

Cost Benefit Assessment guide

Do you know the financial return (payment) that your organisation and your customer will receive in exchange for your Intellectual Property (IP)?

What is this tool?

This tool will help you commission a Cost Benefit Assessment (CBA), to quantify (or monetise) all known financial, environmental and social benefits and costs associated with your commercialised Intellectual Property (IP).

A CBA typically uses a standard methodology for project selection. However, it is also a useful evaluation tool at the end of the commercialisation process, or after your technology solution has been commercialised, to help you demonstrate and communicate the value of your commercialised IP to the economy more broadly¹.

¹A CBA can be carried out at the beginning of the time horizon, (ex-ante or perspective CBA), at the end (ex-post or retrospective CBA) or even during the lifetime of the project (in medias res CBA)



Note

A CBA, also called a Cost Benefit Analysis, is a systematic evidence-based evaluation process that measures the efficiency of an investment.

It assumes that a monetary value can be attributed to the costs and benefits relating to all aspects of commercialised IP. These include both tangible and intangible benefits for the organisations and people who have invested and benefited.

Why use this tool?

A CBA is a useful tool for evaluating the economic impacts of your commercialised IP. It can help stakeholders understand the economic returns from an investment in IP that has been commercialised into a product or service.

It can help you understand if the benefits (both realised and forecasted) are greater, equal or less than the costs associated with transforming it into a commercialised product or service.

It compares the actual and projected costs and benefits from your commercialised IP with the estimated costs and benefits that would have occurred without commercialisation or if you chose another path to impact.

This process includes:

- verifying if your original assumptions reflected the reality
- identifying unexpected impacts or outcomes
- understanding if your technology solution, product or service helped or hindered the planned benefits, outcomes and impacts.

How to use this tool

Follow these steps to help you commission an CBA evaluation of your commercialised IP.



Step 1: Understand what is to be evaluated, who will use the results and for what purpose

Start the process by establishing what is to be evaluated, including clear identification of the IP, the commercialised product(s) and/or process(s).

Discuss with key stakeholders why you are going to undertake this process, including the questions you want answered, who is interested in the answers and how the results of the evaluation will be used.



Step 2: Engage a specialist

CBAs can be complicated, particularly when there are a number of stakeholders involved.

We recommend that you engage a CBA specialist to help you establish an assessment framework and accurately complete the assessment.



Note

It is important to engage with clients and other stakeholders throughout the CBA process, not just at the start. This ensures a thorough understanding of the outcomes and impacts (i.e. benefits) and keeps them informed of any associated usage or adoption costs.



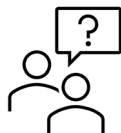
Tip

If you have an economic and/or business school or department in your organisation, they might be able to help, or know someone who can.



Note

To help you engage effectively with the specialist, consult this list of **key terminology** for easy reference.



Step 3: Clarify the actual path to impact for your commercialised IP

A CBA helps you understand if the benefits of your commercialised IP (both realised and forecast) are greater, equal or less than the costs associated with transforming it into a product or service.

Your impact pathway forms the basis for the assessment. To categorise an impact as a benefit, there must be a clear link between the positive impact and your commercialised IP.

Make sure you have reviewed and updated your impact pathway (Step 5) to reflect the actual results of your commercialisation process.

It is important that you clarify the actual outputs, outcomes and impacts of your commercialised IP, including both planned and intended impacts, as well as those you did not foresee. To do this, consider:

- What would have happened if the IP was not commercialised (see **Counterfactual**)?
- What tangible contributions did other organisations make (both in-kind and financial)?
- How much of the anticipated impact is still to occur (see **Discount rate**)?



Note

The positive changes (i.e. benefits) from your commercialised IP are often driven and influenced by collaborations with key research and industry partners. For this reason, the nature and value of these relationships should be included in the CBA.

The following examples and the **Benefits Profile template** can help identify and refine the benefits of your commercialised IP.

Examples of different types of benefits	
Financial	
Economic	<ul style="list-style-type: none"> • Improved revenue (e.g. increase sales) • Cost avoidance (e.g. costs avoided for system upgrade) • Reduced costs (e.g. decrease in production costs) • New or expanded market (e.g. new export or local market)
Environmental	<ul style="list-style-type: none"> • Cost avoidance (e.g. reduced environmental management costs) • Reduced costs
Non-Financial	
Economic	<ul style="list-style-type: none"> • Improved performance or increased efficiency (e.g. reduced steps in a process)
Environmental	<ul style="list-style-type: none"> • Increased recycling or reduced pollution
Social	<ul style="list-style-type: none"> • Improved physical health (e.g. safer conditions for staff) • User satisfaction • Safety improvements



Step 4: Identify all costs

Where possible, you need to attribute each of the costs to the benefits identified in Step 3.

The following examples and the **Costs Profile template** can help identify and refine the costs of your commercialised IP.



Tip

Work with your finance team to help identify the different costs and attributions to the relevant benefits.



Step 5: Complete the CBA

A completed CBA will calculate if the planned and unintended benefits outweighed the costs of commercialising your IP, and to what degree.

The final report provided by the specialist should clearly outline which information (including assumptions, data limitations and key decisions) was used in the analysis. This ensures that the process is transparent. It also enables users to interpret the findings and to understand the limits of any future comparison or aggregation of results across different assessments.



