



Improving IT Purchasing

*A practical guide to
getting more value from
your IT purchases*

HANSEN/DORLING
SCHWEIGERT/LOVETT

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ISBN 1-85912-286-8

First published 1999

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The development of the information contained in this publication has been partially funded by the European Commission DGIII as part of Project 97/501160 under the SPRITE-S2 Program. The content of this publication is the sole responsibility of the project partners listed herein, and in no way represents the views of the European Commission or its services.

Why you should use this workbook

Our purpose in writing this book is to help managers and staff in procurement organizations improve their businesses by establishing a sounder and more advantageous approach to purchasing Information Technology (IT).

The information provided by this workbook is not dependent upon the role Information Technology plays in your organization. We've developed the information in such a way that a very broad base of organizations will find it useful. However, the recommendations that result from using this workbook are designed to vary according to the way you currently purchase Information Technology.

What do we mean by improving IT purchasing?

As you are reading this, you have probably already made at least one purchase of an IT system, possibly many. Technology is moving quickly and often you have many competing alternatives trying to attract your purchase order. Think back on whether your purchasing activities were efficient and managed, just as other projects in your company are. Consider whether you obtained the kind of value to your business you were expecting. Ask yourself these questions:

- Did the new system perform as we expected?
- Did the supplier provide the kind of service we were expecting?
- Was the price of the complete and fully operational system within our original budget?
- Did the users quickly adopt and fully utilize the new system?

If you didn't answer 'Yes' to all of these questions, using this workbook should help your business get more from the IT systems you purchase. Improved performance, better support, lower costs, and systems better suited for users and business procedures are just a few of the benefits organizations like yours obtain when applying the recommendations contained in this workbook.

What about smaller organizations?

Whilst the total purchase amount for a small organization is less, an IT purchase for a small organization has a much higher impact than in a large organization. The impact is larger both in terms of the way the business will change with the new system, as well as the amount spent as a percentage of annual turnover. Small organizations have special needs when it comes to purchasing IT:

- They need suggestions for improvements that are practical and based on actual experience. There's little infrastructure to support formal procurement methods and techniques used by larger organizations. Theory and formal methods are of little practical use

- They need improvements, which are specific to their current situation and business needs. A 'single approach for everyone' is immediately discarded by smaller organizations because they know how varied the business situations and use of IT is within their size of organization
- They need suggestions for improvements that are well documented and that they can implement on their own.

Everything discussed and recommended in this workbook is based on tried and tested techniques. Much of the information will be helpful not just for IT purchasing but also for other aspects of your business.

Origins of this workbook

When starting to read a book or deciding whether to adopt its recommendations, it's useful to understand the underlying approach and philosophy. It helps you decide whether the information is relevant and likely to provide value. For this reason we provide some background on the ASSIST program that originated this work and the philosophy, on which the advice and guidance provided in this workbook is based, in Appendix 1.

Acknowledgements

The authors gratefully thank the following individuals for their contribution to this workbook:

Michael Song and Kevin Daily of QAI-Europe, UK.

Yingxu Wang, Minna Kaartinen and Per Zaring of IVF, Sweden.

Peter Bolter, Wolfgang Rein and Heinrich Schettler of SQS, Germany.

We also gratefully acknowledge the financial support of the European Commission, under SPRITE-S² contract number 97/501156/ASSIST, without which this book would not have been possible. The content of this publication is the sole responsibility of the publisher, and represents in no way the views of the commission. The European Communities and/or their institutions cannot be held liable for the information contained in this publication or for any use of the information provided.

Scott Hansen

Alec Dorling

Tomas Schwigert

James Lovett

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How to use this workbook

This workbook is designed to give you specific recommendations that will allow you to improve the way you purchase IT systems and software. If you utilize the information and the tools provided you will obtain better value from the systems you purchase and the systems will be better suited for the needs of your business.

This workbook is unique in that it provides you with recommendations that are specific to your current situation and your business objectives for making IT purchases. In order to do so, the workbook consists of the following elements:

- 1) Information about introducing IT purchase improvements.
- 2) PC software that assesses and analyses your current purchasing practices.
- 3) A portfolio of step-by-step improvement actions.
- 4) Information about organizing purchasing improvement initiatives.

Introducing improvements in any business procedure or practice requires thought in advance of any specific actions. The first section of this workbook will help you organize your thoughts and better identify the type of business and cultural environment in which you will introduce new approaches and procedures for managing IT purchases.

Having read the introductory materials, you should use the PC software. Once installed, the 'Beyond the Contract' software tool will ask you a set of questions concerning your current practices and activities for IT purchasing. It takes about 45 minutes to go through the interactive questionnaire.

After answering all of the questions, an analysis will be performed that will provide a prioritized list of improvement actions you should follow. These are the actions that, based on your current situation, will provide the most value to your purchasing activities. Experience has shown that only one or two improvement actions can be managed at one time. We suggest that you select from the highest priority recommendations, only one or two improvement actions that are of most interest to you, and that you are most comfortable implementing.

All of the recommended improvements are included in the portfolio of improvement actions at the end of the workbook. Each improvement has the step-by-step actions you should follow to be successful. All of the improvements have been shown to help organizations get higher value from their IT purchases. However, those recommended as highest priority by the 'Beyond the Contract' software tool should be considered first as these will be most appropriate for your organization.

Having selected the one or two improvement actions to undertake, you will find information about how to organize and plan your improvement actions in order to ensure the highest likelihood of success. As you will learn in the next section of this workbook, planning and organization of an improvement action is essential in order to achieve the highest benefits.

How to use
this workbook

Making improvements

Why bother with improving IT purchasing?

As we move toward the 'information society' and start the new millennium, we are beginning to see just how pervasive Information Technology (IT) has become. When we go to the supermarket, IT at the checkout counter calculates our bill, and arranges for the items we have bought to be re-ordered. When we drive our cars, IT controls the throttle to ensure efficient running. IT controls every day objects like TVs and washing machines. Without IT, public utilities would not provide the services we take for granted, and financial institutions would go out of business. And in our own businesses, IT handles such basic matters as paying our staff and suppliers, issuing invoices, and much more.

All of this IT is identified, selected, purchased, and put into operation through a series of activities. Each of these activities that has an input and an output is called a process. Everyone in your organization may be using different processes for IT purchasing. Perhaps some of your processes are documented, but we know that in many organizations they are not. Perhaps they are well understood in your organization, but are unique to your business such that no one outside your organization would be able to quickly understand these processes. But to get things done, you must have a process of some type, whether formal or informal, documented or just understood by the people who must make something happen. There is no other way of moving a task forward.

Think of something besides IT purchasing - marketing, accounting, hiring, etc. Does your experience tell you that if these processes are working efficiently with little waste or duplication of effort, your business is likely to run better and the products created or results are likely to be better? IT purchasing is no different - that is why we are interested in improving the way we manage IT purchasing.

In many organizations, even though substantial IT purchases occur frequently IT purchasing processes are often not well organized or understood by those involved. For some of those involved it will only be a one-time project so they tend to invest little time as it is not clear that the additional abilities will be valuable for their day-to-day activities. In fact, you will find that much of what is presented in this workbook is applicable across a wide range of business processes and activities.

IT is at the heart of most, if not all, modern businesses. Business success increasingly depends on the characteristics of the IT systems they purchase, in particular cost, suitability, reliability and the way it affects other business processes. In the simplest terms, making improvements in IT purchase processes can:

- Reduce costs
- Make you more competitive
- Provide higher returns on investments
- Increase productivity

These are the simple business motivations why you should be undertaking improvements in IT purchasing. By reading this workbook, you've already taken the first step.

How do you gain these benefits with the least possible risk of failure? Here are some rules that will make sense to from other areas - why not use them in IT purchasing as well?

- 1) **Think before you act - know what you are doing and why.**
- 2) **Reduce or eliminate waste - make best use of your people and other resources.**
- 3) **Improve communication so the team is greater than the sum of its parts.**

As you progress through this workbook, you will see that these themes underpin many of the recommendations.

As a business manager you will already be aware of your business's dependence on IT. You may already be seeking ways to manage its impact on your business, to avoid the risks it poses, and to harvest the potential opportunities. If not, you certainly should be!

It makes sense to manage your IT purchases for the highest return on investment. You do it in other areas - IT purchasing is no different. Just as you would invest in other equipment or advertising, you must invest to improve your IT purchasing. This means some of your time and attention and appropriate resources of staff time and money are required. However, it is clear that these investments can be one of the best business investments you can make.

The need for business leadership

Leaders lead and managers manage - successful implementation of IT purchase improvements requires both.

The leader helps people in the organization understand the goals and the kind of environment that will enable those goals to be met, and inspires others to continue working towards the goals because it is to everybody's benefit to do so.

The manager develops the actual program to establish the environment and purchasing activities, and continues to monitor the results of implementation, making corrections as needed to ensure the final results are as predicted and expected.

Both functions are required from senior management. Several reports on process improvement in technology related disciplines showed the following factors as the most significant to whether process improvements were successful:

- Purchase process improvement goals are well understood
- All affected staff participate in the new improvement initiative
- Senior management monitors progress of the improvement
- Individuals are rewarded for their activities to introduce improvements
- Staff time and resources are dedicated to the new improvement initiative

Some studies show the first two items as being the most influential, but given all five have been shown to be significant, we will discuss each in more detail.

Purchase process improvement goals are well understood

Nearly all funding sources require that you provide a business plan that includes:

- Expected revenue
- Plans for how you will make that revenue
- Some sort of risk management scheme
- A general description of why you want the money
- What you plan to do with it
- When you can pay back the loan or other type of investment

If every business approached IT purchasing in this orderly, organized manner, we would have far more success in the adoption and utilization of IT.

Most of our businesses need to focus on specific improvements because we have neither the time nor the interest for a scattershot approach to improvement. This means clearly defined purchasing goals that everyone understands, and it is clear what will be different if they are met. To develop these goals takes hard work and effort so it frequently doesn't happen. We decide on a new IT purchase not because we clearly understand what it is we want to achieve by making the new system operational, but because we know we have a problem and we think the IT purchase will solve it.

What you can do as a leader in your organization:

- Think about what you want your organization to stand for and write it down in a few sentences. Share this with the rest of the organization to make sure everyone understands what you and the company are trying to accomplish
- Using these goals, work with your staff to identify what changes in your IT systems would help you become more nearly the company you want to be. If you want to be known for prompt service, what tracking information, customer data, reports, etc. would allow you to provide better and more prompt service to your customers? If you want to be known for quality products, what IT systems would help you better manage product quality? This will help create the framework for your purchasing improvements so you can define specific goals for purchases, and for improving the way purchases are undertaken
- Keep these goals visible and active, for yourself and for the rest of the organization. Plan and manage small parts of the improvement with goals, milestones, and the rest of the good management you apply elsewhere

All affected staff participate in the new improvement initiative

It is easy to hire someone to be in charge of an IT purchase or to use an external consultant to make IT purchasing improvements. You hire or assign someone part-time, and then say, 'it's your responsibility now'. This rarely works. It's your responsibility and you must involve whoever will have to live with the results of the IT purchasing action. These are the people who understand what the problems really are and they probably already know at least part of the solution.

What you can do as a leader in your organization:

- Hold people accountable for their involvement with purchases and improvements. This means you too
- When you praise the work of staff, make sure you are praising the decisions made and the teamwork involved in bringing a new system on line properly. Don't praise or encourage the 'weekend warrior' who temporarily patches together a working system or sorts out a supplier issue

Senior management monitors progress of the improvement

Get involved in IT purchases and stay involved. Nearly every parent has a saying that sounds something like, 'Do as I say, not as I do'. This doesn't work too well with the family usually and it certainly doesn't work on the job. If your employees see that IT purchasing improvement is important to you, it will be important to them. If they see you only talk about it but take no initiative, so will they. Your continued involvement is the only way to make it work.

What you can do as a leader in your organization:

- Make purchase improvement visible and show that it is important to you. It will become important to other people too
- Talk about it in your staff meetings. When you ask about the status of a purchase or project involving outside suppliers, include questions about how well people are following the new processes
- Ensure that purchasing improvement projects get high visibility in the organization, with suppliers, and with anyone involved with the company through easily seen schedules for improvement, measures of success, or other commitments to IT purchase improvements

Individuals are rewarded for their activities to introduce improvements

Unfortunately, many companies expect IT purchasing activities and improvements to be done in addition to ‘regular work’. This sends the clear message that IT purchasing activities are not worth paying for. And employees quickly interpret this as it’s not worth doing either. If you want to know the likelihood of purchasing improvements succeeding in your company ask yourself, ‘What do I reward? Do I compensate people who work to improve the process as well as I compensate the high-visibility hero who gets noticed for hard work?’ IT purchase improvement can’t be an add-on to your ‘real work’. It has to be integrated into the work everyone does every day. It must also be seen to be a project with sufficient resources committed to it.

What you can do as a leader in your organization:

- Ensure that every IT purchase project schedule has time built into it for training, processes that have been agreed, and process improvement
- Make sure you are rewarding people who are trying to improve the processes equally or better than you are rewarding people who go around the processes
- Build purchase process improvement responsibilities into job descriptions, performance reviews and project assignments. Then be sure to pay whatever costs are associated with this, whether these are time or money

Staff, time and resources are dedicated to the new improvement initiative

Some organizations involved in an IT purchase improvement spend a couple of hours each week on new improvements and the rest of the week incorporating it into their purchasing activities. In other organizations, every member of the purchasing team has a subject — for example, contracting, user needs, supplier acceptance, etc. — for which they are responsible for suggesting improvements. It doesn’t matter if the subject is one the company thinks it already does well. There is always room for improvement and a mature company recognizes that.

One company recognized that trying to do IT purchase improvement whenever people had time wasn’t working. They assigned one person full time to become an ‘expert’ in ways they might improve. She works with the rest of the organization to train and introduce new initiatives with others.

What’s the best way for your organization? The only ‘right’ way is to make sure time and resources are somehow dedicated to purchase improvements so you can focus on achieving your goals. How much time and how many resources are very dependent on your business and your organization, but you must designate some specific resources to any improvement initiative or it will not happen.

What you can do as a leader in your organization:

- Assign responsibilities and give people the authority needed to make things happen
- Work with your purchasing team to find the best way to use the time dedicated to improvements. There is no right or wrong way, only your way
- Get some extra help

You might want to use a mentor to help you get improved purchasing processes started correctly. A mentor can help you stay focused and to better achieve your goals. Typically, it will be an outside expert who can provide training, consultancy and general guidance to you and other employees involved with purchasing. The term 'mentor' implies a slightly different level of activity than 'consultant'. A mentor will come into your company and help you learn, as well as provide expertise on linking your business goals and your purchasing activities. One to two weeks working with a mentor, particularly if this is extended over several calendar months, can help you understand:

- Where you are now in your capability to manage IT purchases
- How you want to improve
- What will help you accomplish these improvements, using focused projects where you can see the results and build on them in the future

Whether you use a mentor or undertake the improvements on your own, remember that you are the one who will make it happen. It's your business that will benefit and, in the end, it's up to you to get the most value from your next IT purchase.

Process improvement

As we've already discussed, IT purchasing is a process and one that can provide significant value to a business when it is efficient and responsive to the needs of the business. Process improvement itself is a topic that has been studied for many years and one which is useful for many parts of the business. We can only provide a brief introduction to process improvement concepts used in IT purchasing but it will give you a framework for implementing the improvement recommendations that result from this workbook.

Introduction

Process improvement is intended to support organizations in achieving their business goals. By establishing processes that are complete, controlled and focused on the specific organization needs and goals, wasted time and costs are eliminated and better results are achieved. This doesn't just happen. Someone - a champion - needs to lead the improvement effort, working with employees at all levels to decide what improvements are needed, how to implement them, and monitoring the results to demonstrate that the improvement happened, and to prepare for the next cycle of improvement. The improvement cycle itself is a never-ending process containing discrete improvement projects or actions that have defined tasks and expected results.

Process improvement requires investments that are particularly demanding for smaller organizations. Therefore, you should carefully select and carry out improvement activities in a controlled way, so that the risk of a failed improvement is minimized. Focusing on specific improvement objectives allows your organization to conduct progressive improvements while limiting the investment in effort and other costs. In this way, improvement becomes a continuous exercise that should be regularly used to enhance the organization's processes as needs and the business environment change.

To implement a process improvement there are seven steps you must follow to lead your organization through an improvement initiative. These steps can help you structure your actions and give you a way to describe the improvement activities to others. The following sections provide guidance in how to conduct each step, and make successful improvements happen.

Step 1: Examine your organization's needs

The need for process improvement is often activated by events like escalating costs, increasing personnel turn-over, declining market share, a recent purchase not meeting expectations, or feedback from customers. Effective process improvement must be driven by the organization needs and business goals, which are often related to one or a mix of the following parameters:

- Purchase costs
- Maintenance costs
- Time to market new products or services
- Timelines
- Responsiveness to customers

- Quality of products or services
- Control of business activities
- Risks

Help your organization focus its attention on clearly defining the business goals that will drive your process improvement initiatives. Help your managers see the link between ‘working smarter’ and meeting their objectives. This may be difficult - small organizations, and particularly young organizations, that face a fast evolution in the business climate often don’t express their mission or underlying goals. Instead, they focus their effort on trying to catch opportunities that the market offers.

Starting a process improvement initiative is an opportunity to steer your managers and other employees towards discussing and deciding which business objectives should be achieved. Failing to define such objectives could easily lead to a failure of the entire improvement effort.

An easy approach to begin defining organization objectives is the SWOT analysis, which is an evaluation of the organization’s:

- Strengths
- Weaknesses
- Opportunities
- Threats

Your top management plays a major role both to clearly define business goals and to provide commitment to improvement. Experience shows that dramatic improvements in productivity, quality, timeliness, and costs can be gained from process improvement actions. However, it is difficult to make process improvements happen if resources are not assigned and process changes are not managed and sustained. Top managers should also be aware that commitment needs to continue along the entire improvement activity, not just at the start. It’s especially important that this commitment be shown when resistance to change may appear while improvement actions are being undertaken.

Step 2: Initiate process improvement

A well accepted principle in process improvement is that: ‘to be effective a process improvement initiative should be conducted as a project in its own right, and planned and managed accordingly’. Organizations cannot expect improvement to take place unless definite plans have been established. As for any project, the organization must clearly define objectives, scope, budget, and time constraints of improvement actions.

As someone starting an improvement initiative, you should first prepare an initial improvement plan that includes:

- A description of current practices
- Business needs
- Preliminary improvement goals
- Processes targeted for improvement
- Expected benefits
- Time-frame and budget constraints

You should work with others in your organization to determine these. Improvements that are driven only by you as a single champion for change are usually not very successful. Other people involved need to understand why the improvement is needed and to be a part of making it happen.

You might also find that support from an external and experienced mentor is helpful. Often, having an objective eye brings to the foreground new approaches to a persistent problem. You should expect a mentor to give advice on:

- Clarifying business needs
- Carrying out a process assessment
- Prioritizing your processes for improvement
- Planning and monitoring your improvement project
- Measuring and evaluating the success of the improvement

This might only be a few days' time over the course of a process improvement initiative.

Step 3: Prepare and conduct process assessment

As part of the initiation of your process improvement action, you should plan an assessment to provide an objective evaluation of your current IT purchasing practices. (In particular, this is an area where a mentor can provide useful input on how to plan and conduct an assessment). Included in this workbook is the 'Beyond the Contract' software tool that allows you to do a self-assessment on key areas that have consistently been shown to provide value.

However, there is a more complete assessment method available called PULSE, which is based on internationally agreed standards. It is a much more thorough assessment technique than we can provide in this workbook. You should use PULSE when you want to get a more complete picture of where your organization stands in IT purchasing, and you would like to benchmark where you are today and compare this to national, regional and industry averages.

You can find out more about PULSE at www.opengroup.org/procurement/.

When you utilize the PULSE methodology to conduct a full assessment of procurement processes, you will start by first defining the purpose, scope, constraints, resources and time-scale for the assessment. As part of a purpose statement you should be able to specify which type of improvements are targeted. When initiating an improvement for the first time, an organization will benefit from performing a complete assessment, where most of the main categories of procurement activities defined within the PULSE methodology are evaluated.

