

Editor's Comment

Sometimes new technologies arrive with great fanfare and significant advance notice. This permits both the researcher and practitioner communities to assess their impact and plan their assimilation with some care. In other situations, a technology slips quietly in the back door with little fanfare, although it may fundamentally change the applications environment, with both practitioners and researchers being caught short. In 1987, this situation is represented by hand-held and laptop computers.

In a period of only six years, laptop computers have gone from very expensive and only marginally reliable, to a technology with significant capacity for a remarkably low price. In a recent sourcing situation, \$2,200 was sufficient to acquire a 640K battery-driven, 11-pound laptop computer with back-lit, twisted-crystal screen, two floppy disk drives, a virtual letter-quality printer, LOTUS 1-2-3 word processing package, a two-year maintenance contract, and a stand-alone CRT. These economics have driven a completely new series of applications to the forefront. Four such applications are described below:

- A major pharmaceutical manufacturer has an anesthesia product. This product is used by anesthesiologists, in conjunction with some 15 to 19 other items, to put a patient to sleep. It is a complicated product to sell because of its apparent high cost and sophisticated interaction with other drugs; however, when you take all the interactions with other drugs into account in a great variety of settings what on the surface appears to be a more expensive remedy has turned out to be both cost-effective and medically effective. After a highly successful pilot study, the company has now equipped all their salesmen with laptop computers with planning models to demonstrate a hospital's actual cost with other drugs and the cost-effectiveness of their remedy. The laptop computer has turned out to be a crucial ingredient in allowing the sales force to make more persuasive presentations to both purchasing agents and anesthesiologists (who are very busy and highly mobile). It has significantly impacted the firm's profits.
- Over three years ago, a major overseas insurance company equipped all its sales representatives with laptop computers. This company specializes in selling to mid- and up-scale markets. The ability to develop and tailor a presentation to a customer at the point of sale produced results. While the number of policies sold per agent remained unchanged, the average face value of a policy more than doubled. A number of U.S.A. insurance companies in the past year have similarly equipped their sales forces.
- A major manufacturer of hosiery has equipped its 900 sales representatives across the U.S.A. with hand-held laptop computers for use in both stores and customer homes. Computers allowed the company to change the pattern of handling customer orders in a way which provided better service to the customer (e.g., no stockouts). Additionally, this system produced significant cost savings for the company by eliminating one week of accounts receivable and one week of finished goods inventories. Delivery costs were reduced by 50%.
- A major food manufacturer is distributing hand-held computers to its 10,000 delivery men. This technology is at the heart of the firm's repositioning itself to implement more customized product stocking and pricing strategies for individual stores. The ability to monitor actual sales off the store shelf (by transmitting actual sales to a corporate computer each day) has produced highly focused recommendations for how stores in different parts of the country should be stocked and what prices should be charged. Bow and arrow marketing has turned into laser-gun marketing.

These are but a few of the growing number of examples of portable intelligence in use. The economics of the next generation of this technology will only accelerate this spread. At present, for example, while academic research has provided sound insights to practitioners on such items as graphics and color, similar insights are not present concerning the impact of portable intelligence and how and where it can be applied. A few of the areas which need clarification are:

1. the characteristics of applications which are best suited to this technology,
2. the specific issues that must be resolved for a sales representative to effectively use the technology in a customer selling situation,
3. the reliability and data integrity issues posed by this technology, and
4. the extent to which this technology can reliably perform in hostile environments (cold, dust, etc.).

The bottom line is that a new technology has swept into industrial life. The technology has great implications for practitioners and is generating fundamentally different applications than those of the past. They span the gamut from better sales presentations, to on-line order entry, to after-sales service. The practitioner must ask, has he or she seriously evaluated this technology and are there applied pilot projects in place in their firm to aid in this assessment. For the researcher, the implications are that this is a major area where there is strong need for grounded research insights. It not only represents a new twist in decision support systems, but runs beyond that into new types of transaction systems.

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I am pleased to announce the appointment of two additional editors to the Theory and Research side of the editorial board. Dr. Gerardine DeSanctis of the University of Minnesota and Dr. Nicholas Vitalari of the University of California-Irvine have joined us with this issue. They have been appointed to strengthen and extend our coverage of research topics.