

Profit, Productivity and Technology

The 12-Step program for choosing the right financial information system for your business



CONTENTS

INTRODUCTION.....	3
STEP 1: DON'T MAKE THESE MISTAKES	4
STEP 2: THINK ABOUT WHY YOU ARE WHERE YOU ARE NOW.....	4
STEP 3: UNDERSTAND THE FACTS OF LIFE ABOUT COMPUTERS	9
STEP 4: DON'T TRY TO FOOL WITH MOTHER NATURE.....	14
STEP 5: SET THE RIGHT EXPECTATIONS	16
STEP 6: DEFINE YOUR GOALS	20
STEP 7: ANALYZE YOUR BUSINESS NEEDS	21
STEP 8: SELECT YOUR PARTNER	25
STEP 9: SELECT YOUR APPLICATION SOFTWARE.....	27
STEP 10: SELECT YOUR OPERATING SYSTEM AND HARDWARE PLATFORM.....	32
STEP 11: MANAGE THE CONVERSION PROCESS.....	34
STEP 12: KEEP YOUR SYSTEM ALIVE.....	38

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Introduction

The purpose of this booklet is to help you become a member of a small, elite group of people: those who have selected the right computer system, paid the right amount of money for it and are using it to provide useful management and accounting information to operate their business.

Surveys have indicated that over 75% of all companies with personal computers have:

1. Paid too much for them
2. Selected the wrong equipment and programs
3. Failed to use them in a way that justifies their cost
4. Suffered a great deal during the conversion to a new system.

The reason for this problem is simple. These companies have succumbed to the temptation of making a decision before they understand where there are and where they are going. In other words, they are using the FIRE... READY... AIM approach to decision making.

This book is NOT a specific checklist of equipment and programs that you can run out and buy. Such a list would be obsolete before it was printed. Also, the underlying premise is that you do NOT have to have a strong technical background or expertise to make an intelligent decision about a computer system and use it effectively in your company.

Our focus will be on selecting a system to serve as a basis for your company's accounting and management information system. This area includes your bookkeeping, tax, accounting, and decision-making information – in other words, the guts of your business.

Steps 1 through 4 require that you take a hard look at where you are now, how you got there, and to understand the realities about computer systems. It has been estimated that over 80% of all problems can be solved by merely understanding the current situation – both internally and externally.

Steps 5 and 6 require that you think hard about your goals and set the right expectations for what you will get from your system. Having a clear set of goals and a clear plan can prevent about 15% of all problems.

Steps 6 through 12 describe the process for selecting and implementing a system. This is the area that most people focus on, but they often do so without taking the first steps – understanding their situation and understanding where they want to go.



Fire... Ready... Aim



Step 1: Don't make these mistakes

Common Mistakes in Purchasing a Computerized Business

Information System Mistake 1: Jumping on the Bandwagon

Don't buy a computer just because your friend or competitor has one.

Mistake 2: Not doing the necessary homework

Do you really want to put the fate of your business in the hands of a computer salesperson?

Mistake 3: Thinking that all accounting software is created equal

The wrong program for your company can create more problems than it solves.

Mistake 4: Ignoring non quantifiable benefits

Better quality information for decision making, more timely information, easier to use.

Mistake 5: Ignoring hidden costs

Hardware can be less than 50% of total computer system cost.

Mistake 6: Relying too heavily on vendor advice

Only you can fully understand the needs of your business.

Mistake 7: Passing the buck – giving up responsibility

Top management must be involved in the decision and implementation of the system.

Mistake 8: Assuming the organization will accept a new system

Employees typically resist a new system. Involve them with the decision from the beginning.

Mistake 9: Thinking a new system will solve all problems

Computers do not make management decisions or solve poorly defined problems

Before we talk about what you SHOULD do, let's review what you SHOULD NOT do. You will be way ahead of the game if all you do is avoid the mistakes that many others make when implementing a computerized business information system.

Step 2: Think about why you are where you are now

Our first step is to examine the current status of your relationship with business computers. There are four possibilities:

No computerized accounting system

Please note that this category includes those of you who are doing your accounting with a word processor or spreadsheet program, which is somewhat like digging a hole with a teaspoon.

Tried to computerize, got burned and gave up

You may have tried to computerize your accounting but chose the wrong equipment and programs. You found that the cost, pain and time involved were too great and just not worth it. In this case, apart from having more realistic expectations, you basically are in category number one.

Victim of technological obsolescence

You computerized some of your accounting five years ago on a mini computer. You now find that your monthly equipment maintenance fees exceed the cost of an entire personal computer system. You are sure that you can get more power and functionality for less money.



Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Outgrew your system

You did everything right a few years ago, but unfortunately your business grew and your computerized accounting system could not. You are now contemplating the possibility of repeating all of that suffering you experienced when you converted last time.

To save some time, you might want to skip to the introductory comments most appropriate for your situation. In each case, your current expectations about what a computer can do for you are probably a little different. However, regardless of your current situation, we will use the same process for selecting your next (or first) system. Also, even if you consider yourself to be fairly computer literate, you might want to skip to Steps three and four to see if your concept of what computers are all about is consistent with reality.

No computerized accounting system

What has brought you to the point of trying to select a system to help run your business?

Are you growing so fast that you are losing control? Do you want to avoid having to hire more clerical people to take orders, process invoices, and take inventory? Do you want to keep up with your competitors? Do you just have this uneasy feeling that you had better join the 20th century before it is over?

All of these are good reasons for computerizing your management information system. Before you go any further, however, there are two things that you must consider:

You probably have the wrong expectations -- the LAST thing you should do is buy equipment.

Wrong expectations

One of the greatest problems that I've seen in the twenty years I have been working in the computer industry is the gap between expectations (or, in many cases, blind faith) and reality where computer systems are concerned.

There is a very good reason for this "expectation gap." The computer industry spends millions of dollars a year trying to convince people that computers are appliances, much like toasters. All you have to do, the ads say, is to buy OUR system and your problems will be magically solved. Just plug it in; in a week or two you will be able to take a few days a week off, fire half your staff, double your profits and produce dazzling graphs and charts which will enhance your business acumen.

Truthfully, we cannot place all of the blame on the computer vendors. Many of us believe that computers are the "silver bullet," or the magic potion that will solve all of our problems with little or no effort on our part. Unfortunately, the mystery surrounding computer technology has reinforced the notion that these machines have the ability to save our businesses and make our lives wonderful. Computer manufacturers and salespeople often find it in their best interests to support this illusion to help sell their products.

The reality is that a computer is merely a tool. Like any other situation in which the wrong person uses the wrong tool for the wrong job, computers can actually do more harm than good. In fact, I have rarely seen a situation in which computerizing an accounting system has resulted in an immediate reduction of staff. Few

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

have been implemented in less than six to twelve months, and only with a great deal of effort. Most have required the expenditure of five to ten times the original purchase price of equipment during the subsequent three years.

Following the steps outlined below will help you select the right tool for the right job. If you have the right expectations about what computers can and can't do, and invest the time and effort required, you will be able to develop a computerized accounting system that will enhance your productivity and help your business.

One thing that a computer will not do under any circumstance is to make a silk purse out of a sow's ear.

Do NOT buy equipment

I cannot emphasize enough that the LAST thing you should do is to buy computer equipment. I have rarely seen any type of commercial transaction in which there is so much pressure to do the wrong thing first. In fact, the law should prohibit people from purchasing computer equipment until they have demonstrated that they understand enough about how they are going to use it to make an intelligent decision.

The truth of the matter is that I have been able to recommend an appropriate combination of equipment and programs to well-prepared clients in a few hours. Other clients have not done their homework and try to abdicate their responsibility to be a key part of the decision making process. For these clients, it has taken weeks to learn enough about their business to make a good recommendation.

The most important part of a computer decision has nothing to do with technology or money. Understanding your business, and what information you need to run it, is the most important part of the decision. It should be obvious that you, the client, and not the computer vendor, is the person who is in the best position to have this knowledge. Put another way, would you entrust your business to a computer salesperson? That is exactly what you are doing if you rush out and buy equipment before FIRST understanding what a computer can and can't do, and SECOND what type of program, or "software" can best to help you achieve your objectives.

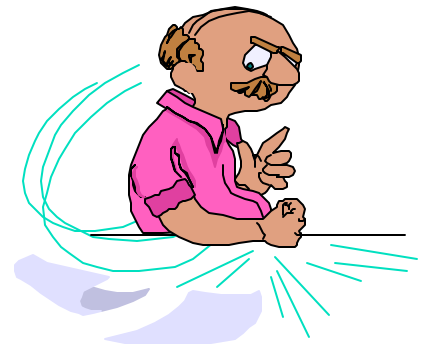
Got burned and gave up

Those of you in this category have a great advantage over those in category one: your expectations about computers are much lower.

You probably purchased a computer system and some software (perhaps a spreadsheet, or a simple accounting program), and found that:

1. It didn't do most of the things you wanted to do.
2. It made you change the way you do business.
3. You were not able to convert successfully from your manual system.
4. You ran out of money before you could get the system that you needed.

