



## **Buying a Computer System That Will Meet Your Needs**

Thinking of computerizing your business, or expanding your computer operations? The accelerating advances in technology are increasingly expanding the choices available to the small business owner. This Guide provides a roadmap to determining what needs your computer system must meet and to finding a system that will meet these needs.

The rapidly increasing power and swiftly decreasing costs of computers are making it economical to use them for a growing number of business functions. The purpose of this Financial Guide, which is directed toward the user with limited computer experience, is to help you forecast your computer needs, evaluate the alternatives, and select the right system. Professional guidance will be helpful in helping you reach the right decisions.

### **What Can Computerization Do For You?**

For the small business thinking of computerizing its operation, the basic question is what can computerization offer. To answer this question, you must have a clear understanding of your long- and short-range goals, the advantages and disadvantages of the various alternatives to a computer and, specifically, what you want to accomplish with a computer.

Before buying a computer, you should compare the best manual (non-computerized) system you can develop with the computer system you hope to get. It may be possible to improve your existing manual system enough to accomplish your goals.

### **Business Applications Performed by Computers**

A computer's multiple capabilities can, of course, solve many business problems. Some of the most common applications are keeping accounting records (such as a cash receipts journal, receivables ledger, and general journal) and preparing accounting statements and reports (such as a balance sheet, income statement or inventory status report). Other equally important tasks include maintaining customer and lead lists, creating brochures and paying employees.

A business that handles large volumes of detailed or repetitious information in short periods of time will benefit from computerization. A properly designed computer system can:

- Organize and store many similarly structured pieces of information (e.g., addresses including name, street, city, state and zip code).
- Retrieve a single piece of information from many stored records (e.g., the address of John Smith).
- Perform complicated mathematical computations quickly and accurately (e.g., the terms of a loan amortized over many years).
- Print information quickly and accurately (e.g., a sales report).
- Perform the same activity almost indefinitely, in precisely the same way each time (e.g., print a hundred copies of the same form letter).
- Facilitate communications among individuals, departments and branches (e.g., quickly transmit messages and/or documents that require review or editing).



- Link the office to many sources of data available through the Internet (as this program, Financial Strategies Online, helps you to do).

## Improving Manual Business Operations

Consider the following manual operations that can be streamlined by computerization.

*Accounts Receivable:* Even if properly organized and maintained, a large volume of active accounts can require many hours of posting sales and receipts and, especially, of preparing statements. Unfortunately, as the volume of information to be handled increases, the number of errors often also increases. Don't forget, too, that if your customer isn't billed on time, you'll wait longer to be paid.

*Advertising:* Using only manual systems, it is costly and complicated to have special sales programs directed toward particular customers. Manually prepared mass mailings are time-consuming and expensive.

*Inventory:* A large number of items or high-volume turnover can cause major errors in tracking inventory. Errors in inventory control can result in lost sales and in the maintenance of unnecessarily high quantities of slow-moving products.

*Payroll:* Calculating and writing checks are tedious operations in payroll administration. It can also be difficult to effectively implement an employee incentive plan using manual procedures.

*Planning:* Manual systems or procedures make planning for the future time consuming and difficult. "What if" situations, such as "If sales increase, to what extent will expenses increase?" are not easy to simulate with a manual system.

## Computer Business Applications

Computers also can perform more complicated operations, such as the following:

- Financial modeling programs can prepare and analyze financial statements.
- Spreadsheet and accounting programs can compile statistics, plot trends and markets and do market analysis, modeling, graphs and forms. They can combine all these functions and can interchange and evaluate data from four programs simultaneously.
- Word processing programs can produce typewritten documents and provide text editing functions. Many offer options such as a thesaurus, a speller, and punctuation and style checkers.
- Desktop publishing programs can enable you to create good quality print materials on your computer.
- Critical path analysis programs can divide large projects into smaller, more easily managed segments or steps. This helps to target goals and set dates for completion.
- Legal programs can track cases and tap information from data bases.
- Payroll system programs can keep all payroll records; calculate pay, benefits and taxes; and prepare paychecks.
- File management programs can enable you to create and design forms, then store and retrieve the forms and the information on them.



