Computers & Project Management CMI

Part 2: Topic:Guidelines for Procuring Project Management Software

Overview: To look at a procurement process when selecting Project Management Software for your organisation.

Objectives: To review the process of sourcing and selecting Project Management software tools that suits your business needs. Areas covered are as follows:

- Gain a thorough introduction to the process of the selection of a suitable project management tool for your organisation
- Understand Lock's recommended selection process

Introduction

In Part 1, we looked at how important Project Management Software has become in providing scalability, control, integrated functionality, stakeholder collaboration, client insight & reporting etc.
Now we're going to look at how you might go about selecting computerised Project Management software solutions. We'll also take a look at the areas in which separate software solutions can be used and about those that integrate and feed into the core PM system – directly or indirectly. We'll also look at a number of sample files to give you sense of how you might go about selecting PM software.

The focus now is on a suggested selection process for an organisation's project management or project portfolio management tool. This suggested process follows the steps below.

Selecting a PM software solution

The following process outlines a basic approach to selecting any product, system or application to fulfil a business need. Procurement of expensive PM software should ensure that the chosen solution will be able to scale up to the needs of the organisation. The procurement process will always need to adhere to the budget / cost performance appetite of the sponsoring company.

- Assess existing situation
- Form selection group
- Begin research – best practice, industry standards, suppliers / vendors
- Consider functional needs & support needs
- Begin cost-benefit analysis
- Compile detailed questionnaire – functional & technical
- Create Long List (matrix)
- Create Short List & arrange vendor presentations – sample project and weighted
- Contact other customers
- Select preferred vendor

Correct application or tool selection is vital. The right tool can play a major role in not only the successful delivery of objectives in individual projects but also in the management of multiple projects for the achievement of strategic goals. A poor selection can mean that the application adds nothing or that the users become swamped under the weight of a system that is too complicated.

Lock's recommended selection process will also be looked at. Lock's process begins when a decision to acquire a tool has already been made.

