

Sage ERP | White Paper

## How to Choose a Manufacturing System



## Table of Contents

Sage ERP

<b>Introduction.....</b>	<b>3</b>
<b>Should Your Company Buy Manufacturing Software? .....</b>	<b>3</b>
<b>Can You Afford to Buy?.....</b>	<b>4</b>
<b>Calculating Consulting Costs.....</b>	<b>5</b>
<b>A Tale of Two Consultants .....</b>	<b>5</b>
<b>Can You Afford Not to Buy.....</b>	<b>6</b>
<b>Every Company is Different.....</b>	<b>6</b>
<b>Four Mistakes People Make When They Buy Manufacturing Software.....</b>	<b>8</b>
<b>Questions to Ask Your Software Supplier.....</b>	<b>8</b>
<b>Electronic Commerce .....</b>	<b>9</b>
<b>Questions to Ask Your Consultant.....</b>	<b>10</b>
<b>One Low Cost Option: Hosted Application Services .....</b>	<b>11</b>
<b>Questions to Ask Your Company .....</b>	<b>12</b>
<b>Six Reason Why New Manufacturing Systems Fail.....</b>	<b>12</b>

## Introduction

For over 25 years Sage has been helping businesses like yours achieve their goals by offering cost-effective, end-to-end solutions that are simple to use and span the diverse needs of midsized businesses across virtually every industry. Our experience has taught us that people need more than just product information; they also need other kinds of input to make sound accounting and manufacturing software decisions. And that's what this booklet is all about. We've distilled what we've learned from our many successful customers and have structured it to deliver useful information to:

- o People who are managing manufacturing manually and need to automate.
- o People who are using entry-level software and want to move up.
- o People who have old systems and are ready for new technology.

## Should Your Company Buy Manufacturing Software?

This simple test will tell you just how ready your company is to adopt a new manufacturing system.

### 1. Does your company currently use bills of material or recipes?

- o Yes. Go to question 2.
- o No. **Stop.** Most manufacturing companies rely on bills of material (BOMs) or recipes to track their material requirements. If you answered "no" to this question, you probably aren't in the market for manufacturing software; instead, a job shop package may be what you need. Check with your local consultant for more information on available job shop solutions.

### 2. Does your company currently have some kind of manufacturing software in place?

- o Yes. Go to question 3.
- o No. **Stop.** You face a serious competitive threat from other companies that are reaping the benefits of manufacturing systems. Read the rest of this guide and get started on an implementation plan today.

### 3. Has your company experienced huge growth or significantly altered its lines of business in the last three years?

- o Yes. **Stop.** Growth or other significant business changes mean that you're outgrowing your current systems. If your growth path is projected to continue, you need to consider new systems right away to ensure that your current system does not become obsolete.
- o No. Go to question 4.

### 4. Does your manufacturing software integrate seamlessly with your accounting software?

- o Yes. Go to question 5.
- o No. Go to question 7.

### 5. Is your manufacturing software more than three years old?

- o Yes. Go to question 6.
- o No. **Stop.** If your integrated system was chosen carefully within the last three years, it should be working just fine. Before proceeding with a new purchase decision, discuss your situation with the consultant who helped you implement your current system.

### 6. Is there a satisfactory upgrade available from your current software supplier?

- o Yes. **Stop.** Contact your software vendor to find out more about upgrading your system right away.
- o No. **Stop.** You need to find a new supplier with a more serious commitment to ongoing product development. Now is a good time to take a look at the products available in today's market.

### 7. Is your accounting software more than three years old?

- o Yes. Go to question 8.
- o No. **Stop.** Without complete integration of your manufacturing and financial systems, you won't get the full benefits of computerization. Blame and frustration will rule the day. Be sure to consider only those packages that can demonstrate full integration.

