

White Paper

Decision time for complex,  
major procurements, making  
the right choices for achieving  
value for money



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A major project can be viewed as a sequence of decisions. There is the decision to explore the feasibility of a project, then the decision to commit the resources. A solution must then be selected.

In the case of a procurement project, a procurement strategy must be determined, proposals assessed and potential vendors identified.

The success of a project is highly dependent on these decisions. Select the wrong project, the wrong solution or the wrong vendor and value for money will not be achieved. In fact, many major projects have failed completely, taking the whole budget with them, due to a failure to find the right route through this tree of key project decisions.

These decisions often involve a highly complex trade-off of multiple factors, the opinions of a diverse group of stakeholders, and evidence from a wide range of written and other sources.

However, even in organisations with mature project management, the process often treats the most decisive moments of a project surprisingly informally, with gut feel supported by rudimentary spreadsheets.

One particular project decision that has been a recent focus for improvement in best practice is supplier selection, and the preceding bid analysis. This is a particularly business-critical decision, the offers by different vendors are unlikely to represent equal value for money, but they can be very hard to differentiate when represented by hundreds or even thousands of pages of intangible, rival, proposal documents.

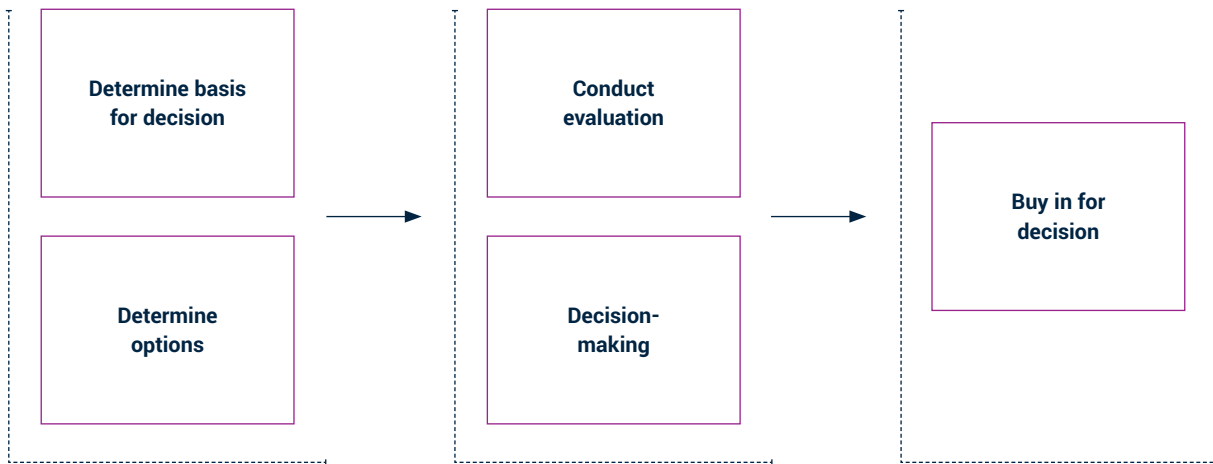
With maybe 90% of a project's total budget being awarded to the winning supplier, improving the quality of this decision-making process can provide a big payback.

As well as being critical to a project's success these decisions are notoriously difficult. Projects in the defence sector are known to evaluate up to 1500 individual factors or criteria when making the decision. A diverse group of stakeholders need to be consulted in the trade-off between these criteria. The analysis may take weeks or months, and then the negotiation process can change the position, requiring re-analysis which there is often not time to complete. Due to this complexity it can be very hard to justify the decision after the event.

In order to improve the process of bid assessment and supplier selection, it is necessary to view the process as a project in its own right. The components of the process must be understood, and the workflow of the process itself executed in a managed and controlled manner.

There are three key components in the decision-making process. These are: planning, execution and audit.

**Figure 1. The planning, execution and audit stages of a key project decision**



## Planning decision-making

Planning for making a decision is fundamental to rapid and thorough execution. It contains two key elements; determining the basis of a decision, and the best potential options.

Supplier-selection decisions are usually made on the basis of the value for money offered by each supplier. This does not necessarily mean the cheapest compliant bid will win. In order to make decisions based on value for money it is clear that it must be understood what is meant by 'value' in the context of the particular project.

The value of a missile will be measured in quite different terms to the value of a hospital or an IT outsourcing project.

Recent developments in best practice (for example, guidance from the Office of Government Commerce) have emphasised the importance of having a pre-planned and transparent model of value for money. A value for money model includes a number of key concepts. These are criteria, weightings, and measurement schemes.

A flat list of criteria is difficult to work with. Criteria describe the key factors that must be traded-off to determine the best option. Criteria need to be organised into a hierarchy, as it is nearly impossible to determine the completeness, consistency or relative importance of a flat list of criteria.