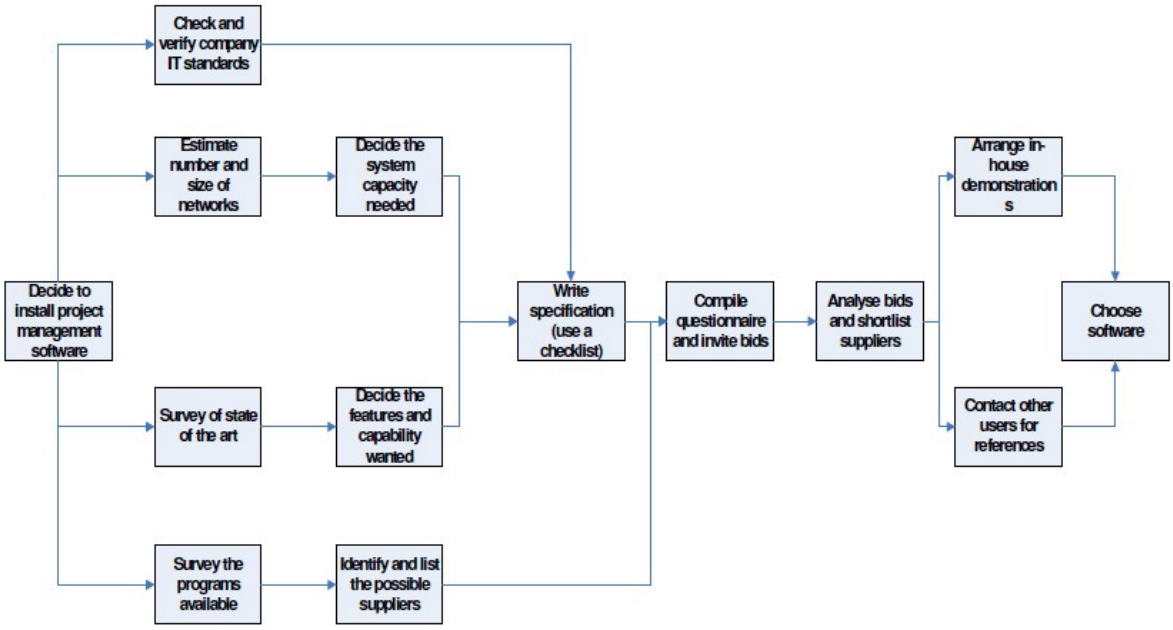

Figure 1 – Lock's Selection Process

To ensure you get the best value and the best functional fit for your organisational needs, you must execute a structured evaluation and selection process.

Existing applications should be taken into account before any decision on even beginning the selection is made. Many of the low-end, non specialised applications can assist the project manager greatly and should be taken into account either before or at least as part of the selection process begins.

Assessing the existing situation

Looking at the existing situation allows you to factor all the positive attributes (things you want the app to have) and the negative attributes (things you don't want the new app to have or that you need it to do better) that they may have. Your previous and current experience of these should inform your decision process when you are looking at selecting your PM software needs.

For example, depending on what you may already be using, you might:

- Compile a brief assessment of any tools or applications already in use (including MS Word etc.).
- Take account of the nature of the PM organisation in your company (e.g. is there a Project Management Office (PMO) or prescribed PM methodology).
- What are you hoping to achieve with the new application?
- What are the technical constraints or limitations in your organisation (e.g. servers and application platforms supported etc.)?
- Budget constraints e.g. a ceiling that Finance will not allow you to exceed,
- Are there any criteria that allow you to discount any of the existing applications and proceed directly to specifying your new system requirements?

If an organisation is at the early stages of introducing formal project management and PM systems, it may be too soon to consider the introduction of new software as well – unless you've got people that know how to use it already (e.g. new PMO staff). In some instances a new tool or application could be the catalyst for the adoption of project management principles and practices but these circumstances are rare. The best approach is to know what your needs are and then implement a suitable system – rather than buy a new system and then change your organisation to try and get the most out of it.

Many general use applications provide a very broad range of PM functions and utilities to the project manager. It is important to begin by listing each of the applications in use within the organisation – or at least those that could have an application in the management of projects.

The actual set-up of the organisation in project management terms needs to be determined. This will represent the context within which the new PM system(s) are going to be used:

- Is there a project management office (PMO) or similar centralised function?
- Does the organisation apply a prescribed project management methodology, such as PRINCE2?
- Consider the likely users – level of expertise with computers in general, level of expertise with project management methodology, frequency of use, number of users, familiarity with any existing templates etc.
- Are you in a specialist industry e.g. software/construction/engineering/manufacturing?
    - Do you need to include specialised PM processes with close coupling to your industry?
- Do you need to be able to read PM files from sub-contractors and suppliers?
- How will the organisation use the tool if one is implemented?
- Will the tool be used to help prioritise all projects (scoring)?
- Will it be used for resource allocations (pools) and resource levelling?
- Is the tool only intended to provide more discipline around existing applications?

It is advisable to involve the IT department as early as possible. Any specific technical constraints need to be considered straight away e.g. what server types are available? Lock calls this "Check and verify company IT standards".

These are some of the items that need to be done / considered before beginning the selection process itself.

Form a selection group

The level of project management maturity within the organisation will probably dictate the members of the 'selection group'. As with most things involved with the management of projects it is vital that all relevant parties or stakeholders are consulted as early as possible.

The selection group should include the following at a minimum:

✓ The chairperson (sponsor) should be the person responsible for the application of project management within the organisation, e.g. project management office manager or his / her boss.

✓ An IT representative that understands any standards, constraints or policies that must be adhered to in terms of the application itself and the vendor.

- ✓ Business area specialists (operational) – people that know your business and will be able to advise on how you can use the application to manage change and implementation within the production / operations end of the business.

