
Getting Ready

AUDIT/ASSESSMENT I

This step gets at questions like these:

It takes too long to respond to competitors' moves. How can we get better and faster internal coordination, so that we can be more responsive?

We really want to improve our ability to manufacture; what should we do first?

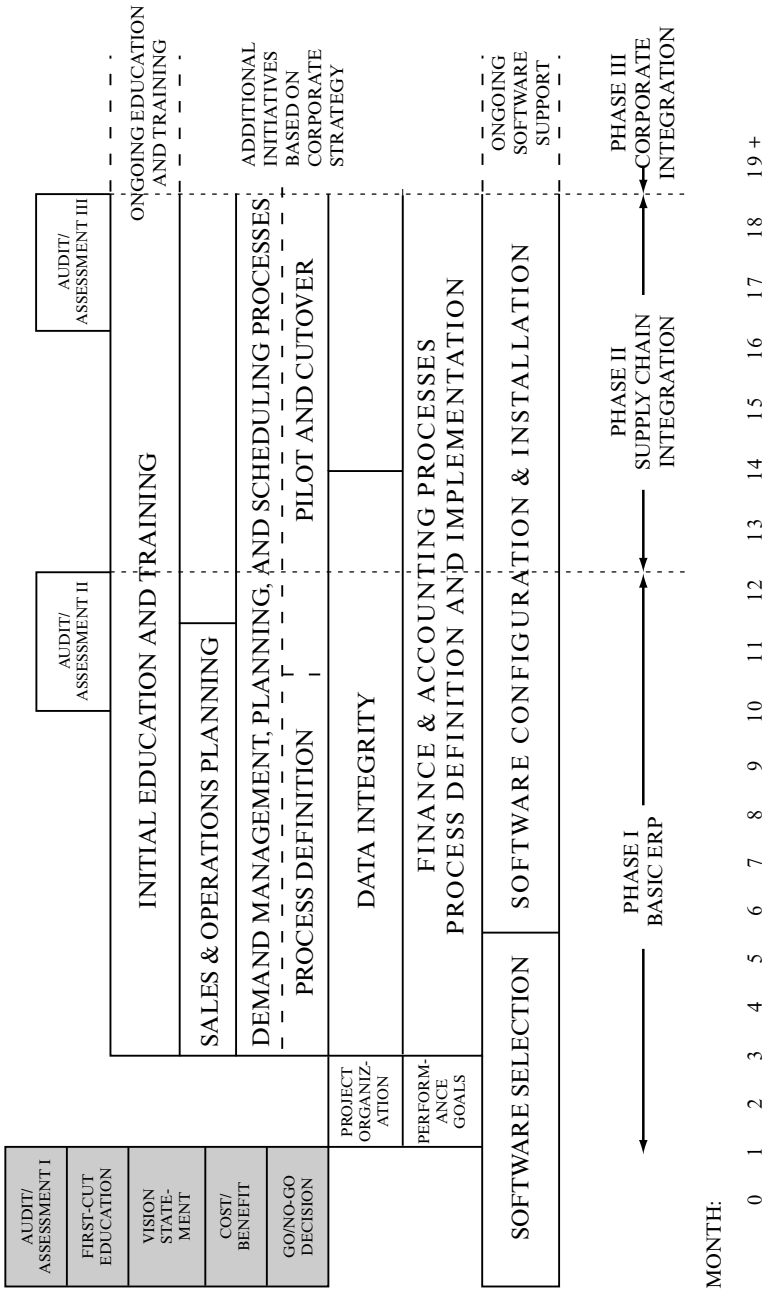
We have a real need to improve our financial reporting and want to do ES but can we do ERP too? Do we need to do ERP also?

We think we need ERP, but we also feel we should get started on re-organization. Can we do both at the same time?

We feel we're in big trouble. We hardly ever ship on time. As a result, customers are unhappy and we're losing market share; we have major cash-flow problems; and morale throughout the company is not good. What can we do to reduce the pain level, quickly?

We've just begun a major initiative with internet selling. However, we're still in order-launch-and-expedite mode, with backorders and material shortages like crazy. Some of us are convinced that we'll

Figure 5-1
ERP PROVEN PATH



never get really good with internet sales if we can't learn to control or predict our basic business.

What to do, and how to get started—these are the kinds of issues addressed by audit/assessment I. Its purpose is to determine specifically which tools are needed, and in what manner they should be implemented—company wide or fast track. For example, a company may need Enterprise Resource Planning and Enterprise Software badly. It may want to implement ERP on a company-wide basis, mobilizing virtually all departments and people throughout the total organization.

However, this may not be possible. Other time-consuming activities may already be underway, such as introducing a new product line, building a new plant, entering a new market, and/or absorbing an acquired company. Everything about ERP may be perfect, except for the timing. Although the company may be willing to commit the necessary dollar resources to the project, the essential resource of people's time and attention simply might not be available. "Turning up the resource knob" is not an option.

In this case, the decision coming out of audit/assessment I might be to implement Quick-Slice ERP into one or several major product lines now. (A Quick-Slice ERP implementation involves far fewer people, and it's almost always possible to free up a handful of folks for a focused project like Quick Slice.) The early "slices," perhaps more than just one or two, would be followed by a company-wide implementation later, after completion of the other time-consuming high-priority project(s).

