



This month's cover design, suggesting the influence of automation on American small businesses, is by our art director—with photography by Fine Arts Software, Santa Monica, Calif.

Well-established with eight years of experience, Keydata now sees eventual expansion to over 10,000 terminals

The Keydata Service

That every business could benefit by the use of a computer is generally accepted by the business community; that to be truly effective, management requires the rapid, accurate and timely information that a well-equipped, well-programmed, well-staffed edp department can deliver is also indisputable. Yet the question remains whether it is advisable or even necessary for every business to spend the time, money and effort to develop its own computer system.

Our feeling at Keydata has always been that "a computer for every business" is not the solution for most of the business community seeking "computer power." Consequently, we have developed an alternative service to the in-house computer system and the local service bureau. We entered the data processing marketplace some eight years ago, having made the decision to develop a service to fill the void for that segment of the business community that did not want to pioneer their own data processing systems. Applying the experience gathered during our software consulting days, we developed an on-line, real-time system to provide the business community with timely information on their inventory levels, sales volumes, receivables, payables, etc.

Originally we thought the service we offered would be most attractive to wholesalers and manufacturers in the one to ten million annual sales cate-

gory. However, we quickly discovered that our service was equally attractive to the wholesaler/manufacturer grossing 10 to 50 million dollars in annual sales, with multiple warehouses or branches. After successfully implementing several of these accounts, large national corporations with many subsidiaries or divisions also found us attractive, either as a complete service or used in conjunction with their own edp departments, due to the on-line capability of our service and our national communications network to tie multiple locations together.

By offering a service to our customers rather than equipment, the onus of the technical expertise and the capital investment required to keep a system up and running rests with us, allowing our customers to manage their respective businesses rather than an edp department. We have found that what the business community truly seeks are the *answers* to business questions rather than the mechanics for providing the answers.

To provide the business community with its timely answers, Keydata's system operates on-line with a two-second response time from the computer center. Initially, after a design survey, customer records are loaded at the computer center. Then, all subsequent activities are initiated by the customer's operator through the Keydata terminal. The terminal is located in the customer's office and is connected to the

Keydata computer center by a private duplex telephone line. Customers may send and receive information simultaneously. Operating in a real-time mode, as each transaction is received records are automatically updated. Thus, records reflect the current status of customer accounts and inventory position. An auxiliary printer keeps customers abreast of exceptional conditions, out-of-stock notices, re-order points, customer credit rating and the like. With the on-line service, any information about a customer's business is available upon demand due to the instant inquiry capability. Details of on-line transactions are captured at the Keydata computer facility for entry into an off-line system for the generation of periodic accounting and analytical reports which are delivered to the customer at prescribed intervals.

Keydata services

The distribution accounting system. This service performs all functions related to the distribution of goods: order processing, inventory control, receivables, and sales analysis. This is an integrated service which begins with a customer's order, ends with goods having been shipped or services rendered, and results in automatic updating of all pertinent inventory, customer and sales analysis records. Operating as an integrated part of the distribution accounting system, the open order service serves customers that receive or-

by Randolph S. Naylor

ders for future delivery, manufacture to order or have a high percentage of back orders. Invoices and shipping documents are automatically produced at the terminal when orders are released or inventories are replenished. Information is available on the status of open orders, current and future demands on inventory, and requirements for similar demands on purchasing, production and shipping.

Accounts payable/general ledger system. This system enables customers to distribute expenses, control accounts payable liability, produce checks and record journal entries. Taken with the distribution accounting system, it provides a complete package of management information and the ability to produce financial reports, including expense and budget analysis, profit and loss statements, and balance sheets.

Labor distribution/job cost accounting system. This service is designed for improved cost analysis and control. It enables a customer to post costs to specific jobs, inquire through the terminal into the current status of any job order—to compare actual with budgeted costs or with percentage of completion—and generate gross earnings of employees.

Communication network. In an effort to minimize communications costs, Keydata developed a nationwide communications network. Our customers pay communications charges between their office and the nearest of

the 42 Keydata communication centers. The network has strong appeal, especially to multi-location companies, by making it economically feasible for them to link headquarters with outlying offices, warehouses or other organizational units and by using the same data base to interact with and monitor the operations of all their locations. Centralized control is thus achieved at reasonable cost.

Costing the service. In pricing our service, Keydata uses two types of monthly charges: fixed and variable costs.

