

Chapter 6

Developing a Business Case

Abstract The aim of this chapter is to outline the principle steps involved in developing a business case. Asset managers are frequently involved in developing business cases which may range from the level of major capital projects to process improvements or system changes. Business cases are also required for activities such as outsourcing. This chapter is concerned with the overall structure outline content of business cases. *Outcomes* After reading this chapter you will know what steps to take in order to develop a business case. You will have available a list of headings under which a business case can be developed, for both large and small projects. You will have enjoyed reading about the use of business case methods to choose a bottle of wine in a restaurant.

6.1 Business Case Introduction¹

A business case is an argument for taking a particular acquisition or development path. It involves defining the proposed path and stating the reasons for and against pursuing that path, in terms of revenue, costs, discounted cash flow criteria, benefits, and risks. Development of a business case is an essential activity which arises at several stages in the asset development process. Asset management personnel need to be familiar with the steps involved in developing a business case, and to be skilled in developing and presenting cases. It is also important to undertake this task objectively, so that the business advantages and disadvantages of any particular case are presented in a balanced way, without undue bias or emotional commitment.

The ability to develop and present a well-argued business case is a key attribute of a good asset manager. Lack of ability to develop and present a business case indicates a lack of maturity in the asset management role.

¹ Relevant areas of the standards are ISO 55001 Clause 6.2.2 and ISO 55002 Clauses 6.2.1.3 and 6.2.2.1.

Good management will take many factors into account when assessing a proposal, but it is important to recognize that the focus of senior management will certainly include:

- Profit,
- Accountability, and
- Business strategy.

Practitioners are often more focused on:

- Equipment availability,
- Maintenance,
- Logistics,
- Risks,
- Continuity, and
- Technology.

The asset management role involves bridging the gap, giving the best outcome for the organization as a whole. In particular it should be recognized that any particular project may have merits, but is likely to be in financial competition with others.

It is therefore essential to bring financial considerations to bear and to express these in standard terms such as Return on Investment and Net Present Value in order to establish the case in the minds of senior management.

6.2 Development Plan

Before a business case can be developed it is essential to create the plan on which it is to be based. In the case of a major project development, based on the procedure outlined in the previous chapter, project planning and business case development proceed hand-in-hand. Thus, the prefeasibility analysis phase will lead to the development of an initial business case. If this is approved the project will enter the feasibility analysis phase which will lead to the development of the final business case, and if this is approved the project will proceed to the acquisition/development stage.

Besides the formal development of business cases for major projects, we will often want to develop business cases in a wide range of situations. The evaluation of options for practically any development can be assisted by the development of an initial business case. For minor projects the two stage process used in major developments may still be followed in principle, but only one actual business case will normally be created, and less detail will be required.

6.3 Business Case Outline

An asset development plan contains information from which we develop a business case. The business case is a summary of the plan, put forward for approval and funding. In outline it covers the following points:

- (1) Project title, name of proposing group, name and details of contact person(s)
- (2) Executive summary
 - (i) Brief statement of problem or opportunity
 - (ii) Aim of proposal, expected function or effect, and main benefits
 - (iii) Financial summary, revenue, costs, and NPV projected
 - (iv) Risks
- (3) Background situation
 - (i) An objective statement of current strengths, weaknesses, opportunities, and threats
 - (ii) Development concept
 - (iii) Asset needs analysis
 - (iv) Existing capability, planned capability, and capability gap analysis
 - (v) Indication of any important relationships to other capabilities or proposals
- (4) Stakeholders—list the roles and/or individuals impacted by the proposal
- (5) Planning assumptions such as
 - (i) Level of service required
 - (ii) Availability of relevant items, e.g., equipment, land, and utilities
 - (iii) Demand assumptions
 - (iv) Price assumptions
- (6) Options available
 - (i) Include “do nothing” or “base case” option
 - (ii) For each option summarize relevant concept, data, and analysis
 - (iii) Include consequences if no action taken
 - (iv) Indication of preferred option with reasons
- (7) Preferred option description
 - (i) Operational concept, function, effects, and net benefits
 - (ii) Technical feasibility
 - (iii) Function and performance specifications
 - (iv) Acquisition strategy
 - (v) Financial summary
 - (vi) Consider wider impacts

