

December 1998

Dow Corning Corporation: Reengineering Global Processes

Jeanne Ross

Massachusetts Institute of Technology

Follow this and additional works at: <http://aisel.aisnet.org/icis1998>

Recommended Citation

Ross, Jeanne, "Dow Corning Corporation: Reengineering Global Processes" (1998). *ICIS 1998 Proceedings*. 43.
<http://aisel.aisnet.org/icis1998/43>

This material is brought to you by the International Conference on Information Systems (ICIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICIS 1998 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

DOW CORNING CORPORATION: REENGINEERING GLOBAL PROCESSES

Jeanne Ross
Sloan School of Management
Massachusetts Institute of Technology
U.S.A.

The Dow Corning case examines the role of information technology and the information technology function in enabling large international organizations to transform a functionally-oriented, regionally-organized business into a customer-oriented, global firm. Specifically, the case explores the dilemma posed by enterprise resource planning (ERP) systems, which would appear to offer a useful tool for integrating global processes but have proved to be extremely difficult to implement. The case is divided into two parts. Part A describes the history of information technology at Dow Corning and presents management's rationale for designating IT a strategic resource in late 1994. Part B presents Dow Corning's plans for global implementation of SAP and reviews its progress immediately following the pilot implementations. Designed for discussion (as opposed to problem-solving), the case asks students to assess Dow Corning's objectives for, and approach to, SAP implementation and to consider the efficacy of using an ERP as a catalyst for organizational change.

1. TEACHING AND LEARNING OBJECTIVES

The case offers opportunities for studying the role of the IT unit in implementing enterprise resource planning systems and in reengineering organizational processes, but it was written primarily to explore the following issues around ERPs:

1. Provide insights into the business reasons for implementing large ERP systems.
2. Introduce some of the key challenges associated with ERP implementations and one company's approach to addressing those challenges.
3. Debate the extent to which an ERP implementation imposes technological determinism and the accompanying implications for organizational change and work redesign.

2. CASE OVERVIEW

Dow Corning Corporation is a \$2.5 billion manufacturer of silicon products. At the time of the case, the company is facing a financial crisis due to lawsuits filed in the United States on behalf of women who had silicon breast implants. Management had filed for bankruptcy protection in U.S. court, which was expected to prevent the lawsuit from draining all its assets, but the damages would be steep. At the same time, the senior management team recognized growing threats from global competition. Management felt that, to address these competitive pressures, the firm needed to make major improvements in operating efficiency and that this would require redesigning its global processes. At the outset of the case, management has determined that information technology will be key to its ability to reengineer organizational processes.

The IT function at Dow Corning had, over the years, been highly fragmented, responding to isolated needs of individual functions and locations. IT aligned with local business needs and emphasized in-house development on centralized, mainframe systems. In late 1995, management announced its intention to focus IT on strategic concerns supporting global process integration and relying on purchased systems operating in a client-server environment. Charlie Lacefield, former Vice President of Manufacturing and Engineering, was appointed as Vice President and Executive Director of Business Processes and Information Technology. He emerges as the case study's protagonist as he attempts to reengineer the IT function at Dow Corning and co-sponsor Project Pride, the firm's long-term reengineering effort.

The backbone of Project Pride was the implementation of the SAP/R3 enterprise resource planning system. Dow Corning management decided to invest in SAP because they believed the software would enable the company to reengineer its global workflow processes. However, "getting the system in" became the firm's top priority and the company was willing to forego major reengineering efforts until the system was installed at essentially all of Dow Corning's 29 manufacturing facilities and 26 sales and distribution sites. Lacefield intended to establish very ambitious implementation deadlines and to insist that deadlines were to take precedent over demands for functionality. Implementation would be completed in late 1998, so that the firm could turn its attention to generating the significant benefits to be gained from radical reengineering of its processes.

Dow Corning assembled a team of 40 of its top business and IT managers from all over the world to lead its system implementation. Team members designed workflows around the capabilities of the software rather than soliciting requirements from the business units. This was because SAP was reported to embody "best practice" and because Dow Corning had recently abandoned a long-term systems development effort that had become mired in a consensus building process. Working with very limited assistance from external consultants, the core team worked full-time starting in June 1995 to learn SAP, configure the system, develop a client-server infrastructure with a centralized database, and train individuals in each of its three geographic regions to support the system during and after implementation. On September 30, 1996, the system was implemented as planned in three pilot sites in Europe.

The pilot sites were generally receptive to the new system, but several issues emerged during the implementation. First, in some cases, SAP created new work because it lacked some of the functionality of the systems that it replaced. For example, it did not have a barcode capability. Second, the global team found that it was difficult to train users on new processes because team members were not knowledgeable about all of the old processes. Thus, they could not explain how jobs were changing. Third, the local team that was to assume support of the system following implementation was ill-equipped to do so, because local team members were not nearly as familiar with the system as the global team. At the close of the case, Lacefield has announced plans to accelerate implementation so that the project does not lose momentum, but the team is wondering how to scale up its efforts and share learning across the organization.

3. TEACHING GUIDE

This case raises two major questions about the implementation of enterprise resource planning systems at global firms, and specifically at Dow Corning:

1. Is the decision to implement SAP/R3 appropriate given the firm's strategic objectives?
2. How effective is Dow Corning's approach to SAP implementation?

Students should observe that Dow Corning has essentially adopted a technological imperative (Markus and Robey 1988), in which the company will shape its processes around the technology. Rather than specify how the company will perform as a global operation, senior management has adopted a technology that will shape its operating strategy. The global team is responsible for designing processes based on the capabilities of the technology and the "best practices" that are built into those capabilities. This defies the argument that management should first reengineer its processes according to its own strategic objectives and then implement systems that support those processes (Davenport 1998). Two conditions, however, support Lacefield's position that the firm should implement SAP quickly and worry about reengineering after the system is in place (and

has effectively established constraints on process design). First, poor IT infrastructures are limiting Dow Corning's efforts to change work systems, and second, organizations have limited energy or fortitude for radical change (Stoddard and Jarvenpaa 1995).

This debate may not be resolvable. Some students will likely consider the decision to adopt SAP to be an act of desperation by a senior management team that does not understand the implications of major system implementations. Other students will applaud their courage in seizing a moment of crisis to introduce revolutionary organizational change. In either case, it is useful to note that Dow Corning management has accepted that the real benefits of its investment in SAP will not be realized until the system is in and the reengineering takes place. This is a very long-term view of the investment and it is worthwhile spending some time assessing Dow Corning's approach to the implementation and considering the likelihood that the firm will get it in.

Students generally agree that the following elements will have a positive impact on the implementation: (a) strong top management support, (b) thorough user training, (c) global and regional cross-functional teams of experts, and (d) use of pilot sites. They will argue whether the learning that resulted from minimizing the use of consultants offset the time lost spinning their wheels as they attempted to learn the software. Ultimately, however, it is too early to know whether Dow Corning will get the system in and whether it will lead to the major organizational redesign that management anticipates. Students should engage in a discussion of what it will take for Dow Corning to succeed in implementing the system and generating real value from that implementation before the instructor updates them on developments at Dow Corning.

References

- Davenport, T. H. "Putting the Enterprise into the Enterprise System," *Harvard Business Review*, July-August 1998, pp. 121-131.
- Markus, M. L., and Robey, D. "Information Technology and Organizational Change: Causal Structure in Theory and Research," *Management Science* (34:5), May 1988, pp. 583-598.
- Stoddard, D., and Jarvenpaa, S. "Business Process Redesign," *Journal of Management Information Systems* (12:1), Summer 1995, pp. 81-107.