There are two categories of fixed-cost charges, communication costs and record file storage costs. Although communication costs do not normally increase on a month-to-month basis, increases by the telephone company in local rates could affect the communications costs.

Because each customer's usage and application of the services varies, variable costs are based on transactions and applications used. The rates charged for these are set for the term of the contract, usually three years. As a customer grows and his need for computer power is greater, additional terminals may be added at minimal cost.

Having offered our service for the past eight years, we have noted some characteristics of the successful Keydata user:

1. In terms of volume of sales, we

have found that a potential customer should do at least one million dollars in annual sales to justify the cost of the service. On the other end of the scale, we have never encountered a customer too large for us to handle. Even in the very large corporations with in-house edp departments, the Keydata on-line service has been used in conjunction with their own edp department to connect branches and warehouses for centralized control.

2. Our service is best suited to wholesalers and manufacturers. We presently provide service to 539 customer terminals in 25 states and 2 Canadian provinces in some 72 industries with the major area of concentration in: air-conditioning, heating and plumbing supplies; aluminum products; building materials and supplies; chemicals and dyes; cosmetics and perfumes; electrical and lighting supplies; furniture; games and toys; industrial equipment and tools; jewelry; liquor; office supplies; paper products; and watches. At the present time, we do not provide a service that advertising agencies, insurance agencies, stock brokers or real estate dealers would find useful.

Getting started

To insure the success of our service to potential customers and our existing customers, Keydata provides the following support functions as part of the original contract price.

The Keydata Service

After an in-depth survey and cost analysis by one of our sales people, and the acceptance of the proposal by a

potential customer, the account is turned over to one of our system designers. He will work with your people to further detail the day-to-day operations to be performed, and to finalize the format of your invoice form and report design. After the systems survey

has been completed and all details of the system defined, Keydata personnel will implement your specific applications on the computer. To insure trouble-free operation, prior to installation, Keydata pretests your programs with your live data. After testing, conver-

At Last—Rewards For a Pioneer

The moment of truth for Keydata was approaching in 1968. The firm was under severe financial pressure and the highly-touted Keydata time-sharing system just wasn't performing the way a highly-touted system should be performing. In a bit of classic understatement, Keydata president John T. Gilmore recalls:

"I guess you could say our system wasn't exactly perfect.

"We were planning for our first users' meeting and we were having our doubts. Some people thought we would be idiots to put all our customers together under one roof. We were afraid they would all get together and complain about how bad things were."

But Gilmore elected to gamble and go ahead with the users' meeting. About 100 persons representing 30 customers showed up at the meeting in Boston and it went very well, he remembers. Instead of burning the Keydata management in effigy, the users got together, talked about their common problems and goals, and they left the meeting generally happy and hopeful about Keydata's ability to continue to provide service in the future.

These days Gilmore approaches Keydata users' meetings without trepidation. Not only does his system work smoothly, but his now-profitable company has more than \$1 million in the bank and there are more than 350 Keydata customers out there in 22 states and two Canadian provinces.

If the computer industry gave a prize for tenacity, Gilmore would be the logical winner. The first commercial time-sharing firm, Keydata was founded in 1965 and, furthermore, Gilmore was a founder of Keydata's forerunner, Charles Adams Associates, which started up in 1959. Gilmore and Allen Rousseau, Keydata's vice president of technical operations, have seen the enterprise through those 13 long and tough years.

Now Gilmore is confident that Keydata's profits are permanent, not ephemeral. He observes that the firm has moved gradually from a loss of \$1.3 million in fiscal 1970 to

a profit of more than \$500,000 in the first six months of fiscal 1973. Furthermore, the company is targeting sales and profit growth at more than 30% a year over each of the next few years.

How did Keydata make it over the hump? Gilmore gives major credit to the company's employees ("the most important thing was their dedication") and to the firm's venture investors ("they hung in there").

But many people close to Keydata argue that Gilmore's ability to hang in with a seemingly doomed proposition was an important factor in the company's struggle for viability. Asked to elaborate, Gilmore remarks, "Well, I'm really a technical guy, but I had to do some selling, too. And I'm even told I'm not a bad salesman. I've just adjusted to whatever I've had to."

Gilmore had worked at MIT during the 1950s in the Air Force's SAGE air defense program and he and a friend, Charles W. Adams, left to form Charles Adams Associates. (Adams left the operation in 1966.) That operation stumbled along for a few years and in time a subsidiary, Keydata, got rolling in 1965 with 24 customers.