- ✓ PMO staff and some of the organisation's Project Managers. People that have been managing projects in your company and understand how your processes and existing systems work, when they work, and also when they don't work (perhaps more important!).

It is important that the Group members are clear on what the application or tool could bring to the organisation and how the tool will be used. The Group's frame of reference does not have to be definitive and can be extended during the research phase of the selection process.

Begin research – identify your functional needs

The next stage of the selection process is to carry out some research. In project management tools terms there are many places to begin the search.

As with most research today, a search engine such as *Google* is a good place to start. Most of the leading project management publications and organisations have websites. *Project Management Today* (publication of PMI) periodically contains a comprehensive comparison study of many of the applications in the market place.
Some other possible sources are listed in the bibliography. Use your selection groups professional and personal contacts as well – they will know what your competition and clients etc. are using and this will often allow you to form a sense of what applications will suit your organisation.

Lock recommends a "Survey of state of the art" step in addition to "Survey the programs available". If your organisation does not have any project management applications in place at the outset then it is important to spend some time assessing the state of play in the field of project management.

If you don't have anyone in-house that can conduct research and develop a set of functional and business process requirements documents, consider employing a consultant to develop these documents for you. They will interview all the stakeholders in your organisation and get a detailed understanding of the "as-is" and "to-be" processes and process flows. A consultant that is a specialist in Project Management systems will also be able to benchmark your requirements against best practice. The end result will be a set of documents and process flows that will be used to inform the development of a more detailed listing functional, operational, financial, implementation and post implementation support questions. These will end up in an RFP or "Request For Proposal" to potential suppliers.

The project management organisations (APM, PMI etc.) can provide material on the latest developments in project management and portfolio project management. You may also be able to purchase a generic PM Software RFP off the web and use this as way of shortening the RFP development process i.e. buy it and then change it to suit your organisational needs.

There is a caveat at this stage also. Project management application vendors are in the business of selling their own products. Many have relationships with project management organisations and more particularly with consultancy firms. Bear this in mind during the selection process.

In any case, it is important to keep a record of all research, including any contact with potential vendors. The number of different products out there can lead to confusion so it is vital to be clear which piece if information relates to which product. A simple matrix is a good way to keep track of the research, including names of products, vendors, any questions asked and answers received. Table 1 provides some potential headings.

No.	Unique Id for product
Ranking	For completion at end
Product Name	
Provider	
Contact Name	
Contact Number	
Contact Email	
Contact Website	
Demo?	Date and time of demo
Software Price	Advertised or initially quoted price
Date of 1st contact	

Table 1 – Research Matrix (sample)

A lot of software vendors allow you to download demo applications that will give you a good sense of the look and feel of their applications. Many will also recognise that they are in competition with other vendors and will offer functionality checklists against these competing products. Use these to inform yourself. Try out the demo's and use them to build your requirements lists in your RFP.

Consider detailed functional & support needs

During the research phase you should start to flesh-out the specific functional needs or requirements you have. Your workflow analysis and process flows etc. should allow you to build these lists and, combined with the details from vendor listings, demos and other contacts etc. you can begin to see what you'd need and what you don't need.

Functional requirements are the "what" or the "to-be" for a system or application.
What is the application expected to do? Is the application simply to provide a little structure to the management of individual projects or will the tool be used in facilitating strategic decision-making? The "to be" part allows you to map your desired processes onto the applications you review and see which ones are likely candidates.

Although not a development specification, some of the techniques applied in the software development for "requirements elicitation" can be used at this point (and later on to help complete the questionnaire). These include approaches such as:

- Fact-finding
- Interviews – Background, Objectives, Scope, Constraints, Authority, Resources, Deliverables (BOSCARD)
- Observation
- Document analysis – existing template, existing usage
- Scenario analysis – use cases, task models

Capacity needs also need to be determined here. How many users? How many projects? These are the two most significant questions. The size of the projects (i.e. number of tasks on the project) might also be considered here.

Lock labels these steps “Decide the features and capability wanted” and “Decide the system capacity needed”.

