

HOW PROBLEM STATEMENTS ARE USED IN PRACTICE

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BCA Practice Notes are a collection of papers designed to explore specific themes or topics of business case development in depth. They are written with Business Case Approach (BCA) practitioners in mind, but may be of relevance and interest to anyone involved in business cases – whether through development, assessment or decision making. They are not intended as strict guidance in the traditional sense and do not represent formal NZ Transport Agency policy.

All BCA Practice Notes are available for download at: nzta.govt.nz/resources/bca-practice-notes.

For general guidance about the BCA, visit nzta.govt.nz/bca.

Problem statements are used in the Business Case Approach (BCA) to quickly and clearly communicate the underlying issues that could be addressed by investment. They are an important part of the case for investment, and are identified at an early stage in the business case, then revisited in subsequent phases of development.

Understanding how and why problem statements are used can therefore give valuable insights to support development of an effective business case, and it is worth spending some time reflecting on how this works.

Why use problem statements?

Well, first off, they help to answer the ‘why?’ questions:

- » Why are we considering this investment?
- » Why does something need to be done, and why now?
- » Why is this issue happening in the first place?

Having a really clear statement of the problem is also a great starting point for communication – with stakeholders, the wider public and, in particular, the people who will be deciding whether it is appropriate to commit limited public funds to a proposed investment.

What makes problem statements work?

Take the following example problem statement from a recent investment logic mapping (ILM) workshop to understand the issues facing an area experiencing rapid growth:

PROBLEM

Ad hoc responses to growth pressure are creating communities disconnected from services, amenities and employment

60%

This works as a problem statement because it includes a number of key attributes. Firstly, it includes a clear **cause** (ad hoc responses to growth pressure) that tells us what needs to be fixed. Understanding the cause of a problem is critical to finding the right solution. For example, if you have a broken bone, it's no good simply treating the pain – that's just a symptom. You need a diagnosis of the cause of the pain and proper treatment, or the problem will just get worse.

To effectively address a problem you need to deal with the root cause (or causes), so it is worth putting in time and effort to try and get this right from the start. If, during development of the business case, evidence is found that shows a different cause is responsible, the problem statement may need to be revisited.

The problem statement above also has a clear **consequence**: community disconnection from the things that people need.

This is stated at a level the reader can care about (we all want to be able to access the things we need to live our lives, so it's easy to relate to). If the consequence doesn't seem compelling to the stakeholders, then the proposed investment should perhaps be deferred or abandoned in favour of one that will achieve overarching goals and objectives more successfully.

The cause and the consequence are also logically connected; there is a **causal relationship** between them that is easily understood. This is important because the causal relationship needs to be explored fully as the business case is developed, allowing effective responses to be found.

Finally, as a statement, this example is **compelling**. Essentially it says, 'We need to sort our stuff out, planning wise, or we carry on getting places that are not easy to live in.'

Aren't most problems more complex than a single sentence can show?

Yes, they are. Many transport problems are highly complex, often resulting from multiple interacting causes and requiring coordinated efforts by multiple agencies to resolve. Problem definition steps for even apparently simple problems typically reveal a rich pool of information about the problem's causes and effects.

The problem statement isn't there to capture all this complexity; its function is to provide a focus and make a clear, compelling point. Think of the problem statement as a newspaper headline - it gets the attention of the reader, and encourages them to read further to find out more of the detail. In a newspaper, that detail is provided in the article itself - usually a few paragraphs that contain the 'real story' summarised by the headline.

Applying this to the problem statement above, some explanation is needed to show that one of the main reasons for 'ad hoc responses' is that this area spans two different local government areas and requires the coordination of multiple agencies to identify and deliver responses to growth; until now, that coordination hasn't been happening as well as it should.

So, in writing a business case, problem statements need to be accompanied by the 'real story' of the problem; the information-rich explanation of the underlying or root causes, and why it is desirable to avoid or remedy the consequences. Like a newspaper article, this can usually be done in a few paragraphs, especially for a strategic case; it needn't be a big exercise.

A good way to start capturing the content for this story is to go back to the outputs of the ILM workshops (assuming ILM was used). The facilitator will have used whiteboards and flipcharts to capture much of the conversation and thinking behind causes and consequences; these are what you are trying to describe.

