

# The Marketing Concept

## A FORGOTTEN AID FOR MARKETING HIGH-TECHNOLOGY PRODUCTS

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There have been numerous attempts throughout the years to define how to produce and market high-tech products. A cursory look in any large public library will reward the explorer with a large number of books on the subject. Most of these works are produced by consultants, advertising and marketing “gurus”, and practitioners in the field — frequently based on their experience with only one product. This body of work has been supplemented by articles in trade journals, typically by the same people who produced the books. There has also been a smattering of work on the subject by academics, often based on extensive survey research designed to answer basic questions about innovation and how such innovation can be translated into successfully marketed products.

The body of work on marketing high-tech has attained the status of conventional wisdom which has developed into a coherent body of “knowledge” which is quite atheoretical but muscular, as is so often true of knowledge won from the school of hard knocks by practitioners. There are, however, three distinct fallacies in this conventional wisdom and one serious, perhaps fatal, shortcoming which lead to extreme difficulties in gaining market acceptance of new products in this field.

### **Fallacy One: There Exist “Technological People”**

A recent journal article cited a story from *Business Week* in which the founder of Digital Equipment confessed that he could not figure out how to use a microwave oven to heat a cup of coffee (Higgins and Shanklin, 1992). The implication is that if a computer engineer cannot figure out how to use a microwave, then what hope do we mere mortals have? Yet millions of housewives seem to be able to use their microwaves.

Millions of VCRs have been sold despite their reputed complexity and most of them must be used somehow. If, instead of a computer engineer unable to use a microwave, the story were about “Joe Sixpack” who could drive a car but not pilot an airplane, would anyone listen? Would anyone care? One of the authors of this article occasionally assembles microcomputers and regularly writes computer programs as part of his business. Yet he admits his inability to program his VCR — a feat which his learning-disabled teenage son accomplishes with seeming ease. The ability of a person to type does not imply the ability to use a ten-key calculator — a feat which the other author professes to be quite beyond his ability.

Why, therefore, do we assume that someone who can design computers is able to use any product which has a

microprocessor as one of its components? The well-known “gadgeteer” who has to have the latest electronic everything has led to extensive literature on marketing “high-tech”, as though microwaves were computers were fax machines, and so on (Buzzell, 1985; Davidow, 1986; Shanklin and Ryans, 1985). The pursuit of that “gadgeteer” as a viable market segment leads many marketers astray. These were the people who had to be the first to have every Polaroid camera, but did they ever use it beyond the first roll of film? Are they truly “innovators”?, the “early adopters” of Rogers’ typology of innovative behavior (Rogers, 1983). If they are, do they warrant pursuit by a firm with a high-tech product to sell? Are there enough of them to define a market segment, or are they useful only for writing reviews and influencing others? Perhaps review copies of products can be sent to them, but should products be designed for them? “High-tech” is not a product category; it is merely the first two words of a category. It is a definition which creates more problems for the practitioner than it solves because of its seeming inclusiveness.

### **Fallacy Two: Training in the Use of New Products Is Not Necessary**

Would any of us wish to drive a car without previously being taught how? Would we want the millions of other drivers on the road to be similarly untaught? Why then do we assume that anyone should be able to use a complex product such as a computer or VCR without any instruction? Steven Jobs’s use of the term “household appliance” as a metaphor for the Macintosh was an intuitive insight into the way things should be. It was, unfortunately, not a description of the way they are. These are

complex products and using them *competently* requires some training. The true issue here is *competent* use. But many of the products covered by the rubric “high-tech” are complex, and complexity leads to fears on the part of consumers. Incompetent or inefficient use is easy, and so is learning to use one feature of a system or one program on a computer. Researchers have analyzed consumer response to four different fears engendered by these new products (Higgins and Shanklin, 1992). These are fear of:

- (1) technical complexity;
- (2) rapid obsolescence;
- (3) social rejection;
- (4) physical harm.

These fears lead to reduced use of a product. This fallacy leads directly to the next one.

### **Fallacy Three: Unintelligible Manuals Are Not a Problem, and Better Manuals Are Not a Solution to Consumer Fears**

In an old Macintosh television advertisement, a huge pile of thick manuals was dropped on a desk next to an IBM PC, while next to the Macintosh was only one thin manual. We have read manuals for dozens of computer programs and other complex modern products; almost without exception these manuals are written by engineers or programmers for other engineers and programmers. They are almost uniformly written in “technobabble”, not in English. And, of course, the programmers and engineers have conditioned the users of these products not to look in the manual for answers to any of their questions. A cursory reading of product reviews in any computer trade journal reveals the method by which customers are expected

to find answers to basic questions about the products: They should pick up the telephone and call technical support; or they should purchase a book, written by an "expert", which will tell them all the secrets which the manual forgot to mention. Most reviews report on the speed and accuracy of response of the firms' technical support personnel. There is a large, secondary industry consisting of people who write books about existing computer programs. If the manuals were better written, we doubt that many of these "How to Use" books would be sold.

