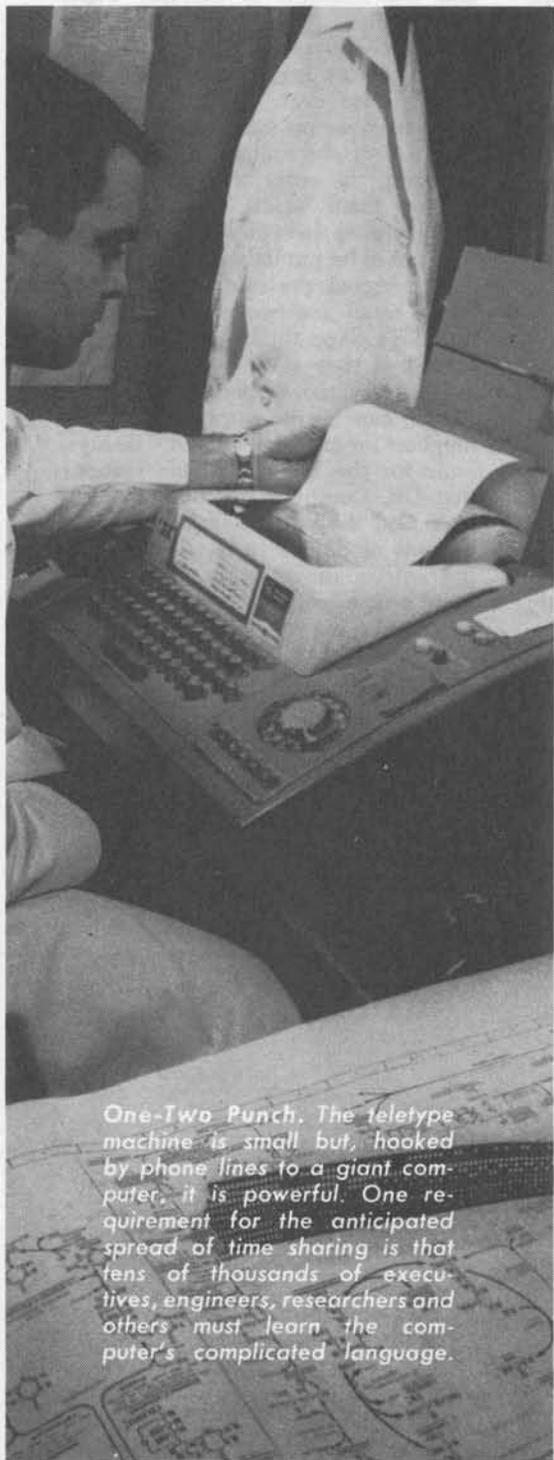


# GE TIME-SHARING SERVICE MAKES NEWS



Time-Sharing Service



**One-Two Punch.** The teletype machine is small but, hooked by phone lines to a giant computer, it is powerful. One requirement for the anticipated spread of time sharing is that tens of thousands of executives, engineers, researchers and others must learn the computer's complicated language.

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### *What General Electric Didn't Sell*

*Note that when GE sold its computer business, it held on to time sharing. There's a good reason, and it involves what may turn out to be one of the biggest parts of the computer business.*

SUCH is the versatility and the time- and cost-saving benefits of computers that almost any business—even the corner store—can use their services to advantage. The trouble is that the really big computers are too expensive and the smaller ones less versatile. Enter time sharing. With time sharing, dozens, even hundreds of users can be plugged into a single computer, paying only for the time and programs they actually use. In fact, the day could come when every school, perhaps every home, would be plugged into a computer or computers.

#### **New First Act**

Many computer people feel that time sharing will be one of the real growth ends of the computer business. But lately it hasn't been growing. At least not the way the script says it should. Total sales last year were just \$150 million, about 1.5% of total computer industry revenues. Since there were more contenders than there was business, price-cutting ensued. In the first quarter of this year nearly 20 small companies closed shop. GE and International Telephone have closed some of their time-sharing offices.

Nevertheless, in the last two years Control Data has announced it has invested \$50 million to build "the first national computer network"; Honeywell has set up a time-sharing service operation; Computer Sciences Corp. said it is investing \$100 million to build a nationwide time-sharing system; University Computing is spending large sums. Current time-sharing leader General Electric, which carefully excluded its U.S. time-sharing setup from its recently announced

deal to sell the bulk of its EDP operation to Honeywell, has put another \$55 million into an "international computer network"; Western Union, Leasco and United Utilities have all talked about expanding heavily into time sharing.