A hierarchy of criteria is a more usable structure, which allows the decision to be analysed under high-level headings such as commercial, technical and past performance. It also allows evaluation results to be entered at the leaves of the criteria tree where it is possible to make objective assessments, for example, the fuel economy of a car, or the price in pounds.

Creating a documented criteria hierarchy is also a good way of debating the important factors in the project with a wide group of stakeholders, as they are easy to understand.

Not all criteria are created equal. They differ in relative importance. For example, the performance of the car may be more important than its fuel economy for a police patrol car; for a sales rep's car the reverse may be true.

Mathematically rigorous techniques such as refined pair-wise comparison can be used to determine a set of weightings based on responses from the project's stakeholders.

Once weightings have been determined, a measurement scheme must be determined for measuring each criterion. The actual score (for example, fuel consumption in mpg) needs to be mapped on to a normalised scale (for example, 0-100) so comparisons of dissimilar criteria can be made.

Once criteria structures, weightings, and a measurement scheme are in place, there is a systematic basis for considering each of the options available to the projects.

The practical issues of who is going to assess which criteria then needs to be considered; assessors should be presented with their list of tasks in the order of their relative importance.

The other key issue in planning for decision-making is determining a set of best choice options to select from.

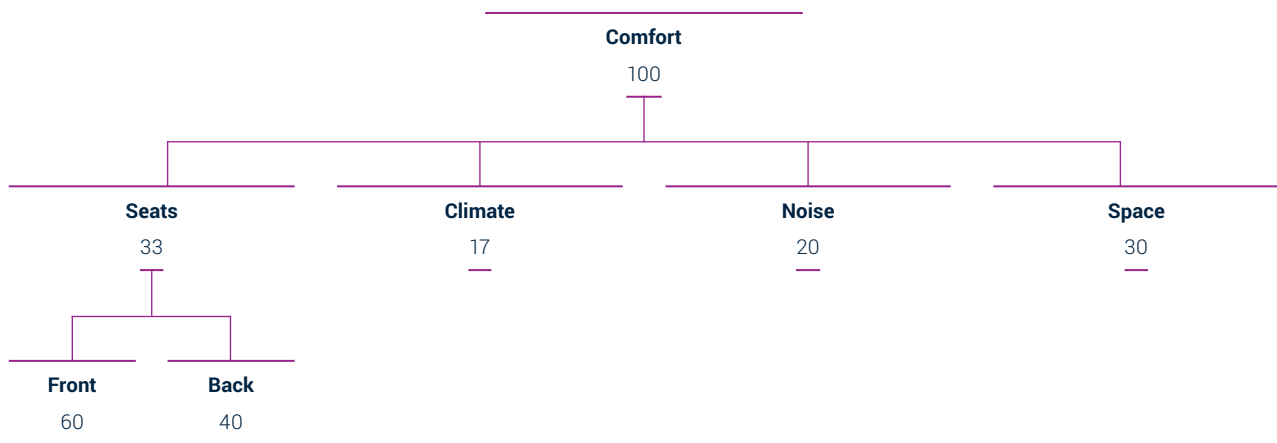
In a procurement-based decision this will involve generating a set of offers from a group of vendors. Exposing the vendors to the value model will help them offer appropriate solutions. Often vendors will offer several options around a principal offer.

The quality of the options available is highly dependant on the solicitation documentation such as the RFP, and it is worth being reasonably prescriptive about the format of the response so that the responses can be compared against the evaluation criteria and against each other.

Figure 2. A flat list of criteria

Badge / brand of car	Ease of use of controls	Financial viability of the manufacturer
Colour	Gearbox configuration	Insurance group
Acceleration	Roadholding ability	Tax group
Power of the engine	Brake feel and efficiency	Feel and fit of interior
Type of engine	Resale values	Build quality
Fuel efficiency	Internal noise when driving on motorway	Price
Type of fuel	Passengers' airbags	Cost of routine servicing
Saloon / estate / coupé / open-top	Electric mirrors	Service interval
Styling	Climate control	Cost of non-consumable spares
Comfort of seating position	Side impact protection	Warranty
Cruise control	How long has the model been available?	Local servicing
Electric windows		Courtesy car available when in for repair
Clear instrumentation		

Figure 3. A weighted criteria hierarchy for determining the comfort levels of a car



## Executing decision-making

Having planned the decision-making process execution can begin. The first step is to capture all the necessary information. This involves capturing scores for each of the criteria to be analysed. Ideally, each criterion should be scored independently by multiple, independent assessors and a consensus opinion determined.

