

Selecting a MRO software system is a complex process. There is a wide range of systems. Some offer a complete, integrated applications, some are a standard 'take-it-or-leave-it' package and others are niche products. How does an airline navigate through this minefield to make the best decision?

MRO software system selection strategies

Buying a maintenance & repair operations (MRO) software solution is much like buying a car, house or other significant investment. Usually the choice is made by more than one person, with a range of priorities and desires that sometimes conflict. There are usually some preconceived ideas about different vendors and a variety of anecdotal data about products available. Very often some kind of external event has prompted the decision to replace or buy a new system in the first place. This external event might bring with it some internal time pressure.

Software differs from many other investment decisions in one major respect, however: it is an intangible product and an unquantifiable commodity that can be made to do many different things in many ways. Seeing a collection of screens during a product demonstration does not tell the selection team whether the complete production software system is capable of working in their particular operating environment, or even working in a way that is useful. The various selection issues that should be considered are highlighted and discussed, and some real-life experience is shared.

Starting the selection process

In broad terms, the software selection process involves three phases: the pre-selection, selection and post-selection contracting phases. Although they do not provide the definitive answer, there are key issues in each phase that act as a checklist for an airline considering new MRO software.

Any selection process needs to begin with a clear articulation of the particular problem that has to be solved. Whether this takes months of work or is a simple two-page executive summary, no

organisation should embark on a new MRO software project before analysing the business case and projecting an expected return on investment. Most chief financial officers will insist on this business case before sanctioning the investment.

Most airlines should think about asking one or two vendors to provide some input on the business case for their products. Some vendors will even offer to do this work for free. As well as providing a useful framework for the investment decision, this consulting phase allows the selection team to assess the credentials of the software vendor.

The business case needs to contain a broad estimate of the investment. This can be problematic, but still needs to be attempted. A good rule of thumb is that the implementation costs are usually in the order of 1.1 to 1.5 times the cost of the license price, before considering the effects of discounting. The actual final costs of implementation, of course, vary between software vendors.

Airlines selecting software also need to include the total lifetime costs in the investment case. This includes a contingency for modifications, enhancements, and maintenance and support costs.

Annual support contracts generally range from 12% to 20% of the license fee before discount. The airline or MRO provider also needs to add its own costs for additional staff that may be required for the new system, and any new hardware that needs to be bought or leased.

Drawing the line

Alongside the business case, the selection team needs to decide the specific functional scope of the project. While it may form part of the business case, some

projects often fail to give proper consideration to this step in the pre-selection phase. The scoping exercise is important because it defines the extent and type of functionality that will be required, and the business processes and departments that will be involved, and because it also starts defining the range and complexity of system interfaces, if any, that need to be communicated to the software vendor. The rule is to try and keep things as simple as possible. Limit the complexity and number of interfaces. Try to focus on solving a specific business problem, rather than designing the best MRO system in the world.

Hardware should be taken into consideration at this stage. The selection team needs to consider compromises in functional requirements that avoid modifications to standard software. The project also needs to consider how the solution is going to be operated in practical terms. For example, are mechanics and engineers going to enter data directly into the computer screens, or will paper records of work carried out be entered by clerks centrally after the event? This question alone will dramatically alter the scope and scale of the software implementation and have an impact on the hardware requirements and on the benefit of investing in the system. Costs, risks and benefits therefore need to be carefully weighed at this stage. The scoping study will also help the selection team determine which type of vendors to approach, and may also revise the business case by focusing the project on smaller 'point solutions' that may not be as expensive to buy or implement. Point solutions are specialist software applications that do a good job of improving a narrow range of business processes.

One final step in the preparation phase is to assign selection team

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members. It is usually beneficial to appoint a full-time project leader, but they need to be supported by at least one business process expert who is familiar with the day-to-day operations. The team members should also include an information technology (IT) expert that can advise on technology and system architecture issues, including hardware choices and options.

