A Panel Discussion

The computer industry in the buyer’s market

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SUMMARY

The panel, in general, agreed that the computer industry is now in a buyer’s market. There was one notable dissenting point of view which indicated that the technology is still rapidly changing, particularly in peripherals, and thus, that the buyer’s market would not prevail until at least 1975. The following industry characteristics appear to support the existence of a buyer’s market.

1. The rate of change of the technology has slowed down considerably, and fundamental breakthroughs are becoming less frequent. There is now a fair degree of engineering standardization.

2. Computer users strongly influence product design, and the product planning procedure of designing to meet user needs has become a basic marketing tool in the industry. Thus, the user has a wide variety of choices at attractive prices.

3. The nature of the competition is very vigorous, and prices are getting lower. In addition, other inducements to buy are common; such as software thrown in and offering of special services.

4. The number of competitors has been reduced in recent years, and it is more difficult for newcomers to enter the race. The entry fee, already high in the past, is getting even higher.

5. Massive investments are being made for tooling and mass production of standard building-block product lines which cover a large percentage of user applications. The introduction of integrated circuits is further accelerating this trend.

CHANGE OF TECHNOLOGY

In the determination of whether the computer industry is still in a seller’s market or has entered a buyer’s market, the state of the technology is pivotal. To facilitate this appraisal, computer history has been divided into three eras of technology as follows:

1. Early era—1943-1950. The industry was forced to use existing components, such as vacuum tube logic and Williams tube storage. There were considerable new system ideas but user requirements were not very well known or understood.

2. Growing era—1950-1960. Considerable development of components specifically adapted to computers took place in this period, and the so-called solid state computer emerged using transistors, diodes and ferrite cores. Magnetic tape units, disks and other mass storage units came into being. Although the system concepts were not basically changed, refinements were made in adding items like index registers and floating point arithmetic.

3. Refining era—1960-1975. Discrete transistor and diode circuits are now being replaced by integrated circuits. This trend has just started and will continue for several years before IC technology stabilizes. There is considerable hope that peripheral development will move forward at a rapid pace and catch up with the highly developed central processor. Refinements will continue in system concepts but no fundamental change is expected.

The state of the technology is changing and will continue to change. The key issue is whether the rate
of change of the technology and the frequency of fundamental breakthroughs have created the characteristics requested for a buyer's market. It is apparent that the rate of change has slowed down considerably and fundamental breakthroughs are becoming less frequent. These trends tend to create the climate required for a buyer's market.

Another test is the amount of engineering standardization. When computers are being sold on a custom engineered basis, the user pays for all the special engineering and software, and this situation favors the seller. There is now a fair degree of engineering standardization in the industry, and the manufacturers have heavily committed engineering and software expenditures in advance of offering the product line to the marketplace. These practices favor the buyer.

USER INFLUENCE IN PRODUCT PLANNING

Now that the user requirements can be defined, the traditional product planning process has taken over. Each manufacturer solicits user groups and structures new research and development projects that will result in products that satisfy these user needs.

Because of the relatively large number of manufacturers, the user has a wide variety of choices at attractive prices. This is an essential ingredient for a buyer's market.

VIGOR AND COMPETITION

The nature of the competition is very vigorous, and this supports the existence of a buyer's market. It can be argued that the number of competitors has been reduced in recent years and it is more difficult for newcomers to enter the race. The entry fee, already high in the past, has gone even higher. Nevertheless, the quality and the strength of the remaining companies has increased. There are now several competitors who can compete with IBM on a broad scale basis.

Because of the highly competitive situation, prices and profit margins are lower. This would appear beneficial to the user, at least on a short range basis, but could be harmful on a longer range basis if research and development spending for new products were curtailed. This does not appear to be the case, for all companies are maintaining or increasing their research and development expenditures. In order to get back lost profit margin, a general attack is being made on manufacturing costs. Also, continued industry growth will spread the research and development investment over more dollars of income.

In addition to outright price cutting, other related sales inducements have become common. A particularly popular one is "throwing in" software. Special services are also provided as the occasion may warrant.

TREND TO MASS PRODUCTION

As the rate of change of the technology diminishes and engineering standardization increases, a new form of competition is developing in the manufacturing area. The new "building block" product lines and the use of integrated circuits encourage huge investments in plant and tooling aimed at lowering manufacturing costs and improving the reduced profit margins. Because of these huge investments, the life cycle of new models will lengthen, and engineering changes will occur less frequently. The trend towards mass production is a clear indication of the maturing of the buyer's market.

MANAGEMENT OF INDUSTRY:
SCIENTIST VS. BUSINESS MANAGER

In the early period of the industry, the scientist emerged as the dominant managerial figure. The key problems were mastering the new technology and building computers that would work with reasonable reliability. User needs and requirements were of secondary importance. Now that the pioneering days are over and computers have reached a high degree of reliability, the business aspects of the industry have taken on increased significance. The business problem is generically difficult because of the complex nature of the computer system itself, the impact of leasing and its requirement for keeping the installation sold over a period of time, the difficult installation and servicing problems of computers and the vast size and growth of the industry. To cope with this problem, industry must develop top managers who are both technically and business oriented. The engineer turned generalist must acquire business knowledge and acumen in order to manage. Similarly, the businessman who comes up from marketing, finance, or other business disciplines must acquire enough technical orientation to successfully manage the business. The development of this new breed of manager has become one of the critical problems of the industry.

The Technical Program Committee invited other members of industry who were not represented on this panel to add their views. The views of Mr. Max Palevsky, President, Scientific Data Systems, Santa Monica, California, are appended below:

A discussion of the computer marketplace that is not cast in terms of the influence of IBM in structuring that market place has the ring of the discussions about the Emperor's new clothes. The premise of the discussion at the 1965 FJCC—that a basic change has oc-
curred in the computer market—seems to have little relationship to the relevant facts. What are the relevant facts? Every industry has cyclical factors which affect profit performance. These include demand, plant capacities, technological innovations, etc. When demand is high relative to supply, the market is said to be a seller’s market. The only measure of this relationship is general profitability. The computer industry, since its inception, has never had a period of general profitability. The total losses, excluding IBM, are astronomical and continue to grow each year in spite of constant mutterings about “turning the corner.” Probably no other industry of the size and importance of the computer industry has experienced an era of rapid technological change in which a seller’s market never existed. Recent examples of industries that have experienced rapid change and have had a consequent period of general profitability are color television and semi-conductors. If such a period will ever exist in the computer industry appears open to question. The cash flow of IBM is of the order of $1 billion a year which dwarfs the strength of even IBM’s largest competitors. The discussion of other factors affecting the market place—such as the rate of technological change—are not totally irrelevant but are of secondary or tertiary importance. Because of the character of the corporations that are IBM’s competitors, there has been a reluctance to openly discuss the problem of economic concentration. For a professional organization, however, to avoid the central issue is not in the best interests of the industry in the long run. Obviously there is a limit even in American industry to the investment that large corporations are willing to make unless there is a strong probability of return. Without such investment on a broad scale with many competing firms, the potentialities of the computer field will never be fully realized. That is the central issue relating to the kind of computer market we have and the consequences that can be predicted. If this central issue is not treated, the discussion is really about the Emperor’s new clothes.