Later on, a focused PULSE assessment performed on a specific subset of processes can be sufficient to either confirm results of the improvement actions, or to plan new improvements. Additionally, a focused PULSE assessment can be performed when improvement goals and scope are clear and the organization has matured to a higher level with improved processes. We suggest you repeat a complete assessment at least every two years to monitor the evolution of all processes.

A PULSE assessment is performed by interviewing key personnel and analyzing existing information about:

- Your organization
- Past and current projects
- Any documentation you may have

Therefore, a schedule of interviews is needed and a list of relevant topics is provided to allow you to prepare in advance. Any constraints would also be clarified in advance, such as availability of key personnel, time or budget constraints.

Someone from outside your organization who can provide an external and unbiased evaluation usually performs the assessment. (This is an excellent way to use a mentor.) Your

role is to facilitate the assessment and improvement, as well as support the mentor and members of your organization.

The results of an assessment will be an overall score and a profile of indicators that denote the expected performance of your organization in undertaking the different processes involved in an IT purchase. For example, undertaking the purchase of a system involving multiple suppliers is high risk and likely to give poor results, if your processes for managing suppliers, and ensuring quality deliveries are not at a sufficient performance level. The PULSE assessment gives you this information with only a small investment of time so that you can make better purchase decisions and reduce the risk of a failed purchase.

Being aware of the current process capability is necessary to objectively analyze the starting point and identify improvement targets that can realistically be achieved. Additionally, analyzing the current process profile allows you to identify your organization's strengths and weaknesses, so that areas that effectively improve your organization's performance can be identified and addressed.

While PULSE will provide valuable information about your procurement processes, this workbook provides a mini-assessment using the 'Beyond the Contract' software tool. The 'Beyond the Contract' software tool identifies process improvement actions especially applicable for small to medium size organizations.

Assess staff attitudes

We know from well-documented experience that the attitude of staff at all levels within an organization can significantly affect the success of any improvement initiatives. The mentor and the senior person responsible for the assessment and improvement activity must ensure that all staff involved with purchasing IT and likely to be involved in the assessment are informed about its objectives and the role that they will play. As part of the assessment activity, the mentor should conduct a staff attitude survey and record the results in the assessment report. The TeamWork Procurement Organization Survey is a well-organized tool that is tailored specifically towards individuals in an organization involved with IT purchases. You can find out more about TeamWork at www.open-group.org/procurement/.

Because staff attitude to improvement can significantly affect success, results of the staff attitude survey should be carefully considered and proper actions should be identified to solve any possible issues. Such actions may include:

- Seminars to raise awareness and commitment
- Workshops to establish improved team working
- Defining a reward and recognition policy

In addition to completing the assessment provided by the 'Beyond the Contract' software tool, you may want to include an attitude survey, as it will provide you with additional information to help you with your improvements.

Step 4: Analyze results and derive action plan

The first step to plan an improvement action is to identify which processes are critical for the achievement of your business goals. This may be done by ranking processes according to their relevance to business needs and to their capability levels. The 'Beyond the Contract' software tool provides you with a first set of rankings based on where you are today and experiences from other organizations similar to yours. These are the processes where investing in improvements will provide the most value for you. The mentor can help you to determine the focus areas for improvement and to prepare an improvement project plan that will drive the improvement actions.

There are other factors to be considered when prioritizing improvement goals. Small organizations should be confident that their current plans allow them to completely achieve the target goals. It is much better to start with simple improvements that you are sure can be achieved, than to address very challenging ones that are difficult to understand and implement.

Specify improvement goals for the selected processes quantitatively, as far as possible. Real numbers such as saving 20% in supplier maintenance fees, or obtaining an improvement of 10% in user satisfaction with a newly purchased system, are more likely to be understood and achieved, than vague ‘do better’ statements. Improvement targets can be expressed as target capability levels from a PULSE assessment, or as target values of specific business or technology measures, or both. You can also use your answers to the ‘Beyond the Contract’ software tool assessment questions as improvement targets.

A critical factor that will make your improvement projects more successful is to ensure that sufficient resources are assigned and that roles and responsibilities are clearly defined. Your improvement goals should be matched to resources that can be applied to process improvement. This again is a reason to perform small but well focused changes.

Step 5: Implement improvements

The improvement plan you establish should specify how the planned improvements will be carried out and process changes established. One way to implement purchase process improvements is to experiment with improvements in a pilot project, and then spread the implementation to all purchasing activities if results are satisfactory. Another approach is to define process changes and then to apply them to the entire organization in one shot. However, if your organization is under heavy pressure for time and has resource constraints, we recommend you select a suitable project to try and validate improvements. Then apply these improvements to other projects and purchases across the organization. All risks associated with the improvement action should be identified and documented as part of the plan, as well as what you are doing to minimize the risk. Just by taking the time to identify the risks will help you avoid them.

Once the purchasing improvement plan is approved by your top management and resources are allocated, then the improvement project itself can begin. During the improvement project, the role of the mentor is to assist you and provide advice on implementation and management issues. Improvement activities must be carefully monitored and progress tracked. Possible deviations from the initial plan are managed by performing actions to solve any problems that occur and by carefully re-planning the next activities. Measurement data should be collected as planned in the improvement implementation to allow evaluation of results and achievement of targets.

Step 6: Confirm improvements

When the process improvement action has been completed, you should evaluate whether planned targets have been achieved and expected benefits have been delivered. A focused process re-assessment should be conducted to evaluate whether the planned capability improvements have been achieved. Data collected should be analyzed to evaluate whether improvement targets have been achieved and whether the cost-benefit ratio is satisfactory. Long-term benefits — like higher service levels, lower support costs, higher production productivity — should be considered, although these take longer to evaluate.

The staff attitude should also be re-evaluated to ensure that the desired organization culture is established. Involve your top management both to approve the results and to evaluate whether the organization’s needs have been met.

Step 7: Sustain improvement gains

A major challenge with purchase process improvements is to keep the benefits of improved processes long after the improvement action has been completed. In order to achieve this goal, all those for whom it is applicable should first use the improved process. If an improved process has been piloted in a specific area or specific purchase, it should be deployed across all areas or purchases for the organization where it is applicable.

This deployment should be properly planned and the necessary resources assigned to it. Planning should specify:

- Training needs
- When changes can be implemented
- How implementation can be validated
- How results can be monitored

To ensure that the improved process will be followed and that the expected benefits are actually produced, we recommend you systematically collect and use data to track purchasing project performance. Measurement data should be simple and aligned to organizational business goals.

You should learn to consider process improvement as a continuous activity, which supports your organization to continually evolve to meet its business goals. Therefore, once an improvement cycle has been completed, that is the time to think again what are the organization's objectives for using IT and what can be improved to better achieve them. Then a new improvement cycle can be started.

Process improvement itself is a process that needs competence and experience to be successfully carried out. Your first experience may be too time-consuming, with too much effort to plan improvements, perform assessment, establish a detailed action plan, carefully implement, and monitor the action plan. Using this workbook will shorten that effort. However, you will find experience will make your performance better and better. Therefore, once a process improvement cycle has been completed, it is worth looking back at how it was carried out and think what could have been done better. This is also part of process improvement!

People and culture

Management responsibility and leadership

We believe that leadership from senior and middle management is a necessary part of making process improvement (or anything else) work. As the champion for change, you must provide leadership, too. But everyone has the same needs in their day-to-day work. Senior managers have responsibilities to lead, show commitment to the improvement effort, and provide the role model for everyone else to follow.

At the same time, middle managers are frequently under a lot of pressure, with tight schedules and budgets and will not have a very clear understanding of how IT purchasing improvements will actually benefit them. Those who lead improvement initiatives often have responsibility for improvements without any organizational authority to make it happen. This can place you in a difficult position. Here are a few ideas to help:

- Try to understand why the current environment is the way it is. Senior managers have problems far beyond what most of us can see - the variable economic state, legislation, providing an attractive return on investment for stockholders, etc. What to us is a big problem can be just noise in the system for senior managers because their perspective is broader than ours
- Try to understand what will make another person a winner. If the senior manager perceives you as only asking for resources for an initiative, it isn't too surprising if you get rejected. However, if you are selling the benefits of increased supplier responsiveness, lower upgrade costs, more functionality for less cost, you are far more likely to get support for change. Understand the benefits that will make others succeed, then sell that
- If possible, relate the benefits to the language of business. For example, 'higher user satisfaction', 'reduction in support costs', 'faster customer response time', 'higher production capacity', etc. are winning concepts. While they may be achieved through such things as establishing better user needs; training purchasing team members; and establishing better supplier evaluation methods, it's the business results that will be persuasive, not the implementation steps or the actions required
- Before asking anyone for resources or support, think about what you are going to give them in return. This is especially true for the managers, but applies equally to others. Give more than you get, and be able to explain what you are giving in return for what you are asking others to give you
- Learn to get away from your own specific day-to-day issues and think like other people - stockholders, customers, engineers, sales people, etc. Can you help with better decision-making in the company? Faster problem solving at a lower level? Appealing more to customers? This is the help that senior managers seek from IT purchase improvements

Values, attitudes and behavior

To make IT purchasing improvements effective and meet the goals set out for them, we often need to actually change the way we look at the behavior of people in the organization and what is causing that behavior. What we currently value as 'good' may not be right any more. Some particular areas we have found often need addressing are:

- Changing attitudes about customers. 'The customer is always right' is an old saying with a lot of truth in it. When we start putting ourselves in the shoes of the customers of our IT purchases - the users - we ask ourselves, 'would I like to use the system being purchased?' We sometimes discover an unpleasant truth - the answer is 'No'. Part of the attitude change is to start thinking about what would change that answer to 'Yes', and then start doing it
- Involve everyone in the improvement process, from suppliers to users. We tend to think about purchasing and limit our thoughts to contracting. Purchasing involves users, support personnel, developers, suppliers, contracting and finance, operations, and sometimes sales and marketing personnel. If we want to improve the process, we must involve them
- Emphasize purchase improvements as part of everyone's job. Purchasing improvement isn't an add-on or extra task. It isn't what we do when we have a few extra minutes. It must become part of the job description, part of the way we do business. Until everyone involved believes this, there will always be a tendency to rely on saying rather than doing
- Establish open communication and access to data and information. Part of the process of improvement is bringing inefficiencies and waste out into the open. It's the only way such problems can be addressed, and reduced or eliminated. This is difficult to do in an atmosphere of fear. If problems are not your problem or my problem, but our problem, and we all try to solve them, the atmosphere is very different and far more productive
- Separate **process** performance from **individual** performance. Part of improving a process is to measure how the process is performing. Many people are afraid of measurement because they fear it will be used against them. They have every right to be if it will. But measurement of the process, not of the people performing the process, can be one of your most effective tools. If we utilize a new procurement-scheduling tool but supplier deliveries are still off by more than 20%, then probably the new tool is not accounting for all the items that can contribute to delays. If you have no way to measure between your estimates and reality, you will probably never realize this

These are all areas to be considered when putting in place a purchasing improvement action. While you may not be the one to personally address these for the whole organization, you can, as someone leading the purchase improvement, be aware and adjust your own attitudes accordingly. Attitude is contagious, and others will soon follow your lead.

Improvement goals and motivation

We have more than one way of setting goals for purchasing improvement. The best way is to start with the organization's business goals, from these derive IT purchasing goals, then look at the processes that will help you to meet these goals. Another way is to look at a model of best practice such as PULSE methodology and see what you need to do to follow these best practices yourself. Most organizations do a combination of these. The Portfolio of Improvement Actions in this workbook is based on purchasing best practice.

The 'Beyond the Contract' software tool is used to identify the degree to which you follow best practices, in order to identify improvements best suited for your organization.

Once your goals are established and you know what needs to be improved, how do you keep people motivated to meet the goals? Some clear steps can be taken:

- Make sure everyone understands the goals and how they relate to each individual. If a business goal is to have faster customer response times, an IT purchasing goal might be to acquire systems that better link the various departments that interact with customers. Each person involved in the purchase needs to understand what he or she can do to help meet this goal
- Find out what problems people have and help them see how the improvements will help solve these problems. Rather than say, 'Tomas, we have a new supplier evaluation procedure and everyone must follow it', try, 'Tomas, remember we weren't very happy with the supplier's support for that system, we've had some training on how to better manage suppliers and maybe you would like to join us to see if it can make the next system easier to manage for us all'.
- Think about how people perceive the improvement action from their position in the company. Are they one of the 'heroes' the company is trying to become less dependent upon? If so, you better concentrate on how they benefit so that they don't just see how they might lose. Otherwise, you will certainly not get their co-operation and in fact you may find them trying to sabotage the improvement. Always be able to answer the question, 'What's in it for me?' People may not ask it out loud, but they certainly need to know. You should have the answer
- Set a good example. Be up-beat and positive about the improvements and what they will do for you and your job
- Organize your thoughts and how you will convey them to others. Make sure the message is clear and that people can relate what you say to what they do every day
- Listen more than you speak. People will be motivated when they are part of the solution, not perceived as part of the problem

One of the best things you can do for an organization is to give each person the chance to feel like a winner, who is contributing to a winning team.

Communication and teamwork

The atmosphere we want to create and encourage is one where people work with each other respecting the opinions and experiences of the individual, but trying as a group to solve the problems. There are some people that believe that fierce competition between employees is the way to get the best performance. And for certain individuals this may be true. But what we are trying to accomplish is the best performance of the organization, not one or two individuals. And for this to happen, people have to co-operate and support each other in an atmosphere of trust. How do you help create this? Here are a few techniques that work:

- Be honest. Always do what you said you would do. People don't trust someone who says one thing and does another
- Put yourself in someone else's shoes and act accordingly. Think about others and their needs as much as you think about your own. Maybe more
- If you have an actual team established as part of your purchasing improvement:

- Establish goals for the team that everyone can understand and that can be met
- Identify several types of people to help meet these goals
- Make sure everyone on the team understands what he or she can do to help meet the goals
- Make sure everyone understands what criteria are expected to be met and can identify when the team is finished (Teams tend to drift on and on, long after they should)
- Don't try to prevent conflict, but do try for the win/win solution to conflict
- Allow people to contribute in the ways they can and when they can (which might not be what you had expected)
- Only host short productive meetings with an agenda, time limit, and a very focused reason for being; if you can't identify why someone should be at the meeting, they probably shouldn't!

Recognition

Recognition and reward inspire all of us. In the purchasing improvement environment, reward of teams and shared performance can be one of the greatest incentives to actually improving the process everyone is following. The recognition and reward should be tied to goals met, with clear objectives and measurable results. You may not be able to give pay raises or perform some other kinds of reward and recognition, but there are things you can do:

- Thank people when they do a good job
- Bring other people's contributions to the attention of management. Many managers would do more in reward and recognition if they knew what was needed
- Promote the team effort rather than your own effort. You can't expect people to want to support improvements if you take all the credit for its successes
- Sell purchasing improvement to the managers, giving the team credit for its accomplishments when you do. You may be able to gain more reward than you expected and recognition for all of you

Education and training

Training is identified as important by nearly every standard and model for process improvement. Training in process improvement concepts particularly can make the difference between success and failure in the program. Even though people may have the will to do the right thing, if they don't know what the right thing is, they obviously have little chance of doing it.

Especially if you have had a PULSE procurement process assessment performed, people need to understand what it means. It is too easy for us to flash some charts on the screen, which show the results of the assessment, but not give people the guidance they need on why they should care and what they can do to make it better.

As someone leading an improvement, you might not feel this is your job. It may not be totally your job, but if you don't get in and make it happen, who will? You can hold formal training classes in the new process, and you can have informal discussion with people about how they use the new process. You can ensure the new processes are documented (thereby ensuring that you understand them yourself).

Here are a few reasons why should you do this:

- You will never know anything as well as when you teach it to other people
- You will gain visibility within the organization in a way that is almost impossible otherwise
- You will grow in stature and professionalism, as well as learning to work smarter yourself

This is part of your job of leading the IT purchasing changes in your organization. Get educated yourself, and then educate others. There are many benefits from both of these activities.

Personal culture improvement

You probably have many reasons not to get involved, not to try and make a difference, staying low and keeping the status quo. Most of us do. But if you are beyond this, if you really do believe things could be better and you could make a difference, here's a general guideline that should affect everything you do:

- Before you spend much time worrying about how everyone else should improve, improve yourself first

If you are a team player, others might be too. If you aren't, you won't convince them to be. If you are more concerned with promoting yourself instead of doing a good job, why should anyone else do otherwise? Do what you tell others to do. If you want people to plan better, you plan better. If you are trying to improve documentation, set the good example.

It is true that for systematic, continuous improvement, support must come from the top of the organization. But the individual person being a champion for change can have more influence on making that happen than you might think.

Using standards for purchasing

What are standards?

You probably have a good idea what is meant by something being called a 'standard'. It is something that is consistently made or performed the same way each time. There are all sorts of standards, like the connection for electricity to your computer. Wherever you are there is a standard defined for the shape of the connector, the size and number of the connections, etc. It may not be the same as another region, but all the equipment in your region uses the same type of connectors. Any manufacturer wanting to sell you a computer must supply a power cable that conforms to this standard.

Standards also apply to methods or processes. The way your organization reports your company accounts is a standard. Certain accounts must be present and the way you calculate values, such as depreciation and Sales (or Value Added) Tax, follows a standard procedure.

Sometimes (as with your company accounts) standards are defined by laws and regulations, there are also specific international organizations established to agree to standards between regions or within industries. For example, if you use the Internet to send e-mail, the communications used to transmit that message comply with a set of data transmission and messaging standards that are documented and agreed to at an international level. All of this is invisible to you when you send your message, but without it, your e-mail might never arrive. Because so many different systems are involved in transmitting your message between different people in different organizations, it is essential that every system conforms to these standards in order for things to work.

Consider another example. Your PC is probably running Windows® 95/98, Windows/NT®, or MacOS. None of these software systems have been established through regulations, or international standards organizations. Yet, having so many people use them, establishes these systems as standards. Other producers of computer components accept that they must work with these systems and that if their products don't, they must change their products.

Therefore, we can see that there are TWO types of standards, those that:

- Are formally established by government or standards groups
- Become standard by widespread acceptance.

What does all of this have to do with IT purchasing?

Well, using standards can be an important tool for ensuring long term value from your IT investments.

Standards and investment

IT systems are often organic in that they tend to grow and expand within an organization. What begins as a PC to keep track of the company accounts becomes a sales tracking system used to collect customer information, or a tool to publish the company newsletter. What starts out as a production control system grows to become an inventory management

and supplier ordering system. It's natural that as we see what IT is capable of doing, we identify new processes where IT can improve our performance or reduce our costs.

Few of us are very good at predicting exactly what these uses might be as they depend on the eventual needs and priorities of the organization. What your objective should be is to purchase systems that are open to expansion and easily adapted for new uses. By doing so, you protect the resources you've invested in your IT system - not just the amount paid to the supplier, but also the time spent to train the users and to make the system operational and tailored to your needs.

If you use standards as part of your IT purchasing, you create systems that can be extended because there will be other components that work with your standard components. It's this extensibility or openness of a system to different uses and being able to build upon existing components to make more sophisticated systems that using standards provides. You are far less likely to have to discard a system based on standards. When you use standards in purchasing, you also have a broader choice of suppliers, as there will be several who can provide you with standard products.

Which standards to use?

There are two elements to consider when using standards within purchasing:

- Which standards should you adopt for your organization?
- How do you know whether your supplier is really delivering something that is standard?

There are literally hundreds of standards established within the IT industry. Some are formal, some are not. However, it's not necessary that you become an IT standards expert to take advantage of standards.

Here are a few that you can adopt today in your IT purchases:

UNIX® 98 Standard

UNIX is an operating system used to run servers, ERP systems, engineering and production systems, and many other business and industrial applications. Nearly every major supplier of IT systems provides systems that conform to the UNIX standard. If you decide to purchase a UNIX system, you should reference in your purchase agreement that the system should be 'UNIX 98 compliant'. Such compliance costs you nothing extra but delivers the benefits of using standards within your IT environment.