You should also consider the level of IT / operation support within your organisation, such as:

- Backup systems in place; do you need a server or recover from tape which may be slow?
- Is the system critical, maximum amount of downtime?
- Number of servers required, do you need an application server and a database server?
- Who is going to support the system? (In-house, third party or both)

If rapid response and restore support is required for instance, then smaller suppliers can be ruled out straight away unless you have in-house IT skills that can do it for you – or a good 3rd party service provider that’s willing to work with you on the support side.

The scale of any 3rd party involvement in the implementation or introduction of the new application also needs to be identified early. Does the organisation have the resources required to facilitate the implementation or will the vast majority of the work have to be conducted by the supplier? Generally speaking, system vendors for the larger and more complex PM systems will provide an implementation service (for a charge) in which they will offer services such as:

- Project Management Services (they know their own product best – leave them at it...!)
- Data migration pre-prep, normalisation, migration & enrichment
- System parameterisation e.g. to get it to do things the way your “to-be” processes dictate.
- User training / train the trainer etc.
- 30 – 60 day post implementation support

Commercial off the shelf (COTS) and customisation

Many / most applications won’t do exactly what you want them to do. COTS packages are “Commercial off the Shelf” products. These are usually “shrink-wrapped” packages and are often sold-as-seen. This is not recommended and if you opt for a COTS, be sure you understand what you want it to do. Usually, you’ll want to tweak it to get it do work your way. This may mean that you need an element of customisation.

Customisation is the process of getting an approved (and experienced) software vendor to make software changes to the COTS base product to either change the way it operates by default – or add additional functionality that is unique to your organisation. A lot of companies invest developer time in integrations – making new systems talk to old once e.g. getting Primavera costs (budgets and actual) to integrate into the Financial Chart of accounts e.g. on Oracle Financials or SAP R3 etc.

COTS are probably the most popular and cost effective way of implementing major software systems today. You (if well planned and managed) avoid the heartache of developing from scratch and the risk of being another failure statistic! Yet, by buying 80% to 90% of the difficult-to-build functionality in a COTS, that means you only have 10% to 20% left to do. Sometimes you can implement the COTS and half of the customisations up front. You can

prioritise the remainder of the customisations and leave them until your business processes need them. Then, you commission your software developer to develop the additional modifications, test and integrate them into the production application.

Conduct a Cost / Benefit Analysis

As with Lock's model, research and the identification of functional needs and support can and should take place at the same time. This is also a good point to consider the available budget for any purchase.

The benefits, functional and productivity improvements in your organisation attached to the introduction of any tool need to be assessed and understood. Large expenditure should be explored to ensure it delivers benefits to the sponsoring organisation. Those responsible for the decision to spend the money will need to be convinced that they'll get a better return from buying, customising, installing, operating and maintaining the new system than they would if they left the [investment] money in the Bank.

More modest expenditure obviously means less need to convince the powers-that-be to spend. But the risks associated with a botched selection still exist. Poor selection of a project management tool will reflect on the project management office (if one exists) and the standing of "project management" as a discipline within the organisation can suffer. Failing in the implementation of your own toolset is equivalent to a "Turkey voting for Christmas"!

Lock's process does not make any specific reference to costs and cost benefit analysis, **which could be perceived as a gap**. There will always be an internal sales job required to get the backing for a new application and convincing the Finance guru's is often the biggest challenge.

Compile a detailed questionnaire

The tool selection process comes with the assumption that the organisation is going to buy in the application and will not develop one in-house or hire a 3rd party to create a bespoke tool. Hence the introduction of a questionnaire as opposed to a development specification. That said, if you have any customisations and special functionality that you haven't seen in your research, you need to build in questions and see which vendors are willing / capable of meeting your business needs.

Lock does however recommend "Write a specification (use a checklist)". This specification will form the basis of the "Compile questionnaire and invite bids" stage in Lock's process.

