

Top Ten Trends in Customer Information Systems

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With regulatory pressures, Sarbanes Oxley reporting requirements, a challenging economic environment and customer demands for faster, better service hitting utilities from every direction, the role of the Customer Information System (CIS) has become increasingly essential. At the heart of mission-critical processes like billing, customer relationship management and service order management, the CIS – and the data managed by these systems – can have a dramatic impact on numerous business processes that underscore success in today's environment. While there are numerous business and technology trends impacting the efficiency, functionality and flexibility of modern CIS solutions, there are a few that stand out for their ability to help meet utilities' most pressing challenges. These trends fall into two primary categories – shifting business approaches and new and emerging technologies.

Trend #1 - A shift from CIS as the ubiquitous be-all, end-all to CIS as one of many critical components. Notable failures with several large-scale, multi-million dollar CIS implementations, combined with the industry turmoil earlier in the decade, have driven many utilities, particularly the IOUs, to shift their emphasis away from large-scale systems and toward smaller, incremental approaches. Technology advances, discussed later in the article, have enabled traditional monolithic approaches to CIS development and data management to be replaced with much smaller, more flexible, economical and robust technologies that no longer bog utilities down with multi-million dollar technology investments whose paybacks are nebulous, at best.

“There is a subtle but important shift away from the idea that CIS is the central data and applications handling mechanism,” said Ethan Cohen, director, Utility and Energy Technology for UtiliPoint International, “to CIS being one in a constellation of important applications that provide critical data for utility operations, with the others being work flow management, field service management and meter data management or Automated Meter Reading (AMR).”

Trend #2 – Replacement of legacy technology. Hand in hand with the first trend is a trend towards replacement of older legacy systems with new CIS solutions built around open system platforms and web-based architectures. Until very recently, many utilities continued to invest in updating legacy systems primarily because they spent millions of dollars over several years to deploy them. The price point of new technology has dropped, however, and in most cases it no longer makes sound economic sense to continue patching obsolete technology. In many cases, deploying a new system can now cost less than the annual cost for maintenance alone on the old systems.

Furthermore, since older systems designed for a utility business environment that has little resemblance to today's reality are typically not capable of meeting this era's complex regulatory and business demands, an increasing number of utilities will make the decision to stop trying to stretch the limitations of their old CIS solutions and replace them with new technology.

In fact, many of the industry's leading consultants and industry analysts such as UtiliPoint predict that between now and 2009, most of the CIS systems currently in place will be replaced, not only by IOUs but also by municipal utilities and cooperatives.

Trend #3 – A shift back toward more encompassing solutions. The failure of several very expensive, highly publicized ERP projects resulted in a strong tendency to retrench towards more focused, less-encompassing technology deployments focused on very specific applications. Old ERP solutions, however, were based on very convoluted, complex programming languages, for which even minor enhancements such on-line bill pay required updates to thousands or even millions of lines of code. Modern web-based architectures, however, make it much easier and less expensive for programs written in different programming languages and on different platforms to communicate and share data through standard Internet protocols.

Because they provide a more flexible, loosely coupled way of linking software applications, they allow applications to share information without being directly integrated because any application can be integrated with any other application. As a result, there is a shift back towards more far-reaching, encompassing solutions surrounding CIS.

“I see a shift among vendors,” said Cohen, “from pure or focused CIS applications development to a broader footprint encompassing CIS, plus customer relationship management (CRM), plus other billing and collection functionality. In the IOU market, I even see a trend back toward overall ERP provisioning.”

Trend #4 – CIS outsourcing. Outsourcing utility business processes is trend that continues to grow in the U.S. UtiliPoint conducted a survey in 2004 of 305 North American utilities, with a goal of assessing their positions on customer care and outsourcing. Some 51% of the respondents indicated that they have either outsourced a customer care function or were planning to do so in the following two years. The survey indicated that the three top common functions to be outsourced within the customer care arena are bill printing, credit and collections (delinquency—collecting from bad pay customers) and bill remittance.

UtiliPoint's Cohen predicts that as outsourcing increases, the communications challenges between utilities and outsourcers will become increasing critical. “We will hear more about these pain points as more and more utilities turn to outsourcing,” he said.

Trend #5 – The Internet as the new delivery mechanism. The Internet has changed everything. It's changed everyone's expectations on the speed with which questions are answered, creating a new era of instant gratification in customer service. To truly exploit the potential of the Internet, utilities will need to embrace the language of the Internet, which goes far beyond adding a web front-end that only cosmetically enhances the customer information system.

Utilities will adapt their IT environments to encompass open standards, web services architectures and software approaches optimized for the Internet as a means to increase customer satisfaction while meeting regulatory requirements and improving the profitability of the enterprise. They will also adopt approaches that more effectively bring together the data sets from the many systems underpinning customer care in order

to meet customer demands for more choice in how they get usage information, more options for how they pay their bills and more options to selectively purchase renewable energy or energy efficiency services.

Modern Internet architectures provide the solution not only for data integration between the CIS and work management, outage management, asset management, and back end financial systems but also for the delivery of this information via low-cost web browsers.

As a result, web-based applications servers standardized around Microsoft.NET and Java™ 2 Enterprise Edition (J2EE) development platforms will replace the client-server as the means by which data is managed, delivered and displayed.

Trend #6 – Open architectures. As web application servers like J2EE and .NET become the preferred platforms for enterprise applications, the concept of a service-oriented architecture (SOA) driven by web services, will become increasingly pervasive. In fact, according to Gartner, “The single, most-important theme in modern application development is the service-oriented architecture.” Gartner estimates that by 2008, more than 60 percent of enterprises will use SOA as a “guiding principle” when creating mission-critical applications and processes. In fact, Gartner says, “Enterprises that deploy service-oriented business applications through 2008 will realize average process productivity gains of more than 20 percent and cost savings of more than 15 percent by fusing dissimilar applications and breaking down structured and nonstructured information silos.”