Compliance with the UNIX 98 standard is checked and managed by The Open Group. You can visit The Open Group web site at www.opengroup.org to verify that your supplier is providing a UNIX 98 standard system.

ISO 9000 Standard

Many have heard about ISO 9000 by now as a method of improving quality. But did you know there is an ISO 9000 standard for software development? You can require in your IT purchases that companies that sell you software are ISO 9000 compliant. By doing so, you have a higher level of assurance that your new systems will be of good quality with fewer 'bugs'. You can verify compliance with ISO 9000 by asking for a copy of your supplier's certificate of conformance. These are provided by independent auditing organizations that verify that the supplier conforms to the ISO 9000 standard for software quality.

CMM Standard

CMM or Capability Maturity Model is a standard way of evaluating and identifying the sophistication of a software development organization. It is less well known than ISO

9000 but is used quite often by medium to large software suppliers. CMM is a 5-point scale where Level 1 indicates the least level of sophistication. Only a handful of companies in the world attain Level 5. Purchasing from a CMM Level 2 or higher supplier provides you with even higher confidence in quality than companies that are only ISO 9000 compliant. Verification of CMM levels is not handled independently and you should be wary of organization's claims of their CMM level. If a company is serious about CMM, they should be able to provide you with the name of an external auditor who can verify their CMM level.

ISO 15504 Standard

This standard also has the informal name of 'SPICE' and is one of the newer standards used for measuring the sophistication and capability of a software development organization. It is based on CMM, as well as a number of other popular assessment methods and models, but it is more advanced in its approach to evaluating software suppliers. The SPICE standard is becoming more and more popular because of its international recognition as a formal standard and benchmark. SPICE can provide you with a single score like CMM, but it also goes beyond CMM by providing you with a more complete report of the capabilities and sophistication of your suppliers.

A few suppliers have already had a SPICE assessment. If your suppliers have not, it's a good idea to ask them to have one, as it will give you a very clear indication of the abilities and risks associated with purchasing from each software supplier. If your suppliers have had a SPICE assessment they should be able to provide you with the name of an external auditor that can provide you with a copy of their SPICE assessment report.

What if I still can't use formal standards?

If you can't reference formal standards in your IT purchasing, use industry-leading products as a way of building a more standards based IT system. Many of these products become industry standards where their market shares command other products to be compliant. Microsoft Office products are a good example of this. Establish a few standard components used by all of your systems and stick to it. For example, have a common database that all of your IT systems must use - even if you have separate databases and are not sharing information between them, use the same underlying database product. Or establish for your company a standard e-mail program that everyone uses.

Even if you pick products that don't eventually become dominant in their area, by choosing products with many customers, the winning products are very likely to provide you with a migration path to their product. Their objective is to convert you to their product and while it may not be free, it is still more cost-effective because you are usually able to transfer your company data into the eventual market-leading products.

Assessing your purchasing practices

We've laid out the framework and support for making improvements in purchasing practices and procedures. In fact, what we've shown you will support improvements in many other areas. To begin a purchasing improvement, you must first understand where you are today and identify which improvement will provide you with the most value. As we discussed earlier, a formal assessment using the PULSE procurement assessment methodology for purchasing would be an ideal place to start. To obtain the most benefit, you should conduct an assessment with the assistance of an external mentor. However, we recognize that not every organization will be able to use such individuals.

This workbook breaks with traditional approaches by using an interactive tool to understand what practices you currently follow and then identify from a long list of potential improvements, those that would be most beneficial for you.

The software tool is available for download at: www.opengroup.org/procurement/.

Using the 'Beyond the Contract' software

Your workbook utilizes PC software that uses an interactive questionnaire to diagnose and prioritize the improvement actions best suited for your current situation. You should install the software following the instructions associated with your machine type. Please see the installation instructions in Appendix 2

If you have questions or problems please contact The Open Group at www.opengroup.org/procurement/.

Preparing to run the program

Now that you've installed the 'Beyond the Contract' software, you are ready to use it to determine which improvement actions are best suited for you. The software is designed to ask you a set of questions about how you purchase IT systems and software. The questions are about different things that organizations like yours may or may not do when purchasing IT systems. Before starting the program keep in mind the following:

- The tool only works if you answer the questions honestly. Don't try and guess what answer might provide the recommendation you're interested in
- Answer the questions based on what you normally do and what you do now or for your most recent IT purchases. Don't think about what you did a few years ago or what you would like to do in the future
- Think about what you do for a purchase that's important for your organization. For a very small organization, just buying a new PC may be an important decision. For others it may require a much larger purchase to be important. Whatever your size, think about significant IT purchases
- Don't attempt to analyze the tool logic by answering different questions. The internal analysis of the tool was developed based on procurement professionals using these same questions in workshops with organizations like yours.

If you take the time to consider the questions and your answers, you will obtain recommendations that will significantly increase the value from your future IT purchases.

How to answer the questions

The 'Beyond the Contract' software has twelve questions about how you use IT and forty-two questions about:

- How you plan for a purchase
- How you handle a purchase once a supplier is selected
- How you manage and organize your IT purchasing activities

Each question has three answer bars. You should adjust all three answer bars for each question to match your organization's situation.

Each question asks about whether you do a certain activity. You answer the question by giving three opinions about the activity. These are:

- **Do you do it?** This is the extent to which you do the activity. Perhaps not at all, perhaps you do it partially, or fully for most purchases
- **Is it formalized?** This is the extent that the activity is formalized. Formalized means that you do it the same way each time, or perhaps you have a formal policy, or have a written procedure that states how the activity should be performed
- **Does it provide value?** This is your opinion as to how valuable the activity in the question is to your organization. You may believe that an activity in one of the questions is not very valuable to your organization. Or, you may believe the activity is very valuable to your organization, even if you only partially do it

If you're not sure about how to use the program, you can use the Help facility in the software to get you started. If you're not sure about what is meant by a question, you can find explanations of each question within the tool.

Now, start the program and answer each of the questions that are posed to you. You should give yourself about 45 minutes to complete all of the questions. Don't worry if you get interrupted, you can save your answers and later, start where you left off.

Turning recommendations into action

Once you've answered all of the questions from the 'Beyond the Contract' software, you will have a prioritized set of improvement actions displayed for you. Write the top 5 recommended improvement actions from the 'Beyond the Contract' software tool in the space below:

Improvement Action:

Improvement Action:

Improvement Action:

Improvement Action:

Improvement Action:

Each of these improvement actions would be valuable for your organization to undertake. However, we know from experience that an organization can successfully manage only one or at most two improvement actions at the same time. So you will need to choose from those recommended above in order to proceed.

Selecting your specific improvement action

Each of the above actions recommended for your organization has a step-by-step description of the activities you should do to implement the improvement action. You can find these at the back of the workbook. In order to select the one improvement most appropriate for your organization, use the following criteria:

- Select the improvement action you feel you are capable of managing. You should understand what's expected and you should feel comfortable implementing the first few steps of the improvement action
- Select the improvement action where you feel you will have the support from the others involved in IT purchase activities. It's better to make an

improvement that others will support first, once they see the benefits they will be willing to undertake other improvement actions

- Pick the improvement action that you can manage as a project. You need to establish a program and plan in order to be successful, pick the improvement that you believe could be structured with a leader and specific objectives

All of the improvement actions will help you purchase IT systems better, so there is no wrong answer. Pick the one that feels right for you, and the one for which you can be the champion within your organization.

Planning your improvement action

Now that you've selected the purchase improvement action you will implement, we need to design a project to make sure that you manage the improvement action implementation. At the end of this section you will find a project-planning template. The improvement action steps along with the project-planning template will help you organize your activities.

When you define a purchasing improvement project plan, you need to establish boundaries for the project in terms of:

- **Timescales.** This should be demanding but above all realistic. It is an excellent discipline to establish firm completion dates for your project and stick to them
- **Staff skills.** It may well be that all the skills necessary are available in your organization, but you may have to consider either outside contracts, staff training, or both. Whichever option is chosen, costs should be fully stated
- **Staff time.** Since the organization still has to maintain its primary role in terms of output, no more than 20% of staff resources involved with IT purchasing should typically be allocated for the purchasing improvement project
- **Staff motivation.** It is essential that all staff involved in IT purchasing are also involved in the improvement and committed to it. How this is achieved depends to some extent on the size of the organization. An initial staff attitude survey like the TeamWork Procurement Organization Survey, might be considered (see the website at www.opengroup.org/procurement/)
- **Measurements.** The collection of data throughout the project helps in both the analysis of success and provides information on which to base any changes during the progress of the project. The additional effort and costs involved should be stated
- **Sub-contracting.** Elements of the project may involve the use of sub-contracting, for example, the use of a mentor. It is important to involve them in the total planning, committing them to firm delivery dates

Project plan template

The following section provides you with an outline of a procurement improvement project plan. If you have a standard form in your organization, then use that form and skip ahead to the next section.

Project summary

This is a brief description, usually one page or less, of the project containing the following items:

- Overview of current status of purchasing practices
- Objectives of improvement project
- Anticipated business benefits

Project objectives

This section, which should not exceed a half page, should contain the specific objectives that the project aims to achieve. The project objectives should be clear and measurable because the progress of the work will be evaluated using them, and all reviews of the project will refer to this section. The objectives should also be realistic for the proposed duration of the improvement project.

Project resource plan

This section should describe concisely the work planned to achieve the objectives of the purchase improvement project, and who is going to do the work. Detailed description of project tasks is included at the end of the project plan. This is a summary of the project tasks and the resources assigned to each.

Project schedule

This section should contain the bar chart showing each activity of the project as scheduled for each calendar month. Critical items that must be completed in order for other project tasks to proceed should be highlighted.

Project methods and tools

This section should identify specific methods and/or tools that are proposed for use within the project. In addition, any specific aspects of the project that are related to human factors and managing the people aspects of those involved with the improvement should be highlighted.

Project standards

This section, which should not exceed half a page, should outline measures used to ensure the project is managed well with a high degree of quality. For example, procedures for reviewing supplier documents, handling problems, and specifying the project administration functions should be outlined here.

Project budget

This section will be the justification of costs for the improvement project. It should present the detailed project budget showing all anticipated costs, especially any necessary sub-contractor costs. All costs should be justified and should represent value for money in the market in which the organization operates.

Project deliverables

This section will list all of the deliverables to be produced by the project, indicating a reference number, description, availability internally and possibly to your suppliers, and target date. There should also be a list of resources allocated to each deliverable.

Work plan

The work plan for the project should be structured using the convention of work packages. A work package is a significant, normally self-contained, sub-division of a project, which

leads to the completion of one of the goals, objectives or major deliverables. A work package should comprise a reasonable amount of work so that it is significant; different work packages can proceed in parallel within a project. Work packages should have a specific start and end date, should be assigned to one person to lead, and should result in at least one deliverable.

A deliverable is an output of a work package in a tangible form (such as progress reports, a document, a contract, a call for proposal, etc.), which is complete enough that someone not participating in the project could externally assess it. Generally, each step you select from the Improvement Actions will be a work package.

Each work package should be described on a work package description form by giving its objectives, the approach to be followed, and the list of deliverables. There must be a clear relationship between the project deliverables and the project objectives.

The number of work packages used must be appropriate for the complexity of the work and overall value of the project. The involvement of the IT purchasing team members, and any consultants and contractors, must be unambiguously correlated to work packages by indicating their activity in, or contribution to, each work package.

In preparing the work plan, the resource requirements for each work package should be estimated. The resources allocated to individual work packages should be shown in person days. Project management itself should be clearly identified in terms of resources and consequently there should be a separate work package covering the project management role.

Here's an example of a work package description form that could be used to define and control work packages:

Work package description:	
Work package or activity number and title:	
Start date:	Finish date:
Person days:	
Other costs (specify):	

Approach

Describe how you intend to implement this work package. Why is it needed?

Key issues/risks/dependencies

These factors might be related to availability of senior personnel, time needed for improvement tasks, training of personnel involved in the project, or other factors that could affect the success of this work package.

Deliverables (reference number and description)

Deliverables might be reports, contracts, user requirements, call for proposals, supplier evaluations, other items that should be scheduled. Whatever you are producing as part of this work package should be identified so that it can be tracked and show confirmation of improvement progress.

The above provides an outline that works for significant purchasing improvement projects. You should tailor these topics to your specific interests and resources. Remember, it's more important that you have a plan with clear deliverables, and assignment of respon-

sibilities and delivery dates, than it is to follow a prescribed template. Do make a plan, and do it in the style and format with which you feel most comfortable.

Managing your improvement action

Once you've established a project plan, the success greatly depends on how you manage the project according to the plan you've established. Here are some important management elements that you should consider, as they will help you manage more effectively your purchasing improvement action:

- **Commitment.** The essential ingredient to the success of any improvement is that everyone involved is committed to it, and senior management is seen to be clearly committed
- **Monitor progress.** When using any of the modern project management tools it is important to decide on the level of detail you need to track throughout the project, and the mechanisms you propose to use to do this. The main purpose of monitoring progress is to:
 - identify and solve problems as they occur,
 - produce product status reports for management and project participants, and
 - maintain historical data to help you plan future projects more accurately
- **Scheduling resource.** A project schedule includes a list of the tasks or activities you want to do, and the length of time or duration each task will take. Project management uses tasks, duration and other information, such as dates and deadlines, to build a schedule and give you a realistic model of the project you are managing. It has to be flexible enough to reflect changes in personnel, and to account for re-direction of resources over the course of the project
- **Ownership.** Tasks within the project should be 'owned' by individual members of staff, who will be accountable to the overall project manager for reporting progress and discussing any difficulties which might arise
- **Communications.** The progress of the project should be transparent to all the participants so it is important that good communications be established at the outset. Personal meetings, memos, letters, telephone contact, faxes and e-mail are common transport mechanisms. But, some thought has to be given to recording decisions made in the course of these contacts, as well as action items, their assignees and due dates. For this reason, memos, e-mail and faxes are preferable. A record of decisions taken should be circulated to all project participants
- **Documentation.** This falls essentially into two categories: The first category is the document proposing the project with associated costs vs. benefits justification, time scale and project plan. This is likely to undergo a number of revisions, so maintaining version numbers is important if you are to avoid confusion.

The second category is a working document, circulated to all the participants in the project, which fulfils a number of objectives. It will describe the main elements of work, which are required, sub-divided into tasks owned by specific project participants. It will form the basis of reporting progress. It will serve as a monitoring device for the project manager. It will be the sole authority for communicating and recording changes to the project. For all of these reasons, this document itself is best owned by the project manager.

- **Project standards.** A lot of time and effort can be avoided at the outset if project standards are set as to the means of communication, the form the documentation should take, the numbering schemes required, and the preferred means of sending information (memo, fax, or e-mail)
- **Review.** A timetable of review meetings, if possible held in conjunction with key turning points or milestones in the project should be scheduled at the outset
- **Budgets.** Most organizations have procedures in place for handling expenditure, but to avoid delays it is worth 'calendarising' expenditure on a month-by-month basis, and establishing whether or not you can move expenditure between cost categories

Some closing thoughts

You've gone through this workbook because you were interested in getting better value from your IT purchases. Hopefully, we've provided you with all of the information, analysis, step-by-step improvement activities, and guidance for establishing a successful purchasing improvement action. There are a couple of important closing points that are worth noting:

- As you make improvements, use the 'Beyond the Contract' software tool again to see how improvements are prioritized. People, business objectives, and purchasing practices are not static in most organizations, and you may find that other improvements become higher priority based on a new set of circumstances. The tool is designed to do this, so take advantage of the recommendations you receive
- Each and every improvement action in this workbook has been proven to add value to organizations that purchase IT. Some are better suited for medium sized organizations; others are appropriate for every size and for every type of procurement. Whichever improvement action you choose, remember that if you follow the steps and manage the improvement as a project, you will obtain better value from your IT purchases. Establish a culture of continuous improvement and don't stop with only one or two improvement actions

Finally, we wish you great success in each and every purchasing improvement you undertake and hope that you will let us know whether this book was useful to you. Send us an e-mail (procurement@opengroup.org) and share with us your success and suggestions for improvement. We're committed to seeing organizations like yours get more value from their IT purchases and we are also committed to the continuous improvement of this workbook.

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Define the business needs

This improvement

The nature and amount of IT to be procured depends on the goals and objectives of the company's business and the tasks associated with achieving these goals. Knowledge of the company's business needs is the key factor in procuring the IT needed to achieve these business tasks and goals. It helps to optimize the functionality and quality of the procurement.

This improvement will assist the procurement project team to define business needs according to company goals and objectives for use in the procurement process.

Warning signs

- Procurement is driven by technical innovation or the availability of new versions
- Procurement decisions are mainly based on supplier presentation, not on defined business needs and user requirements and procedures
- Procurements have shorter lives than expected
- The IT is not used for the purpose it was procured
- The procured IT is not used by all identified users
- Users are reverting to old systems.

Improvement steps

1. Define your business goals and objectives.

Before the start of a procurement project, business goals and objectives have to be defined and documented. Many projects fail because goals and objectives are not defined or documented.

If goals and objectives are not defined, benefits cannot be calculated realistically. If goals and objectives aren't documented, inconsistencies don't become clear, so that there is a high risk that project definition becomes explicitly or implicitly inconsistent.

In order to define your business needs as they relate to procurement, you must first have the business goals and objectives for your organization established and agreed. A typical set of steps for defining your business goals would be as follows:

- Define an information framework with data from your customers, competitors and trend analysis
- Define business objectives relating to this framework.
- Break down goals for each procurement project.
- Define a manner of documentation clear to read and easily checked for completeness and inconsistencies

- Document goals and objectives
- Perform reviews on the documentation.

2. Identify the existing IT system.

Any procurement project should start by looking at the existing procedures and systems. Using this information, it should be possible to collect and verify user requirements. This verification should be driven by a realistic improvement strategy; the environment will not change just because of the new IT.

When asked, possible users often give a description of the perfect solution. The practical problem, however, is that this solution cannot be implemented in a normal business time frame. To identify a realistic level of requirements, improvement, implementation and migration strategies should be developed to verify requirements. You should accurately assess which needs have the highest priority, as they are likely to become core features of the procured system.

If there are no standard procedures to identify the IT system, a good way to identify the required procedures is to ask why the procurement is needed. From the answers, the main problems and how they will be resolved by the requested IT should become apparent. Be careful to find out the real reasons. Sometimes, people require IT solutions just because they are new and available (requirements driven by technology).

3. Define user requirements.

It is necessary to structure and document the requirements that result from the above identification process. There are some methods of documenting requirements on the market. Choose the one that is nearest to the needs of your model and can easily be performed by your staff. Document your requirements according to the selected method.

In order to weight the requirements, include a note of which requirements are essential to the system, referring to the above business goals and objectives. The document should be reviewed by selected users, suppliers and by the procurement team.

4. Priorities requirements to be fulfilled.

User requirements are only one aspect of business needs. The company's business and quality goals must also be considered. The requirements collected must be validated using the following criteria:

- Cost reduction
- Productivity improvement
- Quality improvement
- Automation

Additional criteria can be identified for particular situations, but this list fits most situations.

With this criteria defined, perform an ABC analysis with:

- Requirements that must take place (A)
- Requirements that are very useful (B)
- Requirements that are nice to have (C)

Eliminate C-requirements when their benefits don't match their costs, or when available budget is short.

5. Calculate expected benefits.

The fulfillment of the selected requirements should bring benefits to the organization. It is important to calculate the benefits of the essential and high priority requirements. Considerations in these calculations should include:

- Cost effects, including the whole product life cycle
- Time to market
- Quality and customer satisfaction
- Employee satisfaction
- Management satisfaction
- Environmental effects

6. Define constraints.

Constraints on the procurement should be identified before the system requirements are finalized. This will help identify likely suitable systems and suppliers early in the process. Possible constraints that should be considered are:

- Cost limitations
- Date/schedule requirements
- Specific support required
- Interface requirements
- Associated equipment required
- Standards or law regulations
- Copyright, license or patent

It is very important not only to define positive needs, but also to include the constraints on the required IT. This makes it easier to prepare a clear tender.

