

The Computer and the Marketing Man

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- I**N LESS than ten years from now
- ... U.S. population will be almost 220,000,000.
 - ... Gross national product will be close to a trillion dollars.
 - ... Inflation will likely shrink our dollar another 20% or so.
 - ... Individual incomes will be up nearly 50%.
 - ... Automation and electronics will affect practically everything we do.

Industrial marketing will see many dramatic changes. The changes, wrought by the "black box" (electronic computer) will come from automation in nonmarketing functions as well as such marketing activities as personal selling, product design and development, marketing research, and communications.

Some Electronic Age Predictions

IBM predicts:

- ... Computers tied in with accounting and book-keeping will simultaneously register a purchase in the credit office, inventory control department, production scheduling department, and the shipping office.
- ... Companies using computers to simulate business problems and analyze various alternatives for their solution will have top management free to concentrate on creative phases of their jobs.
- ... Computer technology will enable the government to be far more scientific in planning roads, transportation, schools, and water needs. Tax records, birth and marriage rec-

ords, deeds of sale, car registrations, criminal and public health records will all be stored in computers.

- ... Electronic data processing will give us complete health records for major segments of the country's population. And in hospitals, computers will help doctors to uncover secrets in body chemistry, the nervous system, genetics, and diagnosis.

Indeed, automation and electronics are already beginning to affect almost everything we do. Actually automation is not new. We have been "automating" since the wheel; but most of the significant progress in automation has been confined to production processes and manufacturing.

Only recently have automation methods been linked with marketing. And this has been confined largely to warehousing and transportation, order picking, and handling. Automatic vending and certain other functions in retailing are also being automated. These innovations speed up the distribution process and lower marketing costs. But what about the other important marketing functions: selling; new product development and testing; communications, including advertising, public relations, and publicity; packaging; and marketing research? These marketing functions are the economy's "dark continent."¹

¹ Peter F. Drucker, "The Economy's Dark Continent," *Fortune*, (April, 1962) pp. 103, 265, 266, 268, 270, at p. 103.

Using the Computer in Industrial Marketing

Most sophisticated computer users, and certainly computer manufacturers, agree on one thing. We are just beginning to "scratch the surface" of electronic data processing applications in marketing. Any article or speech on the subject is almost out-of-date the day it is published. Innovations and potential possibilities are developed practically daily.

In *personal selling and sales analysis*, computers are helping industrial marketers to develop dramatic improvements in shaping alternative strategies and measuring performance against planned objectives. Faster and more detailed processing of sales data gives the industrial sales manager an opportunity to measure more quickly and scientifically individual salesman performance, sales-territory achievements, competitive records, and product-by-product performance.

Information on sales trends will be spotted automatically, and in time to give the sales management a chance to take immediate corrective action in many areas. Relative influence of multiple buying will be pinpointed. Weaknesses in certain territories can be eliminated in the early stages of a decreasing sales curve.

Data from computers will guide salesmen to the high potential, high profit customers. It will help interpret reasons for lost sales. The computer can be invaluable in providing direction to the management in allocating funds and time to the most profitable marketing mix. The computer helps to answer the fundamental question: how can we best apportion our marketing dollar to return us the highest profit percentage?

Marketing mathematical models are becoming as important tools to the industrial marketing manager as the more traditional tools of marketing. The predictive possibilities of the computer give the sales manager a tremendous head start in guiding his sales force to the right prospect, with the right product sales message, at the right time.

In *new product development and testing*, the industrial firm will increase its success odds greatly by applying computer technology. Almost all of the outstanding postwar industrial success stories are based on the successful development and introduction of new products. Most major industrial companies' sales records indicate that products not in existence ten years ago now account for between 25% and 50% of total sales. A company's survival depends on new product ideas.

But the development and eventual marketing of the new product out of twenty which achieves success is a very painful and profit-punishing corporate experience.

Alternative product factors, combinations of products, and the adding and dropping of products from the line will be basic marketing problems

solved more quickly and effectively by electronic machines.

