

THE PLIGHT OF THE SIMPLE WORKER

These are perilous times if one happens to be a computer manufacturer. There is a growing feeling among the marketing organizations of these leaders of industrial growth that they no longer understand their markets. This phenomenon manifested itself a bit over a year ago, in the form of constant telephone calls from professional organizations which were doing what were really market surveys. Many of these organizations were candid enough to admit that they were working for a large industrial organization. These calls became so frequent and took so much time that I, personally, began the practice of refusing to do any surveys whatsoever.

I suspect that many other people had adopted the same attitude because finally people from the marketing organizations of these manufacturers began to do their own calling and came out into the open with their concerns. In essence what they were asking was a simple question as to what had happened to the markets they thought existed. They were trying to assess what groups would be important from a sales point of view in the coming five years or so.

One thing which had come to their attention was that when they visited customers they often found very sophisticated systems being used for very simple tasks. This disturbed them mightily, as they had based all of their promotional ideas on the assumption that if they produced ever more elegant hardware with ever more elegant operating systems and compilers, there was no way they could go wrong. In spite of their best efforts, they were being met with a certain amount of apathy. Nothing seemed to be the key to success.

Computer manufacturers now think that they can identify which groups will be major computer users in the immediate future. Among these major users they currently number computational chemists. They are attempting to learn what they can do to attract this group to their individual offerings. It is at this point that they are stopped.

Historically, each field or subfield of a discipline has focused on the use of one or two major packages. The manufacturers can identify many of the major packages used in computational chemistry. The number is not simply two but something like eight to ten. They also realize that QCPE now holds some 625 packages which are all ordered from time to time. The basic question is the same question which one is always confronted with in the marketing business. What does a computational chemist look like from a marketing perspective? What does he think like? What are his true computational needs?

I doubt that there is a direct answer in so many words. At the same time these companies are forced by circumstances to bet their finite resources on a product line which could possibly lead to the demise of the company. It is a high-stakes game.

While a direct answer as to what is good may not be possible, some ideas as to what might be bad may be possible. To supply these ideas one needs to look at the plight of the simple worker.

Today one company introduces a faster chip. Another company counters with a more advanced graphics product. The technology is announced and advances then occur before the simple worker can have even the shortest time to evaluate the potential value of any advances. Evaluation is a slow process, and when advances sweep over the evaluator before one can even get started what usually happens is that nothing gets evaluated. When nothing is evaluated and the

market place becomes confused, very little is sold. Technological change may just be occurring too rapidly for its own good.

One rarely uses today's highly developed workstations to their full potential. It is more typical for someone to become highly familiar with the handful of operating system commands which he needs to do his job. The worker exploits those aspects of the hardware that are also convenient for doing the sort of tasks which are often repeated. Many aspects of his system lie undisturbed. A similar situation is to be found with software products.

There are now many well-developed commercial software products on the market. These products represent the efforts of dozens of people working over many years. Should our simple worker install one of these systems, it is usually the case that he makes use of but a small portion of the capabilities of the package. The full power of this product is never realized.

Related to this reality is the fact that I am told by many people who have to market this software that explaining the product is the major task confronting them. These products are now so complicated that they cannot be easily explained nor can our simple worker easily learn to use them. What has been forgotten is that every time a researcher brings a major package into the research environment, a major investment in learning to use it must be made. It is often the cost of this unseen investment which deters one from purchasing a new package no matter how desirable it might be.

The simple worker wants to control the details of the computing environment as completely as possible. Long experience has taught that it is best to have to depend on no one else to accomplish computing tasks. In my opinion these very human tendencies have led to the 'PC phenomenon'.

There is continuing exceptional growth in the sale of ever more powerful machines which had their beginnings with the IBM PC. Intel sells large numbers of 80386 and 80486 chips for this new breed of machines and is now promising the 80586 chip. These machines add ever more disk and RAM memory and have become potent performers at nominal prices. The operating systems which these machines depend on are relatively simple from the simple worker's point of view, and software comes in small modules – not large systems – which can be readily added into these systems. These machines may hold a clue as to what our simple worker actually needs to move forward.

A question which is most frequently asked when a specific piece of software is being discussed is whether or not there is an IBM PC version of the program. In working with researchers in many other countries it is often essential that PC software be available. These workers will often have the most modern of software and hardware for 80386- and 80486-based machines. The DOS operating system is in reality the only common ground for all researchers throughout the world at the moment. All of QCPE's interactions with researchers in the states which were formerly part of the Soviet Union depend on the commonality of the DOS format for diskettes.

There is some guidance for the computer industry in the 'PC phenomenon', but it is not clear that they are in any position to take advantage of it. In a sense they have committed themselves to a path which is expensive and perhaps does not lead to any assistance to our simple worker. At the same time the PC-like machines are proliferating. Perhaps they are the future.

Richard W. Counts

QCPE

Indiana University

Bloomington, IN 47405

U.S.A.