The disadvantage of this situation, of course, is that now you may be completely disillusioned. You might consider computers to be useless for you and feel that computer salespeople are one step above (or below, depending on how badly you got taken) used car sales people.



Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

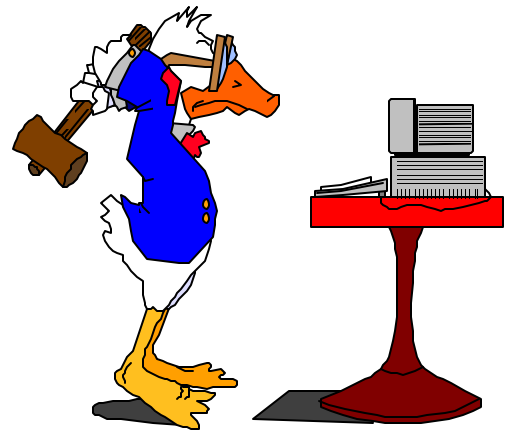
The reality is, of course, that it is all your fault. Salespeople are paid to sell, and are happy to sell you what you think you want or what they can convince you that you want or need. They probably believe, as you might, that you buy a computer system the same way that you buy other products: by comparing features of tangible things (such as equipment) and semi-tangible things (such as software packages) to find those which seem to be the "best." You may not realize that the rules we use to buy most tangible products are irrelevant and misleading when it comes to selecting a computer system; using these rules can very easily lead to the making the wrong decision.

What you are really trying to do when you buy a computer is to solve a business problem. Both your business and the "thing" you are buying are systems, not objects; in fact, they are very complex systems, which change constantly. It is the successful integration of these complex systems which leads to the solution of your business problem.

While the equipment portion of the system is important, other portions are more important. These other portions include various types of programs required, the rules and assumptions implicit in these programs, the training required, the conversion process and the appropriateness of the programs to your business.

We have been conditioned to place value on and pay for the tangible component of the system, i.e., the equipment, and to minimize or neglect the value of the intangible portions. This approach amounts to valuing and paying for the bath water and ignoring the baby, to stretch an analogy.

The process that we will follow is to place the emphasis where it belongs: on the entire system and on your role as a critical element of the system. By using this approach, the technical details and complexity of equipment and software selection can be left to an expert and yet leave you in control of the management of the selection and implementation process. Your responsibility is to define the parameters for the system and to manage the process. If you insist on focusing on the technical details, you will probably make a bad decision.



Remember that a little knowledge is a dangerous thing – especially where computers are concerned.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Victim of technological obsolescence

If you fall into this category, you probably purchased a computer some time ago (perhaps even two years ago, which is a long time in this industry). You have now had some experience with a computer, and have gone through the pain of conversion from your manual system. You now find that the maintenance and repair bills on the large, slow machine (or the modifications of the inadequate programs on said machine) are costing you an arm and a leg. Perhaps the one person in the world who could service the machine or its software has gone away or is out of business. You may be ready to bite the bullet and try a personal computer based accounting system, but wonder whether or not one will work for you.

You should realize three things:

1. You probably used the wrong process to select your first system. (But now you are much wiser about what a computer can and can't do.)
2. The new desktop personal computers have more computing and storage power than the large mini computers of a few years ago, for a fraction of the cost.
3. The new software that operates on these personal computers is at least a generation ahead of what you have been using, in terms of ease of use and functionality.

You probably do not have the problem of overcoming false expectations about computers. Converting to your existing system has imposed a certain amount of structure and discipline on your business. You have paid your dues, and you should be able to convert from your existing system much more efficiently and less painfully than your conversion from a manual system. Also, if you have been using a mini computer, you will be pleasantly surprised at the cost of a personal computer based system that will probably be even more powerful than your existing equipment.

There is one important thing to realize when you approach your purchase decision. You probably obtained your existing system from somebody who knew what they were doing, and did not make your decision in the same way as though you were buying an appliance. Do not think that just because stores often sell personal computers as appliances you should buy one using appliance buying rules. As we will see, it is just as important to have somebody who knows what they are doing assist you in your personal computer decision as it was in your mini computer decision.

You outgrew your system

If you fall into this category, you may be one of the fortunate minority who bought the right computer system a few years ago, implemented it successfully, and have been using it productively, but find that it just can't keep up with your business. You may not have been able to predict how your business grew or the direction that it took. In either event, you are now faced with the prospect of adding on to or replacing you equipment and converting your accounting to another computerized accounting program.

First, consider why you outgrew your current system, and what steps you can take to prevent the same thing from happening a few years from now. As we will see in next steps, there are certain immutable rules of the universe which apply to the life cycle of computer systems and how they will or will not continue to

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

meet the needs of your business. Understanding these rules will help you to make this conversion your last one, or at least protect your investment in equipment and software as much as possible.

Step 3: Understand the facts of life about computers

Now that you have examined your own situation, the next step is to make sure that we have a clear understanding of the rules of the game as far as selecting and installing a computer system is concerned. This is an especially difficult process, because we are constantly deluged with the WRONG information from the media. In many cases, it seems to be in the best interests of equipment and software manufacturers to mislead us about computers and to perpetrate some of the myths surrounding them. The result is that we approach the system selection process with the wrong map in our heads. It is something like trying to navigate the Los Angeles freeways with a map of Moscow; it is unlikely that we will reach the right destination, and if we do we won't do it very efficiently.

The following are the facts of life about computers. You will notice that we will not discuss bits, bytes, processors, printers or software features. These things change constantly, and are NOT the things you have to understand to make a good decision. Your responsibilities are elsewhere, in understanding the basic realities of computer systems and what it takes to select and implement a system in your business.

The Facts of Life, Computer Style

- Who is responsible for what?
- Vendors and users - friends or foes?
- The true costs of computerizing
- How computers will affect your business
- How long it will take to convert
- You'll never know what you need until you use it

Who is responsible for what?

The answer is obvious, but often ignored. (The answer is D, of course.)

I have seen two different attitudes when it comes to buying a computer decision:

Abdication of responsibility

Those who take this approach feel that they know nothing about computers and can never learn enough to make an intelligent decision. Perhaps they are afraid of showing their lack of knowledge, or being responsible for a wrong decision. They abdicate all responsibility, and leave all aspects of the decision in the hands of the computer vendor and their junior staff. This approach can be summarized by the following line from an old Tom Lehrer song:

"Once the missiles go up, who cares where they come down. That's not my department, says Werner Von Braun."

This approach often results in selecting the wrong system. It also reduces the probability of a successful and timely implementation of the system to almost zero.

Who is responsible for what?

A. You are responsible for everything

B. The vendor is responsible for everything

C. The dealer from whom you buy your system is responsible

D. You are jointly responsible for the success of the system

Making the technical decision yourself

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

If you have a degree in computer science, have worked in the computer industry for many years, and have installed a variety of computerized accounting systems, you may be qualified to make the computer decision without any outside help. Unfortunately, most people in small to medium sized companies are too busy running their business to develop this expertise and cannot afford to have such an expert as a full time employee.

If you have been reading all of the computer magazines, have gone to several local computer fairs and THINK you know a lot, you are a prime candidate for a computer salesperson who needs to meet his or her quota for the month by moving some equipment and software.

What is the appropriate type of involvement you, as the purchaser, should have in computer system selection process?

The answer is simple: Stick to what you know.

You should know about your business, the type of information which you need to run it, the capabilities of your staff, how much money you have to spend, when your busy season is, and the status of your manual system. It is your responsibility to define your information priorities and to define your business needs in clear, specific terms in the form of a functional specification for a computer system. This process requires very little technical knowledge. You may be able to do it yourself, or you can do it with the assistance of a consultant who knows something about business and something about how computer systems work. This person is known as a systems analyst, and they may or may not be a programmer. You can identify a systems analyst because although they are technically competent, they speak English, not computerese.

Your problem is then to find an independent computer vendor whom you can trust, who is technically competent and who speaks English. In selecting your vendor, you would use traditional non- technical techniques: ask for references, check backgrounds, ask your friends, and see how well you communicate and work together.

The true costs of computerizing

Cost is possibly the area in which the gap between expectations and reality is the greatest. Even with the significant drop in equipment and software prices, most people significantly underestimate what the conversion to a computerized accounting system will cost them. With the proper analysis and approach, these costs will be justified; all too often, failure to understand these costs results in poorly implemented systems which do not even justify what was spent on them.

Each situation will, of course, be different. We will explore whether the benefits outweigh the costs when we discuss implementation in the payback section. The purpose of this section is to help you set realistic expectations before you embark on computerizing your accounting system.

