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PRESS REVIEW

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Timesharing: A Business Of Specialties

Timesharing firms provide users with many options for info processing and are even offering some software to use on in-house computers.

by Neil D. Kelley
Senior Editor

The attitude of timesharing companies that they "will not sell software" appears to be changing somewhat. Timesharing suppliers are developing new programs for minicomputers, with the idea these will be transferred via sale or lease to customers. Other customers wanting the option to eventually change to an in-house computer are being offered the timesharing firm's existing proprietary software in a few cases. Additionally, timesharing companies sometimes market third-party software under license.

"We're thinking of offering for sale or lease, application-oriented packages for minicomputers," says Ron Braniff, vice president, Computer Services Group, Tymshare, Inc. He thinks customers for these products will most likely continue to use remote computing services from his firm in conjunction with in-house minicomputers.

Identifying special areas

Apart from this development, occurring with several suppliers, Braniff adds that the overwhelming trend for timesharing suppliers is to identify special application areas based on an industry (e.g., banking) or a discipline (e.g., accounting) and offer an increasingly broad spectrum of services to these areas.

Tymshare's move toward sale of minicomputer software is partly an attempt to broaden its offering for certain explicit industries. It is also an attempt to capitalize on the growing popularity of minicomputers rather than lose business because of their usage. "We believe minicomputers will offer an avenue for new applications which we could not handle with our host computers. I think these machines represent more of an opportunity than a threat."

With the impetus to offer new services aimed at particular industries, software may become one of these new services. Other timesharing firms are already selling proprietary software previously available for use only on the supplier's host mainframe.

University Computing Co. (UCC) has been in the numerical control services field for about 10 years, and executives made the decision in 1976 to offer proprietary application programs to users who wanted to go in-house. "Rather than fight the trend for users to put some of their applications on minicomputers, we decided to help them go to in-house equipment," says UCC systems marketing manager, Charles Shelton. "We offer to sell them the same numerical control programs previously used with our network service for application on their own large computers from IBM or Univac and on DEC minicomputers."

While it is not likely that a flood of timesharing firms will start offering proprietary software, more examples are turning up.

Word management

Bowne Timesharing is in "word management" which a spokesman defines as being composed of text editing and information retrieval. "We made the decision about nine months ago to offer transfer of our software, and we think this is an excellent way to go," states Bill Mahony, vice president for sales. "We say to customers, 'we'll teach you about text editing on our network, and when you're ready to go to your own computer you can purchase the software you've been using.' Some customers have already made the change."

Not all software used in the timesharing mode is proprietary to the timesharing supplier. Packages developed at third-party software companies are frequently employed.

ADP Network Services does not offer its proprietary software for sale, but a spokesman points out that at least one package used by customers was developed by an outside software vendor. "Customers are sometimes reluctant to get locked into a timesharing company," concedes Dick Vento, manager, management information services, ADP, "but at least for this one package they know they can go in-house." He adds his firm has been marketing the data base management system he refers to for about two years, "and our clients who acquire the DBMS package are likely to continue using us for other applications."

Even those customers making an almost complete in-house transition often continue to use a timesharing

company for special purposes, points out Glen Hitchcock, manager, product marketing, United Computing Systems. "Customers will sometimes use us for software development as it is needed while handling production runs on their own computers."

Users may find it helpful to understand supplier thinking with respect to the transfer of software. "There's a question of whether it's profitable for timesharing companies to sell software," says Robert Flynn, product manager, Boeing Computer Services. This consideration could lead suppliers to quote very high prices for the transfer of an application from the timesharing service to an in-house computer.

It's also generally true that suppliers must reach a certain minimum size before they become profitable, and after this point they must concentrate on keeping their computers busy. Suppliers are not anxious to see work move from their machines to in-house computers. Xerox Computer Services (XCS) was founded in 1970 and only turned profitable this year, according to reports.

Nevertheless: "We would like to be in a position to offer our software for sale," states XCS marketing vice president Haig Bazoin. "With us it would be a question of making our software useful on large-scale computers other than the Sigmas we use."

Changing to in-house

Despite many difficulties inherent with the move, DP consultant Dick Brandon has some suggestions for users wanting the option to change from a timesharing company to an in-house computer. "Not all application programs offered by timesharing companies were developed by those suppliers. Some were acquired from software companies and it is not always clear which are available from a third party and which aren't.