Audit/assessment I and its companion, audit/assessment II, are critically important to ensure that the improvement initiatives to be pursued by the company:

- match it's true needs.
- generate competitive advantages in the short run.
- are consistent with the company's long-term strategy.

Participants in this step include the executives, a wide range of operating managers, and, in virtually all cases, an outside consultant(s) with Class A credentials in ERP/MRP II who is knowledgeable regarding Enterprise Software. It's quite rare that a given business unit

(company, group, division) possesses enough internal expertise and objectivity to put these important issues into focus.

The process is one of fact finding, identifying areas of consensus and disagreement, and matching the company's current status and strategies with the tools it has available for execution. The end result will be an action plan to move the company onto a path of improvement. Typically, the recommended action plan is presented in a business meeting with the executives and managers who've been involved to date. The purpose for this session is to have the action plan explained, questioned, challenged, modified as required, and adopted.

Another very important activity should take place in this meeting, and we call it consciousness raising. The presentation must establish the connection between the company's goals and the set of tools called ERP, and must outline how ERP can assist the company in reaching those goals and objectives (increased sales, reduced costs, better product quality, improved quality of life, enhanced ability to cope with change, etc.). The general manager and other key people can then see the real need to learn about ERP in order to make an informed decision about this potentially important issue. Learning about ERP is called first-cut education and we'll get into it in just a moment.

The time frame for audit/assessment I (elapsed time, not people-days) will range from several days to one month. Please note: This is not a prolonged, multi-month affair involving a detailed documentation of current systems. Rather, its focus and thrust is on what's not working well and what needs to be done now to become more competitive. (At this point, let's assume that the output from audit/assessment I has specified a company-wide implementation of ERP.)

FIRST-CUT EDUCATION

Key people need to learn about ERP before they can do a proper job of creating the vision statement and estimating costs and benefits. They need to learn five crucial elements:

1. What is ERP?
2. Is it for us? Does it make sense for our business?
3. What will it cost?

4. What will it save? What are the benefits we'll get if we do it the right way and get to Class A?

and finally, if the company does not have Enterprise Software, but needs/wants it,

5. What are the linkages with ES and should we do both at the same time?

Some individuals may go through first-cut education prior to audit/assessment. Either they will not be aware of the value of the audit/assessment step or may want to become familiar with ERP prior to audit/assessment. The sequence is not important; the critical issue is to make sure that both steps are done. A management team should make a decision to proceed with ERP (or any other major initiative, for that matter) only after doing both audit/assessment I and first-cut education.

Some companies attempt to cost justify ERP before they understand what it's all about. Almost invariably, they'll underestimate the costs involved in implementation. They'll feel ERP is part of the computer system to order material. Therefore, most of the costs will be computer related and already funded with ES or other software projects. As a result, the project will not be properly funded.

Further, these companies almost always underestimate the benefits. If they think ERP is a computer system to order material, then most of the benefits will come from inventory reduction. It then becomes very difficult to peg the ERP implementation as a high priority in the company. The obvious moral of the story: First, learn about it; then do the cost/benefit analysis.

Who needs first-cut education? For a typical company, these people would be:

- *Top management.*

The CEO or general manager and the vice presidents of engineering, finance, manufacturing, and the marketing/sales departments. Basically, this should be the leadership team of the company or business unit.

- *Operating management.*

Managers from the sales department, customer service, logistics, production, information systems, engineering, accounting, materials, and supply chain management. Sales manager, customer service manager, production manager, logistics manager, systems manager, production control manager, purchasing manager, engineering manager, accounting manager. Obviously, the composition of this group can vary greatly from company to company. In smaller companies, top management and operating management are often one and the same. Larger companies may have senior vice presidents, directors, and others who would need early education on ERP. The guidelines to follow are:

1. Don't send many more people through first-cut education than necessary, since the final decision to implement hasn't yet been made.
2. On the other hand, be certain to include all key people—informal leaders as well as formal—who'll be held accountable for both costs and benefits. Their goal is to make an informed decision.

Sometimes companies have a difficult time convincing certain senior managers, possibly the general manager, to go through a first-cut education process. This can be a very serious problem, and Chapter 7 will address it in detail.

VISION STATEMENT

In this step, the executives and operating managers who participated in first-cut education develop a written vision of the company's transformation: what will we look like and what new competitive capabilities will be in place following the implementation of ERP (and perhaps the ES/ERP combination). The statement must be written in a way that can be measured easily, so it'll be obvious when you get there.

This step is easy to skip. It's easy to feel that it takes more time and effort than it's worth. Not true. The reverse is actually the case: It's not much work, and it's *worth its weight in gold*. It's an essential part

of laying the foundation for a successful project, along with the cost/benefit step. In fact, without a clear vision of the future, no sane person would embark on the journey to work through the major changes required.

The vision statement serves as a framework for consistent decision making over the life of the project, and can serve as a rallying point for the entire company. More immediately, the vision statement will serve as direct input to downstream steps on the Proven Path: cost/benefit analysis; establishment of performance goals; and development of the demand management, planning, and scheduling processes. Input to the preparation of the vision statement includes:

1. The executives' and managers' knowledge of:
 - The company and its problems. (Where are we today?)
 - Its strategic direction. (Where are we going?)
 - Its operating environment. (What does the marketplace require?)
 - Its competition. (What level of performance would gain us a competitive advantage in that marketplace?)
2. The recommendations made in audit/assessment I.
3. What was learned in first-cut education.

