheless released the policy paper it prepared for the annual Washington Forum.

The North American electricity industry – traditionally perceived as a model of stability in both Canada and the United States - is in a state of significant uncertainty. There are three fundamental causes for the current situation: lack of clarity around market rules, environmental challenges, and the very poor investment climate.

The CEA North American electricity policy paper takes these three causes for uncertainty as context and justification for its principle thesis. That thesis, stated simply, is that the evolving North American market is increasingly a regionally-integrated one, and that continued and growing regional integration will reduce uncertainty. While increased regional integration alone cannot solve all the problems that currently plague the industry, it can contribute to greater efficiency, increased reliability, more predictable regulation and policy, lower costs and greater environmental benefits overall, thereby increasing investor confidence and reducing uncertainty in the marketplace.

Uncertainty in the Marketplace

The North American electricity industry is in a state of uncertainty unlike anything it has experienced in its over 100 years of existence.

With respect to lack of clarity around market rules, the model of state-owned or sanctioned integrated monopolies, while still the standard in a number of jurisdictions, is undergoing a change at the hands of state/provincial and federal governments and regulators. New sub-sectors – independent generation, merchant transmission, and power marketing entities – are emerging at a growing rate. This change in the make-up of the industry has required changes in the manner in which regulators treat the industry. In fact, at times, regulators have helped to facilitate the evolution of the marketplace through various measures.

Recent regulatory activity, however, has contributed to uncertainty for the industry. The U.S. Federal Energy Regulatory Commission ("FERC") issued a notice of proposed rulemaking last year to establish standard market design rules; at present, it is unclear when the final rules will be issued. FERC is also taking steps to encourage regional transmission organization ("RTO") development and participation, but the scale and scope of such RTOs remains undetermined. The transition to competitive markets has been uneven with higher cost jurisdictions moving earlier and further. And while competition at the wholesale level has been most widely embraced, several provincial and state decision-makers have expressed concern regarding the implementation of competition in retail electricity markets. In fact, a few have taken steps to either slow or stop the movement to competitive markets in their respective jurisdictions.

At the same time, electric utilities are feeling the pressure of environmental challenges unlike anything to date. In Canada, this is especially the case as a result of the Government of Canada's ratification of the Kyoto Protocol. That decision leaves Canada obliged to reduce greenhouse gas ("GHG") emissions by six percent from 1990 levels for the period 2008-2012; the Canadian electricity industry will face an onerous task to help meet that goal. In the United States, while the Bush Administration has chosen to pursue a voluntary approach that focuses on improving the carbon intensity of industrial processes, rather than Kyoto, several U.S. States have enacted legislation to control GHG emissions. Above and beyond GHG emissions, companies on both sides of the border anticipate increased reduction requirements for other air emissions, including nitrous oxides (NOx), sulphur oxides (SOx), mercury, and particulate matter.

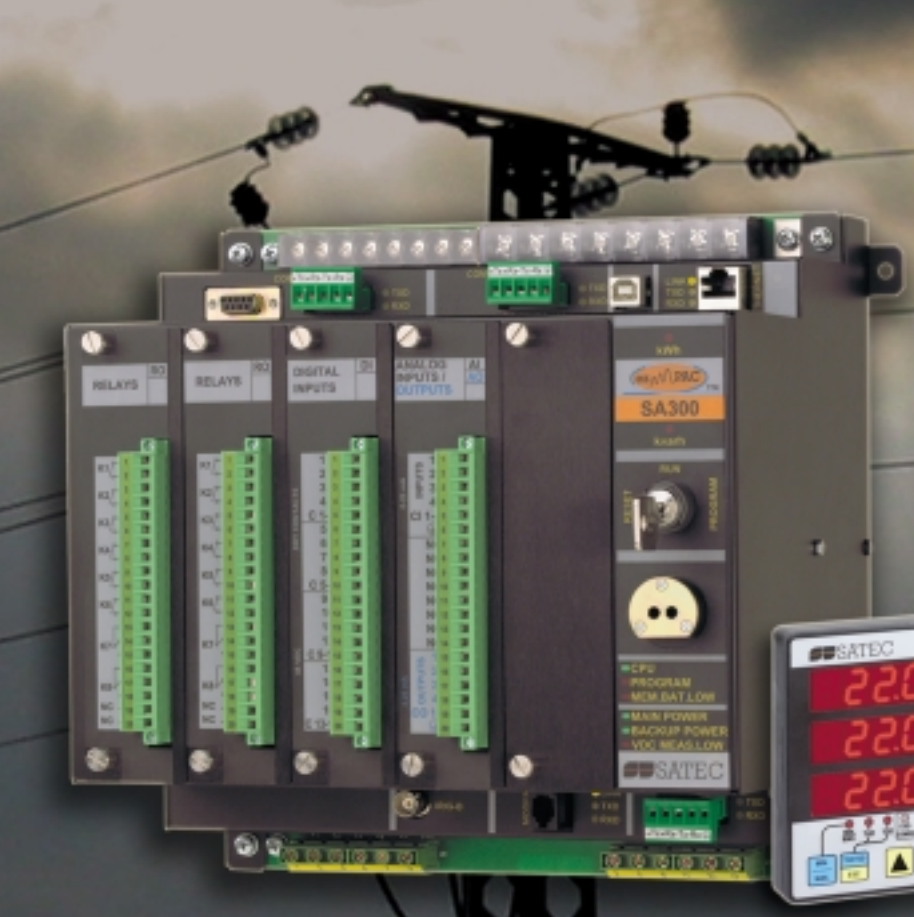
Apart from air emissions, pressures to "green" generation portfolios are increasingly evident through proposals for renewable portfolio standards and restrictions on the building of new conventional generation projects. Moreover, and not to be underestimated, obligations with respect to the protection of species and habitat – fish, birds, and other wildlife – are more and more onerous.

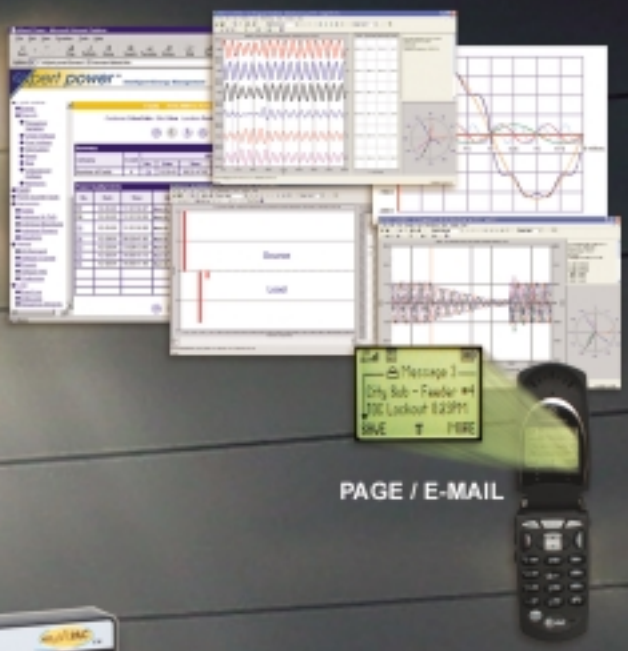
Lack of clarity around market rules and environmental concerns are compounding the third cause for market uncertainty: a very poor investment climate. Investors have been wary of investing in an industry affected by the Enron debacle, the Telecom market deflation, and the continued fallout from September 11th. This lack of investor confidence is a serious challenge to the construction of needed generation and transmission projects and could affect meeting the future needs of customers.

These regulatory, environmental and investment issues are all cause for concern. They are also evident across the North American marketplace. Equally evident across the market is an emerging opportunity that, CEA is convinced, can make a material contribution to moving past such environmental and investment concerns: the potential for efficiency gains from well functioning regional markets. The North American electricity market is increasingly characterized by regionally integrated sub-markets, and continued growth in scale and scope of regional integration is part and parcel of a strategy to move towards greater efficiency. Enhancing existing cross-border cooperation will help deliver continued economic and environmental benefits to the various regional electricity markets in place today, benefiting investors in the industry, the environment, and ultimately consumers across the continent.

ezPAC™

Power Intelligence Unit





PAGE / E-MAIL

Why Replace?
-Add to Automate!

Fault Currents to 20X, Motor Start Curves, Inrush, ColdLoad PickUp

The "Add-On" Automation Solution That "Does It All"

- Relay Target Information
- Revenue Metering
- Power Quality Monitoring to IEEE 1159
- Fault Magnitude and Duration
- Oscillography / Waveform Capture
- Harmonics, Directional Harmonics (Load / Source)
- Station Battery Monitoring
- Logging and Load Profile
- Sequence Of Events to 1 Millisecond
- Event Counters
- Outage Reporting and Power Statistics
- Smart I/O
- Logic and Control
- 64Meg Expandable Memory / Fast UpLoad
- Local and Remote Display
- Dial-Out Reporting / Paging
- Direct e-mail and Internet Data
- Predictive Maintenance
- Web Access System Information via eXpertPower™ Service

SATEC

Powerful Solutions

SATEC Inc. One Springfield Ave., Summit, NJ 07901
Tel: (908) 608-0500 Fax: (908) 608-0535 E-mail: sales@oksatec.com www.oksatec.com

The Integrated U.S./Canadian Electricity Market

A remarkable bi-lateral trading system has evolved between Canada and the United States over the last half century. What began with small tie-lines and the development of boundary waters for hydroelectricity, has evolved into extensive cooperative arrangements for managing transmission system reliability, major inter-ties across the Canada-U.S. border coast-to-coast, and growing exports and imports.

The diversity of our systems -- the different balances of the various conventional and emerging technologies in our regional generation mixes and the differing market demands region by region over days, weeks, and seasons -- has prompted a level of trade that benefits electricity consumers across the continent. When linked across the national border, our diverse systems have created opportunities for efficiencies in regional systems management, reduced environmental impact, and improved reliability; these are vital achievements for all involved.

Details of the Integrated Market

Cross-border trade enables market participants to take advantage of diversity between the Canadian and U.S. electricity systems. The diversity and complementary nature of our systems is first demonstrated by the different balances of the various conventional and emerging technologies in our generation mixes. These differences primarily reflect availability of resources, as different geographic regions have access to different fuels.

Electricity is now a key and growing part of the larger energy trade picture between the two countries, and it is increasingly two-way. Electricity trade between Canada and the United States stems primarily from two sources. First, generators in Canada are key suppliers to particular U.S. markets. In addition, generators in both countries take advantage of the trading relationship to optimize the performance of their respective asset portfolios, which contributes to lower electricity costs and higher overall system efficiency and reliability.

The quantity of electricity exported from Canada has typically been 7-9 percent of production. Electricity export shares have varied substantially by province, from as low as 1-2 percent to as high as 30 percent. Overall, Canadian exports have remained relatively stable over the past four to five years. However, electricity imports to Canada have increased significantly over the last several years. The result has been a continuously growing trade and investment relationship in power coast to coast, to the advantage of consumers across the continent.

Robust competitive wholesale markets in both the U.S. and Canada rely on integrated U.S./Canadian markets. As markets continue to open, the importance of cross-border trade will only increase. Restructuring of the electricity industry remains an ongoing process in both Canada and the U.S. As with states in the U.S., some provinces in Canada are pursuing a restructuring agenda at a different pace compared to others. At present, approximately 50 percent of Canadian retail customers are in completely open markets (although the Ontario government has capped retail electricity prices to low volume customers until 2006).

The Economic and Environmental Benefits of an Integrated Market

Cross-border electricity trade provides the opportunity to optimize the use of generating resources to the benefit of U.S. and Canadian market participants. For example, when linked across borders, the diversity of our systems, our climates, and our demand profiles allow for efficient power flows north or south at various times depending on market circumstances. The resulting regional market efficiency gain reduces the need for generating facilities and results in lower overall generation costs to consumers. Moreover, electricity companies can derive environmental benefits through such efficiencies -- for instance, coordinating on exchanges between "must-run" fossil-fuel fired generation facilities and hydroelectric facilities. This involves a generator selling off-peak power to a hydro generator, allowing the latter to "bank" energy (in the form of stored water) in its reservoirs. During periods of high demand, the hydro generator releases enough water to meet its own needs and to assist in meeting the peak demand of its partner in this diversity change, thereby avoiding both emissions and higher costs from fossil peaking units. Such opportunities exist in each of the regional markets across the continent — western, central, and eastern.

Efficiencies in regional systems management can also be achieved through participation in or coordination with regional transmission organizations (RTOs). RTOs present an opportunity for the effective utilization of existing transmission infrastructure. Canadian utilities are actively exploring participation in RTOs as an approach for optimizing the management of their respective transmission systems.

DEPEND ON SCHLUMBERGER FOR THE MEASURE OF POWER

Schlumberger Electricity has been developing energy management technologies for over 100 years—we understand your needs to operate profitably and efficiently.

Our CENTRON*, SENTINEL* and QUANTUM* Q1000 meters provide intelligent metering solutions to help you meet the challenges of the future. Our software solutions, PC-PRO+* 98, EnergyAudit* and RouteMAPS* provide a powerful set of tools to explore the essentials of meter management and data management.

To find out more about what we can do for your business, contact your local Schlumberger representative.

www.goslb.com or 1-864-638-8300 * Mark of Schlumberger

Our metering solutions provide accurate, reliable data to help you conduct your business with flexibility, functionality, and cost efficiency.

Schlumberger

Circle 24 on Reader Service Card

Imports and exports balance system usage and provide reliability at the various transfer points along the U.S./Canada border. Canadian electricity plays an important role in serving peak demand in a number of U.S. regional markets along the border, and even helps to secure reliable service as far south as southern California. In addition to this short-term reliability assistance, two-way trade can help to secure adequate electricity supply in the United States in the future. Increases in transmission capacity across the border are essential for an increase in electricity flow between markets in the United States and Canada. Provided that the barriers and disincentives to transmission investment are removed, and the transmission grid is operated in a manner that accommodates international exchanges, reliability in electricity supply will increase as a result of this integration of markets.

Moreover, the integration of U.S./Canadian electricity markets will allow for the coordination of approaches to more effectively achieve reductions in the environmental impact of electricity facilities. No one technology is universally applicable across a national marketplace -- fuel availability, geography, and a host of other factors help determine the generation mix. The objectives of reliable, affordable, environmentally preferable power require that all technologies be available. In fact, increased integration enables the larger, combined U.S. and Canadian regional electricity markets to take full advantage of various emerging technologies -- like wind power, whose intermittent nature requires backup capacity, to meet our future energy needs on a larger scale.

Finally, the integrated market enables Canadian and U.S. participants to effectively work together to safeguard the North American electric grid against physical and cyber threats. By working through the North American Electric Reliability Council, Canadian and U.S. utilities and other market participants are able to coordinate responsibilities to ensure effective critical infrastructure protection of the electric power sector.

Prescriptions

CEA offers recommendations for measures to help solidify market integration. In particular, CEA calls for the following:

(1) Increased participation in Regional Transmission Organizations (RTOs), and increased focus on harmonizing market rules

(2) Development of a North American strategy to manage GHG emissions from electricity generation

(3) Identification of opportunities to further harmonize management of other air emissions

(4) Creation of a consistent methodology for measuring environmental performance

(5) Enhancement of cross-border transmission transfer capability

(6) Coordination of critical infrastructure protection

(7) Support for a self-governing international organization for developing and enforcing mandatory reliability standards for the evolving electricity industry

CEA believes that enhancing existing cross-border cooperation in the above areas will help deliver continued economic and environmental benefits to the various regional electricity markets in place today, benefiting investors in the industry, the environment, and ultimately consumers across the continent. Maximizing the opportunities offered by our integrated markets must be part of the strategy to help secure a healthy electricity industry for the future.

The North American electricity industry, faced with a changing industry and evolving market rules, important environmental challenges, and a distressed investment climate, is experiencing a crisis of confidence. Nevertheless, the North American electricity system is among the most reliable in the world and electricity consumers generally have access to energy at reasonable prices. The integration of the North American electricity market offers both U.S. and Canadian market participants opportunities to enhance cross-border trade, increase system and market efficiencies, and improve environmental performance. By enhancing this integrated market, participants will help to lessen the uncertainty in the present market and secure a healthy future for the North American electricity industry.

If success is to be realized and the electricity industry is to play its full and vital role in powering the North American economy in the 21st century, the following must occur:

✓ Policy makers must embrace the vision of large, non-discriminatory, bi-national regional markets;

✓ Regulators must coordinate and collaborate in setting clear and certain rules respectful of and accommodating jurisdictional realities;

✓ Investors must see reasonable rates of return.

Regionally integrated markets are a reality in the Canada-US electricity relationship. Recognizing these natural markets, and identifying opportunities to build on them, offers significant promise for future growth, for improved environmental performance, and for the continuing reliable supply of electricity to consumers across North America. ■

STRATOS®

BEYOND

BEYOND THE HORIZON™

Stratos is a mobile and fixed remote satellite communications company providing a wide range of remote communications solutions to:

- Electric and water utilities
- Liquid and Natural Gas Pipelines
- Environmental and security monitoring
- Emergency backup and support

You can rely on us to deliver:

- Nearly 20 years experience in serving your market
- Highly-reliable, cost effective SCADA VSAT solutions
- Services ranging from Narrowband to Broadband
- Better value for money than terrestrial solutions
- Rapidly deployed plug and play equipment
- Ruggedised all weather Nema enclosure
- Complete 24/7 pro-active network monitoring by site

No matter how remote your operations may be.

To find out how you can get more out of your communications needs, please get in touch with us at:

Stratos VSAT, Inc.
58 Inverness Drive East
Englewood, CO 80112
Phone: 1 800 424 9757
Email: david.christenson@stratosglobal.com
Web: www.stratosglobal.com

The Electric Power Board of Chattanooga: Increasing the Power of Information

The Electric Power Board of Chattanooga (EPB), one of the country's largest municipal electric utilities, provides electricity to over 160,000-metered accounts (a service area that spreads over 600 square miles in and around Chattanooga, Tennessee). Over the last two decades, the utility has continuously utilized its people and resources to develop systems that address both customer and operational needs. At the core of this effort has been the re-development of EPB's CIS (Customer Information System) and DCIS (Distribution Construction Information System).

Both the CIS and DCIS (The DCIS is used for work order processing, job estimating, and tracking.) were originally developed in-house over 20 years ago. Although both systems were still functioning post-Y2K, EPB's management team decided it was time to upgrade their CIS. "We just felt that our legacy CIS did not have the capacity to meet our future needs," commented Preston Suggs, EPB's Chief Financial Officer. "Making programmatic changes to the system was becoming difficult and we couldn't access information as quickly as we would have liked." Suggs also added that while there is not currently a predictable start date for deregulation in Tennessee, EPB wanted to position itself in such a way that would enable the organization to successfully meet any of the challenges deregulation could possibly yield. They realized there was an even greater need for system flexibility and, faster, easier access to vital customer and financial data.

During the CIS vendor selection process, one critical component EPB required was that the CIS had the ability to integrate with their DCIS. "We continue to be very dependent on our DCIS on a daily basis. It interfaces with our General Ledger, Fixed Assets, Inventory and Stores. The new CIS software provider had to commit to interfacing with the DCIS," Suggs continues. Systems & Software (S&S) was able to satisfy this requirement.

In addition, the system provided EPB with a hardware platform that is highly scalable, as well as modules in the following areas: Work Management, Asset Management, Financial Management and CIS. S&S served as the overall Project Manager in the installation process responsible for the data conversion, the design of all third-party interfaces, and application-specific training.

An Abundance of Benefits

With the new CIS, related applications, and interfaces in place, the benefits of the investment were quickly realized. Most apparent was the quick access, availability and usability of utility information.

Prior to partnering with S&S, EPB employees did not have the ability to generate ad hoc reports, and they often had to wait for days to obtain important financial and customer information. After this partnership was formed, users were provided with a number of standard core package reports as well as with the ability to generate ad hoc reports through Cognos Impromptu & PowerPlay reporting tools. "By taking maximum advantage of these reporting tools, we were able to reduce the time it had taken to prepare monthly financial statements from twelve to six working days. In fact, being able to immediately access and customize reports, has allowed EPB to improve management control and planning throughout the company," said Suggs.

EPB has a clear mission that is upheld by their entire organization: To be the # 1 utility in the nation as compared to the top 10%. In order to achieve this goal, they rely heavily on their Customer Service Representatives (CSRs) to deliver superior levels of customer service. With the implementation of the new system, CSRs now have improved, accurate, data availability for use in fielding inquiries from customers. EPB not only talks about achieving high levels of customer satisfaction, they have taken the appropriate actions, resulting in tangible customer-focused results.

Lessons Learned Along the Path

From inception to complete implementation, this project ran nearly two years in duration.

This process yielded some invaluable lessons:

1. Review your business processes prior to implementing: EPB worked closely with S&S to rethink and re-engineer many of their business processes. During the process of designing and implementing a new system, utilities should ask, "why do we do it this way?" In addition, having an outside party involved to help ask these difficult questions can be the difference between the success and failure of a process improvement.
2. Be clear as to what your utility requires from their CIS solution: According to Preston Suggs, the RFP proposal responses EPB received yielded quite a spectrum of capabilities, from the "monetary bargain" to the "best-of-the-best" which contained every "bell and whistle" one could imagine. EPB however, did not want to be at either of these ends of the spectrum. They were looking for a vendor who had success in delivering a fully integrated, functionally rich solution.
3. The conversion process is never seamless: While EPB's data conversion went very smoothly, one should expect problems when converting hundreds of thousands of customer records and plan accordingly. If the process is seamless, then something was overlooked.

EPB is one utility that has made an organizational decision to be fully prepared for whatever lies ahead in the industry; the implementation of their new CIS in conjunction with their DCIS is just one way EPB will maintain their market position, no matter what tomorrow brings. ●

For more information, please contact
Kate Thornton at 802.655.4400 or
Kate.Thornton@ssiutilitysuite.com.
Circle **185** on Reader Service Card

LookOut: The Electronic MapBook Implemented by Sam Houston Electric Cooperative

ST. PAUL – MiniMax Corporation announced today that Sam Houston Electric Cooperative has successfully implemented MiniMax's new digital map viewing tool, LookOut: The Electronic MapBook Sam Houston uses 70 seats of LookOut to view maps, vehicle locations, customer data and facility information in both the field and the office. One of the largest cooperatives in Texas, Sam Houston Electric Cooperative serves nearly 50,000 members.

Sam Houston Electric Cooperative uses MiniMax's StakeOut work order automation system and was able to see LookOut just prior to its release. Sam Houston Electric was so impressed that they decided to purchase LookOut as soon as it became available. Jared Wennermark, Sam Houston's Chief Technology Officer, said, "LookOut outperformed the viewer that we had been trying to implement for months. We were impressed by its speed. You can zoom or pan in LookOut without sitting around and waiting around for it to render. We also like the ease of configuration because we use custom scripts to display different symbology and to access several different databases. Finally, we were very impressed with LookOut's quick implementation. It was completely deployed in less than two months."

We started it.

We'll read you the next chapter.

In 1980, Datamatic's groundbreaking idea gave birth to the Electronic Meter Reading Industry.

In 2003, that same innovative spirit elevated the proven FIREFLY Automatic Meter Reading technology into new realms of power, flexibility and value.

Bold, new functionality built onto bullet-proof reliability.

Your bottom line is the bottom line. Let Datamatic's unmatched experience and industry savvy provide you the tools to protect it.

Datamatic is a leading a provider of comprehensive meter reading solutions:

- *FIREFLY AMR for Electric, Gas and Water Meters*
- *RouteSTAR MVP Enterprise Route Management Software*
- *ROADRUNNER Field Computers*

Datamatic

Energy Systems Division
3600 K Ave Plano, Texas 75074
800/880-2878 | www.datamatic.com

Circle 5 on Reader Service Card

Sam Houston's stakers, linemen and meter readers use LookOut in the field on tablet PCs to view data from Sam Houston's GIS and Customer Information databases saving time as they move between customer locations. Stakers can also use LookOut to import basemaps on which they base their electric facility designs. ●
Circle **186** on Reader Service Card

LogicaCMG Announces UtiliCalcPlus™, a New Solution to Improve Utilities' Complex Contract Billing Process

UtiliCalcPlus enables utilities to provide accurate, reliable and consistent billing for its Commercial, Industrial and Wholesale customers. UtiliCalcPlus is in operation at American Electric Power (AEP). Presently the system produces bills in eleven AEP jurisdictions from Michigan to Texas.

THE ISSUE: Special Contract Bills Require Special Attention.

Large electrical customers such as major manufacturers, restaurant chains and large retail outlets typically have special contracts with their electricity suppliers. While the bills generated for these customers may represent only a small fraction of the total bills produced in a given month, they can often constitute a significant percentage of the total billing revenue. As a result, it is critical that these bills be produced accurately and on time every month.

However, these bills are often so complex that they cannot be processed by a utility's mass billing system. Instead, they are produced manually by a few individuals using spreadsheet programs - and in some cases they are produced by only a single employee. If this manual process breaks down due to employee unavailability or mathematical errors, it can have an adverse impact on customer satisfaction and the utility's cash flow.

THE ANSWER: UtiliCalcPlus from LogicaCMG.

UtiliCalcPlus was designed specifically to deal with the issue of creating complex special bills and enabling many people within a utility to generate them. UtiliCalcPlus combines the power and speed of a modern billing system with the flexibility needed to deal with complex bills. It has the look and feel of the spreadsheets people currently use. And it reduces errors and disputed bills by creating an efficient and accurate billing process. ●
Circle **187** on Reader Service Card

PSE&G Selects Metretek Solution for Large-Scale Industrial Meter Reading Program

Melbourne, Fla. – Metretek, Incorporated, a Florida-based subsidiary of Metretek, Technologies, Inc. (OTCBB: MTEK), announced today the receipt of an order from Public Service Electric and Gas (PSE&G) of New Jersey to provide 6,000 Metretek DCM200 intelligent, wireless gateway devices, along with associated software and support services.

The DCM200 employs new technology to provide real-time wireless access to remote field devices over commercially available cellular networks worldwide. The PSE&G implementation will provide wireless Internet connectivity to commercial and industrial electricity meters in support of new tariff service offerings specifically designed for "Large Power and Light on Secondary" (LPLS) accounts. ●
Circle **188** on Reader Service Card

New from Meter Devices Company

Meter-Socket Disconnect Sleeves Isolate MeterE

CANTON, OH — Meter Devices Company has introduced the MD-5 Meter-Socket Disconnect Sleeve to its line of meter accessories.

The new MD-5 sleeves provide utilities a quick, safe and economical means of temporarily isolating the customer meter from electrical service while allowing the meter to stay in place.

Disconnect sleeves, also known as meter boots, are used extensively in rental properties or in areas where it is not advantageous to remove the meter and return it to the meter shop. The MD-5 sleeves are easy to install: remove the meter from the socket; place the MD-5 sleeve over the load-side blades; replace the meter in the socket and reseal.

MD-5 sleeves are manufactured from Kodar®, which is PETG polyester plastic. The material is .007 mils thick ± .001. It is slightly thicker and tougher than some competitive products. The MD-5 is distinguished by two blue stripes down the body of the sleeve.

Meter Devices Company, a member of the Brooks family of companies, serves electric utilities internationally and electrical contractors nationally with metal enclosures, meter warm-up boards and meter/relay test switches and accessories. ●

For more information call Meter Devices Co. toll-free 1 888 367-6383 • www.meter-devices.com. E-mail marketing@meter-devices.com.
Circle **189** on Reader Service Card

Cognyst's Annual SCOTT REPORT Highlights Growing AMR Markets

Pequannock, NJ. April 8, 2003. Cognyst Consulting announces publication of the 7 th edition of The Scott Report: AMR Deployments in North America." Widely regarded as the most accurate and authoritative source of AMR (automatic meter reading) market data, The Scott Report is the result of an exhaustive and comprehensive research effort covering the market for AMR systems and related subsystems, devices, and services in North America. The Scott Report is the only third party report of the AMR industry that is based on the shipping records of the suppliers providing AMR systems. Supplier participation in The Scott Report accounts for over 99% of all market activity.

Highlights from The Scott Report include:

- Total AMR shipments grew by 18.3% from 2001 to 2002 (see chart below)
- 49,311,372 AMR units were installed in North America through January 1, 2003.
- More new units were shipped to electric utilities than to water and gas utilities combined.
- The number of units shipped in North America has grown for the fourth year in a row, from approximately 4.1 million in 1998 to 4.9 million in 1999 to 6.1 million in 2000 to 8.1 million in 2001 to 9.5 million in 2002.
- 75.1% of all AMR units shipped in 2002 were to projects that were initiated in 2001 or earlier.

The Scott Report includes an executive summary, industry overview, and detailed data on AMR shipments, communications infrastructure, and vendor results.

Howard Scott, Managing Partner at Cognyst and Editor of The Scott Report noted: "The results of this year's Scott Report provide more evidence that the marketplace is embracing AMR. With an unprecedented fourth consecutive year of deployment growth, it is clear that vendors are offering solutions that meet the demanding customer service and operational needs of a broad variety of electric, gas and water utilities. For users, vendors, and consultants who need to better understand the use of AMR and its implications on both a micro- and macro-level, The Scott Report will prove to be a valuable tool." ●
Circle **190** on Reader Service Card

The AMR Business Case – Waging the Successful Campaign

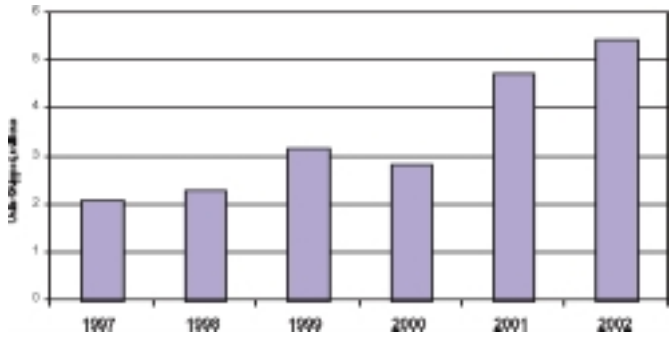
By:

Donald L. Schlenger
Ph.D.

AMR Penetration Increasing

The North American electric utility industry is quickly moving to a point where the debate over whether to deploy AMR will be a thing of the past. As of the end of 2002, there were approximately 25.6 million electric meter AMR units installed. More than one-third of the approximately 3,200 electric utilities (including combination utilities that provide electric service), representing more than three-quarters of all of the approximately 135 million electric meters in North America, have already implemented AMR on some or all of their meters. The rate of deployment continues to grow; shipments in 2002 rose 15% over 2001 (Figure 1).