- (8) Project financial analysis for preferred option
 - (i) Added revenue, value, and/or cost savings
 - (ii) Acquisition and development costs
 - (iii) Net personnel and operating costs or savings
 - (iv) Logistic support and through life costs, LCC
 - (v) Project implementation costs
 - (vi) Required budget
 - (vii) Cash flow analysis
 - (viii) Investment analysis: Payback Period
 - (ix) Investment analysis, NPV, IRR (indicate planning horizon)
- (9) Semiquantifiable benefits. Estimate physical values, e.g., extra tonnes produced, reduction in losses. Possibly estimate \$ value but state basis of calculation so that management judgement can be applied. Benefits may include:
 - (i) Increased reliability and availability
 - (ii) Reduced production loss
 - (iii) Asset life extension
- (10) Human resource factors, availability, net cost, and training
- (11) Environmental assessment
 - (i) Environmental protection actions required, such as sound barriers and waste disposal facilities
 - (ii) Environmental benefits and regulatory requirements met
- (12) Health and safety assessment and requirements or issues
- (13) Nonfinancial benefits
 - (i) Identify benefits of a nonfinancial nature such as social services, sports ground development,...
- (14) Summary of project activities
 - (i) Acquisition/Development strategy
 - (ii) Scope of Work
 - (iii) Timings, Project lead time
 - (iv) Business continuity plan during implementation
 - (v) Sustainability aspects
- (15) Risk analysis
 - (i) Identify risks of doing nothing
 - (ii) Identify risks to the project succeeding, solution risk, schedule risk, and financial risk. May include high, medium, and low analysis
 - (iii) Identify risks in the longer term
- (16) Development project management
 - (i) Indicate the resources and funds required to manage the implementation of the plan

- (17) Performance monitoring
 - (i) Indicate how the intended results will be monitored and reported
 - (ii) Identify the key measure of success
- (18) Proposed date of decision
- (19) Proposed in-service date
- (20) Concluding summary.

6.4 Smaller Project Business Case Outline

For a smaller project a brief case will cover the following points:

- (1) Name of Proposer
- (2) Title of Project
- (3) Executive summary, physical, and financial
- (4) Introduction and background
- (5) Current situation
- (6) Forecasts and opportunities
- (7) Stakeholders impacted by the proposal
- (8) Desired future state
- (9) Outline of options including maintain status quo and potential development paths
- (10) Proposed development, acquisitions, and scope of work
- (11) Physical/material business benefits, e.g., more production quantity, less losses, staffing, or resource savings
- (12) Estimated value NPV, Payback Period, and IRR
- (13) Identify the key measure of success
- (14) Risk, environmental, and health and safety considerations
- (15) Proposed timings including in-service date.

6.5 Impact of Downtime

When a machine breaks down, there is usually a loss of production or service, as well as repair costs, and little or no saving on other costs of doing business. Many projects involve a justification based on reductions in actual or potential downtime.

The impact of downtime can vary widely depending on circumstances. In making out a business case for an asset-based acquisition or improvement, it is desirable to address the issues associated with the impact of downtime or other service losses which may occur if the project is not pursued. The following are some types of cost arising from downtime:

Loss of production which cannot be made up In this case, sales of the product are lost and the corresponding revenue is lost. The cost of downtime is the cost of

the lost sales minus unused consumables. This applies to every machine for which downtime results in irrecoverable loss of production. Machines which impact fully on lost revenue are referred to as *bottleneck* machines. Asset improvement efforts are often directed at relieving bottlenecks, with the idea of improving throughput and reducing vulnerability of revenue to failures at the bottleneck.

Recoverable production loss Machine downtime may cause a production loss which can be made up by overtime working, subcontracting, outside purchasing, etc. When the machine is down, some costs may be saved, e.g., power and other consumables. But the cost of idle labor is often not recoverable. In this case the cost of downtime is the extra cost of running the machine in overtime. For subcontracting it is the cost of the subcontract minus the saving of unused consumables. For outside purchase it is the outside purchase cost minus unused consumables.