Establish a procurement plan

This improvement

The procurement plan should encompass all aspects of the procurement. The first part should specify the goal of the required system or products together with a description of the strategy to address the need. The functions that system will fulfill must be clearly described, together with the date the system has to be operational, the relationship with other systems already in place, and the budget available.

It is good practice to adopt the convention of milestones as a guide to the events that must take place together with a schedule for each. In the plan, the roles and responsibilities of individuals must be made clear. A change management system should also be established to address changes in the procurement during its life.

It is always a useful discipline to imagine the worst and plan for it.

Warning signs

- Procurement is performed on an ad-hoc basis with no reference to other company plans
- There are no management policies and procedures for undertaking procurement
- The procurement plan is not formally reviewed and authorized
- The budget for a procurement plan is not approved
- The procurement plan does not account for systems already in use
- The procurement planning team does not have individuals who understand the requirements and functionality of the procured systems/products
- The procurement plan does not contain clear checkpoints and milestones
- It is unclear who is responsible for each activity amongst those involved in the procurement planning.

Improvement steps

1. Establish goals and strategies for a procurement plan.

In order to put together a procurement plan, the wider business context must be addressed. This should enable a rational approach to the priority of the procurement in question. It is important to understand the corporate goals and strategies of the organization within which the procurement will have to operate. The motivation for which the procurement is required should be clear and understood by the team selected to implement it. Some examples of the motivation for the procurement in terms of the wider business goal may be:

- Improve systems performance and functionality
- Improve data management

- Improve applications effectiveness

Once the wider business context and motivation is clear then the goals and strategies of the procurement can be established. This should be in the form of a procurement requirement statement that clearly states the goals and benefits. If the system is to replace or improve an existing system then the constraints of the current system should be stated.

A goal would take the form: 'Obtain a system that works with current systems X, Y and Z, and performs tasks A, B and C. This system should be installed and operational by D date, and give the organization a return on investment of E% within F years. It should be fully supported by the suppliers for G years.'

The most appropriate procurement strategy will depend on the type of contract the company normally works with, as well as the type of systems and service that the procurement plan is to acquire. Strategies for a procurement project might be:

- One-off procurement
- Single tender procurement
- Competitive tender procurement
- Call-off contract
- Fixed price contract
- Enabling arrangement
- Prime contractor/turnkey contract

2. Define schedules, milestones and dependencies of a procurement plan.

A detailed schedule for the procurement must be created. In a procurement schedule, critical milestones should be identified and appropriate resources for each phase of procurement should be allocated and budgeted. All dependencies within the schedule should be identified.

The milestones in a procurement schedule should as a minimum identify the start and/or complete dates as follows:

- Date to identify supplier(s)
- Contract signing date
- Delivery date
- Acceptance testing date(s)
- Operation date(s)
- Supplier technical supporting schedule

In order to plan this schedule, the time scale for each of the steps must be agreed. These time scales should highlight the company's deadline for the system to be operational. It must also take into account the time required for internal business processes (identification of supplier, raising purchase orders etc.) to be performed.

The elapsed time required for the supplier to source, deliver, install and test the system must be factored into the plan. Supplier time requirements should be determined through initial contact with potential suppliers once the procurement objectives are clear.

Once these elements have been addressed, it is important to revisit the goal to ensure that it is still viable. There is little point in maintaining a goal that is clearly unattainable. It is important to demonstrate an alternative, achievable and beneficial goal before attempting to re-negotiate a procurement proposition with senior management.

3. Clarify roles and responsibility in procurement.

To execute the plan, the roles and responsibility for each part must be assigned to people within the company with the experience and responsibility to carry out that part of the plan. Typically, the responsibilities in procurement need to be assigned to address:

- Procurement requirement
- Availability
- Supplier relationships
- Procurement database
- Contracts
- Product and service verification
- Problem reporting
- Performance
- Planning and change control

Multiple responsibilities can be assigned to a single person. The person's responsibilities should be referenced to the actions in the plan, the deadlines for each action and the other people requiring feedback from that action.

One person should have the overall responsibility to ensure that each action is carried out in accordance with the plan and to act as a coordinator for any problems encountered.

4. Periodically review the procurement plan.

The procurement plan should be reviewed periodically and any changes in requirements from either users or suppliers for a defined and on-going procurement should be controlled and managed. When change is necessary, the reason, benefit, and risks should be analyzed thoroughly and written down. If potential risks or losses are greater than the benefits resulting from the change, the change should be refused or compensation for the losses should be requested. A record of all changes will also prove useful when reconciling charges from suppliers or tracking the effort required to bring the new system on line.

Procure Open Systems

This improvement

Procuring Open Systems is a method of purchasing systems that creates flexibility in your IT systems and choice of suppliers for the future. It's a way of ensuring that the systems you buy today will continue to work and deliver value when new systems and technologies are introduced. It's also a way to create a healthy relationship with suppliers where you have the freedom to select the best suppliers for each purchase rather than being locked into a single supplier solution. By procuring Open Systems investments in applications and data can be preserved as technology moves forward.

Warning signs

- Data are difficult to share between systems
- When there are system problems it's not clear which component supplier is responsible for the correction
- You are unable to take advantage of new lower cost hardware platforms
- You find yourself waiting for your supplier to introduce systems or technology already available from other suppliers
- You have islands of data associated with specific applications or IT functions
- Your supplier indicates that the new function or application you need will require you to change to a whole new IT system
- You are forced to buy your IT components from just one or two suppliers.

Improvement steps

1. Establish an information architecture.

In order to procure IT using an Open Systems approach, you must first establish a structured view of the IT components you already have in place. This is commonly referred to as an Information Architecture. It describes each of the components of your system today, and the way that they interact with each other.

The simplest approach to defining an Information Architecture is to list all the installed hardware and software used within your organization. Once you've done this, you organize each item into logical blocks or layers that represent the level of the component as it relates to the users of the systems. You might first create something that uses the following layers:

- Applications
- Operating environment
- Hardware

You would identify at which level each item on your list of components belongs. You would then expand these levels into a further level of detail as follows:

- Applications
 - Inventory
 - Invoicing and accounting
 - Customer tracking
- Operating Environment
 - Operating system
 - Networking
 - Database
 - Development tools
 - System management tools
- Hardware Environment
 - Servers
 - PCs
 - Departmental systems

Then you would place each of the hardware and software products into one of these more detailed categories.

The objective is to be able to show the relationship between the components of the systems so that the dependencies become clear. For example, which parts of the operating environment does each application rely on? Does it access a separate database, does it rely on something like SAP, or a COBOL development environment, and does it utilize Windows/NT or UNIX? You may find that there are several different architectures being deployed within different parts of the business.

Once you've identified your existing Information Architecture, think about how it could be simplified. Ask questions like:

- Do you have several different development tools being used when one would do the job?
- Can you eliminate multiple databases and have a single distributed database environment?
- Can you define a standard PC environment that would be consistent across the whole organization or within a functional area?

Establish two Information Architecture views: how systems work today, and how you would like to see it work in the future.

2. Define the standard system level interfaces.

The fundamental technique that underlies procuring Open Systems is to utilize standard interface specifications in your supplier requirements and to require your suppliers to remain compliant with those standards today and in the future.

Interfaces are the protocols used by different components within an IT system that allow them to interact with each other. For example, if your inventory application needs to access a database, you would require your inventory application supplier to use a standard set of protocols called SQL which all database suppliers' support. By including this requirement, you give yourself the ability to expand to a larger database for your inventory system or to change to an entirely new higher performing database without having to modify large amounts of your inventory application.

There are hundreds of standards that have been specified and agreed within the IT Industry. Most major IT systems providers support many of them. A good starting point for learning about standard interfaces used within IT is the 'European Handbook on Open Systems.' This document will provide a roadmap of the interfaces commonly used and formerly agreed as IT interface standards. There are other interfaces that because of their widespread use are also standards even though they have not been formally agreed by a standards organization. A good starting point for standards is The Open Group web site at www.opengroup.org.

Without becoming an expert on standards you can immediately begin to gain the benefits of procuring Open Systems by using common standards that incorporate many standards into logical, easy to use groupings.

There are three standards that you can use immediately within your procurements to begin to get the benefits of procuring Open Systems.

1. The Open Brand

The Open Brand is a program that applies a "seal of approval" to products guaranteed to support a comprehensive array of open systems standards. The list of products and open standards in the program changes, so check www.opengroup.org/registration/ for the latest list of standards and products. Most major vendors' products are included in this program that gives the buyer a guarantee of conformance.

2. UNIX®

While UNIX is widely used as the name of an operating system, it is also a well-defined open specification that describes the interfaces and services most modern day applications require. By requiring suppliers to support the UNIX standard, you have assurance that your software investment will remain viable for the long-term. The UNIX standard provides an environment that's fully defined for most applications and computing needs. The Open Brand for UNIX has been available since 1994 and the program covers all major open systems platforms.

3. POSIX

This is a set of basic set of system-level interfaces that essentially every operating system for general purpose computing supports. Whilst there are many POSIX standards, the .1 standard defines a core set of system elements and interactions - but is not a complete environment on which to build today's applications. POSIX is referenced more frequently today in real-time and embedded systems environments than in MIS and application level systems. By requiring POSIX compliance from your suppliers you get a minimum level of assurance that much of your IT investment in software will remain viable for the long-term. An easy way to get full POSIX compliance is to ask for UNIX 98, which includes the entire relevant general computing POSIX standards.

Example text to be used in purchase agreements with suppliers for each of the above standards is available at www.opengroup.org/procurement/contracts.

While Windows/NT® is compliant with part of POSIX (.1 only at this time), there is no higher level of assurance for NTsystem procurements as there is with the Open Brand for UNIX. You must rely upon Microsoft not to change the interfaces in the Windows/NTsystem in a way that would substantially affect your application software and data.

It is important to note that the benefit from referencing one of the above specification standards in your procurement comes from requiring compliance from both the system suppliers and the application suppliers. You need to have conformance to standard interfaces from both to obtain the full benefit. In general, you will find nearly all of the system sup-

pliers support the above standards, however, many of the software suppliers will not do so unless you specifically make it a requirement of your procurements.

3. Define the standard interfaces between IT components.

Once you've started to reference system level interface standards such as the UNIX system, you can increase the benefit gained by procuring Open Systems by identifying standard interfaces you want your supplier to support for other components in your Information Architecture. There are standards defined and widely accepted in the areas of:

- Networking
- Database
- Transaction processing
- System administration
- Development tools
- Security
- Messaging
- Document storage and exchange
- Real-time programming
- Object management

Each of these areas has interface standards specified and agreed amongst a number of suppliers. By establishing some of these standard interfaces within your Information Architecture, you will give yourself the most freedom in choosing suppliers and ensure that products will work together when expanding your existing systems or creating more complex systems.

There is a great deal of information available about standards. A good starting point is an overview guide called the 'Guide to Open Systems Standards' available from The Open Group. This will help you identify which standards are available and for what purpose, so that you can decide which standard interfaces your organization needs to adopt.

Once you've identified component level interface standards, you will require your suppliers to conform to these standards in the products they deliver today and in the future.

4. Require suppliers to validate compliance with interface standards.

Requiring your suppliers to conform to industry interface standards allows you to gain the benefit of procuring Open Systems. However, it is easy for suppliers to state they are conformant to one or more industry standards when in fact they really are not. This is an issue that has been solved for many specifications used within Open Systems. But it requires you to take specific action to assure you are getting what you ask for.

For the system level standards of POSIX and UNIX, there are industry standard conformance tests and testing centers that determine if a supplier's system or application package properly supports and implements the standard interfaces. The Open Group maintains a list at www.opengroup.org of all of the products that have been tested for compliance with one or more of these standards.

The supplier for each of these products has committed that they will maintain conformance to the standard interfaces and that if there ever arises an issue related to conformance they will correct the problem free of charge and in a prescribed timescale. In return for making such a commitment, the Open Group awards these products with a special mark, called the Open Brand, so that purchasers know they are buying fully tested and guaranteed products.

The way that you can take advantage of this guarantee from your suppliers is to reference the Open Brand in your requirements and purchase agreements. By requiring your supplier to deliver branded systems, you have the guarantee that any interface problems will be corrected at any time without any cost to you.

The area today where more problems arise with conformance to interface standards is in the application software. In order to get the benefit of procuring Open Systems, both the system software and the application software must correctly use the same interface standards. While there is not yet a guarantee for application software, you can require your application supplier to prove to you that they are correctly using standard interfaces. Available from The Open Group and other sources is a checking suite that will analyze many application programs to determine exactly how they utilize standard interfaces.

The result from the checking suite is a detailed report identifying all of the standard interfaces used within the application and whether the interfaces were used correctly. Visit the web site www.opengroup.org/spam for more information.

5. Utilize standard interfaces to ensure future compatibility.

Once you've established your Information Architecture, it will become clear which components are critical and where new interface standards are important. By reading the IT press, you will become aware of new and emerging industry standards. You do not need to become an expert on standards to obtain the benefits of an Open Systems approach in your procurements.

As you learn and identify a new standard that may become important to your Information Architecture, require your suppliers to commit to eventually becoming compliant to the new standard within a fixed time interval. Be reasonable, new standards may require substantial changes to existing products in order to become compliant. A typical window to be included in a contract is 18-24 months, where any supplier seriously committed to conformance with standards will usually have products that are conformant to a new standard within this time period.

By requiring future compliance with standards, you can further assure that you have a path forward for your IT systems. Your suppliers will assist you in moving towards new standards through updates of their own products and systems. With an increasing number of your information systems being based on interface standards rather than specific supplier's products, you will obtain the greatest benefit of long-term viability of your IT investment.

If you're unsure about an emerging standard ask for compliance from your suppliers. Listen to what the supplier says, talk to other suppliers, and then decide if the standard is stable and widely accepted enough to become a future requirement for your systems.

Establish feasibility of solutions

This improvement

Establishing the feasibility of a system or solution prior to purchase will reduce the risk that systems will not perform as expected. Whether purchasing an off-the-shelf product or customized system, it is important to first determine if the product or system will meet the needs of the users and the intended business objectives. By establishing the feasibility of solutions, you reduce your reliance on supplier's claims and you often obtain additional information that enables you to more clearly state your requirements to suppliers.

Warning signs

- Purchased systems are sometimes discarded or require substantial development modifications
- Many complaints from users when newly procured systems are introduced
- Suppliers require substantial amounts of unbudgeted money to finish development of a system
- Newly purchased systems don't work well with existing systems
- Performance of purchased systems is substantially less than was expected.

Improvement steps

1. Obtain references from other purchasers.

The first and simplest step in determining whether a supplier's approach or proposal is feasible is to ask for references from other customers of the supplier who have done something similar. If a supplier has successfully implemented a similar system elsewhere, then the feasibility of such is established.

Rather than simply ask if the reference customer is satisfied with their system and the supplier, structure your query to enable you to get additional information and to make a proper comparison. Before contacting a supplier's reference customer, first characterize your new system expectations across several key attributes. Some attributes might be:

- Number of users or clients
- Response time requirements
- Number of records in the database
- Number of remote sites
- Level of availability to users
- Number of transactions per day
- Hardware platforms being used

Then when you talk with the customer reference determine if the system being proposed to you is similar to the system the supplier implemented for the reference customer across

the key attributes. If it is, then you have established the feasibility of the system you are about to purchase.

If your supplier has not done something similar in the past, then you should seriously consider other ways to ensure the feasibility of the system.

2. Utilize prototyping.

Prototyping is the process of creating portions of a product or system that demonstrates the key functionality or performance levels. Whenever you are purchasing a new system that is totally customized for your use, you should always use prototyping to ensure that the system when completed will meet your expectations.

The four steps you should follow in using prototypes are as follows:

- 1) Define the core requirements of the system you intend to purchase and priorities which are the most important aspects. This might be some specific feature, the ability to integrate with some other system, the performance level, etc. There will normally be two or three aspects which if not satisfied, the system will not provide the expected value.
- 2) Ask the supplier to demonstrate the top priority aspects identified for the system. It is not necessary that the supplier implement a large portion of the system, only enough to demonstrate the behavior of these key aspects.
- 3) Analyze the prototype to determine how much of it is based on the same tools and environment that will be used for the actual system. Your level of confidence in the feasibility of the system will increase the more the supplier has utilized the actual tools and environment.
- 4) Have the supplier convince you that the prototype accurately represents the key aspects of the full system implementation. If for example the prototype is a smaller scale version, have the supplier demonstrate how the aspects will remain consistent when scaled up to a full system. Listen for words that imply assumptions about technology, performance, throughput, etc. The fewer assumptions the higher degree of confidence you will have in the prototype and the feasibility of the system.

If you are asked by the supplier to pay for the prototype development, be sure to establish a formal contract so that the specific effort is defined and the costs limited. Also, remember to deduct the costs from the eventual purchase price of the complete system. Also, make it clear to the supplier that the prototype work and the larger purchase are two separate purchase decisions.

3. Collaborate with suppliers.

When you have a good supplier relationship and you have decided which supplier will provide the purchased system, you can establish feasibility through a more collaborative effort. This approach is similar to prototyping but establishes a higher confidence level in the feasibility of the proposed system.

The approach to follow has the following four steps:

- Define the core requirements of the system you intend to purchase and priorities, which are the most important aspects. Identify the core functionality that is fundamental to the system and the value it is intended to provide to the users.
- Construct the supplier purchase agreement as a series of phases where at each phase you will make a decision to proceed to the next phase. The first phase will be to show the core functionality operational. This will not be a prototype but instead will be a partial delivery of the full system

- Analyze the partial system and to determine whether it performs the way you expected. Conduct user feedback sessions where future users of the system can give you their impressions and suggestions for the complete system.
- If satisfied with the core functionality, proceed with the purchase of the next phase of development that will be to include additional functionality around the core functions. At the end of each phase, conduct user feedback sessions to again get impressions and suggestions from the users

By utilizing this approach, you will establish the feasibility of the system very early on. You will also ensure feasibility from the user's standpoint as they are collaborating with the procurement team and supplier at each phase. The users will validate and direct the content of the new system in the direction that best meets their needs.

Your supplier may find it an unusual way to construct a system. Most suppliers build systems by functional blocks rather than user functionality. The approach described above has been shown in several studies and endorsed by many organizations as a more productive and lower risk way of developing systems.

This approach is similar to prototyping but requires higher confidence in the supplier, as the initial phase is usually more expensive than the cost of creating a prototype. However, it provides much higher confidence in the feasibility of a system early in the procurement process.

Within public or government procurement there are limitations to the extent to which you can collaborate with suppliers. However, provided you establish the ability to utilize an alternate supplier at each stage of development, public procurement organizations can apply this approach. The risks are somewhat higher as public organizations do not always have the opportunity to utilize a supplier for which a degree of confidence has previously been established.

4. Utilize external evaluators.

Many SME organizations are forced to rely too heavily on the supplier's statements as to the feasibility of proposed products and systems. Not all organizations have the capabilities to evaluate supplier prototypes or have the resources or purchase the type of systems that allows them to work collaboratively with their suppliers.

An alternative approach is to use external evaluators to determine the feasibility of proposed solutions. In selecting an external evaluator, you should make sure an external evaluator has the following qualifications:

- Knowledge of your business or how the purchased system will be used
- Experience with the systems you already have installed
- Able to explain the supplier technology on which the proposed system will be based
- No existing or previous relationship with the supplier
- Software development experience managing substantial projects
- Familiar with supplier evaluation methods, such as CMM and SPICE

The evaluator should provide you with a formal report that evaluates the proposed solution from the supplier.

An External Evaluator may also be used to manage the prototyping action with a supplier.

Conduct cost/performance analysis

This improvement

Many systems are specified, procured, installed and implemented without due attention to the benefits that are expected. It is quite common, particularly in smaller organizations, for a project to take on a life of its own, with the parties to it loath to question whether adequate budgeting for both cost and performance has been undertaken. Once this has occurred it is very hard for those involved to give a rational analysis of why the project went ahead, what it was really for, who were expected to be the major beneficiaries or what was the return on the investment.

It is important to consider this from the outset and plan for how the project will be budgeted and what will constitute a successful outcome. The development of a cost/performance model will provide a useful structure to accomplish such an analysis. This should ensure appropriate decisions are taken throughout the life of the procurement in order to achieve the goals for which it was made.