## What Not To Expect

There are some things you should **not** expect your computer to do...

- Don't expect a computer to clean up a mess in the office. The mess must be organized before you can attempt to computerize, or you will wind up with a computerized mess.
- Don't install a computer because you don't have the right people to do the jobs in your organization. Initially, at least, the computer will make more, not fewer, demands on your organization.
- Don't install a computer with the idea that any information you want will be instantly available. Computers require structured, formal processing that may not produce some information as fast as an informal system could.
- Don't expect the installation of a computer to help define the jobs that must be done. The computer is a tool to get those jobs done, but the jobs must first be well-defined.
- Don't expect computer installation to occur like magic. Computer selection and installation will be successful only through methodical work.
- Don't expect any computer system to exactly fit your present methods of completing jobs. If you are not willing to listen to new ideas for solving problems, you will not be able to install a computer successfully or at a reasonable cost.
- Don't acquire a computer to generate information you will not use. Growing companies may benefit from structured management information systems, but many owner-managers of small companies already have their fingers on the pulse of their businesses and do not need a formal, electronic system.

## How To Determine Your Requirements

To determine your requirements, prepare a list of all functions in your business in which speed and accuracy are needed for handling volumes of information. These are called applications. For each of these applications make a list of all reports that are currently (or will need to be) produced. You should also include any preprinted forms such as checks, billing statements or vouchers. If such forms don't exist, develop a good idea of what you want - a hand-drawn version will help. For each report list the frequency with which it is to be generated, who will generate it and the number of copies needed.

In addition to printed matter, make a list of information you want displayed on the computer monitor. Again, design a hand-drawn version. List the circumstances under which you want this information displayed.

For each application make a list of all materials used as input into your manual system. These may include items such as time cards, work orders, receipts, etc. Describe the time period in which these items are created, who creates them and how they get into the system. Also, describe the maximum and average expected number of these items generated in the appropriate time period. As with the reports, include copies of the input items or drawn drafts.

For all files you are keeping manually or expect to computerize (such as customer files or employee files), list the maximum and average expected number of entries in a specific time period, such as 10 employees per year, 680 customers per year. Normally, a file, manual or otherwise, is cleaned out after a specified time and the inactive entries are removed.



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Identify how you retrieve a particular entry. Do you use account numbers or are they organized alphabetically by name? What other methods would you like to use to retrieve a particular entry? Zip code? Product purchased?

**Tip:** Decide on which of your requirements are a must and those on which you can compromise. The more detailed you are, the better your chance of finding programs compatible with your business. It is also true that the more detailed you are, the more time it will take to research and evaluate each alternative application software package.

## Evaluate Your Choices

If, after compiling all of your information, you find your needs are fairly complex, you may wish to engage the services of a consultant to help evaluate your software requirements. If, however, you are extremely knowledgeable about computer programs, you may be able to make the choices yourself.

You should look for software packages that meet as many of your requirements as possible. At this point you should review and compare the software packages and verify the extent to which each meets your needs. Consider these questions:

- Does it cover all of your "musts"?
- How many of your other requirements does it fulfill?
- Does it provide additional features you had not thought of earlier but now believe to be important?

After you have identified one or more software packages fitting your needs, examine other general features of the software. Consider these questions:

- Does it come with effective documentation?
- Do you understand it?
- Is the operating manual written for the novice?
- Is the information organized so you can use it effectively after you gain experience?
- How easy is the software to use?
- Does the information displayed on the monitor make sense?
- Is there a help facility?
- How flexible is the software package?
- Can you change data that have already been processed?
- Can you change the program instructions, such as payroll withholding rates, or will you have to pay the vendor to change these for you? If you must pay a vendor, what will it cost?
- Will you be required to change any of your business practices? If so, are these changes you should make anyway?
- Will the software provide the accounting and management information you need?
- How well is the software documented? (You should be able to understand the general flow of information, i.e., which program does what and when.)
- Does the software have security features, such as passwords or user identification codes? Can it prevent unauthorized access to private information?
- Is it easy to increase the size of files?
- What kind of software support can I expect?