### 8. Is your manufacturing software an in-house package invented or developed by your internal programming/IT staff?

- o Yes. **Stop.** Your system was probably developed years ago, before there were so many excellent software packages to choose from. Upgrading your system now will eliminate the ongoing cost to maintain customized software. As custom systems age, maintenance gets more complicated and often more expensive. But be prepared for a little extra effort, because your IT group may oppose a packaged solution that wasn't developed internally.
- o No. **Stop.** Your old accounting system and nonintegrated manufacturing package are begging to be retired. The benefits of harnessing new technology can pay big dividends. The earlier you get started on an upgrade and conversion plan, the sooner you'll see results.

## Can You Afford to Buy?

The benefits of implementing a manufacturing system are well known and well-documented. But it still may be difficult to persuade the management of your company to part with hard earned profits for the new system you're proposing. Consider preparing a return on investment (ROI) analysis to help your company decide how much to pay for the new system. Start by categorizing your costs.

### Software costs

These include software purchase or lease, maintenance fees, and add-on products or packages required to adapt the system to your needs. These costs range from about \$5,000 to \$100,000 for purchase, with approximately 15 percent of the purchase price allocated for annual maintenance costs.

### Hardware costs

These include computers, components, networks and printers. Costs can be difficult to project until you make your software selection. You probably already have most of the hardware you'll need, but you may need to upgrade servers or storage devices to accommodate a new system. For each 25 users, plan on spending \$5,000 to \$15,000 to upgrade existing equipment, and \$50,000 to \$65,000 to start from scratch.

### Consulting costs

You'll want an experienced consultant to help you select and plan your system implementation. See page 8 for tips on choosing a qualified consultant. Fees vary regionally and depend substantially on your desire to "do it yourself" or to off-load excess work to an expert. Plan on 100 hours or more, with rates ranging from \$80 to \$180 per hour.

### Overtime costs

During implementation, you and your staff will have more work than usual. You may have to hire temporary employees to handle some administrative tasks or ask for overtime from your employees. Plan on ten to 20 extra hours per week per 25 employees served by the new system.

### Training costs

You'll need training to get people up and running on the new system. Good training is a logical investment in the success of the project since it can save many hours of expensive backtracking. Training costs are lower than ever, thanks to Internet "virtual" classrooms that reduce travel time and fit education into busy schedules. Plan for training to take between ten and 50 hours per employee, with an average cost of \$40 per hour.

## Calculating Consulting Costs

Consulting fees will depend on the requirements of the implementation, local pay scales, expertise and more. It's impossible to predict exactly how long your installation will take or how much it will cost. The list below gives you some ranges to consider.

You may have additional costs – and some savings – if your accounting and manufacturing systems are already automated. Data conversion may cost more, but analysis and training may cost.

Analysis of client needs	4 – 20 hours
Install network and applications	5 – 20 hours
Modify procedures for new system	2 – 5 hours per module
Design chart of accounts, customer files and vendor files	10 – 20 hours
Modify system reports	10 – 25 hours
Train clerical personnel	10 – 20 hours
Train system administrator	10 – 25 hours
Document modifications	5 – 10 hours per module

## A Tale of Two Consultants

Let's take the case of a company that installed a new system one year ago. They weren't very organized and they had lots of problems. They were busy, so they didn't allocate enough time to do research before they chose a product. They ended up choosing the first package they evaluated. It was a relatively inexpensive software package and the consultant promised it would run on their existing hardware. They subsequently spent \$10,000 in consulting fees trying to get it working. During this two-month process, employees were taken off task and the company paid an additional \$2,500 in overtime. But the system just wasn't getting off the ground. After losing \$20,000 in unrecoverable expenses, they started over.

After more diligent research, they selected a system costing \$15,000. A new server and network connection added \$7,500 to their costs, and the consultant fees were \$50,000 by the time the system was fully functional. While training costs added up to \$5,000, overtime needed during implementation was just \$500 because their consultant worked from an organized implementation plan.

With the system in place, the company began to see changes. Inventory shrinkage nearly disappeared from a previous rate of four percent, which saved this relatively small company \$55,000 in their first year. Two administrative people were redeployed to other departments, saving \$50,000, and overtime costs were reduced by \$15,000.

