

Fortnightly

DO UTILITIES UNDERVALUE R&D?

BY RICHARD W. MACLEAN

In describing the dynamics of the electric industry, a 1992 *Wall Street Journal* article said that “if deregulation is the fuel of competition, technology is its engine.”

From my perspective, technology is one fuel utilities have yet to master. Instead of extracting full value from technology, utilities often overlook, underestimate, or undermine technological opportunities.

Before you disagree, consider what independent power producers (IPPs) have done because of the emerging technologies of cogeneration and gas turbines: They’ve set the entire electric utility industry on its ear.

How can an industry so dependent on technology make the most of that same tool? For starters, utilities have this notion of “collaborative research.” In the competitive world I came from at General Electric, collaborative research was an oxymoron. We didn’t share research and development (R&D), we protected it.

Utilities, on the other hand, aren’t merely willing to share information, they’re eager. I’m not just talking about discussing potentially groundbreaking research or innovative new systems, but actually sharing customer data with prospective business partners before a deal is signed. In doing so, utilities trivialize the value of such information.

NONEXISTENT PATENTS

Another common problem is utilities’ failure to patent their products. My own utility, Arizona Public Service Co. (APS) (a \$1.7-billion corporation), has made tremendous technological advances; yet, like most utilities, our patent portfolio is zero. Even the Electric Power Research Institute (EPRI), which has spent \$5.6 billion since 1973 on R&D (including technologies with implications for nonmember utilities here and abroad), receives only around \$2.8 million annually from patent and licensing fees.

The problem, in short, is that most utilities view R&D as a cost, not an investment. The distinction is critical. Utility R&D expenditures as a percent of revenue are among the lowest of any technology-dependent industry, only about one-half of 1 percent.

NONSTRATEGIC RESEARCH

Utilities must not only rethink how they handle R&D expenditures (and patents), they must also ensure that R&D plans are strategically linked to their utilities’ business plan. To put that in perspective, most utility R&D staffs are smaller than their public relations staffs. Historically, utilities working in a regulated, monopoly environment were content to let the General

Electrics of the world invest their resources in R&D while they concentrated on public relations. But wait a minute! Aren't these vendors the same guys who sell to IPPs? What's wrong with this picture!

CHANGING RELATIONSHIPS

EPRI, acknowledging that there are fundamental problems in how utilities use technology, is starting to unbundle research. As external pressures continue growing, this effort must pick up speed. We must move with urgency to make utilities more competitive.

At APS, we're moving at warp speed to change our thinking and become more strategic in everything from how we conduct research to how we implement technologies. I've also seen movement at other utilities as they begin to question how they work with each other and with vendors. Like APS, utilities are realizing they can no longer give away intelligence.

That doesn't mean there is no room for collaborative partnerships. Utilities do an outstanding job of bringing diverse groups together to create synergy and accomplish things that one group or one utility could never accomplish alone. But we need to be more selective and strategic in our efforts.

For example, in our electric vehicle program at APS, we have brought together Motorola, GE, major car companies, and innovative inventors of components like the zinc-air battery and portable charging stations. These are outstanding partnerships because we're looking not for their public relations value, but for the competitive advantages such partnerships can afford.

Utilities need to follow the strategy of hockey great Wayne Gretsky and skate to where the puck is going to be, not where it's been. To do that, we need to know as much as possible about our customers, their current demands, and the trends that will affect them in the future. It is critical that we keep abreast of the latest technology and, beyond that, know the implications of that technology on our industry and our customers.

Finally, we need to look at the big picture. When investigating new products or programs, we

need to think about the entire life cycle of our product—from cradle to grave. And, in the words of Yogi Berra, "We must think of everything, even things we haven't thought of."

It won't be easy to handle the competitive challenges ahead for utilities, and we must be prepared for surprises around every corner. But if we do our research, know our customers, and keep abreast of new technologies, we can skate to where the puck will be. We can make our research work to our advantage.

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