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Choosing the software is by far the most difficult part of deciding on the computer system that is right for you. However, you must also make sure that the hardware is suited to your particular needs.

## What The Hardware Is And Does

The computer and associated equipment known as hardware consist of a number of components that do different jobs. They include:

- **Processor** - The thinking part of the computer, known as the processor or central processing unit (CPU), is designed to execute software instructions and perform calculations. This device will also control the flow of data, sending it to and from the memory. The faster the CPU, the quicker you can work with your data. Processors are measured in Gigahertz (GHz). Today, CPUs can run as fast as 4 GHz.

**Note:** Despite the fact that processor chips need to get hot in order to run at an accelerated pace, the CPU still needs to be cooled down. If it isn't, the computer may experience difficulties such as a burnt out motor. To keep the CPU cool, a large fan is placed inside the unit. The fan automatically gets activated whenever the CPU gets too hot.

- **Memory** - Memory is often measured in Gigabytes (GB) these days. Roughly speaking, each byte of memory holds one character of data, either a letter or a number. There are two kinds of memory: ROM (read-only memory) and RAM (random access memory).
- **ROM** - Read Only Memory is memory that cannot be altered by a user.
- **RAM** - Random Access Memory is used to store all the information necessary for the CPU to do its job: The more RAM, the more programs you can run simultaneously. Information stored in RAM lasts only as long as the power is on. Once the power is turned off, all RAM information is erased.
- **CD-ROM** - Removeable storage that is able to hold 650-800 MB of information. CD-ROMs operate in revolutions; the X indicates 150 revolutions per cycle. For example, a 40x CD-ROM is 6000 revolutions.
- **USB Storage** - Removeable storage devices that use an open USB port on a computer. They can house anywhere from 512 MB to 5 GB of information.

## What To Look For In A Customized Installation

If your computer needs are so complex that you need a customized system (not too likely with today's sophisticated software and hardware), then you —and your consultant — should consider:

- *The software developer's past performance record.* — Does the software developer have prior experience with similar applications for the same equipment configuration as the one you are considering?
- *Commitment of the hardware vendor.* — Where will your commission sales representative be after the contract is signed? How many systems engineers does the vendor have in your area?
- *Hardware capacity.* — Does the hardware have adequate processing capability to meet your requirements within acceptable time frames?
- *Quality of system software.* — The quality of the system software (operating systems and utilities) dramatically affects how difficult the system is to program and use.
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- *System documentation.* — What kind of systems documentation does the vendor provide and how is it updated? Can it be understood at some basic level by the user? Is it designed so other experts can understand how things were done and change them when necessary?
- *Service and maintenance support.* — When your system breaks down, how long will it take to get it fixed? Who will do it? Will it be subcontracted? Are there any provisions for backup during downtime?
- *Expandability and compatibility.* — What are the technical limits of your system and how close to those limits is your current configuration? Is there software compatibility among the vendor's product lines?
- *Security.* — What security features will your system have to prevent unauthorized use of the system or unauthorized program modifications?
- *Price.*

If you decide to purchase a complete hardware and software system (turnkey system) rather than buying the software and hardware separately, you should have a contract or agreement. Examine the standard contract supplied by the vendor. Be aware it may not protect your interests. If you have any questions, have your lawyer review the contract and suggest changes to help you implement the system.

An important part of the contract is the payment schedule. Do you pay before or after installation? Will you pay for the installation periodically on a draw schedule? The more money held back until the installation is complete, the more power you will have to ensure that the vendor satisfactorily completes all that has been promised and contracted.

The contract should include detailed references to the following:

- Description of equipment and software.
- Installation responsibilities.
- Provisions for additional equipment.
- Performance guarantees.
- Responsibility for training.
- Software rights.
- Provisions for default, bankruptcy of vendor or termination of contract.
- Software documentation.
- System documentation.
- Responsibility for hardware freight charges and sales tax.
- Conversion responsibilities (from manual system to computer).
- Upgrading privileges and trade-in rights.