Brevity is good; less is more. Ideally, the vision statement will consist of one page. Some great vision statements are little more than one paragraph. It should be visceral, and it should drive action.

Since it's a relatively brief document, it shouldn't take a long time to prepare. One or several meetings should do the job, with heavy involvement by the general manager. However, if the vision is not clear and accepted by the leadership, or if it is not aligned with the company's strategy, don't go further. Remember, if the team doesn't know where they are going, everyone will work hard in different, and often conflicting directions.

One last point: Don't release the ERP vision statement quite yet. Remember, you haven't yet made a formal go/no-go decision. That'll come a bit later.

COST/BENEFIT ANALYSIS

Establishing the costs and benefits of an ERP project is essential. Here are some reasons why:

1. *High priority.*

Job 1 is to run the business. Very close to that in importance should be implementing ERP. It's very difficult to keep ERP pegged as a very high priority if the relevant costs and benefits have not been established and bought into. If ERP doesn't carry this high priority, the chances for success decrease.

2. *A solid commitment.*

Implementing ERP and ES means changing the way the business is run. Consequently, top management and operating management must be committed to making it happen. Without a solid projection of costs and benefits, the necessary degree of dedication may not be attained, and the chances for success will decrease sharply.

3. *One allocation of funds.*

By identifying costs thoroughly and completely before implementation, the company has to process only one spending authorization. This avoids repeated "trips to the well" (the board of directors, the corporate office, the executive committee) and their attendant delays during the life of the project. This factor leads some companies to combine ERP and ES into one project.

The people who attended first-cut education should now develop the cost/benefit study. Their objective is to develop a set of numbers to use in deciding for or against ERP. Do not, under any circumstances, allow yourselves to skip this step. Even though you may be convinced that you must do ERP and its benefits will be enormous, it's essential that you go through this process, for the reasons mentioned above. To do otherwise is like attempting to build a house on a foundation of sand.

Let's first focus on the likely areas of costs and benefits. After that, we'll work through several sample cost/benefit analyses.

Costs

A good way to group the costs is via our ABC categories: A = People, B = Data, C = Computer. Let's take them in reverse order.

C = Computer.

Include in this category the following costs:

1. New computer hardware necessary specifically for ERP or ES.
2. ES software for a combined ERP/ES project, and possibly supply chain bolt-ons for either ERP/ES or ERP only.
3. Systems people and others to:
 - Configure and enhance the ES software.
 - Install the software, test it, and debug it.
 - Interface the purchased software with existing systems that will remain in place after ERP and ES are implemented.
 - Assist in user training.
 - Develop documentation.
 - Provide system maintenance.

These people may already be on staff, may have to be hired, and/or may be temporary contract personnel. Please note: These costs can be very large. Software industry sources report cost ratios of up to 1:8 or more. In other words, for every dollar that a company spends on the purchased software, it may spend *eight dollars* for these installation activities.

4. Forms, supplies, miscellaneous.
5. Software maintenance costs. Be sure to include the any expected upgrades of the new software here.
6. Other anticipated charges from the software supplier (plus perhaps some contingency money for unanticipated charges).

B = Data.

Include here the costs involved to get and maintain the necessary data:

1. Inventory record accuracy, which could involve:
 - New fences, gates, scales, shelves, bins, lift trucks, and other types of new equipment.
 - Mobile scanners on lift trucks to read bar codes on stock.
 - Costs associated with plant re-design, sometimes necessary to create and/or consolidate stockrooms.
 - Cycle counting costs.
 - Other increases in staffing necessary to achieve and maintain inventory accuracy.
2. Bill of material accuracy, structure, and completeness.
3. Routing accuracy.
4. Other elements of data such as forecasts, customer orders, item data, work center data, and so forth.

A = People.

Include here costs for:

1. The project team, typically full-time project leader and also the many other people identified with individual segments of the business.
2. Education, including travel and lodging.
3. Professional guidance.
4. Increases in the indirect payroll, either temporary or ongoing, not included elsewhere. Examples include a new demand manager or master scheduler, additional material planning people, or another dispatcher. For most companies, this number is not large at all. For a few, usually with no planning function prior to ERP, it might be much higher.

These are the major categories of cost. Which of them can be eliminated? None; they're all essential. Which one is most important? The A item, of course, because it involves the people. If, for whatever reason, it's absolutely necessary to shave some money out of the project budget, from where should it come? Certainly not the A item. How about cutting back on the C item, the computer? Well, if you absolutely have to cut somewhere, that's the best place to do it. But why on earth would we say to cut out computer costs with the strong ES linkage with ERP?

The answer goes back to Chapter 1—installing ES without the proper ERP demand management, planning and scheduling tools will gain little. Many companies have had decent success without major computer or information system changes by working hard on their ERP capability. Obviously, we recommend that you do both. But, if there is a serious shortage of resources, do the planning systems first and automate the information systems later. Later in this chapter, we'll show you an example of the costs of the full ERP/ES combination and also ERP alone.

Companies are reporting costs for the total ERP/ES installation over \$500 million for a large multinational corporation. In our ERP/ES example, the company is an average-sized business unit with \$500 million in sales and about 1000 people, and the projected costs are over \$8 million to do the full job. This number is not based on conjecture but rather on the direct experience of many companies. Our sample company doing ERP alone (no ES, a much less intensive software effort) shows considerably lower costs, but still a big swallow at \$3.9 million. These are big numbers; it's a big project.