Figure 1. AMR Shipments to North American Electric Utilities



Copyright the Scott Report: AMR Deployments in North America, 7th Edition

Compelling Reasons for AMR

Response to the promises of advanced meter reading technology has varied widely. Some utilities have saturated their service territories, while others have opted to concentrate on large C&I customers or "surgical" or "strategic" deployments (e.g., all new construction). A significant portion of utilities has implemented multiple AMR systems to meet the needs of different customer segments. Some utilities have only conducted trials (sometimes several trials).

While many utilities have forged ahead with AMR, others have repeatedly evaluated the technology, but their justification keeps falling short. There are certainly legitimate hurdles: it's expensive, standards are lacking, and there has been some instability among vendors, raising fears about obsolescence. Deregulation and disaggregation of metering and billing functions, and the potential stranding of metering system investments, are common fears. Utilities are also concerned about unmet expectations, particularly among newer and more sophisticated technologies. Some utilities are concerned about finding a solution that works for all their customers.

Yet there are compelling reasons for considering AMR. As utilities focus more on the bottom line and reduce staff, AMR can help fill the void. Moreover, it enables the radical process improvements that can leverage staff productivity, enhance customer service, and make the utility more competitive. In the current era of volatile raw fuel and purchased energy prices, AMR is becoming an increasingly important tool in shaping load and reducing uncertainty. Pricing signals to customers and more precise modeling and demand forecasting based on AMR capabilities can help the utility better utilize its existing infrastructure. Utilities that need to focus on customer retention can take advantage of enhanced customer services opportunities that AMR supports.

Some Perspective on the Business Case

Over the last several years, AMR technology has grown more capable and cost effective, with larger installed bases. Utilities with more pressing needs, more critical strategic decisions and more straightforward business cases, as well as "early adopters," have implemented AMR. Meanwhile, as the industry better understands the value of the technology, AMR business cases have become more sophisticated — more benefits are being recognized and

validated. For the utilities that have yet to fully explore AMR, and for those that haven't so far seen an economic "break-through," this sophistication means that the process of building the business case is more problematic. In fact, building a comprehensive AMR business case itself becomes a project, with many new challenges, among them:

- If the business case is insufficiently detailed and comprehensive, it will suffer credibility and not achieve "critical mass." At the same time, however, the investigation can fall into "analysis paralysis" trying to pin down enough details and uncertainties.
- Both the "target" and the "shooter" are moving: the utility's operating and regulatory environment, the technologies and the AMR marketplace are constantly changing, even over the course of the business case study.
- The more complex the benefits, the harder they are to quantify and the more resources required to evaluate them and convince others of their validity.
- The number of dimensions (customer segments, technologies, benefit areas, etc.) and variables in the business case can easily generate an extraordinary number of permutations. Considering them all can be overwhelming.
- Depending on their starting orientation, the same methodology can easily lead the team to a different conclusion. If the investigation is initiated at an operational level in meter reading, for example, the business case is likely to look different than if it stated in customer service, distribution operations, or at the executive level.
- There is no way to arrive at the "correct" or "perfect" answer. Every time the study team looks at a situation, they will see it a different way. This could lead to a situation where the business case is never quite completed.

The right answer is the one that is supportable by consensus, achieves the major business objectives, aligns with the utility's strategies, and generates a return on investment commensurate with the utility's capital requirements and financial hurdles.

Ultimately, the business case is more than a financial analysis or a report. It is a process involving give and take between the project champions and all stakeholders. The AMR project champion may be able to assert that the system will improve distribution system reliability, for example, but how many line crews will the distribution system maintenance managers agree that they can live without as a result of AMR?

The success of the business case also depends upon the project champion, the study team and the executive sponsor. The project champion should possess vision, enthusiasm, political savvy and familiarity with the organization. The executive sponsor ensures that the project manager and his/her team have access to needed resources and information, and that indirect beneficiaries of the system will commit savings (such as reduced field crews) to the business case. The study team should consist of representatives of various departments or functions that would be impacted by the project. Diversity and a cross-section of reporting levels are helpful. Finding good team members can be tricky, since the most talented people are often the least available.

Systematizing Benefits Analysis

Successful business cases for AMR have common characteristics usually associated with the *strategy* and *process* of developing justification and support. Given the challenges, the project's champions need to (1) adopt a systematic approach to looking at benefits and costs, and (2) build a "campaign" within the organization. While this process is not mechanical, it should be systematic.

Canada Mayer Security Seals

A Bright Idea!

Stop theft of services, protect the infrastructure

Security is at the top of everyone's agenda these days. Canada Mayer has generated some bright ideas to help you protect valuable equipment and secure meters. For nearly four decades we've worked closely with electrical utilities to upgrade security seals, helping assure the integrity of the electrical distribution system. And while improving the level of protection, we've also become industry leaders in innovation, quality control, inventory maintenance and customer service.

Canada Mayer

MAXIMUM SECURITY

Tel: (514) 745-4102 Fax: (450) 686-8568 Canada/USA toll free: 1-800-567-5382

www.canadamayer.com sales@canadamayer.com

VISA

ISO 9001

Proof of our continuing quest for excellence

MasterCard

Circle 200 on Reader Service Card

A logical starting place for most utilities is to identify the range of available AMR system characteristics and features, and then categorize the benefits created by those features for the utility. Different AMR systems have a wide range of capabilities, from simple gathering of meter readings on a monthly basis (mobile radio), to short-interval monitoring of power quality and outages.

While some benefits of AMR are straightforward, the realization of others will require the involvement of several systems and departments. The following categorization of benefits is useful in developing the campaign to quantify them and win their acceptance.

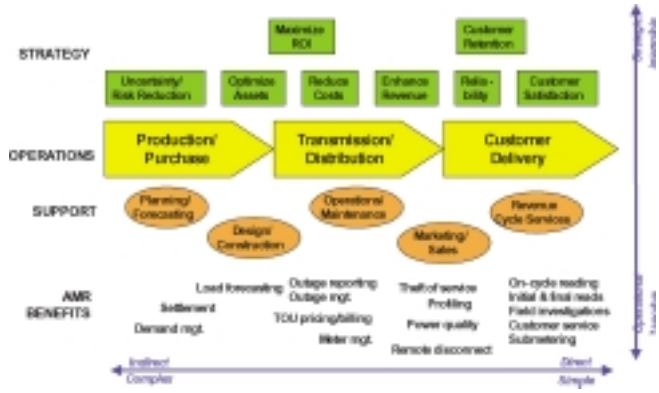
Simple versus complex. Simple benefits involve only one area, function or department. An obvious example is reducing the number of meter readers needed for on-cycle reading. Complex benefits depend on multiple systems or departments. The identification of abnormally high or low consumption, for example, depends on integrating the meter reading data with consumption histories in the customer information system.

Direct versus Indirect. Some benefits are directly related to the capabilities of the system. For example, the ability to create customer load profiles is directly tied to the system's ability to obtain numerous reads per day from the meter. Indirect or secondary benefits rely on some process or chain of events. The utility's call center, for example, may experience a reduction in call volume as a result of eliminating estimated reads. Distribution system operations staff might use missing reads from the AMR system to identify areas of power outage, or detailed circuit related consumption data to balance loads on capacitors and transformers.

Operational versus strategic. Operational benefits pertain more to reductions in operating and maintenance costs or improvements in system reliability. Strategic benefits deal with competitive positioning or long range corporate objectives such as asset optimization or customer retention.

Tangible versus intangible. Tangible benefits can be put in monetary terms; for example, a reduction in staff salaries and overhead. Intangible benefits can't easily be put in monetary terms, although sometimes they can be quantified. Intangible benefits might include improved air quality and traffic congestion from having fewer vehicles on the roads, improved customer satisfaction, or enhanced corporate image. The utility must not undermine its business case by eliminating obvious benefits because they are difficult to quantify.

Figure 2.
AMR Benefits Can be Mapped Against the Utility's Functions and Strategies



Any such categorization will create some gray areas, and it's important to put these in context. Figure 2 maps key functions and strategies in a utility. Often, the more direct benefits are larger, but this is not always the case. For some utilities, the indirect or strategic benefits have clinched the business case. What's important is that the farther away the team reaches from the lower right hand corner to find benefits, the more complex, indirect, strategic and intangible they will be, the more people are involved in quantifying them, and the more people there are to convince.

Steps in the Business Case Campaign

With few exceptions, utilities that have created successful AMR business cases have gone through a process of building support and consensus. The following methodology, extrapolated from the experiences of several projects managers, will help ensure the maximum in expected benefits and a firm handle on the appropriate technologies.

The systematic approach involves the follow steps:

1. Get educated. The team must educate itself concerning the utility's internal drivers and opportunities for savings, as well as its corporate strategy, by identifying and gathering perspectives from all stakeholders in the project. This is often accomplished by interviewing key people. Interviews also help position the project and give team members a sense of the challenges ahead. The team should become familiar with available technologies, what other utilities are doing, and the regulatory and competitive environment in which their organization operates.

2. Craft a vision of the ideal AMR system that addresses the key drivers and supports the corporate strategies. For example, in addition to eliminating estimated reads, it might provide detailed consumption information to help shape customer loads, or monitor outages to help shorten response times. Each of these objectives may depend on several facets of the technology. The vision will be multi-dimensional and complex, involving other systems and functions across the organization.

Point. Shoot. Save.

Laser LocatIR™ helps you accurately associate image with physical target.

High-intensity LCD lets you see hot spots and measure temperature instantly, even outdoors. Also comes with hood (not shown).

Simple, user-friendly controls let you operate camera and store up to 50 JPEG images with the push of a button.

Extremely rugged, lightweight design is as easy to handle as a flashlight.

Meet the world's fastest troubleshooter—the new ThermaCAM™ E2 infrared camera. No other technology helps you find electrical faults faster or easier than infrared. Pinpoint hot spots, measure temperature and store images for quick reporting. And it's affordable enough to equip your entire crew. For more information, call **905-637-5696** or **1-800-613-0507**, or **e-mail ircanada@flir.com.**

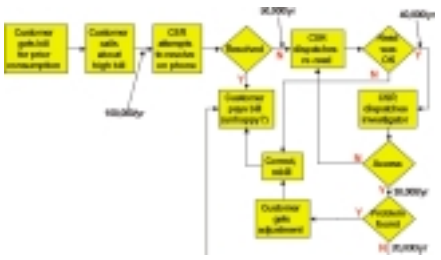
FLIR SYSTEMS

www.flirthermography.com/e28

Circle 9 on Reader Service Card

FIND IT | MEASURE IT | REPORT IT

Figure 3.
Existing high bill complaint responses process



3. Frame the business case for the stakeholders. In a meeting or workshop setting, establish the project premises and a timetable, and get stakeholders' commitment to help the investigation. Develop a collective vision, identifying the potential benefit and cost areas. Review all concerns that have been raised about the project.

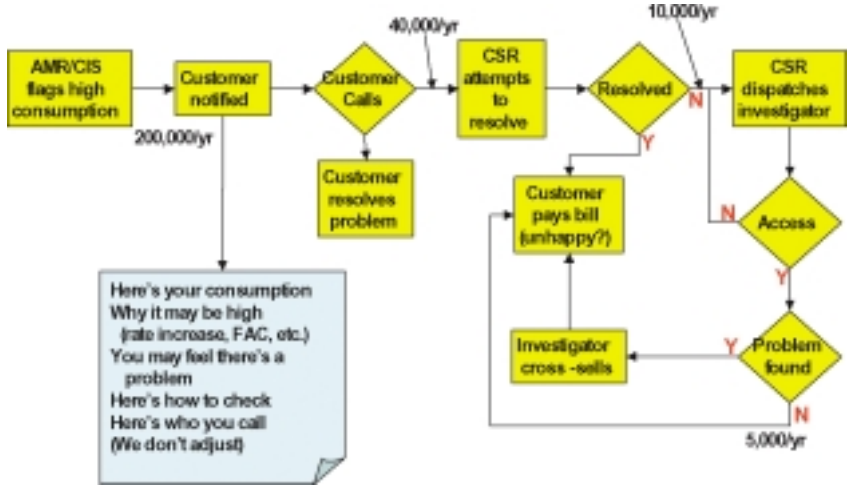
4. In each of the benefit areas, establish quantitative base information. For example, what is the cost of meter reading for different customer segments? What are the customer service productivity measures? What are the current outage response time statistics? What is the estimate for theft of service?

5. At a high level, model the key existing processes in the benefit areas and quantify their throughput rates. A simple process model is shown in Figure 3. People who manage the existing processes should be involved in the modeling exercise.

6. At a high level, redesign the processes incorporating the vision elements established in Step 4. For example, if all bills are based on actual reads, how does this affect the volume of high bill complaints and field investigations? How does the ability to obtain final reads almost instantly affect the speed, customer convenience and level of effort to process account closings? The redesigned process is shown in Figure 4. In this example, customer calls regarding high bills are expected to be reduced by 60%. This can be translated into a reduction in workload. (Note: this redesign exercise is at the "business case" level; actual, detailed redesign would not occur until system installation was well underway.)

   Redesigning customer service processes that involve meter reading is relatively easy. Redesigning operation and maintenance processes in which benefits are more complex and indirect is more difficult. Process redesign is rarely a comfortable exercise; outside facilitation helps. Attempt to quantify the benefits and savings. For some benefits, a range of probability-weighted values will help refine the analysis.

Figure 4. High consumption process redesigned around AMR.



7. Develop strategic implications of AMR-generated benefits. For example, how would short-interval consumption data from an AMR system be to encourage customer retention?

8. Repeat Steps 6 and 7 for various combinations of technological capability and customer segments (Figure 5). For example, the process to create a final bill will be different for a fixed radio AMR system that produces multiple reads per day than for a mobile radio system. Benefits for residential customers will be different than C&I customers.

9. For each key combination, estimate direct AMR system capital, operating and maintenance costs. For complex benefits that rely on other systems (IT integration, new O&M procedures, etc.), estimate the indirect costs (or a range of costs weighted by probability). Assess whether the benefits are well-established or largely conceptual. Assemble the benefits and cost elements into an economic and financial model.

10. Identify and prioritize barriers, constraints, internal objections and risk factors. Develop strategies mitigating the risk factors.

As this process unfolds, more savings will be "contributed to the pot." Figure 6 is a composite of the contribution in several different areas for some representative electric utilities. The composite total is about $30/customer/year.

Figure 5.
Evaluate benefits and costs for key combinations of technology and customer segments.

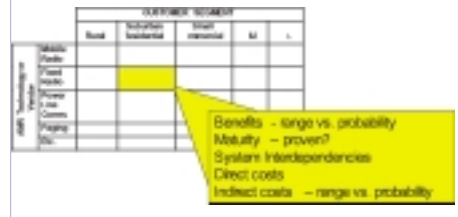
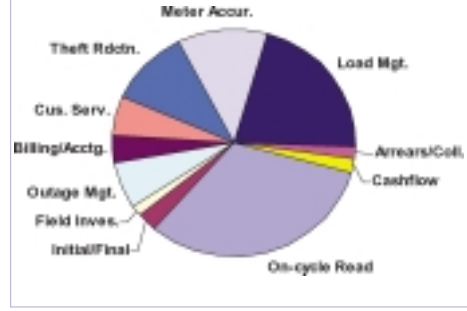


Figure 6.
Contribution to annual savings from AMR



Conclusion

Building the business case is similar to waging a political campaign. It requires leadership, creativity, salesmanship, patience and compromise to overcome the challenges and resistance. A systematic approach to classifying benefits, and a process of stakeholder involvement to secure the savings commitments associated with them, will increase chances for success. ■

Editor's Note:

Don Schlenger is a Managing Partner with Cognyst Consulting, LLC, and can be reached at dschlenger@cognyst.com. Ed Finamore, an Associate Consultant with Cognyst Consulting, also contributed to this article; he can be reached at EdFinamore@aol.com.

Hidden Treasures:

The Benefits of Demand Response Resources

By: Pete Scarpelli ,Vice President Marketing & Business Development, RETX

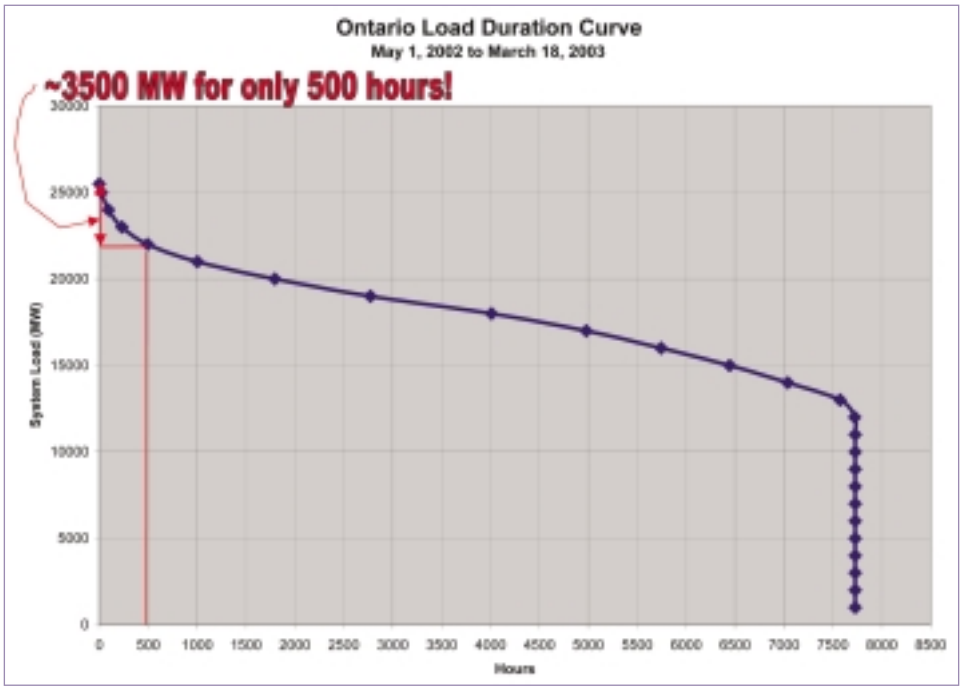
Have you ever watched *"The Antique Road Show"* on PBS Television? The premise of the show is captivating because it is based on finding value in something that people have just lying around somewhere. People bring things that have been sitting in their attic for years and the show's appraisers provide an estimated value for it. Many times these "little treasures" have substantial value, but the owners either didn't know it had value or they didn't know how to acquire the value. Demand Response Resources (DRR) are very similar to the little attic treasures on the *"Antique Road Show."*

Demand Response Resources can be defined as energy consumer load shedding and/or distributed onsite generation. These are "little treasures" that the energy industry has not fully utilized. Many electric markets, Ontario in particular, are facing severe capacity shortfalls. Tapping into the "little treasures" that the market already has, but is not using, can provide extra capacity needed to ensure a safe, fair, and reliable energy grid. Not only can these resources be made available very quickly, they are also economical and environmentally friendly.

Toromont Energy, Olameter, and RETX have teamed together to demonstrate the ease, speed, and reliability of DRR assets. Our demonstration will show that Ontario can tap into the unused (and perhaps even the unknown) assets that already exist. With a coordinated effort, regulatory support, and a little bit of will power we believe that DRR can help Ontario escape its current capacity crisis and lay the groundwork for responsible use of all available resources for the future.

Benefits of Demand Response Resources

The Independent Market Operator (IMO) submitted a report on January 22, 2003 to the Minster of Energy Consultation Process titled *"Reliability through Markets in Ontario."* In this report the IMO stated, "A successful market is two-sided, with both supply and demand reacting to price. There needs to be opportunities for demand response and energy efficiency to be efficiently developed."



The following validates the IMO's contention:

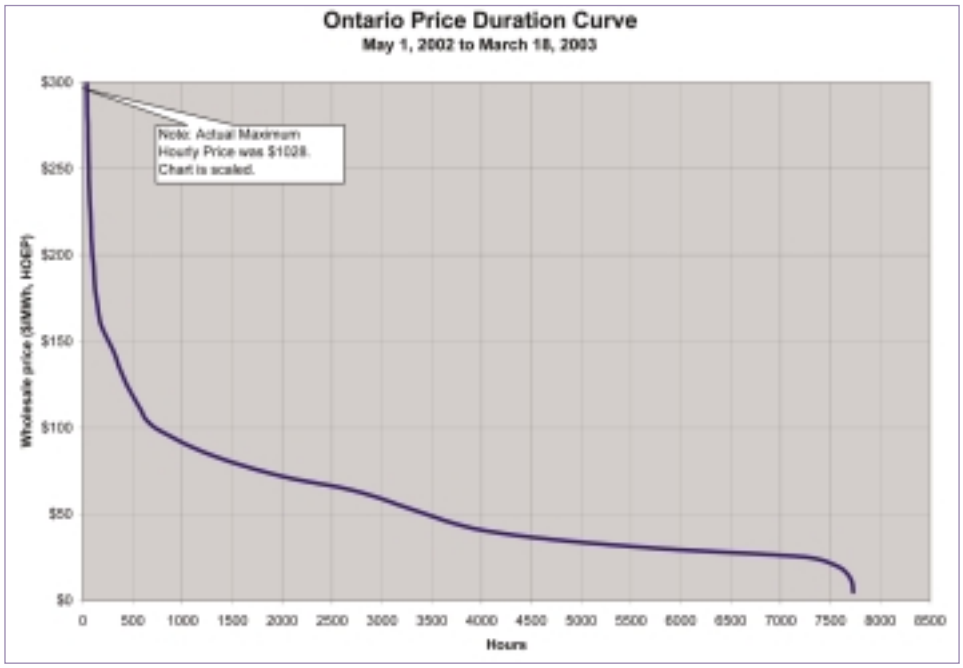
- FERC recently unveiled a cost-benefit analysis that shows a $60 billion savings over the next 20 years if demand response is incorporated into RTO market design and operations.
- Electric Power Research Institute (EPRI) estimates that demand response has the potential to reduce U.S. peak demand by 45,000 MWs by 2010 and 90,000 MWs by 2030.
- Edison Electric Institute (EEI) estimates that a 5% demand response can reduce peak market prices by nearly 50%
- NARUC states that "Responsible estimates of the demand-side potential concluded that as much as 40% - 50% of the nation's peak load growth over the next twenty years could be met through energy efficiency, price-response, and load management measures that would be less expensive than their supply-side substitutes."

Ontario Capacity Challenges

Ontario's Installed Capacity is about 30,500 Megawatts supplied by a mix of resources including nuclear, hydroelectric, coal and natural gas. The power system is interconnected with bordering utilities in Manitoba, Minnesota, Quebec, New York and Michigan.

In its March 2003 10-Year Energy Outlook, the IMO forecasted that energy demand will increase by 1% per year through 2013. The IMO also projected that Ontario will have sufficient supply resources through the end of the decade if the new power plants are built as planned and they do not have any unplanned plant outages. However, they warned that if additional generation does not come on line and/or unplanned outages occur, the province might need additional development sooner.

In 2002, the Ontario energy market ran into significant problems and prices rose by more than 25%. This is due in part to rise in cost of hydroelectric power, forced outages, heat waves, and decrease in operating reserves. In addition, several fossil and nuclear generating units were forced



out of service for technical reasons. Among other things, these challenges caused the Ontario Operating Reserve to fall from 19.2% in 1996 to 1.5% in Summer 2002. To deal with the critical Operating Reserve level in 2002, the Independent Market Operator (IMO) issued six Power Advisory Notices to request voluntary consumer power reductions. The IMO also had to import power 38 times to balance their power supply needs.

"Even with 4,500 megawatts of added electrical capacity expected soon in Ontario, Canada's most populous province could experience power shortfalls as early as 2005" Toronto-based Navigant Consulting states in a press release in February 2003.

The forecasted Operating Reserve margin is expected to be approximately 13% in 2005. This is an extremely tight reserve margin and it is based on strategies that may or may not be implemented. If measures are not taken to deal with this situation, Ontario could face reliability problems over the next several years.

Demand Response Resource Examples

Other markets have faced similar challenges. For example, Southwest Connecticut (SWCT) faces significant transmission congestion issues. This problem makes it difficult for ISO New England (ISO-NE) to maintain grid reliability for the SWCT region. In the summer of 2002 ISO-NE relied on the demand response resources in that region to maintain an adequate reserve margin and mitigate price spikes. Over 80 MW were brought "online" within a matter of weeks. These resources are expected to help with the problem in 2003 as well.

The New York ISO operates one of the most successful DRR programs in North America. Their program has approximately 1,500 MW available at any one time. An independent analysis concluded that the program has reduced system wide energy costs by several millions.

The California Example

The California crisis provides some insightful experiences for Ontario.

California did not have a substantial demand response program in place during their 2000-2001 energy crisis. Consumers did not have the information or the incentive to modify their behavior. They eventually began to modify their behavior "six to nine months after the wholesale prices first spiked in the summer of 2001. Ideally, customers, who saw a 200 percent price increase would have reduced their aggregate demand levels by 4,000 to 5,000 MW within minutes to hours of the first price spikes in May 2000 (California Energy Commission 2002 Action Plan)."

As the crisis in California grew worse, the regulators changed their strategies. In 2002, the California Energy Commission (CEC) released an action plan to add demand response to the market. The CEC stated that "Competitive markets cannot function without customers who have both access to timely price signals and the capability to reduce their aggregate demand as prices rises… It is ironic that the retail price freeze designed to protect customers probably left them more exposed to the exercise of market power and ultimately higher prices that price controls were supposed to prevent."

California has since developed multiple DRR programs and strategies. The state is now investing heavily in demand response and energy efficiency efforts. The CEC has shown that their efforts reduced 2002 monthly peak demand up to 11% from 2001 levels.

What is needed for a successful Ontario Energy Market?

The benefits of DRR are abundantly clear. Almost every industry group, consultant, and market analyst agrees that DRR can help improve grid reliability and market fairness. In fact, the International Energy Agency is currently debating strategies for managing DRR that are similar to way that they manage the Strategic Petroleum Reserve. DRR is simply that valuable.

In its October 2002 Market Surveillance Panel Report the IMO stated, "There is a serious shortage of generating capacity to meet Ontario's growing demand for electricity. If steps are not taken to address this situation, Ontario could face even more serious reliability problems next summer, leading to the possibility of supply interruptions and continued upward pressure on prices during periods of peak demand."

In order for Ontario to tap the benefits of DRR, our team recommends the following:

Regulatory Support

Regulatory support is required for almost every aspect of the energy industry. Regulators like FERC and NARUC have concluded that demand response resources are extremely valuable part of a vibrant energy market. Ontario regulators have begun to draw similar conclusions. With appropriate regulatory support and economic signals, demand response resources can flourish in Ontario.

Simplicity

Consumers don't understand the "ins and outs" of the energy industry, nor should they be expected to. They are focused on building their businesses and living their lives. All DRR efforts must be easy to understand. As noted above, many DRR programs are being tested throughout world. Ontario can leverage their experiences to develop a successful program.

Price Signals

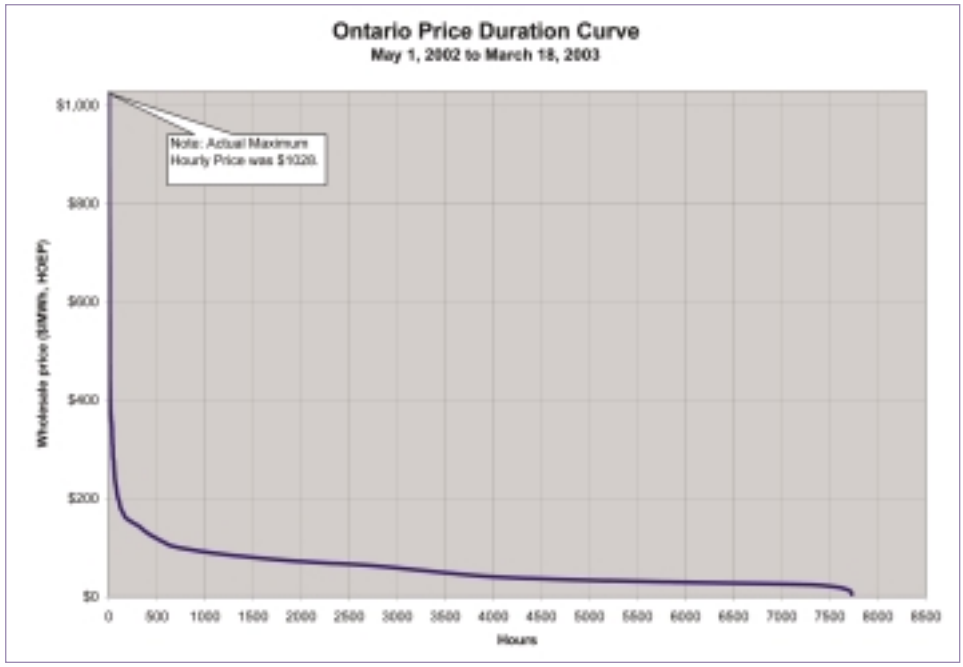
Proper price signals and economic incentives are necessary for the DRR industry to develop. Consumers need a reason to participate. Experience in other markets has proven that commercial, industrial, and residential participation can be achieved with appropriate incentives to do so.

Market Infrastructure

Infrastructure is needed at the market level to monitor participation and financially settle accurately. Participation in DRR programs will be contingent on the proper incentives. The market will need to manage new data streams to ensure that the incentives are being credited to the right account.

Consumer Infrastructure

Accurate recording of consumer behavior is a fundamental requirement for DRR efforts. In some instances, load profiling and/or load sampling may be sufficient (e.g. residential water heaters). However, it is likely that investment in new metering technologies will be required to provide interval data in a timely manor. Depending on its configuration, these systems can also be used to remotely control generation or load shedding assets thereby ensuring its participation when needed.



Onsite Generators

There are thousands of Megawatts of onsite generation in Ontario. These resources are "low hanging fruit" and could be operational in short order. This would provide instant capacity for the current crisis.

In the long term, DRR programs can fundamentally change the value proposition for these assets. Consumers will be able to receive a real return on their investment instead of simply purchasing the asset for backup power purposes. This will encourage them to invest in more efficient and reliable units. Furthermore, appropriate program structures will provide incentives for installing environmental friendly units.

Ontario Pilot Project

Toromont Energy, Olameter, and RETX have initiated a distributed generation pilot project in Ontario. As noted above, appropriate market and consumer infrastructure is required to make DRR a viable resource in Ontario. Our project will demonstrate both of these capabilities. We intend to show that technologies exist to bring distributed generation assets to the energy market. We will also show that it can be done in a matter of weeks at a cost radically lower than equivalent traditional capacity.

The systems will show that the resources can be viewed in near real-time, activated within minutes, and visible to the wholesale marketplace. We believe that distributed generation can be operated remotely based on the needs of the energy market. We will be tracking the Hourly Ontario Energy Price (HOEP) and activating the generation resources when it makes economic sense to do so. The generators can be initiated automatically when the price hits a certain threshold. The generators will also be able to mitigate transmission congestion like it is envisioned for SWCT.