The coinventor of the electronic computer, J. Presper Eckert, predicts that the computer will revolutionize marketing in the future by pretesting products before they appear in the home, the store or factory. "There will be no miserable flops paraded before the public to tarnish a company's reputation," Mr. Eckert reports. "The computer will even have charted the times at which the product will reach its peak, will have matured, and when it will be dead."

He goes on to say that computers should be used in analyzing alternative decisions using linear programming, for example, to tell management from which warehouse the product can be shipped most economically, in which plant it should be manufactured and how many maintenance technicians will be required to service it.

In *marketing research*, the computer gives the marketing man a tool which will drastically speed up processing and analyzing of data. It enables the researcher to provide his management facts and figures on a "before-the-fact" rather than the so common "after-the-fact" basis of today.

Aiding management decision-making are computer applications solving such problems as:

- ...Deciding where to locate a new plant or branch, based on an analysis of expected customer demand, transportation, distribution, and other factors contributing to costs and profits.
- ...Forecasting sales, using marketing research to determine sales probabilities in different geographical regions for different product lines.
- ...Inventory control analysis and warehousing methods, using operations research techniques.

An experimental laboratory for marketing management—simulation on a computer—is improving decision-making significantly. Computer simulation is a tool for discovering an improved mode of operation, one that stands somewhere between what you would have obtained by pure judgment and intuition alone, and the optimum policy which might be pursued.

Another forward advance in marketing is Information Retrieval. IR is the art of extracting from storage the information desired at a particular point in time, in response to specific requests. It is a process growing in importance. Retrieval of information as such is not new—we have had books, libraries, and reference librarians for years—but what is new is the application of mechanized methods for accomplishing the age-old tasks, and more recently the use of computers to assist in solving this universal problem.

² *Chicago Daily News*, April 6, 1962, p. 41.

IR involves all the aspects of information collection, selection, indexing, storage, retrieval and dissemination. The significance of IR to the industrial marketing research manager is obvious. The amount of duplication in terms of market measurement, buying practice studies, marketing trends, and market attitude and opinion research projects is staggering.

We are never sure we have all that is available; but worse than that, we are not sure that we have the most applicable information for our particular problem. Information Retrieval Systems, broadly available in trade associations and government agencies in addition to individual corporate IR systems, will materially improve the speed and effectiveness of industrial marketing research. Learning how to find out what we already know can bring major cost savings to industrial marketers.

In the *external communications programs* (advertising, sales promotion, and publicity) of industrial concerns, the computer is also making its presence felt.

In a very few short years computers will process the selection of media and much of the paperwork now necessary in analyzing the relationships between advertising and sales dollars.

Barnard, Inc., a Standard Rate & Data Service subsidiary, has developed an automated procedure for allocating advertising investments by sales territories, and then correlating these sales with advertising dollars while simultaneously effecting comparisons with year-ago figures.

Studies are well under way to explore the most satisfactory methods of converting business publication circulation data into machine language. Some publishing companies are already processing advertising inquiries on data processing equipment.

Standard Rate and Data Service sees a real possibility of integrating computers with its printing production to provide all of the data now in the directories on an instantaneously current basis. This would be accomplished through a high-speed communications linkage with transmission equipment located in the large advertising agencies, and available to smaller agencies from widely scattered but strategically located points throughout the country. A media buyer who wants to check rates would still refer to his printed directory to make media selections and gather basic comparative cost and coverage data; but once this was accomplished, he would turn to his transmitter linked by direct line to the SRDS computer and ask for a variety of specialized, derived figures—such as comparative cost per thousand figures for publications selected . . . or coverage by geographic or SIC industry breakdowns . . . or dollars to be invested in selected sales or market areas. His answers would come

back across a distance of hundreds of miles in just a few seconds.

Before too long, business paper circulation numbers and audience characteristics will be reduced to standard machine language. It will be available in up-to-the-minute comparative form with the selection on this basis handled by computers.

We shall no longer worry about duplication of circulation and readership we are now buying in business papers. Statistical information will simply be fed into a data processing system big enough to store the information. Retrieval of pertinent duplication facts will then be readily available. Market data defined in the same terms used in the circulation and audience analyses, all in machine language, will provide an instantaneous matching of markets and media at different cost levels.