The purchasing department was resistant to the new system and didn't start using it to its full extent for at least six months. Still, at the end of a year, they had shaved a few percentage points off their costs and saved \$25,000 through bulk orders and reduced rush charges. The company is still getting used to the system, so they aren't fully taking advantage of all the features. And yet their return on investment in a single year has been more than 211 percent!

(Continued on next page)

Plus, their sales department reports that they are winning more bids now that they have accurate production cost information, enabling them to be more competitive.

Because the second consultant did his homework, this company will continue to benefit from new features and improvements in the software.

## Can You Afford Not to Buy?

If you're adding up your costs right now, they may seem huge. But to complete your ROI calculation, you'll also need to add up the savings your system will deliver. Results vary dramatically from one company to another, depending on objectives and work styles. But a good system will definitely deliver significant cost savings.

### Reduced inventory shrinkage

With the right tracking and improved accountability, a good system can help you keep track of inventory and prevent losses. As a result, more of your purchased inventory ends up in final goods. If you're an average manufacturer, plan on reducing shrinkage from your current rates to a rate of about one percent.

### Reduced cost of goods through improved purchasing

With better forecasting, you'll be able to plan your buying to avoid peak pricing, rush charges and small orders. Based on our customers' experience, and depending on the products you buy, component costs can be reduced by ten percent or more, rush charges can be cut as much as 90 percent, and shipping costs can be lowered by ten percent to 50 percent or more. Lower costs may also result in improved payment history for your company's credit report.

### Reduced labor costs

With better scheduling and more accessible data, you'll need fewer people to get the same work done.

Often, a new system can dramatically reduce administrative costs, while bringing overtime labor into check through improved schedules. Depending on the nature of the company and the current rates of overtime, labor savings range from five percent to 50 percent.

### Could your company do better?

Calculate your own ROI by adding up your savings and dividing it by your estimated costs. In our experience, most companies save ten to 30 percent on inventory holding costs. You can make this quick ROI calculation if you know the approximate value of your present inventory. You may be amazed to learn that many companies find that a new manufacturing system pays for itself in a matter of months.

## Every Company is Different

If you've worked for more than one manufacturing company, then you already know that each one is different. Different processes, different tracking systems, and different problems – all of these variations add up to the fact that you need a system tailored to your specific needs. There are so many available solutions that you could spend months looking at demos and still not see it all. You can narrow your search for a solution by defining your own company.

### Light Assemblers

Light Assemblers (or assembly manufacturers) create products by assembling or grouping components purchased from other manufacturers. Light Assemblers have very few requirements for extensive production scheduling or workflow management.

### Discrete Manufacturers

Discrete manufacturers make the same product over and over again. The discrete manufacturer depends heavily on forecasts to purchase raw materials at the right time and cost.

### Make-to-Order (MTO) Manufacturers

These manufacturers respond to customer demands by producing entirely new products, or

significant modifications to standard products. In this environment, accurate product definition and costing are important objectives.

#### Job Shop Manufacturers

These manufacturers rarely make the same objects over again. The job shop manufacturer will assign material costs and labor costs on a project-by- project basis without much repetition.

#### Process Manufacturers

These companies produce batches and typically involve mixtures and chemical processes that make estimating required materials and finished goods somewhat complex. They may produce the same product over and over again or they may mix custom batches on a project basis.

Manufacturing Needs by Company Type					
	Light Assembly	Discrete	MTO	Job Shop	Process
Bills of material	✓	✓	✓	*	✓
Component allocation		✓	✓	*	✓
Work orders		✓	✓	✓	✓
Material Requirement Planning (IRP I)		✓	✓	✓	✓
Light assemble	✓	✓			
Kitting	✓	✓	✓		
Routing		✓	✓	✓	✓
Manufacturing Resource Planning (MRP II)		✓	✓	✓	✓
Project accounting			✓	✓	
Cycle counting	✓	✓	✓	✓	✓
Serial/Lot tracking	✓	✓	✓		✓
Bin tracking		✓	✓		✓
*This depends on the nature of your business. While some job shop manufacturers will need these features, others will not.					

