

## Editor's Comments

The conceptualization and execution of a data architecture has long been held to be a crucial MIS policy decision. Indeed, a substantial body of thought identifies the management of data as the rock on which the long-term future of both the firm and the field will be built. While many application and systems development processes may migrate to other functional areas, the issues relating to the development and execution of a data architecture will remain the bedrock of the MIS organization. In times of major changes in the external and internal competitive environments (changing laws, new competitors, new distribution channels, and new organization structures) a flexible data architecture allows the firm to quickly reconceive and reconfigure its analyses, controls, reports, etc. While it is easy for the professional to buy into this scenario, several major problems exist.

- In the past, data architectures were either non-existent or of limited scope and flexibility, being organized on an application basis rather than an organizational basis. Yesterday's solution is inadequate for tomorrow's needs.
- Linking data architecture to a business' underlying manufacturing technology, marketing situation, etc., has been an area of great difficulty. Too often the architectures have evolved from technical considerations rather than from broad-based business strategy needs.
- The investment decision in this area is particularly hard to defend in firms focused on short-term, bottom-line performance. Clearly visible, compelling success stories are hard to come by.

I believe much of this difficulty comes from genuinely not trying hard enough. To illustrate the urgency of dealing with the problems above, the following example is presented:

The current USA tax reform legislation has fallen very unevenly on the corporate world. There are great losers (the real estate and construction industry); firms for which the impact has been marginal (retailing and grocery); and major winners. No industry has been more favorably impacted than the life insurance industry. The good news for those companies includes the following items:

- The elimination of the tax deduction associated with interest on policy loans. This is an important step in reversing consumer attitudes toward loans against cash values, a situation which exploded with the high inflation of the late 1970s and caused massive negative cash flows from the firms. These attitudes persisted even though the economic rationale for such loans was no longer so compelling.
- The preservation of tax shelters relating to the cash value buildup of whole-life policies and the favorable treatment given to single-premium annuities. For many consumers, paying down life insurance loans and buying single premium annuities dominates the list of very high return, low risk investments available to them (in some cases dominating yields from similar investments by 400 to 600 basis points).
- The destruction of almost all major tax shelters open to the upmarket investor, except for historic renovations and certain aspects of oil and gas partnerships.

In short, the rules of competition have dramatically changed. The problem facing the insurance industry is how can they forcefully and speedily communicate this message to current policyholders and future customers. One of the top ten USA insurance companies faced the new environment by examining and restructuring along the lines outlined below.

For the past 15 years, finding out the cash value of a life insurance policy was a major research project for their policyholders. No formal communication on this topic was ever sent to policyholders (lest they be triggered to do something rash, like borrow the cash and thus reduce the firm's earnings). Even a direct inquiry on this matter might well take up to three months for the customer to get an actionable response.

A major internal technology investment had been made in relational databases. Among other things, it allowed the company to develop a complete profile of all products and policies of the firm owned by the

customer if the firm so desired. (The firm seldom so desired.) Justification for this investment had been a very difficult process and in the end had been pushed through by several key executives on the grounds that it was good business, although it was very hard at that time to come up with specific numbers to justify the expenditure.

In the competitive environment following passage of the new tax legislation, every customer of the firm received a two-page, detailed piece of computer output on each of their policies which summarized in clear understandable English all major aspects of the policy. This included asterisks beside unpaid interest to remind the policyholders that 35% of that tax deduction would evaporate forever if not paid before December 31, 1986. Data highlighting the relative yield from repaying loans versus keeping money in Money Market funds was also presented. At the conclusion of this data there was a final summary of all the customer's policies as a single, integrated investment program, so the overview was clearly visible.

By mid-December, the combination of this data display and aggressive actions of the sales force had triggered a massive cash inflow to the company as customers took cash from other sources to pay down loan principal and interest. Indeed, a key challenge facing the firm was how to invest this income to ensure continued high returns. At the same time, several major competitors wryly acknowledged the competitive disadvantage in which they had been placed by not having this capability, indicating that their cash inflow had been sharply lower than that of the above-mentioned firm. One firm noted that their entire data structure had been built around policy number files and it would be two- and a half years before they would be able to marshal this integrative capability.

The following aspects of this story are key:

1. It is a story about data architecture and competition.
2. The success of the data architecture showed up in facilitating rapid corporate adaptation in turbulent times.
3. The end impact can be clearly understood in business terms.

With this in mind, the CIO can ask the following questions:

1. Has a series of worst case business scenarios been constructed in my firm? Have I analyzed what the data file and information need implications of these scenarios are?
2. Have I explored the adaptive flexibility of our current data structure to changes in our business?
3. Have I communicated to general management the results of this analysis in business, not technical terms?
4. Is the potential of data architecture being examined in terms of today's and tomorrow's technology or are we on autopilot from yesterday?

For the academic reader, the implication is that there is a very important research agenda which can be of great value to the practitioner community. Our current work in this field has stopped short of highlighting, in an understandable way, the broad policy implications of this investment in the firm. For both groups of readers the bottom line is that data architecture is not a sterile academic topic, but one which has broad policy implications that can be vividly communicated to general management.

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I am pleased to announce the appointment of three new Associate Editors to three-year terms. These are Eric Clemons, Associate Professor at the Wharton School, University of Pennsylvania; Thomas Malone, Associate Professor at the Sloan School of Management, Massachusetts Institute of Technology; and Dennis Severance, Professor at the University of Michigan. Because of the significant increase in the number of manuscript submissions, (200 manuscripts are currently in one stage or another of the review

and revision process, of which, based on past statistics, 15% will be published) and to ensure they are handled in a timely and appropriate fashion, we have created a new position of Senior Associate Editor of Theory and Research, which involves taking responsibility for that section of the *Quarterly*. I am pleased to announce that Professor Izak Benbasat of the University of British Columbia has agreed to take this position.

Finally, I want to thank Dan Couger of the University of Colorado and John Henderson of MIT, as they rotate off the Board, for the strong contributions they have made to the *MIS Quarterly*.