We are confident that the technology will perform as anticipated. We are also confident that the aggregation of these existing untapped resources in Ontario can bring significant value to Ontario. Our project will show that the resources can be brought to the market very quickly and with much lower cost than other available options.

We intend to demonstrate the system capabilities to Ontario utilities and regulators in the coming weeks.

Conclusion

When someone on the *"Antique Road Show"* learns that their "little treasure" is worth thousands of dollars their face beams with pride and enthusiasm. The Ontario energy market has the chance to feel this same sense of joy. There are thousands of "little DRR treasures" all around the province. We are attempting to show the market how these resources can be put to use in order to help avert the current capacity crisis.

The capacity crisis in Ontario will not disappear by wishing it away. Action is required and creative solutions are necessary. It will take several years to build new generating facilities and the neighboring electrical systems are facing their own challenges. Ontario has resources that can be activated quickly given the proper incentives. We hope that our pilot effort provides shows that Ontario can mitigate the current problem by fully utilizing resources that already exist in the province.

Monitoring Performance vs. Baseline

Our team has the technology, market knowledge, and resource availability to achieve the goal. We will seek regulatory and utility support for our effort in the coming weeks. We are confident that with this support we can help Ontario tap into the value of these "little treasures" and manage the current supply shortages. ■

About the Author:

Pete Scarpelli, Vice President
Marketing & Business Development

Pete Scarpelli is responsible for driving the strategy and business development efforts for RETX. He is the inventor of RETX's Load Management DispatcherTM (LMD) application and the co-inventor of RETX's Regional Negawatt HubTM (RNH) application. Pete has been active in the demand response industry by way of the Peak Load Management Alliance, and various speaking engagements. Pete also led a cross sectional industry group in developing a "pro-forma" demand response tariff that was submitted to FERC in February 2002.

METERING AMERICAS 2003

BILLING AMERICAS 2003

CRM/CIS AMERICAS 2003

— the connected future —

May 4th - 8th 2003, Chicago, Illinois, USA

GREETINGS

As Mayor and on behalf of the City of Chicago, it is my pleasure to welcome all those attending the Fourth Annual Metering, Billing, CRM/CIS Americas Conference, hosted by Metering International Magazine.

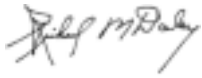
As the proper metering and measurement of gas, water and electricity is essential to resource providers and consumers alike, this important annual conference will allow industry professionals to learn about innovations in customer service practices and technologies as well as new concepts for billing, metering and CRM/CIS. This conference will bring together billing, commercial and distribution managers, energy marketers, regulators and vendors from around the world, enabling them to stay abreast of advances in the energy market.

While you are here, I hope you will take time to discover all that makes our city a great place to live and visit. I know you will like what you find, from our remarkable architecture and our beautiful Lake Michigan shoreline to our exciting nightlife and many world-renowned cultural institutions, Chicago offers something for everyone.

Best wishes for a successful and enjoyable event.

Sincerely

Mayor



A MESSAGE FROM THE ORGANIZERS

A competitive era of customer choice is upon ALL stakeholders involved in the electricity, gas and water utility industries.

Customer service is no longer about courteous customer sales representatives seeing to the day-to-day queries and complaints of a client base, but is about cost-effective options, be it supplier, technology or service. The rapid convergence of metering, billing and CRM/CIS systems and strategies in a competitive marketplace provides unprecedented opportunities for those players positioned to provide future proof solutions. The future of metering is connected and Metering Americas 2003, together with the co-located Billing Americas 2003 and CRM/CIS Americas 2003, remains the definitive event for dialogue regarding metering challenges in this diverse and dynamic industry.

We look forward to providing the ultimate platform, for the fourth year, for the discussions to continue...

Rudi Leitner

Managing Director

Track B: May 5th 2003

Preconference seminar: Metering, submetering and co-generation, Hosted by: Herb Hirschfeld, PE, New York, USA

9:30 – 10:00 a.m.
Case-study: Water submetering experiences from National Water & Power

10:00 – 10:30 a.m.
Integrating Submetering with Cogeneration in Residential Buildings

10:30 – 11:00 a.m.
Integrating Submetering with other Residential Building Systems

11:00 – 11:30 a.m.
Morning Refreshment Break

11:30 am – 12:00 p.m.
Making the most of submetering with price and demand response programs

12:00 – 12:30 p.m.
Advanced metering technologies

12:30 – 1:45 p.m.
Lunch

1:45 – 2:15 p.m.
Co-generation and distributed energy

2:15 – 2:45 p.m.
Enterprise software platforms: reducing costs and increasing energy efficiency in your buildings

2:45 – 3:15 p.m.
Case study: Energy management in large buildings

3:15 – 3:45 p.m.
Afternoon refreshment break

3:45 – 4:45 p.m.
Think tank discussion / Q & A

5:00 – 6:30 p.m.
Networking function: Cocktail reception and opening of exhibition
Sponsored by: ELSTER

Track A: May 5th 2003

Preconference seminar: Demand Response Management: Metering and the Customer: Overview
Chairman: Dan Delurey, President, D-RAM, Washington DC, USA

"… Advanced metering and communication applications are necessary to support effective pricing and incentives. More detailed and timely energy information is essential for customer education. Together, metering and communications provide an information tool to integrate demand response options with power system operations. Advanced metering and communications should be viewed as a necessary component of all demand response options." EPRI's New Principles for Demand Response Planning **Report,** *00000000001006015,* **Date Published,** *April 2002*

9:00 – 9:30 a.m.
Overview of policies and regulations

9:30 – 10:15 a.m.
Home automation and demand response

10:15 – 11:00 a.m.
Demand response management: Metering and the market place

11:00 – 11: 30 a.m.
Morning refreshment break

11:30 am – 12:00 p.m.
Time-sensitive energy pricing holds long-term benefits for utility customers

12:00 – 12:30 p.m.
Demand side response enhances reliability and efficiency in the market during peak demand periods

12:30 – 1:45 p.m.
Lunch

1:45 – 2:15 p.m.
New residential rates using market based hourly prices

2:15 pm – 2:45 p.m.
GoodCents SELECT,
Energy Management for the 21st Century

2:45 – 3:15 p.m.
Afternoon refreshment break

3:15 – 4:30 p.m.
Think Tank discussion: What will demand response look like in 2003 and in the future?

5:00 – 6:30 p.m.
Networking function:
Cocktail reception and opening of exhibition

May 6th 2003

Opening session and keynote address, Session 1.1

8:45 – 9:00 a.m.
Chaiman's welcome

9:00 – 9:30 a.m.
Welcome address

9:30 – 10:00 a.m.
Welcome address

10:00 – 10:30 a.m.
Morning refreshment break

10:30 a.m.– 12:00 p.m.
The leaders visioning panel

12:00 – 1:30 p.m.
Lunch sponsored by: KEMA Consulting
Lunch-time address by the Honorable Commissioner Nora Brownell

PARALLEL SESSIONS

North American Strategic Metering Issues Session 2.1	**South American and International Strategic Metering Issues Session 3.1**	**Revenue Protection Session 4.1**	BILLING AMERICAS 2003 **Session 5.1**
1:30 – 2:00 p.m. Standard market design	**1:30 – 2:00 p.m.** Crisis strategies for metering in Argentina	**1:30 – 2:00 p.m.** Case study: Commonwealth Edision	**1:30 – 2:00 p.m.** Improving cash flow, profitability and customer relationships through the integration of CRM and Billing Systems
2:00 - 2:30 p.m. LCRA's approach to providing value-added services to its wholesale customers	**2:00 - 2:30 p.m.** South American metering trends and technologies	**2:00 - 2:30 p.m.** Protecting Israel Electric's revenues	**2:00 - 2:30 p.m.** Global billing trends
2:30 - 3:00 p.m. Ontario – the bumpy road to electricity deregulation	**2:30 - 3:00 p.m.** The metering system for Italian power exchange	**2:30 - 3:00 p.m.** Title to be advised	**2:30 - 3:00 p.m.** Electronic billing and delivery

3:00 – 3:30 p.m.
Afternoon refreshment break in the exhibition area

PARALLEL SESSIONS

North American Strategic Metering Issues Session 2.1	South American and International Strategic Metering Issues Session 3.1	Revenue Protection Session 4.1	BILLING AMERICAS 2003 Session 5.1
3:30 – 4:00 p.m. Metering challenges of distributed generation	**3:30 – 4:00 p.m.** Think tank discussion: Metering in emerging economies	**3:30 – 4:00 p.m.** Strategies for countering energy theft	**3:30 – 4:00 p.m.** Enhancing your C&I billing performance
4:00 - 4:30 p.m. Hydro Quebec's approval process of meters		**4:00 - 4:30 p.m.** Revenue assurance technologies	**4:00 - 4:30 p.m.** Outsourced billing and best practice techniques to enhance customer satisfaction
4:30 - 5:15 p.m. Think tank discussion: Metering in the wave of change	**4:30 - 5:15 p.m.** Think tank discussion: Revenue protection protocols in modus operandi	**4:30 - 5:15 p.m.** Think tank discussion: The integration of billing and other management strategies	

5:30 – 7:30 p.m.
Networking function: Winding down in the windy city, Chicago Style!
Sponsored by: Excelergy

May 7th 2003

AMR: Case Studies Session 2.2	Meter Technologies Session 4.2	Session 5.2 Overview CRM/CIS AMERICAS 2003
9:00 - 9:30 a.m. Automated meter reading mass marketed and segmented solutions	**9:00 - 9:30 a.m.** A utility's perspective on meter to-cash	**9:00 - 9:30 a.m.** CRM - Everything you need, nothing you don't
9:30 - 10:00 a.m. Case study: Nstar's demand AMR strategy	**9:30 - 10:00 a.m.** New telecommunications media alternatives for utility automation applications	**9:30 - 10:00 a.m.** Are you doing CRM but just don't know it?
10:00 - 10:30 a.m. The rise of AMR	**10:00 - 10:30 a.m.** Design, performance and life expectancy with electronic meters	**10:00 - 10:30 a.m.** The future of CRM, trends and developments

10:30 – 11:00 a.m.
Morning refreshment break in the exhibition area

Metering Operations: Data Session 6.3	AMR: Project and practice Session 2.2	Prepayment: Strategic Session 4.3	Session 5.2 Projects and practice CRM/CIS AMERICAS 2003
11:00 – 11:30 a.m. Outsourcing metering service from the perspective of the net operator: Nordic experiences	**11:00 – 11:30 a.m.** Case study: Central Vermont Public Service Company	**11:00 – 11:30 a.m.** Prepayment and low-income advocacy groups in a regulated environment	**11:00 – 11:30 a.m.** What hundreds of utilities have to say about North American customer care
11:30 - 12:00 p.m. Intelligent metering- reduce costs and conserve energy: Case Study- Enel	**11:30 - 12:00 p.m.** The Business case for AMR	**11:30 - 12:00 p.m.** Familiarity breeds content	**11:30 - 12:00 p.m.** Value added services for CRM: National and international experiences

12:00 – 1:45 p.m.
Lunch in the exhibition area

May 7th 2003 *Continued*

Metering Operations: Data Session 6.3	AMR: Project and practice Session 2.2	Prepayment: Technology Session 4.3	Projects and practice Session 5.2
1:45 – 2:15 p.m. Mobile data and back office support	**1:45 – 2:15 p.m.** Pros and cons of tamper detection with AMR	**1:45 – 2:15 p.m.** Case-study: Experiences with implementing a prepayment system	**1:45 – 2:15 p.m.** CIS as an ASP –What makes a successful implementation?
2:15 - 2:45 p.m. Electrical data acquisition and manipulation	**2:15 - 2:45 p.m.** Lessons from a large scale automated meter reading implementation: "The good, the bad, the ugly"	**2:15 - 2:45 p.m.** Multi-utility prepayment	**2:15 - 2:45 p.m.** Can CIS be one-size fits all?
2:45 - 3:15 p.m. Meter data collection in a competitive environment	**2:45 - 3:15 p.m.** Updates on AMR deployments worldwide	**2:45 - 3:15 p.m.** Prepayment technology options	**2:45 - 3:15 p.m.** Mitigating customer flight during CIS migration or customer acquisition
3:15 – 3:45 p.m. Afternoon refreshment break in the exhibition area			
3:45 - 4:45 p.m. Discussion / Q & A	**3:45 - 4:45 p.m.** Discussion / Q & A	**3:45 - 4:45 p.m.** Discussion / Q & A	**3:45 - 4:45 p.m.** Discussion / Q & A

May 8th 2003

Session 1.2 Closing session

9:45 – 11:00 a.m.
Think Tank Discussion: Connecting the future of metering, billing, CRM/CIS in the customer revolution

11:00 – 11:30 a.m.
Refreshment break

11:30 a.m. – 12:00 p.m.
Closing remarks

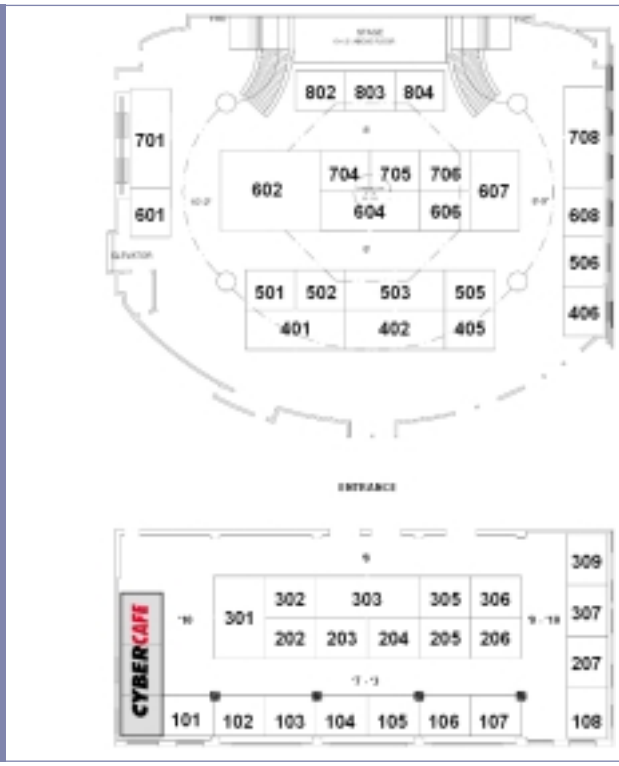
EXHIBITORS

Company	Booth No.
AES Internet Metering	802
AMPY Automation Digilog	505
AMRA	203
Electric Energy	**307**
Elster Metering	503
Energy ICT	608
Excelergy	303
Gruner AG	501
Hunt Technologies	604
Inner-Tite Corporation	405
Integrated Metering Systems	406
Itron	401
IURPA	108
KEMA Consulting	301
KG Technologies	803

Company	Booth No.
Landis & Gyr	602
Locate Technologies	502
McGard Special Products	306
McGraw Hill	804
Motorola/Nertec	402
Nansen	302
PLMA	601
Positron	706
PUR	206
Radian Research	701
SchlumbergerSema	708
Schweitzer	506
Speedread Technologies	704
Spintelligent	705
TWACS by DCSI	607
Viterra Energy Services	606

FLOOR MAP

Intercontinental Hotel Chicago



AMRA 2003
International Symposium

Mapping Your Future: From Data to Value

September 7–10
America's Center
St. Louis, Missouri, USA

The annual AMRA International Symposium is your best source for information about new energy and water information systems — and how these technologies can help you collect the information you need to expand into new business territories.

Let AMRA, the world's largest nonprofit association dedicated to AMR and related technologies, help you:

- develop visionary strategies to exceed customer expectations
- evaluate cutting-edge solutions and services
- network with automation and information-management experts from around the world

Invest in your future:
Plan now to attend the AMRA International Symposium — the one educational forum you can't afford to miss in 2003.

AMRA is an international nonprofit membership organization that provides AMR information and educational resources worldwide by advocating standards and the use of advanced metering technologies.

amra
Advancing Utility Technology Internationally

AMRA
60 Revere Drive, Suite 500
Northbrook, IL 60062
USA
847/480-9628
847/480-9282 (fax)
amra@amra-intl.org
www.amra-intl.org

Northeast Utilities chooses NERTEC communications

Northeast Utilities System

"NERTEC had the proven reliability, engineering depth and flexibility to meet our Flex AMR requirements."

- David Scott, NU Manager, Meter Engineering & Systems

Northeast Utilities Systems

Northeast Utilities (NYSE: NU) is a Fortune 500 located in Connecticut. NU provides a full range of energy products and services to millions of residential and business customers from Maine to Maryland. For more information on Northeast Utilities, visit the NU family of Web sites at www.nu.com.

New Challenges for Today's Markets

During the late 1990s, as deregulation unfolded, NU reassessed its approach to meet the challenges of reliability, operating efficiencies and providing quality customer service. For most of these goals, improving performance would require better and timelier information about the company's operations.

Information from the Meter

NU began trials of automated meter reading (AMR) in the early 1990s. By 1999, about one third of its customers were on AMR. All its gas meters were already read remotely. David Scott, NU Manager, Meter Engineering & Systems, took on the challenge of engineering the conversion to 100% AMR by 2003 in NU's Connecticut Light & Power and Western Massachusetts Electric operating companies.

NU's Approach to AMR

NU needed a simple, flexible, cost-effective meter reading system that would work now and could be upgraded in the future. Also, NU wanted accurate information for internal and external customers. Increasingly, they wanted "near-real-time" meter data for utility operations, for large customers and for third parties, like ISO New England, which uses the data for settlement pricing on the New England power grid.

By reaching 100% AMR coverage and minimizing commitments to proprietary technologies, NU could:

- Reduce operating costs while providing improved customer service,
- Eliminate costs of supporting multiple proprietary meter protocols;
- Access most data electronically, including load profile, demand and billing data.

Flexible AMR Handles Differing Customer Needs

NU's Flex AMR program provides three types of services:

1) Silver Service: basic drive-by meter reads for over 1.2 million residential and 100 thousand commercial and industrial (C & I) customers. Also, about 4 thousand Silver Service customers will use telephone communications.
2) Gold Service: telephone communications plus selected data services such as demand profile and customer specified dates for meter reads.
3) Platinum Service: telephone communications plus enhanced data services, including near-real-time interval data over the Internet. The regulated, fee-based Gold and Platinum services currently serve approximately 2 thousand C & I customers.

Inbound Telephone Options

At NU, telephone communications include:

1) standard telephone, sharing the customer's line;
2) dedicated phone line installed by customer;
3) 2-way public network wireless for approximately 250 customers where telephone is unavailable. NU has found telephone communications to be low cost and well received by its customers.

Since telephone based AMR would have to fill more complex data needs of Gold and Platinum customers, in addition to some Silver customers, it was very important to choose a reliable communications system supplier. After evaluation, NU chose NERTEC to answer the majority of its interval data collection needs and this important market segment. According to Scott, "NERTEC had the proven reliability, engineering depth and flexibility to work with NU's meter manufacturers and meet utility specifications."

NERTEC Meets Single and Polyphase Needs

NU works with several meter manufacturers. However, for customers using telephone communications, Schlumberger Electricity Inc. provides most of the meters: either its Centron™ single-phase meter or its Sentinel™ polyphase meter.

For NU's polyphase requirements, NERTEC tailored its NCTR801 to integrate smoothly with the Sentinel meter. NCTR801 acts as a telephone modem and gateway to access the data stored in the Sentinel. The NCTR801 can be programmed locally via the optical port.

For single-phase Centron meters, NERTEC's NCTR101 acts as an interval data recorder (IDR), satisfying NU's single-phase load survey needs. The NCTR101 also provides momentary outage logging and real time power outage notification.

NERTEC Answers the Call

At NU's operations center, a server running NERTEC SerView communications software answers inbound AMR telephone calls and does initial data handling. In the future, NU may use the NCTR101's real-time outage notification capabilities and link directly to NU's GIS and SCADA systems.

Simple and Cost Effective

Northeast Utilities wanted a comprehensive AMR system that would have a simple, cost-effective architecture, based on proven technologies. Now NU is on track to achieve 100% AMR deployment in 2003. And, with their goal in sight, NU is already realizing operating efficiencies and data availability – a success story for the utility and a fulfillment of the promises of AMR.

NERTEC

800 East Campbell Road
Suite 199
Richardson, Texas 75081

Tel.: (972) 680-5145
Toll Free: 1-888-463-7832
Fax: (972) 680-5146
Web: www.nertec.com

These kids will retire before our stuff will.

If you're thinking about AMR, you should think about the company that sets the standard. A reputation for reliability that's the envy of the industry. The first company to deploy technology capable of reading and transmitting data on electricity, gas, and water in a single unit. And the company that made a major contribution to the establishment of the first telecommunications protocol for all AMR transmissions. That company is NERTEC. The signal is clear.

NERTEC

www.nertec.com

AMR solutions from the best in the business

By:

Steven Rios
Utility Products
Marketing Manager
E.J. Brooks Company

An engineering review of new metering-point products

Quality, innovation & technological breakthroughs for safety, security and operations efficiency at utilities

At E.J. Brooks — more choices, more solutions

Brooks Straight Wire Enduro Seal for definitive tamper-evidence.

Ekstrom's low-profile surge-suppression device, MBSA-90

Lexan prewired meter socket endures severe environments

E.J. Brooks Company always strives for product innovation. "We are particularly interested in creating products that address customers' specific needs," says Brooks Special Project Manager Robert Debrody, P.E. "When an electric utility says, 'I have a problem—can you come up with a product to solve it?,' that's what we love to hear."

A case in point is our new Straight Wire Enduro Seal, a new version of the Brooks security classic, the Enduro Seal. Made of durable acrylic plastic, the Straight Wire Enduro Seal is equipped with a straight-wire hasp end instead of the traditional hook-shaped hasp end. The stainless steel wire is easy to maneuver through apertures as small as 1/16" (1.78 mm) diameter.

The Straight Wire Enduro Seal features a unique fishbone-shaped insert embedded in the clear seal body. Once locked, the insert "bones" rigidly engage notches in the wire hasp. Any attempt to withdraw the wire will cause the bones to fracture, thereby providing visible tamper evidence.

Straight Wire Enduro Seals are heat stamped with consecutive numbers and company name/logo. As an option, a company name can be molded into the insert. Inserts are available in a range of colors.

At Ekstrom R&D, a history of innovation

Ekstrom Industries features products that enable utilities to upgrade existing technology through new and improved methods. It's their specialty to help utilities stay on the leading edge. Since Ken Ekstrom designed his first meter socket adapter 47 years ago, this Brooks subsidiary has introduced more than 4,000 new products.

Ekstrom is known for creating products that feature improved performance at lower cost. For some products, that means Ekstrom focuses on ease of use, says Darrell Robinson, P.E., Engineering Manager at Ekstrom. "Take MBSA-90—Ekstrom's surge suppression device. The product's improved longevity means you don't have to change it as often—and that's added value to the utility."

Robinson explains: "When it comes to creating solutions for utilities, Ekstrom engineers ask —how can we save the utility if they use our products versus the competitors? Let's say we've refined the product to its simplest form, at that stage, you start asking, can we save them labor on installation? We continually ask how can we improve function and design every day in new product development."

At Meter Devices—newer, better designs

Meter Devices always has several projects in the design mode; each is geared towards meeting customers' needs. "We pride ourselves in finding ways for our customers to accomplish their goals," says Meter Devices Engineering Manager Tom Archer. "Whether it's designing a new product or tweaking an existing design, we make it happen in the least amount of time possible."

One example--MD's 3000 Series Transformer Rated Meter Sockets, engineered to help utilities save time and money while ensuring accuracy. Series 3000 sockets can be pre-wired with test switch and wiring harness. Sockets are built to precise specifications, ready to install.

For customers looking for a corrosion-free alternative to the standard steel and aluminum meter socket, MD designed the Lexan Non-Corrosive Prewired Meter Socket. This new product will endure harsh conditions in coastal areas, refineries, chemical plants, fertilizer plants and other caustic .

Meter Devices knows how to fast-track projects without sacrificing on quality. "In years past, it took an engineer five days to make drawings for a meter socket. He sat in front of a drawing board and made all his drawings by hand. With the changes in computer technology and in the introduction of 2D CAD, that five days dropped to two days. But now with 3D CAD design, a meter socket can be completed in hours, not days," Archer says.

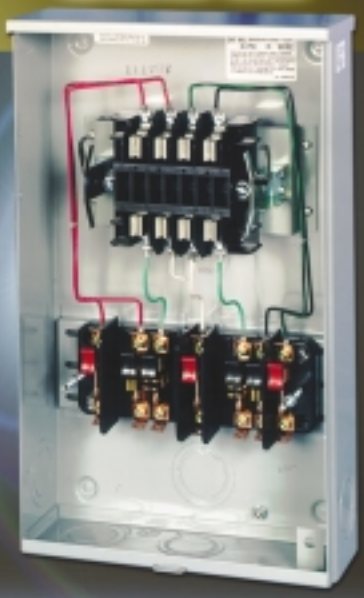
About Brooks, Ekstrom Industries & Meter Devices

E. J. Brooks is an international supplier of security seals and locking. The company is based in Livingston, N.J. and has 13 operating units worldwide, including locations in Mexico and Canada. Meter Devices with metal enclosures, meter warm-up boards and meter/relay test switches and accessories. Ekstrom Industries, Inc. is the leading manufacturer of meter socket adapters and metering test equipment. All companies are registered to ISO 9001.

Enhance Security
Solve Problems
Reduce Costs

E.J. Brooks High-Security Padlock Seal features an acrylic body with an 1/8"-diameter steel hasp. Ideal for securing both ring and ringless style meter sockets.

The profile of Ekstrom's LP Series extender adapter is only 1.2"; 4-8 jaw models; accepts phone lines for direct access, MOVs for surge protection, relays for load controls.

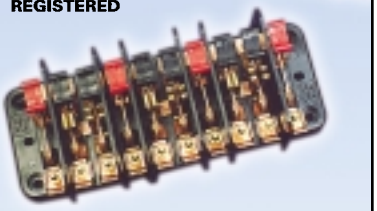


Meter Devices transformer-rated meter sockets are prewired to specs with provisions for test switch and wiring harness.

Brooks' Multi-Lok Cable Seal provides cost-effective meter security. Cable is available in 3 diameters. Has dozens of electric-utility applications.

EK Disconnect Device ensures safety, disconnects single-phase and polyphase lever-bypass sockets under load.

ISO 9001 REGISTERED



Meter Devices designs and manufactures the finest quality and most complete line of test switches in the industry.

BROOKS

EKSTROM INDUSTRIES, INC.

MDI Meter Devices Company, Inc.

The electricity meter stands at the core of your business, marking the place where investment turns into return. Our Utility Products Group is dedicated to creating security, safety and cost-effective solutions at the metering point. Please visit our web sites for 1,001 more solutions.

E.J. BROOKS COMPANY
8 Microlab Road
Livingston, NJ 07039
1 800 458-SEAL
usasales@ejbrooks.com
www.ejbrooks.com

EKSTROM INDUSTRIES, INC.
23847 Industrial Park Drive
Farmington Hills, MI 48335
1 800 532-IDEA
marketing@ekstrom-metering.com
www.ekstrom-metering.com

METER DEVICES COMPANY, INC.
3359 Bruening Ave, SW
P.O. Box 6382, Station B
Canton, OH 44706
1 888 FOR-METER
marketing@meterdevices.com
www.meter-devices.com

E. J. BROOKS INDUSTRIES
412 High St. East
Strathroy, ON N7G 1H5
1 800 663-4292
dongeddy@ejbrooks.on.ca
www.ejbrooks.com

E.J.B. de MEXICO, S.A. de C.V.
Copenhague 2A, Desp.1,
Col. Juarez
Mexico, D.F. 06600
Tel: +55 5511-8560
Fax: +55 5511-8602
www.ejbrooks.com

"Beyond Innovative Technology... ...Your Key to Bottom Line Results"

At the heart of Hunt Technologies' product offerings is patented Ultra Narrow Bandwidth power line carrier technology. This technology allows for the remote collection of usage data over the utility's existing infrastructure without the use of additional line conditioning equipment. The system transmits at frequencies below 60 hertz and is therefore highly resistant to interference allowing it to transmit information over long distances.

The Turtle System

The company's one-way product, the Turtle System, remotely reads electric and water meters. The Turtle System offers an inexpensive solution to simultaneously read all meters and provide comprehensive data that is utilized for billing services, distribution system maintenance, customer service, and line loss prevention. To date, over 2.5 million endpoint transmitters are deployed at over 400 utilities worldwide.

TS2

The most recent addition to Hunt Technologies product offering includes a bidirectional broadcast communication system called, TS2. This system also utilizes power line carrier communication, and is designed to facilitate bi-directional flow of information to all endpoints simultaneously. This allows utilities to send commands, reconfigure endpoints, accommodates switching, and facilitates plug and play installation of endpoints.

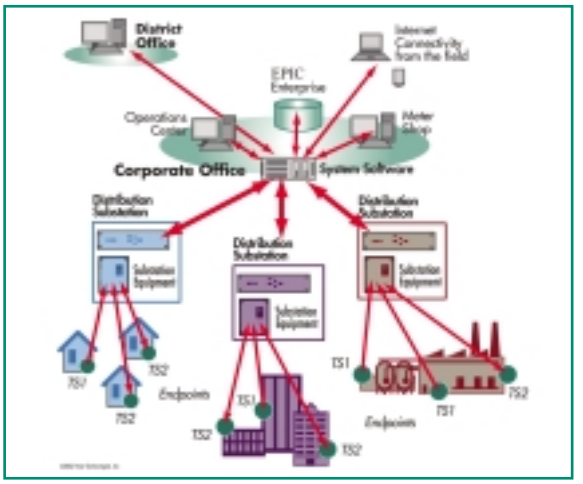
Unique Bi-direction and One-Way Systems

Both the Turtle System and TS2 can operate on the same distribution system. This allows utilities to selectively deploy the systems based on the features needed at each endpoint, ensuring the most cost effective solution for deployment is achieved at each utility. Each endpoint communicates on its own channel, providing for continuous and simultaneous communication at all endpoints.

EPIC™ - End Point Information & Control

Hunt systems are used by utilities, to gather endpoint information for use in utility operations. The system provides all the meter data activity needed for accurate and timely billing, including time of use data from each meter. Plus, it stores usage profiles to solve billing disputes, report power outages and maintain the entire power system – all from every customer, every day. It is this collection of endpoint specific data that provides an even greater return on investment than simply gathering a monthly meter reading. Hunt brings reliable, endpoint specific data, into an open architecture environment that can be easily integrated and analyzed. While each utility selects information systems to meet specific needs, the benefit of data integration is evident. Hunt's goal is to simplify system integration with endpoint data collected by the Turtle System so that it can be distributed throughout your organization.