Benefits

Now let's look at the good news, the benefits.

1. *Increased sales*, as a direct result of improved customer service. For some companies, the goal may be to retain sales lost to aggressive competition. In any case, the improved reliability of the total system means that sales are no longer lost due to internal clumsiness. ERP has enabled many companies to:

- Ship on time virtually all the time.

- Ship in less time than the competition.
- Have their sales force spend their time selling, rather than expediting shipments and making excuses to customers over missed shipments.

In short, ERP can represent a significant competitive weapon. Surveys of ERP-using companies¹ have verified improved customer service gains of 15 percent for all respondents; 26 percent for the companies who identified themselves as Class A. For most companies, better customer service means more sales.

2. *Increased direct labor productivity*, resulting from the valid, attainable schedules which ERP can enable companies to have. Productivity is increased via:

- Providing matched sets of components to the assembly areas, thereby eliminating much of the inefficiency and idle time often present.
- Reducing sharply the amount of expediting, lot splitting, emergency changeovers, short runs, and so forth in the fabrication areas.
- Requiring much less unplanned overtime, because the forward visibility is so much better.

Survey results show respondents reporting an average productivity gain of 11 percent; the Class A users got 20 percent. Think of the value to the bottom line of that kind of productivity gain!

3. *Reduced purchase cost*. ERP provides the tools to give suppliers valid schedules and better forward visibility. Once the customer company gets out of the order-launch-and-expedite mode, its suppliers can produce the customer's items more efficiently, at lower cost. A portion of these savings can be passed back to the buying company to be used either for increased profits or reduced product pricing which can mean increased sales and profits.

Further, valid schedules can free the buyers from a life of expediting and paper shuffling, so that they can do the important parts of their jobs (sourcing, negotiation, contracting, value analysis, cost re-

duction, etc.). Therefore, these savings don't come solely from lower prices but rather from reducing *total purchase costs*. Survey results: Companies report an average reduction in total purchased costs of 7 percent; the Class A companies got 13 percent. In many companies, the single largest financial benefit from ERP comes from purchase cost reduction.

4. *Reduced inventories*. Effective demand management, planning, and scheduling result in valid schedules. Valid schedules mean matched sets of components, which means making the products on schedule and shipping them on time. This typically results in lower inventories at all, or at least most, levels—raw material, work-in-process, finished goods.

For most companies, the four benefit areas identified above are the big ones. However, there are other benefits that are potentially very significant and should not be overlooked. They include:

5. *Reduced obsolescence*, from an enhanced ability to manage engineering changes, better forward visibility, and an overall smaller risk of obsolescence due to lower inventories in general. This is often a hidden cost at most companies and no one likes to focus on the stuff that is sold at discount or thrown away. However, it can be very large and certainly requires attention.

6. *Reduced quality costs*. Valid schedules can result in a more stable environment, which can mean less scrap. Eliminating the end-of-the-month lump, where perhaps 75 percent of the shipments go out in the last 25 percent of the month, can lead to reduced warranty costs.

7. *Reduced premium freight*, both inbound, by having a better handle on what's needed, and outbound, by being able to ship on time. Many companies are delighted when they can air express a shipment to fulfill a customer order without thinking about the money that they could have saved with an on-time land shipment.

8. *Elimination of the annual physical inventory*. If the inventory numbers are accurate enough for ERP, they'll be more than good enough for the balance sheet. Many Class A and B companies don't take annual physical inventories. This can be a substantial savings in

some companies. It can include not only the costs of taking the inventory itself but also the costs of disrupting production, since many companies can't produce while they count.

9. *Reduced floor space.* As raw material, work-in-process, and finished inventories drop sharply, space is freed up. As a result, you may not need to expand the plant or build the new warehouse or rent more office space for some time to come. Do a mental connection between ERP and your building plans. You may not need as much—or any—new brick and mortar once you get really good at manufacturing. Don't build a white elephant.

10. *Improved cash flow.* Lower inventories mean quicker conversion of purchased material and labor costs into cash.

11. *Increased productivity of the indirect workforce.* ERP will help not only the direct production associates to be more productive but also the indirect folks. An obvious example is the large expediting group maintained by some companies. Under ERP, this group should no longer be needed, and its members could be absorbed into other, more productive jobs.

Another aspect of this, more subtle and perhaps difficult to quantify, is the increased productivity of the supervisors and managers. That includes engineers, quality control people, production supervisors and managers, vice presidents of marketing, and let's not forget about the guy or gal in the corner office—the general manager. They should all be able to do their jobs better when the company is operating with a valid game plan and an effective set of tools to help them execute it.

They'll have more fun, also. More satisfaction from a job well done. More of a feeling of accomplishment. That's called quality of life and, while it's almost impossible to quantify that benefit, it may be the most important one of all.

Responsibility

A question often asked is: "Who should do the cost/benefit analysis? Who should put the numbers together?" First of all, it should not be a one-person process—it's much too important for that. Second, the process should not be confined to a single group. Let's look at several ways to do a cost/benefit analysis:

Method 1: Middle management sells up.

Operating managers put together the cost/benefit analysis and then attempt to sell the project to their bosses. If top management has been to first-cut education, there should be no need for them to be sold. Rather, they and their key managers should be evaluating specifically how ERP will benefit their company and what it'll cost to get to Class A.

This method is not recommended.

Method 2: Top management decree.

