

# **How to Determine if Your Organization Needs New Business Software**

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**Technology Group International**

## Introduction

One of the most difficult decisions any company must make is to determine when it needs to obtain new business software because it has simply outgrown its existing software. For most companies, this is an agonizing process. There are a number of reasons this is unpleasant. Some of the reasons we frequently hear regarding why organizations are reluctant to change their business software include:

- 1) We know our current system; although it is clearly not the best system around, at least we know it.
- 2) A new system would be way too expensive; we can just bring on more people and be fine with our current system.
- 3) Each department has their own system they have developed to work around the deficiencies in the existing system and we do not want to lose those capabilities.
- 4) Our people are too busy as it is and do not have the time required to successfully implement a new system.

While each of these seem like silly reasons for not replacing an existing system, they nonetheless represent significant issues to an organization that is “getting by” with its existing business software and struggling with the potential expense and resource constraints associated with a system’s replacement.

In this document, we will provide you with some basic guidelines regarding how you can help determine if you need to replace your existing business system. This information is detailed in the form of ten basic questions that you can answer regarding your current system. The answers you provide to these questions will clearly define for you whether or not your existing information systems are meeting your current business needs.

These questions accommodate and are applicable to small companies as well as very large organizations. The issues regarding an information system’s performance in meeting the requirements of the business are really no different in any business regardless of size or structure. The magnitude of the various issues is clearly different in a large organization compared to a very small one. The issues themselves, however, are no different if you are running QuickBooks or Peachtree; SAP/R3 or Oracle; or even a homegrown package.

If you can answer **yes** to two or more of these questions (i.e., score 20 points or higher), at the very least you have issues with your software. If you can answer **yes** to five or more of these questions (i.e., score more than 50 points), you are in serious need of replacing your existing business systems and should consider initiating a software selection project within your company.

## The Questions

1. Is your existing software more than 20 years old?
2. Do the users of your system manually enter the same information multiple times in order to process transactions through the system?
3. Does your existing business software consist of many compartmentalized smaller sub-systems which are then “integrated” through some other series of processes?
4. Do your users have off-line systems (typically spreadsheets or other small database applications) that they use to either do their jobs or to maintain information they need to function in their job?
5. Are standard business management reports taking a long time to run?
6. Do you have problems with inventory management (e.g., do you know what you have in inventory, where it is, and what it is worth)?
7. Are you seeing an ever growing number of user complaints regarding their ability to do their jobs in an efficient and timely manner?
8. Is your IT organization increasingly unable to fulfill requests for information in the desired format or time frame from either internal (employees) or external (customers, partners, etc.) sources?
9. Have your support costs risen (i.e., do you have adequate support resources and do you find yourself in a position in which external resources are required to provide support)?
10. Does your organization take full advantage of technologies such as the Internet and EDI?

## Is your existing software more than 20 years old?

First of all, from a general functionality perspective, there is nothing wrong with 20 year old software. Age itself really has nothing to do with whether software is any good or not. However, there are three very important aspects of software that do have a direct bearing upon the age of the software:

- Feature and Function
- Price and Performance
- On-Going Maintenance Costs

Twenty years ago, it was not uncommon for a 20 user business software package to cost in excess of \$200,000. The annual maintenance cost for such a system would typically run in the vicinity of \$40,000. Today, a 20 user system typically costs in the range of \$70,000, with annual maintenance in the \$15,000 range. Implementation costs would be expected to also be around \$70,000.

If you then look at the 5 year cost of ownership of your existing 20 year old system (neglecting any on-going support and customization costs) versus the 5 year cost of buying a new system (assuming the purchase costs and first year maintenance are both incurred in the first year with the new system), you get the following:

Year	Old System	New System	Cumulative Difference
1	\$40,000	\$85,000	- \$45,000
2	\$40,000	\$15,000	- \$20,000
3	\$40,000	\$15,000	+\$ 5,000
4	\$40,000	\$15,000	+\$30,000
5	\$40,000	\$15,000	+\$55,000

Thus, after 5 years, you are at about break even with the total cost of a new system (new software + 5 years maintenance + implementation costs) roughly equaling the annual maintenance cost of the old system. So, you cleverly ask, why implement a new system? This is where price and performance and feature and function come into play. For the \$70,000 cost of a new system, you are going to get a 10 to 100 fold increase in functionality in the areas of customer interaction (CRM, EDI), inventory control (WMS, RF, bar coding), manufacturing (MRP), and purchasing (supply chain management). This, in turn, will mean significantly enhanced productivity throughout your organization (see subsequent discussions on duplicate data entry, etc.).