Warning signs

- An unwillingness to stop and review a project having troubles
- Cost overruns
- Moving costs into different parts of the business in order to hide true cost
- No one person controlling performance against budget
- Additional functionality planned and delivered on an ad hoc basis
- An absence of structured meetings to address cost performance on a regular basis
- No senior management support for the system being procured.

Improvement steps

1. Identify the procurement stages for a cost model.

Part of the preparation of the procurement should include the development of a cost model that will address each stage of the procurement. The model should incorporate all of the costs associated with the adoption of a new system, including those which occur before the purchase of the system such as planning and the time involved in deciding which system to be procured.

Some costs associated with procurement are clear such as the purchase price or the amounts that are invoiced by the supplier. But with any procurement there are always hidden costs that are not clearly stated but which can factor heavily in whether the costs of a new system do not exceed the expected benefits. You must estimate these costs before entering final negotiations and purchase agreements with your supplier.

In developing the cost model you should break the procurement activities up into stages. For example there may be a development stage where there is little activity on your part, followed by an initial delivery or delivery of a prototype where potential users might evaluate the system and provide recommendations. By identifying the different stages, the job of modeling the costs of the procurement becomes more manageable.

Consider the following list of typical procurement stages and select those that are appropriate for the specific system you will be purchasing:

- Defining system requirements and user needs
- Developing call for tender and tender evaluations
- Purchase of system or software
- Development of system by supplier
- Review and evaluation of initial deliveries
- Review and evaluation of final deliveries
- Preparation for system cutover or introduction
- Updating system based on user feedback
- Additional delivery of versions of systems or components
- Introduction of the systems at other company sites
- On-going maintenance and fixes

Group the smaller stages together so that each stage has significant effort or costs associated with it.

2. Identify the costs associated with each stage of a cost model.

Once you've identified the different stages of the procurement, you need to consider the costs associated with each stage. The best way to do this is to structure your analysis by asking a set of questions for each stage. The specific questions will depend on the particular system being procured, but examples of typical questions are as follows:

- Which personnel need to be involved in this stage?
- How much time personnel involved in this stage will require?
- What products or services need to be purchased during this stage?
- What changes in current business activities will occur at this stage and what will the disruption cost?
- What new knowledge or expertise will be required of personnel and where will it come from? (e.g. training, consultants)
- How will this stage affect current services to users and customers and what will this cost?

By asking these questions you will be able to identify the costs associated with each stage. This may be the actual purchase, but just as important are the people costs of providing input to the supplier, the training costs for the users and the disruption costs for the business.

When you forecast costs always remember that anything involving people requires transition time. For example, even though training on a new system might require for each user only one day's class attendance, it will probably be several days or even weeks after the training that the users become comfortable with a new system and are proficient. While the one-day training costs can be easily calculated, the low productivity period also has a cost that should be estimated.

After you've identified the costs for each stage of the procurement, review each cost and ask yourself whether it should be shifted to or at least shared by the supplier. Do this in

advance of asking for proposals or offers from suppliers and include these cost items in your requirements or call for tender provided to potential suppliers.

3. Contact supplier's clients to validate the cost model.

It is recommended that you talk to organizations that have undergone a similar purchase so that you can confirm your cost expectations and identify any costs that might have been overlooked. A useful starting point is to approach a number of the clients of the suppliers from whom the procurement is being considered. It is likely that the suppliers will reference their best clients but it is sensible practice to include prospective supplier clients who have not been referenced, as a control. The names of these clients can often be found in computer user directories or through user groups.

This exercise can be time consuming so it is important to prepare a questionnaire to guide the interview. The interview can take place over the telephone. In this way a larger number of clients can be approached than would be the case if visits were undertaken. As a guide, use the model that you have prepared as the hypothesis to test. Generate questions to guide the client through your model and be prepared to make notes regarding any changes that appear to be necessary. A small spreadsheet can help with the recording and the subsequent analysis.

The purpose of this is to refine the cost model that has been developed and to ensure that it fits the type of procurement that is under consideration. The result should be a fully documented cost model that is circulated to and understood by everyone on your procurement team.

4. Define the expected performance of the new system.

In order to decide whether to proceed with procurement, you must establish the expected benefits that you will receive by making the purchase. Sometimes these benefits can be strategic such as having the latest technology, other times they are tactical such as to provide better service to users or clients, and other times systems are purchased to reduce costs. A purchase may be motivated by a combination of expected benefits. What's important is to be able to clearly state what is motivating the purchase of a system or software in terms of the expected benefits it will provide.

Once the expected benefits are established, the procurement manager in cooperation with the users, support staff and other people touched by the new system should meet to translate the expected benefits into requirements. For each expected benefit you should state the following:

- **The expected performance of the system required to achieve the benefit.**
This might be the number of transactions per hour, it might be the time it takes to look up a customer record, and it might be the time it takes to prepare a report or transmit instructions to another part of the company. It might be the time saved by no longer having to do manual tasks.
- **The minimal acceptable performance of the system.** This is the lowest performance level acceptable and if the system falls below this level the benefit gained is questionable or not attained

These performance targets must be stated in terms that can be measurable. They should have specific figures associated with them either as rates, response times, specific cost savings, reduction in staff, etc. With each performance measure, state how you will collect the performance data from the new system.

5. Undertake benchmarking analysis against existing systems.

There is little point in implementing a new procurement unless it will bring significant measurable advantages over the existing system. It is quite possible that, especially in the case of the smaller enterprise, the existing system may be manual.

It should be remembered that there have been many examples of systems that have simply replicated, in a computerized manner, a process that was inherently manual. Unfortunately such an approach has been known to bring more disadvantages than advantages. For example, manual double entry accounting procedures are often inappropriate for computerized systems.

Take the performance benchmarks you've defined and collect the same data for the existing system or processes. Many organizations are surprised that the actual performance of existing systems is higher than what was perceived. This may lead you to re-evaluate your performance targets or to reconsider whether procuring a new system is required.

One benefit of benchmarking existing systems is that you may find it useful to restate your performance objectives in terms relative to your existing system. For example, the new system must provide an 80% increase in capacity, or a savings of 30% in operating costs compared to the existing system. These types of relative performance objectives are very useful to use as requirements on suppliers. They are usually more precise, easier to measure, and can serve as a very clear set of acceptance criteria. You also shift the task and costs of measuring performance of the new system to the supplier.

6. Establish formal tracking procedures.

Having established a cost model and target performance benchmarks, you need to collect and track actual cost and performance data. You must establish tracking systems that allow you to:

- Determine the amount of time staff are spending on procurement tasks
- Determine the time users have spent being involved in the procurement and learning and changing over to the new system
- Keep a log of all costs and charges the supplier has placed on the organization both for products and services
- Determine the amount of down-time or disruption to normal operations that has occurred during and after the procurement

Once you are tracking costs, you should conduct periodic reviews to determine if your forecast costs were accurate. These reviews should occur at least at the start of each of the procurement stages identified for the cost model.

While the system performance cannot be fully determined until the system is delivered, use of prototypes can provide a degree of confidence that the system will ultimately meet the performance targets. When procuring complex systems include an initial delivery of a prototype or a partial system with the core functionality implemented. Ask the supplier to show how the performance targets will be met based on this initial delivery and consider if the justifications are based on engineering principles or a set of expectations which can not be fully explained.

Most important, when costs are running far beyond what was expected, or performance targets look unlikely to be met based upon initial prototypes of deliveries, be prepared to stop a procurement. It is far cheaper to pay for a partial implementation early in the procurement process than to impose a poor performing system on users and your business at the end of the procurement process. Anticipate this possibility in your contracts with suppliers and have payments be contingent upon meeting performance targets, and the ability to cancel contracts without substantial penalties.

Analyze and manage risk

This improvement

There are risks during the procurement process and later while the product is in use itself. Both sources of risk can often be traced to failures in the procurement process. Therefore each procurement project has to identify and reduce the risks continuously throughout the procurement process. Identifiable risks should be analyzed with regard to their probability and criticality. High priority risks require a strategy for reduction that should be followed continuously.

Warning signs

- Risks have been identified, but no tasks or responsibilities are assigned
- Many change requests are occurring in the first couple of months after delivery
- Risk management procedures are not defined
- There is no defined role/person in the project who is responsible for risk management.

Improvement steps

1. Identify risks.

The potential risks to successful completion of a procurement should be identified and documented. It is important to classify the level of each risk and estimate the probability of its occurrence. In addition, an estimate of the potential impact on the procurement goals (time-scales, quality and costs) should be made.

This activity also includes the identification of the person, team or company that will be responsible for managing the risk (later called the risk owner).

For each risk, you must identify suitable metrics as a basic instrument for controlling activities that will follow later. Typical risk types are:

- Human resource risks, qualification and personnel
- Unrealistic time schedule
- Unrealistic cost plans
- Incorrect or incomplete functional specification
- Incorrect or incomplete technical specification
- Supplier status
- Transport and delivery

To determine the risks to the procurement project you have to select those that could endanger the success of the project.

2. Analyze, categories and priorities risks.

Using the information collected in the risk identification phase you should be able to analyze, categories your risks and establish priorities for them.

Analyze your risks by going through the possible attributes of each:

- **Human resource**
 - Availability in the company
 - Availability on market (consultant)
 - Health
 - Fluctuation
 - Pregnancy and marriage
- **Unrealistic time scale or cost plans**
 - Low estimation knowledge
 - Unknown technical environment
 - Fixed date of delivery
 - Wrong planning methodology
- **Functional or technical specification**
 - Unclear environment
 - Low dependencies
 - Knowledge lag
 - Missing version control
 - Missing requirements
 - Included errors
- **Supplier Status**
 - Bankruptcy
 - Capacity
 - Availability of product
 - No quality system
 - Market readiness

Add other risk attributes to this list if necessary for your procurement project.

If necessary categories risks and attributes. Potential categories might be:

- Internal
- External
- Controllable
- Mitigating

Priorities your risks. The priority is mostly driven by the risk factor. You should calculate this risk factor by multiplying the probability with the potential impact.

3. Control risk.

Once the high priority risks have been identified, it is important to plan and implement mitigation activities and implement procedures to monitor and report to senior management the status of the risks and the effectiveness of strategies to reduce risk.

A mitigation strategy is a plan where the impact of the risk is reduced, its occurrence prevented or avoided. It also covers the need for contingencies to be put in place to compensate for the risk, should it occur. This mitigation strategy should be implemented during the procurement process.

Risk control also includes the estimation and calculation of the risk exposure, in financial terms, caused by the impact of the risk on the procurement process, with due consideration of the moderating effect of the implementation of the mitigation strategy.

An amount of money is calculated and allocated to each risk element. The sum of these amounts forms the risk contingency fund. It is important to include this calculation in the cost estimates.

4. Monitor risks

In order to get through your project, you have to make sure that risks, their status and their impacts are visible to the procurement team.

So each risk owner has to report:

- The risk
- The monitored attributes
- The mitigation strategy
- The efficiency of the chosen strategy
- Potential effects of each risk on schedule, quality and cost

5. Implement corrective actions.

Whenever the probability of a risk changes or a mitigation strategy doesn't work as planned, corrective action has to be taken to improve procurement results. It is important to identify certain milestones to validate the analysis of the results against the current situation. The information needed can be found by analyzing metrics or assessing the production and delivery processes of the supplier.

Implement a tendering approach

This improvement

Establishing a consistent approach to identifying and evaluating suppliers means that procuring organizations can improve the quality of their procured systems by ensuring they select the most appropriate supplier and solution in each procurement project. As well as guidelines for identifying and evaluating suppliers, guidelines are needed for managing the relationships with suppliers, both in the contract between the procurer and the supplier, and the day-to-day project management requirements.

This improvement action will assist organizations in developing guidelines that support their tendering and evaluation processes, whilst ensuring that the business requirements of the organization are uppermost throughout the process.

Warning signs

- Existing evaluation processes are not being followed
- There is no consensus on supplier rankings
- Purely financial considerations are taken into account in choosing suppliers
- Supplier selection begins before system requirements are sufficiently understood
- The selection team cannot agree on features that potential suppliers should demonstrate
- Procurement projects are often managed in a confrontational manner
- Contact and communications with suppliers are poorly managed, if at all
- Suppliers are abandoning the bid process.

Improvement steps

1. Ensure open competition between potential suppliers.

For many public organizations, regulations require that new system purchases over a specific amount require public announcement for invitations to tenders. This is also a best practice for commercial organizations as it provides additional information and the opportunity to compare different approaches from other suppliers. Invitations to tender should be advertised in an appropriate contracts bulletin or journal, ensuring open competition. Each potential supplier should be provided with the same information about the system to be procured, and the same functionality should be demanded from each supplier.

The tender evaluation policy and criteria, along with an appropriate level of understanding of the procurer's business, should be communicated to each potential supplier.

It is possible to limit the number of proposals received by establishing a list of suppliers who are regularly invited to tender. This list should be fairly broad and always include suppliers who have not provided services in the past.

2. Ensure demonstrated and documented proof of performance from suppliers.

Demonstrated and documented proof of potential suppliers' capabilities should be ensured; do not rely on promises from suppliers. A consistent framework for demonstrations should be developed to enable comparisons between supplier demonstrations.

This framework should include potential suppliers demonstrating, and being questioned about:

- The maturity of their software development capability
- Their understanding of the procurer's business and capability to meet the business objectives of the procurement project
- Proposed level of support for the lifecycle of the procured system
- Their ability to fulfill the service provisions proposed

3. Employ an iterative evaluation process.

The evaluation process should be iterative and multi-phase, ranking potential suppliers at each stage and eliminating suppliers as requirements are clarified and risks prioritized, resulting in a natural selection process and consensus and commitment from both the procurer and the supplier.

The evaluation process should be consistent for each procurement project, and should take into account not just financial measures, but also measures of usability, functionality and capability. Evaluation criteria should be relevant, weighted and quantitative, and communicated to and understood by the evaluation team and potential suppliers. The proposed solution should meet the business needs of the organization, and the procuring organization should be wary about being led to the supplier's own preferred solution.

At each stage of evaluation the differences between suppliers should be focused upon to ensure relative comparisons between competing solutions.

4. Develop an appropriately skilled evaluation team.

To ensure adequate evaluation of procurement proposals, the evaluation team should be cross-functional and made up of a variety of skilled professionals, including:

- Procurement specialists
- Contracts staff
- Information systems specialists
- Business functions staff

The evaluation team should have the appropriate level of seniority, experience and authority to be able to represent the business users and make recommendations that will be accepted in the organization. There should be a balanced membership of 'technology enthusiasts' and 'healthy skeptics', to ensure a good balance when evaluating the technical aspects of the proposal.

The team needs to have access to a legal advisor throughout the tendering and evaluation process. The team should also have the skills required to manage third party relationships.

5. Develop an organization-wide contracting strategy.

An organization-wide contracting strategy ensures all relevant issues are taken into account and consistently applied to each procurement project, eliminating the need to

develop a contract from scratch for each project. Business considerations should be uppermost in the contract, and functional, technical, commercial and legal areas covered. The procurement should be split into multiple contracts where uncertainty is high. The contract should include:

Commercial issues:

- Supplier performance criteria - measurement, testing and links to payment schedule
- Ownership and transfer of intellectual property rights
- Formal terms for success of the project
- Duration of the contract, particularly with respect to maintenance and support

Functional issues:

- How functionality of the procured system will be tested and accepted
- Service level specifications and agreements, agreed remedies and penalties
- Change control mechanisms for the system
- Deliverables and time-scales for the project

Technical issues:

- Business requirements should be translated to technical requirements, using standards where possible
- Technical risk of the project should be evaluated, and the risk management approach outlined in the contract
- Required links and compatibility with existing systems

Legal issues:

- Informed professional advice should be sought in order to develop appropriate legal content for the procuring organization

The standard contractual framework is likely to vary slightly depending on the relationship between the procurer and the supplier. For example a single component of a specific project will require a different framework from a framework for a long-term strategic program. Good relationships with suppliers are essential to project success, and project contracts should be designed and negotiated so as to ensure good relations, essential for the successful delivery of business benefits.

6. Maintain lists of potential suppliers.

Maintaining lists of potential suppliers reduces the time taken to identify appropriate suppliers for procurement projects. A 'long list' of suppliers should be maintained, including information such as:

- Financial viability
- Implementation track record
- Quality and relevance of their reference sites
- Project management capability
- Level of understanding of the procurer's business, at both strategic and process levels
- Resource base of appropriate skills
- Technical competence

For each procurement project, this long list should be reduced to a ‘short list’ of suppliers, based upon assessment and ranking of supplier responses, and focusing on the features of the required solution, including:

- Usability and functionality of the proposed solution
- Compatibility with existing systems
- Capacity for growth
- Relevant technical features
- Conformance to standards
- Quality management techniques
- Application of environmental and safety standards

7. Invest in building relationships with suppliers.

The relationship with suppliers, both current and potential, is vital to the success of the procurement project. The type of relationship will depend upon the nature of the solution; for instance, the procurement of a ‘commodity’ solution will require a tight contract with a low level relationship, whereas a complex solution of strategic importance will require a close relationship and communications at a number of levels.

An effective process should be established to manage the relationship with suppliers throughout the procurement project, in order to minimize surprises in the project. Expectations should be clearly defined and agreed at the start of the project, and good communications channels established, appropriate to the project. Strategic long-term relationships should be managed separately from project specific relationships, and skilled management is needed.

The long-term aim should be to ‘partner’ with key suppliers, with shared and joint definition of objectives, with balanced and shared risk and reward. The relationship should use the skills of both parties, with teamwork and open management as the keys to success.

Barriers to successful relationships should be avoided, and the project should be monitored for signs of any of the following:

- Insufficient top management commitment
- Inappropriate management style
- Inadequate or inappropriate resources
- Unrealistic budgets
- Insufficient involvement of users

8. Document lessons learned and maintain the tendering processes.

The tendering and evaluation processes should be planned, executed, reviewed and improved as part of the organization’s quality management system. The lessons learned in procurement projects and tendering should be documented and used to improve the existing processes on an on-going basis.

Require supporting supplier deliverables

This improvement

It is unlikely that the delivery of the product alone is enough to guarantee the success of a project. Small to medium size enterprises in particular do not usually have the time or the resources to carry out comprehensive tests. This makes it all the more important for them to receive assurances from the supplier with regard to quality management and testing.

Verifying these assurances can often lead to a considerable reduction in the risks associated with the introduction of a new product.

Warning signs

- Quality management, configuration management and testing are not recognized by the customer as being the responsibility of the supplier
- The procurement team has no criteria for choosing suppliers and no action points for the management of a project with regard to quality management, configuration management and testing
- Statements about quality management are accepted at face value from brochures or supplier presentations
- Nobody in the procurement team can say with certainty what form of quality management was agreed with the supplier
- There are no resources available to check the documentation delivered by the supplier
- There are no resources available to carry out tests using the test data supplied by the supplier or to evaluate the results.

Improvement steps

1. Get information on quality criteria, testing methods and documentation from your supplier.

Gather information on the following topics:

- The quality criteria that your supplier uses for the system to be supplied (quality management plan)
- Suppliers' testing programs for the product (testing)
- Suppliers' management process for the different components of the system. Is the supplier capable of recreating a particular version of the

product for testing and verification purposes? (configuration management plan)

- The methods used for documenting development and testing (test documentation)
- The process the supplier uses to ensure that the product meets the expectations of the users (validation)

2. Define realistic requirements.

Define your own requirements regarding the documentation of quality:

- Define what statements you need from your supplier regarding quality
- Define the statements your supplier should make regarding the quality of the tests that were carried out. This should include:
 - Supplier test procedures
 - Supplier quality assurance procedures
- Define what versions your supplier must be in a position to recreate

It doesn't make any sense to demand documentation that has no use, so ask the supplier only to deliver what will actually be tested or checked.

A company which demands a test on its own computer equipment should set aside the resources necessary to set up a test environment.

When quality and configuration management are both to be tested, it should be established beforehand whether the test would be using a pre-defined checklist or a general review of the actual results delivered.

3. Include quality requirements in standard contract text.

Not enough attention is usually given in contracts to questions of quality management, quality assurance and acceptance testing. Many lawyers are not well acquainted with these topics. For this reason many contract texts have deficiencies in these areas.