"User's thinking of going with a timesharing supplier should try to determine who owns all the software offered before they sign up. They can check lists of available packages and simply ask the timesharing company. If the software is being leased or sold by a third-party software company on the open market, eventual conversion to an in-house computer should be fairly easy.

"For those parts of a timesharing company's software which are proprietary to the services firm, the user should ask about options to convert to an in-house computer before he signs the contract. The larger users are more likely to carry clout in obtaining this option. Users should also ask the services firm if software can subsequently be acquired at a reduced price when conversion takes place.

"Finally, if the user knows he wants to go in-house eventually, he might think of developing the software himself or contracting for it. He would then use the service firm's computer until the time when it makes sense to move to an internal computer," according to the president of ACT-Brandon Co.

Converting from a remote computing services firm to an internal computer, however, can be extremely difficult, "a formidable although finite problem," according to John Lewis, president of consulting firm Real Decisions Corp. He believes that users wanting to convert should insure that software, which a timesharing company is willing to transfer, can be applied with the size and make of computer the user can afford. "It doesn't make sense to acquire an option for software useful only on an IBM 370/168, if the user is able to acquire nothing more than an IBM System/32."

Lewis also thinks discussions about changing to minicomputers has remained talk, rather than action, for the most part. He points out that users thinking of minicomputers should make sure response time for interactive applications will be as fast as with a timesharing company's computer.

Hardware economical

Lewis adds: "The in-house minicomputer for interactive and batch is often hardware economical relative to an outside service firm. Personnel cost, however, is often prohibitive compared to expense for equivalent services from a timesharing vendor. Internal programming and operating expenses can be very high. Companies must also consider whether the employees who will ultimately make use of the minicomputer have the necessary skills for this.

"Whether converting to a large computer or a minicomputer, users have a great number of cost items to

consider. Very important is the comparative expense of developing or buying the equivalent of proprietary software. Users must also consider the cost for obtaining the equivalent software updates, network services and technical support which timesharing companies provide."

He emphasizes that network considerations alone merit close examination. "When a lot of remote data stations are involved, users must consider the relative costs for an in-house system vis a vis a timesharing company. The timesharing company can often provide economy in communications over and above what the user can achieve for himself."

The Real Decisions Corp.'s president concludes that conversion is likely to be easier when less network processing is involved. He adds that the move to an in-house system is similarly less complex when general-purpose timesharing is involved or when the service firm's computer was used as a utility. "This doesn't mean necessarily that in-house or contract software development is recommended, although it is usually easier to bring up an internal computer when the user owns the software and has employed the timesharing firm's computer as a utility."

He recommends that users wanting the option of going in-house "inquire not only about software transfer, but also ask if the timesharing firm will offer facilities management for the in-house computer until the conversion is finished.

While users may want the ability to go in-house as an option, indications are that timesharing usage will actually increase. Various predictions put compound annual growth at 14 to 22 percent for the next five years.

The designation "timesharing," having the connotation of interactive processing only, is often thought to be a less descriptive term than "remote computing services." This description implies interactive, batch and remote batch processing carried out via user-located terminals linked to the remote computer of the services firm.

The future is bullish

Taking this latter definition, research firm INPUT is very bullish on the future. The Menlo Park, CA, company estimates growth from about $1 billion in 1975 to approximately $3.2 billion in 1981. Data base services, indicating user capability of accessing a service firm's computer-based information files, has become an increasingly important activity. With data base services added to remote computing services, INPUT estimates industry growth from $1.1 billion to $3.8 billion over the same period.

Users contemplating first-time or additional applications with timesharing companies will have a wide choice of suppliers from among the 100 or so companies in the field.

Some members in the Association of Time-Sharing Users (ATSU) advise that customers pick several potential suppliers, run benchmark tests to check actual results obtained with different firms, and be willing to negotiate since final prices for contracts are sometimes less than "list." Made up of 1,200 individuals who either use timesharing or work for supplier companies, ATSU provides several directories. The trade group headquartered in Boulder, CO, lists supplier profiles, specialties and methodology used to provide security for client data. Another list is headed by the names of major cities, under which follow the names of suppliers offering toll-free telephone lines from these points as part of the overall service charge.

