

1989

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Recommended Citation

Ruth, Stephen R., "PANEL 8 EXPERT SYSTEMS FOR COMPETITIVE ADVANTAGE: A BOTTOM LINE PERSPECTIVE" (1989). *ICIS 1989 Proceedings*. 21.
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PANEL 8

EXPERT SYSTEMS FOR COMPETITIVE ADVANTAGE: A BOTTOM LINE PERSPECTIVE

Panel Chair: Stephen R. Ruth, George Mason University

Panelists: John Chandler, University of Illinois
Ed Mahler, E.I. du Pont de Nemours & Company
Daniel E. O'Leary, University of Southern California

This panel examines one of the fastest growing computer-mediated technologies, expert systems, in the context of its ability to contribute to the competitive edge of a firm. There have been several notable examples of expert systems applications contributing dramatically to improved profit margins: Digital Equipment Corporation an exemplar for large scale implementations and du Pont for smaller scale ones. But there are few indications that this technology is able to have a noticeable effect on an organization's ability to affect cost and product differentiation strategies, change industry structures, or alter competitive relationships.

Since relatively few firms use information systems technology as an essential delineator of their competitive strategy, it might be possible to assume that expert systems is destined for the same sort of role that IS has: a vital contributor but not at the nexus of the strategy for competitive edge. Yet expert systems technology may have the potential of breaking away from traditional leverage expectations of IS hardware.

Some of the recent successes reported in the practitioner and academic publications indicate that return on investment of an order of magnitude or more is not uncommon under certain well-managed implementations. At du Pont, for example, the typical application costs about \$20,000 and pays back ten or twenty times the investment. Similar results have been experienced at large accounting firms and automobile manufacturers. American Express has obtained major leverage from expert systems implementations in credit card approval operations. This potential for order of magnitude improvements in annual return on investment as opposed to single and double digit percentage increases in traditional MIS applications may be one of the ways that expert systems will carve a new type of niche. Only a small number of firms have attained these spectacular improvements so far.

The perspective offered by the panel is speculative, drawing on theory and practice. The most successful and least successful implementation strategies will be examined and discussed, offering insights for roles that expert systems technology may eventually be able to play in becoming a mainstream force in shaping the competitive edge of the firm. The panel will also suggest key results indicators in ES implementation and an agenda for action to facilitate the introduction of ES as a major force for improved productivity.

The panel offers a goal-directed approach to the engineering challenge of extracting real benefits from expert systems, benefits that may go far beyond those usually associated with unit investments in MIS. The panel's aim is to leave the audience with a clear idea of the key issues, technological and managerial challenges, and examples of realistic applications from recent experiences of firms in several industries.