Scientific audience studies will be readily available from random access memory devices. Industrial advertisers and agencies will use computers to research the reading habits of every individual in a given industry or market. This information will be stored in a random access memory device which is easily updated from time to time.

Many people have ignored the fact that really high-capacity memory devices are now available. For example, for several years it has been possible to get an IBM RAMAC disk file which stores up to 10 million characters of information.

Life in 1972

The publisher in 1972 will be building mathematical models of his magazine a year in advance of the issue date, just as the businessman will be looking at a simulated annual report a year ahead of time. Story details will be sped to the publication home offices by Tele-Processing; and computer-controlled printers operating at speeds in excess of two thousand lines a minute will print out story outlines. Output from high-speed printers will be photographed directly and become offset proofs for solid pages of text.

Reversing Tele-Processing input, publishers will be selling a new information service . . . providing punched card or magnetic tape marketing data to business and industry. Highly advanced information retrieval programs will turn publishing into an *information* business in which the publisher not only communicates general information in the form of magazines, but provides his audience with almost instantaneous, yet highly individual, information.

Money in the form of bank drafts will not be exchanged between the publisher, the advertiser, and the agency because the national banking system will almost instantly and automatically update corporate accounts from data fed from Tele-Processing units. For example, one signal from the agency's

Tele-Processing unit will decrease the advertiser's account by a hundred dollars, increase the publisher's dollars. The same automatic updating of corporate accounts will be reflected in the updating of personal accounts so that payroll becomes a matter of communicating with the employee's bank rather than communicating through the form of a check with the employee himself.

Each morning, the editor and the publisher will meet to review a very brief statement on a single sheet of paper. On this paper will be an exception report of things they should worry about *that day*. The computer will be continually analyzing their business and telling them only the things that they have to worry about—the corporate officers then can work on the assumption that everything they do not know about is running smoothly.

Subscription fulfillment, which even now can be fully automated on high-speed computers, will be incredibly accurate. Change-of-address cards will be optically read by the computer and all subscription data updated in a millionth of a second—where a change of title occurs and it is obviously a promotion, the computer will also (as a byproduct) tell an electric typewriter to write a letter of congratulations over a facsimile signature of the president of the publishing company.

With the press of a button, the agency man will watch extremely detailed information fly out of a high speed printer—it will give him precise analysis of the publication's circulation, duplication, geographical breakdown by SIC codes by county, and by title; factors indicating renewal trends by SIC code over a 10-year period; terse comments on editorial evaluation from a 500-point mathematical profile; and rate trends over the past five years.

Four days after the publication has been mailed, all advertisers will receive an extremely accurate analysis of the readership of their advertisements—the information will be printed out for them at their Tele-Processing receiver.

G geared to its own employee profile requirements, a company will receive student profiles of college

seniors who mathematically match the kind of person it wants to hire—the same service for experienced personnel will be provided by data centers specializing in personnel.

Many publications will become dailies, but will not even have a printing plant. The "issue" will be sent out on high-speed magnetic tape over Tele-Processing systems and type and halftones produced by facsimile machines at the subscriber's office. Just as we now have instant pie mix and instant coffee, there will be "instant news." The story on the hiring of a new president of a major U.S. corporation will appear in the publication BUSINESS MINUTE on the subscriber's desk within 20 minutes after the announcement has been made.

Partners in Progress

The computer and the marketing man—partners in progress? It is no longer a question . . . it is a fact—today! Not when, or why, or how, or where . . . but how fast? The challenge and opportunity to industrial marketing is unlimited. The goal of "science in marketing" is closer than ever before, thanks to the computer.

But industrial marketing people must understand these facts first:

1. The computer does not replace judgment, common sense, or creativity. It can, however, replace guesses and "flying-the-seat-of-your-pants" business practices.
2. The computer is only as efficient as the facts and figures put into it. The programming and programmers (the "software") must be equally as good as the computers (the "hardware").
3. There are few, if any, marketing functions which are not affected by electronic computer applications. The alert marketing man will explore electronic data processing for application in all marketing activities.
4. Size of company makes little difference in the possible uses of computer technology. With the rapid growth of computer service centers, a small company can rent computer services for a relatively small monthly investment.