The Association of Data Processing Service Organizations (ADAPSO) is composed of 315 corporate members in the service bureau, timesharing, software and consulting fields. ADAPSO, based in Montvale, NJ, has a listing of timesharing suppliers based on applictions specialties.

It is clear that "specialties" are increasing for suppliers in the field traditionally known as "timesharing." Timesharing companies are constantly offering more consulting aids, more technical support and more software to particular industries and disciplines. □

Who is timesharing whom?

by Philip Stein

Timesharing is a process by which more than one user has access to the capabilities of a computer for the purpose of more efficiently using its capabilities.

Most computer programming jobs, and many small computations, take little cpu time. Many of them, however, also take correspondingly large amounts of interaction with the user. These applications are good candidates for timesharing and feed on themselves since timesharing computers are often chock-full of interactive languages which encourage lengthy terminal sessions by users. Timesharing has become a way of life for students, scientists and many other system users who need lots of little jobs done.

Timesharing is possible on minicomputers, and several products are available with this capability. Be aware, though, that you can't just buy a minicomputer and terminal interfaces, hook up a few crts, and open shop. There are a few things the mini must have if you plan to timeshare.

OS is crucial

First, last, and always is the operating system. This is the program which, while doing very little for the user by itself, acts as a traffic manager to make sure that each job gets its turn, and that no job interferes with or destroys another job. Without a timesharing oriented operating system, you might as well not use the mini for that purpose. Timesharing operating systems are difficult and expensive beasts. Many mini makers will tell you that their hot-shot multitasking system will do the job, but it isn't exactly true.

Multitasking is a process by which many programs can share resources in the same computer mainframe, each taking some of the cpu's time, and relinquishing this time either on schedule or when a high-priority task enters the system. Computers that can perform independent I/O can start I/O for a particular task, then do other work until the I/O is finished. So far, so good. It looks as if a number of tasks of the same priority can be set up so that multitasking becomes timesharing. But it may not be if:

- The OS is organized so that when several jobs exist at the same priority, they are automatically allowed to take sequential turns. This is called round-robin scheduling, and not all systems can do it.
- The system does not allow jobs to be started, new devices to be logged on and operated, and new users brought online from any terminal without the intervention of the console operator. Most multitasking systems are oriented around realtime applications, where only the console operator can do such necessary timesharing processes as loading a new program into the user's workspace or connecting his output to the printer.
- The system does not have an auto-answer direct access telephone arrangement. Many operating systems support data communications, but only with data circuits that are established manually.
- The operating system does not have a routine to support user passwords and identification procedures, and to protect programs and files from inadvertent or deliberate damage by users other than the owner of the data.
- The operating system does not support a cost accounting program to keep track of the amount of time and other resources of the system consumed by each user, one that can also be used for billing or statistical purposes.

Remember, you are going to need each of these features, whether they seem to make a great deal of sense to you now or not. If they are not supplied by the equipment vendor, guess who is going to have to write them.

More software, too

In addition to these timesharing OS features, several other pieces of software are needed. Most important is a first-rate interactive text editor. This should be capable of acting as a line-at-a-time editor or as a fully context-oriented alphanumeric data manager. It would be best if it worked on entire files rather than on small text buffers. The user interactions should be clear, simple and robust. Most of the time spent on the system by your users will be with the editor. If the editor is happy, they will be too.

You will also need a hotshot copy and file management utility. Again, there is no way to make one of these utility systems too good, too user-oriented, or too convenient.

You will need an interactive language or two. *Basic* and *Fortran* are the most common ones, and there are many other good ones.

Finally, you will almost certainly need a group of peripherals and a very good service contract. You can buy the mainframer's peripherals, but plug-compatible peripherals are almost always a good idea, since they usually offer better value per dollar and often outperform the offerings from the cpu vendor.

Without a clearly thought-out, strongly worded service contract you may watch your downtime grow from minutes to hours to days, as service technicians get sulky and wander aimlessly around, pointing accusingly at each other.

A single, vendor, or at least a single service source, is absolutely necessary if you want to keep your head away from the users' guillotine. □