The executive group does the cost/benefit analysis and then decrees that the company will implement ERP. This doesn't allow for building the kind of consensus and teamwork that's so important.

This method is not recommended.

Method 3: Joint venture.

This is the recommended approach. The cost/benefit analysis should be done by those executives and managers who'll be held accountable for achieving the projected benefits within the framework of the identified costs. Here's how to do it:

1. A given department head, let's say the manager of sales administration and customer service, attends first-cut education.
2. The vice president of the sales and marketing department attends first-cut education.
3. Upon returning to the company, both persons do some homework, focusing on what benefits the sales side of the business would get from a Class A ERP system, plus what costs might be involved.
4. In one or several sessions, they develop their numbers. In this example, the most likely benefit would be increased sales resulting from improved customer service, and the biggest cost elements might be in education and training.
5. This process is also done in the other key functional areas of the business. Then the numbers are consolidated into a single state-

ment of costs and benefits in all of the key areas of the business (finance, manufacturing, logistics, product development, etc.).

Please note the participatory nature of the joint venture approach. Since both top management and operating management are involved, it promotes consensus up and down the organization, as well as cross functionally. We've found it to be far better than the other approaches identified above.

A word of caution: Be fiscally conservative. When in doubt, estimate the costs to the high side and the benefits low. If you're not sure whether certain costs may be necessary in a given area, include them. Tag them as contingency if you like, but get 'em in there. There's little risk that this approach will make your cost/benefit numbers unattractive because ERP is such a high payback project. Therefore, be conservative. Don't promise more than you can deliver.

We'll give you an example of the costs and benefits to illustrate the potential. You know that your company will have different numbers, but we want to show that a conservative approach still gives big savings. Note that the dramatic savings that are shown are still VERY conservative.

Examples of Cost/Benefit Analysis

To illustrate the process, let's create a hypothetical company with the following characteristics:

Annual sales: \$500 million

Employees: 1000

Number of plants: 2

Distribution centers: 3

Manufacturing process: Fabrication and assembly

Product: A complex assembled make-to-order product, with many options

Pretax net profit: 10 percent of sales

Annual direct labor cost: \$25 million

Annual purchase volume (production materials): \$150 million

Annual cost of goods sold: \$300 million

Current inventories: \$50 million

Combined ERP/ES

Let's take a look at its projected costs and benefits both for a combined ERP/ES implementation and then for an ERP only project. First, a warning:

Beware! The numbers that follow are not your company's numbers. They are sample numbers only. Do not use them. They may be too high or too low for your specific situation. Using them could be hazardous to the health of your company and your career.

With that caution, let's examine the numbers. Figure 5-2 contains our estimates for the sample company. Costs are divided into one-time (acquisition) costs and recurring (annual operating) costs . . . and are in our three categories: C = Computer, B = Data, A = People. Note that we have not tried to adjust the payout period or the rate of return for the obvious tax consequences of expenses versus capital. This is for simplicity (but also recognizes that the great majority of the costs are current expenses, and that expenses considered as capital investment represent a relatively small number). You may want to make the more accurate, tax-sensitive calculation for your operation.

These numbers are interesting, for several reasons. First, they indicate the total ERP/ES project will pay for itself in seven to eight months after full implementation.

Second, the lost opportunity cost of a one-month delay is \$1,049,250. This very powerful number should be made highly visible during the entire project, for several reasons:

1. It imparts a sense of urgency. ("We really do need to get ERP and ES implemented as soon as we can.")
2. It helps to establish priorities. ("This project really is the number two priority in the company.")
3. It brings the resource allocation issue into clearer focus.

Regarding this last point, think back to the concept of the three knobs from Chapter 2—*work* to be done, *time* available in which to

Figure 5-2
Sample Cost/Benefit Analysis: Full ERP/ES

<i>COSTS</i>			
<i>Item</i>	<i>One Time</i>	<i>Recurring</i>	<i>Comments</i>
<i>C- Computer</i>			
Hardware	\$400,000		Costs primarily for workstations.
Software	500,000	\$75,000	Can vary widely, based on package.
Systems and programming	2,500,000	200,000	Adapting the software to your company, and training in its use. These costs are pegged here at 5 times the software purchase cost.
<i>B - Data</i>			
Inventory record accuracy	700,000	100,000	Includes new equipment and added cycle counters.
Bill of material accuracy and structure	200,000		Bills will need to be restructured into the modular format. Experienced engineers will be needed for this step.
Routing accuracy	100,000		
Forecasting	200,000	100,000	Full time person for Sales forecasting. Needs to come on board early.
<i>A- People</i>			
Project Team	1,200,000		Six full-time equivalent people for two years.
Education	800,000	100,000	Includes costs for education time and teaching the new ES interactions to the organization.