The True Costs of Computerizing

- Equipment
- Operating System Software
- Network Software
- Applications Software
- Custom Modifications
- Training
- Temporary personnel during conversion
- Personnel to operate/manage the system
- Physical environment (power, cabling, space)
- Media and supplies
- Opportunity costs during conversion
- Consulting fees

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The 12 - Step Program for choosing the right financial information system

The first thing to understand is that you will probably spend from five to ten times the original cost of your equipment over a three to five year period after you begin your conversion. This fact is not necessarily negative. If your system is working and your company is growing, this money is well spent. It does point out, however, that you should carefully plan what you are computerizing and why you are doing it.

The following chart will give you some idea of the less tangible and usually hidden costs related to installing medium sized accounting system:

Lest you are overly concerned about the above, remember that computers do provide enormous benefits, and are well worth the cost if they are used intelligently. Remember, if the information which you get from your system lets you make just one decision which helps your company to grow (or prevents it from going under), the cost will have been justified.

Intangible costs of converting		
Item	Hours	Dollars
• Needs analysis to determine client needs	4-16	\$300-1,200
• Select software to fit client needs	2-12	150-900
• Select hardware to fit client needs	2-12	150-300
• Install network and applications software	4-20	450-2400
• Modify existing procedures to fit new system (per applications area)	2-4	150-300
• Design chart of accounts, customer, vendor, inventory coding systems	8-16	900-1800
• Modify reports in new system to meet clients needs (per report)	8-24	900-2800
• Train EXPERIENCED clerical personnel on new system (per module)	8-16	900-1800
• Train system administrator (assumes well qualified individual)	8-24	900-2800
• Develop procedures manual to document system functions (per module)	4-8	300-600
• Write custom programs to meet special client needs	???	???

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The 12 - Step Program for choosing the right financial information system

How will it affect your employees?

The answer to this question is "all of the above".

Certainly during the conversion process, your employees' workload will increase substantially – by up to 300% as they learn the new

program, convert their data, and run a parallel system for a month or two. In fact, we recommend hiring temporary employees during this time to reduce the pressure on your full time employees.

After the system has been installed, an integrated accounting system will significantly decrease the workload of your employees and make them more productive. They will also be able to perform higher-level decision making tasks than they were able to do before. In fact, a good information system will let you push most of the day to day decision making down to where it belongs - on the front line, to those who are in the best position to make timely, effective decisions.

Your employees will become more efficient because they will only have to enter data into the system once and it will be used by all functions. The system will summarize and report this information automatically and eliminate the many time consuming and tedious clerical tasks involved with billing, paying bills, maintaining inventory and doing payroll.

How will it affect your employees?
<input type="checkbox"/> Decrease your employees workload
<input type="checkbox"/> Increase your employees workload
<input type="checkbox"/> Let your employees become more productive

How much will your operations have to change?

The answer to this question is that it depends on:

- How well-organized you are before the computer installation
- How well the software packages match your operations
- How much you can customize the package to meet your needs.

How much will your operations have to change?
<input type="checkbox"/> None
<input type="checkbox"/> Some
<input type="checkbox"/> A lot

As you will see in the next step, most programs (closed systems) do not fit neatly in an open systems environment. You can increase the probability of a fit by selecting a series of packages that have been specifically designed for your industry. Even in this case, however, you will probably have to customize some aspects of the program to conform to your individual needs, since every business is different.

Although computerizing your accounting system can cause you to make some beneficial changes in the way you operate, beware of one that tries to impose dramatic changes. These changes are probably not appropriate, and you will tend to not want to implement them.

Does it make sense to change the way you do business to fit your new computerized accounting system? No, it doesn't. Be sure that you pick a system that can be modified to the way you do business, or would

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The 12 - Step Program for choosing the right financial information system

like to do business. This is possible by choosing software that makes source code available. By having the source code, you can have modifications made to the system to fit your particular needs.

In addition, it makes sense to consider getting source code for a program that can be modified by Object Oriented Programming (OOP). OOP allows modifications to a program to be written as an object that resides outside of, but is attached to, the program. What does this mean to you in practical terms? It means that any modification can be carried forward to any software update or upgrade.

Even with a closely matched system, you can expect fairly substantial changes in procedures, work patterns and personal relationships in your company. It is these changes which cause delays in the effective conversion from a manual system.

Also another important factor to consider is how quickly your business is growing and when the system you are considering will no longer be able to keep up with your needs. A LAN based system might fit your needs now, but what about three years from now? If your business has grown, you might need a client/server solution. Can you move your accounting system to the new platform, or will you have to incur the expense of you and your employees learning a new system? There are accounting solutions on the market today that retain the same features and functionality across platforms, so that you do not have to face the steep learning curve of a new system. These solutions are worth investigating.

How long will it take to convert?

Again, it depends on your situation. In the worst case, you may be poorly organized, have no manual systems, have little in house computer or accounting expertise. You may want to convert your entire system, including accounts payable, billing, inventory receivables, general ledger and payroll. In this case, it could take you years for a complete conversion.

How long will it take to convert?
--

- | |
|--|
| <input type="checkbox"/> A month
<input type="checkbox"/> Six months
<input type="checkbox"/> A year |
|--|

On the other hand, I have seen small businesses convert in less than a month.

In general, I have found that it takes most businesses from one to two months per accounting module to fully convert, test and run parallel. A typical business should be able to perform a complete conversion in six months to a year.

Why you will never know what you need until you use it

One of the strange things about a computerized information system is that you will never really be able to understand how well it fits your needs until you install it. If you have never worked with a computerized system, it will be impossible for you imagine how your business will operate with the system in place. Everything will be different, from the day to day activities of your employees to the type of information that you receive for decision making.

Factors affecting conversion time
--

- | |
|---|
| <ul style="list-style-type: none">• State of manual systems• Computer literacy of employees• Bookkeeping/accounting literacy of employees• Degree to which programs match operations• Amount of customization needed• Degree of commitment and involvement of management |
|---|

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

One of the biggest mistakes which I have seen companies make is to request a large number of changes to packaged programs before installing and using them. These people try to get the system to match their existing reports exactly, and do not realize that they will operate in a different way once they get the system.

In those cases where I have let clients persuade me to make a large number of modifications beforehand, I have invariably had to undo these changes or make entirely different changes once the system has been used for a while.

Make only those changes that are critical or obvious before you install the system. You will save time, money and a lot of agony.

Step 4: Don't try to fool with Mother Nature

Systems theory, entropy and obsolescence Understanding these concepts is key to providing a foundation for selecting your computerized accounting system. They are fundamental laws of systems that affect how a computer system will interact with your organization.

Obsolescence

FREE DRINKS TOMORROW!

What is the life of a business information system?

The average seems to be about 3 years for most companies. Within three years, the company has changed so much that their information system (whether manual or computerized) must be revised to provide the management information required to run the business.

Systems theory, entropy and obsolescence

- Obsolescence - Free drinks tomorrow!
- Systems theory
 - Closed systems
 - Open systems
- Entropy

Note that we are talking about the information system, which means primarily the business programs and the information that they generate.

The issue of equipment obsolescence is easier to deal with than that of information obsolescence. It is virtually impossible to purchase computer equipment that is not "obsolete," since the new generation of machines has already been designed. Those who defer their decision to computerized while waiting for the next generation of equipment are fooling themselves; there will ALWAYS be a next generation of equipment, and the benefits which they lose by waiting far outweigh the possible lower costs and greater power of the next generation of equipment. This approach reminds me of the sign in a bar which reads "Free drinks tomorrow"; obviously, the free drinks never come.

Again it is important to consider an information system with source code modifications written in OOP that move across version upgrades and a system that can be moved across platforms as your computing needs grow. This is the best way to protect your investment and avoid the high costs of adopting and learning a new system as your business grows.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Mini and mainframe computer manufacturers understand the concept of a system life cycle. Unfortunately, their approach has been to provide incompatible platforms of equipment, operating systems and applications programs. The result is that every few years their customers must throw out their old systems and start all over again, at a tremendous cost in money, time and effort. The one exception to this rule may be IBM's AS/400 minicomputer, which has been developed with extreme scalability and downward compatibility.

Fortunately, systems based on personal computers are more flexible and adaptable. If your personal computer becomes obsolete, you can usually upgrade it, use it as a terminal on a network, retire it to do word processing or give it to your son or daughter to take to college.

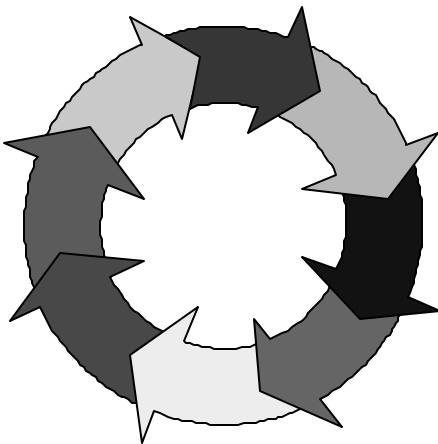
Unfortunately, the rest of your information system cannot be upgraded as easily. To understand why not, we must explore two key systems theory concepts: closed vs. open system and entropy.