## **Do the users of your system manually enter the same information multiple times in order to process transactions through the system?**

This is one of the classic signs of a system which no longer meets the needs of the business it is currently supporting. There are a variety of reasons why a system ends-up requiring the same information to be input multiple times by multiple people in multiple functional areas of the business. The most common cause, however, is that, over time, side bar “mini modules” were added to the system to perform some particular function. A classic example of this is EDI. There are many companies that use EDI because their customers require that they do so. In order to perform the various EDI transactions, however, the organization actually re-enters the information associated with the particular EDI transaction into either the EDI translation package or into their system (depending upon whether the transaction is an inbound or an outbound transaction).

The results of this activity are three fold. First, there is process inefficiency because the same data is being manually entered multiple times. This, in turn, means that the true cost of transacting business is increased because either incremental staff is required to key in the transactions or one or more individuals is operating at a reduced productivity level because they spend their time duplicating work.

Secondly, the process of manually keying in the same pieces of information multiple times into multiple systems significantly increases the probability of an error occurring somewhere due to a keying error. In this case, it is quite likely that the cost associated with the keying error itself is greater than the cost associated with the actual duplicate keying of the information by several orders of magnitude.

Finally, the multiple keying of information into various parts of a system means that there is a complete absence of data integration within the application. What this results in is either: (a) two different segments of the same organization look at the “same” information but see different data; or (b) additional time must be spent reconciling the data at some point in time in the future. We know of an organization that has three people spend the first 5 days of each month attempting to reconcile inventories because their receiving system and their inventory control system are not integrated. They spend nearly the equivalent of a man month each month reconciling inventory. In other words, they effectively have one full time equivalent person, from a cost perspective, simply reconciling inventory.

## **Does your existing business software consist of many compartmentalized smaller sub-systems which are then “integrated” through some other series of processes?**

One of the most common practices utilized by businesses as they go through their normal growth process is to simply buy needed new functionality via stand alone software packages which are then “integrated” into their existing software. Typically, this integration takes the form of batch (i.e., not interactive) programs which move data from one sub-system or application to another.

There are several problems with this approach. First, the technologies utilized by the different sub-systems tend to be different. This means that the cost to support the system is higher because internal resources must now exist to support each of the divergent technology platforms that your system encompasses. The second problem with this approach is that there is a lack of concurrency in the information in various portions of the system. For example, if the shipping portion of your system is not interactively updated through the other portions of the system, then individuals in customer service will not see the same information regarding the status of the order as would someone in the shipping area. This, in turn, precipitates multiple phone calls between the two segments of the organization as they attempt to define “where” an order really is in the process. Finally, there is a significant risk that the programs which are designed to update the information in various portions of the system will encounter an error which causes the program to terminate and not properly update the data in the system. As a result, users who might be unaware that the error occurred may potentially make improper decisions based upon the information available to them, which is now incorrect (or, at least, outdated).

The bottom line is that keeping multiple sub-systems synchronized from a data perspective is a process that ultimately:

- 1) Causes the organization increased costs
- 2) Establishes an environment in which different parts of the organization see different values for the same data at the same time
- 3) Creates a situation in which the potential for bad decisions to be made is highly elevated due to lack availability of current information
- 4) Reduce the ability to use advanced functionality in one area of the business due to the inability to obtain adequate information flow from another area of the business

## **Do your users have off-line systems that they use to either do their jobs or to maintain information they need to function in their jobs?**

Today, essentially every business utilizes some form of individual productivity aid (typically spreadsheets such as Excel and Lotus 1-2-3) as a routine part of their daily operations. In the ideal case, these tools automatically bring in data from the primary business system in use by the organization and then arrange it in such a manner that users are able to perform quick analysis of the information. In the worst case, this information is manually re-entered into the tool from multiple printed reports and then used for data storage and retrieval. In the later instance, this occurs because either the primary business system is incapable of putting the information from multiple reports into a single report or it is incapable of automatically downloading the information in a program readable format (e.g., comma delimited flat file).