Your EPIC Solution



The greatest return on investment can be obtained by your utility through the selective deployment of both one-way and bi-directional technology.

Hunt Technologies delivers innovative and economical solutions:

- Easy to install and maintain
- Highly flexible to serve all your customers' needs
- Utilizes utility owned infrastructure
- Economically scaleable
- Continuous data transmission – one-way and bi-directional
- Proven, Patented Ultra Narrow Bandwidth technology
- Simplified data integration via open architecture design

Hunt Technologies has a proven reputation for quality, durability and reliability. Hunt Technologies offers a money back guarantee on the trial system and an 18-month warranty and extended service agreement for all products. To support you in implementing your system, Hunt Technologies holds more than 50 regional training sessions per year that cover every aspect of the Turtle System, from installation to maintenance and software operation. In addition, Hunt Technologies maintains an award winning customer support call center available to answer any questions you may have. On site assistance is also available through the field technical support team.

Take a closer look at EPIC, TS1 and TS2 – and unleash the power of endpoint specific date through your utility organization. Call our sales department today to receive additional information or to schedule a sales visit, 800-926-6254.

Hunt Technologies, Inc.

6436 County Road 11
Pequot Lakes,
MN 56472

Phone: 800-828-4055
Website:
www.turtletech.com

Smarter endpoints are just the beginning.

EPIC,™ the End Point Information & Control solution from Hunt Technologies, goes beyond just innovative technology. It is a revolutionary way to turn your metering communications into a valuable enterprise-wide information system benefiting decision-making, planning and day-to-day operations. EPIC delivers the endpoint specific information critical to enhancing customer service, reducing system outages and increasing operational efficiencies throughout your entire utility—a value that you can see in your bottom line results!

The unique structure of the EPIC solution and TS2 allows seamless integration with existing one-way Turtle® Systems thereby providing additional bi-directional communications where desired. You can strategically deploy a two-tiered solution to create a customized energy management system providing the precise control to meet your specific operational and investment needs. This distinctive AMR system solution allows continuous and simultaneous communications with every endpoint giving you the time critical, reliable information essential to your operation.

Take a closer look at the EPIC solution provided by Hunt Technologies — you'll see the difference in your bottom line. Contact us at 800-926-6254 or visit www.turtletech.com.

Hunt Technologies, Inc.
6436 County Road 11 • Pequot Lakes, MN 56472
218-562-4877 • hunttech@turtletech.com
www.turtletech.com

EPIC™ from Hunt Technologies, Inc.

By:
Lee Margaret Ayers
Director T&D Utilities OSIsoft
and
Bill Thomas
Director of Business Systems
E&C Services, AMEC

Guns or Butter or Both

Introduction

America needs to defend itself from terrorists, we need homeland security, but at what cost? Others see that we need to rebuild our social and economic security, but how do we pay for it? The first is driven by the horror of Sept 11, the second by the honcho's at Enron. Economists say that we cannot do both—are they right?

This paper presents a business approach that targets both concerns: Homeland and Economic Security.

Background

Over the past year we have mobilized an army of inspectors and an array of technology in domestic and foreign, ports and airports, to inhibit if not stop terrorism. We are also beefing up monitoring around "economically vital facilities" such as power plants and refineries to prevent attacks.

Quite simply we are trying to prevent the bad guys, from using bad stuff to do bad things. However when we consider the tasks involved, are they not just the mirror image of mobilizing good people to use good stuff, to do good things? Is not protection from terror the ultimate in "asset monitoring, material tracking, pattern recognition and performance monitoring"?

Examples

In the utility business we have emergency response personnel to deal with traffic accidents that knock down power poles and black out customers. That is what a terrorist wants to do, just on a bigger scale. The bad guys want to take out power plants and transmission systems to black out parts of the Nation.

In the paper business we have the TAPPI roll numbers and barcodes to track a paper roll from its planned creation through production, transportation, to consumption. This is no different than tracking baggage or containers, as they move through our transportation networks, to enable suspicious materials to be identified and dealt with — not unlike a bad roll identified in subsequence lab tests.

Current Situation

Current economics make it difficult for the utility and transportation industries to invest in business processes and technology for economic security, but they are being forced to implement other business processes and technology for national security.

Rather than look at the costs and potential loss to the organization, why not turn this new paradigm to our advantage. In the process to "prevent attacks," national security creates a huge opportunity to simultaneously re-energize the American economy and promote economic efficiency. We must understand that preventing terror or error can be positive outcomes of smart business solutions.

Homeland Security and Control Systems

In the testimony of Joseph M. Weiss, a Control System Cyber Security Expert, before the Committee on Government Reform's Subcommittee on Government Efficiency, Financial Management and Intergovernmental Relations, Weiss points out that a lot of security initiatives are focused on internet activities, but that "there is a growing threat that cyber attacks on operational control systems could create a crisis for which no one is prepared." He makes several key points about the state of control system technology of which we will review three:

- First, many control systems (SCADA, DCS and PLCs) are of legacy design and cannot handle the bandwidth of what IT Security implies. Encryption technology is still too slow to support a real-time environment.

- Second, a majority of installed systems were never designed to be open to the world, but the need for corporate access to control system data has forced these systems to become more open. This leaves the control system at risk from outside attacks.

- Third, control systems lack security technologies, known as Intrusion Detection Systems (IDS). IDS technology is available, but since most control systems are proprietary applications that were implemented before security was an issue, many systems would need re-engineering in order to meet security initiatives.

While all these points are true, re-engineering will take considerable time and money for installed systems. There are ways, now, to achieve security that will also service economic needs of the corporation.

Weiss points out that two ways for attack on control and other automation systems are from the device side to control system, and from corporate to the control system. The main focus of this article is the secure approach by corporate users to control systems.

Economic strength and asset management

Our gut reaction to potential breaches in security is to deny control and automation systems from any possible corporate access, but this would force utilities back to the cumbersome task of manually moving data from operations to the corporation. As of 1995-1996, when the utility industry began deregulating, utilities have struggled to move data from real-time systems to the corporation.

In their paper, *"Reinventing Asset Management,"* Ayers and Dolezilek make the point that without real-time data, true asset management cannot occur and that "economic opportunities will not be realized without innovative concepts for understanding assets or innovative technology to support automation." Various entities within the corporation need operating data to improve operations, reduce costs and foresee outages. Competition has forced utilities to rethink their business strategy. To this end, smart utilities use their real-time and historical operating data with an aggressiveness that redefines them as an organization. Denying access to these systems would represent a huge technological step backward.

EEI **Annual Convention/Expo**

Edison Electric Institute joined by Canadian Electricity Association

Hilton Hawaiian Village, Honolulu • June 1-4, 2003

Charting the Future Course

Never before has the energy industry faced such serious challenges. In 2003, there will be decision-making on several critical issues:

- system reliability and infrastructure protection;
- oversight of finances and governance;
- Federal and state regulatory initiatives on market structure;
- and national energy and environmental legislation.

How well we understand and cope with these issues will determine the success of both your company and the industry. Attend EEI's Annual Convention/Expo and help demonstrate Power by Association℠.

This event is designed to:

- create business and networking opportunities;
- provide you with new ideas through Executive Forums;
- give you insight on critical issues by facilitating exchanges with industry experts;
- and showcase the latest technologies and services from top industry suppliers.

Keynote Speakers include:

Lord John Browne – Chairman of BP, the holding company of one of the world's largest petroleum and petrochemicals groups.

Dewitt Jones – a world-class photojournalist with National Geographic and an Academy Award-nominated director.

Visit www.eei.org/2003 for more details and to register.

Circle 8 on Reader Service Card

Hawaii

Corporate Sponsors

ALLIANCE DATA SYSTEMS

EDS

Canadian Electricity Association / Association canadienne de l'électricité

ELECTRIC PERSPECTIVES

FLUOR

Itron

KINECTRICS

Electric ENERGY T&D MAGAZINE

EATON Cutler-Hammer

Hawaiian Electric Company, Inc.

LEE HECHT HARRISON Global Career Services

The Internet as a band-aide strategy to security

One way vendors try to mitigate potential security breaches around control systems is to provide web views to the SCADA or automation system. The problem with this is SCADA and automation vendors are not web experts, and by providing a view to real-time data, the vendor and utility overlook the problem of managing and utilizing these data for a number of applications that cannot be serviced by a web view, not to mention every automation vendor out there is doing the same thing. As a result, the utility has to deal with multiple web views that vendors provide and multiple, un-integrated databases. Implemented in this way, Internet technology is a short-lived solution to a long-term problem when infrastructure is overlooked. These solutions also do nothing to help the long-term economic security of the corporation as data become isolated to a limited number of engineering departments. The Internet is still important for security, but as an end in itself.

Leveraging Information Architecture for Economic and Homeland Security

One technology that can be harnessed for security is the PI System(PI) from OSIsoft, the leading architecture for Real-time Performance Management (RTPM) in manufacturing and utilities. The PI infrastructure gathers information from control systems and other real-time data sources and makes the data available in highly secure format to corporate users and operations. The PI System has over 360+ standard interfaces to communicate protocols from devices and SCADA systems to secure servers at the corporate level, thereby isolating control and automation systems from interrogation and attack from outside users.

PI provides an infrastructure for managing large volumes of high-speed data and Microsoft based tools to view and analyze the data in an engineering environment. Configurable displays show real-time graphical and trended views of SCADA data along with any other data users want to look at. Many articles describe this technology and reference its benefits to utilities using it to respond to dynamic changes in the power market.

Technology that gives the real-time functionality of SCADA but in a flexible, open form, and easily integrates with other business systems has changed the way utilities do business. The ability to alarm on any type of operating condition, outside of SCADA, provides the utility with many ways to predetermine outages. A northwest utility has a web page where any corporate user can sign up for alarms tags. When SCADA alarms on a transformer, the dispatcher typically cannot determine the cause for an alarm, but now, five other people (such as the specific feeder and substation engineers) are signed up for events and when alarmed, can immediately receive pages and emails from PI. These engineers can then go to their real-time views and perform ad hoc and correlation trends to determine the cause of failure and immediately target crews to prevent events. This infrastructure provides instant economic benefits, by being able to identify and respond to major outages before they occur.

One major east coast utility has used PI to reduce their O&M budgets by migrating from a traditional maintenance programs to "Just in Time" maintenance practices. By monitoring how a myriad of assets perform in relation to the amount of revenues they generate, the utility to not only reduced maintenance cost, but also was able to treat the substation as a profit center. Decisions to upgrade or maintain the existing asset configuration became a business decision based on revenues verses performance rather than a traditional maintenance practice.

Using the infrastructure already in place for real-time monitoring, corporations are beginning to expand PI for a variety of security initiatives. They are using it to monitor the underlying information of unauthorized computer users, virus alerts, and unauthorized IP traffic. The same technology used for economic benefit is now enabling homeland security.

Revisiting Web Solutions for Security

Along with their real-time infrastructure philosophy, OSIsoft realized that a myriad of proprietary Internet solutions did not meet the needs of the corporation and so developed a versatile web solution the leverages other portal infrastructures on the market. The concept of Real-time Performance Management forces us into a new paradigm of how we consider data (or the lack of it) and traditional roles in a utility. Instead of being reactive, utilities can readily evolve to be proactive.

RTPM Technology and Security

The PI System also supports a security application called IT Monitor, which can be configured to provide alerts on anomalous behavior and thus provide an effective Intrusion Detection System (IDS). It is simply the PI infrastructure with network, server and application interfaces. The same tools for alarming and monitoring of events and business decisions are already there to identify security breaches. Some of the security functionality includes:

- **Infrastructure Security**
  - Provides tamper-proof data security details with an audit trail of changes by user at both data collection, usage and reporting levels
  - Point level security and trust tables
- **Network Infrastructure Security (Cisco Netflow, SNMP, Packet Capture)**
  - Intrusion Detection – monitoring of inbound and outbound IP traffic for early identification of unauthorised network access
  - Virus Traffic – Utilizing traffic classes on routers to define policy maps identifying Code Red and other virus traffic
  - Centralized Data - Data aggregation to centralize secure information removing duplicate data and unauthorised usage while utilising existing investment in secure utilities

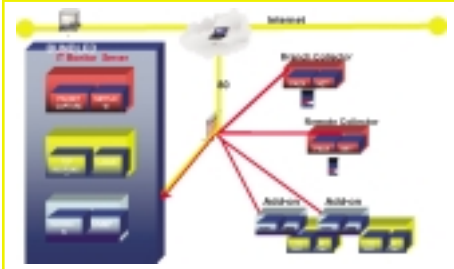


Figure 1: IT Monitor Configuration.

Figure 1 shows how a utility lays out this technology. Again, the PI System with regard to collecting data from automation systems works in the same manner. Where the IT Monitor might look at an SNMP interface, engineers are looking at substation data via the DNP 3 protocol. IT Monitor - Security Agent, to the left of the firewall can monitor local traffic, but cannot monitor infrastructure outside of the firewall. Installing IT Monitor Remote in the remote site and enabling port 5450 on the firewall will allow IT Monitor to capture traffic, response, etc. within the remote site and transport it back to the Enterprise Server. For optimal results, when performing reliability tests, IT Monitor is installed at each end point. In this way, failures can be more accurately pinpointed. End-to-end reliability data will also save time thus reducing support costs.

Regardless of how many firewalls, proxy servers, packet filters, and levels of authentication and encryption are provided; someone or something will get through. Most popular IDS platforms do not allow for long term retention of packet logs. IT Monitor can absorb immense amounts of data and reproduce it for forensic purposes if an attack is suspected. If a port is spoofed, your ability to reproduce details of traffic flows will allow you to see whom, when and where suspect traffic entered your network.

Blazing Trails in Energy Delivery and Services

2003 IEEE/PES Transmission & Distribution Conference & Exposition

www.ieeet-d.org

The best technical conference and exposition in the industry has just gotten better.

- Industry leaders speak on hot topic issues
- Educational tracks
- Technical sessions and tours
- Demonstrations and hands-on interaction with the latest T and D products
- Opportunity to meet with engineers and executives of 500 companies
- Close look at over 60 different product types of equipment and services
- Texas size Opening Reception
- Companion activities
- Networking Reception

Dallas, Texas

Conference Dates • September 7–12, 2003
Exposition Dates • September 8–10, 2003

IEEE

2003 Dallas IEEE/PES

POWER ENGINEERING SOCIETY PES IEEE

Circle 11 on Reader Service Card

IT Monitor measures data through a variety of interfaces.
Data collection for security and health monitoring includes:

- **Simple Network Management Protocol (SNMP)**
  - Polling & Trapping under one minute
- **ICMP PING Tests**
  - 64k Ping tests at one minutes intervals
- **Logical Port Connection Tests**
  - Port connection test
- **Physical Port Packet Interception**
  - Packet logging at the router/switch
- **Windows Perfmon**
  - Central & Distributed performance handles captured
- **Log File Aggregation**
  - Syslog, event log file aggregation

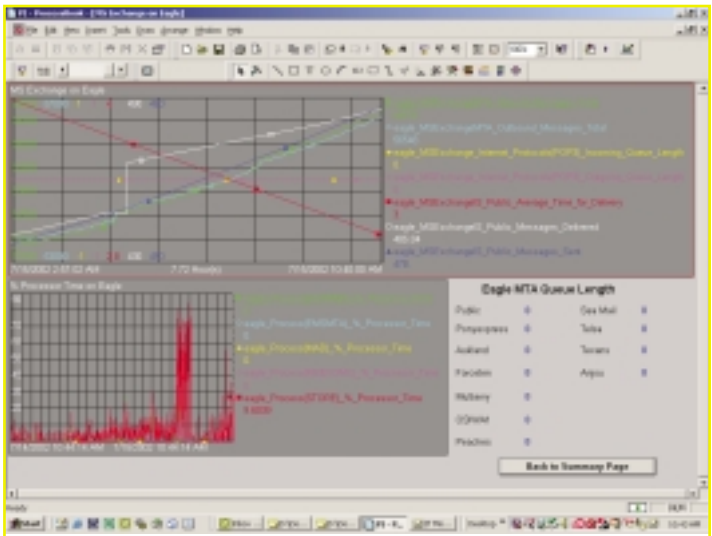


Figure 2: Attacks can come from anywhere, anytime. The large spike in red shows the Nimda profile on a particular server.

Utilizing the same graphical interface used by corporate users of PI who look at SCADA or substation data, Figure 2 shows attack of the Nimda virus on a particular server using the same technology.

Figure 3 shows how heavy CPU users or intruders are identified. Alarms can easily be linked to either source of concern.

As shown in Figures 4a and 4b, beyond security, internal computers and networks can be monitored for system health. Power users can define their own view of IT Monitor by designing screens like the one above in minutes. These views can be used as templates for creating other views and can be converted to web/thin client views for use by more casual users. Cautionary problems are dynamically coded in yellow, while pre-alarm conditions are identified in red. Alarms can then be triggered and stored. This allows for alarm history to unveil hidden problems that cannot be solved through current state.

Summary

As organizations move from fault tolerant to fault resistant to fault prevention, it also has the architecture in place to move toward more advanced security practices. Real-time Performance Management architectures like PI give the utility an infrastructure. And much like traveling to the moon spurred the solid-state technology and an economic revolution in computer technology — by making the organization more secure and economically strong, we can realize similar economic benefits. Business drivers and the need for information are forcing utilities to become real-time organizations, and so is security. ■

GUNS & BUTTER: Good Understanding of National Security & Best Underlying Technology Targeting Economic Resurgence

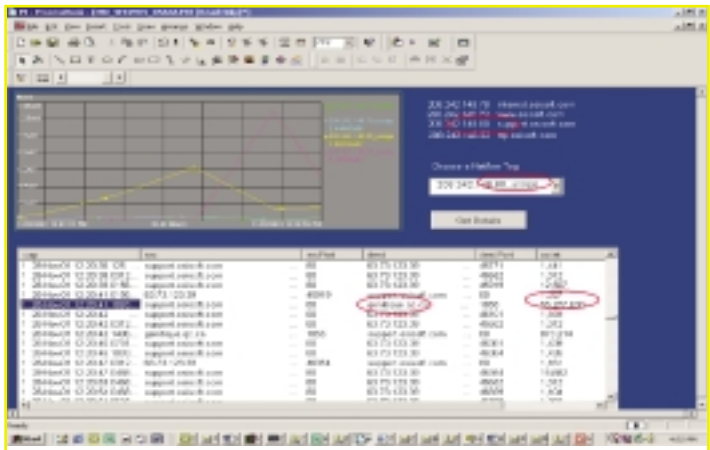


Figure 3: The same technology that is used to monitor heavy users of CPU time can also be used to identify intruders by an unauthorized IP address.

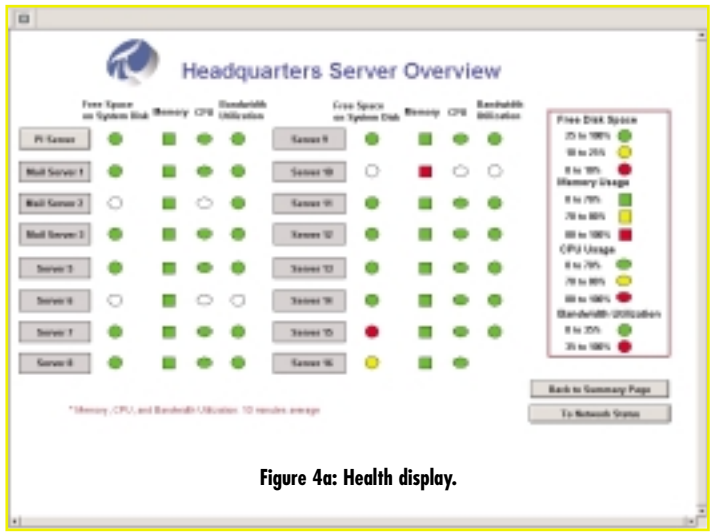


Figure 4a: Health display.

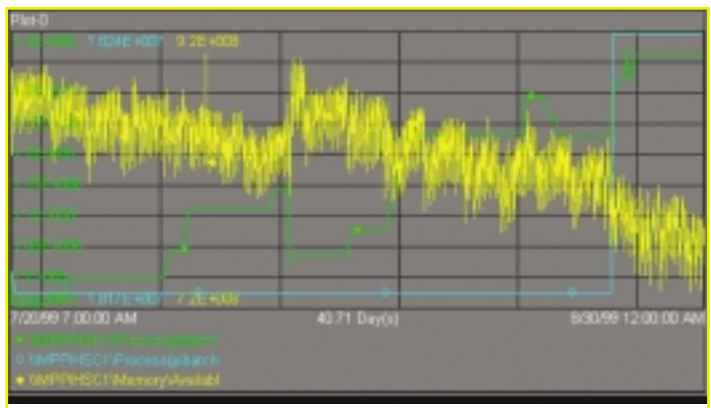


Figure 4b: Shows that any of the dynamic points in Figure 4a can be automatically trended.

[1] Weiss, Joseph M., before the Committee on Government Reform's Subcommittee on Government Efficiency, Financial Management and Intergovernmental Relations, U.S. House of Representatives, July 24, 2002

[2] Ayers, L., D. Dolezilek, "Reinventing Asset Management," Proceedings of the GITA Conference XXV, March 2001.

[3] Ayers, L., J. Baranowski, "Substations Transformers: Two Birds, One Stone," Electric Energy Magazine, July-August 2002.

[4] Ayers, L. "Managing Your Data – From the Field to the Desktop," Conference Proceedings DA/DSM Europe, October 1999.

[5] Ayers, L., "Temporal Data — The Undiscovered Country," Proceedings of the GITA Conference XXVI, March 2002.

Circle 4 on Reader Service Card

Succeeding with CRM:

The Importance of Retail and Change Management Strategies

By: Bob Brnilovich, Senior Vice President, Global Professional Services, SPL WorldGroup

In the mid-1990s, North American electric utilities enthusiastically embraced the concept of Customer Relationship Management (CRM). At the time, software vendors presented CRM as a package of IT functions that went well beyond the legacy Customer Information Systems of the time. With advanced tools for identifying customer niches and their evolving needs, along with developing, selling, and marketing new products and services, CRM offered utilities a way to deal effectively with the move toward retail competition that was then sweeping the industry.

Utilities that went forward with CRM implementations were well prepared to handle the new, competitive retail market. But for many, retail competition never arrived. And in the meantime, vendors of customer management solutions, originally seen as limited CIS replacements, have expanded their applications to encompass many of the most important customer service improvements previously available only in extensive CRM solutions.

Under those circumstances, it's hardly surprising that CRM has not delivered an expected return on investment (ROI).

That doesn't mean, however, that utility CRM needs to join the CalPX on the industry's pile of historical artifacts. Delivering full and complete customer satisfaction remains a cornerstone of the electric utility industry. CRM functionality—obtained through dedicated application packages, advanced customer management tools, or expansions of legacy-system functions—has a definite role to play in today's utility.

To realize the full benefits of existing and proposed new CRM applications, however, utility managers and executives must take a multi-step approach to incorporating the new functionality into the entire fabric of the organization. There are four steps necessary for success:

Step 1: Establish a retail strategy.

Both unregulated and regulated segments of the utility market have retail functions. From distribution companies to competitive energy retailers, every utility company that sells products and services to customers is in retail. Today, however, many utilities have not adopted that perspective.

To shift to a retail mentality, utilities must view customers as partners with rapidly growing expectations about product variety and service quality.

A retail strategy has many components, including target markets, product lines, branding, and measurements for each product line's profitability in different market segments. The foundation for the plan is in-depth knowledge of customer preferences, typically gleaned from customer focus groups and distributed to those in the organization who are empowered to act on it. A certain customer segment may want to purchase green power, for example. Another segment may want budget billing or a guaranteed annual price. Yet another may wish to have a reliable backup power source in the event of an outage. By definition, a retail strategy revolves around letting customers design the products or services they desire at a price they consider fair.

Step 2: Use CRM to build out and implement retail strategy.

CRM is far more than just software. It is a combination of strategies, people, processes, and technologies that enables companies to boost customer retention and meet demand for tailored products and services in new and profitable ways.

CRM is a way to approach the process of discovering what customers want. It is a commitment to streamline everything from customer initiation through to product and service delivery. It is a way to develop knowledge of each customer's preferences and purchasing patterns and to use that knowledge to cross-sell and up-sell new products and services that complement what customers have purchased in the past.

Step 3: Design and implement a retail-oriented organizational structure.

Once a retail strategy is in place, utility companies need to begin structuring their organizations around the concept of satisfying customer demand. The necessary organizational changes will be far more sweeping than those that occurred when traditionally integrated utilities restructured their operations by unbundling regulated and unregulated businesses into separate business units.

Many of the most highly regarded and successful retail companies are organized by product line. Managers are responsible product line profitability or loss, and they have the authority to leverage the cross-functional resources of the enterprise to make their product lines succeed in the market.

Step 4: Put change management strategies into place.

Organization by product line is foreign to most utility companies, where hierarchical structures are the norm and rewards are allocated based on the performance of the entire organization. Thus, shifting from a rate-based business model to one organized around product lines with individual responsibility for product success or failure will be a major change for most utilities.

Change is not an easy process. Among the many by-products of significant organizational restructuring are discontinuity, disorder, and distraction. There are differences between what was once appropriate and what will now be appropriate. There is uncertainty about what should be done and the standards to apply.

Most executives know that organizational change of this magnitude is impossible without full staff cooperation and participation. They know that they must lead the charge, and that employees must implement the changes. However, top management typically overestimates the degree of cooperation it will get and underestimates the cost and complexity of change. And, just when visible executive leadership is urgently required to enable the necessary transformations, top managers are swamped by decisions about what to do and feel they have less time for managing process changes.

InfoNetrix™
The Market Intelligence Information Network

in Association with…

Electric ENERGY MAGAZINE

PRESENTS

The Utility Horizons™ Reports Series

"Automation Strategies, Issues & Trends for Progressive Electric Utilities (2003-2006)"

A compendium of automation issues, trends and sources for UTILITY MANAGERS who want to turn their automation investments into critical success factors…

Order all 5 volumes today!

Created specifically for forward-thinking utility managers who want to turn automation investments into critical success factors. Reports include an *Executive Market Overview of T&D Management Solutions (TDMS)* and *GIS & Mobile Computing Solutions (GMCS)* plus separate volumes addressing *Market Drivers, Issues & Trends* and the *Supplier Environment* in each sector.

UTILITY HORIZONS™ REPORTS ORDER FORM

ORDER SEPARATELY OR 5-VOLUME SET	PRICE	COPIES*	TOTAL
VOLUME 1: EXECUTIVE MARKET OVERVIEW	$US 395		
VOLUME 2: TDMS MARKET DRIVERS, ISSUES & TRENDS	$US 395		
VOLUME 3: TDMS SUPPLIER ENVIRONMENT	$US 395		
VOLUME 4: GMCS MARKET DRIVERS, ISSUES & TRENDS	$US 395		
VOLUME 5: GMCS SUPPLIER ENVIRONMENT	$US 395		
5-VOLUME SET (ONE COPY OF EACH VOLUME ABOVE)	$US 1,595		
	SUBTOTALS		
FAX FORM TO: 504-466-2230	*Louisiana, add 8% State Sales Tax*		
	TOTAL AMOUNT ($US)		

*(*Individual volumes delivered via email; report set delivered on CD)*

NAME

TITLE

ORGANIZATION

ADDRESS

CITY ST/PROV M/C

TEL FAX:

EMAIL

(Reports emailed to above address unless otherwise indicated)

MAIL OR FAX THIS FORM TO:

InfoNetrix LLC
P.O. Box 640698
Kenner, LA 70064 USA
FAX: +1.504.466.2230
(TEL: 504.466.3460)

www.InfoNetrix.com

PAYMENT METHOD:

❑ Check (Payable to InfoNetrix, LLC)
❑ VISA ❑ Master Card
❑ Amex ❑ Discover
❑ P.O. (#)

Card #

Expiration (MM/DD/YYYY)

Signature (Required)

Circle 13 on Reader Service Card

Some executives believe that staff will welcome change—or at least make an effort, if only to preserve their jobs. Others view change management as a "back burner" priority that can be addressed when resources free up.

If mismanaged, restructuring can all too easily make people feel helpless, anxious, startled, embarrassed, overworked, cynical, hostile, and worse. Restructuring thus produces a window of vulnerability, a time when exposure to disease is increased at precisely the same time as the corporate body is temporarily weakened. As a result, change management must be on the front burner, and it must occur before new directions are defined and new technologies arrive.

Change management initiatives are among the most difficult an organization faces because so many elements must be completed successfully. The chart below details each of the vital elements and explains what the company risks if the element is omitted or mismanaged.

Successful change requires that projects successfully achieve all the elements in the left-hand column in this chart. Ensuring that all these elements are managed well helps companies navigate change while retaining company value and morale. And if managed gracefully, organizational and cultural changes can reinvigorate a company, inspiring a new sense of team spirit and camaraderie among staff and renewing commitments to corporate success.

Change Management: The Road to Project Failure

SUCCESSFUL CHANGE REQUIRES:	WITHOUT IT:	AND PROJECTS MAY END IN:
A Case for Change	Project team members cannot agree on a vision of the ultimate results of the project.	No Action
Clear and Shared Vision	It is difficult to ensure agreement on a plan to achieve project goals—its guiding architecture.	No Direction
A Guiding Architecture	It is difficult for those affected to experience commitment, as it is unclear if specific actions will further project success.	No Ownership
Leader and Stakeholder Commitment	Communications both among the project team members and between the team and the rest of the organization lacks force, failing to inspire others to adopt project goals.	No Role Models
Effective Communication	Cultural adjustments are difficult to achieve or misdirected.	No Knowledge
Cultural Fit	Project team members fear that achievement of project goals will undermine their position within the organization's culture and framework.	No Willingness
Individual and Team Capability	Project team members find it difficult or impossible to demonstrate that project goals have been achieved.	No Lasting Effect
Performance Measures	Neither project team members nor others the organization are motivated to persevere in the goals of the project.	No Reinforcement

When managers realize—too late—that change management should not have been postponed, they often attempt to salvage the innovation initiative by bringing in an outside team of change management experts. That impulse has some merit. There are a number of proven methodologies that can help overcome organizational inertia and prepare employees to respond positively to innovation. However, the process takes months at a minimum. By the time executives and employees are on the same wavelength, the window of opportunity stimulating change has probably long since closed. Change fails simply because the company implemented process and technology changes before implementing change management for the people pivotal to success. Other changes are possible in the future, of course. But they must be played out against the backdrop of initial failure and the skepticism it engenders.