If the contract is for software developed especially for you, the contract should specifically refer to your RFP and the vendor's responding proposal. A good contract will help you prepare for the system's installation and ensure a more satisfactory business transaction.

Factors to consider when selecting your computer system include:

- **Reliability:** How qualified are the manufacturer and the vendor? What is their reputation? What is the incidence of repair on the system equipment?
- **Resources:** How long have the manufacturer and vendor been in business? How strong are their financial positions and credit ratings?



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- **Services:** Are ongoing consulting, training, supply and repair available?
- **Rates:** Are charges competitive? What terms are offered?
- **Backup:** What happens if your system fails?

## Implementation

As suggested before, successful computer applications for your business depend heavily on the implementation process. Problems are inevitable but proper planning can help avoid some of them and mitigate the effects of others.

- **Employee involvement** The success of a new computer system will depend on the cooperation of your employees; therefore, it is important to involve them as early as possible in the implementation. Explain to each affected employee how his or her position will change. To those not affected, explain why their jobs will remain unchanged.
- **Schedule for implementation** Set target dates for key phases of the implementation, especially the last date for format changes.
- **Installation site:** Prepare the installation site. Check the hardware manual to be sure the location for your new computer meets the system's requirements for temperature, humidity and electrical power.
- **Converting applications** Prepare a prioritized list of applications to be converted from manual to computer systems. It is important to convert them one at a time, not all at once. Prepare a list of all business procedures that will be changed so the computer system will fit into the regular work flow. Develop new manual procedures to interface with the computer system.
- **Training** Train everyone who will be using the system.

When these steps are complete, the computer system can be installed. Each application on the conversion list should be entered (files set up, historical data entered and the system prepared for new transactions) and run parallel with the preexisting, corresponding manual system for a number of processing periods. This means that two complete systems will be running, placing a great deal of pressure on your employees and on you. However, until you have verified that the new system works, it will be worth the effort.

**Tip:** Be sure to insist on progress reports from everyone involved in the changeover.

## Long-Term Concerns

At the same time you are converting each application, you must begin dealing with the long-term issues that will keep your computer operation successful.

### System Security

If you will have confidential information in your system, you will want safeguards to keep unauthorized users from stealing, modifying or destroying the data. You can simply lock up the equipment, or you can install user identification and password software. You can also:

- Control access to your computer, storage devices and reports.
- Label all storage devices to identify their contents and verify correct labeling.



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- Initiate original accounting transactions, adjustments or corrections yourself.
- Rotate computer employees or schedule their vacations to expose possible unauthorized practices.
- Require dual signature authorizations to control software modifications.

## Data Safety

Data, confidential or otherwise, can be destroyed by unexpected disasters (fire, water, power fluctuations, magnetic fields, etc.) or through employee tampering, resulting in high replacement costs. The best and cheapest insurance against lost data is to back-up information on each diskette regularly. Copies should be kept in a safe place away from the business site. Also, it is useful to

- Have and test a disaster recovery plan.
- Identify all data, programs and documents needed for essential tasks during recovery from a disaster.

## Employee Cross-Training

Just as with a manual system, it is important to have more than one employee who knows how to operate the system. Once your business relies on the computer system, the absence (sickness, termination, etc.) of a computer operator can be devastating unless another person is prepared to fill in.

## Management Controls

Although computer systems allow small businesses to process more data more accurately than ever before, there is a chance that the same system can cause greater problems if left unsupervised. All systems, manual or otherwise, must be continually monitored to ensure the quality of the input and output data.

## Summary

If all this seems like a lot of work, it is. The computer, like any tool, requires learned skills in order to fulfill its purpose properly. If you believe that you and your business need a computer, plan to spend the time and the money it takes to make its installation and operation of the system successful.

With little knowledge of computers, you can buy a personal computer with applications for your business. With some guidance, study and experience, you can develop computer-based management planning and control expertise. By taking advantage of the speed and complex capabilities of a computer, you can tap the potential for growth and profit in yourself and your business.

Technology is continually evolving. Personalized guidance on the state of current technology in choosing a system which will both meet current needs and grow with your business, will be very helpful.