The procurement team should bring this subject to the attention of the company's lawyers who should provide:

- Contract terms for quality management.
- Contract terms for quality assurance
- Contract terms for acceptance
- Warranty terms
- Liability terms

In order to guarantee adequate coverage of quality management issues in the drafting of contracts the company should use a contract model that includes a section that outlines quality management requirements.

In addition, statements on quality management, quality assurance and testing in draft contracts from suppliers should be scrutinized using checklists.

4. Include quality management as a factor when choosing suppliers.

Because of their size, smaller organizations often do not have the power to force through their own conditions on the supplier. It is therefore important to exploit the competition amongst suppliers in order to gain the best possible contract terms.

The following conditions are necessary in order to do this:

- Costs and risks can be assessed from a supplier's conditions.

- The importance of quality management is recognized and realized internally
- The necessity is clearly defined and formulated

5. Review your projects.

Establish a feedback procedure that makes sure that project results from the above items are collected and evaluated. It is important to document:

- The deliverables that were requested
- Which of these requests became part of the contract
- The items that were delivered by the supplier
- The contribution of the above deliverables to the success of the project
- Whether the project is more successful when the above items have been delivered completely by the supplier

Take corrective actions on these if the procurement project begins to produce poor results. It is important to have planned strategies to motivate the project staff and the suppliers.

Utilize a product selection process

This improvement

Defining a product selection process allows an organization to manage product or supplier selection in a structured and organized fashion. Decision making between competing solutions becomes easier and better documented. By using a product selection process an organization is able to build strong support within the procurement team and the eventual users for the product or solution that has been selected. It ensures that IT purchases are made based on sound business and technical reasoning and that each potential solution is carefully considered before substantial investments are made.

Warning signs

- Decision-making concerning products or suppliers is taking too much time
- Users are unsure why new systems are being introduced or the benefits that are expected
- Procurement team members are unable to explain why a supplier was selected
- Products or solutions can only be purchased from 1 or 2 favored suppliers
- Total costs of bringing a new product or solution on-line are routinely underestimated
- The organization has had troubles using new or leading edge technologies
- There's a large amount of re-work and modifications to systems after being brought on-line
- Projects are sometimes cancelled before the supplier delivers the purchased system.

Improvement steps

1. Define company objectives and strategies.

In order to decide between competing supplier products or solutions, it is essential that the procurement team have an understanding of the context in which the decision will be taken. A key element that is required before defining a product selection process is to establish the corporate goals and strategies of the organization and to identify the motivation for which the procurement is being made. The procurement should relate to the business goals of the organization. Some examples of common goals might be:

- Improve customer focus or service level
- Improve operational efficiency or lower costs
- Establish additional business unit or new functional activity

If the objectives are stated in far-reaching broad terms, gain consensus on their true intent. A clear understanding of the corporate objectives and their implications is essential for a successful IT procurement.

These higher-level business goals are then translated into IT specific objectives that become part of the basis for supplier selection. Some examples might be:

- **Improve data management**
- **Improve applications effectiveness**
- **Improve systems connectivity**
- **Improve systems performance and functionality**

There are several key elements that should be put in place before proceeding with an evaluation. In fact, the procurement team should establish these elements before proposals from suppliers are requested.

The size and relative importance of systems being procured varies significantly and, while you should always be aware of the ‘big picture’, each procurement will not require an in depth analysis of the entire corporation and all of its objectives. It is important to decide the impact that each procurement has on the company as a whole, and to adapt your efforts accordingly.

2. Introduce a procurement scorecard approach.

Whether evaluating different infrastructure approaches or simply comparing two solutions for a specific function, the challenge becomes how to ensure that all of the proposed solution’s benefits and shortcomings, risks and uncertainties, both tangible and intangible, are evaluated along with the financial analysis. One method that has proved useful for many organizations is to employ a Procurement Scorecard.

A Procurement Scorecard is a framework for organizing and evaluating alternative supplier solutions. It is specific to each organization and procurement in that it takes into account the business objectives and strategies as well as the existing infrastructure in which the procured system will operate.

The establishment of a Procurement Scorecard is a joint activity undertaken by all of those involved with the procurement. The definition of the Procurement Scorecard is undertaken in a group setting where each person involved with the procurement participates. In addition to the direct benefits the Procurement Scorecard has on making supplier decisions, the definition process itself assists the procurement team to clearly state the criteria and expectations for the procurement.

The steps in defining a Procurement Scorecard are outlined below.

3. Define the scorecard elements.

The Procurement Scorecard will consist of a set of elements that will be used for evaluating the supplier alternatives. These elements are divided into four categories - Business Objectives, IT Objectives, Financial Measures and Intangibles. These allow for a broad-ranging analysis covering the strategic, technical, financial and other issues relevant to your organization’s future.

Some examples of evaluation elements in each category are as follows:

Business Objectives

- **Make available all required information at point of customer contact**
- **Speed up two-way flow of information between company and customers**
- **Generate a minimum of two new IT-based services each year**

- Implement computer supported co-operative work tools for research centers

IT Objectives

- Enhance data interchangeability
- Reduce data redundancy
- Increase number of staff linked to core and local systems
- Improve electronic communication with customers and suppliers

Financial Measures

- Total costs.
- Return on investment
- Maintenance costs
- Liquidity of supplier

Intangibles

- Supplier's knowledge of our business
- Degree of change of current user procedures
- Forward compatibility of technology
- Supplier's dependency on other suppliers

The specific evaluation criteria will of course depend on the procurement and the objectives and needs of your organization.

4. Determine the scorecard measurement criteria.

Having defined the evaluation elements, you must now reach agreement amongst those involved in the procurement as to how each element will be measured. For each evaluation element it is important to define a criterion that can be used to judge the capability of a potential solution to realize the strategy or to minimize the risk. The more easily measured the criteria, the more readily acceptable the subsequent scoring is likely to be.

Some examples might be as follows:

Evaluation Elements	Measurement Criteria
Make available all required information at point of customer contact	Number of PCs at customer support node
Speed up two-way flow of information between company and customers	Number of external access ports
Enhance data interchangeability	Cost of conversion
Improve electronic communication with customers and suppliers	Number of external access ports
Lack of long-term forward compatibility	Compatibility with standards
Five year total costs	Not to exceed value
Change in user's procedures	Number of users affected

The measures will vary depending on evaluation criteria. It is not necessary that each measure be a quantitative figure. It is more important that it is understood and that the procurement team can quickly determine the measure.

5. Assign relative weights to each category.

The final step in building your Procurement Scorecard is to obtain agreement on the relative importance of the various elements that make up the Scorecard. Clearly not all

aspects are equal in their concern to the organization; therefore, it is necessary to determine weighting factors that provide the necessary balance between the various evaluation elements.

The first question that should be addressed is the relative weights to be assigned to the four categories. How do you balance Financial Measures against Business Objectives against IT Objectives or Intangible Risks? As there is no single answer to this question, it is suggested that you use a consensus process involving appropriate levels of management to assign category weights that are acceptable to all.

Weights may be either positive or negative. Negative weightings are typically assigned to the Intangible category. As a result, larger risks weigh more heavily in the final analysis. The category weights should be represented as decimals adding up to 1.00.

An example might be:

Financial Measures	0.5
Business Objectives	0.35
IT Objectives	0.25
Intangibles (Risks)	-0.1
TOTAL SCORE	1

Research suggests that organizations have tended to assign about half the total weight to the Financial Measures, allocating the balance to the three other categories. Thus the Financial Measures still have a significant influence on the final procurement decision.

You might find it useful to categories the measurement criteria as you identify them into those most critical and those less critical. This will help you assign the weights to each element in the later steps.

6. Assign relative weights to each element.

You must now determine the weightings to be assigned to the Evaluation Elements within each category. In order to ensure comparability between categories, the total number of weighting points to be assigned within a category is fixed at 100 - irrespective of the number of evaluation elements within the category. Thus, there may only be 3 elements in the Financial Measures and 10 in the Business Objective category, but in both cases the total for all evaluation elements is 100.

An example of how the weighting might be assigned to individual evaluation elements within a category is as follows:

Improve Customer Focus and Service	
Make available all required information at point of customer contact	30
Speed up two-way flow of information between company and customers	28
Improve Innovation and Development	
Generate minimum of 2 new IT-based services each year	25
Implement computer supported co-operative work tools for research centers	17
Business Objectives Total	100

7. Rate and score the alternatives.

For each of the non-financial Evaluation Elements, the alternatives are rated on their ability to meet the measurable criteria agreed. This rating should be undertaken on a 5-point percentage or decimal scale, where 0 represents 'Does not Meet Criterion' and 1 means 'Fully Meets Criterion'. The rating is then multiplied by the Evaluation Element weighting to obtain the Element Score. All the element scores within each category are summed to obtain the overall Category Score.

For the Financial Measures, calculate the appropriate analyses (ROI, Total Cost, etc.) and rate the results obtained for each solution on a similar scale, again 0 is low and 1 is the highest possible result. Multiplying the rates by the element weightings results in the Element Scores, which are summed to obtain the overall Financial Measures Score.

The final step in calculating the Scorecard requires that you multiply each Category Score by the appropriate category weight and total the results.

You now have a single number for each alternative solution, representing the relative ability of each to meet your agreed balance of financial, business, technical and other objectives. Unlike assessments based solely upon a single financial criterion, for example return on investment, the Procurement Scorecard provides you with a means to reflect the competing pressures that represent the real strategic questions facing you and your organization.

By building the Scorecard in conjunction with those who will participate in the procurement review, you already have a ready means to communicate both the key issues and your preferred means of resolution. The value of the Procurement Scorecard as an aid in reducing large, often complex, reviews of dissimilar approaches to a common, easily understood form should not be underestimated.

Evaluate supplier's capabilities

This improvement

Establishing a supplier's capabilities will provide the context within which a rational selection will be made from those suppliers who are capable of providing the required system(s) and delivering against an agreed contract. It is important first to determine an appropriate list of suppliers who can demonstrate a reasonable track record in the application areas under consideration. This list can typically be drawn from directories, network contacts and companies who have installed similar application systems.

A model of the required supplier should be generated. This can then be used to assess supplier capability. The profile should cover such issues as application experience, quality, delivery record, change management, support and service.

Warning signs

- There is no profile to evaluate supplier capabilities
- Suppliers are selected subjectively
- Users' opinions are ignored
- The procurement team is unable to agree the capabilities of suppliers
- Contact and communications with the supplier are not being managed
- Potential suppliers are abandoning the bid process.

Improvement steps

1. Establish evaluation criteria and scoring system.

The suppliers' capabilities should be assessed against defined criteria using some kind of scoring or rating scheme. Such a scoring scheme may involve developing a matrix of evaluation criteria against capability expressed as a score (say out of 10, where 10 represents the ideal state).

Although it is recognized that additional expense will be incurred, it is recommended that, where economically possible, an independent third party assessment should also be sought using the same criteria. Initially, the suppliers should also be asked to provide their own answers to the rating scheme.

The attributes of such a rating scheme might be:

- Trading history, profitability and staff numbers (particularly those associated with application development and support)
- Application competence

- Network competence
- Quality accreditation
- Software engineering capability determination
- Percentage of on time deliveries in the past five years
- Number and lengths of project overruns in the past five years
- Staff turnover
- Change management system
- Repeat business

It is recognized that some of this material may be difficult to research but two key sources of supplier capability will be information from the suppliers' clients and, of course, the suppliers' company reports and accounts.

2. Generate questionnaire.

It is recommended that a structured questionnaire be generated which is used to elicit answers from clients referenced by each supplier. The questions should be designed to cover the issues addressed in the improvement steps below. These answers can then be compared with those submitted by the clients from their own assessments.

As with all research, it is important to control the amount of information that has to be analyzed. The criteria, established in step 1 above, should point the way to the questions that will need to be asked. The capabilities that are agreed by the implementation team should represent those that are desirable and therefore be the subject of the questionnaire. Typically, the questionnaire would be used to:

- 1) Evaluate each supplier's ability in the context of the application requirement through reference to past projects. Were they successful? Did the supplier understand the particular business problems in detail?
- 2) Find out how the supplier co-operates with clients in order to establish a requirement specification. How was the systems analysis explained to the client? How was the documentation handled? What was the frequency of meetings?
- 3) Determine whether the supplier has a professional approach to the control of quality. Do they have accreditation? Do they utilize metrics? What is their attitude towards prototyping? How do they incorporate user requirements, and what is their approach to change control? Where there was a variance in a project, how did it occur and how was it accounted for?
- 4) Show the supplier's record with respect to delivery schedules. How did they address support issues? How responsive was their help desk? Were there other mechanisms for support, such as remote diagnostics, etc?
- 5) Show the costs associated with each phase of the project in comparison with the estimates

Finally, it is important to know whether the client would purchase from the supplier again.

3. Analyze questionnaire data to compare suppliers.

Having conducted the survey, the procurer should assemble the various responses to the questions raised by the profile and the questionnaire and analyze them in the context of the goal of the project.

This analysis should be compared with that conducted by a third party, where that has been possible, and also with the answers supplied by the individual suppliers. It is advis-

able to apply weighting factors in order to reflect the relative importance of different elements of the profile.

Typically, such an analysis should be short and to the point covering the general capabilities of each supplier and then exploring the specific competencies with respect to the application or applications in question. For instance, it is possible that a supplier could score quite highly on general questions relating to past history but not well in a section regarding specific business knowledge and vice versa.

Lay out the capabilities of each supplier in the context of the objective and the profile that was agreed.

Remember that this analysis is a guide only and should not be used alone as the basis for the decision. After the analysis has been completed, it is important to apply a collective judgment on the results. This judgment will include the experience of contact with the individual suppliers, their responsiveness during the bid process and so forth.

4. Determine supplier software engineering capability.

As part of the overall evaluation of a supplier's capability, one may wish to include an assessment of the software engineering capability of the supplier to determine whether the supplier has the capability to meet contract requirements. This activity can be accomplished by reference to the ISO/IEC 15504 standard on software process assessment.

By establishing a target capability for the supplier, and by determining and analyzing a supplier's actual capability, the risks of any shortfall can be analyzed and risk mitigation strategies put in place to control any identified risks.

5. Identify the risks associated with the analysis.

Since it is not always a simple task to uncover the information that you need to satisfy your profile it is important to allow for risk, particularly with respect to supplier's information about themselves. Usually it is possible to gain this information from third parties. However, you should remember that not all third-party information, when given freely, is necessarily independent. A contracted assessment by a third-party, covered by professional indemnity insurance, is always preferable to anecdotal evidence.

Some points however are usually easy to spot through a visit. For instance:

- The demonstration shows that the application area is new to the supplier
- The supplier has a significant weakness in its production and documentation systems
- The supplier has no demonstrable quality assurance system and proven performance
- The supplier's attitude to support and maintenance is unclear

Control contract changes

This improvement

Although both parties to a contract endeavor to cover all aspects of the project, changes in circumstances, particularly with projects that extend over long periods, mean that contract changes are likely to be necessary. The requirement for such revisions can occur at any stage of a project. It is of course important to establish matters, such as, the fundamental design and logic of an application before work starts, since changes to these are likely to cause significant difficulties down stream.

Change control should only arise when either party during the implementation of the contract sees the need for change to inputs, outputs, interfaces and network functions. This improvement action will assist organizations to establish a process to successfully monitor, control and document contract changes.

Warning signs

- No awareness of the need for change management
- No formal guidelines for change management
- Changes are implemented on an ad hoc basis
- No provision for changes is evident in the contract.

Improvement steps

1. Identify and document potential causes for change requests.

From the initiation of the project, the procurer should record all potential requirements that might need changes to be agreed with the supplier. Responsibilities should be defined for processing change requests. A change management team that could be run by the procurement team manager to ensure co-ordination between the changes and the original procurement teams might accomplish this.

The causes of requests should be examined and agreed in the context of the objective of the procurement. Those elements that are deemed mandatory should be raised with the supplier and a formal response sought. Depending upon the response, a decision should be taken regarding the inclusion of the change in a revised specification and the contract.

The changes that are agreed should be documented and a contract variation agreed with the supplier covering:

- Change content
- Time for delivery

2. Include a contract change clause in a contract.

The objective of a contract is to record an agreement between the parties that is agreeable to both. Apart from all that is initially known about the system, current context and environment, a 'change clause' should be incorporated in the contract to allow some flexibility.

A change clause in the contract allows changes to be made on certain conditions. Conditions that should be regulated in the clause include:

- Whether changes will attract additional charge
- A definition of the changes that are acceptable
- An explicit statement of how and by whom a request for change and its approval should be made
- Restrictions relating to the changes that are available

3. Establish a contract change control system.

A system should be adopted to control contract change management by facilitating communication between the parties to the contract. The purpose of such a system is to review and authorize contract changes, prioritizing those for which authorization must be signed.

In a contract change control system the following activities should be covered:

- A formal system for identifying changes
- A mechanism to determine consequences of changes in terms of impact on project costs and duration
- Investigation of and recommendation for alternative courses of action
- Communication of changes agreed to the project team and user representative(s)
- Specify a policy for minimizing conflicts and resolving disputes
- Ensure that changes are implemented
- Report regularly a summary of all changes to date and their impact both financially and to timescales for implementation

4. Monitor and record contract changes.

The circumstances under which a contract may be changed should be identified and documented in order to provide a control system. It is important to establish what will be allowable and what will not. For instance it might be advisable to preclude logic changes to the system specification, once it is agreed between the parties to the contract. Should significant changes be required in this area then this could be an indication that the original specification was invalid and therefore a new contract might be required.

It is more usual that elements of the inputs, user interface and outputs require change. With a monitoring and recording system, the agreement of change requests to the contract can be made explicit and understandable to both parties.

Therefore, it is important to have:

- A formally documented contract
- A defined contract change request procedure
- A contract change authority structure.
- Identification and documentation of potential causes for change requests
- Examination of the contents of the change request with legal representatives

- Performance measures for the changes that are identified as required
- Consideration of the need for open options in a contract
- Consideration of segmentation of a contract for easy referencing and modification

Conduct quality assurance and product verification

This improvement

The smooth production release of new products and systems is only possible after it has been established that the new system meets the company's business requirements and is capable of running smoothly in its technical environment. If deficiencies or weaknesses are first identified during release or in the first few days of operation then considerable delays and increased costs can ensue. This will be because corrective actions, regressions testing and backwards migration to the previous environment are necessary.

These circumstances endanger not only the economic success of the project but also the acceptance of the system among the users. Unprepared or insufficiently prepared tests lead to error detection in the operation phase and, therefore, to avoidable risks.

Warning signs

- Nobody is responsible for testing new systems
- Tests are carried out on an ad hoc basis upon delivery
- Interim results are not recognized as being a part of quality assurance
- There is no test documentation
- There are no documented procedures for testing or quality assurance
- Quality assurance is considered from the cost point of view only
- Error and error elimination costs for new systems are not transparent
- There is no definition of requirements against which to assess a product or system.

Improvement steps

1. Document agreed system requirements.

The basis of quality assurance is an agreed document that defines the requirements for products and interim products. During the definition process, a list of the requirements for the various products and interim products should be derived through discussion with all interested parties. It is important to ensure that all interested parties are identified before the process of definition begins.

2. Plan the tests.

Using the agreed system requirements document, a checklist of required functions and features for the product or interim product should be drafted. This checklist should ensure that appropriate tests are defined for each component of the system. It should also ensure that systems are re-tested after correction, and with each new product delivery. This testing phase should be factored into the procurement plan. The plan should allow adequate time after the testing phase to correct any identified problems before delivery.

Although the final product should always be tested, a selection of interim products to be tested can reasonably be made according to the following criteria:

Availability of resources

- Criticality
- Cost/benefit analysis

Plan supplier audits when quality criteria are critical for the project.

Plan not only a time schedule but also resources and test environment to make sure that tests and audits are performed in the scheduled time. More information about testing can be found at www.opengroup.org.