CRM implementations—founded solidly on both retail and CRM strategies—can be successful only when organizations are prepared for change. Change management must therefore be on the front burner and must be implemented before new business directions or technologies are proposed.

Conclusion

North American retail energy markets have not evolved as predicted in the mid-1990s. Investments were made in CRM and other IT applications that have not proved as central to success as planned. But there is no reason to lament these investments or to view them as failures. It is time to acknowledge that "a funny thing happened on the way to the future" and move on.

CRM functions can and should be an important part of any utility's plan to serve customers thoroughly and well. In the presence of a clearly articulated retail strategy, and viewed as one of the means of strategic implementation, CRM can provide a firm foundation for building customer loyalty and support long into the future. ■

27th Annual
CIS Conference

May 31 - June 3, 2003 · Nashville Convention Center

Keynote Speaker

General H. Norman Schwarzkopf

Sunday, June 1, 2003, 1:00 pm

Special Event Concert

Randy Travis

Monday, June 2, 2003, Ryman Auditorium, 9:00 pm

The Utility Industry's Premiere Educational Conference for Customer Service Professionals!

2003 Workshop Tracks

Strategies and Trends

Customer Information

Customer Relationship Management

Customer Care

Interfaced Systems

Exhibitor Showcases

CIS CONFERENCE®

903-786-3214
903-786-6136 fax
cis@cisconference.org

Complete information available at **www.cisconference.org**

Circle 3 on Reader Service Card

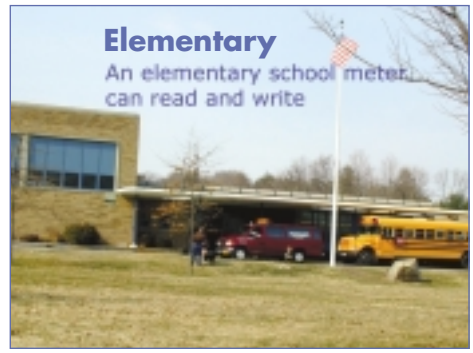
By:
Gerald Mimno
CEO
Advanced AMR Technologies LLC

Send your Electric Meter to College

Electric meters share this with children - They can earn more later if they have more education now. Ninety percent of electric meters have an elementary school education. They can read and write. Now suppose you send them to high school or college. What would you get back? This is not just an academic question. It is of critical concern on the West Coast where the droughts of 2000 have returned and utilities must purchase wholesale power to replace low cost hydro energy. In 2001, Idaho rate payers saw monthly bills rise 39% and the Federal Energy Regulatory Commission has found that the market manipulation exercised by wholesalers and traders cost the rate payers in California two billion dollars.

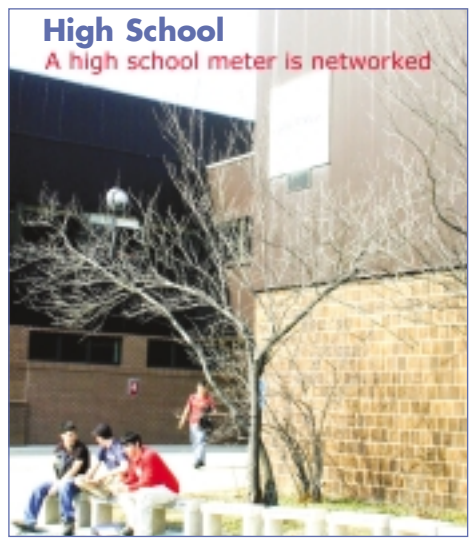
Smarter meters can mitigate market spikes by enabling consumers to respond to Time-of-Use tariffs and aggregate demand response. Public Utility Commissions in California and Idaho decided two years ago that some demand response is essential to discipline the wholesale market. Faced with peaking prices, a small amount of demand response can leverage prices down by a percentage ten times as great. Recognizing the value in "harnessing mice" for demand response, both PUCs embarked on studies aimed at implementing smart meters statewide. The cost for TOU meter systems would be $US 1.8 Billion for PG&E's 4.7 million electric meters in California's and $US 72 Million for Idaho's 450,000 meters. 43% of the cost is in the meter, the balance is for communications capital, networking, and data management. Under the guidance of the PUCs, these costs and TOU tariffs would be added to regulated rates.

For two years, the CA and ID PUCs have studied every aspect of statewide AMR with at least daily TOU communications. They have cautiously approached the point of a decision which might see statewide AMR beginning in 2004. So what kind of metering, communications, networks, and controls have they been studying? One way to present their studies is to think of meters as having different levels of education and different expectations of return.



Elementary School Meter

It reads and writes. It costs about $US 40 plus about $US 1 a month for a walk around meter reader. They represent 90% of all meters. The 9% of meters who have reached middle school can talk once a month to a mobile van or use the telephone. They cost about $US 90 plus monthly reading cost.



High School Meter

Less than 1% of meters have finished high school but they are the focus of advanced AMR envisioned in CA and ID. They are networked and can tell you over the Internet what's going on at least once a day. They support TOU tariffs and demand response. They can also write reports and tell you how present consumption compares to history or how your building compares to similar buildings. They can tell you a lot about how you can reduce monthly electric bills and save money. They cost $145 plus about $5 month for cellular communications.

College Meter

This meter has left home. Best described as advanced AMR with energy controls, they have been deployed mostly in pilots. They can make their own decisions about many things. They can decide when and how to save money and they can do it for you. They are networked to real-time demand and supply systems and can operate digital energy controls based on the information they gather. They can respond to critical peak pricing signals and aggregate their response with thousands of others to balance the transmission system and reduce price spikes. They cost $700+ and require a broad band connection.

Taxpayers and parents spend $US 3,500 a year on elementary education per student, twice that for a high school student and ten times that for a private college. They wouldn't spend this money without a return. So what is the return on educated metering?

High school The California Public Utilities Commission is evaluating networked meters for the entire state at a system cost of $US 160 at the meter and $US 220 for communications and networking. In February the Idaho PUC ordered Idaho Power to plan advanced metering throughout its service territory for a system cost of $US 160 per meter. The benefits of advanced metering with communications to the Internet are to support Energy Information Systems (EIS), Time-of-Use tariffs, peak load management, critical peak TOU, demand response, energy efficiency, and conservation. The PUCs identified benefits that flow individually to the consumer by providing information needed for lowering their bills and collectively to all ratepayers as a result of market response mitigating price spikes and reducing consumption of expensive peak power.

The California PUC study notes that just putting a meter on line can reduce energy consumption by 5%. This is the "discovery" effect when rate payers see a real load profile of what power they use and when. They frequently "discover" they don't need that extra refrigerator in the garage. On the commercial side, Leslie Lambert of Lambert Engineering says, "Most inefficiencies are invisible to management… Experience shows that 10% or greater savings often result from simply operating what you have more efficiently". *(Energy Pulse 2.25.03)*

College A college trained meter combines Internet communications with intelligent control. A residential installation, typically over cable or power line carrier, costs about $700 and manages Time-of-Use tariffs, Critical Peak Pricing (CPP), and an air conditioning or electric heat thermostat. On the commercial side, the New York Energy Research and Development Authority provides grants up to $US 3500 for advanced commercial meters. One of the biggest pay backs is to enable critical peak pricing which can save significant sums for both the customer and the utility. In Idaho, the PUC estimates that critical peak pricing could save rate payers more than $US 1 million. Additionally, if just 25% of residential customers participated, the CPP system could reduce peak demand by 40 MW. Long term, according to studies cited by the PUC, "Idaho Power would have the potential to avoid $US 12 million per year in carrying charges for capital investment in peaking facilities" *(IPUC 2/21/03)*

Combining metering with communications and controls can reduce energy waste ten to fifteen percent. Coupled with Time of Use tariffs and incentives, the system can pay for itself in a year or two depending on market spikes. A residential system is aimed at managing heating or cooling in real time, especially during critical peak pricing episodes. Day to day, the management of heating and cooling through the afternoon peak demand period saves small amounts without any human involvement. The savings accumulate automatically. A commercial system manages coincident demand adjusting refrigeration, lighting, and HVAC through the daily peak and becoming especially smart during critical peak pricing incidents. A single soft drink vender using $30 month power can save $3 month simply by coasting through the daily demand peak and the midnight hours (reducing both peak kW and monthly kWh). College campuses have dozens of vending machines each potentially offering a ten percent saving. Bigger savings can be achieved by managing walk-in refrigeration, dimming office lighting on bright days, and managing co-incident demand of heating and air conditioning.

A college trained meter combines digital logic, communications, and energy control. Microprocessors in your meter managing air conditioning are relatively inexpensive compared to the cost of the energy flowing through the meter. The Internet, connected to control systems by cable or wireless, is the capstone paying dividends on a college education. Elementary school AMR captures benefits accruing to the retail electricity supplier. These benefits improve meter reading. High school meters capture benefits accruing to all the rate payers as everyone benefits from lower cost of peak power. The college meter captures benefits accruing to all the above and to the home owner or businesses by automatically timing the consumption of peak kilowatts and total kilowatt hours. Just like a college education, a baccalaureate meter will cost more in the short run, but will quickly pay for itself and return ten to twenty percent in energy savings by reducing waste. ■

About the Author

Gerald Mimno writes extensively on the value of interval data. He has many years experience with the technology of real-time AMR. Professionally, he is CEO of Advanced AMR Technologies LLC based in Peabody, MA. He encourages comments to gmimno@AdvancedAMR.com

27th Annual CIS Conference

May 31st - June 3rd, 2003
Nashville Convention Center

Schedule at-a-glance

Saturday, May 31st, 2003

2:00 - 6:00 p.m.	Registration
4:00 - 6:00 p.m.	Registration Reception - sponsored by Docucorp
8:00 p.m.	Welcome Reception - sponsored by Itron
8:00 - 9:30 p.m.	Welcome Entertainment and Dance - sponsored by Open-c Solutions

Sunday, June 1st, 2003

7:30 - 8:00 a.m.	Worship Service
8:00 - 9:15 a.m.	Continental Breakfast - sponsored by ORACLE
8:00 - 11:00 a.m.	Late Registration
9:00 - 11:00 a.m.	Exhibit Hall Invitation - Only Demonstrations
9:15 - 9:45 a.m.	Welcome and Opening Remarks
10:00 - 11:30 a.m.	Session 1 Workshops
11:00 a.m. - 6:00 p.m.	Exhibit Hall Open
11:30 a.m.- 12:45 p.m.	Lunch in Exhibit Hall - sponsored by ORACLE
1:00 - 2:00 p.m.	Keynote Speaker: General H. Norman Schwarzkopf - sponsored by Cayenta
2:00 - 2:15 p.m.	Break in Exhibit Hall - sponsored by SAP Public Services
2:30 - 4:00 p.m.	Session 2 Workshops
4:00 - 5:30 p.m.	Exhibitor Reception - sponsored by Indus International
7:00 - 11:00 p.m.	Exhibitor Hospitality Suites Open

Monday, June 2nd, 2003

7:00 - 8:15 a.m.	Continental Breakfast - sponsored by Advanced Utility Systems
8:15 - 9:30 a.m.	General Session
8:30 - 9:30 a.m.	Keynote Speaker: Connie Podesta - sponsored by Advanced Utility Systems
9:00 - 10:45 a.m.	Exhibit Hall Invitation - Only Demonstrations
9:45 - 10:45 a.m.	Session 3 Workshops
10:45 - 11:00 a.m.	Break in Exhibit Hall - sponsored by SAP Public Services
10:45 a.m. - 5:00 p.m.	Exhibit Hall Open
11:00 a.m. - 12:00 p.m.	Session 4 Workshops
12:00 - 1:30 p.m.	Lunch in Exhibit Hall - sponsored by Utility Solutions, Inc.
1:45 - 2:45 p.m.	Session 5 Workshops
2:45 - 3:00 p.m.	Break in Exhibit Hall - sponsored by SAP Public Services
3:00 - 4:00 p.m.	Session 6 Workshops
6:00 - 7:00 p.m.	Convention Center Special Event Reception - sponsored by Conversant
7:30 - 9:00 p.m.	Country Music Hall of Fame Dinner - sponsored by Alliance Data Systems
9:15 - 10:30 p.m.	Randy Travis at the Ryman Auditorium - sponsored by SPL WorldGroup

Tuesday, June 3rd, 2003

7:30 - 8:15 a.m.	Continental Breakfast - sponsored by PartnerSolve LLC
8:15 - 8:30 a.m.	General Session
8:45 - 9:45 a.m.	Session 7 Workshops
9:45 - 10:00 a.m.	Break in Exhibit Hall - sponsored by SAP Public Services
10:00 - 11:00 a.m.	Session 8 Workshops
11:15 a.m. - 1:30 p.m.	Customer Service Center Tours: Metro Water Services Nashville Electric Service

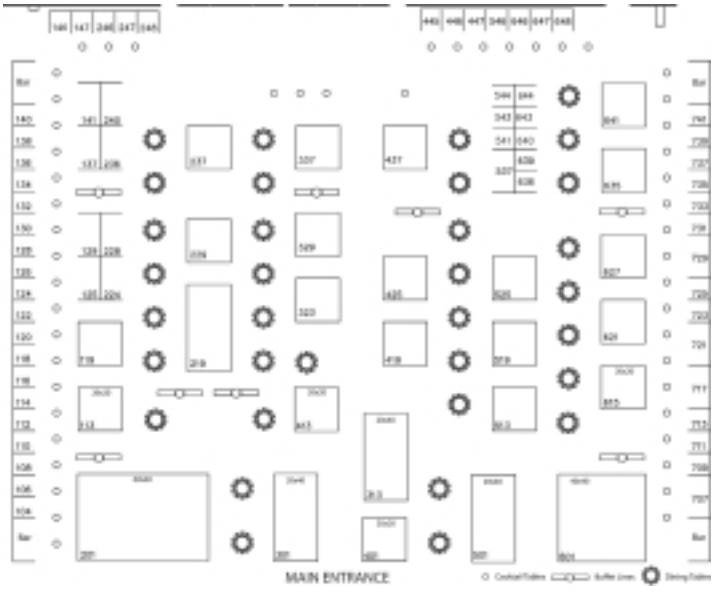
Exhibitors

Company	Booth
Able Software, Inc.	731
Accenture	525
Advanced Utility Systems Corporation	513
Alliance Data Systems	401
AMX International	413
Applied Technology Solutions, Inc.	108
Axiom Corporation	136
Blue Heron Consulting Corporation	419
Capstone Consulting Partners	125
Cayenta	301
Centurion, Inc.	643
Check Printers, Inc.	446
ClearNova	138
Cogsdale Corporation	119
ComTec, Inc.	639
Conversant, Inc.	717
CORE Business Technologies	106
Cpak Corporation	248
Daffron & Associates, Inc.	337
DATAMATX	648
DataProse Billing Solutions	104
Docucorp	112
DST International Billing, Ltd.	236
E Commerce Group	709
EC Power, Inc.	140
Eden Systems, Inc.	543

Company	Booth
Electric Energy Publications	737
Energy Central	721
Energy Solutions Plus	224
EnvoyWorldWide	640
Frank Solutions, Inc.	247
Gentrack	615
Greater Miami Convention & Visitors Bureau	147
Group 1 Software	114
Hansen Information Technologies	627
Hart's Energy Markets	229
IBank, LLC	118
IBM	313
Image Now	733
IMSofTech, Inc.	128
INCODE, Inc.	126
Indus Utility Systems, Inc.	501
Itron	329
Language Line Services	739
LODESTAR Corporation	425
MICON Consulting	707
MITEM Corporation	723
National Rural Electric Cooperative Ass.	447
New Dimension Solutions, Inc.	541
Open-c Solutions	228
Optical Image Technology, Inc.	445
Optiron	116
ORCOM	601

Company	Booth
OSG Billing Services	122
OSI	641
PartnerSolve LLC	519
Peace Software	323
PennWell Publishing	644
PeopleSoft	735
Platts, A Division of the McGraw-Hill Cos.	729
Power & Gas Magazine	124
Public Utilities Reports, Inc.	130
Rekadom Incorporated	621
SAP Public Services, Inc.	219
Satyam Computer Services, Ltd.	544
SEAGULL	713
Severn Trent Systems	537
SFI	636
Soluziona	237
Source One Communications	646
SPL WorldGroup	201
Split Rock Consulting, Inc.	134
Springbrook Software	725
SunGard Mailing Services	132
Systems & Software, Inc.	437
TMG Consulting, Inc.	110
TUI Consulting, Inc.	129
UtiliPoint International	711
UtiliTec, An Ancor Company	246
Utility Solutions, Inc.	137
Wipro	113

Floor Plan



Amidst the precipitous drop in overall IT investment, corporate spending on customer-focused applications, such as customer relationship management (CRM), has been a bright spot. The utility industry is no exception. Facing new competitive challenges, electric providers have had to focus much more on the customer experience, rather than just on operational efficiency. Their attempts to improve customer satisfaction, boost loyalty and increase retention by investing heavily in CRM, however, have yielded little, if any return.

This article examines the challenges providers face with CRM implementations and describes how they can turn CRM output into actionable customer communications that deliver compelling messages, streamline operations, reduce costs, and ultimately, help increase revenues.

Achieving a Return From Customer-Focused Investments

By: William D. Barry, senior V.P. of sales and marketing, Docucorp International

How Did We Get Here?

In the days of highly regulated markets, when customers were a largely captive audience, operating efficiency was the foremost concern for electric providers. As a result, customer information systems (CIS) were designed to provide an efficient mechanism for keeping track of customers and populating the billing application. These systems have served their purpose well and are important information assets.

However, after deregulation, customer-centricity, rather than operational efficiency, has become the overriding concern for electric providers. Now, they must better understand their customers and improve communication with them, or risk their migration to competitors. Competition necessitates a new focus on customer relationships, communication and satisfaction, while not losing sight of traditional cost and efficiency goals. Another level of complexity is added when a provider acquires, or is acquired by, another provider, a common occurrence in today's market.

In this new environment, providers have invested heavily in CRM in an attempt to learn more about their customers' interests, desires and habits. These applications provide a new level of analysis and insight beyond what is capable with CISs. Though implementation is often a significant struggle, the real challenges arise once the CRM system becomes operational.

First, there is the technical challenge of compiling meaningful, quality customer data with which to populate the system. The information contained in the CIS will form the backbone of this effort, but good data from all transactions, as well as many other sources, must be added.

Providers also face significant business and cultural challenges. For example, with the onset of competition an entirely new corporate mindset must be adopted. Image, messaging and one-to-one relationships become critical, and this means attitudes, roles, compensation and career choices are affected. Providers must begin considering customer contact, whether through billing or other correspondence, a revenue generator rather than a cost driver.

Likewise, business processes are affected. Previously, when customer information fed only the billing process, the organizational impact was limited. But when attempting to integrate CRM output with billing and other customer correspondence, many different processes and departments become involved, increasing the potential for less-than-optimum results.

Leveraging CRM Output

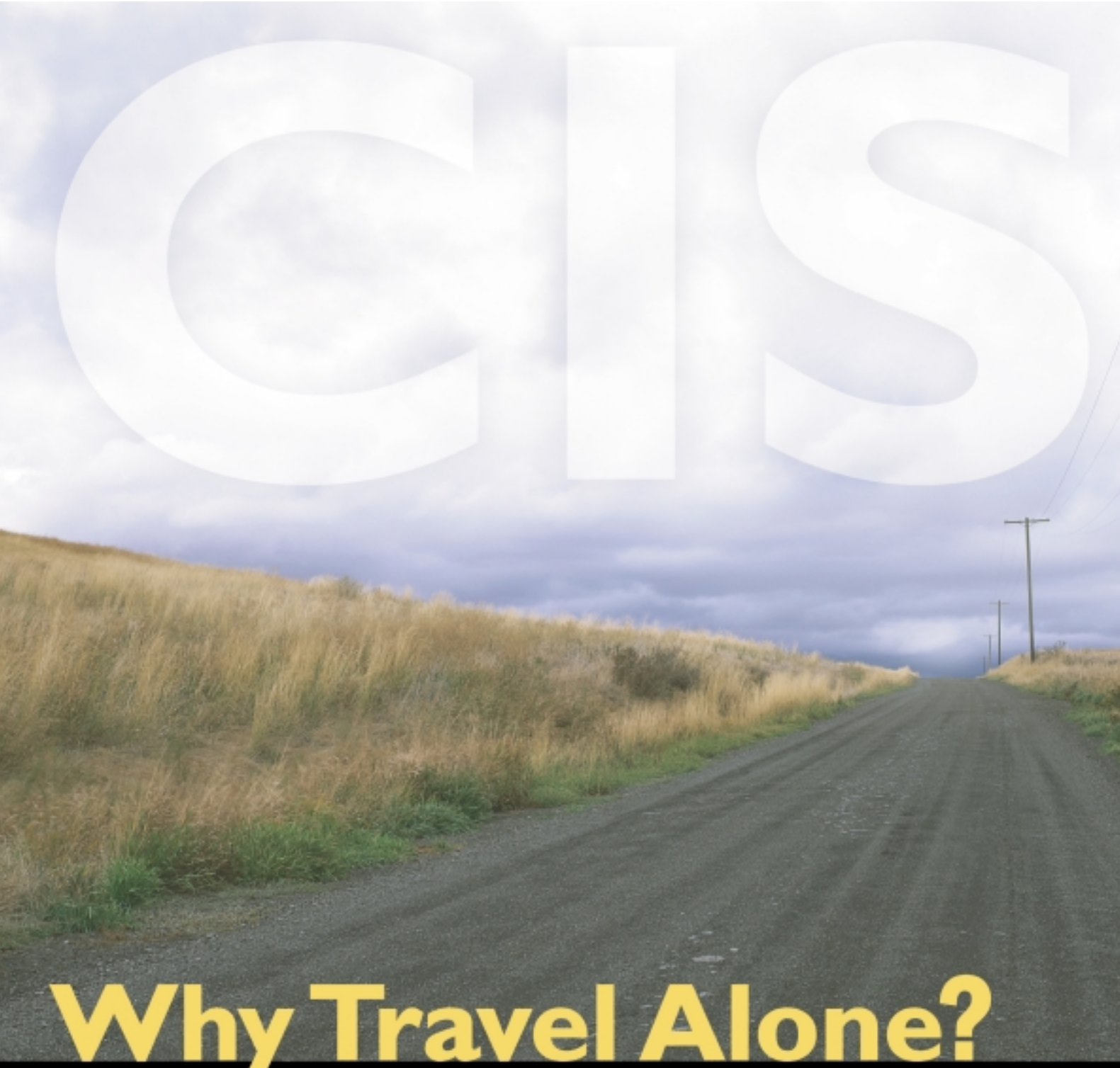
In light of all these challenges, one simple question must be asked – how can CRM output be utilized more effectively in the new competitive environment and provide a return on what, for many, has been a major investment? Unless CRM output can be leveraged outside of somebody's workstation, the investment will have been wasted. This is a situation in which many providers have found themselves.

A key consideration in answering this question is realizing that touch points with customers are few, thus every interaction must count. Any information presented to customers, whether on their monthly bill or other related correspondence, must be clear, personalized, actionable, and delivered in the format desired by the customer. Accomplishing this objective requires electronic archival, retrieval, form creation, presentment, printing and Web-enabling capabilities that can be customized for any size of operation.

Extracting and Preparing Data

As providers struggle to support their CRM initiative, one of their first and most crucial requirements is a simple, effective way to exchange customer data, such as between billing, the CRM application and correspondence-generating software solutions. Tools that enable technical staff to quickly, easily and inexpensively develop processes to accept data from multiple sources and in multiple formats, translate and manipulate that data into the new data outputs needed and put these processes into production are critical.

Rather than rely on custom designed bridging programs that require commitments of multiple months of programmer effort, and weeks to months of calendar time, electric providers can now implement Extract-Translate-Load (ETL) tools that quickly and efficiently provide the same capability.



Why Travel Alone?

Experienced Guide

With 235 successful projects TMG Consulting has the experience necessary to guide you past project pitfalls. TMG Consulting provides CIS review, selection, quality assurance, and project troubleshooting.

Proven Path

TMG Consulting has developed a proven methodology which will result in a successful project. Using our exclusive project tools and templates, TMG Consulting provides an efficient process that saves you time and money.

Direction

You know where you want to go. We can show you how to get there. TMG Consulting is vendor independent so you can be confident that our directions are based on what is best for you.

Learn More

Receive a free CIS resource CD by going to www.tmgconsulting.com/ee.

www.tmgconsulting.com | 512.288.2655 | www.cisworld.com

TMG Consulting

These tools extract data from multiple files and formats, translate data between formats, and then facilitate loading into applications necessary to output the data in the form of customized billing or other communications.

Turning Data Into Documents

Another crucial step in enabling the efficient and cost-effective utilization of CRM output is designing clear, consistent, personalized and powerful customer communications. How much information is provided to customers, how easy it is to navigate information within correspondence, how sophisticated correspondence appears and how much the correspondence is personalized can strongly influence customer opinions and, ultimately, determine the return on CRM investment and the effect on the bottom line.

New software solutions supply electric providers unparalleled ability to design complex, personalized, individualized documents, to accept transaction and other input data from a wide variety of sources to personalize these documents, and to create final documents in a wide variety of printer and electronic formats for distribution. These high-volume, production-ready information acquisition, personalization and presentation systems enable the production of millions of documents, each optimized for an audience of one. In addition, they enable the conditional inclusion of information based on specific business rules, such as when marketing new services to customers above a certain monthly spending threshold. Finally, any type of bill – summary, multi-service, commercial, residential and industrial – or supporting communication – reminder notices, service inserts, customer service correspondence and marketing notices – can be generated by such tools.

It is also important that customer service representatives generate personalized correspondence for every customer contact. They must be able to provide their correspondence – from a simple follow-up explanation after handling a customer call to a confirmation that a service problem has been corrected – in a timely and cost-effective manner. This capability requires archival and retrieval tools that can produce correspondence quickly from pre-existing documents, whether stored in a single, centralized library or scattered across the corporate network. These tools should automatically combine logos, graphics, text blocks and digitized signatures, streamlining correspondence production and enabling representatives to deliver personalized messages swiftly.

Electrifying Bills and Customer Correspondence

As online transactions become more commonplace, customers appreciate – and even expect – immediate access to view, print and even pay bills over the Internet, at a time of their choosing. In addition, Internet-enablement helps reduce, if not eliminate, printing and mailing costs while allowing customer service representatives to instantly manage customer information online and speed service interactions.

Accomplishing effective customer relationship management in e-bills or customer service interactions requires tools that help data flow easily from the CIS system, through document creation facilities, and on to the electronic presentation of the bill. Less manual intervention – to manipulate print streams and extract data – saves money and minimizes opportunities for errors. When e-billing and payment capabilities come from the same vendor providing document creation and delivery functionality, the integration is even tighter and the opportunity to achieve a positive return even greater.

Letting Someone Else Do the Work

A final consideration in creating compelling and cost-effective results from CRM output is ensuring that production facilities are capable of handling the volume of bills and other communication items. If electric providers cannot actually produce and deliver their customized content, all is for naught. For this reason, some utilities have chosen to outsource processing, printing and mail handling of their communications to application service providers (ASPs).

With capabilities such as high-speed printing, address verification, intelligent insertion, electronic bar coding, EDI transmissions and more, ASPs ensure that personalized customer documents are created and delivered according to exact quality and time specifications. The ASP assumes the cost and risk of implementing the software and Internet technology necessary to produce, print and deliver customized correspondence, including electronic bills.

Summary

The onset of deregulation has forced utilities to focus more on the customer experience and less on pure operational efficiency. Legacy customer information systems, though still valuable information assets, have been joined by a new wave of customer-focused IT investments, most prominently customer relationship management (CRM) systems. However, despite significant investments in CRM, few electric providers have been able to achieve a return on their investment. To fully leverage CRM applications, providers must be able to take system output and design, produce and deliver actionable, compelling, cost-effective and personalized customer communications. Software tools now exist that enable providers to develop these capabilities, while application service providers enable utilities that so choose to outsource these capabilities. ■

About the Author

William D. Barry is senior vice president of sales and marketing for Dallas-based Docucorp International. For more information, e-mail him at bbarry@docucorp.com, visit www.docucorp.com or call 1-800-735-6620.

Docucorp (Nasdaq: DOCC) is the authority in providing dynamic solutions for acquiring, managing, personalizing and presenting enterprise information. Servicing the entire enterprise information lifecycle, Docucorp's information application software, application service provider (ASP) hosting and professional consulting services enable companies to implement solutions in-house or fully outsource to Docucorp. The company has an installed base of more than 1,200 customers, including many of the largest insurance, utility and financial services organizations.

Headquartered in Dallas, Docucorp has major facilities in Atlanta and Silver Spring, Md. The company also maintains offices in Portland, Maine and Bedford, N.H., as well as an international office in London that represents Europe, Middle East, Africa and Asia Pacific.

Attending the Key Women in Energy-Americas March 2003 awards ceremony held at Edison Electric Institute (EEI) headquarters in Washington, D.C. (front row, L-R): Susan Tomasky, AEP; Kathryn Hollander, U.S. Department of Commerce; Alma Del Toro-Baltaci, BP; Sheila Slocum Hollis, Duane Morris; R.M. 'Johnnie' Burton, MMS, U.S. Department of Interior; Janelle Reese, Koch Hydrocarbon; Lee Margaret Ayers, OSIsoft; Nabila Yousef, YES, Inc. and DTE Energy Technologies; Lynn H. LeMaster, EEI; Diane Webb, EDS; (2nd row, L-R) Tonja Wicks, EEI, Elizabeth A. 'Betsy' Moler, Exelon; Vicky A. Bailey, U.S. Department of Energy; Marianne Kah, ConocoPhillips; E. Renae Conley, Entergy Louisiana; Jane Peverett, Union Gas (Duke Energy); Cathy Abbott, Wesley Theological Seminary; Shirley Neff, Goldwyn International Strategies, Jackie LaFontaine, Halliburton; Michelle Kalnas, AEP; Claudette Cox, Cox & Associates and Linda Rader, Rader Energy. Missing from photo: Madeline Boyd and Nachamah Jacobovits, NYMEX; Karen Knutson, the White House; and Sherry Quirk, Sullivan & Worcester.

Photo by Ronald Holloway.

2003 Key Women In Energy™ ~Americas

One hundred women were recognized for their achievements and contributions to their companies or to the energy sector, according to the results of Rader Energy's Key Women in Energy-Americas 2003 awards program.

The honors program is designed to identify and recognize individual performance that results in business excellence across six criss-crossing characteristics of the energy sector. One overall 'winner' was recognized in each category for outstanding performance.