Asking for proposals

Once a business case has been developed, and an idea of the project scope has been established, it is useful to whittle down the selection of vendors to a manageable long-list. This can be done while any formal request for proposal (RFP) document is being developed. Most of the long-listing can be achieved through personal knowledge or simple desk research, using the internet or various publications (see www.aircraft-commerce.com).

For example, later this year *Aircraft Commerce* will publish an exhaustive list

of software companies and a summary of their solutions which would assist in this process. Specialist MRO software conferences also provide the ideal forum to undertake a long-list exercise.

From the long-list, software companies should be contacted to alert them to the pending selection. Vendors need to be aware of selection timescales, if and when an RFP will be issued, and some of the project background. They should be invited to contact the project team to find out more details about the requirements.

Some insight into a company's professionalism and internal processes can be gleaned early on in terms of how it responds to this initial inquiry. Above all, vendors should be provided with enough time to engage with the organisation. Do not put them under unrealistic time pressure.

The RFP document can be developed in parallel, or before, the long-listing starts. The RFP details the project requirements and desires of the buyer, both functionally and technically. The

RFP can be short, sometimes a simple spreadsheet, or be an extremely long and weighty document or set of appendices.

Whether long or short, the content is what is important. "The issue of the RFP is not about the thickness of the document, but about its relevance and suitability to both clients and potential vendors," says Sharhabeel Lone, partner, global business strategy at SAKS Consulting's London office. "The RFP document, in engagements that SAKS carries out, is the most important one for making sure the project is set on the correct track. We recommend that clients map their business processes against best practices first. Organisations should have clearly structured processes that are understandable and agreed by each business unit. If each unit does not know what benefit a new information system will bring and they do not feel that they have a stake in its success, the implementation is doomed from the start. This early business buy-in and clarity is easily demonstrated in the quality of the RFP that is produced. Finally, the RFP must be in a format that vendors can easily relate to, so that they can quickly and effectively understand the real needs of the business."

Lone's last point is well made. It must be remembered that the selection process is not a one-sided event. Both parties in a software contract need to be committed to the process and feel fairly treated if a mutually beneficial long-term outcome is to be achieved. This includes creating a useful RFP that will not take significant amounts of effort from vendors to produce a response. RFPs are generally structured around three main areas: desired functionality, technical issues and company/commercial attributes. The details of the internal weighting systems against each functional attribute, the relative importance of price and the implementation approach are usually not shared with vendors. This prevents unscrupulous sales people from trying to make their solution appear in a certain way, based upon what the customer wants to hear. RFPs need to give vendors enough time to properly engage in a question-and-answer session before they submit their responses, and for them to grind through the often lengthy electronic document responses required. The buyer should use this phase to get an early sense of each software vendor in terms of culture, professionalism and whether the vendor is a long-term safe bet.

The finalists

There are several ways of filtering out the various vendors and narrowing the analysis down to a handful of finalists. This reduction in numbers is important to allow the buyer to properly analyse both



the software and the vendor.

In reality, a proper level of scrutiny is only feasible with three or four vendors. The RFP is the major vehicle used in this initial filtering process. Vendors' responses need to be treated evenly and rationally. RFP responses are notoriously difficult to score, however, since some companies may be liberal with their interpretation of the requirements and their product's capabilities to comply with the functions requested.

Some vendors may be more pragmatic and err on the side of caution when responding. One way of taming vendors' enthusiasm for their own product is to insist that the RFP response will form part of the final contract, so if the vendor claims that the product will do something, they are legally committed to making it work in practice. Buyers often fail to take advantage of this approach.

The second mechanism employed by many buyers is to invite initial software demonstrations. This allows the selection team to gain an initial impression of the software and the company. Care must be taken at this stage, because first impressions can be hard to dislodge and these sales demonstrations can mask some of the weaknesses in certain products. These initial product overviews can, however, have a valuable place in the filtering process alongside the RFP.

The demonstration

Having filtered down to three or four finalists, a detailed due diligence needs to be carried out on these shortlisted vendors and their products. These companies should be invited to present their solutions to the wider selection team and other key users within the company.