3. Document testing and quality assurance.

Define the documentation for the testing. This should include:

- Which item in which version was tested
- The date of the test
- Who performed the test
- How the test was conducted
- The test profile and standards used
- Results analysis and conclusion

The quality requirements and the testing for quality should be developed from the requirements definition and added to the documentation prepared for testing. Once the tests have been completed it should be possible to assess which products were tested and with what intensity. This documentation can be used as proof of results and completeness.

At this point, it should be possible to pinpoint the risks associated with a production release. However, it will not be possible to quantify them.

4. Define activities and procedures.

Simply documenting that the test results conformed to the specification is insufficient for testing and quality assurance purposes. In order to achieve an acceptable level of quality for introduction it is necessary to plan the verification checks and the quality assurance measures in advance.

In general, the following activities have to be planned for each test:

- Preparation
- Execution
- Evaluation
- Documentation of results
- A conclusion recommending acceptance or rejection with supporting narrative

It is important to be thorough but realistic in determining quality and test procedures. Inevitably, these procedures can be costly and a balance must be struck for the SME that ensures that the quality of the testing process is adequate to ensure overall compliance with the requirements.

5. Integrate verification and quality assurance.

Aspects of verification (acceptance test) and quality assurance should be incorporated in the procurement process as soon as possible.

Generally speaking, the supplier delivers a finished product based on his specification or the requirements of the customer. The handing over of interim products as well as internal reports, manuals, test reports, etc. is not normal practice.

If interim releases are contemplated, then the delivery and test program must be clarified and this will require negotiation with the supplier. In addition, the company should negotiate a right to reject interim deliveries.

Final acceptance should be planned in advance as part of the procurement process. For example, clarify how test data will be made available, who will generate it, and who will carry out the tests. It is important to ensure the separation of test and operational data.

If test data is to be made available by the supplier, it must be made clear whether and to what extent the customer has to specify this data (test cases), or whether it will be built on customer supplied data.

If the customer is to carry out the final acceptance, then the period of advance notice the customer requires should be agreed beforehand and observed by the supplier.

6. Define standards.

It is important to evaluate the feedback from the project in order to develop standards and formalize the processes. In order to do this, the following should be used:

- Checklists
- Table of contents profile
- Results profile
- Document templates
- Name conventions for test results
- A structure for your test result database.

In order to save time, resources, and money in the test process, use test tools to cover your standards. Test tools are available for the following:

- Capture replay
- Measurement
- White-box test support
- Test case determination
- Test data administration
- Test procedure administration
- Data set comparison

Perform value for money analysis

This improvement

Establishing a standard value for money analysis framework, consistent with the business benefits analysis, enables organizations to select procurement projects that have maximum value for money, and to assess past and present projects to improve value for money measures where possible.

This improvement action will assist organizations in defining value for money measures and applying them over the course of procurement projects.

Warning signs

- There is no established method for comparing the value for money of competing procurement projects
- Different members of the organization obtain different value for money measures
- There are no standard cost tracking procedures in the organization
- Value for money measures are based solely on project cost
- Projects are evaluated solely on technology delivery schedules.

Improvement steps

1. Define value for money measures.

A consistent analytical framework should be developed which can be applied to all procurement projects, with defined methods and tools. It should be applicable when:

- Selecting between competing procurement solutions
- Comparing the value for money of current projects to that of past projects
- Analyzing the value for money of on-going projects

The metrics should be independent of the kind of procurement, and able to be applied before a specific procurement approach is chosen.

The cheapest procurement approach is not necessarily the best, and the value for money metrics should include not only financial measures, but also aspects such as functionality, supplier capability and measures of project risk. A total cost of ownership approach should be adopted, assessing the value for money of a project from design through to implementation and maintenance over the expected lifetime of the procured solution. This

should include 'soft' factors such as user satisfaction and ease of use, as well as technical functionality.

Where financial analysis is carried out, financial assessment rules such as discounted cash flow and depreciation should be applied over the lifetime of the project, to ensure realistic evaluation of costs.

2. Align value for money measures with business benefits.

Procurement projects should be undertaken as part of a business performance improvement initiative, and so it is essential to align value for money measurements with expected business benefits, such as reduced time to market for products, or increased competitiveness. Value for money targets should be based around these business benefits, rather than solely on technical delivery of the procured system. Value for money targets should be planned and specified in the business case or procurement plan for the project.

A consistent business benefits framework should be developed, and be able to be applied to all past, current and proposed procurement projects.

As with all aspects of procurement, senior management sponsorship is essential when defining business objectives and value for money targets.

3. Track costs throughout projects.

Value for money should remain a priority throughout the procurement project, and it is essential to track costs accurately to have a true measure of value for money of projects.

Costs are easier to establish for standard procurements, such as packaged solutions. Costs become increasingly difficult to establish accurately as the complexity and the level of customization of the solution increases. Establishing costs too early in innovative solution development can result in suppliers basing a bid upon an incomplete understanding of the problem, and so costs should be agreed at an appropriate time, together with time estimates.

Once established, costs should be tracked to compare actual with estimated costs and to provide measures of value for money. If possible, cost tracking should be tied in with existing regular management reporting measures, rather than being an individual task, thus making the process easier for the project team to undertake.

4. Conduct periodic reviews.

Each procurement project should have program goals for cost, schedule and performance. Periodic reviews of procurement projects should be carried out to ensure that the business objectives and value for money measures are still realistic. The value for money of current systems should be ascertained to enable benchmarks to be developed and used to compare new systems with old systems.

It is the exploitation and use of a procured system that provides business benefits to the organization, not simply its implementation. Sufficient time should be allowed to get a true measure of the value for money. This is to allow for benefits to emerge, as the capacity of the system becomes better understood.

An individual team member should have the responsibility for acceptance testing of a procured system, and adequate time and resources should be allowed for acceptance testing and training system users. Metrics ascertained from users are essential in assessing value for money, and specific project resources should be allocated to capturing user feedback.

An independent review should be carried out at the end of each project to confirm its value for money and lessons recorded to apply to future projects, as well as reviewing the meeting of business objectives.

Manage post implementation

This improvement

The purpose of managing post implementation is to ensure that post delivery activities are successfully completed on time and that users are satisfied with the delivered systems. In particular, with systems that have staged deliveries, it is important to have management processes for the integration of subsequent systems. The early stages of post implementation activity require a careful and structured approach to the integration of the system(s) with those that already exist whether computerized or not.

It is important that the supplier is contractually committed throughout the life of the system, providing for example, user support, fixing performance problems, providing a help desk, technical support and maintenance covering bug fixes, upgrades, development and documentation. To ensure that these are covered requires management. It will not happen automatically.

Warning signs

- No documents relating to the acceptance procedures (including user acceptance) are available for each stage of implementation
- No post implementation contract review has been undertaken
- The specific elements of supplier support have not been formally contracted
- System performance, response times and network issues are not contracted or reviewed
- There is no escrow agreement to cover access to code in the event of supplier failure.

Improvement steps

1. Implement recording system for a performance review.

A post acceptance performance review should be contracted with the supplier to cover the early stages of operation and post implementation. Depending upon the system, such a review should be carried out between one and six months after a system has been brought on line. In order for this to be of value the implementation process should provide a means for users to feed back to management areas of difficulty with the system. Typically, such systems employ either manual or e-mail recording.

A daily or weekly fault/failure reporting system is particularly useful to manage this process and to avoid anecdotal complaints from users. To be effective, such a system

should enable management to re-visit the faulty part and repeat the problem so that it may be demonstrated to the supplier. A user log of support requests should also be retained.

The post-acceptance performance review should involve the supplier and preferably be non-confrontational. It should generate an action plan to resolve issues from:

- Post-implementation fault reports
- System performance compliance - for instance, are response times still within specification? Is network performance still satisfactory?
- Project performance variances against targets (timing and budgets).
- Where problems have been encountered how have they been resolved?
- Application difficulties that point to revisions that may be required
- The user support log

2. Conduct contract compliance review.

A contract compliance review is different from the performance review. It is normal to conduct such a review very shortly after the acceptance testing has been completed and the system accepted.

The purpose of contract compliance is to ensure that both parties are satisfied with their respective positions and performance and that the contract still reflects the purpose for which it was made. In a contract compliance review, the following issues should be reviewed and an agreed action plan prepared to address outstanding issues:

- Was the system ready for acceptance on time?
- What changes to the system have been allowed?
- What part of the contract has been accepted and completed?
- What deviations from the contract (agreed or otherwise) by either supplier or purchaser were made?
- Are there penalties to apply?
- Are there additional un-contracted expenses to pay?
- Are there variations required for the continuance of the contract?

3. Ensure supplier's post-delivery support.

Subsequent to the contract compliance review, or at the same meeting, the matter of support should be reviewed so that both parties are clear about the continued support that the system will attract. This will avoid any doubt about the expectations relating to support.

The matter of warranty must be clearly covered by the contract. For instance, what happens in the event of a failure of part of the system resulting in financial loss? In many instances, suppliers seek automatically to limit liability. For some purchasers, this may be inappropriate and special terms will need to be negotiated.

As a minimum the parties should:

- Explicitly describe what parts of the system are under warranty in the contract
- Specify system service levels. Typically, this will be in the form of % availability
- Contract the response time of support services, such as help desk and call-out.
- Agree the ongoing user and technical training
- Enable modifications to be addressed through additions to the contract

- Implement an escrow agreement for software source-code.

4. Review supplier performance and capabilities.

Armed with the results of steps 1 to 3 above, the supplier's performance and capability should be reviewed internally and documented.

This review should encompass all aspects of the project and be in the form of a report for senior management. Ideally, it should have a single page that covers the key events relating to the project, the resulting level of success and recommendations for future action.

The subsequent narrative should cover:

- Overall procurement satisfaction
- Overall evaluation of the supplier
- Problem reporting and tracking
- Future procurement process improvement recommendations

Manage supplier relations

This improvement

Supplier relationships are crucial to the success of a project. Both parties to the contract need to establish working and formal relations and to understand the difference between them. It is natural to believe that close and friendly relationships will lead to success. Unfortunately, this is not always the case. It is better to establish a good formal and professional relationship that enables each party to be realistic and honest in its dealings.

There are many types of relationships that can exist during the procurement process. For instance, a one-off procurement will be different from that where the procurer is placing a number of different contracts. There are also differences between a 'single tender', a 'call-off contract' and a 'competitive tender'. Fixed price contracts tend to be inflexible in execution. There are contracts where there is a prime contractor controlling one or more sub-contractors in order to provide a 'turnkey solution'. Sometimes the best solution may be found through a 'consortium of vendors' or a 'strategic partnership' between two key suppliers. Each requires a different form of supplier relationship for optimal success. In addition, relationships can change from one type to another during the progress of a contract.

Warning signs

- The contracted suppliers do not meet regularly
- There is no contact with potential suppliers
- Lack of awareness of suppliers' product development program
- Procurer has no consensus of view about suppliers' capabilities
- Users are not briefed about the suppliers' status
- Contract or requirement changes are not agreed
- Potential suppliers are not willing to participate in a tender

Improvement steps

1. Enable the procurer and supplier to work together to the benefit of both.

The procurer and supplier(s) should establish working practices to enable them to work together to the benefit of both parties. In many cases there will be an IT team but the purchasing department within an organization should act as a bridge between supplier(s), the IT team and user(s). New technologies, such as the Internet for accessing suppliers and the win-win negotiation model may be adopted to improve the practices towards maintaining good procurer/supplier relationships.

2. Ensure effective communications.

Formal and informal communications channels should be established between the procurer and suppliers. Strategic briefings should be carried out regularly by the procurer for key potential suppliers in order to prepare them for potential future requirements. A formal diary of supplier/procurer meetings should be implemented.

Often there is a conflict between the users' requirements and the supplier's interpretation of that requirement. Regular meetings should be organized to identify any difference between users' and suppliers' feedback on progress to date. This can be done either face-to-face, or through the IT manager as an intermediary. Any differences in requirements or dissatisfaction from the users should be recorded, and an appropriate action plan established to correct the problem. Such an action program should cover:

- A definition of the user requirement
- The interpretation as understood by the supplier
- The agreed resolution of the issue
- The person responsible for the resolution
- A time scale for the resolution to be implemented

3. Co-ordinate inter-organization issues.

One way of managing issues between the suppliers and procurer is to appoint a coordinator from the procurement department. In this way issues can be raised and dealt with speedily through a single point of contact. It is important to avoid ad hoc contact between suppliers and users.

The contract between supplier and procurer should be monitored to ensure that it reflects the expectations of both parties at all times. Where there is a difference between the expectation of the parties and the text of the contract, the contract should be revised to reflect this difference. Both parties should sign off all changes to contracts.

A process should be established that:

- Identifies the coordinator and empowers them with responsibility
- Establishes the monitoring report frequency
- Defines the circumstances where a change is deemed to have occurred
- Defines the framework and sign-off for a change to the contract

Invoices submitted by suppliers should be checked against the contract and project plan by the coordinator prior to payment.

4. Maintain regular meetings.

It is important for the procurer to make regular visits to the supplier's premises to establish and maintain visibility within that supplier. In this way the capability of the supplier can be reviewed discretely, on an on-going basis. It is therefore recommended that a schedule of regular meetings between procurer and supplier be agreed and kept.

It is advisable to ensure that the supplier makes regular visits to users in the procurer's organization. This should give the supplier insights into the procurer's operation and assist in the understanding of the application and the operational requirements. Such meetings should be documented and the minutes copied to both parties with any resulting actions being managed by the procurer.

Where individual relationship issues arise, perhaps as the result of a dispute between individuals, an arbitrator should be called and a resolution sought at the earliest possible opportunity.

Establish a standard procurement procedure

This improvement

A standard procurement procedure should be established in order to regulate the conduct of the procurement process. It must define the roles of the staff involved and assign responsibilities appropriately during the life of the procurement.

A standard profile should be derived from the best practices in procurement. Standard independent models are available which address the organization of procurement. When selecting an external procurement model for suitability it is important to understand its ability to be tailored for the procurement in question. In many cases such models have been derived for specific application purposes. The selection process should therefore determine if the model is generic or specific. It is likely that a generic model will be more adaptable. But if a specific model fits well, then use it.

Warning signs

- No process for defining procurement policy, strategy, tactics and cost/benefit
- No definition of technical, contract, financial or project requirements
- No contract award process defining activities such as invitation to tender, tender evaluation and contract negotiation
- No process for determining contract performance through supplier monitoring, procurement acceptance, contract closure
- No support process addressing documentation, configuration management, quality assurance, verification, validation, joint review, audit and problem resolution
- A lack of supporting processes for project, quality, financial and risk management
- No consideration in the process for organization alignment, process improvement, human resource management, infrastructure, measurement, reuse, supplier relationship management and user relationship management.

Improvement steps

1. Establish procurement needs definition process.

A process for procurement needs definition should be established. Its purpose is to ensure that the best solution is procured that satisfies the needs expressed by the user while minimizing the risk, cost and effort. A formalized procedure of procurement should include:

- A process for defining procurement policy, strategy, tactics and cost/benefit
- A definition of technical requirements, contract, financial and project requirements
- A contract award process defining activities such as invitation to tender, tender evaluation and contract negotiation
- A process for determining contract performance through supplier monitoring, procurement acceptance and contract closure
- A support process addressing documentation, configuration management, quality assurance, verification, validation, joint review, audit and problem resolution
- A management supporting process covering overall management, project management, quality management, financial management, and risk management
- Processes for organization alignment, process improvement, human resource management, infrastructure, measurement, reuse, supplier relationship management and user relationship management

2. Establish procurement requirement definition process.

A procurement requirement definition process should be created. To be useful, such a process should show how to gather, define and track procurement needs throughout the life of a contract. Inevitably, the first process generated is unlikely to be comprehensive so information gathered during each procurement should be used to strengthen the process where it is found wanting.

3. Establish procurement contract award process.

A procurement contract award process should be established to facilitate the achievement of a binding contract or agreement between the procurer and the supplier. The process should address how suppliers will be qualified and selected. It should also show how products will be evaluated, what consultation process will be undertaken and how decisions will be made.

4. Establish procurement contract performance process.

A procurement contract performance process should be established. The application and management of this process should ensure that the contract is performed in accordance with the terms. It is important to have clearly defined roles and points of contact. These should be agreed between the procurer and supplier and documented. There should also be a means for measuring performance and, where under-performance against the agreed process is found, a procedure for corrective action that can be invoked. For example, this could result in a change in contact point or adjustment to contract terms where mutually agreed.

5. Establish procurement support process.

A procurement support process should be established to cover the entire life of any procurement. This process should show how and who will provide the following support:

- Documentation - strategy for identifying documents to be produced and the standards to be applied
- Configuration management - establishing and maintaining the integrity of all the project elements
- Quality assurance - assuring that all the results and processes comply with specified requirements and that problems and non-conformances are identified
- Verification - strategy and criteria for verification of all required products and identified
- Validation - strategy and criteria for validation of all required products is identified
- Joint review - maintaining a common understanding through periodic reviews between the procurer, user and supplier on the progress and objectives of the acquisition
- Audit - independently determining compliance of selected results and processes with requirements, plans and agreements
- Problem resolution - ensuring that all discovered problems are analyzed and/or tracked to closure and that trends are recognized

6. Establish procurement management process.

A procurement management process should be established. The purpose should be to demonstrate how the procurement department would be managed in order to achieve its procurement goals, within the context of the business goals of the organization. It should show how management would address:

- Organization
- Process initiation
- Process performance monitoring
- Quality
- Risks

The appropriate organization of procurement is important. Management should ensure that the appropriate resources are available within the organization in order to support the procurement process. Clearly this must be compatible with the wider business organization and be fit for purpose. Often roles in procurement will overlap with other responsibilities. The respective roles, where overlaps do occur, should be clearly stated in the process. For instance the finance director may have budgeting authority in procurement but he may not have any technical authority.

Establish a formal procurement team

This improvement

Establishing a formal team is crucial to the success of procurement. Choosing the right balance of abilities will assist decision-making as well as gaining commitment to the success of the procurement from staff and management. It also helps to ensure that procurement success can be repeated.

This improvement action will assist organizations to identify the roles in an IT-procurement team and to define what important activities and responsibilities should be taken by each role in the team.

Warning signs

- It is unclear who is responsible for each procurement activity
- There are no management policies and procedures for undertaking a procurement project
- The decisions made are not generally explained or understood
- Procurement projects depend on the experience of one or two individuals
- It is unclear who has authority to approve procurement activities
- No regular meetings are planned or held.

Improvement steps

1. Define a generic procurement team structure.

It is very useful to have defined a generic procurement team with a balanced functional distribution. This may be amended according to the type of procurement under consideration but the reasons for the amendment should be documented. For instance it is quite possible that, on some larger projects, the technical appraisal process may have to be split among a number of different disciplines.

The procurement team structure should be formally defined and documented. Organization charts are a useful way of recording such structures since they can be simply understood, amended, copied and distributed both manually and electronically.

It is also important to have a procurement workflow process. This will assist in defining who does what and in what order. It is sometimes possible to represent workflow on the organization chart for simple procurements.

The users and suppliers should be informed about the roles and responsibilities in a procurement team.

2. Identify roles and assign responsibilities.

Typical roles in a procurement team include:

Sponsor

The sponsor should be responsible for project strategy, project policy, establishing the expected benefits and the appointment of the project manager. The sponsor is also responsible for sourcing the procurement team's resources such as budget and staff.

Project manager

The sponsor should delegate to the project manager responsibility for establishing a procurement team, planning the project and supervision of the activities to carry out a procurement project.

Procurement manager

The procurement manager is usually the purchasing manager who has overall responsibility for the organization's supplier relationships. The procurement manager generally has sign-off authority for supply agreements, contract terms, discounts and so forth within the context of other procurements being made by the organization. The purpose of this is to avoid unnecessary duplication of effort across different procurements. Procurement officers may be appointed and be made responsible for managing procurement requirements, availability, direct supplier contact, contract detail, problem reporting and change control.

Technical experts

The technical expert(s) will usually be a technical engineer or systems engineer and be responsible for procurement requirement analysis, solution selection, technical evaluation, integration and the analysis of the impact of changes. With larger projects it is normal practice to appoint a team who has responsibilities in specific technical areas, with a team leader as a representative on the procurement team.