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### **THE COMPLEXITY OF A PERSONAL COMPUTER RISES EXPONENTIALLY AS PROGRAMS ARE LOADED**

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These complex "high-tech" products are made even more complex by the fact that they are rarely used by themselves. The complexity of a personal computer rises exponentially as programs are loaded into it. Many of these programs cannot coexist with other programs and it is widely known that many computer users use multiple programs. One type of program, called TSR (terminate-and-stay-resident), which remains in memory while other programs operate, is a major cause of system crashes, but the companies which produce them cannot agree on a solution to the problem. Hooking up a VCR may be relatively straightforward, but it becomes almost impossible for a cable subscriber. Programming a VCR may be made easier when the program input is shown on the television screen as it is entered, but trying to deal with all the choices is still difficult if they are listed in code or in initials which have very little tangency with the English language.

These last two fallacies lead directly to the major shortcoming in the literature on marketing high-tech products.

### **Shortcoming: Where Is the Marketing Concept?**

We have often heard, "It is impossible to ask consumers what they want in high tech". One observer stated that if, "... as is the case of many innovations, no market exists, and if potential customers are unable adequately to understand the product, then market research can provide only negative answer" (Brown, 1992). Although this statement may be self-evident (and possibly true for packaged goods), behind it lurks terrible danger to any firm, but particularly one trying to introduce a highly sophisticated new product (Evans and Berman, 1979).

"Often the problem with a new product is not that it fails to perform well but that it offers no significant advantage to the user. Many new products have failed because manufacturers could perceive product differences, but customers could not" (Higgins and Shanklin, 1992). Saving nanoseconds of processor time is an issue for engineers and programmers (and for product reviewers), but many users cannot perceive how this press for speed helps them. One of the authors of this article uses an 8 megahertz PC-XT clone (a relatively slow machine) because most of his work is word processing and he is only a 30-word-a-minute typist; changing to a 50 megahertz 486 machine makes no sense since processor speed is not an issue. However, a program which can perform many word-processing tasks simultaneously, or — based on previous work performed — in an "expert-system" process, could prove to be a great benefit and could propel him to purchase a new, expensive and much faster machine.

The greatest danger to marketers is that so few products or services are innovations. None of the high-tech products discussed in the article on consumer fears can be remotely considered innovations in the 1990s (Higgins and Shanklin, 1992). Microcomputers date from the mid-1970s; even the IBM PC is over ten years old. Microwave ovens are more than 25 years old. Burglar alarm systems have been with us for more than 20 years. Residential solar heat has been *passé* for more than a decade. The lack of consideration of the marketing concept cannot be laid to the doorstep of product innovation. Rather it is in the Mandarin's sneer — so evident in the statement about marketing quoted above that “we know what products to design and you will buy what we think you should have”. This sneer is a recipe for bankruptcy. And the number of microcomputer firms which no longer exist shows dramatically just how good the recipe is.

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### SO FEW PRODUCTS OR SERVICES ARE INNOVATIONS

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A client of ours developed an innovative computer program to write classified advertisements for used cars. After having limited sales success in developing a similar computer-related product, this client sponsored a focus group of used-car managers to obtain their opinion of the product. Within the first ten minutes, it was clear from their comments that they would never buy the product, nor use the product if it were bought for them, because it did not adhere to the methods they used for writing advertisements. This research was a successful application of

the marketing concept to new-product development: let the engineers and programmers come up with innovations but then let the potential customers have a say in whether the innovation is a viable one. If not, good money will probably be poured in after bad, *ad infinitum*, until all sense of proportion may be gone (Cahill, 1990).

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### RETRAINING AND RELEARNING HAVE THEIR PRICE

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Yet the engineers and programmers continually strive to develop products on the grounds of “if it can be done, it *must* be done”. To many customers, this approach is counter-productive. Retraining and relearning have their price. A recent journal editorial complained about the “bloated, over-designed software that we are faced with day after day”, caused by “whizzy features” (Alsop, 1992). And these “whizzy” features are often included over features which would add real value to users. Three such missing features were recently identified in another computer trade journal: hardware with built-in protection against electrical irregularities; system software which includes protection against viruses; and applications software which automatically saves the user's work to the hard disk (Coffee, 1992).

Features such as these tend to be neglected because of industry structure: reviewers do not focus on “robustness”, but rather on standard benchmarks, as well as the fact that reviewers are sophisticated users who take appropriate steps to prevent virus attacks and the consequences of failing to back up their work. Too often, input from ordinary



users is shunned because they “will not understand” the product or “dealing with them will be too demanding” of scarce resources which need to be applied to the next version of the product.