There is a danger at this point that a lot of time is wasted by the selection team

viewing unrepresentative, pre-configured sales demonstrations. Wherever possible, the buyer should stay in control of the detailed demonstration. The selection team also needs to be aware that a proper demonstration of a software system takes vendors a lot of effort to prepare. Adequate preparation time and guidance needs to be given by the buyer, and the right people from the vendor should be available for the detailed demonstration.

There are two extremes of the spectrum in terms of how to conduct the demonstration. At one extreme, all the vendors are invited in on the same set of days and housed in separate rooms. The selection team can go from room to room asking to see the same functionality and get an immediate 'back-to-back' comparison of the products. This has merit in terms of the selection teams' time and the ability to go back and ask for immediate clarification if gaps are seen between products. It is also an immediate way to get a relative comparison between the strengths of the products under consideration. Most software vendors are nervous about this approach, but it is good if specific functionality is high on the list of a buyer's concerns, and time is pressing. In any case, most vendors with strong products are unlikely to resist this competitive approach.

At the other end of the spectrum, the vendors can be invited to present a series of smaller, focused demonstrations to each department within the buyers' company. These can be over a series of weeks and could even be run remotely, using WebEx technology, for example. This allows particular parts of each application to be scrutinised more deeply and may ensure that the buyer interacts with more people from the vendor; which is an important part of the final selection.

In either case it is vital that the buyer

Selection teams need to stay in control of slick sales demonstrations by issuing rigid business scenarios that software vendors must follow.

stays in control. The best way of achieving this is to insist that the vendors conduct a demonstration against a specific set of business scenarios. This should include a relatively detailed set of process descriptions or flows, with the key business issues highlighted. The vendor should be told not to stray from the scenarios. This way, the relative strengths of each product can be more readily assessed against the buyer's business needs.

Some buyers go to extreme lengths on scenarios, producing hosts of actual sample data they want to see in the demonstration. This is usually of little value and simply causes more delay, while each vendor tries to load the data into their demonstration system.

"Demos are crucial to any evaluation," says Lone. "In fact we usually have a full day's workshop with business process owners in determining key business scenarios that vendors need to demonstrate. We ensure that vendors are not just peddling the usual beauty parade of presentations and demos. This means communicating clearly to vendors what they need to see, particularly focusing on critical and broken processes that the new system should be able to fix."

Background checks

The next challenge facing the selection team is the tricky question of site visits to reference customers. On-site visits are expensive and take a lot of time, so telephone conference calls can be a good solution. Also, reference customers are by definition the happy customers, sometimes even under financial incentive to help sell a system, so they may not be representative. They can also be on the other side of the world, making discussion difficult.

Lone agrees. "Reference visits are important. However, they need to be carried out in a systematic manner that delivers true value to the client team. We separate our client's reference site visits into three streams: executive, functional and technical. We ensure that each stream talks to its counterparts at the reference site. Crucially, we ensure that the vendors are nowhere to be seen. We also carry out a second round of site visits after the solution has been selected and sometimes a third, mid-stream during implementation of projects."



What some buyers completely miss is the opportunity for on-site visits to the vendors' offices. A big part of any long-term contract is the interpersonal relationships between companies. Risk is a major part of the final decision and the buyer needs to be confident in the range of people who will be part of the implementation and on-going support. The buyer also needs to be confident in the vendors' management team and future leadership direction. Current and future technology should be thoroughly explored and understood, either by the buyer or by hiring a consultant to help. Rather than spending time and money on visiting reference customers, a more effective investment could be to visit the vendor's headquarters and insist on meeting all the key staff without the sales team being present. Also, if a company claims to have in-country offices, visit those and find out exactly what they do. Is it a sales office or just someone's house?

Making the decision

While it is impossible to generalise, there are some common guidelines in decision making. Senior management must commit to, and feel ownership of, the decision, or the project will fail at some point during the implementation. Also it is worth considering making the decision in two stages. The project leader should make a choice mentally, present the recommendation and get initial approval, but then enter a period of reflection. This can have benefits because most decisions have an element of personal involvement, bias and emotion attached.