Contractual financial loss Failure to deliver the product on time may result in financial loss as part of a contract undertaking. Alternative product may need to be bought in from more expensive sources.

Loss of goodwill This may result in lost sales in the future and may have negative political impacts.

Spare capacity To reduce the impact of machine downtime we may introduce spare capacity. For example, a company operates a fleet of four-wheel-drive vehicles to support its operations. In normal operation, 80 vehicles are required to be available. The company has a fleet of 90 vehicles, providing a repair pool to cover breakdowns and routine maintenance. The provision of this spare capacity is a cost. If breakdowns occur to the extent that there are production losses, this is an additional to the cost of providing spare capacity.

Continuing with the vehicle fleet example, if the condition of the fleet deteriorates to an extent that less than 80 vehicles are available, and this impacts on production, then we need to address this by changes such as replacing older vehicles, increasing the size of the repair pool, or improving operating or maintenance practices. The justification for a project to make these changes would involve identifying the impact on the business of the loss of availability of the vehicles.

6.5.1 Physical or Service Losses

It is often easier to identify physical or service losses than it is to put an accurate cost on them. The reduction of losses may well be worthwhile even though we cannot cost them accurately. In making out a business case we should estimate the savings in physical or service terms, even if the precise financial effect is hard to quantify. Financial and operations' managers can make their own assessments of the impact of physical losses, and this may vary with the state of the market, levels of stockpiles, and so on.

For example, an ore loader moves approximately 5,000 tonnes of ore per day. If the loader is down for a day, 5,000 tonnes of production will be lost. This is the physical loss rate from loader downtime. If the typical sales price of the minerals yielded by a tonne of ore is \$100 then the loss of 5,000 tonnes amounts to \$500,000 in lost revenue. This is a figure which can be given in the business case, but the basis for calculation should always be given. Including the physical loss rate in a business case will provide information on which management can make its own financial judgement based on the perceived value of this production loss.

In a general business setting, the term Price of Non-Conformance (PONC) is used to describe the costs involved in any deviation from correct processes.

6.5.2 Cost of Failure

Figure 6.1 lists some of the cost factors which can arise when a failure occurs.

6.5.3 Indicate Savings and Returns on Investment

Always give a financial estimate of the value of your proposal and the basis on which it is calculated. For a proposal which will improve reliability, provide forecasts of the reduction in the numbers of failures and hence in the costs of downtime, repairs, spares, and lost production. Provide historical or comparative data where possible.

Fig. 6.1 Cost factors of failure

Production or Service <ul style="list-style-type: none"> • lost sales through downtime, and wind-down and start-up of related areas • contractual loss • goodwill loss • rework Primary Repair Cost <ul style="list-style-type: none"> • labour • overhead • spares Secondary Repair Cost <ul style="list-style-type: none"> • labour • overhead • spares 	Safety/Health <ul style="list-style-type: none"> • lost time • trauma • workers compensation and insurance Environment <ul style="list-style-type: none"> • clean up • corrective • legal costs • legal liabilities
---	--

For a proposal which will reduce downtime, estimate the reduction in production or service losses and estimate the value to the organization. This will offset any additional expenditure on maintenance personnel or equipment.

Liaise with accounting personnel on getting the financial implications correct and in regard to the timing of submissions.

Indicate trends, e.g., increasing demand, aging equipment, replacement requirements, changes in costs, and the financial implications of these factors.

6.6 The Final Decision to Proceed

The final decision to proceed lies with senior management. It will be based on financial considerations, combined with judgement in relation to forecasts of future developments, consideration of future flexibility and of risks to both the project itself and to the assumptions underlying the business case. Health, safety, and regulatory factors will be considered.

6.7 Approved Development Plan

Once approved, a project becomes part of the organization's approved Business Development Plan. This is a portfolio maintained by the organization, which contains all project plans which have received final approval but are not yet introduced into service.