On the market side, the forecasts are that computer time sharing—multiple users communicating with one computer at the same time—could grow to be a \$2-billion industry by the mid-Seventies. That's a growth rate of over 50% a year.

Isn't such a prediction far-fetched, in view of the problems of the past year or so? Many in the industry think the problems are being worked out. "The industry is a hell of a lot healthier than it was nine months ago," says Paul W. Sage, head of General Electric's time-sharing operation.

Sage thinks time sharing is passing through the first stage in its growth. So far the bulk of time-sharing revenues has come from what is called "conversational" time-sharing. A user—often an engineer or scientist—types his query at a remote terminal; it is transmitted over telephone lines to a computer, which relates it to the proper program in its memory bank; and the answer comes back to the terminal almost immediately. GE had helped to support the pioneering venture in this kind of time sharing at Dartmouth College, a venture that also included devising a simplified and easily taught computer language called BASIC. By 1968, greatly aided by the wide acceptance of BASIC, GE had captured an estimated one-third of the total time-sharing market.

Most of the 100 or so time-sharing companies that sprang up in 1968 and 1969 followed the same approach. It was relatively simple: One rented a computer and terminals from GE or another manufacturer, and got much of the software, such as BASIC, with the computer. All that remained was to sell the service. It was so simple that by late 1968 prices had begun to tumble. "Everyone was selling basically the same product," says James A. Stone, head of computer technology at Quantum Science Corp., a technological information service. "It was like selling Fords against Chevrolets."

#### Stage Two

The time sharing that GE and the other big computer companies are talking about now is quite different from conversational time sharing. Remote terminals will still communicate to central computers. But instead of being oriented toward relatively smaller research problems, the computers could handle payroll, inventory and accounting jobs that are now done manually or with small on-site computers. "It opens up a big new market of the small and medium-sized business where there is very little competition from the hardware manufacturer," says William R. Hoover, president of Computer Sciences.

Some of the time-sharing networks plan to go even further. They will link into data bases containing current in-

formation on such subjects as stock prices, hotel rooms, legal precedents, bibliographical material or economic data. Anyone who has a terminal can inspect the data.

It is this so-called commercial market that the big boys are aiming at. Quantum Science estimates that less than \$100 million of the current time-sharing market is commercially oriented; the rest is scientific. But it estimates that \$1.7 billion of the mid-Seventies market of \$2 billion will be commercial time sharing.

Going in on a nationwide scale makes sense, says Hoover, because the costs required to put together one time-sharing center are so large. "There is no in-between point," he says. "These costs have to be amortized over a large number of systems."

The anticipated market is so much bigger than the present one that nobody really has much of a head start—not GE or even International Business Machines. It is estimated that IBM now has only about 20% of the time-sharing market, compared with its estimated 70% of the computer manufacturing business.

IBM's seeming lag is due largely to GE's large market share. And to the fact that it has been so busy selling computers that it hasn't had the time to focus on the relatively small time-sharing market. "It is very difficult for IBM to commit itself to this [time sharing] as their top priority item," says Hoover.

IBM has also run into legal problems with its time-sharing sales. Thus, in 1968 it moved its time-sharing sales force into its wholly owned Service Bureau Corp. subsidiary which, under the 1956 Consent Decree with the Justice Department, can't use the IBM name in its marketing.

#### Survival of the Fittest

But if it is clear why so many companies are betting so much money on what is now a small market, it is far from clear who will have the brains and the strength to survive. Tight money and a weak stock market are making the financing of new ventures difficult. Stock prices may take a long time to rise even when the market starts to move up again: Investors are skeptical of the industry's practice of deferring the costs of huge projects, labeling them "assets," and then suddenly writing them off when they don't turn out to be profitable.

The biggest pressure will be on the many small companies in the field, but GE's Sage thinks that some can survive if they stick to a single geographic region or a specialized service. "These can be the guys who are the toughest for us to sell against," he says.

As for the big nationwide systems that GE, Computer Sciences, Control Data and the others talk of spending millions of dollars to install, they are the entries in what promises to be quite a race, with some very big winners. And some very big losers. ■

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