Better business cases – achieving the promised ROI on airfield investment

At a glance

Developing a reliable business case early in the project development process allows an organisation to deliver best outcomes from their projects and avoid those with marginal returns.

As ownership of airfields passes from public to private investors, the focus of operations has shifted from efficient operation of the airfield to achieving a return on investment. This is particularly the case for the large investments required for capital infrastructure projects. Owners invest in airfield corporations because of their ability to generate cashflow from multiple sources – airline fees, parking and leases paid by retailers and other third party operators – and their access to available land close to what is often one of the largest transport hubs in a city.

Maximising the revenue base of the airfield invariably involves investment in capital infrastructure over time – terminals, lounges, retail outlets, commercial buildings, carparks, transport links and terminals as well as related engineering infrastructure. The capital investments plans of Melbourne Airport ($10B over the next 20 years), Sydney Airport Corporation ($2B over the last decade) and Queensland Airports ($300M over the next five years) illustrate both the scale and importance of capital investment to airport corporations and their investors.

In this context, it is critically important that airport corporations are able to invest the time, resources and money required with the confidence that their investors will achieve the desired return on investment. The initial business case, on which the decision to proceed with the project and invest significant resources is made, must therefore be comprehensive and reliable. It has to satisfy investors and provide surety to the development managers responsible.

This paper will provide both executives and practitioners with some ideas for delivering better business cases, as well as insight into the logical errors to look for and the hallmarks of a well-constructed and investigated business case.

While the detail below is specific to airfield projects, the general principles should hold true to every business case and project.

Procure the right consultant

Most consultancies which provide business case services have a defined process for preparing them and will be able to point to a range of experience in the area. Therefore, methodology and experience are rarely differentiators, at least on paper. There is often only limited briefing material available on the issues that would enable a consultant to differentiate themselves with innovative ideas while tendering – so price is generally where it lands. Now we have a race to the bottom with cheaper prices, a lower level of service and compromised outcomes for the client who relies on the efficacy of the business case produced.

The solution – a two stage process not dissimilar to the procurement one often used for Early Contractor Involvement. The first stage is similar to existing tender processes where tenderers demonstrate and are evaluated on their process, experience and availability of key personnel. The second stage is a workshop in which the requirements for the project and the process of the business case preparation are developed further with each consultant.

Value for money is considered and the preferred consultant selected after the workshop. This process will give you a far greater appreciation of the consultant's particular skills and innovation in the areas that count to you and the extent to which they are likely to produce a reliable business case, and therefore, the value they bring.

We also recommend an independent project challenger role to be included in the team. When the right person is chosen, they will add rigor and innovation to the process and avoid some of the pitfalls, such as groupthink, erroneous assumptions and ignoring of issues and risks.

Set clear project objectives

A project without a solid statement of its objectives is like a ship without a rudder – almost guaranteed to wander off course. You will suffer from scope creep and a myriad of other issues. A good set of project objectives should describe those outcomes which must be achieved for the project to be considered a success, as well as why the intended outcomes of the project are of value.

Value is at the core of all good program and project management, so the objectives should be defined in terms of the value that the project is expected to deliver. Therefore, we like to use the (slightly modified) definition of value used in AS4183 Value Management as a useful conceptual structure to define the objectives. This definition has three components – fundamental objectives, important characteristics and benefits.

Fundamental objectives - outcomes which must be achieved for the project to be considered a success. They should be unique to the project and must be tested to ensure that they are mandatory to success, not only desirable.

Important characteristics - features of the delivered product which the stakeholders are willing to invest in to achieve. This might be a particular functionality, a quality level or delivery before a particular date.

Benefits - the positive changes which the stakeholders hope to see from the project. Benefits could be business risks that are mitigated, improved efficiency or new functionalities.

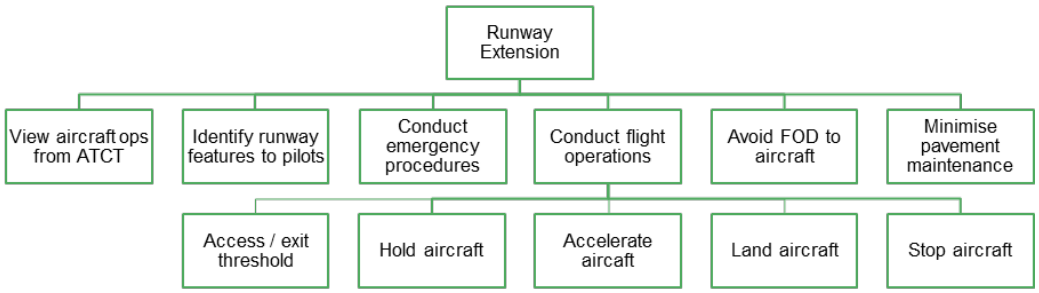
Context is important here – different stakeholders will have very different pictures of what the delivered value looks like. For the purposes of the business case, it's helpful to consider the views of every stakeholder in this respect. The final objectives however should be those which the people at the highest level of the organisation delivering the project would agree to, which will align most closely with the interests of the organisation as a whole.