Rick Nicholson, vice president of Energy Insights, an IDC industry research company, commented, “In my mind, web services and service-oriented architectures represent the next level of software componentization and application integration.” Nicholson theorized that, “You could implement a CIS in pieces more easily using this type of an architecture. For instance,” he said, “if you had a legacy CIS and needed to replace the credit collection or accounts receivable modules, this type of architecture would make it easier and less expensive to do that without wholesale replacement of the entire system.”

An SOA makes it much easier and faster to add new services, products and rate structures as business needs and regulatory demands change. It also provides built-in functionality for advanced features such as customer self-service, online bill presentation and payment, and complex rating and billing. It enables utilities to more easily bill customers for unlimited products, such as cable, Internet, home security and any other product or service that the utility may diversify into.

Trend #7 - Business process management . The standardization of application servers and web services has given rise to a set of standards related to business process management or BPM. These standards, when combined with service-oriented architectures, can create a dynamic synergism that extends the capabilities of both technologies.

“Business process management is an outgrowth of the of the enterprise application integration software trend, but with the addition of business process modeling and automated work flows,” commented Nicholson. “For utilities wanting to model and manage an end-to-end business process like service order management,” he explains, “business process modeling makes achieving this goal much more efficient, from the

time a customer first contacts the call center, through scheduling the appointment, securing the necessary resources, dispatching the work crews, completing the job and updating the account record.”

“If utilities can overcome the cultural boundaries needed to agree to cross departmental borders and thus leverage the benefits of BPM, the ROI is potentially quite high,” Nicholson noted.

Trend #8 - Data mining and customer analytics. In today’s business environment, utilities need more intelligent information to stay competitive as well as to comply with regulatory directives and legislation. They also need a single view of the customer across various dimensions in order to gain insights into customer behavior to identify patterns and analyze root causes for key issues like slow payment, overdue bills, collection potential and cross selling. In addition, today’s legislation mandates that utilities today more stringently monitor their data and business practices and develop performance

According to Nicholson, “Combining an SOA and new business process management standards with customer analytics and real-time intelligence is another trend that more fully enables utilities seeking a strategic advantage. “While we see more activity in this arena in Europe because of the higher level of competition there,” says Nicholson, “customer analytics and business intelligence are important technology trends among utilities seeking to better understand their customers, their behavior and how this impacts their desire for products and services.”

The trend, therefore, is toward an approach to analytics based on a robust data warehousing framework that enables flexible user-defined analysis using a single view of the customer. This view combines customer information, customer account management, service account management, installed service, site meter reading, billing, payment, collection and other customer parameters.

Trend #9 – Increased mobility. Improvements in wireless networks, device technology and device-based services that have occurred during the last few years have made mobile approaches to customer care and work order management possible, resulting in an explosion in the usage of mobile technology. Wireless solutions allow both individuals and organizations to connect to the Internet at any time, from almost any place, via wireless devices, including cell phones, personal digital assistants (PDAs), pagers and laptops. In fact, Yankee Group anticipates that the number of people using the wireless Web will reach over 200 million by 2005, and the number of people using mobile data services is expected by ARC Group to grow to 1.187 billion by 2005. Mobile solutions for customer information management are essential to allow utilities to improve field productivity and mobile workforce management, provide better customer service and respond more readily to outage situations, while keeping operating costs at a minimum.

Trend #10 – Embracing evolving technologies. The tenth trend is really a greater inclination than in the past to examine and, if justified, embrace new technologies as they evolve. A few technologies worthy of mention include broadband over power lines, cyber security, interactive voice response and advanced speech recognition. Broadband over power line is a relatively new technology being utilized in the United States to provide high-speed Internet access over utility lines. It is used

successfully in rural America to provide broadband access to households that previously had access only to dial-up service. Relative to CIS, this technology has the potential to support energy services such as automated meter reading and load balancing, enabling customers to participate in demand response via two-way communication. The data resulting from interval metering conducted over the power line backbone can be populated into the CIS, thus enhancing the richness of the data set and the resulting customer analytics capabilities.

Interactive voice response and advanced speech recognition hold promise for improved customer service for functions like billing more rapid resolution of customer questions. Cyber security isn't a new concern, but as more and more CIS transactions move to the Internet, for example, bill view, bill pay and service order management, the threat of cyber security becomes a bigger concern. As a result, software and processes to thwart intentional or inadvertent acts of computer break-ins will become increasingly common.

Summary

While there are many business and technology trends impacting the planning and deployment of CIS, it's important to note that technology should never drive utility business decisions. Rather, business drivers should dictate technology decisions. As UtiliPoint's Cohen emphasized, "It's not really a technology story. It's all about the cost and the value that results. It's about how technology can drive operational efficiency and help you get from point A to point B." While it's important to understand and evaluate technology trends, it's even more important to recognize that the promise of technology can go under-realized unless the net result is increased operational efficiency, reduced cost and increased customer satisfaction. "The key," noted Cohen, "is in determining where to make the best investments based on business optimization and on better aligning business processes to technology functionality."

About the author. Brian McFaden is an Implementation Manager for Innoprise Software, Inc. McFaden's utility experience started with 24 years at Pacific Gas and Electric Company in a career including project management, rate case design and preparation, strategic planning, gas and electric deregulation, and managing utility operations. McFaden spent six years at Alliance Data Systems (formerly ORCOM) as VP of Professional Services. McFaden holds a degree from Fresno Pacific University.