User representative(s)

The user representative should co-ordinate user requirements covering functionality, inputs, outputs and interfaces. Tasks will include the analysis of user case studies, conducting requirement reviews, and feasibility analysis. The user representative will liaise with the technical officer regarding system installation and user training arrangements.

3. Identify technical supporting infrastructure required for a procurement team.

The supporting infrastructure for a procurement team should be created. This will encompass:

- Database facilities
- Specialized information systems
- Network modeling
- Communication support
- Acceptance test processes
- Document management
- Contract management

Some organizations are now adopting direct electronic procurement facilities. These are usually based upon the use of the Internet. An internal intranet that connects an organization with suppliers and partners using the Internet may be considered for adoption.

However, there are important issues regarding security that should be addressed. The dangers inherent in such an operation are not trivial. This approach is only viable if a large number of procurements are being made from many individual suppliers, or where there is a very large contract involving many stages with many procurements. Even at this level, the costs may be prohibitive for a small organization.

Organize training and transition

This improvement

The motivation, training, experience and employment duration of the staff will be key factors in productivity and quality. Training is beneficial to the organization. Educating staff in new systems is one of the most critical activities necessary for their successful introduction. The most important factor in increasing productivity in the company is the investment in human resources, through improvement training.

In order to prepare for the use of new applications, procurement projects have to make sure that users and product support are familiar with the products. Training and transition have to be managed in order for procured systems to be used properly and their benefits to be realized.

Warning signs

- There is no established standard for training and transition
- The training of the users is not part of the project plan
- The training of the supporting staff is not part of the project plan
- Responsibilities for training of users and supporting staff are unclear
- Although the supplier of a system offers training, training is purchased from third party companies
- There is no training department.

Improvement steps

1. Identify the users of the product.

A list of users who will be using the new product and a list of staff supporting the product should be developed together with a written record of their roles and skills.

2. Identify the know-how and the training needed for each role.

People with different roles need to know different things about a new product. Training has to meet these needs to ensure that the expected benefits of the product can be realized. A list of the training needs for each role should be developed and documented. Members of staff may have different knowledge. Where this knowledge is capable of being made explicit it should be recorded. Helpful inputs will be:

- Personnel records
- Training records

Define a personalized training program for each member of staff affected by the new system.

3. Integrate training and transition requests into the procurement project.

Because of the importance of training, training planning should be integrated into the procurement process. This means that in the planning of the procurement the training needs are taken into consideration and the procurement plan should explicitly identify the training required.

Make sure that the project team is clear about training needs as well as the effects of any transition that may be necessary.

Define which activities are to be performed by the supplier and which activities are to be performed by the organization.

Schedule the training activities, making sure that resources (rooms, equipment) are available and that trainees are able to take part in the training sessions.

4. Define contract requirements.

Define the training activities required from the supplier and fix a price before a contract is placed.

Make sure that all activities of the supplier are covered by the contract, so that the supplier can demand no extra fee.

5. Establish feedback procedure.

In order to control the performance of the training, it is necessary to establish a feedback process. The definition of the process should contain the:

- Time at which the feedback has to be collected
- Structure of the feedback
- Form the feedback should take - including interviews, problem-reports, meeting minutes, etc

Take corrective action when it becomes clear that the procurement project is producing poor results in regard to the above items.

6. Establish standards for planning and executing training.

A standard for planning and executing training should cover the needs of all staff involved in the project. It should contain a procedure to define the qualifications needed for each role, a set of methods for training and a curriculum for planning and executing training.

You can do this by using:

- Checklists
- Tables of contents model
- Results model
- Templates
- Documenting issues and solutions

7. Train your project team.

In order to ensure that training and transition are performed well, members of the training department and procurement team should also complete a training program.

Carry out the following steps:

- Determine the awareness level of the procurement team members
- Define the knowledge required for each role in the procurement project
- Define a training plan for each member
- Execute the training according to the plan
- Establish a feedback procedure to make sure that the training is effective

Document and reuse procurement information

This improvement

Information gathered during a procurement project should be documented and always remain available to the company. It serves as a record of how the goals of the procurement were achieved.

In addition, the lessons learned during one procurement project can be used for further procurements.

Warning signs

- There is no filing system for procurement documentation
- The procurement documentation is restricted to brochures from suppliers
- It is not clear who worked on a procurement project and in what role
- New procurement projects are started without the participants knowing about results and procedures from previous projects
- There is no follow-up activity or review of procurement projects.

Improvement steps

1. Document procurement project results.

Various activities occur during a procurement process:

- Meetings.
- Conversations
- Telephones calls.
- Reading.
- Demonstrations.
- Presentations.
- Tests, etc

Define:

- Which activity is to be documented
- By whom
- When.

- How
- Who receives the documentation

Use the following documentation formats in order to make sure that the above activities are documented properly:

- Notifications
- Minutes
- Contracts
- Functional/System requirements
- Evaluations
- Correspondence

2. Define results documentation system.

Before procurement project results can be stored they must be secured. Make sure that:

- Follow-on projects
- Project control staff
- Auditing

have access to the documentation.

This can only occur when the documenting systems for all procurement projects have been standardized. Elements of standardization should ensure:

- Project results are to be found under the project name
- Similar access structures for similar results categories
- Self-explanatory naming conventions

In this way people who want information can easily and quickly search the results.

An important consideration is the protection of sensitive information from unauthorized access. Defining and granting appropriate access rights should accomplish this.

3. Establish technical standards.

Standardized results formats are a pre-condition for company-wide access. The procurement processes should standardize software tools for:

- Word processing
- Spreadsheets
- Presentations
- Databases
- E-mail and internet access
- Picture processing
- Document image processing

Make sure that documents coming from external sources can be converted into the chosen standard formats or be presented in the standard formats.

4. Document experience with suppliers.

The experience made during previous procurement projects is the most important factor for planning future procurements. A good supplier should be considered for future contracts too. A poor performing supplier on the other hand should lead to a change of supplier.

In order to have a solid base on which to make decisions the following should be documented about every supplier:

- **Negotiation style:** Does the supplier listen to your wishes and ideas or does he insist on his standard model without compromise?
- **Price level:** Is your supplier above or below the average market price?
- **Pricing of changes:** When adjustments and change requests are made, does your supplier credit you with unused components or does he charge you for the change costs as well as for components not used?
- **Goodwill:** Does your supplier charge for every change-request?
- **Delivery dates:** Does your supplier deliver to the agreed milestones or later? If later then how much later per milestone?
- **Quality:** Did the results have the desired quality? How many deviations (rejections) were there per milestone? How many re-deliveries were necessary? How much was a milestone delayed?
- **Cost recording:** Excluding change requests was the project within budget? If not by what percentage?
- **Reaction time:** How fast were the suppliers' employees on site when problems occurred? Was there a competent hotline?
- **Hotline:** How many queries were dealt with directly, by callback within an hour, by callback within one day, by callback longer than one day? How often was it necessary to call again after a promised callback deadline had been passed?
- **Maintenance:** Were the maintenance releases sensible? How many problems were corrected on average (in %) per maintenance release? How long did problems that were reported remain?
- **Data import/export:** Did your supplier provide support to migrate your data to his system? Did he deliver a concept for exporting the data from his system (export interface) to neutral formats/other systems?
- **Independence:** Does your supplier support you in solving problems independently or does he hide information in order to make you dependent on his service activities so that he can increase his sales?

5. Re-use documentation and define project standards.

Re-use of results is anyway one of the most efficient models of proceeding. Project results should be maintained in a format that allows re-use and actions taken to be stored and the results made available to others.

The following documents and results are often produced as part of a project:

- Project standards
- Sample documents
- Procedures
- Texts relevant to other projects

These results should be made generally available to other projects. It is the task of management to ensure that this occurs.

Define a process to ensure that participants know the location of these documents in future procurement projects. A read-only project repository is a useful means of making this happen. Establish a feedback procedure that makes sure that project results from the above items are collected and evaluated. Take corrective actions when it becomes clear that the procurement project produces poor results in regard to the above items.

Systematic re-utilization of previous results leads to partial standardization of procurement projects. Document project results systematically in collaboration with the participants. From these results define:

- Standards for future projects
- Change requirements for such standards.

Define:

- Checklists
- Table of contents models
- Results models
- Document templates

Improve the people factors

This improvement

In order to succeed, procurement projects must address the needs and desires of all the people involved in the project - the users, the project team and the supplier staff. Resistance to proposed change is natural, and must be managed in order for procured systems to be accepted and their benefits realized.

This improvement action will assist organizations to improve their understanding of 'people factors' at all stages of the procurement process, and improve their procurement process accordingly.

Warning signs

- Procured systems often fail to meet requirements or encounter significant user resistance
- Poor communication and misunderstandings between users, procurement team members and suppliers
- Excessive dependence on external resources for critical skills
- Repetition of the same mistakes in procurement projects.

Improvement steps

1. Invest resources in getting commitment from all those involved in the procurement.

Successful procurement projects need 'buy in' from all the project stakeholders, both internal, such as users, and external, such as customers and suppliers. The need to manage organizational change carefully should be taken seriously, as people's resistance to change is often the greatest risk posed to the success of a procurement project.

Sufficient time should be allocated to analyzing the requirements of the procurement project and the associated business process and organizational changes. There may be changes in people's jobs, their role or the organizational structure. Potential resistance to these changes should be identified and addressed. Pushing technology into an unprepared hostile organization will not work. Techniques employed to help identify and overcome potential resistance include:

- Motivating staff involved with the project
- Ensuring staff feels involved in the project
- Communicating with staff throughout the project
- Training staff in the new technology and its use

All staff who will be affected should be included, not just those who are immediately associated with the new system.

2. Involve users throughout the procurement project.

The acceptance of system users, in particular, is key to the success of procurement projects, and users should be involved from the very start of a project to ensure their needs are recognized, documented and taken into account. Requirements should be based on user needs, which should be independent of the kind of procurement.

System users should be involved in a variety of activities throughout the procurement project, including:

- Specification of the procured system
- Contract design and negotiations
- Cost objectives of the project
- Project scheduling
- Risk analysis
- New system increments
- Evaluation of the system
- Quality procedures and measures for the project

The users should be committed to the project, and should be trained and prepared accordingly.

3. Develop a procurement team with the necessary skills and resources.

In order to deliver a high quality, accepted solution, the procurement team should be cross-functional, with the appropriate level of empowerment and authorization to implement a successful solution. The team should be able to maintain the confidence of users and senior management.

Staff should possess the relevant skills, and the team should typically contain the following skills:

- Business analysis
- People management
- Systems design
- Supplier and third party management
- Technical skills, knowledge and experience
- Purchasing and budget management
- Program and risk management
- Legal competence or access to legal resources

The project team should understand and accept the business objectives of the procured system and the proposed technology. The team should experience operational activity throughout the project, to really understand the user needs, and time should be allocated to this in the project plan.

The procurement manager should be an individual with accepted responsibility, who understands the required changes and acts as the formal point of contact for the project.

For a successful procurement project, resources should be allocated in the project plan for activities including:

- Studying interoperability with other systems
- Gathering feedback from users and other involved parties

- Configuration control throughout the project
- Coordinating with other activities and organizations where appropriate

Where possible, the necessary skills should be attained in-house. This is not always achievable, particularly in small organizations, and external resources can be employed where appropriate. Where external resources are used, the experience and skill of the individual are more important than the general qualifications and stature of the organization they work for. Work with external expertise should be managed so as to ensure maximum transfer of knowledge from the expert to the procuring organization.

4. Design appropriate communication and management mechanisms.

Appropriate communication and management mechanisms should be developed, in all directions between suppliers, users and the project team. Communication should be open, honest, and a non-confrontational management style should be adopted for maximum success.

The relationship with the supplier should include the definition of performance criteria, and the relationship should be reviewed regularly to align expectations. Top management should be involved in supplier relationships, to ensure organizational commitment to the relationship.

Communication channels with system users are important, and should include channels for feedback. Achieved improvements should be communicated to users on a regular basis, ensuring their continued buy-in and support.

5. Ensure feedback is incorporated to address conflicts and issues.

Procurement processes should be documented and managed as part of the organization's quality management system. Key personnel move on, and their knowledge and expertise should be documented throughout the project, in order for it to be replicated or attained in other staff members.

Feedback should be used for continual process improvement, and user evaluations should provide input to the process improvement activities.

Establish formal tracking systems

This improvement

Completing a project on time depends on the ability to track adherence to cost estimates, deadlines and quality levels. It will also depend upon the ability to address the risks in a timely fashion.

A formal project controlling system will serve as an early warning system for projects going wrong. Such an early warning system should be able to provide different options for corrective action. Steering a project back on track at an early stage is likely to save time and money.

Warning signs

- There is no progress control to show the hours worked on the project
- There is no written agreement to confirm and update the contract to reflect changes, verbal or written
- Errors are resolved verbally and the process is not documented
- There are no interim deadlines or milestones; there is no definition of what has to be delivered at a milestone
- It is unclear what errors have been corrected in the case of redeliveries
- There is no documentation of supplier tasks and deliverables.

Improvement steps

1. Introduce cost control.

The first step is to establish what costs will be charged to the project. This should include equipment costs such as the rental, lease or purchase of space, computers, networks, software licenses, overheads, power, heat, light and so on. It should also cover the cost of procurer personnel and expenses as well as additional costs reported by the supplier.

These items should be researched and budgeted. A reporting system should be established to ensure costs incurred could be promptly compared to the budget on a regular basis.

2. Introduce project planning.

The project plan should define who does what and when. A rough project schedule should be generated to cover major project events such as:

- Release of system requirements
- Selection of suppliers

- Acceptance of specification
- Delivery of system
- Acceptance
- Training
- Transition
- Retirement

Milestones are to be used and the following should be verified:

- Is the project on schedule?
- Do the costs match the budget?
- Has the agreed quality been achieved?

3. Establish error tracking.

Create a filing system with an index for identified errors so that previously reported errors can quickly be found. A useful approach is to assign a number to each error that uniquely identifies that error. It is important to involve the supplier in the error reporting system so that the elimination of each error is formally agreed and documented.

With each new delivery or release there must be a document describing the errors that have been eliminated.

4. Establish a contract history.

All dialogue whether written or not constitutes part of the contract history. Documented information will have more weight, provided there is evidence that both procurer and supplier(s) have agreed the content. For example, the following belong to a contract history:

- Documents coming before contract closure
- The contract and its annexes
- Documents coming after contract closure

These documents could be change-requests, minutes, correspondence, acceptance statements and other statements with legal implications (and other documents that have a bearing on contract status).

5. Document delivery scope.

It is essential to document the scope of an agreed delivery schedule in order to ensure the contract execution covers all aspects of the supply. This is often omitted, especially in projects that are defined primarily from a technical point of view. The scope of the delivery contains more than the product itself and this is often overlooked.

The following have to be considered:

- User documentation
- Computer center manual
- Training documentation
- Hotline
- Maintenance
- User rights
- Development and test documentation

The scope of what the supplier has to deliver should be contained in the contract. All correspondence and minutes from meetings should be available for reference if clarification is needed.

The scope of the actual delivery should undergo a formal check against these documents. This inspection determines the completeness of the delivery and hence the testability of the system too.

6. Ensure procedures are realized within the project.

The benefits of documentation and project tracking are often not immediately apparent and may be viewed as an unnecessary expense. Where a project is under a time constraint then it is common practice to ignore these important tasks in order to save money and effort.

A further obstacle to formal project control is too close a relationship between members of the project team and the supplier. Such relationships can impede appropriate attention to under-performance by a supplier where a project has a generally good record of success.

Management should therefore establish what the current situation is, determine which previously completed projects underwent project control and see what effects its omission/execution had on the project. Management should undertake a cost/benefit analysis for all actions in the context of goals. This requires that:

- **The goals are defined and understood.** It should be possible to determine what areas of project management can be improved and to establish goals in these areas
- **Define actions.** Establish which actions will bring the greatest benefit with tolerable costs (from the project point of view). Achieve clear commitments to achieve these goals in the project
- **Monitor conformity.** Monitor the execution and effectiveness of the agreed actions

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The origins of this book

The ASSIST Project

The ASSIST project consortium has written this workbook with funding from the SPRITE-S² program of the European Commission. This program was targeted at assisting organizations to better manage their Information and Communication Technology procurements through the use of best practices, standards and tools. The project consortium consists of partners with significant prior experience helping companies benefit from improved IT purchasing practices and procedures: The Open Group (UK, Belgium and France), IVF (Sweden), SQS (Germany), and QAI (UK, Belgium).

The objective of the project was to make available practical information about improving IT purchasing practices, which was proven but also tailored to each organization's specific situation.

To achieve this objective the project had four main phases:

Collecting experience

Within the project we brought together the practical experience from the partners, other experts on IT purchasing, and the most popular and widely used guides, methodologies, and handbooks on IT purchasing. This information was distilled into a set of step-by-step improvement actions covering 21 different topics.

Analysis tool

The project knew that in order to provide recommendations specific to an organization, some analysis of each organization's existing IT purchasing procedures was required. A PC software tool was developed to collect the information needed to identify and tailor the improvement recommendations contained in this workbook. This software tool 'Beyond the Contract', is available from the website at www.opengroup.org/procurement/.

Regional workshops

The experience, improvement actions and software tool were all put to use within a series of workshops across Europe. The workshops were conducted by procurement specialists from each of the consortium partners and provided the opportunity to confirm the usefulness of the materials. More importantly, workshops were used to refine the analysis technique used to identify the most appropriate improvement actions specific to each organization.

Workbook dissemination

The ultimate aim of the project is to make available this workbook that allows many organizations across to benefit from improvements in IT purchasing. The combined experience of the partners, the information collected through working with small organizations in the workshops, and the PC tool and analysis techniques have been packaged into this 'self-help' workbook being widely disseminated.

Through the support of the European Commission, the information contained in this workbook is being made available to thousands of organizations across Europe and worldwide.

Other deliverables

At the time of writing, mid-1999, the project has delivered, in addition to this workbook, a detailed report of the research project and its findings 'Beyond the Contract: An analysis of the business impact of IT procurement best practice' the software tool, an update to the ISO standard for IT purchasing (ISO 14598) and a teamworking workshop/seminar designed to improve the working of procurement teams. Details of all these – and the work in progress under later projects - are at the website www.opengroup.org/procurement/.

The ASSIST Partners

IVF, Center for Software Engineering

Argongatan 30, SE-431 53 Molndal, Sweden

Tel: +46 31 706 6000, fax: +46 31 27 61 30

E-mail: minna.kaartinan@ivf.se Web:<http://www.ivf.se>

QAI Europe

8 Shortway, Amersham, Bucks, HP6 6AQ, UK

Tel: +44 1494 726146, fax: +44 171 691 7047

E-mail: qai@bigfoot.com Web:<http://www.bigfoot.com/-qai>

SQS Gesellschaft fur Software-Qualitatsschicherun gmbH

Stollwerckstrasse 11, D-51149 Koln, Germany

Tel: +49 2203/9154-0, fax: +49 2203 9154-15

E-mail: peter.boelter@sqs.de Web:<http://www.sqs.de>

The Open Group

Apex Plaza, Forbury Road, Reading RG1 1AX

Tel: +44 118 950 831, fax: +444 118 950 0110

E-mail: s.hansen@opengroup.org Web:<http://www.opengroup.org>

Installing 'Beyond the Contract' software tool

Software

The Beyond the Contract software tool will help you identify the purchasing improvements best suited to your organization's current situation and needs.

To obtain the software go to www.opengroup.org/procurement/btc/ and follow the download instructions.

You must register to download the tool.

The minimum system requirements for installing the tool are:

Operating platform: MS Windows® 3.1, 95, 98 or NT

Hard drive space needed for software (data files are additional): 5.0MB

The software is contained in a single self-extracting file. Save the file in a temporary directory, execute the downloaded file and follow the directions.

Registration

Before registration, the tool can only be used in demonstration mode: full functionality is available, but you cannot save or print the results. When the software is started, the 'Registration' button is displayed on the front screen. Entering the registration code will enable full functionality.

A registration code can be obtained by sending e-mail to: registerbtc@opengroup.org

Registering Beyond the Contract ensures that you will have the latest version and updates.