Tip

If you don't understand the results, ask your specialist to clarify anything that is unclear. It is important you understand and can explain the key messages to key stakeholders.

Examples of different types of costs	
Financial	
Direct costs	<ul style="list-style-type: none"> • Variable costs (e.g. labour, raw materials) • Fixed costs (e.g. plant and equipment)
Indirect costs	<ul style="list-style-type: none"> • Fixed costs (e.g. overheads) • Variable (e.g. usage and adoption costs)
Non-Financial	
Intangible costs	<ul style="list-style-type: none"> • Impact on customer service or delivery times • Costs associated with risks (e.g. regulatory risks and environmental impacts) • Employee morale



Step 6: Share key findings with stakeholders and investors

Talk with your key stakeholders, identify the most important results and translate them into a communication or promotional product. This could take the form of a brochure, website, press release or case study (or more!).

This will help demonstrate the types of return on investment your IP can bring.



Tip

All stakeholders should be able to understand and interpret the findings in the CBA report.

Key terminology

Adoption and usage costs

Costs incurred or outlaid by end users (people who use the commercialised IP) to integrate a technology solution or other commercialised IP into processes or products. These costs are not associated with the process of commercialising the technology solution.

Assumptions

Statements underpinning your planned impact pathway. They are not supported by evidence, but are accepted as true or as certain to have happened.

Attribution

The action of allocating a proportion of the benefits to the organisation commissioning the CBA, when more than one organisation has participated in creating, developing and commercialising a technology, or where other inputs into additional work were also required before the impact occurred.

Attribution shares should be agreed through consultation with collaborating organisations.

Cost benefit ratio

A mathematical calculation that compares the present value of all measured benefits to the present value of all measured costs. When the benefit-cost ratio is greater than 1, benefits exceed costs.

Counterfactual

A hypothetical situation that could have occurred if the IP was not commercialised.

*Note: Ruling out alternative scenarios that could explain the cause of a benefit included in the CBA helps to establish the degree to which the commercialised IP is calculated as being responsible for a benefit included in the assessment. See **Attribution** for more information.*

Discount rate

A calculation that is used to compare costs and benefits that occur in different time periods. It converts all costs and benefits to a 'present-day value' so that they can be compared.

Fixed costs

Costs that are constant, no matter the level of output or commercialisation activity.

Return on investment (ROI)

A measure of profitability or financial return on the IP investment. To calculate a ROI, divide the benefit of an investment by the cost of the investment.

The result is expressed as a percentage or a ratio². The income method is the most commonly used method for IP valuation. It values the IP asset on the basis of the amount of economic income that it is expected to generate, adjusted to its present-day value.

Variable cost

Describes the costs that vary according to the level of output or commercialisation activity.

² <https://www.investopedia.com/terms/r/returnoninvestment.asp>

Benefit profile template

Use this template to help you prepare for discussions with the CBA specialist.

Benefit name
List a few words that describe the measurable improvement.
Description of benefit
Write a brief sentence on the measurable improvement/s. This could include the challenge or opportunity your technology solution is addressing.
Type of benefit
Determine if the benefits are financial or non-financial.
Benefit dependencies and contributors
List any dependencies and/or contributions associated with achieving this benefit that were highlighted in your impact pathway.

Benefit profile template (continued)

Benefit risks and issues

List the risks and issues that contributed to help estimate the degree a benefit has been and/or could occur in the future.

Counterfactual

Counterfactual is a hypothetical situation that could have occurred if the IP was not commercialised (see also Opportunity cost). Consider what might have happened if you did not pursue this path.

Benefit measurement

Describe how the improvement (benefit) will be quantified and/or monetised.

Start date

Write the date the benefit was first achieved.

Benefit profile template (continued)

End date
Write the date the benefit is expected to end.
Data source
Record where the data comes from.
Estimated value
Indicate if the current estimated monetary value of the benefit is known at the time of the analysis.
Benefit owner
Name the stakeholder who is responsible for the benefits.
Opportunity cost
Opportunity cost is the forgone benefit that would have been derived from an option that was not chosen. See Counterfactual, consider what might have happened if you did not pursue this path.

Cost profile template

Use this template to help you prepare for discussions with the CBA specialist.

Cost name
List a few words that describe the measurable outlay of resources to produce the technology solution and the market product or service.
Description of cost
Write a brief sentence on the measurable outlay (the amount of money that you spent) and the stage at which it was spent.
Type of cost
Indicate if this is financial or non-financial.
Cost contributors
List the contributors to commercialising your IP. Name the different stakeholders and their contributions, both in kind and financially.

Cost profile template (continued)

Start date
Write the date the cost was first outlaid.
End date
Write the date the last cost was outlaid or is expected to be outlaid.
Source for cost data
Indicate where the data will come from.
Estimated value
Write the current estimated monetary value of the costs (at the time of the analysis).



Note

All costs should be adjusted for inflation and a social discount rate applied (social discount rates are used to put a present value on costs and benefits that will occur at a later date).

Your CBA specialist will help with these adjustments.



Tip

If you are uncertain about any indirect costs (such as adoption and usage costs), just start with an estimate. Your specialist can calculate the CBA more accurately using different tools such as sensitivity analysis scenarios.