If your organization finds itself engaging in the worst case practice outlined above, you have a very serious problem. This situation alone is sufficient to justify acquiring a new business system. The problems with this situation are numerous, but here are two of the highlights.

- 1) The probability of data re-entry error is extremely high. This leads to erroneous information content and, ultimately, to poor information content in support of decisions.
- 2) There is a sense of “ownership” on the part of the organization or individual who maintains this information from both a data and a process perspective. This, in turn, means that segments of the organization become isolated from one another from an information standpoint. The ultimate result is that there is duplicate maintenance of the same data going on in multiple segments of the organization. Moreover, the actual values for the same data elements are rarely, if ever, the same across the organization.

The net result of this activity is the creation of information and process “fiefdoms” throughout the organization. Such organizations ultimately become dysfunctional because an environment exists in which each segment of the organization represents a faction which is at war with other factions within the organization for control of both processes and information.

## **Are your standard business management reports taking a long time to run?**

When reports start running slow, there are usually only three possible causes:

- 1) The computer hardware you are utilizing is not adequately sized to handle the number of concurrent users on the system and generation of reports concurrently.
- 2) The amount of data you have that must be considered for inclusion on the report exceeds the information volume the system (hardware or software) was designed to handle.
- 3) An unknowing user just ran an extensive and unnecessary report such as a request to print the detailed sales history for the company for the last 10 years.

The problems created by items (1) and (3) can be solved with money: buying new faster hardware in the case of item (1) and buying new faster users in the case of item (3). If your problem is item (2), on the other hand, it is likely that you are going to need new business software. The reason for this is simply that item (2) is a software design issue. It is caused by the fact that either the software you are utilizing does not make use of a relational database management system (RDBMS) or it is not fundamentally designed to handle the volume of transactions you have now processed through the system.

Unfortunately, it is sometimes difficult to differentiate between problems caused by item (1) versus item (2). Here are some things you can do to try to determine the source of the problem:

- 1) Look to see if there is a known (or published) restriction to the number of transactions your system can handle. QuickBooks, as an example, publishes a restriction of X transactions, although it has been suggested that the number is actually closer to Y transactions.
- 2) Run the report when no one is on the system. If it is still slow, your problem is likely caused by item (2). This can be verified by checking out the CPU and Disk I/O (techie stuff) of your computer while the report is running. A Hardware problem is indicated if the CPU is near 100% utilized but the DISK I/O is well below 100%.
- 3) Determine which (if any) RDBMS the software uses. If it is not a commercially available RDBMS (like SQL Server, Oracle, DB/2, etc.) then item (2) is a likely problem.

## **Do you have problems with inventory management (e.g., do you know what you have in inventory, where it is, and what it is worth)?**

One sure fire way to determine that you need new business management software is to examine how you are doing relative to inventory management. If any of the following situations describes a condition that exists within your organization, then you absolutely have a problem with inventory management.

- 1) Your accountants or inventory control personnel spend days (or weeks) at the beginning of each month reconciling the actual month-end inventory (as defined by a stock status report) with the accounting book value of inventory.
- 2) Your customer service personnel cannot, with confidence in the data they see, inquire into inventory levels to answer questions customer questions on availability.
- 3) When you go to pick material for shipping or manufacturing, your warehouse personnel are more surprised to find the material where the system says it should be than to find that it is not there.
- 4) Whenever you do a physical inventory, there is collective organizational queasiness because there are significant concerns about just how inaccurate the inventory really is and how large the adjustment to the accounting value of inventory will be.
- 5) Customer service is constantly calling the warehouse to determine if you really have the desired quantity of a given product.
- 6) The personnel in the warehouse have their own sub-system which they use to actually tell them what they have in inventory and where it is located within the warehouse.
- 7) Your statistics on slow moving inventory, outages, under shipments, or order fill rates are poor compared to your industry's average.