### Questions to Ask Your Software Supplier

As you narrow the field of software contenders, you'll begin examining the companies more closely to see how well they meet your needs. Consider asking these questions to weed out suppliers that won't fit with a long-term strategy for manufacturing excellence.

#### Are the standard accounting modules available for this package?

Look for General Ledger, Accounts Payable, Accounts Receivable, Purchase Orders, Sales Orders, and a very strong Inventory Control module as a minimum set. You may also want to ask each perspective supplier about the availability of additional modules such as Payroll, Fixed Assets, or other vertical modules.

#### Which manufacturing modules are available?

Light Assemblers should look for a product that offers features like BOMs, sales kits and

product configuration. Discrete manufacturers should look for Material Requirement Planning (MRP I) and Manufacturing Resource Planning (MRP II) in addition to support for BOMs. Make-to-Order and Job Shop manufacturers will likely need all of these features plus a method for estimating and tracking costs on a project-by-project basis.

#### **Do the accounting and manufacturing modules integrate completely?**

This is a tough question to answer. Just because the modules come from the same company doesn't mean they work together. The company may have acquired the manufacturing modules from another company, and they may not integrate smoothly. Alternatively, just because the modules come from two different companies doesn't mean they won't integrate fully. Some software companies provide open source code and programming standards for developers of add-on modules to follow. Seeing a product demo may be your only way of assessing the level of integration. Check to see that Bills of Material and Manufacturing Orders have solid integration with Inventory Control and Sales Orders. You should be able to maintain inventory items while defining BOMs, and configure orders based on BOMs during order entry.

#### **How does the system handle data collection?**

You will need to consider how well a system monitors your critical work areas. Can you monitor production if you're running at 100 percent capacity for your staff? Has inventory actually been received, and if so, are the counts reliable enough to forecast material requirements? Data collection ties into true manufacturing as well as accounting. How well you collect vital data determines your ability to forecast production information. Data collection is an important part of the total solution for a company that requires MRP II.

#### **What key features set this product apart from others?**

Before you tell the software supplier much about your business, find out what they think their product strengths are. You'll get a good feel for whether or not they design products for companies like yours.

#### **What is the R&D budget for the software supplier as a percentage of sales?**

A company that's not putting at least ten percent of sales revenue back into product development can't possibly keep pace with technology. You want to buy software from a supplier that's serious about having great products today and tomorrow.

#### **Does the supplier offer frequent updates and an upgrade path?**

Before you make a purchase, find out if your software publisher has a maintenance program in place that gives you access to frequent updates. Good software suppliers update their software frequently, making new features and bug fixes available to resellers and customers. Software is one of the few industries where you can upgrade your product to the newest, hottest version for a fraction of the full price. Imagine being able to go to a car dealership and have all the features of this year's model added to your existing car! With most products you have to buy an entirely new model or do without. A good software publisher will provide frequent upgrades at reasonable prices.

#### **Is software maintenance available?**

Before you make a purchase, find out if your software publisher has a maintenance program in place that gives you access to frequent updates. For a reasonable price, usually about 15 to 20 percent of the purchase cost, you should be able to get an annual maintenance contract that provides a continuous stream of product updates and improvements. This demonstrates that the developer has an ongoing commitment to the product and to your satisfaction.

#### **Does the system have the capacity to grow?**

If you're not sure how well a system will accommodate your company's needs as you grow, here are some key questions to help you find out. What are the maximum number of customers, vendors, BOMs or inventory items that are allowed? What is the maximum number of users that can be working with a particular application at the same time? Can the software be customized to meet the changing needs of a growing company?

#### **What kinds of reports does the system provide?**

Your system must be able to extract relevant information easily. A system using database files provides virtually unlimited reporting capabilities. Ask for samples of reports to see the system's

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### ***Four Mistakes People Make When They Buy Manufacturing Software***

#### ***1. Not doing their homework***

*You're already a step ahead of most people because you're reading this booklet. Most people don't have their objectives in hand before they buy.*

#### ***2. Misunderstanding the benefits of automation***

*Computers do not replace intelligence, judgment, hard work or productive employees.*

#### ***3. Ignoring hard-to-quantify benefits***

*It's hard to calculate your future gains due to good decisions made from information the system provides. But results can be dramatic.*

#### ***4. Passing the buck***

*Top management must be involved in the choosing and implementation of the system. A consultant's output is based on the quality of the input.*



reporting capability. In addition to standard reports, the product should allow non-programmers to design custom reports using industry-standard reporting tools.