It soon became evident that Keydata had made a mistake: each customer had a custom package and custom packages were very expensive for Keydata. Gilmore quickly declared a moratorium on new customers and the firm concentrated on developing standard packages. When this was accomplished in late 1967, the company began adding customers at a steady rate. But all through the 1960s and into the early 1970s, Keydata was relentlessly stalked by an ugly financial bugaboo.

"Money was really a problem," says Gilmore. "There were several times when we had to do some fancy talking to our bank to meet our payroll. Turning the corner on profits was a big turning point for us. Now we have more than \$1 million in the bank and that means a lot to the bigger companies looking at our services. We've reached the area of critical mass, I think. We

don't need any more capital and it's easy to add new customers."

Another interesting aspect of the Keydata story is the efficient way it uses its hardware. That's not particularly surprising because Gilmore and technical operations expert Rousseau are strong programmers and systems men. Gilmore, of course, came from an academic atmosphere at MIT while Rousseau learned virtually everything about computer technology on the job.

For instance, Keydata currently operates some 725 terminals, many of them in-house. They are tied to a Univac 494—a machine one would hardly call state-of-the-art hardware—and 40% of the cpu time is idle. Rousseau says Keydata can hook 1,000 terminals to a 494. In addition, the terminal response time is two seconds.

What will the future bring? Gilmore says the current Keydata hardware will be efficient through the 1970s. The company continues to add new features to its packages with the idea that these will attract new customers (Gilmore, for example, has just developed a new management information system that will be unveiled soon.) The company has some 30 programmers working full time on enhancement of Keydata's service.

Europe, too, represents an area of future growth for Keydata. Rather than starting up an operation from scratch in Europe, Gilmore feels that Keydata will follow its U.S. domestic customers who want Keydata services in European locations.

Keydata has had a knack for turning disasters into pluses for the company. Take the recent recession, for instance. Keydata got hurt, of course, but Gilmore now thinks the recession was good for the company. "When our customers' business was off by, say, 6%, their Keydata bill was off by 6% too. If they had had their own computer installations they would have had to pay the same as before and they would have had wasted capacity."

—W. David Gardner

sion from your present system to the Keydata system will be coordinated by Keydata personnel. Once conversion and operation is effective, Keydata will assign a member of its customer service department to your account to handle requests and any problem areas. As the customer's needs change, programming changes are provided for by Keydata.

Keydata's training school will supervise your personnel in the operation of the terminal. Operating the Keydata terminal is simple and all personnel in your office can be easily trained to fill in on an emergency basis.

Company facilities

Our present computer configuration includes two Univac 494s for the on-line system and an IBM 360/50 for the off-line reporting system. Honeywell 316 and 516 concentrators are located in remote cities as part of the Keydata communications network. We have backup equipment for every component in our configuration; thus, we can provide our customers with a service that has a 97.8% reliability factor.

Corporate headquarters for Keydata Corp. are located in Watertown, Mass. Although corporate headquarters will remain in Watertown, we are moving our computer and communications operations to a new remote facility. The immediate reason for the move is that we require additional space for mass-storage equipment to support our expanding customer base. The new facility in Foxboro, Mass., offers many advantages: the availability of backup power from a second independent source, good security, and room for eventual expansion of computing equipment to handle well over 10,000 terminals.

In product development, Keydata's management planning and reporting system is now in pilot operation. This on-line service allows any manager to correlate and analyze operating and financial data, including budgets to measure performance, develop plans and make decisions.

Keydata as an alternative

From our experience with our own customers, Keydata offers advantages in five basic areas:

1. A system that requires no investment in data processing equipment.
2. An increase in personnel productivity and/or a reduction in personnel.
3. A reduction in the capital investment in inventory by using the Keydata inventory control system to reduce inventory levels while simultaneously improving customer service.
4. An improved cash flow position. The Keydata system expedites preparation of invoices and provides the neces-

sary credit control and documents that facilitate the prompt collection of receivables.

5. A management reporting system that helps to highlight trends and provides timely information to better run your business by pointing out areas that require management attention.

As an alternative to an in-house edp department or service bureau, Keydata offers a proven, flexible service the cost of which can be readily identified and accurately forecast. We offer to the business community an installation that is easy to use, expandable, completely programmed and documented, and productive on a predetermined schedule. It's a service that requires no special staff or equipment, yet provides the business community with the instantaneous, timely information required to run a more profitable business. □



Mr. Naylor is vice president, marketing, for Keydata Corp. Until he joined Keydata at the end of last year, he had been with IBM since 1964 and was most recently eastern area manager for the Service Bureau Corp. He is a graduate of Princeton Univ. and attended graduate school at New York Univ.