A problem with inventory management exists within your organization if you recognize any of these symptoms. It is also quite likely that if you recognize any one of these issues, you will recognize the others as well. When an inventory management issue exists within an organization, it typically manifests itself across a wide range of operational segments of a business.

## **Are you seeing an ever growing number of user complaints regarding their ability to do their jobs in an efficient and timely manner?**

The level and severity of user complaints are good indicators of system problems within your organization. These complaints, however, need to be separated from the typical complaints about IT that exist in every organization (e.g., things like IT does not understand my business may be valid personnel issues, but they are **not** valid issues pertaining to the need for a new system).

Here are some typical types of complaints that are made by end-users that indicate that you might need to consider a new business system.

- 1) The system is extremely slow. It takes minutes just to navigate from one screen to another.
- 2) When attempting to engage in an activity, you need to go to one screen and manually write down a document number and then go to another screen and enter the document number you obtained from the first screen in order to perform the desired function.
- 3) A significant amount of time is spent on the phone attempting to get simple questions answered because system information is not readily available provide answers to these types of questions.
- 4) Individuals who pick material (for shipping or manufacturing) spend their time wandering around the warehouse looking for product because the material is not where the system says it should be.
- 5) The system does not allow a customer to have multiple ship-to locations tied to a single order from location.
- 6) There is a great deal of time spent within the accounting function attempting to reconcile inventory, payables, and receivables values.

These items represent just a small sampling of the types of user issues you will find when they are frustrated with their current system environment. As you can see from the types of questions illustrated above, issues that relate to the need for a new system are ones in which the primary driver is a lack of functionality within the current application software.

## **Is your IT organization increasingly unable to fulfill requests for information in the desired format or time frame from either internal or external sources?**

What this question is really asking is whether or not the backlog of requests for changes to your current information system within your IT organization is continuing to grow. Backlog within an IT organization is an indicator of the inability of the existing software to perform certain functions. It should be emphasized here that **every** IT organization should have **some** backlog of work. If they do not, then either you have an IT organization that is too large for your business or the requirements your customers are placing on your business have stopped evolving (highly unlikely). The question is not whether or not the IT organization has a backlog; it is whether that backlog is continuing to grow with each passing day.

Backlog growth is one of the first early warning indicators of a potential problem with the information systems in use by your organization. Backlog provides one of two key indicators regarding the viability of your current business systems.

This first indicator is represented by current month to prior month backlog ratio, as measured in man-hours of work required to eliminate the backlog entirely. A ratio of 1.0 means that your IT organization is able to make the necessary adjustments to your current system at the same rate that new requests are coming in from the user community. A ratio larger than 1.0 means that the IT group is falling behind (i.e., the number of hours required to eliminate the backlog is increasing with time). When this ratio gets to beyond 1.1 and stays there for more than 4 consecutive months, in the absence of a major shift in either internal or external business requirements, it is a sure sign of an impending problem with your current system.

**Have your support costs risen (i.e., do you have adequate support resources or do you find yourself in a position in which external resources are required to provide this support)?**

The second primary indicator of the viability of your current business system comes from the relative change in your incurred costs to provide support for your business systems within the IT organization. This is determined as follows current month this year to current month last year contract programming expenditure ratio, as measured in dollars spent.

Typically, when backlog begins to grow, organizations bring on additional contract programming resources to help get the work done. In this environment the backlog ratio may go down, but the contract programming expenditure ratio will get larger. As with the backlog ratio, if this ratio gets beyond 1.1 and stays there for more than 4 consecutive months, in the absence of some internal or external business requirement, there is an issue with the functional nature of your current system.

The issue with rising support costs is, obviously, that your organization is spending money to provide functionality which your existing system does not provide. At some point, it is appropriate to determine whether the costs associated with adding functionality to your existing system would be more appropriately spent on a newer system, with (hopefully) significantly enhanced functionality built-in and a more current technology platform which is both easier and less expensive to support.