The category 'winners': Leadership - Jane L. Peverett of Toronto-based Union Gas Limited, a division of Duke Energy; Wisdom - Julia Nanay of PFC Energy; Visionary - Jackie LaFontaine with the Energy Services group of Halliburton's Deepwater Global Business and Solutions; Innovation/Creativity – Simone Crook, Vice President of Schlumberger Ltd. SEED (Schlumberger Educational Excellence Foundation); Potential – Alma Del Toro-Baltaci with BP; and Pathfinders/Trailblazers – Nabila Yousef of both Toronto-based YES, Inc. and DTE Energy Technologies.

Royal Dutch/Shell had 6 honorees. AEP and divisions of Schlumberger each had 5, including a single honoree who serves on both boards of directors. ConocoPhillips and Duke Energy each had 4 honorees, spread across both the United States and Canada. Entergy had 3. Two honorees work for each Bechtel Corp., ChevronTexaco, Energy Intelligence (one awarded posthumously), Exelon Corp., the New York Mercantile Exchange, and divisions of Halliburton and Williams.

The program is unique in that honors cross country borders, nationalities, energy verticals, private/public sector organizations, areas of expertise and layers of management. In all, 327 nominations were received from industry peers for women working in Canada, the United States, Mexico, Central-, Latin- and South America and the Caribbean, in an offshoot response to western hemisphere response to Rader Energy's global honors program, '50 Key Women in Energy'.

Country flags are provided for each honoree. Where more than one flag is present, they represent (as known and in order) the honoree's country of birth, dual nationality, country for which their work is honored, and/or current country of employment.

Candidates were judged by a selection committee panel of industry experts. Honorees work in (among other areas) oil, natural gas, power, coal, nanotechnology, transmission/transportation, climate change, energy policy, law, audit, engineering, technology, energy rentals, energy trading and information technology.

Awards were presented as part of an executive conference held at the Edison Electric Institute (EEI) in Washington, D.C., that was part of two simultaneous conferences: the EEI/Canadian Electric Association joint CEO conference and the EEI/American Gas Association joint director's conference. Joining four of the six overall 'winners' at the ceremony (see photo), held during the opening days of the War with Iraq, were honorees employed by the White House, the U.S. Departments of Energy, Commerce and Interior, the Federal Energy Regulatory Commission, and private-sector companies.

EDS hosted the EDS Key Women in Energy Tea immediately prior to the reception and awards dinner. Sponsors for the 2003 Key Women in Energy-Americas program include Bozell & Jacobs, EDS, and the New York Mercantile Exchange. Supporting Organizations include the Canadian Energy Research Institute (CERI), DTE Energy Technologies, the Edison Electric Institute (EEI), Major News Wire and YES, Inc.

2003 Key Women in Energy-Americas Selection Committee:

- Linda K. Rader, President, RaderEnergy (founder/chair, Key Women in Energy), www.keywomeninenergy.com
- Claudette Cox, President, Cox & Associates (Washington lobbyist)
- Richard R. Drouin, Senior Partner, McCarthy Tétrault, LLP, www.mccarthy.ca; and Chairman, North American Electric Reliability Council (NERC), www.nerc.com
- Stephanie Goodman, Director, Public Affairs, Entergy-Koch, LP (Energy Trading), www.eklp.com
- Kevin D. Hutchison, Account Director, Bozell & Jacobs (Sponsor), www.bozelljacobs.com
- E. Daisy Liu, Manager, International Government Affairs, Asia Pacific, ConocoPhillips (Oil/Gas), www.conocophillips.com
- Rebecca McDonald, President, Houston Museum of Natural Science (Natural Gas/Transportation), www.hmns.org
- Richard McMahon, Executive Director, Edison Electric Institute (EEI) (Energy Supply Policy), www.eei.org
- Shirley Neff, Senior Advisor, Goldwyn International Strategies, Washington, D.C. (Energy Policy), www.goldwyn.org
- Fiona Smith, Executive Director, Morgan Stanley UK Limited (Financial Issues), www.morganstanley.com
- Diane M. Webb, Vice President, Global Utilities, Global Energy Industry Solutions, EDS (Sponsor), www.eds.com

SPONSORS

Bozell&Jacobs

EDS

New York Mercantile Exchange

SUPPORTING ORGANIZATIONS

CERI Canadian Energy Research Institute

MNW Major News Wire

EEI Edison Electric Institute

YES Inc. YES Inc.

DTE Energy DTE Energy Technologies

Key Women In Energy™ ~Americas 2003 Honorees

Leadership: There is a new level of excellence commanded of energy leadership in the Western hemisphere.

Category 'Winner': Leadership

Jane L. Peverett, President, Union Gas Limited, a division of Duke Energy, Toronto, Ontario, Canada, www.uniongas.com — Natural Gas Transportation, Distribution & Storage

Jane Peverett assumed leadership in April 2001 of Ontario-based Union Gas. She reinforces the importance of achievement based on merit, and the role that women perform in cultivating future leaders. Her dedicated approach to employee communications includes regular employee meetings, email columns, informal focus group lunches with front line employees, and walkabouts. Peverett spearheaded employee programs to reinforce corporate values, business competencies and balanced scorecards, and has encouraged employee volunteerism and community investment. She organizes an annual management retreat at which women network, meet successful professionals, and receive coaching.

Strategically, Peverett achieved the first performance-based regulation mechanism in Ontario, contributed to the first Ontario Model Franchise Agreement, and is working closely with the Province of Ontario's Ministry of Energy to introduce changes to benefit natural gas consumers.

Leadership Category Honorees:

Vicky A. Bailey, Assistant Secretary, Office of Policy & International Affairs, U.S. Department of Energy, Washington, D.C., USA, www.doe.gov — Energy Policy

Prior to her current appointment, Vicki Bailey was president of PSI Energy Inc. She served as a Commissioner on the Federal Energy Regulatory Commission (1993-2000) and as a Commissioner on the Indiana Utility Regulatory Commission (1986-1993).

Rita Bajura, Director, Department of Energy/National Energy Technology Lab (NETL), Pittsburgh, Pennsylvania, USA, www.netl.doe.gov — Science and Technology Development

Rita Bajura oversees the implementation of major science and technology development programs in fossil energy and environmental technologies, including advanced coal-fired, natural-gas fired, and biomass-fired power generation technologies; environmental control technologies for fossil steam plants; ultra-clean transportation-sector fuels; domestic oil production enhancement technologies, efficiency and environmental quality; natural gas exploration, production, and processing; and nuclear production site environmental cleanup technologies.

Sue Becht, Retired (Formerly Senior Vice President – Investor Relations, Duke Energy), Charlotte, North Carolina, USA, www.duke-energy.com — Energy Finance

Sue Becht retired in December 2002 after 27 years with Duke Energy. Becht was named Treasurer in 1988 and senior vice president in December 2000. She was instrumental in clarifying the investor relations message to investors regarding dramatic corporate industry changes.

Becht served on the Edison Electric Institute's (EEI's) Finance Committee. She was named Investor Relations Officer of the Year by the National Investors Relations Institute.

Nora Brownell, Commissioner, Federal Energy Regulatory Commission (FERC), Washington, D.C., USA, www.ferc.gov — Regulatory Policy

Nora Brownell is an advocate for energy trading reform. She made a very controversial, yet prophetic, comment in Spring 2002 to the effect that persons in the energy community who broke the rules should come forward to the FERC and use it as something of an energy confessional. FERC would find out eventually, she noted, so they might as well make it easier on themselves by confessing and then trying to work something out.

Rejane Medinger (R.M. "Johnnie") Burton, Director, Minerals Management Service (MMS), U.S. Department of Interior, Minerals Management Service, D.C., USA (Country of birth: French Algeria), www.mms.gov — Managing Mineral Assets

Led and challenged by 'Johnnie' Burton since March 2002, the MMS will be an active participant in implementing President Bush's National Energy Policy by managing mineral resources on 1.76 billion submerged acres on the outer continental shelf. Burton, who previously served as a member of the Wyoming State House of Representatives (1982-88), urges individuals to 'tell the story of energy' to promote a positive side of the business.

Brenda Fraser Castonguay, Senior Vice President of Administrative Services, Progress Energy, Raleigh, North Carolina, USA, www.progress-energy.com — Human Resources, Corporate Services, Real Estate

Brenda Castonguay played a critical role in Progress Energy's acquisition of Florida Power. She undertook the challenge of merging two distinct employee cultures to ensure a successful combined entity. Today, all subsidiaries of Progress Energy, representing 16,000 employees, work from a single culture statement: Powered by People, Driven by Performance, Committed to Excellence.

Kim Clark, Vice President and Controller, Entergy-Koch Trading, LP, Houston, Texas, USA, www.entergykoch.com — Accounting, Risk Management

Kim Clark and her staff built systems and controls to help steer EKT away from the accounting woes, increased risk exposure and control deficiencies in today's precarious trading environment. Clark anticipates challenges, allowing EKT's mid- and back-office to keep pace with an increasing level of analytical sophistication on the trading floor, which leaves the company able to focus on business objectives to achieve profitable results.

E. Renae Conley, President and CEO, Entergy Louisiana Inc., Baton Rouge, Louisiana, USA, www.entergy-louisiana.com – Corporate Image

Renae Conley brought her strong financial background and powerful track record of leading dramatic improvement between Entergy's investor relations and Wall Street to Entergy's largest utility company in mid-2000. She earned respect and admiration as she crawled down man-holes, rode with line crews in bucket trucks, and talked to thousands of Louisiana employees and customers. The company responded with top quartile 2002 J.D. Power utility survey placement.

Penni McLean Conner, Vice President, Customer Care, NSTAR Electric and Gas, Westwood (Boston), Massachusetts, USA, www.nstaronline.com — Customer Care Efficiency

When Penni McLean Conner joined NSTAR in April 2002, she implemented a daily line of sight report so employees know how well they are serving their customers. After six months under her leadership, the call center's answer rate rose to 90+ percent from 55% in 2001. Monthly meter reading performance rose to 97% from 78% in 2001. Total arrears dropped below $110 million from about $190 million.

Linda Cook, President & CEO, Shell Canada, Calgary, Alberta, Canada (currently CEO, Gas & Power, Shell International Gas Ltd., London, UK), (Country of Birth: USA), www.shell.com — Oil, Gas & Power

In February 2003, Royal Dutch/Shell named Linda Cook as President and CEO of Shell Canada Ltd., effective July 1, 2003. She will be responsible for the company's business activities across the entire country. She will be moving into the spot left open by the retirement of Tim W. Faithful.

Nancy J. DeSchane, Consultant, Duke Energy (formerly President and CEO, Duke Energy Services Trading & Marketing), Houston, Texas, USA, www.duke-energy.com — Energy Trading

Since her first honor in the 2001 global '50 Key Women in Energy' awards, Nancy DeSchane was promoted from Senior Vice President to President and CEO. DeSchane now serves as a consultant for the new restructuring of Duke Energy North America's business. She previously was providing transitional leadership for two new business areas – Energy Marketing and Energy Management.

Jeri Eagan, Vice President, Finance & Commercial Operations, Shell E&P Company (SEPCo), and Vice President, Finance and CFO — Shell Oil Company, Houston, Texas, USA, www.shelloil.com — E&P Finance

As head of supply operations, accounting and finance functions for Shell's domestic E&P company. Jeri Eagan is in charge of the financial organization, as well as commercial operations for natural gas and crude oil. With the upcoming global reorganization, her financial and commercial responsibilities will expand to include the 'Americas'.

Dawn Farrell, Executive Vice President, TransAlta Corp., Calgary, Alberta, Canada, www.transalta.com — Independent Power Production

Dawn Farrell led the introduction of the Independent Power Producer (IPP) business in TransAlta, starting approximately ten years ago.

Donna L. Garbuttt, Vice President of Marketing – North & South America, Schlumberger, Sugar Land, Texas, USA (Country of birth: Canada), www.schlumberger.com — Product Sales

Since her June 2002 promotion, Donna Garbutt is responsible for a $4 billion marketing & sales business for Schlumberger's technology products. She develops new products and assures they are rolled out. Previously, as Geomarket Manager of Alaska, she was responsible for all Alaskan-based operations and for Improved Safety & Environmental statistics. The company was awarded DNV Level 6 standing for HSE.

Garbutt was Women of Achievement (Outstanding Leadership & Excellence) - Alaska 2001

Katherine Hope Gurun, Senior Vice President & Chief Counsel, Bechtel, San Francisco, California, USA, www.bechtel.com — Engineering Legal Matters

Katherine Hope Gurun serves as general counsel and manager of the legal department for engineering and construction, core business for energy infrastructure giant Bechtel. For example, as chief counsel for Bechtel's London-based Europe, Africa, Middle East, and Southwest Asia region, Gurun negotiated Bechtel's contract to restore the Kuwait oil fields (1991) after the Gulf War.

Sheila Slocum Hollis, Managing Partner, Duane Morris LLP, and member of the Executive Committee and Partners Board, Washington, D.C., USA, www.duanemorris.com — Energy Law

Sheila Slocum Hollis specializes in domestic and international energy, water and environmental matters, and plays a key role in the formation and implementation of energy law and policy.

She is the immediate past chair of the ABA's 11,000-member Section of Environment, Energy and Resources of the American Bar Association (ABA), served on the ABA's Coordinating Group on Energy Law, and from 1993-2001 on the ABA's House of Delegates. Hollis is a member and past president of the Federal Energy Bar Association and serves on the Standing Committee on the Federal Judiciary.

V.J. Horgan, President, President, Portfolio Management, TXU Portfolio Management, Dallas, Texas, USA, www.txuenergy.com — Energy Portfolios

VJ Horgan is responsible for the tactical operations of TXU's North American portfolio, evaluating and managing the commodity risks inherent in TXU Energy's portfolio of assets and customers, and leading TXU's entry into new markets. She currently leads the Edison Electric Institute's (EEI) CEO Policy Committee on Energy Supply's initiatives.

Catherine Hughes, Geomarket Manager, Canada, Schlumberger, Calgary, Alberta, Canada (Country of birth: France), www.slb.com — Oilfield Services Corporate Improvement/Employee Motivation

Catherine Hughes was chosen by the Calgary business community as the 2002 Consumer choice "business woman of the year", but is quick to deflect credit to her entire team. After her 2 years in Canada, the editors of "Canada's Top 100 Employers" chose Schlumberger Canada Limited as one of the best places in the Nation to work. Hewitt survey rankings improved by 36% in one year. The vehicle accident rate decreased by 41%. On the Customer side, three complete operations are now ISO 14001 and 9001 certified.

Mary Hutzler, Director - Integrated Analysis & Forecasting, Energy Information Administration (EIA), U.S. Department of Energy, Washington, D.C., USA, www.eia.doe.gov — Energy Policy

Since August 2002, Hutzler has served as the Acting Deputy Administrator of the EIA. She has testified before numerous Committees in Congress on energy issues and briefed senior officials in the Bush Administration including Vice President Cheney and Secretary of Energy Abraham. From July 2001 to August 2002, she served as Acting Administrator of the EIA.

Fran Keeth, President and Chief Executive Officer (CEO), Shell Chemical LP, and Deputy Chief Executive Officer and Executive Vice President, Shell Chemicals, Ltd., Houston, Texas, USA, www.shell.com/chemicals — Petrochemicals

Fran Keeth was the first woman president and CEO of a major US-based chemical company, Shell Chemical LP. She is also the deputy chief executive officer and executive vice president of London-based Shell Chemicals Limited.

Carin S. Knickel, President, Specialty Businesses, ConocoPhillips, Texas USA, www.conocophillips.com — Retail Gasoline /'Change Leadership Style'

Carin Knickel grew, from 8 to 12 percent, Conoco's share of the retail gasoline market in a large metropolitan area, and plans to reach 20 percent. She believes a business will not reach its full potential until leaders learn how to unlock the potential in people. Knickel hopes to simultaneously create a new culture and grow the company by collaborative thinking, capitalizing on group dynamics, 'idea turning', and influencing management.

Holly Keller Koeppel, Executive Vice President - Energy Services, AEP, Columbus, Ohio, USA, www.aep.com — Preserving Corporate Value Through Divestiture and Negotiations

In two years with AEP, initiatives overseen or directly handled by Holly Keller Koeppel have helped simultaneously preserve significant corporate value and dramatically advance AEP's strategy. As AEP's focus shifts to asset management, she guides the company through a redesign and reorganization of its marketing and trading business and directed a planned exit from the communications business. Promoted twice in the last year, Koeppel led AEP's effort to divest two foreign subsidiaries no longer central to AEP's growth strategy -- one in the UK and the other in Australia, reducing debt by some $3 billion.

Fauzia Lalani, Chief Executive Officer (CEO), Aquila Networks Canada, Calgary, Alberta, Canada (Country of Birth: Uganda), www.aquilanetworkds.com — Electricity Distribution

Fauzia Lalani leads the growth, strategic direction and performance of Aquila Networks Canada, the first pure-play electric distribution business in the province of Alberta, through evolving provincial market reform. Helming an experienced leadership team, Lalani applies proven transition planning and management skills, effective government and stakeholder relations, operational knowledge, experience in both regulated and non-regulated markets and her ability to build teams.

Maria Elizabeth Lizardo, Vice President, Pequiven (Petrochemicals), a subsidiary of Petrólas de Venezuela (PDVSA), Chacao, Caracas, Venezuela, www.pequiven.pdv.com — Petrochemicals

Maria Elizabeth Lizardo has held leadership positions in both oilfield and petrochemical industries. Nothing, however, could prepare an executive for the national oil strike in Venezuela. As top PDVSA executives consider a solution to bring a close to the work disruptions caused by the election of a new board of directors and a new company president, she was quoted by global media, "We're not supporting a stoppage. We are working harder than ever."

Janie Mitcham, President, Texas Region, Reliant Resources, Houston, Texas, USA, www.reliantresources.com — Fuels Acquisition/Supply Negotiations

Janie Mitcham is a tough, but respected, negotiator who vigorously defends Reliant's interests (including coal, lignite, natural gas, fuel oil and petcoke). She is accountable for integrating and coordinating wholesale trading, retail supply, power origination, power generation, operations, and structuring to maximize Reliant's regional business position.

Mitcham serves on the United States National Coal Council executive board and the Gas Industry Standards Board.

Judith C. Moorad, VP Health Safety & Environment (HSE), Shell Oil Products US, Houston, Texas, USA, www.shelloil.com – Oil Health, Safety & Environment

Judith Moorad has overall responsibility for HSE compliance, programs and performance. Through Shell, she sponsored research and agency interactions resulting in risk-based criteria for remediation, and sponsored research into the development of bacteria able to degrade MTBE.

Moorad serves as a Women's Business Enterprise Alliance Board Member and as a Partner's Committee Member of the Deer Park Refining Limited Partnership. She received the 2002 AWC Award for Leadership in Technology and a Certificate of Special Congressional Recognition.

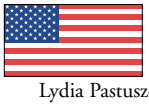
Pamela A. "Pam" Moore, Site Utilities Department Head, Baton Rouge Refinery, ExxonMobil Refining & Supply, Baton Rouge, Louisiana, USA, www.exxonmobil.com — Refinery Energy Management Best Practices

Through Pam Moore's leadership and initiative, the ExxonMobil Baton Rouge refinery is leading the way with the development and implementation of best practices. The net result was significant improvement in refinery energy efficiency. An ExxonMobil executive noted that Moore's approach to energy management is now part of best practices and performance measures being applied globally at ExxonMobil refineries and chemical plants.

Marie-José Nadeau, Executive Vice President Corporate Affairs and Secretary General, Hydro-Québec, Montréal, Québec, Canada, www.hydro-quebec.com — Hydro Energy: Regulatory Issues

Marie-José Nadeau is in charge of legal affairs, communications, government and institutional affairs, as well as regulatory affairs and industrial safety. She also manages the secretariat for Hydro-Québec's Board of Directors and its subsidiaries.

She was a key part of the team that brought together five global electricity organizations for a Canadian-based millennium conference. She serves as board chair for the Canadian Electricity Association.



Lydia Pastuszek, Senior Vice President, Human Resources, National Grid, Westboro, Massachusetts, USA, www.nationalgrid.com/usa — Electric Utility

Lydia Pastuszek was the president of Granite State Electric, a unit of what is now National Grid, the 9th largest electric utility in the U.S. She has served in several areas during her career with the company. Previously, she oversaw product development for Massachusetts Electric, one of the retail subsidiaries.

Ann Pickard, Director, Global Business Strategy, Shell Gas & Power, London, UK (formerly President, Southern Cone Gas & Power, Rio de Janeiro, Brazil), (Country of Birth: USA), www.shell.com — Energy Strategy

Ann Pickard recently accepted a London position on Shell's Gas and Power Executive Committee with responsibility for LNG, Power and Gas Strategy. She commuted between Rio (Brazil) and London from November 2002 to January 2003. A U.S. native, she exemplifies global energy executive traversing the globe to deliver bottom-line corporate value.

Diane Prier, Vice President, Alaska Refinery, Petroleum Services, Williams Companies, Anchorage, Alaska, USA, www.williams.com — Refinery Management

Diane Prier's refinery operations management role resulted in relentless efficiency and customer service improvements. The plant set production, shipping and sales records in 2002 during an imminent refinery sale. Her instrumental role in helping defeat a proposition to implement a 2 cent/gallon transfer tax on all refined products, saved nearly $200 million/year for Williams and its customers.

Prier serves on the Boards of the Alaska Oil and Gas Association and the Anchorage Economic Development Corporation.

Preetha Pulusani, President, Intergraph Mapping and Geospatial Solutions, Huntsville, Alabama, USA (Country of Birth: India), www.intergraph.com – Geospatial Information Systems (GIS) Solutions

Preetha Pulusani is responsible for the global strategic direction and overall business development of one of Intergraph's four vertically focused units conducting business in over 60 countries. Intergraph encompasses GIS applications for utilities, communications, location-based services; local, state, and federal governments; transportation; photogrammetry; remote sensing; cartography; and military and intelligence. Pulusani serves on the IGUC GeoSpatial Executive Board and the Open GIS Consortium board.

Nancy Schultz, Vice President Operations & Engineering Services, Williams Cos. (Formerly Senior Vice President & General Manager, Gulf Stream Pipeline System, a Williams/Duke Energy joint venture), Houston, Texas, USA, www.gulfstreamgas.com; www.williams.com -- Pipeline Construction

Before her Autumn 2002 promotion within Williams, Nancy Schultz led the team that constructed the US$1.6 billion Gulfstream Natural Gas System -- the first natural gas pipeline constructed in Florida in more than 40 years. For Gulf Stream, Schultz oversaw all technical and engineering aspects of the project. The project was completed four days ahead of schedule, on May 28, 2002.

Carolyn C. Shanks, President & CEO, Entergy Mississippi Inc., Jackson, Mississippi, USA, www.entergy.com -- Power Company Turnaround

"We made a promise to our customers to improve service reliability," said Carolyn Shanks. "A promise doesn't have an expiration date." Teaming directly with front line electric utility employees, they turned around the company's public image. "She's gotten us the tools and equipment we need, and she's made it clear that safety is the number one priority," said lineman Gene Woolsey.

Pamela "Pam" B. Strobel, Chairman & CEO of Exelon Energy Delivery, Chairman, Exelon Corp., and Executive Vice Chairman, ComEd and PECO, Chicago, Illinois, USA, www.exelon.com -- Electric Transmission & Distribution

Pam Strobel is responsible for overseeing the transmission and distribution system of one of the nation's largest utilities with nearly $10 billion in revenues and a customer base of approximately five million electricity and gas customers in Illinois and Pennsylvania.

Strobel was inducted into "Today's Chicago Woman's Hall of Fame."

Susan Tomasky, Executive Vice President - Policy, Finance and Strategic Planning, and Chief Financial Officer (CFO), American Electric Power (AEP), Columbus Ohio, USA, www.aep.com – Business Leadership

Susan Tomasky led AEP's effort to strengthen its balance sheet, maintain liquidity and cash flow, and improve its structure. Under Tomasky's leadership, AEP reduced debt by $4 billion through divesting two foreign subsidiaries and issuing additional equity. She embarked on an initiative to achieve sustained earnings improvement by permanently reducing company-wide operating and maintenance expenses by at least 10 percent.

Patricia A. Woertz, Executive Vice President for Global Refining and Marketing, ChevronTexaco, San Francisco, California, USA, www.chevrontexaco.com -- Chevron/Texaco Merger

Patricia Woertz is responsible for directing the company's worldwide downstream businesses, including 26,000 employees, 20 wholly owned or joint venture refineries on five continents with 2.2 million barrels per day of refining capacity and 25,000 retail sites. She has management responsibilities for the company's global lubricants, aviation fuels, marine fuels and lubricants, trading and transportation businesses. She oversees four regional refining and marketing companies selling Chevron-branded products in North America, Texaco-branded products in Latin America and Europe/West Africa and Caltex-branded products in Asia/Middle East.

Pathfinders/Trailblazers: Great roads often follow humble trails blazed for others to follow.

Category 'Winner': Pathfinders/Trailblazers

Nabila Yousef, President, YES, Inc., & Director, Canadian Operations, DTE Energy Technologies, Toronto, Ontario, Canada (Country of Birth: Egypt), www.dte.com — Canadian Markets

Nabila Yousef has parlayed 20 years of hands-on experience and relationships with Ontario Hydro, lastly as director of engineering and construction for 8 nuclear power units, into current roles of acquiring plants in Canada for American companies and marketing of distributed generation throughout North America, and particularly in Canada. She is a recognized expert on supply, demand and pricing in the Ontario market.

Yousef was the first-ever female Mechanical Engineering graduate from the University of Ain Shams in Cairo, Egypt. She was president of the Canadian Nuclear Society (CNS) (1986-1987) and co-founder of Women in Science and Engineering (WISE) in the late 1970's, along with Claudette Mackay Lassonde. Yousef served as its president in 1980 and 1986.

Yousef speaks as an advocate of careers in science and engineering – particularly to female groups in high schools and universities.

Pathfinders/Trailblazers Honorees:

Cathy Abbott, Seminarian at Wesley Theological Seminary, Washington, DC, USA (formerly President, NiSource Pipeline and Production Group. Fairfax, Virginia) — Natural Gas Pipelines

While running the pipeline companies Columbia Gas Transmission and Columbia Gulf, Cathy Abbott considers her group's major accomplishments were that they increased ongoing operating income 50% in five years, increased revenue by completing two major pipeline expansion projects and negotiating contracts to add 17,000 MW of system power, consistently delivered top quartile return on investments (peer group relative), and created an all-employee incentive plan tying bonuses to company results.

Her future took a different twist when she left the company this year. "I have gone from one "energy field" — natural gas pipelines and production — to another "power domain" — God's work."

Chairman Denise Bode, Commissioner, Oklahoma Corporation Commission (OCC), Oklahoma City, Oklahoma, USA, www.occ.state.ok.us — Independent Producer Advocate

Denise Bode's supporter called her the American Don Quixote for her service to the independent producer community as the first female president of the (Independent Producers Association of America (IPAA). Through prioritization and a healthy fight for critical issues, she definitely helped transform the profile of the good-old-boy oil producer into a powerful collective voice.

Bode currently serves the Oklahoma state energy regulatory commission.

Madeline Boyd, Member, Board of Directors and Director of Government Relations, New York Mercantile Exchange (NYMEX), New York, New York, USA, www.nymex.com — Future's Exchange Gasoline Trader

Madeline Boyd trades gasoline for her own account on the NYMEX. She represents floor trader interests to the Exchange board of directors and served on its executive committee (2000-2001). Boyd heads a number of key Exchange committees, including the petroleum products advisory committee, and is petroleum refining/marketing industry liaison to Exchange management to ensure that futures and options contracts reflect commercial sector standards and practices. She co-chairs the board's local advisory committee that advises on unique concerns of independent floor traders. As chairman of the Exchange's Charitable Foundation committee, corporate charitable contributions have increased from $125,000 to $1.1 million/year.

Dundeana Doyle, Vice President - Infrastructure Security, Alliant Energy, Madison, Wisconsin, USA, www.alliantenergy.com — Infrastructure Security

Alliant Energy places all security processes and procedures under one 'umbrella'. In early 2002, Doyle was named the company's first vice president of Infrastructure Security. The position ensures a single point of accountability for all company security-related issues, both cyber and physical. Doyle's previous experiences were in customer service, operations, public relations/affairs, communications, business resumption, project management and process training.

Susan Glasmann, Vice President and General Manager, Questar Gas, Salt Lake City, Utah, USA, www.questar.com – Natural Gas

Susan Glasmann helps women reach their full individual and corporate leadership potential. She pioneered and promoted a "360-degree" review process, and encourages her employees to see their responsibilities from different vantage points that promote their ability to identify opportunities for growth, improvement and additional capability development.

She is a member of the Salt Lake City Area Chamber of Commerce Board of Governors and served on the Olympic Task Force. She was the 2002 Prevent Child Abuse Advocate of the Year and is president of the board of trustees for Prevent Child Abuse Utah.

Special Recognition: Wanda Jablonski (1920-1992), Former Founder, Editor and Publisher, Petroleum Intelligence Weekly, (Country of Birth: Czechoslovakia), New York City, New York, USA — Energy Journalism/OPEC Influence

Opening the energy journalism door for other female journalists, the late Wanda Jablonski founded Petroleum Intelligence Weekly in 1961, and served various positions, including editor and publisher until 1988. She visited Middle East oil fields as early as the 1950s, and covered oil in Africa and Latin America. While serving as the oil editor to the *Journal of Commerce*, 1943-54, Jablonski is credited with making connections in 1945 that directly tied into, or later influenced the formation of, OPEC. She was a member of the Oxford Energy Policy Club and the Council on Foreign Relations.

Cathy A. Lamboley, Senior Vice President, General Counsel and Corporate Secretary, Shell Oil Company, Texas, USA, www.shelloil.com – Diversity

Cathy Lamboley has changed the way that law firms think of diversity by insisting that the teams of lawyers working on Shell's projects are diverse. She also works tirelessly on behalf of women in the profession.

Elizabeth Anne "Betsy" Moler, Executive Vice President, Exelon Corp., Washington D.C., USA, www.exelon.com — Energy Regulation/Policy

Betsy Moler is honored for her contributions to the Federal Energy Regulatory Commission (FERC). During Moler's tenure as its Chair, the Commission successfully restructured both the interstate natural gas industry under Order No. 636 and the wholesale electricity industry under Order Nos. 888 and 889. Starting in June 1997, serving as the Deputy Secretary of Energy, Moler was the principal architect of the first Comprehensive Electricity Competition Act, which was transmitted to Congress in 1998.

Moler has received the National Energy Resources Organization Distinguished Service Award, the *"Energy Daily"* Annual Public Policy Leadership Award, and the Women's Council on Energy and the Environment Woman of the Year Award.