Their Customers Say...

After soliciting this article from the vendor, the DATAMATION staff checked with some of Keydata's customers to get first-hand information on how they liked the service.

Marine Colloids, Inc., of Rockland, Maine, likes it fine. The company processes seaweed to produce an extract used in food products. Annual sales are over \$10 million and the firm employs about 200 people. In 1971, they unloaded an IBM installation that was costing about \$100,000 a year and required six to eight people full time; they now pay about \$25,000 a year and have two full-time people for the job. Office manager Edwin Tyler says: "We have less flexibility than before but we still are able to accomplish everything we need to."

"The first three months were very trying," Tyler recalls. "We were going from one system to another totally new system. So the problems were understandable, I think."

The Keydata system works well now, he said. It handles accounts payable, accounts receivable, general ledger, and some sales analysis. The company now does its inventory manually and more elaborate sales analysis through an independent supplier—two services that had been provided by the displaced computer system.

"It's a real practical way for a small company to go," Tyler says. "I'm afraid if we rented the big equipment again we'd go hog wild and have a monster on our hands."

An organization that made the change directly from bookkeeping equipment is *The Harvard Business Review*. In 1967, facing growth problems, they looked into the possibilities of using a service bureau, getting an in-house computer, or using the computer facilities at Harvard Univ.

"Fortunately," general manager Ernest D. Frawley says, "Keydata was just about there when we had to change. The conversion was very easy too. We took our ledger cards and put them on punched cards for our data base. We did the whole conversion job over a weekend."

Charges to the HBR for the service are from \$25,000 to \$30,000 a year and Frawley thinks they will stay with Keydata. "We looked at the new mini-computer business systems . . . but there you usually have the problem of needing to add a programmer to your payroll."

Although the Keydata service is usually thought of as one for smaller companies, we talked to a large chemical products manufacturer who has one department tied to the service—replacing an in-house computer. This is the first time they have ever used an outside service for data processing and Keydata handles their customer orders, invoices, bills of lading, and related paperwork. It also provides input to their production control, accounts receivable, and sales analysis systems.

The company notes that the service is easy to use if you take the standard package but, if you want modifications, it's more difficult.

The Psychological Corp., New York City publisher of psychological tests and consultants on industrial psychology, are enthusiastic users of the Keydata service. The firm does \$6 million a

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year in sales and has about 165 people. They made the big switch directly from a manual system, except for an outside sales analysis program.

One of their applications may be unique. Buyers of their tests must have certain qualifications, such as the proper academic degrees, to be permitted to administer the tests. All customer names are coded to reflect these qualifications and the system won't prepare an invoice unless there is a match between customer qualifications and the nature of the test ordered.

According to Paul Rosenzweig, the system is little short of phenomenal. "It's almost limitless and their additional programming charges are ludicrous. I don't know how they can do it." Their monthly bill is \$5,000 and they cut 15 positions from the payroll for an estimated savings of \$195,000 a year "and we're able to do a lot of things we never did before."

Any problems? The Keydata service is growing so fast that "there's sometimes a bit of difficulty in keeping up in terms of customer service. But they don't try to con us. The off-line reports come down by courier . . . if the couriers get fouled up somehow they usually call and tell us."

G. L. Johnston Co., Detroit, has used the Keydata service for five years to do billing, receivables, payables, general ledger, and inventory control. The company is a wholesaler of air conditioning, heating, and refrigeration equipment and parts, with a sales volume of \$6-\$7 million, five locations in Michigan and Ohio, and a staff of 55.

They changed from unit record equipment, rather than upgrade to a 360/20. "Programmers are like butterflies," president Lee Johnston says. "They get excited with a new system for a year and then want to light elsewhere."

The company reports no problems in converting to the service. They also say that gross profits increased 2.9% the first year and that virtually all the improvement was the result of more accurate invoice processing. And in the past five years, volume has tripled while the accounting staff stayed the same. As for cost, the company has recently negotiated a new contract and will be paying \$4,300 a month for the service, to handle 60-70,000 invoices a year.

Training? "You could take a little boy or girl off the street and teach them to operate the system in 20 minutes. After a week they're experts." □