**Figure 5-2
Continued**

<i>COSTS</i>				
<i>Item</i>	<i>One Time</i>	<i>Recurring</i>	<i>Comments</i>	
Professional guidance	400,000	50,000	4 days per month during installation.	
SUB-TOTAL	\$7,000,000	\$725,000		
Contingency 15%	\$8,050,000 1,050,000	\$834,000 109,000	A conservative precaution against surprises.	
TOTAL	\$9,100,000	\$943,000		
<i>BENEFITS</i>				
<i>Item</i>	<i>Current</i>	<i>% Improvement</i>	<i>Annual Benefits</i>	<i>Comments</i>
Sales	\$500,000,00	7% @ 10%	\$3,500,000	Modest improvement due to improved product availability at the profit margin of 10%.
Direct labor productivity	25,000,000	10%	2,500,000	Reductions in idle time, overtime, layoffs, and other items caused by the lack of planning and information flow.
Purchase cost	150,000,000	5%	7,500,000	Better planning and information will reduce total purchase costs.
<i>Inventories</i>				<i>One time cash flow:</i>
Raw Material and WIP	25,000,000	10% @ 15%	380,000	2,500,000

continued

**Figure 5-2
Continued**

<i>Inventories</i>				<i>One time cash flow:</i>
Finished goods	25,000,000	30% @ 15%	1,130,000	7,500,000
Obsolescence	500,000	30%	150,000	Conservative savings.
Premium freight	1,000,000	50%	500,000	Produce and ship on time reduces emergencies.
SUB-TOTAL			\$15,660,000	\$10,000,000 One time cash flow.
<i>Less costs for:</i>				
Contingency		15%	-2,349,000	1,500,000
Recurring			-720,000	
NET ANNUAL BENEFITS			\$12,591,000	\$8,500,000 One time cash flow.
Cost of a one month delay (Total /12)				\$1,049,250
Payback time (One Time Cost/monthly benefits)				7.7 months
Return on investment (Annual benefits/ One Time Costs)				193%

do it, and *resources* that can be applied. Recall that any two of these elements can be held constant by varying the third.

Too often in the past, companies have assumed their only option is to increase the time. They assumed (often incorrectly) that both the work load and resources are fixed. The result of this assumption: A stretched-out implementation, with its attendant decrease in the odds for success.

Making everyone aware of the cost of a one-month delay can help companies avoid that trap. But the key people really must believe the numbers. For example, let's assume the company's in a bind on the project schedule. They're short of people in a key function. The choices are:

Figure 5-3
Projected Cash Flow from ERP/ES

<i>Year</i>	<i>Annual</i>	<i>Cumulative</i>	<i>Comments</i>
1	– \$6,440,000	– \$6,440,000	80% of onetime costs
2	– 1,610,000		Remainder (20%) of one-time cost
	– 417,000		6 months of recurring cost
	+ 5,036,400		40% of annual benefit
	+ 2,125,000		25% of inventory reduction
	<u>+ \$5,134,000</u>	– \$1,306,000	
3	– 834,000		Annual recurring cost
	+ 12,591,000		Gross annual benefits
	+ 6,475,000		
	<u>+ 18,233,000</u>	<u>+ \$16,926,000</u>	Balance 75% of inventory reduction
			Total cash flow at end of year 3

1. Delay the implementation for three months. Cost: \$3,147,750 (\$1,049K x 3).
2. Stay on schedule by getting temporary help from outside the company (to free up the company's people to work on ERP and ES, not to work on these projects themselves). Cost: \$300,000.

Few will deny \$300,000 is a lot of money. But, it's a whole lot less than \$3,147,750. Yes, we know this is obvious, but you would be amazed at how many companies forget the real cost of delayed benefits.

So far in this example, we've been talking about costs (expenses) and benefits (income). Cash flow is another important financial consideration, and there's good news and bad news here. First, the bad news.

A company must spend virtually all of the \$8 million (one-time costs) before getting anything back. The good news: Enormous amounts of cash are freed up, largely as a result of the inventory decrease. The cost/benefit analysis for the total effort projects an in-

ventory reduction of \$10 million (10 percent of \$25 million raw material and work in progress and 30 percent of \$25 million in finished product). This represents incoming cash flow. (See Figure 5-3 for details.) The company does have negative cash flow in year 1 since most costs occur (as with virtually every project) before savings materialize. However, while the cumulative cash position is still negative at the end of year 2, the project will have generated over \$5 million of cash for that year. By year 3, you are generating cash in a big way.

How many large projects has your company undertaken that have no cash impact in the second year with full savings in the third? We bet not many. For our example company, ERP and ES appear to be very attractive: An excellent return on investment (193 percent) and substantial amounts of cash delivered to the bank.

ERP Only

Now, what about a company that separates doing ERP only? Figure 5-4 shows a possible cost and benefits analysis for ERP by itself. Although each situation is wildly different, you can make a rough assumption that the ERP only numbers are additive to an ES project that has come before or will come after ERP.

What's exciting about this ERP only analysis is the payout and cash flow are as attractive as the ERP/ES total effort. Certainly, the numbers on both sides of the cost/benefit ledger are smaller but equally attractive. The project pays out in 7 months with a 170 percent rate of return. If you can find a better investment, go for it. But remember that this one will continue to return \$553,000 each year in savings along with the one-time inventory cash savings of \$4,500,000.

Please note that the benefit numbers are larger for ERP/ES than for ERP alone. The major difference between doing ERP and ES together or doing just ERP is the enhanced speed and accuracy of information flow when using an ES. Every decision from forecasting to sales to production will be more accurate and faster and will thus generate added benefits.

