COMPUTERS-

WHAT GOOD ARE THEY ANYWAY?

Resist the Urge to Buy Until You Know Why

BY MARTIN KING

The Computer is not a labor-saving electronic device—it is an irresistible social force. If you don't recognize that fact you are a contractor at risk.

Contractors' problems take a variety of shapes, but they eventually boil down to one thing: time. Whether you survive in this profession you love and pursue from dawn to dark is largely decided by how you spend your time. No matter how large or small your company is, each day gives you precisely the same amount of time it gives to every other contractor in the world. And it's never enough.

That's where computers come in. In the seconds it takes you to read this sentence, a computer performs thousands of operations. Surely anything that fast will save a lot of time! How can you survive without one? That's the message blowing from every corner. Owning a computer is a credential that certifies you as a modern technically proficient business man. But think about this: General Motors, Eastman Kodak, Burlington Industries and a thousand other firms grew into giants without the benefit of a single computer.

Ok, let's be realistic. There is probably no way to resist the pressure. Who wants to be out of step with the world? You are going to get a computer. If you're a full-time contractor trying to squeeze fifteen productive hours out of a twelve hour day, the worst thing you can do is spend several thousand dollars and a hundred hours of precious time learning to perform automatically something you should not be doing in the first place. From a business standpoint the net effect of a computer can be equivalent to breaking your leg.

The best way to handle the decision may be to buy the cheapest computer you can find—and store it in the closet. Permanently.

This may seem a strange prologue for a discussion of computer applications for contractors, but you have to be hard-nosed about decisions as important as this. Contractors usually know enough about construction; they stumble for lack of business savvy. As a businessman, your computer decision hinges on this: "are the dollar benefits of this investment greater than any other expenditure I could make?" Until you answer that question with a reasonable degree of certainty you will not be making a business decision. It requires that you have a good idea of the dollar costs and benefits a computer is likely to generate.

The purpose of this discussion is to help you evaluate those costs and benefits. We're turning on the cold water first, because it will be safer in the event you should stop reading early.

The Real Costs

When you obtain construction equipment you balance its price against the expected performance, durability, and frequency of use. Then you either buy it, rent it, or secure it through the services of a subcontractor. The costs are clearly known.

With computers you will be dealing with less tangible costs. The hardware and software costs of a system are easily determined. The difficult things to quantify are the time it will take to learn how to use the system and the administrative time required to mesh it with your existing operation. These costs are usually underestimated. By a factor of ten.

We know a masonry contractor who does quite well. He paid $7,800 to a well-known manufacturer of computers and construction systems for a fully-integrated package: accounting, job cost, estimating, project management—the works. His wife had used a word processor and she was going to operate the system. After three years no part of it has come on line, and there is no sign it ever will. The $7,800 is not what hurts most. It is the 300-plus hours of his wasted time and the lost activities those hours represent. Also important: he probably will never try another one!

Do not underestimate the difficulty of comprehending the strange medium of electronic data processing. Just because computers are shown in all the magazines and every business seems to have one doesn't mean they are easy. Computer usage is like a foreign language, except that it is sternly unforgiving. Data entry is either precisely correct or entirely wrong. Many who rush into computer applications find it tough sledding.

It takes time to become proficient with any software, but not sporadic time. Like the field trades, computer skill requires continual use to develop and keep sharp. This means some person other than the boss will have to be dedicated to computer operation. It doesn't mean they can't do other things as well, but their duties should include regular keyboard time.

Also start out with a healthy respect for the time and effort it takes to change the way you do business. Your business may not have a procedures manual, but you do have procedures, even with an office staff of one. These are a matter of habit—you expect actions to follow a certain sequence, you expect to find documents in certain places. A strange computer program may require a lot of procedural changes all at once. That means administrative time will be spent in implementing, monitoring, and fine tuning them.

Balancing the costs is the fact that a well-utilized computer system will be amortized over many years, probably ten or more. It can be a major business asset, So within reason, actual hardware and software costs don't matter that much. The major cost and most of the risk lie in the time spent training (computer jargon: "the learning curve")

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and integrating electronic data processing into your existing operation.

Along with the costs, we must examine how software will benefit your specific applications. Understand that computers don't solve problems—they only help with things you are already doing well. Here are some of the benefits a contractor can find useful:

In the Office

Correspondence. You can produce more accurate and more attractive letters. There is no time saving over an electric typewriter in the hands of a good typist, but there is considerable time saving over a mediocre typist, since corrections are quickly made on the computer.

Form letters. You can store standard letters or paragraphs and combine them easily. You can individually address form letters quickly. You can set up a file to print a complete set of standard letters and forms for a new project.

Contracts and clauses. You can store a variety of contracts and clauses and combine them easily to fit specific conditions. You can also revise contracts quickly to reflect changes after negotiation.

Mailing lists. If you mail notices to suppliers, advertising letters to prospective clients, or reminders to old customers, the computer makes it easy to update your mailing lists and print mailing labels.

Office forms. You can compose forms for internal office or field use, and it is easy to revise them to fit procedural changes and new conditions.

Production Applications

A variety of programs can be used for project management. They are based on data collected at the site. If you are not now collecting and recording daily production data, you will find it difficult to establish procedures from scratch.