Systems Theory

Systems theory describes the laws that govern system. Since almost everything can be described as a system (your body, your business, a computer program, a network, your filing cabinet, etc), understanding some of these general laws can help us to understand the requirements for a successful computer installation.

In general, there are two types of systems: closed systems and open systems.

A **closed system** is one in which there are inputs, outputs and a process in the middle that converts the inputs to the outputs. A thermostat is a good example of a closed system: the temperature falls, and a signal is sent to turn on the furnace. A computer program is another example of a closed system: you enter data, it computes and produces the same output each time for a given set of input.



Unfortunately, most systems in the real world are not closed systems, but open systems. In an **open system**, life is not so simple. The system is constantly changing form, and is affected by internal and external forces. Input in one area may produce completely unexpected output or results in another area. For example, getting a large contract that triples your business overnight could cause you to go bankrupt because of the effect on your cash, people and information and control systems.

What do you think happens when you take a closed system such as a computer program, and try to insert it into an open system environment, such as your business? The probability that it will fit the needs of the open system exactly are minimal. If it does happen to fit the needs today, chances are very small that it will fit the needs of the business in a few years.

This mismatch explains in large part why it takes so long for companies to convert to a computerized accounting system. It also explains why many programs do not work in businesses: they are simply too rigid to meet the fluid requirements of a dynamic open system.

There is another problem with mixing closed and open systems: the effect of entropy.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Entropy

Those of you with an engineering background will be familiar with this term. It is in fact the second law of thermodynamics. It is a characteristic of all systems: the inherent tendency for all systems to become disorganized and to deteriorate. When we say that the universe has entropy, we are noting that it is expanding and deteriorating. We all know that our checkbooks and filing systems have entropy; they tend to become disorganized almost of their own will!

There is only one way to slow down or delay the effects of entropy, and that is to import energy into the system. This energy can take many forms. For people, the energy is food; for your business, energy is money and human resources. For your checkbook, energy is the time it takes to balance it.

How does this concept apply to your computerized accounting system? Since both your business and the programs that produce your information are systems, entropy is at work on them. They are constantly becoming disorganized and less useful as your business grows and changes. Unless energy is invested to maintain the functionality of the programs, they will become increasingly useless.

We now get to the crux of the matter: a computerized accounting system that cannot be modified via source code to meet the constantly changing needs of your business or cannot migrate across platforms will become obsolete.

Why do you think that large companies have staffs of programmers who are constantly updating and modifying programs? If they did not, the programs would soon become useless. Small business is no different. In fact, the changes might come more quickly and be more traumatic in a small business environment.



The moral of this section is: DO NOT tie your business to accounting software that cannot be easily modified or migrated to a new platform. If you do, you will find yourself constantly changing systems to meet the changing needs of your business.

Step 5: Set the right expectations

Now we come to the good news/bad news part. The proper expectations are essential for a successful computer installation. Expectations that are too high will result in frustration and disappointment, while those that are too low will result in not realizing the potential that a good computerized information system can offer.

What a computerized information system can't do

The computer manufacturers and the media are largely responsible for the unrealistic

What a computerized information system can't do

- Replace your accountant
- Save money by eliminating workers
- Be a substitute for qualified employees
- Clean up your manual procedures
- Solve broad, poorly defined problems
- Always be right
- Allow software changes to be made by amateurs

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

expectations which people have about computers. Movies and articles about artificial intelligence and talking computers, together with TV spots showing major business problems solved during a 30-second commercial lead people to expect miracles. The reality is that computers cannot perform magic or miracles. Here are some other things which computers cannot do:

Computers will not replace your accountant

Many small companies make the mistake of believing that by installing a computer they will replace their accountant and bookkeeper. This illusion is similar to believing that buying a 747 will solve your transportation problems without considering who is going to fly it. A computer can make your accountant more efficient, and perhaps reduce his or her fees (after a successful conversion), but it will not replace expertise.

**Computers will not save money by eliminating workers
(at least not right away)**

During a conversion from a manual system, your employees' workload will increase by 300%, and this conversion process can last for six to twelve months. When you install a computer, you will have to do the following:

- a. Do your work on your existing system
- b. Learn how to use the computer and software
- c. Convert your data from your old to the new system
- d. Run parallel on the new system

During the conversion process, it is often necessary to hire additional employees. It is only after a successful conversion that more work can be done by the same number of employees. Even then, it is unlikely that you will reduce staff; instead, the system will create new ways of doing things and free up time for higher level, more productive activities.

Computers are not a substitute for qualified employees

Computers are very fast and very stupid. If you combine them with poorly trained, unskilled people, the result will be complete chaos in a very short period of time.

A computer won't clean up poor manual procedures

"Garbage in, garbage out" is a familiar saying of computer people. If your business is out of control, you must first develop good manual procedures before subjecting it to the stress involved in converting it to a computerized system.

A computer won't solve broad, poorly defined problems (i.e., think)

One company saw their sales declining, and noted that many of their competitors had computerized. When the company followed suit, their sales continued to decline. A computer is no substitute for thinking. In fact, installation of a computer system is often used as a substitute for thinking, as can be seen by the lack of thought which goes into selecting applications for computerization.

A computer won't always be right

There is a great tendency to believe all of the numbers that come out of a computer. An example is the spreadsheet forecast that shows forecast profits to the second decimal place sixty months out. Another type of error is that caused by a "bug," or error in a computer program that produces errors which go unnoticed for a long period of time.

A computer's software won't accept changes made by amateurs

An example of this fallacy is the insurance firm's owner who'd once taught programming in college classes. He set out to tailor a packaged program to suit his own procedures. He flat out couldn't do it, and his \$10,000 system never worked for him.

Computer software is extremely complex, and a change in one area often produces unexpected results in other areas. Only professionals should be entrusted with something that you are using to help run your business.

What computers can do

The other extreme is those who spend a great deal of money on equipment and use it only for simple applications such as word processing and spreadsheets or a simple accounting program.

What computers can do

- Provide better information for decision making
- Improve cash flow
- Improve the accuracy of information
- Improve employee morale
- Provide control
- Provide a foundation for growth

A fully integrated, multi-user accounting system can increase the productivity of a work group enormously and can provide timely, high quality information for management decision making. Billions of dollars a year are spent on computers, and the payoff for this investment can be enormous. Some of the things which computers can do, even for the smallest business, are as follows.

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The 12 - Step Program for choosing the right financial information system

Provide better information for decision making.

Most people have heard of Pareto's Law, otherwise known as the 80/20 rule: 20% of your products produce 80% of your profits, 20% of your customers produce 80% of your revenue, 20% of your salespeople produce 80% of your sales. A good computerized information system can separate the wheat from the chaff, and provide key decision making information on a timely basis - while there is still a chance to do something with it, rather than after the fact.

Improve cash flow

Cash management is essential for all businesses, and computerized billing, inventory, receivables and accounts payable systems can assist enormously in cash management.

Improve the accuracy of information

Whenever the same information is recorded in more than one place, the chance of errors and unbalanced entries increases enormously. A great deal of people's time in a manual accounting system is taken up with cross-checking figures recorded in different ledgers. In a good computerized accounting system, information is entered only once and is used throughout the system, thus reducing the chance of error.

Improve employee morale

There are certain things that people hate to do and which computers do very well, such as adding long columns of numbers, cross-footing, summarizing and preparing reports. Freeing up employees from drudgery and allowing them to spend time thinking, talking to customers, managing and doing things which people do well can contribute to morale and employee effectiveness.

Provide control

A computerized information system can provide the timely information needed to manage and control a business. With a computerized system, it is possible to monitor the effectiveness of departments and individuals on a detailed and continuous basis.

Provide a foundation for growth

While a computer may not let you reduce staff, it can help you avoid hiring some additional staff as you grow. In a computerized environment, one employee may be able to process twice the number of transactions as in a manual system. Also, many businesses reach a point where they simply cannot keep adding people to perform the same function; a structural change in their information system is necessary to provide a foundation for growth.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Step 6: Define your goals

We have discussed your internal situation vis à vis computers and how you got to where you are now. We have also reviewed the realities involved in computerizing your operations. Before we plunge ahead with the "how-to" section, you must ask yourself the question: Where is your business going?

Remember that you are going to spend the next year involved in this project. You are also going to be spending a lot of money, not only on the original equipment and programs, but also on all of the support and conversion costs. Do you really want to repeat the experience in three or five years when your business grows and changes and your new system proves to be totally inadequate?

Where are you going?

- Increases in transaction volumes
- Change in type of business
- Flexibility to reduce risk

Unless you are a masochist or have nothing better to do with your time and money, your answer is NO.

The first step to take is to project your increase in volume of transactions over the next five years. How many more customers, inventory items, vendors and employees do you expect to have? Be liberal in this estimate - I have rarely seen companies get too much computer capacity.