The questionnaire is what will be sent to the vendors that make a 'Long List'. Lock provides a detailed suggested questionnaire in his book (Figure 20.2). An alternative is to approach things from a 'user type' point of view, where the requirements for each perceived user-type are included: project team member, project manager, director etc.

In class, we'll look a sample RFP and scoring example. This example will illustrate the areas of information that need to be considered when inviting tenders to supply, implement, customise and support an application.

Again there are techniques available from software development practices, e.g. MoSCoW – must haves, should do, could do, won't do. It is not advisable to make preferences explicit to vendors in the questionnaires but the Selection Group should decide the weight that the

various questions carry beforehand. This discipline should be extended to the handling of vendor presentations also.

Technical requirements should be supplied and vetted by the IT department, e.g. server types available to host application. These must also be included in the questionnaire. Make sure you involve them as early as possible as they can stop the project dead in its tracks if you are trying to implement something they can't or won't support. Many of them still haven't cottoned on to the fact that IT is a business service / enabler – not a business driver!

Keep the questions in the RFP questionnaire as functionality focussed as possible!

Create a long-list of vendors

At this stage of the process, the Selection Group will have a good idea of those vendors that are to be considered. You can use prequalification criteria if you like and this is often preferable. You do this by ensuring that vendors can fulfil basic prerequisites that you have e.g.:

- Must be a modular solution (core PM module) with add-on modules that can be purchased as the PM function grows
- Vendor must have an Irish customer base
- Vendor turnover must be in excess of €3M per annum
- Vendor must have a Tax Clearance Certificate from Revenue
- Must have installed 5 similar scale implementations in <<specialist industry>> e.g. Engineering, Food processing etc. within the last 3 years
- Must have no court judgements or legal cases against it for failed or disputed implementations in the last 3 years
- Etc.

You ask respondents to reply to a questionnaire like this and if they get through, then they get onto your long list (possibly 5 to 7 suppliers).

With a long-list from a pre-qualification process, you know you're dealing with a list of candidate vendors that have track record and look like they can deliver for you. The 'Long List' should be finalised at this point. This is to provide some finality to the broad research phase but the List can of course be re-visited if no vendor fits the bill at the end. These instances are rare however. The number of vendors on the Long List is entirely flexible but between 5 on the low side and 10 on the high side makes most sense. An advantage of prequalification is that you evaluate as few real contenders as possible. That avoids wasting your time and also the time of vendors who really haven't any chance of getting your business.

All Long List vendors should receive your questionnaire. They will need to respond to all questions and then return the responses to you for scoring. You should also attach a covering letter for the RFP competition in which you give the vendor additional instructions on how you need them to respond. This letter might cover areas for services you need them to provide such as:

- Project Management Services (asking for €/hr or fixed price costs)
- Data migration (from our old PM system(s) (€/hr * number of hours)
- Customisation work (asking for €/hr cost for developers)
- Implementation and Configuration support.

- Security and control configuration – user groups & user account setup
- Recommended Hardware and estimated Cost
- Post implementation support
- Annual software license fee
- Annual software support

You may also need to require that they complete and sign a confidentiality agreement.

When you complete the scoring process, you should have a mathematical result that indicates each vendor bid in order of the score outcomes.

Create a short-list and arrange vendor presentations

The Selection Group should convene to assess all completed questionnaires and reduce the Long List to the Short List. Depending on the size of the Long List, the Short List should be limited to 3-5 members. You inform the remainder of the bidders that they have not been shortlisted. In general, it is wisest to advise them that the shortlisted vendors will proceed forwards but that we will retain their bid on file in case none of the shortlisted candidates proves capable of supplying the product and services required.

You inform those on the shortlist that they have been shortlisted and invite them to deliver demos of how they will meet you requirements. Generally, it is an idea to develop "use-cases" in scripts that you provide to the vendors. They then need to include the use cases in their demos to prove that they understand your requirements and can deliver both the core functionality and the special customisations you have highlighted in the use cases.