Software vendors may promise a marvelous array of reports and tables that let you peer into the soul of your business. What they seldom emphasize is the cost of collecting, entering, and updating data for those reports. How current do you want the information to be? Daily accuracy requires daily entry, weekly accuracy, weekly entry, and so on.

How useful will the information be compared to the cost of capturing it? How much time do you have available to digest reports and act on them? Only information that leads to action is needed. The rest is a waste of time.

Also, using computer-generated reports introduces the question of accuracy. Since the records on which your report is based no longer have to be assembled the old-fashioned way (in a file folder), it may be difficult to check the back-up documents. Whenever any report shows a significant change, a question invariably comes to mind: "Is this thing accurate?" Data may not be easy to confirm on the spot.

On the brighter side, once you establish procedures you will be committed to capturing and entering that data, and checking to be sure it is done consistently.

Project Status. You must be able to track the status of work in progress. Every contractor has to produce a list of this type to plan the coming week's activities and control the cash. With a few ongoing projects it is easy to produce the project list manually. When the projects multiply beyond a certain number, a computer can handle them more efficiently. Progress payments and subcontractor draws must be in sync with the work performed, completed operations must be verified, various inspections scheduled. The accuracy of the tracking depends on timely data collection and processing.

Scheduling. Most contractors use some type of visual scheduling system, such as a large scheduling board with magnetic markers. You can't beat the

clarity and efficiency of this tried-and-true method. Complex projects such as major condominium rehabs however require detailed charts which may be handled more efficiently by computers.

Job cost. A periodic analysis of individual job costs is essential, if only to correct the bidding of future jobs. If your jobs are not too large, too numerous, or too complex, this can be performed manually as jobs come up for billing. Invoices and payroll records are close at hand and their accuracy is easy to verify.

However, if you want to track job cost, in order to control the project while it's running, the requirements change drastically. Using invoices and payroll records incurs a lag in reporting time. Late invoices don't appear, and change orders may not be billed by subs until after the job is over. That's why large projects have a way of looking good until the very end, when suddenly they turn into losers.

Job-cost programs that run from the general ledger tend to inform you when it's too late to bird-dog the trouble spots or bill for the extras. Instead of running job cost from the general ledger, you can use a computer program that handles it separately. This can give you accurate, up-to-date information. Again, the frequency with which the data are collected and entered determines the accuracy of the report. But it also represents a cost.

Estimating Applications

Anyone who has labored into the night calculating wall areas and cubic yards of concrete has surely asked himself "Why can't a computer do this?" It is a logical application. Computers can perform area and quantity calculations instantly. They are also beautifully equipped to store price data and flash it out at your command. They can apply pre-determined ratios to estimate material quantities based on the overall dimensions of a structure.

Unfortunately, computers can't estimate. The multitudes of variables that bear on cost, such as site conditions, structural irregularities, quantity, travel distance, new products, weather, remain the human estimator's business. Sharp estimators may increase their efficiency. Estimators who don't know their business won't learn it from the computer. Every computerized estimating system reduces flexibility to some degree. Technological speed requires a standard format. The automobile that can stop at any street corner is both more flexible and less swift than the airliner, which only stops at airports. The same principle applies to computers. The faster you wish to travel, the less precision you can apply to the finished product.

There are several approaches to computerized construction estimating. One approach lets you enter the overall dimensions of a structure, the types of materials, and other cost factors. The program then applies built-in ratios to calculate the material quantity, costs, and labor requirements. This might be called a whole structure approach.

The systems approach lets you select various pre-assembled system prices for different types of walls, floors, foundations, roofs, and so on. A floor system might include the joists, bridging, headers, subfloor, finished floor, nails, and adhesive in a single unit price. You enter the dimensions for each major system and the built-in ratios provide a total price.

A third method lets you select the items of work to be performed on each part of the structure in a room-by-room approach. Items are called up from a built-in inventory of material and labor costs. This method can work with either stick- or unit-prices, permitting flexibility in listing different items of work for different parts of this structure.

There are variations and combinations of these systems. There may also be useful by-products from the computerized estimate, such as trade summaries, material lists, work specifications, invoices, and other reports derived from the estimating data. Some programs have special material take-off forms which simplify the process.

In general, you are likely to enjoy more success using a system that matches your present estimating method. If you get a good fit, computerized estimating can cut estimating time substantially and provide a superior product.

Work specifications

After you are awarded the contract you probably put together some sort of work specification to tell everyone what to do. However, the work specification can also be a powerful sales tool. Detailed specs submitted along with your contract can make the package more attractive—people find it easier to buy when they know what they're getting.

Accounting

There are a plethora of computer programs for tracking payroll, accounts receivable and payable, and general ledger. Accounting is a discipline requr-requiring precise habits and the ability to sit still for long stretches of time. Contractors usually detest it, so it remains a mystery to me why one would want to perform his own bookkeeping on a computer. The cost in lost productive hours is prohibitive to anyone but an accountant or comptroller. Leave this work to an accounting professional and let them evaluate accounting software since they will live with the choice. ■

Martin King publishes an estimating program called Clearscope *for remodeling and rehab contractors—based on his 27 years of construction and estimating experience. As president of Martin Churchill Assoc., Inc., in Arlington, Va., he now specializes in investigating and consulting on structure damage, and appraising reconstruction costs.*