There is also discussion on when is the best time to negotiate price and terms and conditions. Some argue that telling a

vendor they are selected before the negotiation leaves them in a strong position to not provide the lowest possible price. In reality, with a complex and large investment like MRO software, vendors are perversely more likely to provide better overall value for money if they are negotiating secure in the knowledge that the project will in fact proceed with them. While the vendor needs to provide competitive prices and man-day rates, pushing down on prices for things like software licences and implementation costs simply leads to pressure on the vendor to cut corners or provide cheaper, but less experienced, personnel. In the end, it may be worth paying more for a lower risk project that will deliver something than a slightly cheaper disaster. However, the contract does need to contain sufficient protection for the buyer against the vendor failing to deliver their promises. For example, it is a good idea to spend the time on jointly defining any software modifications and interfaces with the vendor, and getting a price in the contract to develop these changes. Timescales should also be agreed for delivery, and acceptance of both the initial software, and the modifications should be tied to payments. This will ensure there is equal pressure on both sides to deliver the agreed project on time and to budget.

"The contract must include service level agreements (SLAs) that are watertight and exhaustive," comments Lone. "Often in the euphoria of having been given a sign-off by the board, many organisations make crucial mistakes at this stage. This process needs competent people who are able to show considered judgement and leadership. Some of the hardest things to unravel are contracts that lack clarity and that have not been thought through properly when

While the RFP is a very important tool in the selection process, airlines need to spend more time on internally digesting and agreeing their requirements and their priorities than creating extremely lengthy RFP documents. Remember, the airline has to assess and mark each response from each of the vendors.

implementations start to go wrong."

Doing it for real

It is often difficult to look into an MRO software selection process and find out how it operates. A European MRO organisation recently undertook such a process, and it provides a unique insight into the challenges and lessons learnt. Pat Owen is the business process improvement consultant from Aerospace and Industrial Marketing, and was hired to help the company select and implement a new MRO software package. "We started the selection due to external pressure from the regulator to tighten up traceability of parts," says Owen. "The company also runs over multiple sites, with multiple stove-pipe systems and we needed to get a better handle on cost management. We started by drawing a high-level process map and analysing the nature of our business, as a prelude to producing an RFP. We built an outline specification by talking to all the end users. The challenge was that most users wanted something that replicated the way they were working today, and that would have been a major mistake. We took all the inputs and had a series of reviews with management to remove redundant functions. We held workshops again to resolve any conflicts in perceived system needs, and then had a further senior review of the specification. We tried to categorise the needs from mandatory through to 'nice-to-have'. This whole process took about 18 months, and I strongly believe that you need that amount of time to digest and understand your own complex requirements internally, before inviting clever software vendors to dazzle you with their products.

"We also found it very useful to write down the functional requirement in the words of the end user," continues Owen. "That way we could translate our needs for each vendor, rather than the other way around, and our internal staff would immediately understand the functionality and the gaps. It also led to an interesting side benefit. When we issued the RFP, I put a lot of emphasis on the amount and type of clarification questions I received back. If a vendor didn't ask any questions, or they asked stupid questions, this told me a lot about them and so some vendors were discounted right away. We sent the RFP to a number of vendors

Top tips for selecting MRO software

- Pick a selection team early
- Get senior management buy-in
- Allow time to gather requirements
- Understand and prioritise your needs fully
- Allow vendors time to respond to RFPs
- Control product demos with scenarios
- Make the RFP response part of contract
- Negotiate a fair contract, with detail focused on statement of work, not legal

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based on our knowledge of the market. But the eventual winner was initially unknown to us and actually came to us through marketing efforts. Adverts in specialist magazines do work, as do specialist conferences and other marketing.