Define the scope

Un-scoped work required to deliver the objectives of the project has the potential to massively increase the cost of the delivery.

At the core of a comprehensive scope is a strong understanding of the intended functionality of the works. The functional breakdown structure is a concept borrowed from systems engineering which is particularly useful for achieving this objective, though it's not the only methodology and isn't even the best in all circumstances.

At its highest level, the functional breakdown structure lists the functions of the works being delivered. The objectives of the project will give you a good insight into what these are – if the objectives aren't wholly delivered by the functions listed, then there's at least one function missing. The example below is a simplified functional breakdown structure for an airfield project.



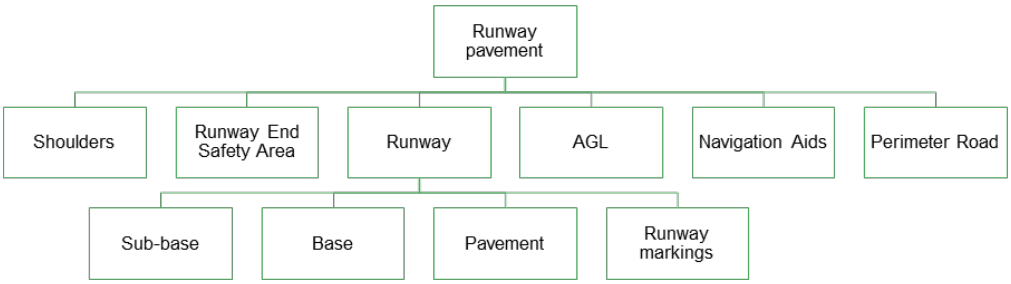
The functions identified are then used to develop an initial scope using a work breakdown structure.

A work breakdown structure is similar to the functional breakdown structure, but it splits the works down into its physical parts. An example building on the airfield project is provided below. There are three important points to make here.

The first is that the work breakdown structure should be broken down as the works are planned to be delivered. This sets up the project to have a useable cost plan and program. This article on earned value management explains why.

The second is that the functional breakdown structure does not necessarily map directly to the work breakdown structure. In most instances they look very different. The purpose of the functional breakdown structure is to give the group a reference to which they can compare the work breakdown structure to see whether it performs all of the required functions. As with the objectives, if the works as described in the work breakdown structure don't fully perform all of the functions, then there's something missing.

The third is that, while there is usually only one description of the functions that you need the works to perform, there may be many options for the scope. Value management or a similar process should be used develop and assess these options to ensure the delivered scope aligns with the required functions in an efficient manner.



The next step once the stakeholder group is satisfied that the work breakdown structure performs all of the identified functions is to consider the interfaces of the project. The group simply considers each of the elements of the work breakdown structure and how they will interface with the outside world both during construction and during the operation phase.

For example, the group may consider interfaces with the vehicles using the roads, other infrastructure, the environment and the road operator. This process may identify further scope to be added to the work breakdown structure. For example, reducing height of nearby structures and trees, and relocation of existing infrastructure and airside fencing might be added to the WBS above. The group may also consider the operational cost of temporarily displacing the threshold during construction.

Develop and select options

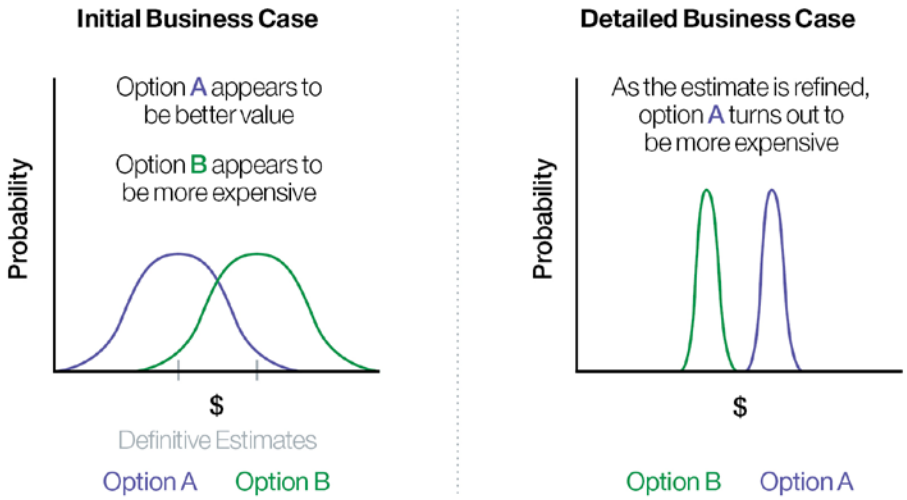
Option development is both an important part of the business case development and, if not done well, the source of many issues which could undermine the accuracy of the end result. The following are three ideas that will encourage a more expansive and innovative process:

Involve a wide range of stakeholders from different backgrounds to bring a range of perspectives and new ideas and produce an innovative outcome.