Projects in the approved Business Development Plan must be taken into account in subsequent planning, and will be regarded as fixed, unless changes are approved at senior level. Such changes should only be made in response to significant changes in the business environment.

6.8 Wine Selection Example

Some fundamentals of the entire business development process can be illustrated by means of the following example relating to the purchase of wine in a restaurant.

Problem Statement

To meet the drinking requirements of the party

Stakeholder group: All members of the party

Options: Beer, Wine (white or red?), and Water

Needs analysis: We need 2 bottles of red wine, 1 bottle of white, and some water.

Capability Gap Analysis

Needed = 2 red, 1 white, and water

Available = 1 bottle of white brought by a member of the party. Water is available in restaurant at no cost.

Gap = 2 bottles of red wine.

Capability Requirements Statement

We require 2 bottles of red wine.

Decision Criteria

A next step is to establish the criteria on which we are going to make our decision. For wine selection we may decide that our criteria are:

- Produced in South Australia (or other region preferred by top management)
- Made from one grape variety—no cheap blends
- At least 2 years old—no vintage-Thursday-week stuff
- At least 14 % alcohol—we are serious
- Within notional budget—but not rash.

Prefeasibility analysis

Acquisition strategies were identified as:

- Buy from the restaurant wine list
- Buy from the bottle shop down the road.

Check against criteria—was there wine on the list that met them. Answer, Yes there were three. Options analysis involved ranking them in order of price. One wine was deemed too expensive and so it was eliminated.

Stakeholder group meeting

No one wanted to go out to the bottle shop.

White wine drinkers now say that one bottle may not be enough.

Prefeasibility proposal

Buy the middle priced red wine from the restaurant list—the cheapest wine was considered too high a quality risk. White wine drinkers are to buy extra by the glass if needed. It was noted that this extra white wine requirement should have been identified at the needs analysis stage. A possible issue was whether white wine drinkers should pay separately for extras, but this was countered by the fact that the bottle of white was provided by a member of the party. The prefeasibility proposal was approved.

Feasibility analysis

Check current availability of selected wine with waiter. Confirm that the price is as on list.

Test and Evaluation

Sample the wine and continue with the current plan only if the wine is satisfactory.

Project approval

Wine approved. Place order for selected wine. Wine ordered.

Implementation

Wine delivered, drunk, and empty bottles disposed of thoughtfully.

Note: For the white wine, through life logistic support was required in the form of an ice bucket and ice, or other temperature maintaining device.

6.9 Exercises

6.9.1 Organizational Structure and Procedures

Check out the organizational structure for asset management within your own organization. Identify any documented procedures for asset management aspects of business planning, expenditure proposals, and acquisition projects.

6.9.2 Own Project

Develop, and present a plan and business case for an asset management development in your organization or similar. The report may represent a project proposal or may extend into implementation and assessment of results. The scale of this and the degree of detail may vary depending on the type of development, which can be a minor improvement proposal or a more significant acquisition or development.

Typical features to be contained in your report are shown in the Business Case Outline in Sect. 6.3. However, the range of items and level of detail covered in your report should reflect the actual range and relevance of the activity in your project. For smaller projects use the Smaller Business Case Outline from Sect. 6.4.

6.9.3 Pacific Earth Moving Part 2

Pacific Earth Moving is a medium-sized company which sells, maintains, and hires out excavators, bulldozers, graders, trucks, and other earth moving equipment. Increased demand is occurring for the company's services and the company needs to develop proposals which will enable it to fund and implement expansion. Several existing senior managers have recently retired and a new organizational approach is needed to plan and implement developments.

You have been hired to advise Pacific Earth Moving on establishing a systematic approach to its future. What factors should the organization consider in deciding on the overall direction and pace of development? What analysis should be undertaken prior to commencing equipment acquisition? Give your answers in dot point form.

6.10 Experience Required

Jock applied for the position of Project Manager for the prefeasibility study for an expansion at the Sandy Point plant. He was doubtful of his chances of getting the job, but was disappointed to find that he was not even short-listed. Rumor had it that the front runner was an experienced project manager from Sydney, but a counter rumor said that this guy was fishing for an even bigger job. There were also four or five others who had made the short list.