With your volume figures, you can develop specifications for equipment and software capacities to make sure that you won't run out of space, power, number of workstations and data file sizes. There are definite economies of scale in computer equipment. For example, the larger the disk drive, the lower the cost per megabyte of storage. If you can't afford all of your projected storage now, make sure that you can expand your system without having to replace it entire and migrate to a different "platform." Remember that these platforms have been artificially established by some equipment and software vendors to insure a continuing market for their products.

The question of how your business might change is a more difficult one to answer. In most cases, you simply won't know the answer. Your only intelligent course of action is to get both equipment and programs that can be expanded and modified easily via source code, Object Oriented Programming, and an ability to migrate across platforms, so that you can protect your investment as your business changes.

If you don't do your homework and ask your vendor some relevant questions, you stand a very good chance of being stuck with whatever is providing the highest profit margin or commission at the time, which might well be an obsolete or inadequate system.

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

Step 7: Analyze your business needs

The right and wrong approach

We are now ready to get down to the nitty-gritty of choosing your system and planning your conversion. We'll start with some suggestions on which applications you should computerize first and how to select a vendor. We'll then review some common sense steps you can take to pick the right equipment and programs.

Before we begin, let's review the typical and the right steps to take.

Under the classic approach, most of the time is spent in selecting equipment. It is the most fun, involves tangible objects, and is exactly the WRONG thing to do.

TYPICAL APPROACH	
<u>% Of time</u>	<u>Activity</u>
60%	Buy equipment
40%	Find software to work on equipment
Too much	Make the system work in your business

The right approach is shown in the following chart. The surprising thing to note is that most of the work involves no technical knowledge at all. In fact, only you, not a computer salesperson, can do this job. Companies which run into trouble when computerizing are those which delegate this responsibility to their computer vendor or to lower levels within their organization.

Analyzing your information requirements

The classic cartoon which shows an executive proudly sitting in front of his terminal and making the following statement illustrates the failure to use computers in ways that can produce significant benefits for a company. All of this

power, of course, costs the executive only about \$50 per hour of his or her time (not counting the costs of the system), and comes at the expense of applications which could provide some REAL benefits for the company.

RIGHT APPROACH	
<u>% Of time</u>	<u>Activity</u>
60%	Analyze your business Readiness for computerization Cost benefit analysis of applications Organizational issues Personnel and training needs Timing
30%	Find software
10%	Buy equipment

Now that I'm computerized, I can type like my secretary, file information like my file clerk, track details like my bookkeeper and send messages like my communications clerk.

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

Take a minute to list the order in which you are thinking of putting applications on your computer. Use the following table to rank each application:

What type of analysis did you do (or do you plan to do) to decide which applications to automate, and in what order? Did you choose word processing first because it was the "easiest"? Did you select General Ledger because your accountant said that you should do it to make his or her job easier?

You might be interested in the results of a survey of organizations that was made five years AFTER they had first installed their computer. This survey asked them to rank the applications that they had installed which, after the fact, had produced the highest to lowest payoff for the organization.

Analyzing your information requirements	
<u>RANK</u>	<u>Application</u>
_____	General Ledger
_____	Word Processing
_____	Payroll
_____	Accounts Payable
_____	Accounts Receivable/Billing
_____	Inventory control
_____	Sales Order Entry
_____	Purchase Orders
_____	Desktop Publishing
_____	Spreadsheet/Forecasting/Planning
_____	Custom Management Report (Standalone or derived from one of the above)

Their ranking is as follows:

1. Information for management decision-making, i.e., spreadsheets, custom management reports.
2. Information for cash flow planning/forecasting, i.e., sales orders and purchase orders.
3. Billing and accounts receivable
4. Inventory control
5. Accounts payable
6. General ledger
7. Payroll
8. Word-processing

In interpreting the above rankings, it is important to realize, of course, that the ranking for any individual company could be different. For example, I'm sure that an attorney would find word processing to be a virtual money machine when used to produce legal documents. Likewise, the independent accountant or bookkeeper would find that using a General Ledger program would substantially increase their billings from financial statement preparation.

The point is that each organization should take the time to find out which applications will yield the highest payback, and concentrate on using the power of a computer system to maximize the benefits available in these areas.

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

Benefits of a Good Management Information System							
	<i>Plan/ control growth</i>	<i>Reduce labor expense</i>	<i>Shorten billing cycle</i>	<i>Carry less inventory</i>	<i>Increase sales</i>	<i>Control costs</i>	<i>Manage cash</i>
Order Entry	X	X	X	X	X		X
Inventory Control	X	X	X	X	X	X	X
Accounts Payable	X	X				X	X
Accounts Receivable	X	X	X	X	X		X
General Ledger	X	X			X		
Payroll	X						X
Business Modeling	X				X	X	X
Word Processing		X			X		

Payback/benefit analysis

If you have the time and the staff, you might want to do a formal payback analysis to justify each computer application before you buy your system and try to implement it.

For most small businesses, a less formal approach is more practical. You might find the following guidelines helpful in analyzing which applications should be computerized in your organization:

Payback/benefit analysis

- Information for strategic decisions
- Information for cash forecasts
- Information to manage my assets
- Automation necessary for growth

What information do I need to have to make key strategic decisions for my organization?

This information could include the results from budgeting and modeling your business. It could also include current information on gross profit by product, customer or salesperson. It might involve financial ratios. By using a program such as the General Ledger PROPERLY, you can also get information about the performance of key profit and cost centers that can be used for strategic and tactical decision making.

In many cases, the specific information and the format in which you like to see it is unique for your company. In this case, you will probably need a custom report or program that makes use of the data contained in the databases generated through the routine processing of your orders, invoices, bills and other accounting transactions. Using your accounting system as a management decision support system,

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

instead of just a bookkeeping system, will provide the highest payoff, since one correct or incorrect decision could affect the entire course of the company.

What information do I need to accurately forecast my cash flow?

Cash is the lifeblood of any business, and the ability to accurately forecast your cash flow as far out into the future as possible should be a key benefit of a computerized accounting system. The first modules to consider for cash forecasting are those which track your sales orders and purchase orders, since they provide the best advance information on future cash inflows and outflows respectively. Unfortunately, many small businesses do not feel that they need these modules, and are more interested in the more mechanical aspects of an accounting system such as preparing invoices and paying bills. Accounts Receivable and Accounts Payable modules, through the Aging Report and the Cash Requirements Report respectively, also provide critical information for cash forecasting.

What information do I need to manage my assets?

Accounts receivable and inventory are in many cases the primary financial assets of an organization. A great deal of cash is tied up in these assets, and the borrowing or opportunity cost of carrying these assets can significantly affect cash flow and capital available for other activities (such as hiring another salesperson for example). If these assets are a significant part of your business, the payback from controlling them better can be calculated very easily, as can be seen from the case studies (see sidebars).

What functions must I automate in order to grow?

I have consulted with organizations whose growth was at a standstill simply because they were not automated. You can only add so many people to keep up with paperwork, and then the entire system must be changed to prevent bottlenecks and inefficiencies. For example, an organization that provides home health care simply could not expand until they automated their claims processing and temporary employee payroll system. The cost of not automating these areas was enormous (it could have put them out of business, or at the very least, stopped their growth).

It is easy to automate for the wrong reasons, or to blindly computerize functions that provide little payback. The conversion from a manual system is often a long, painful and expensive process; you owe it to yourself to apply your resources to the areas which will provide you with the most benefits first, and deal with the low payoff areas after you have made some money with your computer system. Neither your computer vendor, your accountant, nor your consultant can possibly know your business as well as you do, and only your analysis and decisions can put you with the 25% minority whose computer systems have paid for themselves.

Inventory Control Savings

A typical company had annual sales of \$2.5 million, and an average inventory of \$500,000. By using a computer to identify and eliminate slow moving products, they were able to reduce inventory by 20%. As a result, they were able to reduce bank borrowing by \$100,000. At an annual interest rate of 15%, they saved \$15,000 in one year. Their savings from avoiding being stuck with obsolete inventory was even more dramatic – **over \$50,000 a year!**

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The 12 - Step Program for choosing the right financial information system

Accounts Receivable Savings

Another company has annual sales of \$6 million and average outstanding receivables of \$2 million. Before computerizing, it took them 122 day, on the average, to collect their receivables. The annual cost of borrowing \$2 million at 15% interest is \$300,000. By using a computer to speed up invoicing and control past due accounts, they reduced the average days outstanding by 5 days, or 4.1%. Even this small reduction resulted in annual interest savings of \$11,500.

Savings from Cost center management

A company's copier costs were \$5,000 per month. They rented two new office copiers which were supposed to reduce this expense, according to the copier sales people, by using less expensive paper. Since the copiers were set up as a separate cost center in their computerized general ledger, they were able to determine immediately that the new copiers actually increased costs by 20%, or \$1,000 per month because of the expensive chemicals which they used. Under their manual system, they received a P&L Statement every six months, and costs were not broken out by cost center. At the very least, they would have lost \$7,000 (\$1,000 per month for seven months), and quite possibly would never have noticed the increased costs.