Marge O'Connor, Legal, Attorney-at-law, Houston, Texas, USA — Energy Law/Standardized Contracts

As senior counsel - major transactions, for ExxonMobil Corporation subsidiaries (1997-2000), Marge O'Connor provided support to Mobil LNG & Power Inc. in India, Singapore, Taiwan, and Japan; Asian subcontinent marketing and refining operations; and Indonesian E&P operations. She planned development of LNG receiving terminals and marketing of LNG to India and Taiwan ($1 billion projects) and participated in cogeneration/independent power projects in Singapore, Taiwan and Japan. She participated on a team that secured a 20-year contract to supply Indian State of Gujarat with Qatari LNG, and developed contract structure that made a Taiwan LNG/Power project commercially feasible. She led the region's six legal departments ensuring Y2K readiness.

She previously served as counsel to Panhandle Eastern Pipeline Company and Trunkline Gas Company.

Hazel O'Leary, O'Leary & Associates, Chevy Chase, Maryland, USA — Energy Deregulation and Policy

Hazel O'Leary was appointed as the United States Secretary of Energy under the Clinton administration (1992 to 1997). She expanded the scope of the department to include relations with a number of countries. Immediately prior to that appointment, while at Northern States Power, she was part of the U.S. nuclear industry.

Barbara Rhines Shook, Houston Bureau Chief, Energy Intelligence Group, Houston Texas, USA, www.energyintel.com — Energy Press

Since 1981, Shook has interviewed such prominent figures as Prince Abdul Aziz bin Salman bin Abdul Aziz, deputy minister of Petroleum and Minerals, Kingdom of Saudi Arabia; Sheik Ahmed Zaki Yamani, former Saudi Arabia oil minister; Dr. Rilwanu Lukman, oil minister of Nigeria and former Secretary-General of OPEC; and Oscar S. Wyatt Jr.

Shook started covering the liquefied natural gas sector in 1996. She has covering flaring waste technologies of the Mid East, Southeast Asia, Africa and offshore, and covers major LNG players and markets including Qatar, Oman, Abu Dhabi, European and US markets.

Linda Gillespie Stuntz, Attorney-at-Law, Stuntz, Davis & Staffier, PC, Washington, D.C., USA — Energy Law/Board Governance/Environmental & Technology Issues

A practicing attorney, Linda Stuntz focuses on energy, environmental issues and the government's support of technology development and transfer. She currently serves on the boards of directors of energy industry participants AEP and Schlumberger Limited. Stuntz serves as vice-chair of board of the Electricity Innovation Institute (E2I), a non-profit EPRI affiliate that conducts strategic research and development in energy-related science and technology.

Prior to returning to private practice in 1993, she worked for congressional offices, and testified before both the U.S. Congress and the U.S. Senate. Stuntz served as Deputy Secretary to the U.S. DOE under President George H.W. Bush. She played a principal role in the development and enactment of the Energy Policy Act of 1992, and helped develop the Clean Air Act Amendments of 1990.

Wisdom: Some of the greatest minds in the energy business often belong to women who do not regularly get public recognition for their ideas or concepts.

Category 'Winner': Wisdom

Julia Nanay, Senior Director, Petroleum Finance Corp. (PFC), Washington, D.C., USA, (Country of Birth: Hungary) — Caspian Sea (Russia) Oil Analysis, www.pfc.com

Julia Nanay is a Caspian energy region expert, and is well known for her work in the region of the former Soviet Union. She advises most of the major international oil & gas companies on the commercial, economic, political and strategic aspects of doing business there. As this region emerges as a crucial source of new oil, with multi-billion-dollar investments, Nanay looks at everything from the geo-politics of major pipeline projects to the inter-personal dynamics of key leaders in the area.

She has built a network of in-depth contacts in the international political arena and the oil and gas sectors of Azerbaijan, Georgia, Iran, Kazakhstan, Russia, Turkey, Turkmenistan and Uzbekistan. She travels extensively in the region for high-level meetings with officials.

Wisdom Category Honorees:

Melinda Ackerman, Senior Vice President, American Electric Power (AEP), Columbus, Ohio, USA, www.aep.com — Human Resources

Over time, Melinda Ackerman's 'been there, done that' experience propelled her from a small-town Kentucky clerk to senior vice president of Human Resources of the nation's largest provider of electricity. She guides AEP through the rough waters of increasing health costs, "downsizing," plummeting 401k plans and myriad other issues for more than 20,000 employees in 11 states.

Joanna E. Baker, Vice President, Canada, ConocoPhillips Gas & Power, a division of ConocoPhillips, Calgary, Alberta, Canada (Country of Birth: UK), www.conocophillips.com — Power Marketing

Joanna Baker started ConocoPhillips' successful Canadian gas and power marketing business. Under her leadership, the Canadian team realized significant gross margin contributions in both first two years of operation. Baker led an effort to negotiate a February 2002 early termination of the outsourcing contract that resulted from (then) Conoco's July 2001 Gulf Canada acquisition, which resulted in an eightfold in-house increase in equity volumes being handled by the team, and a significant increase in managed ransportation capacity.

M. Carol Coale, Senior Vice President and Senior Natural Gas Analyst, Prudential Securities, Houston, Texas, USA, www.prusec.com — Energy Analysis

Carol Coale's stock downgrades are red flags, but they are a necessary part of her respected market analysis and independent reporting on energy companies. She has been either the first, or among the first, to downgrade many stocks that, one by one, fell from previous levels of financial strength. Many are now 'restructuring', 'retrenching', and 'returning to basics.'

Marian Davenport, Foundation Member, Dynegy Foundation, Houston, Texas, USA – Dynegy Foundation

In 2001, Dynegy founded the Dynegy Foundation with a mission to fund children's charities. Creatively, Davenport helped create a new model of corporate philanthropy which helped sustain the foundation even if stock price were to ever fall. It has grown to become a philanthropic joint venture opportunity where any two companies partner to benefit the partner charity, which gets the 'credit' for the charitable contribution at zero risk.

Sarah A. Edman, Senior Vice President, Natural Gas Liquids, ConocoPhillips, Houston, Texas, USA, www.conocophillips.com — Natural Gas Liquids/LNG

Sarah Edman develops global NGL commercial strategy and manages North American NGL business activities, including transportation, fractionation and storage operations, NGL supply and trading, refinery NGL and olefin supply/disposition, and direct marketing through the propane dealer network.

In her pre-merger role as vice president, Edman enacted significant transformation in the company's natural gas liquids (NGL) business by instituting strict risk management techniques, sophisticated trading capability, and improved financial reporting.

Michelle Michot Foss, Executive Director, University of Houston, Institute for Energy, Law & Enterprise, Houston, Texas, USA, www.uh.edu — International Association of Energy Economists (IAEE)

Michelle Michot Foss is a master at finding people with expertise and giving them both a forum and voice through university-related global energy events and panels.

Foss was the 2002 IAEE global president, and serves as 2003 domestic IAEE president. She was 2001 president of the USAEE.

Bonnie Hancock, President, Progress Fuels Corp., a subsidiary of Progress Energy, Raleigh, North Carolina, USA, www.progress-energy.com — Merger Integration

Bonnie Hancock served as the integration executive for the 2002 closing of CP&L Energy/Florida Progress Corp. merger that formed Progress Energy. She established the overall structure and process to manage integration. Setting and tracking synergy goals achieved savings in excess of $125 million for 2001 and $175 million for 2002.

Sally Hunt, Senior Advisor, National Economic Research Associates, Inc. (NERA), New York, New York, USA (Country of birth: Great Britain (UK)), www.nera.com — Electric Markets Economist

Sally Hunt was head of the US Energy Practice, and is now a Special Consultant to NERA. She recently completed Making Competition Work in Electricity (Wiley 2002), a technical issues analysis of electric industry restructuring.

Hunt worked with the World Bank and the Electric Power Corporation in China over a ten-year period on the discussions and papers that led to the 2002 Policy Document No. 5, adopting competition as China's electric industry policy. Hunt worked on industry structure issues in Venezuela, Thailand, Australia, and Argentina.

Kathleen A. "Kathy" Kelly, Vice President and Practice Leader, Markets and Regulation Practice, Stone & Webster Management Consultants, Inc., a Shaw Group Company, Boston, Massachusetts, USA, www.shawgrp.com — Energy Consulting

Kathy Kelly facilitated and advised senior staff on strategic issues and strategy development and implementation. She directed the development of a first of its kind retail load aggregation program called Rhode Island Energy Aggregation Program. It consisted of participants from most Rhode Island cities and towns and delivered substantial multi-year participant savings.

Karen Knutson, Energy Advisor to the Vice President, The White House, Washington, D.C., USA, www.mail.house.gov — Energy Advisor

Karen Knutson is the Vice President's energy advisor. She was previously Deputy Director to the White House task force on energy policy (until it was disbanded). Her analysis and synthesis of the complex policy issues were the foundation of the Cheney task force report on energy policy, for which she served as balance as she reached out to experts at the federal labs, the academic community, industry and NGO's.

Lynn H. LeMaster, Senior Vice President of Policy, Issue Management and Internal Operations, Edison Electric Institute (EEI), Washington D.C., USA, www.eei.org — Government Affairs

Lynn LeMaster represents the interests of the investor-owned electric utility industry before the U.S. Congress and other legislative bodies, and helps shape policies and legislative outcomes. The Institute's membership includes companies that generate and distribute approximately three-quarters of the nation's electricity. She has been instrumental in forging consensus among the different segments of the energy industry on a range of critical issues and policies.

Ann J. Milne, Director, Latin America Corporate Research Department, Deutsche Bank Securities, New York, New York, USA, www.db.com — Latin American Market Analysis

Ann Milne's recent review of Venezuela-based PDVSA "Black Gold, Texas Tea" gave an insider's view of the South American situation and oil strike within Venezuela. Because of this widespread strike among workers, she wrote, the company was forced to shut down nearly all its domestic operations in December and early January, costing the federal government billions of dollars in lost revenues.

Tia Nelson, Director, Climate Change Initiative, The Nature Conservancy, Worldwide Offices, Arlington, Virginia, USA, www.tnc.org — Biological Sequestration

Under Tia Nelson's guidance, The Nature Conservancy regularly teams with energy companies to perform mitigation projects or adaptation projects to save what it considers to be environmentally endangered areas or to improve the environment. Examples include the emissions protection Rio Bravo Project in Belize, funded by Wisconsin Electric, and a Brazil project using solar-powered electric fences for dairy beef. Among other participating companies are AEP, BP, Canadian Occidental, Cinergy, PacifiCorp and Suncor.

Sherry Quirk, Senior Partner, Sullivan & Worcester LLP, Washington, D.C., USA, www.sandw.com — Legal/Rural Cooperatives and Municipalities

Sherry Quirk serves as the Managing Partner of Sullivan & Worcester's Washington, D.C. office and Director of the Energy Practice Group in a firm with approximately 50% women lawyers. Quirk leads a coalition of consumer-owned power systems in ten Southeastern states to preserve the systems' first right to low-cost federally marketed hydropower.

Tracie E. Rowson, Executive Vice President and Chief Operations Officer, Financial Engineering Associates, Inc. (FEA), Berkeley, California, USA, www.fea.com — Energy Information

Under Tracie Rowson as an FEA company founder, FEA developed and brought to market a suite of energy option pricing analytics. FEA pioneered the use of real options-based techniques for valuing energy assets, and used multifactor seasonal principal component analysis (PCA)-based simulation models for valuing storage assets, swing, load factor and take-or-pay contracts, price processes to handle the mean reversion, truncated distribution, kurtosis (fat tails) and sudden electricity market spikes.

Dr. Linda Katherine Trocki, Principal Vice President, Bechtel National, Inc., San Francisco, California, USA, www.bechtel.com — Climate Change Mitigation

Dr. Linda Trocki set the course for the corporate approach to a variety of 'cleaner energy' technologies, ranging from fuel cells and cleaner coal technologies to energy efficiency. Her particular specialty is with the scientific study of energy and the environment, particularly cost-effectiveness of various approaches to mitigate climate change. She contributed to the national debate on the costs and benefits of radioactive waste cleanup.

Trocki serves on the National Renewable Energy Lab Board of Governors, and Boards of Directors for the CEO Coalition to Advance Sustainable Technologies, and the Colorado Energy Science Center.

Keli Shanks Tuschman, Vice President of Human Resources, Entergy-Koch, LP, Houston, Texas, USA, www.eklp.com — Team Building

Keli Shanks Tuschman deliberately created a culture that emphasizes integrity, humility, dignity and respect. Operating the human resources (HR) department like a business, she aligned the HR function strategically with every facet of EKLP's business - hiring the right people, developing an accurate performance measurement system, and providing a team-based, flexible incentive program that rewards people appropriately. The result is a culture of open communication and earned respect.

Chistine (Tina) M. Vujovich, Vice President, Marketing and Environmental Policy, Cummins Inc., Columbus, Indiana, USA, www.cumminspower.com — Power Engineering

Tina Vujovich won the recent local Athena Award. She encourages others to, "Continue to push the envelope of capabilities and contributions and know that there are limitations. Accept a mentorship. Make certain you have a positive support system. Never forget your priorities." She speaks at her university with students, particularly female students, about the engineering field.

Mary Clark Webster, International Resources Group, Washington, D.C., USA, www.irgltd.com — Energy Advice

Mary Webster's global contributions include advising governments in the establishment of 15 energy regulatory agencies, including in Cyprus, Turkey, Nepal, Pakistan, India, Russia, Ukraine, Romania, and most recently in Egypt, where she spent 18 months as the key advisor to the Egyptian government in power sector regulation. In 2002, she carried out short term assignments as regulatory advisor to the Office of the Regulator of Electricity and Gas in Cyprus; and the Energy Markets Regulatory Authority in Ankara, Turkey.

She is a former Member of the House of Representatives of the State of Maine, and former Commissioner of Public Utilities in Massachusetts.

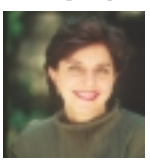
Patricia E. "Pat" Yarrington, Vice President, Public & Government Affairs, ChevronTexaco, San Francisco, California, USA, www.chevrontexao.com — Merger-Related Cost Control

In her previous two-year tenure as vice president of Strategic Planning and Development, Pat Yarrington was responsible for advising senior corporate executives in setting strategic direction for the company, allocating capital and other resources, determining operating unit performance measures and targets, and developing an initial corporate strategic plan for the company.

Yarrington serves on the boards of Chevron Phillips Chemical Co., a 50-50 joint venture with Phillips Petroleum, and the ChevronTexaco Foundation.

Innovation/Creativity: With fresh ideas, anything is possible. By thinking and working outside traditional energy boxes, they are opening new doors for others.

Category 'Winner': Innovation/Creativity -



Simone Crook, Vice President, Schlumberger Ltd – SEED, New York, New York, USA (Reared in France), www.seed.slb.com, www.slb.com — Interconnectivity/SEED (Schlumberger Educational Excellence Foundation)

Simone Crook currently serves on the SEED board of directors, the program she initiated in 1998. SEED is an educational development program through which Schlumberger employees and their families invest in global school children through three programs: 1) a Connectivity Grant Program providing financing and technical assistance to connect disadvantaged schools and children in economically developing countries to the Internet (107 schools educating 155,000 children in 29 countries connected to date); 2) a multilingual online Science Center sharing the knowledge and expertise of Schlumberger scientists and engineers with global 10-18 year olds across 7 site languages: Arabic, Chinese, English, French, Portuguese, Russian and Spanish; and 3) that Collaborative Projects encourage teamwork and project-based learning between school children across 8 projects and countries for 13 schools.

Innovation/Creativity Category Honorees:

Sharon Allan, Director, Product Management and Business Strategy, Elster Electricity, a division of Ruhrgas Industries (formerly known as ABB Electricity Metering), Raleigh, North Carolina, USA (Country of Birth: Libya), www.elsterelectricity.com — Automated Meter Reading Implementation

Sharon Allan's creative advocacy led to the establishment of a metering facility in Asia, and increased the company export metering business to 30% of revenues. Allan's innovative approach to electricity market wireless communication solutions transitioned between manual meter reads and work her company completed with an automated meter reading (AMR) technology provider to extend commercial demand customer drive-by meter reading capabilities.

Lee Margaret Ayers, Industry Manager for Power Transmission & Distribution, OSIsoft, Sammamish, Washington, USA (Country of Birth: Germany), www.osisoft.com — IT (AM/FM/GIS, SCADA, DA, AMR)

Lee Margaret Ayers links real-time data and long-term data storage needs to corporate applications such as AM/FM/GIS for distributed generation, energy trading, information technology, utilities and operation equipment manufacturers. In the past two years, she concentrated her efforts on a unique plug-and-play approach, and is currently working to evolve utility thinking regarding operations/temporal data. She desires to solve the integration of two technologies – static GIS maps and dynamic SCADA systems.

From 1975-1979, Ms. Ayers served in the United States Air Force repairing navigational radar on B-52s, KC-135s, and F4s.

Emmanuelle Boubour, Nanotechnology Researcher, Rice University, Houston, Texas USA, (Country of Birth: France; Citizenship: France/Canada), www.rice.edu — Nanotechnology Research

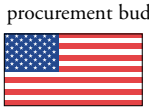
French native Emmanuelle Boubour received her Ph.D. in chemistry in 2000 from McGill University in Montréal. Following two years as scientist at the National Micro- and Nanotechnology Research Center in Denmark, she now works with 1996 Chemistry Nobel laureate Professor Richard E. Smalley on the ethical and societal implications of nanotechnology, focusing on energy-related issues. Bourbour actively works to bridge the gap between science & technology and the general public.

Ann S. Brown, Manager, Advertising & Brand Management, SRP (Salt River Project), Phoenix, Arizona, USA, www.srp.com — Advertising Campaigns

Ann Brown received 2002 Utility Communicator International's (UCI) "Communicator of the Year" award. The award-winning Energy Savings Solutions summer campaign featuring personified appliances wasting money followed by an energy management tip how customers can save money on their electric bill. Beyond serving as President-elect of UCI, Brown leads a corporate department and two advertising agencies to develop innovative ways of relating to, and involving customers for, a company that owns North America's largest nuclear power plant.

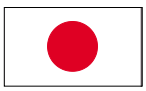
Michelle Kalnas, Senior VP — Supply Chain, AEP, Gahanna, Ohio, USA, www.aep.com — Energy Supply

Promoted twice in the past year, most recently in September 2002, Kalnas is responsible for the direction and management of AEP's supply chain process, and provides procurement of materials and services, contracting services and materials management. As vice president (promoted March 2002), she merged corporate supply chain functions by combining energy delivery, wholesale and corporate supply chain organizations with more than $2 billion annual spending. Still in its first year of transformation, the company reduced procurement staff by 32% and the procurement budget by 15%.



Kandy Lukats, Systems Vice President, Exploration and Development, Landmark Graphics Corp., Houston, Texas, USA, www.halliburton.com — Upstream Oil/Gas Software

Kandy Lukats pioneered the first workflow consulting project for Landmark. Lukats' ability to mentor and coach a new generation of technology partners is now so highly prized, Lukats was named the "2001 Salesperson of the Year" based on her success in merging business development and people development and for significant financial contribution she and her team made to Landmark.



Mieko Mahi, Owner/Petroleum Photographer, Energyimages, Houston, Texas, USA, (Country of Birth: Japan), www.eneryimages.com — Energy Photography (Ex: Offshore Rigs)

Since 1988, Mieko Mahi has photographed over 150 rigs worldwide from the Gulf of Mexico to the Gulf of Guinea. Need a cover photo for an industry magazine cover? Need a layout of offshore rigs for the annual report? Call Mieko. Recently, she created the "Life on a Rig" exhibit at Ocean Star museum, at the AADE, and at OTC 2003.

Kim Mickelsen, Senior Partner, Bozell & Jacobs, Omaha, Nebraska, USA, www.bozelljacobs.com — Energy Industry Advertising

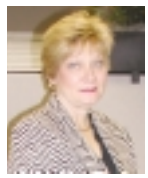
As director on the MidAmerican Energy account, Kim Mickelsen guided the utility through its first major effort at brand development to launch, "Obsessively, Relentlessly at Your Service." Mickelsen overcame initial opposition to the slogan by arguing a human service-oriented message was just what customers needed to hear from an industry often seen as impersonal. Loyal customer ratings increased by 10% following the brand repositioning. The campaign won awards, including several 'Best of Shows', and an international CLIO.

Janelle M. Reese, Kansas Area Manager, Koch Hydrocarbon, LP, South Hutchinson, Kansas, USA, www.kochhydrocarbon.com — Fractionation

At round-the-clock facilities of a 50,000 barrel-per-day fractionator in Hutchinson, and a McPherson plant that can daily process 8,000 barrels of normal butane into isobutane, Janelle Reese adeptly overcomes challenges. To resolve a McPherson plant mechanical failure following a five-month shutdown, Reese mobilized a team that corrected it within a week. Reese and her crew's recently developed new ways to quickly blend products captured a $3 million marketing group profit.

Visionary: Change is challenging. Catalysts and conduits of change are times openly celebrated and at other times a mystery to those around them who do not yet comprehend their impact.

Category 'Winner': Visionary -



Jackie LaFontaine, Division VP, Deepwater Global Business and Solutions, Energy Services Group, Halliburton, Houston, Texas, USA, www.halliburton.com — Drilling Completion Technology

Jackie LaFontaine combined her ability to anticipate future industry needs and make things happen with listening and leadership skills to become a driving force in deepwater exploration. As an expert in completion and sand control, LaFontaine identified knowledge gaps in completion technologies and recognized that a collective effort would be faster and more effective than if individual companies tried to solve their problems in isolation. She rallied the industry through SPE meetings and industry studies to help expedite the development and refinement of frac pack and horizontal completions. The data collected and knowledge documented as a result of LaFontaine's efforts enabled the industry to refine the technologies required to move into deepwater drilling at a faster pace.

She was a member of the technical steering committee for the 2002 SPE Deepwater Applied Technology Workshop in Brazil and for the Deepwater Drilling and Completions Section of the 2003 OTC.

Visionary Category Honorees:

Becky Blalock, Chief Information Officer (CIO), Southern Company, Atlanta, Georgia, USA, www.southernco.com — Economic Development

Becky Blalock directs all aspects of Southern Company's Information Resources function to provide support and guidance in maintenance, operations and application design for information technologies. She is responsible for 1,300 employees at five subsidiary utility companies serving nearly 4 million customers in four states.

Lynda R. Clemmons, President & Chief Operating Officer, XL Weather & Energy Products, a division of XL Capital (Formerly Element Re Capital Products), Stamford, Connecticut, USA, www.xlwe.com — Weather Risk Management

Element Re Capital Products, founded by Lynda Clemmons in 2000, has since written over $1 billion in weather risk coverage. In the past year, in conjunction with corporate sibling XL Trading Partners, it participated in the first South African weather hedge, and in one of the industry's first multi-year derivative contracts on behalf of UK energy supplier Centrica. In 2001, it completed a deal protecting German utility Elektrizitswerk Dahlenburg AG from precipitation-related loss, and a weather insurance deal with Atmos Energy Corp.

Shelley Fidler, Principal, VanNes Feldman, Washington, D.C., USA — Climate Change/Environmental Issues

Shelley Fidler was the long-time policy advisor to Chairman Phil Sharp on the energy subcommittee of the House Energy and Commerce Committee. She then joined the Clinton Administration as Chief of Staff of the council on Environmental Quality, and later as head of the Climate Change Task Force. She continues to work on the public policy with her current law firm.

Else Hafstad, Director, Corporate Strategic Technology, Statoil USA, Houston, Texas, USA (Country of Birth: Norway), www.statoil.com — Climate Change: CO2 Capture Project

Else Hafstad came from Norway to Houston for one year (2002 time-frame) for Statoil, during which she worked on the CO2 Capture Project.

Together with participants ChevronTexaco, Eni, etc., the group set a goal of finding a 50% reduction in a retrofit application and a 75% cut when applied with new technology. The group selected four real facilities as scenarios: a Norwegian 400-megawatt facility, a European Union refinery, an Alaskan North Slope application, and a coal-fired gas project to produce hydrogen + steam + power.

Karen Hill, Team Leader, Real Time Systems, Alliance Pipeline Ltd., Alberta, Canada, www.alliance-pipeline.com — 'The Electronic Pipeline'

Karen Hill oversaw hundreds of contract staff and employees in the development of the Alliance Pipeline when this cross-border (Canada to US) natural gas pipeline made its on-time and within-budget start-up in November 2000. Together they built the 'Electronic Pipeline', the interwoven electronic systems that created the base of the physical and commercial pipeline business operations and technology behind the system: SCADA, gas management systems, flow measurement, real-time modeling and satellite data transmission systems.

Nachamah Jacobovits, Senior Vice President, New York Mercantile Exchange (NYMEX), New York, New York, USA, www.nymex.com — Futures Exchange

Global media people making NYMEX inquiries for gas, power, crude, etc., all go through Nachamah Jacobovits. Since 9/11 and the fall of EnronOnline and Dynegydirect, NYMEX picked up the slack. When the company announced dozens of new products, over-the-counter solutions, and new markets, Nachamah took the lead position. She was promoted in 2002 to Senior Vice President.

Margarita Jannasch, Vice President, Market Risk Management, Office of the Chief Risk Officer (CRO), Entergy Corp., Houston, Texas, USA, www.entergy.com — Asset Valuation

As part of the Entergy Corporate Risk Committee, Margarita Jannasch leads the asset valuation group for Entergy's Wholesale Operations company (EWO). Jannasch pioneered a summer 2000 EWO effort to launch a new risk management capability for Entergy's book of unregulated generating assets. The Asset Risk Book initiative was so successful, it was also positioned as the Entergy corporate standard for credit and operational risk.

Marianne Kah, Chief Economist, ConocoPhillips, Houston, Texas, USA, www.conocophillips.com — Energy Economics

Marianne Kah develops the company's market outlooks for oil, natural gas, refining and marketing, and conducting special strategic studies, and is the company's expert in scenario building and planning. Developed prior to September 11, 2001, Kah's "Volatile Village" scenario helped the industry understand how the industry might be impacted in a world racked by terrorism.

Kah presently chairs the American Petroleum Institute's (API) Committee on Economics and Statistics.

Emily McAnally, Director of Development, Severn Trent, USA, www.severntrent.com — Mobile Wireless Product Development

Emily McAnally moved products from two single independent products to a suite of integrated products within three years. The company's mobile wireless product, FieldIT, developed in Java technology, and based on a J2EE architecture, was designed to be scalable from a small PDA devise to a laptop. It focuses on varying utility work, including routine, emergency, construction and inspection.

Caroline Ann Reda, President & General Manager, GE Energy Parts, Inc., a division of GE Power Sytstems, Atlanta, Georgia, USA, www.ps.ge.com — Nuclear

Caroline Ann Reda has demonstrated the ability to lead and energize others while meeting business commitments with unyielding integrity. In 2001, Reda received the GE Corporate Achievers Award and was profiled in the 2001 GE Annual Report for her leadership in helping restore electrical service to the thousands of customers in lower Manhattan left without power following the September 11th terrorist attack.

Karen Ritter, Senior Regulatory Analyst, American Petroleum Institute (API), Washington D.C., USA, www.api.org — Greenhouse Gas Emissions Methodology/Compendium

Karen Ritter and the API developed a "Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry". The objectives were to provide technical expertise on existing methodologies and ways to improve and streamline estimates, and to promote consistent estimation of petroleum companies GHG emissions. Participating companies included BP, ChevronTexaco, Conoco, Equilon, ExxonMobil, Marathon, Phillips and Shell.

Susan Rosenbaum, Schlumberger Software Métier Manager, Schlumberger, Austin, Texas, USA, www.slb.com — Schlumberger's Women's Forum

As Métier, Susan Rosenbaum pays attention to both the people who have the knowledge, and the technology solutions within the corporate environment. Then she matches and cross-references the two on project, IT and personal levels.

In her spare time, Rosenbaum is not only dedicated to getting more women fired up about careers in technology, math and science; she makes it happen. With a team, she designed and implemented Schlumberger's Women's Forum, which was held in two consecutive Octobers – in Austin, Texas (2001), and in Cambridge, England, (2002).

Sue Lena Thompson, Cambridge Energy Research Associates, Boston, Massachusetts, USA, www.cera.com —"Commanding Heights"

Sue Lena Thompson assisted CERA Chairman Daniel Yergin with the book, Commanding Heights. Thompson was instrumental in the research and production of the book. The book became a video film series in 2002.

Tina J. Vital, Oil & Gas Investment Officer, Standard & Poor's, New York, New York, USA, www.standardandpoors.com — Oil Investment Advice/Energy Research

Tina Vital leads the energy, utilities and telecommunications team in the Equity Research Department within Standard & Poor's Investment Advisory Services and is a registered representative of Standard & Poor's Securities. She is the team's integrated oil & gas equity analyst. She develops analytical and institutional models and feature articles for, among others, The Outlook, Equity Insights, BusinessWeekOnline, Market Month, and Investor's Monthly. She has appeared on, among others, CNBC, CNN, BBC, Nightly Business Report, Bloomberg, TV Tokyo, SinoTV (Chinese TV) and ROB-TV (Canadian TV).

At the outbreak of the War in Iraq, Vital held a contrarian view to general opinion predicting an energy sector outlook repeating the 1991 Gulf War scenario. While some relief is on the horizen, she said, higher oil prices are supported, …with U.S. crude and refined product inventories below their 5-year range and natural gas inventories 48% below five-year averages.

Potential: This category is open to women who are relatively new to the energy industry, yet who are already making exceptional contributions. As potential future industry leaders, they are the industry's future.

Category 'Winner': Potential -

Alma Del Toro-Baltaci, Risk Management and Assurance Auditor, BP, Warrenville, Illinois, USA (Dual Nationality/Reared in: Mexico) www.bp.com — Risk and Audit

Alma Del Toro-Baltaci has been having an amazing influence on BP Latin America in her two years at BP. Raising the standards of ethics throughout the BP ranks, and helping business mitigate crucial risks, she has tremendously improved the BP bottom line while utilizing her law degree to identify and handle ethics issues in Mexico, Latin America and South America for BP.

Prior to coming to BP, she used her legal background as a child advocate for special needs children. When the oil strikes hit Venezuela this year, she used those same advocacy skills to watch for, and move up the corporate chain to insure, medical and special attention needs of the children of Venezuela employees of BP.