However, you can still have an impressive change in your business with ERP even with a non-integrated information system. We have assumed that the ERP project would fund one of several attractive supply chain software packages available but this would be a stand-alone assist to the forecasting/planning effort. There may be some

Figure 5-4
Sample Cost/Benefit Analysis: ERP Only

<i>COSTS</i>			
<i>Item</i>	<i>One Time</i>	<i>Recurring</i>	<i>Comments</i>
<i>C- Computer</i>			
Hardware	\$200,000		Additional workstations or system upgrade.
Software	200,000	\$50,000	Supply chain support software.
Systems and programming	200,000	100,000	Fitting the SC software to your system.
<i>B - Data</i>			
Inventory record accuracy	700,000	100,000	Includes new equipment and added cycle counters.
Bill of material accuracy and structure	200,000		Bills will need to be restructured into the modular format. Experienced engineers will be needed for this step.
Routing accuracy	100,000		
Forecasting	200,000	100,000	Full-time person for Sales forecasting. Needs to come on board early.
<i>A- People</i>			
Project Team	600,000		One FT person per plant and one corporate leader for two years.
Education	800,000	150,000	Key leaders and teams to learn ERP principles and techniques, and their application within the company.
Professional guidance	<u>200,000</u>	<u>50,000</u>	Two days per month during installation.

continued

Figure 5-4
Continued

<i>COSTS</i>				
<i>Item</i>	<i>One Time</i>		<i>Recurring</i>	<i>Comments</i>
SUB-TOTAL	\$3,400,000		\$550,000	
Contingency 15%	510,000		82,500	A conservative precaution against surprises.
TOTAL	\$3,910,000		\$632,000	
<i>BENEFITS</i>				
<i>Item</i>	<i>Current</i>	<i>% Improve- ment</i>	<i>Annual Benefits</i>	<i>Comments</i>
Sales	\$500,000,000	3% @ 10%	\$1,500,000	Modest improvement due to improved product availability at the profit margin. You could assume this as no improvement to be more conservative
Direct labor	25,000,000	5%	1,250,00	Reductions in productivity idle time, overtime, layoffs, and other items caused by the lack of planning and information flow This is very conserva- tive.
Purchase cost	150,000,000	3%	4,500,000	Better planning and information will reduce supplier costs. Not as much as with complete ES connections and speed.
<i>Inventories</i>				<i>One time cash flow:</i>
Raw Material and WIP	25,000,000	6% @ 15%	230,000	1,500,000

continued

Figure 5-4
Continued

<i>BENEFITS</i>		<i>%</i>		
<i>Item</i>	<i>Current</i>	<i>Improve- ment</i>	<i>Annual Benefits</i>	<i>Comments</i>
Finished Product	25,000,000	18% @ 15%	680,000	4,500,000 These are very low numbers for a Class A company.
Obsolescence	500,000	20%	100,000	Conservative savings
Premium freight	1,000,000	30%	300,000	Produce and ship on time reduces emergencies—but not as good as with the complete information system.
SUB-TOTAL			\$8,560,000	\$6,000,000 One time cash flow.
Contingency		15%	– 1,284,000	– 1,500,000
Recurring			– 632,000	
TOTAL			\$6,644,000	\$4,500,000 One time cash flow
Cost of one-month delay				\$553,000
Payback months period				7 months
Return on investment				170%

added costs if ES comes after ERP due to the need to connect the ERP wiring to ES. However, this cost should be relatively small compared to the rest of the project.

Here's a familiar question: Does size matter? In terms of the payout, not as much as you might think. For a very small company, the challenge usually is resources. There are simply too few people to add a major effort such as this without risk to the basic business. Too often, small companies (and, to be fair, large ones also) will hire consultants to install ES and will ignore the ERP potential. These com-

panies are usually very disappointed when they realize the costs have not brought along the benefits.

Large, multinational companies should be able to allocate resources and should find that the benefits are even more strategic. The problem with larger companies is trying to get all parts of the company, worldwide, to adhere to a common set of principles and practices. If pulling together all aspects of the company is difficult (like herding cats), we recommend that the project be attacked one business unit at a time. The impact for the total company will be delayed but the more enlightened business units that do install the total project will see rapid results.

Here are a few final thoughts on cost/benefit analysis.

1. What we've been trying to illustrate here is primarily the process of cost/benefit analysis, not how to format the numbers. Use whatever format the corporate office requires. For internal use within the business unit, however, keep it simple—two or three pages should do just fine. Many companies have used the format shown here and found it to be very helpful for operational and project management purposes.

2. We've dealt mostly with out-of-pocket costs. For example, the opportunity costs of the managers' time have not been applied to the project; these people are on the exempt payroll and have a job to do, regardless of how many hours will be involved. Some companies don't do it that way. They include the estimated costs of management's time in order to decide on the relative merits of competing projects. This is also a valid approach and can certainly be followed.

3. Get widespread participation in the cost/benefit process. Have all of the key departments involved. Avoid the trap of cost justifying the entire project on the basis of inventory reduction alone. It's probably possible to do it that way and come up with the necessary payback and return on investment numbers. Unfortunately, it sends exactly the wrong message to the rest of the company. It says: "This is an inventory reduction project," and that's wrong. We are talking about a whole lot more than that.

4. We did include a contingency to increase costs and decrease savings. Many companies do this as a normal way to justify any project. If yours does not, then you can choose to delete this piece of conservatism. However, we do encourage the use of contingency

to avoid distractions during the project if surprises happen. Nothing is more discouraging than being forced to explain a change in costs or benefits even if the total project has not changed in financial benefit. Contingency is an easily understood way to provide the protection needed to keep working as various costs and benefits ebb and flow.