Have an independent challenger, who is free of any agenda, to question the group and push them to look at the problem from new angles.

Apply design leadership principals, such as clearly identifying the key issues, to help develop an innovative outcome. These have been addressed in this article on design leadership.

Probabilistic estimates should always be developed to show the likely range of cost for each option. Investigations and design development later on may drastically change the curve for each option, resulting in the apparent relative value changing significantly. This is shown in the graphs below. Definitive estimates do not demonstrate this possible outcome to clients and stakeholders, even when they are clarified by a range of certainty.



An important point on option selection is that they should not be deleted unless they are clearly not going to deliver better value than the preferred in any circumstances. A good business case will identify where two or more options are likely to deliver value and recommend that they be developed more in the next phase.

Optimising the site investigations

Initial business cases should balance the risk of proceeding on a false estimate of the cost against the expenditure of funds too early in the development process. The procurement process, contract and development process must all align on the need to achieve this balance in order to get a value for money outcome for the client.

By removing the investigations from the tendered scope of the business case consultant and procuring the investigations from a third party once they are defined you have a better chance of getting them right. This is important to both assuring the reliability of the business case and avoiding the cost of investigations unnecessarily early in the process – it creates a commercial incentive to get it right.

The main drivers of cost for investigations are the number of sites over which they should take place, the variety of investigations conducted and their fidelity.

Existing information is the best basis for assessing the risk of site conditions in order to inform the site investigations needed. However, while most organisations have information available, it's often spread across several databases and legacy documentation sources. Information can be found via a variety of sources and stakeholders should be consulted to uncover as many as possible as well as any specific knowledge of site conditions from previous projects. Government and heritage sources should be consulted to ascertain previous uses of the site and likely contamination. Coffey's proprietary remediation software package brings together these sources to present the information is an easily understandable and usable manner.

Based on the desktop analysis, functional requirements and other constraints, a shortlist of site options should be agreed with the client and other stakeholders. An initial probabilistic cost estimate needs to be developed to identify the greatest areas of cost risk for contamination and other issues. The site investigations should primarily be aimed at retiring these risks, particularly where they may differentiate between two site options. Further information on developing probabilistic cost estimates for contamination can be found here seeing below ground - estimating remediation costs accurately.

The business case should clearly identify what investigations were conducted, and which were not, along with the reasons why and the potential impact of any outstanding risks. This will allow the program manager or executive committee to assess whether risks have been adequately quantified.

Other pitfalls

The following are other pitfalls which can result in inaccuracies in the business case. They should be used as a checklist both during the development of the business case and in the final review.

Inadequate definition of the staging plan. This makes it difficult to ascertain the feasibility of the options and can lead to a significant increase in project costs.

Erroneous assumptions. One of the most common that I've seen is the assumption that the services requirements for new buildings will be the same as the buildings that they're replacing. With the increase in technology and automation, this is rarely the case. An independent challenger can assist in identifying and removing these assumptions.

Non-existent, or very small, allowances for decontamination. If the project is on land that has been used for any commercial or industrial purpose, a significant allowance should be made for decontamination. See the above link for more information.

Inadequate allowances for engineering services. Given the limited information available on the project requirements, services calculations should be benchmarked for both cost and capacity against similar projects where available. Depending on the type of project, an estimate for site engineering services which is less than 10% of the total project value should raise the concern of the program and project managers.

Wrap up

Delivering accurate business cases is critical to effective program management in organisations delivering facility and infrastructure projects such as airfield operators. A good business case will clearly identify the value to be delivered, provide a reliable assessment of the cost of delivering and will describe the process used to develop it. To look over the main points again:

- Procuring the right consultant with the experience, approach and ideas required to prepare a reliable business case is critically important. We suggest a two-stage process with a tender followed by a collaborative development workshop as an effective method to ascertain the value that you're likely to achieve from each tenderer.

- The functions and scope which form the basis of the project should be clearly identified. The use of functional and work breakdown structures provides a simple and effective way of identifying and communicating both.

- Probabilistic estimates should be used and options only discounted on value grounds where there is a clear advantage of one option over the others.

- Getting the right investigations done is important to both assuring the reliability of the business case and avoiding the cost of investigations unnecessarily early in the process. We suggest creating commercial incentive to get it right by removing the investigations from the tendered scope of the business case consultant and procuring them from a third party once they are defined.

- Erroneous assumptions and unidentified risks are the most common causes of business case failures. We suggest that an independent challenger role will provide the rigour required to remove these weaknesses from the business case process.

Program managers and review committees should be looking or these markers when reviewing business cases to ensure projects are set up to achieve the value and return on investment envisaged.