The Presentations

All vendor presentations should be arranged in a reasonably short timeframe as this makes comparison easier. All vendors should be supplied with the following:

- A fixed agenda, including times supplied beforehand
- A sample project – supplied during the presentation
- Any special use-cases

The Selection Group should prepare before each presentation. A "Score Sheet" should be agreed for use by all members during the presentations. This Score Sheet is basically a summary of the questionnaire plus items relating to the presentation itself.
It should also have a section for scoring the demo itself and the use-cases. An item to allow scorer's rate the technical competence and level of understanding of requirements by each vendor might also be included. Some suggested Score Sheet headings are provided in Appendix 1. In addition a list of questions that the Group wish to ask should be compiled beforehand. A member of the Group should be given responsibility to ensure that the vendors are subjected to the same set of questions.

Each Group member should complete the "Score Sheet" independently. It is generally more convenient to do all "Score Sheets" after all the vendor presentations are complete. Don't forget to allow people express whether they like the "feel" of the companies and the body-language, responsiveness and general attitude of the vendors. You're looking for a "can-do" attitude that is reflected in the demos and use-base proofs.

Contact other customers

If a vendor is unwilling to provide a contact with other clients it is not a good sign. If possible, try to contact customers not referred to by the vendor. It can be difficult to achieve this as peer organisations may not be willing to talk but every effort should be made to discover the experience of other companies with the tools on the Short List.
Lock labels this step “Contact other users for references”.

Select preferred vendor

The Selection Group should make the decision on “preferred bidder” at this stage based on all the available information and with particular emphasis on the completed Score Sheets.

Advise the other vendors that you have selected a preferred bidder and that you are entering contract negotiations and clarifications of a Head of Agreement with them.
Also advise them that you will keep them on file and will be back in touch with them if contract negotiations with the current preferred bidder fail.

Conclusion / Summary

Today we have taken a look at how you might source a suitable Project Management software solution. We went through some sample files to indicate how you might build a business case to cover the investment in the application. We also looked at how you might score the responses from the software vendors so that you try to ensure you pick the vendor solution that best meets your needs.

Appendix 1 – Suggested Score Sheet items

Score No.	Item
S1	Implementation Plan
S2	Ongoing Support
S3	Training
S4	Project Team Member GUI
S5	Project Manager GUI
S6	PMO Dashboard (Portfolio Manager)
S7	Project Executive GUI
S8	Project Document Management
S9	Idea/Request/Demand Management
S10	Portfolio Management
S11	Interoperability

Bibliography and Further Reading

- Project Management, 9th Edition – Dennis Lock (Gower)
- Guide to the Project Management Body of Knowledge (PMBOK), 5th edition, PMI.
- Managing Successful Projects with PRINCE2, OGC 2005.
- Brilliant Project Management – Barker & Cole (Prentice-Hall)

Websites

- www.ogc.gov.uk - PRINCE2 website
- www.pmi.org – Project Management Institute
- www.ipma.org – International Project Management Association
- www.Gartner.com – Gartner website, IT consultancy
- http://www.egovernment.tas.gov.au/__data/assets/pdf_file/0019/78031/Digital_Information_Management_and_Storage_Strategy_Project_Business_Case.pdf - Business Case/Cost Benefit Analysis Sample.
- http://www.prioritysystem.com/ppmselectionaid.html - RFP template with scoring

Requirements Engineering

- Requirements Analysis – D. Hay (Prentice-Hall) 2003
- Requirements Engineering: A Good Practice Guide – Sommerville & Sawyer (Wiley) 1997
- Writing Better Requirements – Alexander & Stevens (Addison-Wesley) 2002

Student preparation (informal):

To prepare yourself for the class, try having a look on the Internet for information in the subject area. Searches such as: "Project Management RFP"; "Selecting Project Management Software" will yield a large array of feedback and will provide you with some interesting insights into how broad this area can be.