Editor's Comments

The fascination of a career in information technology is the opportunity to deal with a fast-changing array of new application and research challenges. Yesterday's speculative ideas quickly become today's bread and butter applications and tomorrow's obsolete systems. The everpresent danger we face is to become bogged down in refining nuances of past approaches, thereby missing a sea of change in application and research opportunities.

An example of such a field in transition is that of expert systems and knowledge-based systems. Extensive writing has appeared in this journal and others about potential application areas, how they will interface with decision support systems, how they will be supported, etc. This work has been primarily speculative in nature, not based on actual field applications. It has allowed the practitioner to begin thinking about the technology, identifying areas of potential application and initiating pilot projects. Simultaneously, the IT professionals have been busy constructing software tools which are enabling faster construction of cheaper and more cost-effective applications.

To date, the results of a few early applications have been publicized, primarily focusing on what was done as opposed to the implementation issue. As recently as a year ago, one in-depth search identified less than 200 publicly visible projects; of these, only a tiny handful were beyond the prototype stage and in actual production. As a result, the field has not benefitted from an experience-based analysis of what is working, what is not working, potential pitfalls, preconditions for success, etc., to develop grounded paradigms to stimulate and shape the next generation of applications. In the Senior Editor's judgement, the time for this work has now arrived.

In the past month, I have looked at two dramatically different firms in the financial services industry whose products are in the same segment. One firm has 28 expert systems projects underway, including three in full production. Twenty professionals are working on these projects with an annual budget of several million dollars. The firm is past the theory stage and has already developed insights which cry to be shared. The other firm's IT vice president allowed that his firm has done nothing yet with expert systems, but was becoming concerned about this. They are looking at ways to start but have no handle on *how* to start.

As I reviewed the projects of these two firms (and others), a tentative taxonomy of applications began to emerge.

1. Applications which work beside a trained knowledge worker allow the individual several more alternatives in perhaps half the time. These systems deepen and improve the efficiency of the analysis, but all action and approval lies in the workers' hands. This category covers a wide spectrum of applications ranging from those where the knowledge worker's role becomes one primarily of review, to those where the system makes only a very modest contribution to the overall effort. Some require very large investments; others much smaller ones.

2. A second cluster of applications are those where software is delivered into the hands of a paraprofessional, allowing the same individual to implement a more sophisticated and useful analysis than was previously possible. In these cases, the system makes the decisions, acting as both a professionalizing and control instruments. In retrospect, these systems do not have to be 100% perfect. Few experts reach such lofty heights.

The purpose of these examples is not to suggest that this or any other method of parsing the field is the right one; rather we mean to encourage the initiation of field research which can produce grounded insights to build the base for the next generation of research. The recent doctoral thesis of John Sviokla (Harvard University) entitled, *Planpower, XCON, and MUDMAN: An In-depth Analysis Into Three Commercial Expert Systems in Use*, is the type of work which is urgently needed. For the practitioner, the message is that this work is out of the laboratory and can be ignored only at their peril. For the researcher, the message is that an important research vacuum currently exists.