GO/NO-GO DECISION

Getting commitment via the go/no-go decision is the first moment of truth in an implementation project. This is when the company turns thumbs-up or thumbs-down on ERP.

Key people within the company have gone through audit/assessment and first-cut education, and have done the vision statement and cost/benefit analysis. They should now know: What is ERP; is it right for our company; what will it cost; what will it save; how long will it take; and who are the likely candidates for project leader and for torchbearer?

How do the numbers in the cost/benefit analysis look? Are they good enough to peg the implementation as a very high—hopefully number two—priority in the company?

Jerry Clement, a senior member of the Oliver Wight organization, has an interesting approach involving four categories of questions:

- Are we financially ready? Do we believe the numbers in the cost/benefit analysis? Am I prepared to commit to my financial piece of the costs?
- Are we resource ready? Have we picked the right people for the team? Have we adequately back-filled, reassigned work or eliminated work so the chosen resources can be successful? Am I prepared to commit myself and my people to the task ahead?
- Are we priority ready? Can we really make this work with everything else going on? Have we eliminated non-essential priorities? Can we keep this as a high number two priority for the next year and a half?
- Are we emotionally ready? Do I feel a little fire in the belly? Do I believe the vision? Am I ready to play my role as one of the champions of this initiative along with the torchbearer?

If the answer to any of these is no, don't go ahead. Fix what's not right. When the answers are all yes, put it in *writing*.

The Written Project Charter

Do a formal sign-off on the cost/benefit analysis. The people who developed and accepted the numbers should sign their names on the cost/benefit study. This and the vision statement will form the written project charter. They will spell out what the company will look like following implementation, levels of performance to be achieved, costs and benefits, and time frame.

Why make this process so formal? First, it will stress the importance of the project. Second, the written charter can serve as a beacon, a rallying point during the next year or so of implementation when the tough times come. *And they will come*. Business may get really good, or really bad. Or the government may get on the company's back. Or, perhaps most frightening of all, the ERP-knowledgeable and enthusiastic general manager will be transferred to another division. Her successor may not share the enthusiasm.

A written charter won't make these problems disappear. But it will make it easier to address them, and to stay the course.

Don't be bashful with this document. Consider doing what some companies have done: Get three or four high-quality copies of this document; get 'em framed; hang one on the wall in the executive conference room, one in the conference room where the project team will be meeting, one in the education and training room, one in the cafeteria, and maybe elsewhere. Drive a stake in the ground. Make a statement that this implementation is not just another "flavor-of-the-month," we're serious about it and we're going to do it right.

We've just completed the first four steps on the Proven Path: audit/assessment I, first-cut education, vision statement, and cost/benefit analysis. A company at this point has accomplished a number of things. First of all, its key people, typically with help from outside experts, have done a focused assessment of the company's current problems and opportunities, which has pointed them to Enterprise Resource Planning. Next, these key people received some initial education on ERP. They've created a vision of the future, estimated costs and benefits, and have made a commitment to implement, via the Proven Path so that the company can get to Class A quickly.

THE IMPLEMENTERS' CHECKLISTS

At this point, it's time to introduce the concept of Implementers' Checklists. These are documents that detail the major tasks necessary to ensure total compliance with the Proven Path approach.

A company that is able to check yes for each task on each list can be virtually guaranteed of a successful implementation. As such, these checklists can be important tools for key implementers—people like project leaders, torchbearers, general managers, and other members of the steering committee and project team.

Beginning here, an Implementers' Checklist will appear at the end of most of the following chapters. The reader may be able to expand his utility by adding tasks, as appropriate. However, we recommend against the deletion of tasks from any of the checklists. To do so would weaken their ability to help monitor compliance with the Proven Path.

Q & A WITH THE AUTHORS

TOM: Probably the biggest threat during an ERP implementation is when the general manager of a business changes. You've lived through a number of those, and I'm curious as to how you folks handled it.

MIKE: First, try to get commitment that the torchbearer will be with the project for two years. If the general manager is likely to be moved out in less than that time, it might be best to select one of his or her staff members who'll be around for the long haul. Second, if the general manager leaves, the executive steering committee has to earn its pay and set the join-up process for the replacement. This means the new general manager must get ERP education and become thoroughly versed with the project's vision, cost/benefit structure, organization, timetable, and—most important—his or her role vis-à-vis ERP.

In big companies, change in management leadership is often a constant and I have seen several business units flounder when change happens without a "full court press" on engaging the new leader.

NOTE

ⁱ The Oliver Wight Companies' Survey of Implementation Results.

IMPLEMENTERS' CHECKLIST

Functions: Audit/Assessment I, First-cut Education, Vision Statement, Cost/Benefit Analysis, and Commitment

Task	Complete	
	Yes	No
1. Audit/assessment I conducted with participation by top management, operating management, and outside consultants with Class A experience in ERP.	_____	_____
2. The general manager and key staff members have attended first-cut education.	_____	_____
3. All key operating managers (department heads) have attended first-cut education.	_____	_____
4. Vision statement prepared and accepted by top management and operating management from all involved functions.	_____	_____
5. Cost/benefit analysis prepared on a joint venture basis, with both top management and operating management from all involved functions participating.	_____	_____
6. Cost/benefit analysis approved by general manager and all other necessary individuals.	_____	_____
7. Enterprise Resource Planning established as a very high priority within the entire organization.	_____	_____
8. Written project charter created and formally signed off by all participating executives and managers.	_____	_____