Potential Category Honorees:

Karlin Bohnert, Vice President & Chief Technology Officer, Pacificorp, a division of Scottish Power, Portland, Oregon, USA, www.pacificorp.com — Information Architecture/Strategic Blueprint

Karlin Bohnert has worked 34 years in information technology (IT) , but only transferred to the energy sector in 2001. The strategic blueprint was adopted for PacifiCorp to follow in all its technology endeavors and by parent company Scottish Power. By embracing interfacing off-the-shelf systems using enterprise application integration with work flow management model-based standardized messaging, the blueprint saved several million dollars (US) through improved efficiencies via reusability and cost savings/cost avoidance for many IT and business projects.

Kathryn Hollander, International Trade Specialist; Energy Division, U.S. Department of Commerce — International Trade Administration, Washington, D.C., USA, www.ita.doc.gov — U.S — China Energy Trade Relations

As the Northeast and South Asia analyst, Hollander brings the U.S. private sector perspective to the international trade policy arena. Her particular expertise is China and how international trends, statistics, and market research impact the energy sector in Asian countries. Hollander is the point of contact for the United States-China Oil and Gas Industry Forum, the U.S.-China Electric Power Technologies Sub Working Group, and for ongoing programs in Australia, Bangladesh, India, Japan, Korea, and the Philippines.

Hawaii

This June participate in the ongoing creation of tomorrow's power environment, at the Edison Electric Institute Annual Convention and Expo. Restoring investor confidence, standard market design, comprehensive national energy policy legislation, system reliability, infrastructure security, environmental protection – these are only a few of the complex, often-opposed factors at work in the electric industry today. And they're the core of EEI's value-packed three day program. You'll gain an overall perspective on top industry concerns, giving you an edge in the marketplace! For more information, or to register, visit www.eei.org/2003.

EEI Annual Convention/Expo

Edison Electric Institute joined by Canadian Electricity Association

Hilton Hawaiian Village, Honolulu • June 1-4, 2003

TO REGISTER, EXHIBIT OR SPONSOR, VISIT WWW.EEI.ORG/2003

GENERAL SESSIONS

Monday, June 2

8:00 a.m. – 10:00 a.m.

OPENING GENERAL SESSION

Catch the Aloha Spirit

T. Michael May
President & CEO
Hawaiian Electric Company

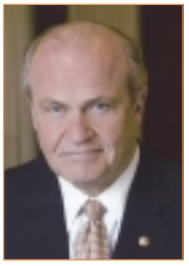
As your hosts, Mike May and HECO extend a warm "Aloha" to share in the captivating hospitality of Honolulu and the Island of Oahu.

Charting the Future Course

Erroll Davis
Chairman
Edison Electric Institute

Marking the end of his term as EEI Chairman, Mr. Davis will reflect on the challenges of the past year and share his views on the industry and role of EEI in defining the future course of the electricity sector.

An Outsider's Inside View of Washington



Fred Thompson
U.S. Senator (1994-2002) and Actor (NBC's "Law and Order")

Having viewed the Washington scene from the inside and outside, this former Senator will share his insight on the challenges faced by government leaders today and his strong belief that America still works.

Monday, June 2

12:30 p.m. – 2:30 p.m.

SECOND GENERAL SESSION

A panel of senior industry executives from around the world will discuss the status of industry restructuring and offer their thoughts on its future direction, in a lively give-and-take session.

Wednesday, June 4

8:00 a.m. – 10:00 a.m.

CLOSING GENERAL SESSION

Leadership Lessons of the Bold and Brave

James Bradley
Bestselling Author of *Flags of Our Fathers*

James Bradley is the son of one of the men who raised the American flag on Iwo Jima in 1945, and the author of the *New York Times* #1 bestseller about those men entitled *Flags of Our Fathers.* Based upon this "arresting meditation on the nature of heroism," James offers moving and insightful lessons on leadership.

Edison Award Presentation

EEI's highest award will be presented to a U.S. Member Company and an International Affiliate Member "for distinguished leadership, innovation, and contribution to the advancement of the electric industry for the benefit of all."

Dare to Dance

Dewitt Jones
Photojournalist and Motion Picture Director

Where do we find the vision and passion to take our lives to the next level, to keep "raising the bar?" The stories and images drawn from Dewitt's time in the beautiful Pacific Isles will inspire you to see yourself and the world with new eyes.

CRITICAL ISSUE DISCUSSIONS

Tuesday, June 3

These sessions are always a highlight of the Convention. They provide an opportunity for EEI Member Company Chief Executives to offer their thoughts on a variety of topics, and to engage the audience in a stimulating dialogue on important industry issues and trends.

8:00 a.m. – 9:00 a.m.

THREE CONCURRENT SESSIONS

1A **What Investors Want Today**
Challenging times require significant efforts in order to maintain the confidence of investors. What actions are companies taking today that will make a difference?

1B **Partnerships for Environmental Protection**
Companies are embarking upon innovative efforts with a diverse set of stakeholders to enhance environmental protection. See how successful some specific programs have been.

1C **Outsourcing Underperforming Assets – What is Working?**
What functions or assets can best be outsourced, and what are the benefits and downside? What is the industry experience to date?

9:00 a.m. – 9:30 a.m.

NETWORKING REFRESHMENT BREAK

9:30 a.m. – 10:30 a.m.

THREE MORE CONCURRENT SESSIONS

2A **What is the Transmission Business Model?**
A wide range of companies are adopting a number of different structures and strategies in the transmission business. Which of these models will endure?

2B **Maximizing Employee Talent and Motivation**
Employment reductions often leave fewer employees trying to accomplish more. Learn how companies are discovering and utilizing the talents of their people in challenging circumstances.

2C **Renewables are Sprouting All Over!**
Many companies are utilizing innovative renewable technologies in their operations. Where and how have these key technologies been employed?

SCHEDULE

SUNDAY, JUNE 1

9:00 a.m. – 6:00 p.m.	Registration
12:00 p.m. – 4:00 p.m.	Association Business Meetings
4:00 p.m. – 6:00 p.m.	ALOHA Reception/ EXPO 2003
6:00 p.m.	Supplier Hospitality Events

MONDAY, JUNE 2

6:00 a.m. – 2:30 p.m.	Registration
6:30 a.m. – 8:00 a.m.	EXPO 2003 Open with Continental Breakfast
8:00 a.m. – 10:00 a.m.	Opening Session
10:00 a.m. – 12:30 p.m.	EXPO 2003 Open
10:30 a.m. – 2:30 p.m.	Spouse Program Hawaiian Cultural Fashion Show/Luncheon
11:00 a.m. – 12:30 p.m.	Lunch in the Exhibit Hall
12:30 p.m. – 2:30 p.m.	Second General Session
5:30 p.m. – 10:00 p.m.	Grand Event: USS Missouri

TUESDAY, JUNE 3

6:00 a.m. – 1:00 p.m.	Registration
6:30 a.m. – 8:00 a.m.	EXPO 2003 Open with Continental Breakfast
8:00 a.m. – 9:00 a.m.	Critical Issue Discussions 1
9:00 a.m. – 9:30 a.m.	Networking Refreshment Break
9:30 a.m. – 10:30 a.m.	Critical Issue Discussions 2
10:30 a.m. – 1:00 p.m.	EXPO 2003 Open
11:30 a.m. – 1:00 p.m.	Lunch in the Exhibit Hall
1:00 p.m. – 5:30 p.m.	Optional Sightseeing Tours ($35 pp) • Pearl Harbor Memorial • Diamond Head Crater Adventure
p.m.	Supplier Hospitality Events

WEDNESDAY, JUNE 4

6:30 a.m. – 10:00 a.m.	Registration
7:00 a.m. – 8:00 a.m.	Continental Breakfast/ Coral Lounge
8:00 a.m. – 10:00 a.m.	Closing General Session
Wed. p.m. & Thursday	Supplier outings and departures for post-tours

Hawaii

EEI Annual Convention/Expo

Edison Electric Institute joined by Canadian Electricity Association

Hilton Hawaiian Village, Honolulu • June 1-4, 2003

SPOUSE AND SOCIAL ACTIVITIES

SPOUSE PROGRAM

Monday, June 2

10:30 a.m. – 2:30 p.m.

Hawaiian Cultural Fashion Show & Luncheon

This event will provide a wonderful overview of 250 years of Hawaiian Fashion History, and is sure to be a hit with all that attend. Replicas of gowns worn by Hawaii's Monarchs will be shown, as well as modern day fashions. The narrator will describe the influence of the early Pacific Rim through the Hollywood heyday of the '40s. The program will take place in the magnificent Monarch Ballroom of the Royal Hawaiian Hotel, the "Pink Palace" of Waikiki Beach.

5:30 p.m. – 10:00 p.m.

Grand Event: *It Might As Well Be Swing*

Delegates, spouses and family members will not want to miss this spectacular affair on one of America's most famous battleships, the USS Missouri. EEI attendees will have exclusive access to the "Mighty Mo" and will experience a fun-filled backward glance at American history when "Swing was King." Culinary delights from different countries around the Pacific Rim will be featured, as well as your favorite tropical beverages. (Dress is casual.)

EDS

WELCOME AND GRAND FINALE
A "Royal" Welcome, and a "Rousing" Finale befitting the evening

ALLIANCE DATA SYSTEMS

FANTAIL FANFARE
The best of Rock 'n Roll music from the '50s-'60s

Itron

OFFICERS CLUB AND CASINO
An upscale casino featuring games of chance

FLUOR

GENERAL MACARTHUR
A photo op with the legendary general on the Surrender Deck

Washington Group International
Integrated Engineering, Construction, and Management Solutions

MIGHTY MO
"Picture yourself" in front of the infamous gun turrets

TO REGISTER, EXHIBIT OR SPONSOR, VISIT WWW.EEI.ORG/2003

EXHIBITORS

EXPO 2003: ENERGY SOLUTIONS SHOWCASE

The Energy Solutions Showcase offers a unique venue for suppliers to reach the most influential senior management in the energy business. This Expo is no ordinary trade show. Because of the nature and caliber of the audience, exhibitors structure their booths and strategies with more emphasis on informing top industry executives and answering their questions.

Leading industry-allied suppliers will show their latest and best products, services and technologies. A tour of the exhibit hall is certain to arouse your imagination. You'll see firsthand how a range of technical and management innovations can give you and your company a competitive edge.

The following companies have staked their own futures on their ability to understand and meet your needs, and they've made the exhibit hall an integral, high-value component of an outstanding annual convention:

Bechtel

Cannon Technologies

Career Management International

Celerant

CQ Inc.

Deloitte & Touche

Eaton Cutler-Hammer

Edison Electric Institute

Electric Energy T&D Magazine

EPRI

Fluor Corporation

GE Power Systems

HECO: Hawaiian Electric

ICF Consulting

Indus International

Invensys

IO Energy

Itron

Kinectrics

Lee Hecht Harrison

Lodestar

Meteorlogix

NERTEC

Nexant Inc.

Osmose

Platts

Progress Energy

Public Utilities Reports

Source One Communications

TTG Systems Incorporated

TWACS by DCSI

Twenty First Century Communications

www.canelect.ca

The Voice of Canadian Electricity

Prescriptions
for North American Electricity

The Canadian Electricity Association's policy paper on North American Electricity calls for:

- Increased participation in Regional Transmission Organizations (RTOs), and increased focus on harmonizing market rules
- Development of a North American strategy to manage GHG emissions from electricity generation
- Identification of opportunities to further harmonize management of other air emissions
- Creation of a consistent methodology for measuring environmental performance
- Enhancement of cross-border and interprovincial transmission transfer capability
- Coordination of critical infrastructure protection
- Support for a self-governing international organization for developing and enforcing mandatory reliability standards for the evolving electricity industry

For more details, visit **www.canelect.ca**

Canadian Electricity Association
Association canadienne de l'électricité

Circle 1 on Reader Service Card

By:
Joe Franz
Product Manager
LODESTAR

How Pricing Experts Make More Money in Gas Markets

Of course, gas companies sell gas. But price and complex contract terms are the real product sold in today's gas markets.

Gas companies understand very well that price is important. But saying something is important is different from saying that it is your business — which, if true, implies a fresh perspective. Perhaps the biggest realization is that gas itself is not the key commodity. Information is the key commodity. A price is, after all, a number — a number that reflects the analysis of other numbers, any or all of which are equally available to everyone in the gas business. But there is something else that counts more. That is the speed and cost at which a company can acquire, process, and use the data needed to quote an accurate price at which it will earn the maximum profit for a specific customer. That is the true differentiator.

There are three things gas companies need to understand about the information commodity. First, price is what sells, not gas. Second, price is a unit of information. Third, gas companies must now demonstrate the same type competitive advantage with information management that they once had to demonstrate with gas extraction, processing, transportation and quality control.

Information cost differences is where true opportunity lies in the gas marketplace. Compared to gas costs, information costs vary widely. If a gas company had not already figured out long ago how to produce and transport gas at market cost levels, more efficient competitors would have driven it from the market. The same will someday occur with information. Substantial information cost differences now exist between market participants. For example, it simply takes longer for some gas companies to:

a) extract usage data from billing systems and price curves from trading desks,
b) run that information against marketing models,
c) identify likely prospects for new offers,
d) calculate a price quote tailored to each prospect's unique situation,
e) present offers to those prospects, and
f) begin executing other information systems, e.g. billing, from those contracts.

Those delays add costs:

a) loss of business caused by delayed or mispriced quotes,
b) unprofitable customers caused by mispriced quotes,
c) increased risk caused by unhedged offers, and
d) increased operating expenses dealing with unintegrated, manual processes.

Over time the market will wring out these information cost differences between players — just as it has for the gas commodity. All players will become information efficient or leave the market. Until then, more information efficient companies have a significant market advantage.

Breaking Down the Information Commodity

Data, like any commodity, can be enriched. When it comes to selling a particular gas customer on a particular pricing formula there are certain "raw ingredients" to mix:

- Market pricing curves
- Competitive retail prices
- Proximity to pipelines
- Price sensitivity
- Interruptible loads
- Ancillary charges (spinning reserves, etc.)
- Loyalty ratings from market research
- Usage levels at different time periods
- Green ratings
- Imbalance calculations
- Delivery charges
- And many others …

Depending on the end user, these factors become essential to providing accurate and timely pieces based on individual customers. For existing customers, those would be contracts that commit the buyer to a longer period of time. For prospects, those would be contracts that are more competitive than contracts from other gas companies (a process called "blending and extending"). In both cases, the incentive for switching is usually not just a lower price (although it might be) but also a better pricing formula. Four types formulas are:

Flat rates

price stays the same over a specified number of months or years

Floating rates

price is indexed to published market prices

Caps and collars

customer pays a floating rate, but one guaranteed to stay below a certain point (cap) or within a certain range (collar)

Shared savings/shared risk

customer pays a floating rate. If price goes below a certain point, the difference is applied to a savings account. If the price goes above a certain point, the customer can draw from the savings account to pay the difference — potentially resulting in a negative balance. Retailer receives half of any leftover savings; and contributes half of any leftover negative balance.

It's not just price alone customers find compelling but the way the price is packaged (or "productized") to meet their needs. Those needs reflect various risk tolerances, price sensitivities, load requirements, load schedules, and other characteristics. Running the database of customers or prospects through the model yields the most enriched information products of all — the names of customers that score high in their likelihood to buy (or buy longer) when offered a specific pricing formula.

Breaking Down the Process

The need to correlate different pricing formulas against different customer types will not come as news to most gas retailers. Most are already doing that. What separates more profitable retailers from less profitable ones are the speed and efficiency of how that is done. It is noteworthy that many retailers that apparently understand well the importance of efficiency in bringing to market a generic commodity (i.e., natural gas) are still less than efficient in bringing to market a differentiated one (i.e., information).

As a commodity, information really is a lot like natural gas. Functions like extraction, processing, transport, and quality control are critical. These are also the very areas in which gas companies typically hurt themselves in handling information:

Extraction

Can pricing systems automatically extract requirements data and delivery points (i.e., when and where customers will use gas)?

Can systems easily accept manual inputs from salespeople about future operations (e.g., summer shutdowns)?

Can systems easily accept outputs of predictive statistical models?

Can systems accept pricing curves directly from trading desks?

Processing

Do business analysts rely on spreadsheets or, worse, pad and paper to score customers and configure best offers?

Do business analysts rely on programmers to change pricing algorithms, and data validation rules?

How are contracts written — manually using a word processor or do systems automatically compute or conditionally apply terms and then automatically insert appropriate language into contracts?

Transport

Does information move smoothly between functions — e.g., from trading and billing to pricing and contract writing, all the way to the customer and back? Or does data have to be reentered manually system to system?

Do workflow tools exist to help manage information flows and process steps, ensuring repeatability and best practices?

Do functions tend to be web based, allowing efficient access regardless of geographic location?

Does the pricing system tie forward books directly to the wholesale and retail contracts, and to the delivery points behind them?

Quality Control

Will systems automatically smooth spikes and dips and extrapolate missing monthly meter reads?

Can business analysts easily enter data validation rules into systems rather than rely on computer programmers to do it?

Will systems check for invalid data, and correct it automatically or else flag it for manual follow-up?

Do tools easily visualize and correct data validation issues on screen?

Is the pricing system completely auditable, trackable and controllable? Does it store all aspects of the deal and provide flexible reporting capabilities to allow proper management of gas operations?

Looking at these functions, there are generally three kinds of information costs companies incur: 1) The "frictional costs" incurred moving data across organizational, technological, and geographic boundaries; 2) the cost of "dirty" data; and 3) the costs of using inefficient processing methods.

Frictional Costs

The most obvious sources of friction is when data from one system has to be manually entered into another — say, when usage data from billing or price curves from trading must be manually reentered into systems that generate offers based on usage patterns and price curves. The friction is obvious when there are delays and people make mistakes entering data. The mistakes mean that customers get offered the wrong price-products and the company is potentially exposed to unhedged risks. Delays mean that customers are lost or that deals are mis-priced either because a customer's pattern of usage has changed or (more likely) because the price of natural gas has changed. An extreme (but too common) example is when market price spikes occur, when a gas company might want to suspend making offers altogether — and retreat from the market rapidly.

Even when systems do talk to each other, sometimes it is over communications links that are less efficient than they might be. Web-based systems, for example, are more efficient than client/server technology. They can be accessed anywhere there is a connection to the Internet using commodity PCs and web browser software. Client/Server tends to be proprietary, which means that access may be limited geographically or organizationally to the physical locations the systems are actually installed.

Dirty Data Costs

It costs money to clean data but it usually costs more not to. Dirty data is data that contains gaps or errors. In addition to data entry errors (already discussed) the other major examples are missing or erroneous meter reads. One cost of using bad meter data is the same as for data entry errors — i.e., mispriced contracts — if the gas company is using incorrect or missing usage data for making offers. If the bad data is used for billing, it can result in uncollected revenues or, alternatively, in exposure to liabilities.

That's the cost of using it. The cost of cleaning it depends on how efficiently the company can validate data as it is passing through the network and make corrections as needed. Typically, the way to identify dirty data is to submit it to validation rules such as the following, which might apply, say, to a dry cleaning business:

- No more than a 30% difference between winter and summer usage
- No more than a 50% month-to-month load variation
- No more than a 100% variation peak to minimum load during the contract period

If data points exceed these variations (a spike) software can automatically smooth the data or, alternatively, flag the data for human inspection. The same applies to missing data (gaps). For example, if a 12-month period has fewer than six months of missing data for a customer that exhibits consistent usage, the system might be programmed to simply plug in extrapolated values. Otherwise, again, the system might be programmed to kick out the customer record for inspection by a person. Whether or not these automated capabilities exist determines to a great extent how much a company pays to clean up data. The more manual the process or the more difficult to program, the harder it is to clean the data, the longer it takes, and ultimately the more expensive it is to do. A key factor in determining ease of programming is whether business analysts themselves can program validation rules or whether they must rely on software writers. If the former, then not only is it faster, but the chances of "getting it right" the first time are much higher because the chance of misinterpretation is lower. Analysts are also able to tweak the rules on the spot rather than cycle through a series of iterations with developers — making the whole process faster and more accurate.

Another cost factor is how often the same data needs to be cleaned. If four different systems (say, trading, billing, pricing, and settlement) have to each clean the data separately, that is obviously four times the work and four times the delay. A better approach is to store validated data for common access by all systems. Not only will that eliminate redundant cleaning, it will eliminate the possibility that data in one system is out of synch with data in another system — for example, because one system has been updated and another not.

Another way to avoid duplication of effort and out-of-synch data is to store not only the data in one repository but also the data validation rules themselves in one repository. That means that the same validation rules will be applied regardless of which system actually performs the validation — because everyone gets the same rules from the same source.

Processing Costs

The guidelines that apply to increasing data validation efficiency also apply across information processing generally:

- Reduce redundant effort
- Ensure data consistency across systems
- Ensure rule consistency across systems
- Make it easy for business analysts themselves to implement business rules

Scoring customers is a good example of where efficiency counts. Companies would not want to use different rules in their scoring models from those used to actually select which customers receive which offers. Nor would companies want to make their analysts go through the information services department every time the analysts needed to revise a rule. Business rules, of course, are important everywhere, not just in data validation or customer scoring. The more "English like" the language in which these rules can be written, the more efficiently they'll be in terms of timeliness and accuracy — and that lowers costs.

Not only would you want the rules easy to implement, you would want to do so only once — regardless of where the rule was invoked or on which copy of the data. In fact, you would only want to store one copy of the data — again, in a single data repository, to ensure that the version of an item used by one system was not different than a version of the item used by another.

Easy-to-write rules and a common repository also have another advantage: they make it easier to address pricing requirements in multiple markets and commodities. All the business analyst needs to do is add the appropriate rules to the repository — not rewrite software on all the multiple systems affected by these rules.

Accelerate the Value Cycle

The payoff from selling a complex product like a cap or a collar is greater than from selling an undifferenti-ated product like natural gas — but only if gas retailers exploit the opportunities inherent in this complexity. For a commodity, the upside is mainly in reducing costs once revenues are locked in. For a differentiated product, the upside is from adding value and bringing it to market faster and more often. Costs matter — as we have been discussing — but some costs matter more than others. The costs that matter most are market opportunity costs, and less so the cost of redundant manual effort or replacing obsolete technology. Compared to the opportunity costs at stake, these incremental out-of-pocket expenses may actually seem trivial. It's the impact of missing usage data or out-of-synch market pricing that really hurts — and that impact probably will not show up on accounting ledgers. It is the cost of unrealized profit and untapped market growth potential.

The greatest reward for natural gas retailers lies in reducing this opportunity cost — in other words, in accelerating the value cycle. How is that accomplished? It is accomplished by rewriting the customer's pricing formula (adding value) whenever a change in market pricing curves or customer usage patterns permit. That means accelerating the cycle of extraction, processing, transport, and data quality. The more times the retailer completes this cycle the more value it adds to the product and the faster and more frequently that this added value is monitized. What product? Not natural gas — the purported mission of the business — but pricing formulas, which are the true product in today's hotly competitive gas market. The cost of supplying that product — both opportunity and out-of-pocket — is a function of the retailer's information efficiency. Increasingly it is on that benchmark that the value of gas retailers themselves will be judged. ■

bills2go

With Docucorp's **Bills2Go™**, billers of any size can now have state-of-the-art billing services without spending hundreds of thousands of dollars on implementation, software licenses and maintenance costs. **Bills2Go** gives small to mid-size billers a comprehensive one-stop outsourcing solution – from design to delivery – for affordable, turnkey bill processing.

Docucorp International, Inc.
5910 north central expressway, suite 800
dallas, tx 75206-5140

www.bills2go.net
www.docucorp.com
800.735.6620

DOCUCORP

Circle **191** on Reader Service Card

Solid Brass Padlocks
Assembled and Keyed to Your Specifications

HERCULES INDUSTRIES, INC.
Manufacturer of Herculock Padlocks
P.O. Box 197 • Prospect, Ohio 43342
Phone: **(740) 494-2628**
Toll Free: **1-800-345-2590**
Fax: **(740) 494-2274**
www.herculock.com

Circle **192** on Reader Service Card

The Radar Engineers **Model 250 Ultrasonic Locator** was designed specifically for pinpointing powerline arcing and corona. The handheld, self-contained instrument pinpoints RFI and TVI sparking from the ground. The one-piece unit includes a speaker, meter and parabolic dish. It is easy to operate, very precise and extremely sensitive.

RADAR ENGINEERS

9535 N.E. Colfax St., Portland, OR 97220-1374
503-256-3417 email: sales@radarengineers.com

Circle **193** on Reader Service Card

SURPLEC TRANSFORMERS

In our plant:

Transformer repair, rewind, redesign and testing facilities

- 100MVA 230KV capacity
- Complete warranty

Also distributor for

TAMINI GROUP

Power, furnace and reactor transformers up to 1000MVA 765KV and

VT

power and dry type transformers

SHERBROOKE (QC) Canada
1 800 663 0050
Tel. : (819) 821-3636 • Fax : (819) 563-7517
surplec@surplec.com
www.surplec.com

Circle **194** on Reader Service Card

HDW ELECTRONICS, INC.

Cable Fault Locating System

HDW TECHNOLOGY

- **Fault Location, Secondary & Primary**
  Radars, Thumpers, Pinpointers, Cable Tracers
- **Cable Testing & Diagnostics**
  VLF, AC & DC Hipots, Partial Discharge, IRC & RV Methods

89 S Commerce Way, Suite 940 Bethlehem, PA 18017 U.S.A.
Office (610) 861-8862 Fax (610) 861-8864
E-mail: sales@hdwelectronics.com

Web site: www.hdwelectronics.com

Circle **195** on Reader Service Card

PRODUCT SHOWCASE

ADVERTISERS INDEX

RSC #	Company	Web Site	Page #
199	AMRA	www.amra-intl.org	27
200	Canada Mayer	www.canadamayer.com	15
1	Canadian Electricity Association	www.canelect.ca	63
2	Chemonite Council	www.acza.com	50
3	CIS Conference, Inc.	www.cisconference.org	43
4	Cybertech	www.allenergyjobs.com	39
5	Datamatic	www.datamatic.com	11
6	Datel Inc.	www.datel.com	13
7	E.J. Brooks Company	www.ejbrooks.com	30-31
8	Edison Electric Institut	www.eei.org/2003	35
9	Flir Systems Ltd.	www.flir.com	17
10	Hunt Technologies Inc.	www.turtletech.com	32-33
11	IEEE/PES T&D Conference	www.ieeet-d.org	37
12	Indeck Power Equipment Company	www.indeck.com	66
13	InfoNetrix	www.infonetrix.com	41
14	Inner-Tite Corp.	www.inner-tite.com	65
15	Kema Inc.	www.kemaconsulting.com	Inside Front Cover
16	Landis+ Gyr Inc.	www.landisgyr.us	3
17	Lodestar Corporation	www.lodestarcorp.com	Outside Back Cover
18	Megger	www.megger.com	45-47
19	Nertec Design Inc.	www.nertec.com	28-29
20	NxtPhase Corporation	www.nxtphase.com	14
21	PBP Preissinger GmbH	www.pbp-preissinger.de	6
22	Rugged Com Inc.	www.ruggedcom.com	1
23	Satec	www.oksatec.com	5
24	SchlumbergerSEMA Energy & Utilities	www.slb.com/utilities	7
25	SPL World Group	www.splwg.com	Inside Back Cover
26	Stratos VSAT, Inc.	www.stratosglobal.com	9
27	TMG Consulting Inc.	www.tmgconsulting.com	49
28	Unique Concept Ltd	www.uclsafetysystems.com	26

Every journey begins with one small step.
But it's the steps that you take along the way that determine your destiny.

That's why organizations around the world rely on CorDaptix™ – the number one customer management software solution from SPL WorldGroup.

CorDaptix has been designed for markets where product and service portfolios are forever changing, and where the only constant is the need for a customer-focused billing system that can adapt to change. CorDaptix's open, scalable and modular architecture provides the adaptable core for a customer management solution supporting multi-language, multi-jurisdiction, multi-currency, multi-product and service lines.

Follow the path to success with SPL.

CorDaptix™

SPL
Innovate·Adapt·Excel™

(800) ASK-4-SPL
www.splwg.com

World Leader in Customer Management Solutions

SOS 3897

Circle 25 on Reader Service Card

Chicago London Manila Melbourne Morristown NJ Paris San Francisco Sydney Tel Aviv

Component-Based Software Solution www.lodestarcorp.com 888.225.1293

Support and Services Your Business Can Depend On.

With over 20 years of experience, and 120 clients worldwide, LODESTAR is committed to delivering solutions, on time – on budget. We have a solid track record of managing our projects to our clients' expectations and schedules. The combination of the inherent flexibility of the LODESTAR Customer Choice Suite™ (CCS) ™ with our industry experiences greatly minimizes financial risks, providing our clients greater returns on their investment.

Our rapid implementation and best-practices approach to project management makes LODESTAR a cost-effective solution, when trying to enter into new markets or replace existing systems with cutting-edge business intelligence solutions. LODESTAR Customer Choice Suite was built on the latest technology platforms to provide you with the performance, scalability and flexibility your business needs for advancement in the energy industry.

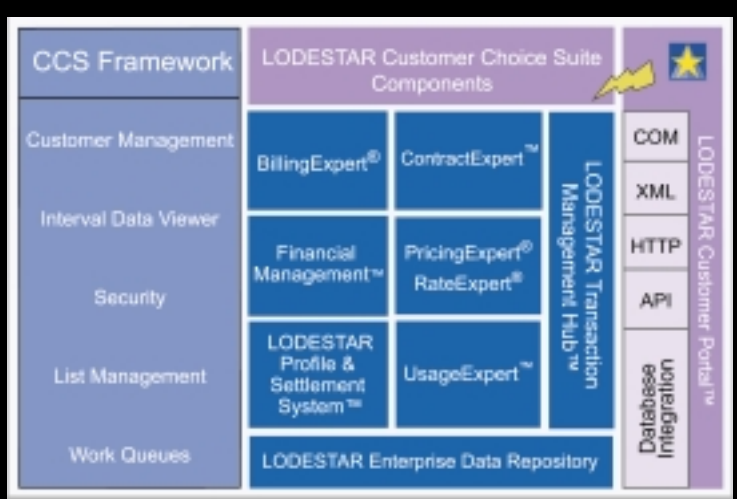
Our software has solved the most difficult problems in mission critical areas such as pricing, billing, financial management, collections, load profiling, forecasting and transaction management.

To Learn More About LODESTAR's Customer Choice Suite - Visit www.lodestarcorp.com.

LODESTAR Corporation Corporate Headquarters:
Two Corporation Way, Peabody, MA 01960, USA
Tel: 978.532.4555 • info@lodestarcorp.com

LODESTAR Solutions Limited London Office:
Abbey House, 25 Clarendon Road
Redhill, Surrey, RH1 1QZ, UK
Tel: +44 (17) 3785 2266

LODESTAR CORPORATION



Circle 17 on Reader Service Card