An even better approach would be to start thinking about how you will tell this story straight away at the end of the ILM workshop, discussing it with the facilitator and investor if possible. Set aside time to write up the descriptions of the problems as soon after the workshop as possible, while the discussions are still fresh in your mind. Of course, if you do not plan to use ILM workshops, you will need to think in advance about how you can capture this information.

How are problem statements used?

Defining benefits

The consequence of the problem can be used to point to the outcomes or benefits that could reasonably be expected if the problem is addressed. In the example above, the stakeholders identified that addressing the problem would likely result in:

- » improved community well-being and resilience
- » efficient use of resources.

Note that this is not an exercise in identifying every single benefit that can possibly be imagined. It is aimed at highlighting only the most important outcomes, that is, those which any response must deliver to be deemed a success.

Identifying the right response

The response is aimed at the cause: in this example, what we are trying to fix is 'ad hoc responses to growth pressure'.

A word of warning here – do **not** set out to fix the consequence! Consequences are developed so that the urgency and need for a solution can be understood, but it is important not to aim the responses at the consequence. To do so leaves underlying or root causes untreated, meaning problems are likely to keep recurring and undermining the effectiveness of the response. An important part of defining the problem is to make sure that root causes are properly identified, so they can be addressed effectively.

For more information about root causes, read [BCA Practice Notes 3: Root cause analysis in business case development](#).

For example, if we try to fix community disconnection, what would happen? Responses that are aimed at 'communities disconnected from services' would focus on where services are placed and the connections between them, but that won't address underlying causes of 'ad-hoc responses' – that is, the lack of coordination across the various agencies responsible.

It is likely that if better physical connections are identified, they will be hard to deliver in practice and coordination will still be lacking into the future – unless the underlying lack of coordination across agencies is addressed first. Plus, it will be harder to identify opportunities to improve outcomes by reducing travel demand and achieving a more integrated approach to planning; these are responses that need a coordinated approach across partners to be effective.

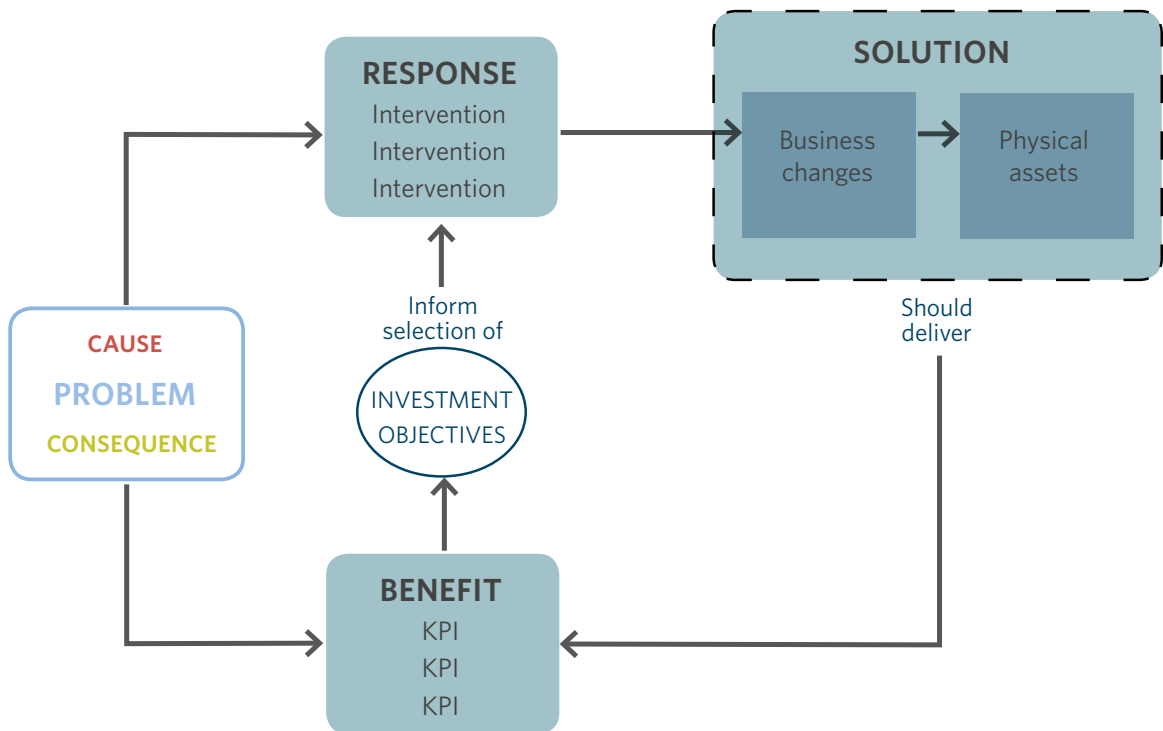
So instead of trying to fix the consequences, we need to focus on addressing the underlying cause – in this case, getting the agencies responsible to collaborate effectively and agree up front on essential strategic objectives that support planning and provide a common focus.

