

# 10 Things You Must Consider When Buying Shop Control Software

*A Guide for Job Shops, Machine Shops  
and Make-to-Order Manufacturers*



shop**tech**™  
Software

## Introduction

Whether you are a job shop, machine shop, or make-to-order manufacturer, you share similar problems. Companies today are faced with increasing pressures from their customers, dealing with constant change, meeting customer's due dates, and scheduling the shop floor. At the same time, they are attempting to increase revenue and profitability.

In today's business climate, companies look to information technology to help improve their processes and gain a competitive edge.

Most systems have their heritage in the Material Requirements Planning (MRP) philosophy developed in the 1960s. This concept utilized computer power to calculate time-phased material requirements. It later evolved into MRPII promoted by APICS and Ollie Wight during the 1980s, and further evolved to the Enterprise Resource Planning (ERP) systems available today.

The original premise of all of these systems is that material planning is the center of the universe. The typical manufacturing system was designed with an MRP process at the heart of the system. The emphasis of such systems is on standard bills and routings and standard costs.

Job shops, machine shops, or make-to-order manufacturers have a different focus. To win business, you must provide accurate estimates and quotations to a demanding customer base. In many cases bills and routings are specific to a job and you must closely monitor actual costs versus the original estimate to ensure profitability.

If you are a job shop, machine shop, or make-to-order manufacturer, here are ten questions traditional manufacturing software vendors don't want you to ask. Before you invest in new software to run your business, you should carefully consider the following questions.

## Ease of Use

All software vendors say their product is easy to use, but how easy is it really? Trust your first impressions. Within a few minutes of the demo, you should be able to understand how the system would work in your environment. If the product is not easy to use then training will be more difficult and time-consuming. Employees are more likely to make mistakes. Your overall implementation time will be longer and therefore your company will be denied reaping the benefits of the new system until completed. It's not just about the speed of implementation, but on-going use. Employees will quickly stop using a system that's a hindrance and not a help.

### Ask:

- Are the screens easy to understand and free from clutter?
- Is the screen layout consistent throughout the system?
- Does the system match your business processes?
- Can you create parts, bills, orders etc with a minimum of data entry?
- Can you access information in summary and drill-down into the detail when required?

## Estimates and Quotation Management

It all starts with the estimate. The ability to estimate potential costs and to determine a fair selling price can make the difference between winning business and winning profitable business. However, creating a one-off detailed estimate can be very time-consuming considering that you may decide not to bid after all. When time is of the essence, your first estimate may be a rolled up summary of large buckets of labor/machine hours or material dollars. Or you may copy an estimate from a similar job and make adjustments accordingly. Some companies have custom-built applications using such tools as spreadsheets or Microsoft® Access® to create estimates. These applications may contain specific logic that is unique to your company and should be retained.

### Ask:

- Can you start with a summary quote and add more detail later?
- Can you easily copy information from existing quotes?
- Can you automatically send the quote by fax or email?
- Can you include CAD drawings and images with the quote?
- Can you adjust profit margins at each quantity break?
- Can you easily import quote data from external systems?

## Services and Support

One size does not fit all. The training and support needs of a 15-person job shop are going to be very different to that of a Fortune 500 company. It's important that the software vendor offers a variety of training and support services that can be customized to fit your unique needs and budget. It's important that the vendor offers a variety of training methods including on-site, classroom, and web-based. The vendor should also offer implementation and ongoing consulting services, to help you solve real-life business problems with your new system.

No one should expect any package software to address 100 percent of your needs. In these cases the vendor should offer customization services to bridge any gap that will undoubtedly be realized. The key here is that the vendor should provide you with the right amount and type of services to ensure a successful implementation, and not coerce you to buy services that you don't need.

For small shops, the vendor's help desk can be a lifeline in resolving problems and keeping your system running smoothly. Most vendors allow you to communicate with them in a variety of ways. Telephone via an 800 number, email, or fax. Hopefully, the problem can be resolved quickly by the Level 1 support. But we've all experienced call centers where you explain the problem to the first person you contact and they can't solve the problem, and pass you over to someone else. You end up explaining the problem repeatedly. Not only is this frustrating, but also wastes your valuable time. A better approach is the "touch and hold" method where the Level 1 technician retains responsibility for solving your problem, even if it's passed off to another group. With this approach, you only have to interact with one person until the problem is resolved.

### Ask:

- Does the vendor offer a variety of training methods to suit your needs and budget?
- Does the vendor offer comprehensive data conversion tools and services?
- Will the vendor provide you with a dedicated customer account manager?
- Does the vendor offer a variety of services including technical support, implementation, consulting, and customization?
- Does the vendor offer "generalists" or experts in functional areas e.g. accounting, scheduling etc.?
- Does the vendor offer different maintenance plans to suit your needs, or is it a flat rate for everyone?
- Does the Level 1 support take ownership of your problem until it's resolved?