Users of a technology often have a larger stake in that technology than the developer. They frequently know what is wrong with, or missing from, the product before the developers have any inkling. The concept of “beta testing” in the software industry is a recognition of this fact. One observer reports that, frequently, users have led developers to produce new software (Voss, 1985a). Another actively encourages such a stance on the part of developers of all high-tech products, and with good reason (Von Hippel, 1986); in a recent study, more than 80 percent of respondents reported that their customers were their “best source for new product and service ideas” (*Marketing News*, 1992). He again lists success factors for developing applications software (see Table I, and Voss, 1985b); and at the top of the list is recognizing user needs, which is a part of the “marketing concept”.

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### **CUSTOMERS WERE THEIR BEST SOURCE FOR NEW PRODUCT AND SERVICE IDEAS**

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What are the chances for success of a product which requires a change in the work process? Unless a product clearly offers substantial benefits, users will not reorganize their methods of doing business. The automobile classified ad program was perceived as offering no such benefit. Fax machines, on the other hand, have been so perceived and have been bought in large numbers by all types and sizes of businesses. Further, the

1. Recognizing users needs
2. Good communication by the innovation
3. Good management of technical aspects
4. Presence of a product champion with status
5. Availability of adequate resources
6. Good marketing
7. Planned innovation as a corporate policy
8. Good management practice in the innovation process

*Source:* Voss (1985a, pp. 124-5). These are listed in descending order of frequency of mention in the research reported in the Voss article

**TABLE I.**  
**Success Factors Associated with Successful Innovation**

research to determine what users want *must* be done with the people who will actually use the new product. Asking the owners of a firm will provide misinformation, unless the owners themselves perform the relevant task. Even then, owners will typically answer questions differently from employees, since they have a different stake in the work processes.

Standards are often seen as a partial solution to this problem: if a product adheres to the standard interface, users will know what to expect. If a program adheres to standard data addresses, it would be less likely to affect a user's already complex array. But standards belong to the realm of the engineer and are dangerous things to marketers (Cahill, 1992). They focus attention onto the product or service and away from where it belongs — the customer. This shift in focus can lead to price competition and razor-thin margins between parity products. Almost always, these products will eventually become commodities, virtually interchangeable pieces (Higgins and Shanklin, 1992). As long as a computer is “IBM PC compatible”, the only selling point tends to be price, as

everything else will be equal. One microwave oven is virtually the same as all the others (unless perhaps it has a turntable to rotate the food or some other "whizzy" feature); the only selling point is price. Where is the marketing in this? It is time for marketers to take back control of product development from the engineers in order to instill into it some semblance of customer desires.

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### References

- Alsop, S. (1992), "Sometimes You Can Do Without the Bells and Whistles", *InfoWorld*, 20 January, p. 4.
- Brown, R. (1992), "Managing the 'S' Curves of Innovation", *Journal of Consumer Marketing*, Winter, pp. 61-72.
- Buzzell, R.D. (Ed.) (1985), *Marketing in an Electronic Age*, Harvard Business School, Boston, MA.
- Cahill, D.J. (1990), "Industrializing Services: An Example of What Not to Do", in *Stayin' Alive Through '95: How to Thrive and Not Just Survive*, Proceedings of the 9th Annual Services Marketing Conference, American Marketing Association, Chicago, IL, pp. 52-63.
- Cahill, D.J. (1992), "I Want a Choice Not the 'Standard' Excuse", *Marketing News*, 6 January, pp. 4, 32.
- Coffee, P. (1992), "Quality PC Solutions Are Worth the Extra Cost", *PC Week*, 20 January, p. 52.
- Davidow, W.H. (1986), *Marketing High Technology: An Insider's View*, The Free Press, New York, NY.
- Evans, J.R. and Berman, B. (1979), "Improving New Product Planning Through an Analysis of New Product Failure", in Gitlow, H.S. and Wheatley, E.D. (Eds), *Developments in Marketing Science II*, Academy of Marketing Science, Miami, pp. 294-9.
- Higgins, S.H. and Shanklin, W.L. (1992), "Seeking Mass Market Acceptance for High-Technology Products", *Journal of Consumer Marketing*, Winter, pp. 5-14.
- Rogers, E.M. (1983), *Diffusion of Innovation*, 3rd ed., The Free Press, New York, NY.
- Shanklin, W.L. and Ryans, J.K. Jr. (1985), *Marketing High Technology*, Lexington Books, Lexington, MA.
- "Study: Launching New Products Is Worth the Risk", *Marketing News*, 20 January, 1992, p. 2.
- Von Hippel, E. (1986), "Lead Users: A Source of Novel Product Concepts", *Management Science*, Vol. 32, pp. 791-805.
- Voss, C.A. (1985a), "The Role of Users in the Development of Applications Software", *Journal of Product Innovation Management*, pp. 113-21,
- Voss, C.A. (1985b), "Determinants of Success in the Development of Applications Software", *Journal of Product Innovation Management*, pp. 122-9.

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