#### **Is the system easy to use?**

Many buyers spend far too little time evaluating this aspect of the software. Yet ease-of-use will have a dramatic impact on the quality of your implementation. Poorly designed software leads to frustrated users who bypass the system or resort to manual “short-cuts.” If you want a system that delivers maximum productivity, focus on how easily your employees can use it.

You want a system that lets you enter information quickly and efficiently. Look for features such as full-screen editing, embedded help systems and clear prompts. Now that Microsoft® Windows® has become the most popular operating system, it is important to ensure that production data entry (particularly in sales orders and purchase orders) does not require excessive mouse use. If the operator’s hand must constantly move between the keyboard and the mouse, data entry can be too time-consuming.

You should also make sure the system can handle all the situations that will come up on a day-to-day basis. Is the sequence of steps to create a sales order simple and straightforward? Can you look up vendor information while you are in the middle of posting a line item on an invoice or purchase order? Can you search the item master file while you are creating a new manufacturing order? Can you add inventory items while you are in the middle of creating a manufacturing order?

### **Electronic Commerce**

While many companies are examining their Internet sales strategies, many are overlooking the roles that accounting, manufacturing and distribution play in this market revolution. Ideally, your accounting and manufacturing software should be ready for electronic commerce even if your company isn’t. Here’s what to look for:

- o A complete solution that seamlessly integrates accounting, manufacturing and Web-based activities in real time.
- o E-mail fields in customer and vendor information files so you can begin sending invoices, notifications and confirmations electronically.
- o The ability to publish any accounting or production reports in HTML (the standard Internet format) for publication on the Internet, or more importantly, for internal distribution on your corporate intranet. Many companies no longer distribute paper reports to managers.
- o The ability to execute payment electronically for payroll or accounts payable. You’ll see lower error rates, more control and lower transaction costs.
- o An interface to capture leads from the Internet and automatically convert them to customer records. Don’t waste time on duplicate data entry of electronic leads and transactions.

#### **How does the system handle data validation?**

This capability dictates how well the program prevents mistakes from getting into your system. The program should test for errors such as duplicate customers and vendors, incorrect item numbers, and unreasonable amounts and dates. Your system should notify the operator of unusually high quantities or unit prices for certain types of items and offer valid choices along with the notification message.

#### **What kind of documentation is supplied?**

The quantity and quality of documentation is an excellent guide to the quality of the software. Look for software suppliers who offer other support materials such as CD-ROMs, tutorials, training guides, videos, and technical reference manuals in addition to basic documentation. Clear, accurate and useful documentation takes time to produce. Software companies

that have a long-term commitment to their users tend to develop and provide outstanding documentation.

**What kind of training is available?**

As knowledgeable as your reseller may be, nobody knows more about how the software works and how to implement it in your plant than the people who wrote it. Ask whether there is a formal training course available for you and your staff.

**What kind of security does the system offer?**

The degree to which sensitive functions and reports can be safeguarded through a password protection capability will affect how the program rates in security. Ideally, you should be able to specify which operations can be performed by specific users at specific times. With a good system, you should be able to set it up so that your assembly technician cannot see costs on the BOMs, but your production staff can.

**How many people currently use this product?**

If the company you're buying from has already sold many units, they're probably doing something right. People vote with their checkbooks, and it's a good idea to give a popular product a serious look. A large install base is like an insurance policy for users. You can be sure that the product has stood the test of time, satisfied companies similar to your own and delivered good value. A large install base also generates additional products for you. If the product is popular, you'll find add-on software, worthwhile utilities, a training schedule with convenient dates and locations, and a large number of local dealers who can work with you.

**Don't buy futures!**

A salesperson's promise of future releases is sometimes not grounded in reality. Make sure the software you're buying has the features you need today.