How can we make sure that this helps to avoid the consequence? Well, if the cause is truly an underlying one, from which the consequence is a logical effect, then addressing the cause will also prevent the consequence.

Remember that the consequences are also used to identify the benefits to be delivered. For example, consequences can inform the development of investment objectives to use as success criteria when choosing between different possible responses. So, while the responses themselves may be aimed at the causes of the problem, the selection of which response to use will depend, in part, on how effectively it addresses the consequences.

Building and understanding these relationships between cause, consequence, benefit and response helps to ensure that the business case has a robust logic, and gives decision makers confidence that the investment has a high chance of success. They are essential components of the logic, as shown in the following diagram.

Development of the investment story - logic flow



Why is the focus only on problems? Aren't opportunities important too?

Of course opportunities are important – and problems and opportunities are inextricably linked. In the BCA, problems and opportunities can be thought of as opposite sides of the same coin. The American industrialist Henry J Kaiser is quoted as saying, 'Problems are only opportunities in work clothes.'

However, many potentially valuable investments are not successful because the core need for investment has never been fully understood or communicated to decision makers. This happens when the business case fails to answer the question, 'Why is the investment needed?'

Describing an opportunity is a great way of showing what an investment could deliver – and in the world of investment management this is addressed by clearly stating the benefits that the investment is expected to achieve. In many cases however, the underlying problem has been reduced to 'The money isn't available', or 'We need to replace such-and-such an asset'.

While the availability of funding is a very real issue for any investment, the reality is that all public investments seek funding from finite sources. Investment decision makers need to make informed decisions about how best to allocate the limited public funding available, in order to achieve the greatest possible progress towards strategic goals and objectives. This principle underpins the concept of 'value for money'. Simply articulating an opportunity may appear attractive, but tells decision makers nothing about why, specifically, investment is needed to unlock the benefits.

Spending time articulating why the current state prevents benefits from being realised is a very powerful way to get this message across. It is also essential later on in the development of your business case, when looking at the different ways to shape the response, to have a clear understanding of the underlying or root causes: what, fundamentally, is the 'breakage' that needs to be addressed?

To illustrate this, consider the following example:

Unlocking aquaculture

A proposed marine aquaculture development in a rural area will potentially bring much-needed employment and further investment from support businesses into the town. However, the existing infrastructure is not considered to be up to the task of allowing large volumes of produce, in this case shellfish, to be first landed and then transported to markets around New Zealand.

The local council has been asked to consider allocating funds towards new infrastructure to enable the development to proceed. Councillors are faced with a decision – whether or not to invest a significant portion of ratepayers’ revenue in helping to make the scheme work.

Initially this proposal is described only in terms of the opportunities it presents, focusing on the jobs that will be created, and the associated inward investment to the local town from related activities, such as the local marine engineering trades (which are currently struggling to stay in business).

These opportunities are not lost by following good investment management practice; they would be described in detail, together with clear, measurable key performance indicators (KPIs), as part of the benefit mapping that underpins a robust business case.

However, simply stating that funding is needed to achieve these benefits does not tell the decision makers what the investment is needed for – something councillors are likely to want to understand before committing scarce funding from rates. In this example, decision makers will probably want to know why the existing infrastructure is not adequate for the new activity. In other words, what is wrong with the ‘current state’ that is preventing the opportunities from being realised? They are also likely to ask what other approaches have been considered before agreeing to fund brand new infrastructure.