Jock and Sheila continued house hunting and Jock continued worrying about money. Sheila gave up work.

“I have more important priorities now,” she said.

Jock looked out for other job options, but nothing came up. Then out of the blue he had a call from the Human Resource Manager. She said that Ricardo wanted to see him. Ricardo was the CEO and he had only met him once before. That time he had made the mistake of calling him “Mr. Ricardo”, not realizing that Ricardo was his first name. Ricardo was only a Divisional Manager then and less well known, but still it was an embarrassing moment.

Jock’s meeting with Ricardo went surprisingly well. Ricardo wanted him to run the Sandy Point project!

“Yes Mr. Mello,” said Jock.

“Call me Ricardo,” said Ricardo and they both laughed.

Jock was mystified how he had got the job, but his friend Declan from corporate legal said it must have been to do with the bitumen plant. It was after a budget meeting at the bitumen plant that Jock had met Ricardo the first time.

“Yes, maybe,” said Jock to Declan. “I was lumbered with the job of Acting Operations Manager at the bitumen plant when some guy went sick. That was when I realized the meaning of the phrase ‘Asset Death Spiral’. The funny thing was that the plant was running above nameplate output and bitumen was selling like hot bitumen.”

“No wonder the financial boys were happy,” said Declan, “It was the classic ageing cash cow.”

“But nothing happened,” said Jock, “My budget was approved.”

“I was at that meeting,” said Declan, “And it may have seemed like nothing to you but after you left there was a massive argument. The Divisional Financial guy said that your budget proposals for CAPEX and OPEX had no business justification and were just waffly ambit claims. But my boss spoke up for you. It was the first time that I had heard him speak up on anything. It was those photos that you showed at the end of your presentation—the ones with the leaking drums.”

“I wasn’t sure if I should show those,” said Jock, “It could have been a CLM.”

“CLM?” said Declan.

“Career Limiting Move. I held back the worst ones just in case,” said Jock.

“Well, anyway,” said Declan, “My boss said that if any of that stuff leaked into the creek, and it got out that they had knocked back your budget proposal then it would look bad in court. When he said “in court” Ricardo really picked up on it. The argument went on, but Ricardo eventually said that he took it that nobody was opposed to the budget submission, and by that time, nobody was.”

Later Jock caught up with the HR manager to fix up some details. He could not resist asking how it came about that he got the job when he was not short-listed. She was cagey—she had done the short-listing.

“Ricardo looked through all the applicants and said he wanted someone with in-plant experience,” she said, turning away.

Jock had not worked at Sandy Point, but had had 3 years at Jungalup. “Those other applicants certainly weren’t Desert Rats, more like Gabardine Swine,” he mused, with one of his Pop’s old phrases coming into play.

That evening Sheila had more news—she had found a house. No, she did not care about Jock’s stupid decision criteria, the point was that she liked it. Jock looked at the Real Estate Agent’s brochure and it seemed that it actually met all his stupid criteria except one—it was \$150,000 over budget. Jock looked at her.

“Okay,” he said. Sheila gave him a hug.

The next day at work Jock worried about what Declan had told him about the inadequacy of his budget proposals at the bitumen plant. If he was going to make a success of the prefeasibility project then he would have to get a grip on the business of creating business cases. And he did not want to go asking the Gabardine Swine.

“I need to make some notes on business case development,” said Jock to himself.

6.11 Exercise Solution

6.11.1 *Pacific Earth Moving Part 2 Solution*

- Forecast of demand
- Forecast of revenue
- Asset gap analysis in relation to existing fleets
- Assessment of quantities and types of equipment needed
- Consideration of commercial competitors
- Proposed volumes and timing of acquisitions
- Identification of prospective suppliers and options, e.g., purchase and leasing
- Identification of logistic support requirements and costs
- Financial analysis including sources and cost of funds, return on investment
- Projected Cash Flow, Profit and Loss, and Balance Sheet calculations
- Risk analysis including optimistic, average, and pessimistic scenarios
- Acquisition approval.