## **Does your organization take full advantage of such technologies as the Internet and EDI?**

Like it or not, the Internet has revolutionized the way business is conducted, and will continue to do so for the foreseeable future. If your organization is not maximizing its use of this remarkable tool, then you are likely in a position in which you are extremely vulnerable to a clever competitor who does. The same can be said for EDI. The future belongs to the organization that can leverage these two technologies to simultaneously reduce its internal costs and improve its service to its customers.

If your existing system does not provide for a seamless methodology for integrating directly with the Internet and utilizing EDI, then it is very likely that you are not taking full advantage of the opportunities afforded by these technologies. Here are some basic questions that you can ask yourself to determine the extent to which you are utilizing EDI and the internet to a reasonable degree.

- 1) Does the organization have a web site that is more than a simple “electronic marketing brochure” for the company?
- 2) Can customers perform customer service related function over the internet:
  - a) Place an order
  - b) Check order status
  - c) Determine inventory availability
  - d) Check current A/R and aging
- 3) Can orders, order acknowledgements, advanced shipping notification (ASN) and invoices be transacted without any human intervention?
- 4) Can vendor purchase orders and the resulting acknowledgements and shipping notifications be handled without any human intervention?

If your organization is fully utilizing the Internet and EDI, then you should either be able to answer **yes** to each of these questions or have the capability within your existing system to perform such tasks. The “human intervention” portion of the questions is extremely important. There are a number of organizations which engage in these processes, but utilize an external system to do it. In these instances, information is manually re-keyed into the system. The net result is that essentially none of the cost benefit associated with electronic transaction of business is realized by these organizations.

## Summary

Making a decision to replace your existing business software systems is a difficult one. Replacing an existing system is always more difficult than keeping an existing one. However, if the short and long term needs of the organization are not being met by the existing software, then the organization will simply not be able to move forward in a cost effective manner without making the move to a new system. Hopefully, this document has provided you with three key pieces of information that will assist you in the determination as to whether or not replacing an existing business information system is warranted.

First, this document should have provided at least some basic guidance regarding the situations in which looking at replacing your existing information system would be appropriate. There are no clearly defined conditions that can demand the replacement of an existing system. What can be said, however, is that if an organization finds itself in a situation in which the answers to five or more of the situations presented here are **yes**, then the existing software being used by the company is largely failing to meet the current, forget the future, needs of the organization.

Secondly, this document should also have successfully demonstrated that, in a significant fraction of the cases, the five year cost of ownership of new software (excluding internal implementation costs) is roughly equivalent to the cost of a typical maintenance agreement with an existing software application over the same five year period. If an organization is in a situation in which external resources are necessary in order to provide the manpower required to meet support requirements of the existing software, then this cost equation becomes even more heavily tilted towards the efficacy of a new system.

Finally, through the use of measures such as the backlog and contract programming expenditure ratios, the organization should have some quantitative measures for determining whether system replacement is appropriate.

## ORGANIZATIONAL SCORE CARD

The below score card may be utilized by your organization in determining the state of your existing business software and your potential need for a new business information system.

Question	Y/N	Value	Score
1. Is your existing software more than 20 years old?		10	
2. Is the same information manually entered multiple times?		10	
3. Does your existing system consist of many smaller sub-systems which are then "integrated"?		10	
4. Do your users use off-line systems (like spreadsheets) to either do their job or maintain information for their job?		10	
5. Are standard business management reports taking a long time to run?		10	
6. Do you have problems with inventory management?		10	
7. Is the number of user complaints regarding their ability to do their jobs in a timely manner growing?		10	
8. Is your IT organization unable to fulfill requests for information in a timely manner?		10	
9. Have your support costs risen?		10	
10. Does your organization take full advantage of technologies such as the Internet and EDI?		10	
<b>Total Score</b>		100	

Additional software selection white papers and templates are available within the Software Selection Tool Kit section of Technology Group International's web site. These resources are available for download or via a free mail order CD.

## **About Technology Group International**

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- Enterprise Resource Planning (ERP)
- Distribution & Supply Chain Management (SCM)
- Manufacturing Resource Planning (MRP)
- Warehouse Management System (WMS)
- E-commerce
- Decision Support System (DSS)
- Business Intelligence (BI)
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