## Questions to Ask Your Consultant

Consultants have special expertise – they've been through the process many times before and can help you save time and effort. A consultant can help you choose your software, install any needed networks or hardware, and help ensure the system is up and running by your target date.

Your ideal consultant is someone who has installed manufacturing systems at businesses similar to yours. You will benefit substantially from their expertise. You can also find good consultants through referrals at your professional club or organization – ask colleagues to share their experiences.

**Has the consultant installed manufacturing software at companies similar to yours?**

Ask about company size, number of employees and nature of the business.

**Will the consultant provide references?**

Ask for contact names so you can call these customers and learn about their implementations.

**Can the consultant provide a free trial version of the software?**

While a software demonstration can be helpful when you're in the process of evaluating your options, what you really need to see goes deeper than what 50 minutes of bells and whistles will show you. Trial software allows you to enter your own data and explore the features of the program. This is a limited use of the software and does require some effort on your part to investigate the product's capabilities.

**How are the consultant's fees structured?**

Find out up front how your consultant handles hours, services and billing. (See page 3 for more on figuring consulting costs).

**Can the consultant provide a complete service package?**

As part of your implementation, you'll need training, technical support and many other services. Look for a reseller who will work with you from start to finish. You don't want someone whose only focus is on selling software.

**What are the costs involved with adding more users or adding more modules for existing users?**

When you're running price comparisons, dig a little deeper than initial cost. In addition to considering maintenance and upgrade support and costs, think about how much you'll pay to add on more users. Some packages charge you less than other packages for all modules, but gouge you in the cost per number of users, while other companies are relatively inexpensive when it comes to adding seats, but charge quite a bit for additional modules.

**Who is responsible for technical support?**

At some point you will need technical support for your new system. Will you call the software manufacturer or the consultant? How much will technical support cost? Find out what the policies are for maintenance, upgrades and support. Get clear definitions up front. Ask your consultant what you can expect in support turnaround times. Some suppliers allow you to control your turnaround time by purchasing a support upgrade package.

**Does the consultant listen effectively?**

This question separates the true sales consultants from the peddlers. A true professional will not make recommendations for you without learning about your business and your objectives.

**Does the consultant communicate clearly?**

Avoid resellers who try to impress you with jargon and who immediately start talking about equipment and program features. Your focus during the interview should be on what applications the consultant can provide and how he or she can help you benefit from them – not on details.

**Do you think you can work with the consultant?**

You'll be working with the consultant over a period of weeks. You may even end up with a long-term relationship if the consultant helps change and extend your system as your company grows. Choose a consultant who is a good fit with your company's philosophy and culture. Trust your instincts if you don't feel right about the consultant. You need someone with whom you feel comfortable.

**One Low Cost Option: Hosted Application Services**

Application Service Providers (ASPs) host software applications on their servers and "rent" them to their customers via the Internet. Or another option is a software as a service (SaaS) provider that connects to your on-premise ERP – often referred to as a connected service.

**What are the benefits of using an ASP?**

An ASP can give you high-end business solutions at a fraction of what it would cost you to purchase hardware and software, implement a network infrastructure and maintain and upgrade these complex systems.

**What should I look for in an ASP?**

- o First-rate solutions and superior levels of customer service and support.
- o State-of-the-art software, hardware and network infrastructure.
- o An advanced system for data protection, backup and recovery.
- o Proactive detection of malicious code, viruses and system intrusion.
- o Service level agreements that clearly specify the levels of performance, consistency and availability.
- o Flexible subscription service – monthly, one-year and two-year agreements.
- o 24/7 customer support, technical support, regular maintenance and upgrades, and full backup and recovery capabilities.

Look for an ASP that can provide your business with infrastructure management and systems monitoring of your mission-critical applications. An effective ASP agreement will eliminate initial IT capital expenditures and lower your recruiting and training costs, thereby significantly reducing your total cost of ownership.