Step 8: Select your partner

Vendors and users - friends or foes?

Given the bad decisions which most people seem to make when buying a computer, one is forced to ask whether the interests of computer vendors and users are similar or totally opposite.



When you think about it, computer manufacturers are interested in continuously selling you new equipment, and in preventing you from using other vendor's parts and peripherals on their computers. They also tend to divide up the market in ways which are useful to them and which make them as much money as possible in the short term. Users, on the other hand, would like to have a system which can expand as their needs change, is easy to use, is compatible with parts and peripherals from a wide range of vendors and is reasonably priced.

Vendors and users - friends or foes?

- The vendor is my friend
- The vendor is my enemy
- The vendor and I are a team

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Many computer vendors follow the retail model, in which the tangible part of a system is emphasized (i.e., the equipment, as opposed to the solution of a business problem) and the name of the game is to move inventory and get commissions.

Thus the selection of a vendor who will have your best interests at heart is not a trivial matter. Your best bet is to find somebody who is independent, who has business as well as technical knowledge, who can offer you a total solution (not just peddle you equipment and programs). You can recognize this person because they will offer to stay with you throughout the entire selection and conversion and implementation process.

Choosing a vendor you can live with is perhaps the most important part of your decision. You will work together as a team during the process of selecting the programs, or software which you need, choosing the equipment needed to operate the software (note the order of the selection process), and implementing the system in your organization. You will be responsible for the business issues and your vendor will be responsible for the technical issues. Your vendor cannot possibly know all that you know about your business, and you will not be as knowledgeable technically as your vendor.

Remember that both the computer and your business are examples of complex systems. These systems involve equipment, programs, rules, accounting knowledge, information and people. It is extremely difficult to make a complex system function, or to join two complex systems, without understanding all aspects of the system. Only you and your vendor together can make it work, and the chances of it working are much better if you select a vendor who can help you with all aspects of the computer conversion, from equipment and software selection through training, installation and conversion. By selecting a vendor who will stay with you after the sale, you will at least have the satisfaction of seeing the vendor suffer as much as you do if the wrong equipment or programs were recommended!

Selecting your vendor

Selecting your vendor

- A. Buy the cheapest hardware and software you can find from wherever you can get it
- B. Buy your hardware from one vendor and your software and support from another
- C. Buy a complete turn key system from a single vendor who is familiar with your industry

If the intelligent answer is so obvious, why don't more people select option C?

Those who choose option A do not understand that they are dealing with a complex system which cannot be put together on a piecemeal basis. The savings they might get through extensive shopping or mail order purchasing are often more than outweighed by the consequences of poor decisions and lengthy implementations.

Those who choose option B are often forced into this decision because many hardware vendors (e.g., retail computer stores) know little about software and are not interested in providing support. The problem with

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

this approach becomes obvious when something goes wrong (and something WILL go wrong). The hardware vendor points to the software vendor and vice-versa, with you caught in the middle.

It is difficult to overestimate the value added and benefits that you can obtain by working with somebody who will assume complete responsibility for your system, from selection through implementation. If you can find somebody who has installed many systems in companies similar to yours (a "vertical market specialist"), the benefits are even greater. You will probably benefit from the mistakes made in the past and the expertise gained by the vendor in working with other companies.

The best way to find these people is to contact your industry trade association, talk to your competitors, or contact software manufacturers for a list of their dealers.

In your initial appointments with these prospective vendors, you should qualify them using a checklist such as the following:

Potential Vendor Questionnaire

1. Is the vendor independent (i.e., does he carry more than one brand of software and hardware)?

2. Does the vendor spend most of the time listening and asking you questions about your business?

This question separates the true sales consultants from the peddlers. A vendor cannot possibly recommend an appropriate system for you without finding out a lot about your business.

3. Does the vendor speak English?

Avoid vendors who try to snow you with jargon and who immediately start talking about features of equipment and programs.

4. Does the vendor know something about business in general and about your type of business in particular?

Vendors of accounting systems who do not know accounting and office procedures are dangerous. A vendor who is familiar with the language and information requirements of your industry is a definite asset.

5. Do you think that you can work and communicate well with this vendor?

Remember, you are getting married, not out for a one night stand. If all goes well, you will be working with this vendor for years. He or she will help adapt your information system to the needs of your business as it grows and changes.

Step 9: Select your application software

We'll explore why your options can range from good to bad to ugly in a minute. First, let's try to understand what software is and how you should select programs for your business.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Software is the black magic part of computers. You can't see it and can't touch it, but without it your computer is just a useless piece of machinery. In fact, you will find that your applications software is far more important than your hardware in the long run.

We should first distinguish between systems software and applications software. We will be discussing systems software, which controls the physical operations of the computer, in the next section. Application software lets you do specific jobs (payroll, order entry, billing, etc.). For each job, you'll have to have the appropriate software. In an accounting

system, of course, these separate programs will have to talk to each other so that the information needed by one program can be supplied by another without having to reenter it.

THE GOOD, THE BAD AND THE UGLY

- A. Buy a packaged accounting program
- B. Develop your own custom software
- C. Modify a packaged program after you have used it for a while

Conceptually, programs are quite simple. An accounting program consists of a set of rules that allow the computer to display information on the screen, capture input, compute, and produce output and reports. The information that you type in and the results of the computations by the program are then stored in data files for use in reporting and future computation.

If you have done your homework, you know what information you need to capture, what computations you need to make (e.g., average cost inventory method), and what reports you need to run your business. Your job then is one of matching your requirements to the characteristics of an existing program, or giving them to a programmer so a program can be written for you.

You might be tempted to run out and start doing a detailed feature comparison of ten different software programs. This approach could result in five to ten pages of checklists, and you could still make the wrong decision. I urge you to step back and look at the big picture. By following the guidelines listed below, you can pre-screen a large number of packages and focus on the most important criteria for selecting a software package.

Software Selection

1. Can you modify the programs?

Software comes in two forms: source code and compiled code. You can recognize source code, because you can almost read it. It is written in a language such as COBOL, BASIC or Visual FoxPro. Compiled

code is a series of 0's and 1's, which only the computer can read and which you cannot change. Many software vendors sell only compiled code to prevent people from stealing their programs, making a few changes, and then competing with them.

General Criteria

- Can you modify the programs (do you get source code)?
- Are the programs written in a high level language?
- Can you easily generate custom reports?
- Can you easily modify the input (database files)?
- Can you easily import and export data to other programs?
- How much and what type of support is available?
- How many copies of the program are already in use?

We have already seen that your business will change, and you will need to change the programs to allow them to adapt. Compiled code programs are fine for word processors and spreadsheets, which are just tools, but should not be used for something as complex as your business information system.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

For modifying your programs, make sure you get source code. It also makes sense to get a program that is written in an Object Oriented Programming (OOP) language. This way any modifications that you do are written as an object that is attached to the program and then can be moved across to software upgrades, saving you the expense of having to have the modifications rewritten. Also it is important to investigate whether a software vendor has designed their program to work across multiple platforms. This way, not only do you not have to learn a new system, the modifications that you have done can be migrated to the new platform as your business grows and your computing needs change.

2. Are the programs written in an Object Oriented Language?

It is important to get programs that have been written in a popular object oriented language such as Visual Basic, Visual FoxPro, or Visual C++. Object oriented language is easier to use and the less expensive to modify. In some cases, you can accomplish in four lines of OOP code what can take up to 400 lines of code in a character-based language. Also, the more popular the language, the more likely it is that you will find people who understand it. You'll have a greater selection of programmers, and have some insurance if your vendor goes out of business.

3. Can you easily generate custom reports?

Perhaps the most important part of an accounting system is the type and format of information that it produces. You will most likely want to see specific information in a specific way, and it is probable that the reports that come with a program are not in a format that you need. Your accounting system should have a report generator that allows you to easily (without making program changes) produce most of the reports that you need.

The higher level languages have an advantage in this area, since there are a number of report generators which allow even novice users to produce an enormous variety of reports. For example, Visual FoxPro comes with it's own simple report generator. Because of its popularity, a number of vendors have produced very sophisticated report generators. R'n R Report Writer, F9, and Alpha Four are examples of programs that can be used by non-programmers to produce very sophisticated reports.

4. Can you easily modify the input?

What happens if the program does not capture some of the information that you want on a report? For many programs, adding another field to the data files, and modifying the programs to capture this data from the input screen can be a time consuming and expensive task. For programs written in higher level languages that use database files to hold information, this type of change is quite easy.

It is very likely that you will want to add information to the standard data captured by your accounting system for special reports. For example, your sales manager might tell you that he can double his close ratio if you could capture and report your client's birthdays and wife's names, but your customer file input screen does not have a place for this information. If your customer information is held in a database file, you could add these fields and begin capturing the information in a few hours.

5. Can you easily import and export to other programs?

No matter how complete an accounting program you get, you will at some time or another want to transfer information to or from "foreign" programs. For example, you may want to dump your sales history to a

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

spreadsheet program for analysis. Your accounting program should let you import and export its data to other programs.