## Scheduling and Shop Management

When a customer calls and wants to know the status of their job(s), it's important to have the information instantaneously available without having to go on the shop floor and see for yourself. Many companies are familiar with the manual visual scheduling tools such as cards, magnetic colored strips, or just writing on a whiteboard. Today, shop management software provides the same visual benefits of a scheduling board on the PC.

There are many different techniques for shop scheduling including forward/backward, finite/infinite including user defined "tie breakers" when multiple jobs are competing for the same resource. Another important feature is the "what-if" simulation that allows you to answer customer requests for promise dates. It's important to have the option of selecting the best method for your environment and not be forced to use a specific method that doesn't apply or suit your needs.

Viewing job status is only useful if the data collected on the shop floor is up-to-date and accurate. To get up-to-date job tracking and costing information and ensure that time is booked to the correct job, shop floor data collection equipment is an important addition to any system. The system you choose should be flexible to allow for multiple shop floor data collection methods, from manual timecards to data collection devices, scanners, and touch screens on a PC. Many shops want to move towards a paperless shop floor by allowing workers to view all the information they need on a computer screen instead of paper such as a list of all jobs scheduled on their work centers, work instructions, CAD drawings and images.

### Ask:

- Does the system provide multiple scheduling methods?
- Does the system allow for user defined "tie breakers"?
- Does the system provide "what-if" simulation?
- Can you view the load/capacity of your shop in visual format?
- Does the system provide for integrated shop floor data collection?
- Does the system support a paperless shop floor?

## Quality Management

Customers expect products manufactured to specification and delivered on time. With so much competition for every job coupled with slim margins, no manufacturer can afford to spend time and money on rework. An integrated quality system allows your company to easily collect and analyze data to identify production problems earlier in the production process thereby reducing rework, returns, and customer complaints.

Today, many companies require or prefer their suppliers to be ISO 9001 certified. Anyone that has been through the process knows that the amount of time required to pass an audit and achieve certification is significant. One of the most time-consuming aspects of certification is documenting your business processes. Your system forms the framework within which your business operates and is an integral part of your ISO 9001 certification process.

If the system contains pre-defined templates of each business process, then this can go a long way helping you create the necessary documentation required for certification.

### Ask:

- Is the quality module part of the core system or a third-party addition?
- Does the system automatically collect all quality data?
- Does the system schedule and track all preventative maintenance?
- Does the system help you identify and control potential problems before they affect due dates or quality ratings?
- Does the system help you create quality documents for ISO 9000 certification?

## Access to Information

Business owners want access to accurate, up-to-date information to help them make more informed business decisions. It is therefore important that your system allows you to access the information you need easily and in real-time. Today's systems capture and process a lot of data. However, unless that data can be transformed into information it's useless. The system should provide easy access to information via screens and reports. On the other hand, the amount of information can be overwhelming. It's therefore important for senior management to see the big picture and manage by exception, highlighting where there is a problem and then drilling down to the detail to examine the root cause.

Having access to management information is no use if you have to be chained to a desk to use it. Owners of job shops wear multiple hats. Most owners are involved in estimating, sales, engineering, as well as day-to-day operations. Owners need to be in front of customers. Imagine sitting in front of a customer and producing a quote, checking receivables, job status, inventory balances, and the latest promise dates. Technology exists allowing shop owners and employees to access their information from any remote location, just as if they were sitting in the office. This not only portrays a hi-tech image, but also can be a competitive advantage.

### Ask:

- Can you see information in summary and drill down the detail everywhere in the system?
- Can you manage your business by exception?
- Will the system alert you via email when an exception occurs?
- Does the system provide remote access from a variety of mobile devices?

## Implementation

A successful system implementation takes more than computer hardware and software installation. It takes qualified people. Unfortunately, many smaller shops just don't have the available resources to dedicate full-time to the implementation. In these cases the role of the software vendor is critical to a successful implementation.

Even with the best will in the world, many people don't have the motivation or expertise to get fit and lose weight. That's why they go to a personal trainer. The trainer develops a program and helps you stick to it to achieve your goals as well as providing extra motivation. The same applies to implementing a computer system. Companies don't always have the expertise in-house or get distracted by problems. Some companies hire an independent outside consultant, but this can be very expensive. You can't abdicate all of the responsibility for the implementation to the software vendor. However, the right assistance from the vendor can make the vital difference between success and failure.

### Ask:

- How long does a typical implementation take?
- Will the software vendor assign your company a dedicated account manager?
- Is the account manager compensated on your success or failure?

