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## COMMENTARY

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### TOWARD A "WIN-WIN" RELATIONSHIP

I have long believed that the clinical and academic nuclear medicine community and the equipment industry do not understand each other's thought processes, goals, or problems—and are therefore in no position to help each other. As an equipment user in nuclear medicine, I am frustrated by the seemingly arbitrary hardware and software limitations which manufacturers frequently impose. As a consultant to industry, I am sympathetic to the difficulties that manufac-



ers face in responding to users' needs, and the lack of patience and understanding sometimes exhibited by clinicians and investigators in nuclear medicine.

I view the development of new products with a model of three intersecting circles: (a) what the market wants, (b) what the market should want, and (c) what the market can get. In this model, the goal of new product development is to maximize the circles' overlap. "What the market wants" can only be assessed through widespread surveys of the entire spectrum of users. "What the market should want" is dictated by combining the views of leading institutions, and by synthesizing new techniques presented at scientific meetings such as The Society of Nuclear Medicine's Annual Meeting. "What the market can get" is determined

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New York, recommended that the SNM work to establish protocols to define guidelines for the evaluation of computer systems for clinical use.

#### **Educating the Marketplace**

Educating users came up as another priority, and Mr. Enos said that industry needs a vehicle for educating the marketplace.

Dr. Croft concurred, adding that "we must be attempting to reach radiology residents because they are the likely practitioners of the near future. These residents will also have increasing prior experience with computers, and as their expectations rise, manufacturers must be prepared to furnish software to a more sophisticated customer base."

Dr. Links, who organized the discussion, also arranged the users group meetings that took place in West Palm Beach, where 60 attendees met with research and development people and product managers from

ADAC, Elscint, General Electric (GE) Medical Systems, Medical Imaging Processing Specialists (MIPS), Picker International, Siemens, and Technicare. Instead of covering clinical applications as in past users group meetings, the sessions provided a forum to discuss technologic issues.

Clayton Larsen, product line manager for Picker International, said that his group talked about new software that allows for simultaneous acquisition and processing, as well as networking capabilities.

Three engineers from GE shared information on protocol development, software for single-photon emission computed tomography (SPECT), and developing local area networks for nuclear medicine departments.

Reflecting on the recent past, Dr. Graham observed that "initially, nuclear medicine computers were an instrument looking for a market. Then heart work came along and the computer became a necessity. We don't know where future developments will

lead, but we need to work together with industry to move forward."

#### **Caution Against Industrial Ties**

Cautioning against exclusive agreements with industry, A. Bertrand Brill, MD, PhD, of Brookhaven National Laboratory, said, "We started out years ago with the forlorn hope that one could develop computer-independent software and exchange it between institutions. Right now, we're moving in quite the opposite direction.

"I think it's important for users to work with the manufacturers to improve the utility of their systems, but at the same time we must strive to retain the right to share the essential ideas with colleagues. I would encourage people to develop within the SNM a means of sharing among users within classes of systems, and we should be careful about allowing our progress in this area to be dominated by industry."

*Linda E. Ketchum*

by both the available technology and any financial constraints on the marketplace.

It seems obvious that accurate assessment of the three circles depends on open communication among the entire nuclear medicine community—clinicians, investigators, technologists, and representatives of industry. It would be naive, however, simply to suggest that “we talk to each other more” without providing any mechanisms.

The first requirement is widespread acceptance of the *fact* that the hospital and scientific community is fundamentally “on the same side” with industry. It is tempting to think that users and manufacturers are financial competitors, each seeking to maximize gain while reducing cost. In reality, advances in nuclear medicine technology depend on a close-knit, supportive relationship between users and manufacturers instead of a “win-lose” relationship. Reduction of a manufacturer’s profit on a given sale, for example, may only result in short-term gain for the user because the manufacturer then has less money to spend on research and development.

A good start towards mutual understanding would be to better define the marketplace. While it may be unrealistic (in terms of expense) to consider a large-scale written or telephone survey of “what the market wants,” it would perhaps be useful to conduct some type of survey at the SNM Annual Meeting this June in Washington, DC. This survey could take several forms: a survey at registration time, a short poll of all attendees who visit a manufacturer’s exhibit booth, or a survey conducted at the Users’ Group meetings. This more explicit approach to surveying would nicely complement the feedback mechanisms I assume industry already has, such as written reports from sales representatives when they lose a sale.

I think most of the companies do an excellent job of assessing “what the market should want.” Indeed, I worry sometimes about the excessive reliance which most manufacturers place on the views of one or two leading institutions. One of the factors that makes nuclear medicine so fascinating and fun (and frustrating to industry) is the existence of so many legitimate ways to perform a particular study. It is often difficult to separate “what the market wants” from “what the market should want,” and especially difficult to determine the *balance* between those two things in a product. I believe industry has an obligation to promote newer, more accurate techniques, but it is unreasonable to expect manufacturers to do so at a loss.

The ultimate limitation, “what the market can get,” is especially important. I am constantly impressed by how far the state-of-the-art in hardware has advanced. Today’s

cameras have better physical performance and greater flexibility. Today’s computers are faster, smaller in size, and less expensive. Unfortunately, the marketplace acts as though it has less money to spend, and the purse strings seem to be controlled more by the administrator than the physician. In such a situation, there is added incentive to make a product appear explicitly “different” or more powerful to justify its purchase to a less sophisticated decision-maker.

This pressure to *appear* superficially “better” has hurt nuclear medicine by producing a situation in which the hardware itself is featured. This emphasis on hardware is the result of a “vicious cycle” of users’ demands and manufacturers’ responses, and has led to a meaningless horsepower race that consumes valuable resources. A fundamental change in this “mind set” will require a long process of education. Users can touch and “kick” hardware, and are willing to pay for it; the same has not been true of software. It is interesting to note that people *are* willing to pay large amounts of money in the personal computer market for software, but if a nuclear medicine manufacturer charged \$40,000 for hardware and \$60,000 for the software (which is probably an underestimation of the relative software expense), the nuclear medicine user community would not support it. I think part of the difficulty lies in what I call the “aesthetics” involved: many people will choose a stereo speaker, for example, as much for its size as its sound.

This emphasis on hardware has hurt the development of new software. It always makes me sad to talk to manufacturers about their new, powerful hardware because when I ask, “What are your software plans for the new system?” they inevitably reply, “We’re implementing all the software from the old system”! So much attention is given to hardware, by both users and manufacturers, that little resources are left for new software development.

I am concerned about a trend among industry leaders to interpret large market share as a sign of satisfaction with their products. As with presidential elections, a landslide victory may only represent widespread agreement on which candidate is the least mediocre. I see this trend as just one more sign of the present fundamental lack of communication. There is tremendous potential for advancement of nuclear medicine hardware and software, and tremendous talent available, but only by working together can the nuclear medicine community make it happen.

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