In general, if your program lets you import or export information in what is known as an ASCII format, you will be able to communicate with a wide variety of other programs. ASCII is the common language of data formats. It does not matter how the data was produced, or in what language the program was written; if it can accept and produce ASCII data files, you can communicate.

6. How much and what type of support is available?

No matter what amount of computer expertise you have, you WILL need support at some time. The amount, quality and options available for support are what separate the flakes from the professionals.

Your first line of support is the organization that sold you the software. You should be able to evaluate their competence directly. Note whether they offer training services and software support contracts.

There is always the chance that your vendor will go out of business. Does the software manufacturer also provide support and training? If not, you might find yourself all alone a few years down the road when you need to change or upgrade your program or train new employees.

7. How many copies of the program are already in use?

You can recognize a pioneer because that is the person with the arrows in their back. It is not a good idea to be a pioneer where accounting software is concerned. It is better to let other people suffer through the process of de-bugging a large accounting system. Find out how many copies of the program are in use, and contact some people who have been using it for a while.

By using the above criteria, you should be able to eliminate a large number of vendors and software packages. The next step is to look at specific programs. Even at this stage, I do not recommend doing a feature by feature comparison. It is best to approach the selection process on a functional level by using the following guidelines.

Functional comparison

Performance

There are a number of characteristics of a software package that affect its performance. These include:

Functionality, or ability to perform the basic business functions required by the client. Any software that is easily modifiable, of course, will win on this count since it can be adapted to almost any business situation. One way to look at this dimension is to discuss the range of modules available as standard packages (e.g.,

Functional Comparison
<ul style="list-style-type: none">• PerformanceFunctionalityCapacityReporting capabilities<ul style="list-style-type: none">Ease of inputEditing of inputMulti-user supportSpeed • Documentation• Ease of Learning• Ease of Use• Error Handling• Support• Value

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

general ledgers, accounts payable, billing, inventory, etc.). Another important basis for comparison is the number of vertical packages available.

Capacity, is the number of periods, digits in account, customer, inventory and vendor records, and other possibly limiting characteristics of the packages.

Reporting capabilities relates to the ability to extract the information entered into the system in relevant forms. A system based on FoxPro files provides a virtually unlimited reporting capability. Through the use of reporting tools non-programmers can easily design unlimited custom reports.

Ease of input refers to how quickly and efficiently a user can enter information. Features like full screen editing, embedded help system, clear prompts and the ability to switch easily from screen to screen are key in this area.

Editing of input deals with the issue of how good the program is at preventing garbage from getting into your system. The program should test for things such as duplicate customers and vendors, incorrect item numbers and unreasonable amounts and dates.

Multi-user support, or the ability to handle true multi-user situations at the record level is essential for any accounting package in almost any business.

Speed of processing is another key performance measure. With the availability of compilers such as FoxPro, packages written in this language will equal or exceed the processing speed of most other packages.

Documentation

The quantity and quality of documentation can be used to differentiate products. Documentation includes tutorials, training guides, videos, technical reference manuals and other support materials as well as the basic program documentation.

Ease of Learning

The ease of setting up, installing and learning a program is an important characteristic of an accounting program. A related aspect is the availability of training from qualified people who are readily accessible to the user.

Ease of Use

The difficulty of entering transactions, adding reference information on the fly, and doing quick look-ups will affect how well the software allows the user to perform the business functions required.

Error handling and security

How well the programs prevent unbalanced transactions and how good they are in preventing users from making mistakes which dump them out of the system or cause them to lose data are key measures in this category. The degree to which sensitive functions and reports can be protected through a password protection capability will affect how the program rates in security.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

Support

Many surveys have indicated that support is a key concern to users. The phone support, warranty, money back guarantee, extended support programs, newsletters and bulletin board support offered by the software companies are key differentiating factors.

Value

Value is a trade-off among performance, ease of learning and use, features and price. In many cases value is a subjective decision and varies for each user. High scores in the other areas will build a case for good value.

We have seen that option A (the "bad" choice) probably won't work for most businesses because of their unique features and their tendency to grow and change beyond the capacities of a closed program. Note that there are some applications, such as payroll and general ledger, which rarely need modifications because their structure and functionality is prescribed by outside agencies, such as the government and the accounting profession. When changes do occur in these areas, the software manufacturers will usually provide them for you as an upgrade (assuming that they are still in business).

Option B is the one used by many large companies, and in applications for which there is no packaged program. This choice definitely qualifies as "ugly" because of the time, effort and money involved in developing a completely debugged package from scratch. For example, it costs about \$5.00 per line of documented and tested code in a complex accounting system. One vendor's accounting system has over 500,000 lines of code, which was developed over a period of six years. You should if at all possible avoid this option completely for your major applications. You may need to write custom programs for specific, unique areas, but may still be able to use option C to get what you need.

Option C is the preferred approach to selecting applications software. You get the benefit of the man-years of work and debugging done by the software manufacturer, and yet can tailor the programs to your needs.

Step 10: Select your operating system and hardware platform

As we start getting closer to the hardware portion of the system, the jargon begins to increase and the probability that you will have enough technical knowledge to make the right decision by without help decreases.

What is system software?

It is basically the "brains" of the computer. It makes it possible for the equipment to understand certain computer languages, operate your applications programs, move data between parts of the system and print and display information.

Our objective here is not to give you a technical education on networks and systems software. Remember that we are managers, and our responsibility is to find the right people to do the real work. In the case of systems software, that means finding a vendor whom you can trust and who knows what he or she is doing.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

In some cases, the applications software that you have chosen will determine the operating environment and the equipment. For example, if you have chosen an accounting program that operates only on a Macintosh computer, your choices of operating system, networks and equipment are quite limited.

There are a lot more choices in IBM and IBM compatible world, and each option has its advocates, who will defend their position with missionary zeal.

The main concept that you must understand is the difference between **LAN** and **Client/server** systems.

The operating system software determines whether your computer can handle only one job (and user) at a time, or can have several people using the same computer, through different terminals, at the same time. MS-DOS is a single user operating system, and Windows NT and Unix are multi-user operating systems. Your other option if you need a multi-user operation is to link together several single user computers in a network. In this case, the network software sits on top of your MS DOS operating system and allows more than one user to use a disk drive, printer or application program at the same time.

As we have seen, in an accounting system application, multi-user processing is a must. If you have a very small business, and can schedule your accounts payable, billing, inventory, word processing and other computer functions so that only one person at a time has access to the computer, you can get by with a single user system. Buying more computers will not solve the problem for an accounting system. If each program is on a separate computer, you will not be able to transfer information between them, and will lose much of the benefit of an integrated accounting system.

In a **network** environment, you will have a number of separate computers that are linked together with cables. Each computer will have a printed circuit board in it (the network card) which allows it to communicate with other computers and devices (such as printers and disk drives) on the network. The whole thing is held together by the network software, which manages the traffic along the network.

A network solution might be appropriate for you if you have already invested in a number of stand-alone computers. Also, since networks use the MS DOS or Windows operating system, you will not have to learn a whole new way to communicate with your computer. A further advantage is that you can operate your old MS DOS programs such as spreadsheets and word processors. If you get a network, you can expect to require training on how to use the network software, and may have to invest in a separate computer to just take care of the network functions (this equipment is called a "server").

Networks come in a wide range of prices and speeds. The speed of a network refers to how fast data is transferred among different pieces of equipment on the network. It is expressed in megabits per second. Speeds can range from 19,000 to 100 million. For most multi-user accounting system environments, a minimum of 10 million megabits per second is required for the system to be truly functional.

The main concept that you must understand when it comes to networks is the difference between **LAN (Local Area Network)** and **client/server** systems. The trend today is toward less processing power on the desktop and more processing on the server computer. The main difference between how a LAN and client/server system works is how each handles a request for a file. With a LAN system, it's like asking a file clerk for a specific file and being handed every file in the filing room. With client/server, only the exact file that is requested is provided by the server. You can imagine the difference in speed of these two systems, especially in a large network. Plus client/server has increased reliability and security.

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

The details of the above systems are beyond the scope of this book and will remain beyond the technical abilities of most users. Your best bet is to find a vendor who is familiar with a number of options and trust him or her to recommend the one most appropriate for your needs. Most of them will work for you, provided that somebody is available to train you in their use and provide support to you.

Selecting the equipment

Selecting your equipment

Pentium 200 Mhz system w/16 MB RAM \$1,800, w/32 MB RAM \$2,300. Motherboard with AMI bios. 2 GB disk drive w/12 msec av. access. Parallel/serial interfaces, 8-slot chassis...

If you completely understand all of the above, and the implications for your accounting system performance, you are probably qualified to select your own equipment. If not, find a competent vendor and trust his or her recommendation.

The important thing to remember about equipment is that it is the LEAST important factor in selecting an information system. Getting your equipment first and then finding a system that runs on it is putting the cart before the horse.