Once a score for a criterion is determined, a score can then be calculated for the next level up in the hierarchy by taking a weighted average of the criterion and its siblings. This can be repeated up to the top of the criteria tree to provide an overall score for each option. However, similar top-level scores can represent very different options and it is important to be able to review results at all levels of the tree. For example, it is possible to view a 'commercial result' and a 'technical result' to determine the specific strengths and weaknesses of an option.

Often this aggregation and analysis is only performed when scoring is complete. This is very inefficient. High-level scores can be determined during the evaluation process. A 'current' score can be determined by assuming all outstanding scores will be 0 and a 'best' possible score can be determined by assuming all outstanding scores will be 100%. From these scores it is possible to see the range of potential outcomes at any level in the criteria tree. Once an option's best-case score falls behind the worst-case score of another option, further scoring is unnecessary and the option can be discarded.

Historically spreadsheets have been used as the mechanism for managing the collection and analysis of scores in the lead-up to key decisions. While spreadsheets are readily available, they are not suitable for analysis of anything but the simplest decisions. This is for a number of reasons.

Major project decisions are collaborative in nature, requiring input from multiple stakeholders. It is not unusual for major-supplier-selection decisions to involve thirty or more people. Thirty people working together effectively on a spreadsheet is virtually impossible.

Additionally spreadsheets are not good at creating an audit trail; they can record a result, but the rationale cannot be easily captured, nor can a version history of answers. Neither are spreadsheets good at directing work flow, nor providing visibility of completion progress and only provide a one-dimensional view, as they cannot be queried to answer questions in a flexible way in the analysis process. Where spreadsheets are used it can be very difficult to justify decisions after the event.

Recently COTS web-based software has been made available to support major project decisions, and especially critical decisions around supplier selection and contract negotiations.

Our own product (AWARD) is playing a leading role in this new market space. It has already supported procurement projects worth over £50 billion. It has enabled decisions to be made up to 40% quicker and, by enabling a more thorough analysis of proposals, has enabled better value for money contracts to be negotiated.

The product ensures that all stakeholders are directed through the criteria they need to score in an optimal order, and managers are constantly informed of scoring progress and the developing results.

Tools can improve analysis, but they cannot make decisions. The final step in the execution process is to summarise, query and report on the analysis performed, thus enabling high-level managers to make their final decision based on the best possible information.



## Auditing decisions

Once a decision is made, that is often considered to be the end of the process. However, decisions do need to be justified. On projects using government money the law requires that the decision process is fair, transparent and auditable. In these post-Enron days businesses also need to show diligence in decisions that result in the expenditure of significant sums of shareholders' funds.

Having a clear, traceable record of the analysis and reasons behind a decision is also very useful in improving organisational and business performance.

Lessons learned as a decision is acted out can be applied to the basis of future decisions. Where such analysis has been conducted informally using spreadsheets it is very difficult to revisit and learn from it months or years after the event.

Again, software tools such as AWARD can be invaluable at this stage, as a comprehensive audit trail is automatically recorded and can easily be analysed after the event.

## To summarise...

Major project decisions, especially those with a significant financial impact such as selecting suppliers and negotiating contracts, need to be treated as formal projects in their own right.

The major components of the process are planning, execution and audit and new web-based software tools can be invaluable in improving the whole decision-making process.

## About Commerce Decisions

Commerce Decisions has been supporting strategic, high-risk procurements globally since 2001, and is at the forefront of best practice procurement. With a unique focus on complex evaluation, we have unrivalled experience in supplier evaluation and are a trusted provider of procurement services to the public and private sectors.

We deliver a robust and defensible procurement process to our clients, proven time and time again across many sectors including construction, transport, education, health, defence and facilities management procurements – to date, we have supported over 13,000 strategic projects, collectively worth over \$400billion. This enviable experience and in-depth knowledge has enabled us to develop proven methodologies, supporting clients to deliver the best possible outcome on strategic and complex procurement projects.

Headquartered in Oxfordshire, UK, and with offices in Canberra, Australia, and Ottawa, Canada, Commerce Decisions provides software and services to support the procurement and post contract review processes for both buyers and suppliers. For buyers we improve the efficiency and effectiveness of the evaluation process to make the best buying decision based on all the relevant criteria, underpinned by our AWARD® software. For bidders we improve the quality and timeliness of proposals to best meet the needs of the potential buyer and thereby give them the best chance of securing the contract, underpinned by our ADVANCE™ software.

## About QinetiQ

QinetiQ is a leading international provider of technology-based services and solutions to the defence, security and related markets. We develop and deliver services and solutions for government organisations, predominantly in the UK and US, including defence departments, intelligence services and security agencies.

In addition, we provide technology insertion and consultancy services to commercial and industrial customers around the world.



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