## References

Before making any significant investment, all sensible companies will do their due diligence and check out references. Reference checking should be the final stage of the evaluation, a confirmation that you are making the right choice. The software vendor should be able to point you to companies in your industry that make similar products, and are around the same size. If the vendor claims thousands of customers and cannot provide you with at least three companies that match your criteria, walk away!

Insist on talking to your counterpart at the reference company who will provide you with a greater understanding of the challenges and opportunities you may face when dealing with the vendor and during the implementation. The software vendor should provide you with a list of relevant references for you to phone or visit. If you decide on an on-site visit, make sure you are not chaperoned by the software salesman. The reference company is more likely to be forthcoming if the vendor's representative is not present.

**Ask:**

- Can the software vendor provide you with a list of references that are relevant to your company?
- Do you recognize the names of the companies on the list?
- Will the software vendor allow you contact the references without their representative being present?
- Would the reference company buy the software again?

**The Right Fit**

During the evaluation process, companies focus on finding the software product with the best fit. The reason companies buy a software package is that they don't want the expense and risk of building and maintaining their own. Here the 80/20 rule applies. If you have to modify more than 20 percent of the system to get it to fit your business, you have made the wrong choice. If you hear the vendor saying too many times, "It's coming in a future release" or "We have a work around for that," beware! If the software doesn't fit your business, your employees will soon start working outside the system with their own manual sub-systems and spreadsheets will proliferate. After all, the reason you chose an integrated system was to get away from that situation.

The right fit also means buying only what you need. How much of the product will you use? If you are buying a product that is focused on your industry then all the functionality should be relevant. Avoid buying a product that was designed to fit a broad spectrum of manufacturers. You will end up paying for modules or functionality that you'll never use.

Conducting a comprehensive evaluation of multiple systems can be daunting and time-consuming. It is therefore essential that you devote the majority of your time on the areas of the system that will have the biggest impact to your business. Today, accounting, parts, bills, inventory control are pretty much standard in all systems. Keep the demonstration focused on your specific needs and focus on the parts of the system that solve your problems and will help you gain a competitive edge. After all, no one has ever won more business because they had a great general ledger!

**Ask:**

- What percentage of the customer base are job shops, machine shops, or make-to-order manufacturers?
- How much of the product is really relevant to your business?
- Who determines the priorities for product development?
- Is the demonstration geared toward solving your specific needs?

**Vendor History and Background**

You want to ensure that the software vendor is focused on your business, and has a customer base of companies that have similar characteristics, processes, and problems. You want to ensure that the consultants from the software vendor have the experience of implementing the system in companies similar to yours, and have not come straight from completing an implementation at a process company.

You are buying the vendor's expertise, service, and support, not just their software. Does the vendor have a deep understanding of your industry and business issues? Not just the sales team, but the implementation consultants and senior management as well.

Remember, its people that provide services. Interview the personnel who will be actually working on your project. The vendor may have many good people, but will you have access to them? Speak to their senior management. Do they really understand the issues facing job shop, machine shop, or make-to-order manufacturers today, or do they just talk in general platitudes?

Your business system should help you run your business, not run you out of business. Feeling comfortable with your vendor is a key decision factor. After the dating game, you now have to get married and divorce can be expensive for both parties.

**Ask:**

- Can you talk directly with senior management, or are you relegated to the insulation layer of middle managers?
- What is the history of ownership of the software vendor?
- Is the software developed in the USA or abroad?
- Will the software vendor allow you interview the consultant supporting your implementation?

**Summary**

There are many reasons why implementations fail. Lack of management commitment, inadequate education and training, poor planning, not enough resources to name just a few, but there is a more basic reason—choosing the wrong system.

While large companies can absorb the cost of a failed implementation, small companies can be devastated by the wrong choice. Most job shops, machine shops, or make-to-order manufacturers are small, privately owned business, so it is essential that they make the right choice, the first time. Taking the time to ask the right questions and focus your evaluation on the things that matter will help ensure you make the best possible choice.

## About the Authors

Greg Ehemann and Rich Ehemann, Shoptech's founding partners, have been around job shops their entire careers. While working in a machine shop in Cincinnati, Ohio during the 1980's, Greg and his brother Rich were frustrated that they couldn't determine whether they were making or losing money on a job. Out of that frustration, the two brothers collaborated to develop a computer system to track actual costs and monitor profitability. They also experienced firsthand the need to better coordinate most of the other facets of running a job shop: estimating, scheduling, collecting time from the shop floor, purchasing, shipping, and even accounting.

Out of their experience with shops and their passion for computers came a software product and a company that was built from the ground up, a real American success story. Today, Greg and Rich Ehemann (the two Es of the E2 Shop System) are still involved in the day-to-day operations of the business.

Their passion is still evident as the E2 Shop System continues to be the most comprehensive ERP package on the market today. They have built Shoptech Software into a company that now has thousands of customers and five offices across North America.



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