As we have seen, equipment is obsolete before you buy it. As your business grows, you will need to upgrade your equipment. You might grow from a peer to peer network to a client server based system to a minicomputer. By choosing an accounting and financial information package that can operate on multiple platforms, you will avoid the agony of changing your entire system just because you need more computer power.

Step 11: Manage the conversion process

The implementation of a computerized accounting system has been described by some users as journeying through the valley of despair. Even a carefully planned, well-executed conversion is bound to put a great deal of stress on an organization.

One of the keys to a successful conversion is to approach the task with your eyes open and with a full understanding of how this massive change is likely to affect your organization.

Implementation and Conversion factors

- People and change
- Organizational factors
- Training
- Data file conversion and running parallel
- Support and modifications

Let's assume that you have selected a good vendor, have found some packaged software that will work for you, have chosen your equipment and are ready to plan your conversion. Your next task is to fully

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

understand the impact the conversion will have on your organization and to plan the training, support and software modifications that you will need during the implementation of the system.

People and change

People are the foundation of any system, whether it is a manual or a computer system. Unfortunately, this aspect of a system is the most ignored factor. Do not underestimate the problems which people can have in dealing with and learning to do a job on a computerized system. Many of these problems are related to the resistance to change caused by fear of computers and fear of the changes that the computer will cause in the work environment.

Different people in your organization will have different skills and levels of experience with computers. Some people will never be able to work effectively in a computerized environment. You will have to face the fact that the computer will probably require a reorganization of your staff to reflect new and different jobs and the ability of each of you employees to deal with these jobs. The system administrator is a new job category that you will have to create. This can be a full or part time job, depending on the complexity of your system. The system administrator will need a significant amount of training, and will be the main liaison between your organization and the vendor. He or she will be responsible for the conversion and smooth operation of the system.

People considerations

- Different jobs for different people
- Communication problems
- Cyberphobia
- Resistance to change
- Different learning styles

In a computerized environment, communication problems will arise among those necessary to make your system work. In addition to the normal communication problems that exist in any organization, you will have a new level to deal with. Management, clerical people, your accountant, your vendor, the programmer and your system administrator will all have to communicate effectively during the conversion process. Usually each of these parties speaks a different language and has different priorities and interests, which makes for an interesting and challenging time for all concerned. The proper way to deal with these problems is to have frequent review meetings with all of the parties involved. It is especially important that management not abdicates its responsibility and demonstrate support for the system by staying involved during the conversion process.

Resistance to change Symptoms

- Drop in productivity
- Failure to meet deadlines
- Absenteeism
- Turnover
- Excessive complaints
- Low morale
- Reluctance to learn new job skills

Cyberphobia is defined as a fear of computers. It is estimated that one out of every five persons suffers from this condition to some extent. One out of ten people actually exhibit physical symptoms such as sweaty palms, headaches or other illnesses. Do not underestimate the importance of this factor in slowing down your conversion.

Resistance to change is a natural human condition. People do not like to change the way they have been doing things, and will often subconsciously sabotage a new system to avoid having to change. The following chart shows some symptoms of resistance to change:

There are good reasons for this resistance, especially among those who will be most affected by the new system. Those most affected are likely to be the lowest level of people in your organization, as can be seen in the following chart.

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The 12 - Step Program for choosing the right financial information system

How people are affected by change				
Reasons for Resistance	Level Affected			
	Operating Personnel	Operating Mgt.	Middle Mgt.	Top Mgt.
Loss of Status	X	X		
Economic Insecurity	X			
Change in Interpersonal Relationships	X	X		
Change in Job Content	X	X	X	
Change in decision making approach			X	X
Loss of power	X	X	X	
Uncertainty and misinformation	X	X	X	X
HOW AFFECTED	Unemployment	Job content changed	No change	

If you note these symptoms, you will have to slow the rate of change and provide more training and support to your staff. If they persist, you may have to find new employees who can more easily accept the new system. The following are some common sense suggestions for minimizing the impact of change.

1. Involve employees in development of the new system
2. Open lines of communication between employees and management
3. Provide employees with information and training on the new system
4. Initiate moral boosting activities
5. Pace the conversion to allow adjustment to the new system
6. Convert on a modular basis
7. Develop written documentation of the new procedures to be followed.
8. Clearly establish in advance the new organizational and authority structure that will exist after the changeover
9. Upgrade the work environment following the change
10. Alter job titles to reflect increased responsibilities
11. Show sympathy and be receptive to complaints
12. Conduct frequent orientation sessions
13. Arrange job transfers
14. Retrain employees for new job functions
15. If necessary, provide job counseling, group therapy and separation counseling.

Profit, Productivity, and Technology
The 12 - Step Program for choosing the right financial information system

Organizational factors

The second set of factors to consider when installing a system is the office environment. Any problems that exist in terms of office politics, poor manual systems, unqualified personnel, financial problems, overworked staff, etc. will be magnified under the stress of installing a computer system.

Accounting software affects the core of a business. To automate successfully requires a stable and supportive business environment, with good procedures, adequate staff and capital, and a clear understanding of the purposes and benefits of automating.

DO NOT convert during your busy season. DO expect to need more people during the conversion process. DO NOT expect to convert more than one function at a time. DO expect it to take one to three months to convert each application.

Training

The amount of training your organization will require will depend on the skill levels of your employees before the conversion. A common mistake is to expect the accounting software to have expertise that does not exist in the organization. If your employees are computer illiterate and have no accounting knowledge, you must train them in these areas BEFORE you convert to the new system.

Training should include the areas on the chart.

Conversion and running parallel

Now that your system is in place and your employees are trained, you are ready to convert from your manual system or your old computer system. As you convert, you will probably want to run your old system for a while to make sure that everything is working properly on the new system.

The first step in the conversion process is to develop a conversion plan. This plan should provide for the conversion of only one module or department at a time, and you can expect the conversion process to take from one to three months.

Most computerized accounting systems require two types of data: reference data and transaction data. Reference data includes items such as customer information, vendor names and addresses, inventory

Business and Office Environment

- Status of manual systems
 - Well defined job functions
 - Clear procedures
 - Understanding of information needed
 - GIGO: garbage in = garbage out
 - CHAOS: Automation of a sloppy manual system
- Time of year to convert
- Understanding of conversion priorities
- Management involvement and support
- Staffing requirements
 - Old job
 - Learning a new system
 - Old job on new system
 - Data conversion
 - System administrator
- Conversion timetable
 - One function at a time
 - Parallel processing
 - Six to twelve months for total conversion

Training requirements

- Bookkeeping and accounting knowledge
- Computer literacy
- Conversion process for each module
- Operation of each module
- Backup procedures
- Operating system
- System administrator training

Profit, Productivity, and Technology

The 12 - Step Program for choosing the right financial information system

descriptions and employee names and tax information. With most systems, you can input this information at any time before your conversion date. There is normally a great deal of data to input, and you should spread this task over a reasonable period of time.

Once you have entered the reference data required for a module, you are ready to enter transactions. The first transactions that you will enter will be the balances as of your cutoff date. These will include items such as open accounts receivable transactions, unpaid vendor invoices, inventory balances and year to date employee earnings and withholding taxes. These balances should agree, of course, with those in your manual system. Once they have been entered, you can begin processing new transactions with the system.

The traditional wisdom is to operate both your old and your new system for a few months to make sure that everything is working. This process is called running in parallel. For many small companies, the staff and effort required to run parallel makes this approach impractical.

An alternative to parallel processing is to take a sample of historical transactions (a week or a month's worth) and run it through the system before your cutoff date. If everything checks out, you can purge this data and enter your beginning balances as of the cutoff date. If the system does not allow you to purge data easily, you can make a copy of the software in a different directory on your computer to use for testing.

Step 12: Keep your system alive

Once you have installed your packaged programs and used them for a while, you will probably want to make some modifications to make them fit better with the way in which you do business. You will also want to add peripherals to your system and get other packaged programs. As we mentioned earlier, you can expect to spend from five to ten times the original cost of your system over the three to five years after your initial installation. If you have selected and installed your system properly, these additional expenditures will be justified by the benefits that your system can provide to you.

If you are making custom modifications, you can expect to pay an hourly rate to your vendor or programmer to develop the specifications for these changes. You are responsible for clearly defining the changes to be made in reports, input screens and processing rules. You should then communicate these functional specifications to the programmer. He in turn should provide you with a detailed specification that shows the specific screen pictures, report layouts and data file structures necessary to implement the changes that you have requested. Once you have approved these detailed specifications, you should request your vendor to give you a fixed price bid for the changes.

During the specification phase, where the job is mainly one of communicating information, you should share the risk involved and the financial arrangement should be an hourly one. However, once the specifications have been completed, the programmer is in a much better position to estimate the time it will take to finish and test the program. He should bear the risk by offering a fixed price bid.

If you have followed the process described in this booklet, you will have a system that will be alive and well for many years.