“I employed a simple point-scoring system, weighted by its importance to the organisation. Mandatory functions got a weighting of five, and nice-to-have scored one point,” continues Owen. “Of course one issue is the time it takes to analyse and score the RFP responses. For us the big issue was risk. Rather than setting ourselves a budget, we took the approach of asking ourselves how much we could afford to lose if the implementation was a complete disaster. We then also put a lot of emphasis on assessing which solution, and which company, provided the best risk mitigation approach. We gave extra weighting to companies that put forward multiple people from the organisation, not just sales people, for the demonstrations. We called reference customers and probed them on specific topics to explore concerns about functionality and about implementation. I also wanted to gauge the vendors’ sales people as to their optimism and trustworthiness, so I could factor it into the RFP responses. Reference site visits are always a little awkward. You really want to talk to most recent customers and the vendor wants to show off its happiest customer. In fact we didn’t do enough reference calling in the end and could have spent more time visiting the vendors’ offices to see more of their company.

“We got down to four companies and in reality only two were actually contenders. Demos were short affairs,

some done on WebEx. We saw a multitude of people from the eventual winner and that impressed us; peace-of-mind is important when people are the crucial element in making the solution work. We made the selection in the end because one offered to do an unlimited amount of free consulting work, ahead of a contract, to produce a detailed statement of work (SOW) and ensure we were happy that its solution would work for us. This was all part of the risk mitigation that we were most focused on. It also provided us with a ‘cooling-off period’ after the initial pressure and emotion of the decision. In the end I made the recommendation and the decision was made, but we didn’t tell the software company. We invited its CEO to meet our MD and they had an eyeball-to-eyeball meeting before we agreed to work with them. This is also important for the project going forward. When times get hard during the implementation, as they will, we need the personal relationships at all levels to work so that they resolve issues. We didn’t do the final negotiation until we told the company they had the deal. I feel strongly that it is a better way to treat a long-term relationship, rather than holding a company to ransom by playing them off against a rival. We got one thing wrong however; we over-complicated the legal contract. My strong belief is that the commercial contract should be as simple as possible. American-style contracts add no value. The most important thing is to get the SOW detailed and agreed and understand who is responsible for what and when. Vendors often under-estimate the risk that the buyer is running in selecting their company and product. Reputations, and often jobs, are at stake.”

There are several lessons airlines can learn from other selection processes and from external consultants. Often, one of the most difficult lesson is to try to stick to a balance when negotiating and dealing with vendors.

In summary

Selecting an MRO software solution is difficult and requires time and investment from the buyer to get it right. The lessons seem to be that taking time to gather requirements, and indeed understand them fully, is essential. Time needs to be given to this phase, mostly because it will educate and allow the buying company time to digest and reflect on its own business needs. It will also build confidence in the selection team for when the slick sales demonstrations are given by the software vendors. The RFP, while needing to have a level of detail, is all too often the only focus of attention and ends up being of less value while creating a lot of extra internal effort to score. More importantly, the demonstration phase is often left to the vendors to control. Buyers need to be rigid in their demands that the vendor sticks to pre-defined scenarios. There should be no ‘wriggle-room’ given to vendors to claim that they could show some function if only they had the data, or a business rule, configured. They should be given ample time to prepare the demonstrations. Buyers should consider the range and quality of people they are in contact with at the vendor. Reference site visits are usually not good value for money and more attention should be paid to the vendor company site. Senior management and key staff should be interviewed without the sales staff present. Finally, it seems that the best contracts are structured after the vendor knows that the deal is theirs. Most vendors will be happy to provide a better package of work if the price is reasonable and they are treated fairly. But the best contracts focus on the detail of who will deliver what to whom and when, rather than on lengthy legal paragraphs. The way to ensure and motivate the vendor is to tie specific, and substantial payments, to key deliverables, and to ensure that the customer’s acceptance or rejection is specified clearly. In the end, there are a number of solutions that will work well for all customers. The trick is to get the right fit for your organisation and feel confident that the vendor is sufficiently committed to your particular success long-term, and that includes both you and their senior management. **AC**

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