## Questions to Ask Your Company

There's never a great time to disrupt your business by implementing a new system. But if everyone's on board with the idea of change, you'll find smoother sailing as you get the system up and running. Consultants often complain that companies want a new system but don't want to put in any effort to achieve the goal. Even the best, most capable consultant with the most sophisticated software will still need sincere effort from you and your staff if the project is going to be a success.

### **Are you willing to accept change?**

How well will your engineering group take to a system that was created elsewhere, especially if you have been relying on your own proprietary system? You'll need buy-in, and you'll need to understand how well your new system will integrate into, or work with, any development tools they're already using.

### **Is someone in charge of each phase of the project?**

Consultants can't carry the entire load themselves when it comes to implementation. You'll need to assign a project champion from the top ranks (usually the CFO, CIO or Manufacturing VP), and a project leader from middle management. You may need to restructure work priorities during the selection and implementation phases to make sure your project leader has the bandwidth to get things done.

### **Is source code a worthwhile investment?**

Some people need source code and some do not. If you have a staff of in-house programmers and anticipate making extensive changes to the software, then be careful to choose a company that makes source code available. On the other hand, if your application is fairly standard and you need to be able to upgrade your software easily and inexpensively, then you should not pay for source code.

## Six Reasons Why New Manufacturing Systems Fail

### **1. A faulty inventory item numbering scheme**

Consider a company that has two sources for chips. Even though each supplier has its own part number for the item, the company didn't map out its own part numbering scheme properly. As a result, the item appears to be out of stock even though there are still chips on hand from the other supplier. There's a right and a wrong way to set up inventory control when you have more than one supplier. If the program you're using doesn't have multiple supplier capabilities, you won't be able to properly set up Inventory Control to reflect this. Make sure the system you are considering maintains a cross-reference between your internal part number and each supplier's part number.

### **2. Insufficient control of content for bills of material**

Every BOM needs to be entered correctly from the start, based on specifications received from engineering. Even if the BOM has all of the right components in theory, sometimes in practice quantities aren't exactly what they need to be and then people on the shop floor start to personalize as they assemble. It's critical that engineering and manufacturing communicate effectively over the correct structure of BOMs and that only qualified people are keeping BOMs up-to-date. Regardless of the size of your manufacturing operation, a robust security system will restrict unqualified people from using certain critical functions of the software.

### **3. Inaccurate inventory on hand**

One of the benefits of an integrated solution is that you eliminate redundancies in your system.

One of the drawbacks is that errors can be compounded. If your inventory on hand is miscounted from the start, the error will repeat itself throughout your system. And the last thing you want is to be forced to close down for several days to do a physical inventory in order to identify discrepancies and reset your on-hand quantities. Manufacturing systems that offer "net-change" physical inventory functions will make it easy to correct stock counts without having to halt production activities.

### **4. Lack of agreement between engineering and manufacturing**

Before implementing any system, it is absolutely essential that you reach an agreement

between engineering and manufacturing on your goals and how you're going to get there. It doesn't matter how sophisticated your software is if you don't have appropriate buy-in from these two departments. Work with your consultant to develop a thorough implementation plan. Make sure everyone in engineering, manufacturing, and management signs off on the plan before you begin installing software.

**5. Unrealistic expectations of what the system will be able to accomplish**

Know exactly what you want to accomplish with your new system. You wouldn't buy a Chevrolet to travel 200 m.p.h., nor would it make sense to pay a lot of money for a Lamborghini just to keep it in the driveway. Buying functionality you won't ever need is just a waste of money. Make a careful list of the functionality you really need, adding a few of those "would be nice" items. Award major points to manufacturing systems that have a built-in growth path, especially if you can test-drive advanced functions using your own familiar data.

**6. Failure to determine the company's needs in accounting, manufacturing, engineering and data collection**

It is vital that you spend time thoroughly evaluating your company's needs before choosing and installing any system. Get a complete review of the requirements in accounting, manufacturing, engineering and data collection. This is a mandatory step in the process – and one that cannot be skipped. Doing your homework in the planning stages will pay off ten-fold when it's time to connect all the pieces. Ask your reseller if consultation and training is available directly from the software supplier.

## About Sage North America

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