Carrying out a simple problem definition exercise highlights that the town’s existing timber wharf, now some 80 years old, is not structurally sound and would need to be replaced before it could be used to take the larger vessels needed to harvest and land shellfish. It also reveals that a road bridge leading to the wharf currently has a 3-tonne restriction and could not be used by the trucks needed to transport shellfish to market economically. In other words, without something changing, the proposed aquaculture business cannot get started.

In this case, the problem can be stated as:

PROBLEM

The inadequacy of existing infrastructure in the town for landing and distributing shellfish is preventing the development of aquaculture in the district

Stating the problem in this way does two things:

- » first, it answers the question that decision makers are likely to ask: ‘Why is investment needed to make this happen?’
- » second, it identifies a clear cause – the inadequacy of existing infrastructure to support a particular activity – around which options for responses can be developed.

In this example, options were developed that included upgrading the existing wharf and bridge, completely replacing either the wharf, the bridge or both, or locating a new wharf somewhere different (avoiding the bridge completely). Taking this further, alternatives that involved shipping harvested shellfish directly to Auckland, and aquaculture methods that involved smaller vessels and/or vehicles, were also evaluated alongside the more obvious ‘fix-it’ approaches.

The desired consequence was used to identify a number of benefits that were being sought from the investment, including the creation of new employment opportunities in the town, and an increase in revenue from the landing fees that would result from development of aquaculture activities.

It may be that some of these alternatives and options later prove to be impractical, or are unlikely to deliver the desired benefits – the development of aquaculture in the district – in which case they can quickly be eliminated without the need for extensive analysis. However, identifying them as possibilities opens the door to innovative approaches, and gives decision makers confidence that lower cost alternatives and options have not been ignored.

By developing a simple problem statement that identified a clear cause, the investment can be shaped to focus on and describe the above thinking and analysis of options. It can also clearly communicate to the local community why their rates are being committed to this project, including the benefits that can be expected locally.

In contrast, simply focusing on the need to release funding to realise the opportunity (the development of aquaculture) would have told councillors nothing about what needed to be addressed – what the funding is needed for. It is also likely that a ‘fix-it’ solution would have been identified quickly, with little thought given to alternatives, and the opportunity for innovation would have been lost.

Conclusion

Problem statements are a key component of any business case, providing a concise, easily communicated explanation of what we believe is broken, and why it should be fixed. We have seen that good problem statements include a few essential components, including a clear cause, a meaningful consequence (or effect), and a logical, causal relationship between the two.

A common mistake in problem definition is to try to capture all the complexity of a problem within a single sentence. This is not what is intended; some supporting explanation is almost always needed, even if it is only a few brief paragraphs. Remember that the problem statement is a call to action; it needs to be brief, accurate and compelling.

Achieving this takes practise and hard work – simplifying complexity without sacrificing meaning is always going to be a challenge. But it is worth the effort, since so much of the rest of a business case relies on having a clearly articulated view of the problem.

Another common mistake is to think that a problem statement needs to be perfect first time around and that, having put effort into developing it, it should remain unchanged (and unchallenged!) throughout the business case development. This typically leads to long, contrived problem statements that do not reflect the evidence, and that fail to convey a compelling sense of the need for change.

To assume problem statements need to be perfect from the start is false; they should be developed as well as possible using the available information to start with, for example, during development of a strategic case. Bearing in mind that the strategic case is intended to be a **brief** statement of the case for investment, it is expected that:

- » further investigation will be undertaken in the next phase around both the causes and the consequences, and
- » understanding of the problem will continually be refined throughout development of the business case.

In other words, problem statements can – and should – be revisited after each ‘new’ piece of evidence to check whether they still reflect our best understanding of the problem. The important thing is to make sure you bring your stakeholders along with you on that journey.

Where to find more guidance

- » [BCA guidance on the Transport Agency website: nzta.govt.nz/bca](https://nzta.govt.nz/bca)
- » [BCA online learning modules](#)
- » [Strategic case: defining problems and benefits well information sheet.](#)

To provide further guidance on the Transport Agency's expectations for meeting principles, a series of guidance notes have been developed that set out the information that should be provided by the end of each phase of business case development. This not only sets out the expectations around each of the 16 investment questions, but provides an explanation of why it is important to know each answer. The guides are:

- » [What does a good strategic case include?](#)
- » [What does a good programme business case include?](#)
- » [What does a good indicative business case include?](#)
- » [What does a good detailed business case include?](#)