

Our Place Guide to Cost-Benefit Analysis



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My Community



THE PURPOSE OF THIS GUIDE

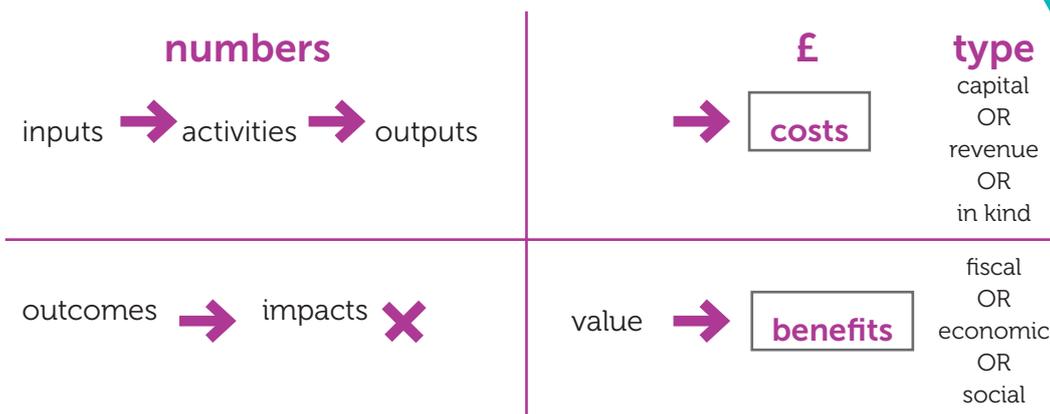
This is a guide to cost-benefit analysis (CBA), designed to help those new to this methodology to understand the process. It is based on the HM Treasury Guidance for Local Partnerships, developed by New Economy in partnership with analysts from a number of government departments, which itself is based on HM Treasury Green Book methodology.

What is cost-benefit analysis?

Cost-benefit analysis demonstrates the value of an intervention – when you are still planning it or once you have delivered it. There are several ways of doing it, but Locality recommends the New Economy approach, when services are redesigned and costs and benefits accrue to different public bodies as well as to citizens. Although it looks technical, in practice it is about being logical and distilling your intervention to its essence.

demonstrates the value of an intervention

while you're still planning or delivering it



The diagram above shows the components of the cost and benefit calculations: volumes and values, costs and benefits.

The process is broken down into five basic steps to producing a cost-benefit analysis of an intervention or programme:

1. Describe – Set out the process
2. Measure – Quantify costs and benefits
3. Identify – Assess the timing of your benefits and who benefits
4. Calculate – The ratio between your costs and the different types of benefit
5. Present – Communicate what the figures mean

This guide outlines the basic principles of completing a cost-benefit analysis and directs you to sources of further support.

Further information

[HM Treasury: Green Book](#)

[HM Treasury & New Economy: Cost benefit Analysis Guidance for Local Partnerships](#)

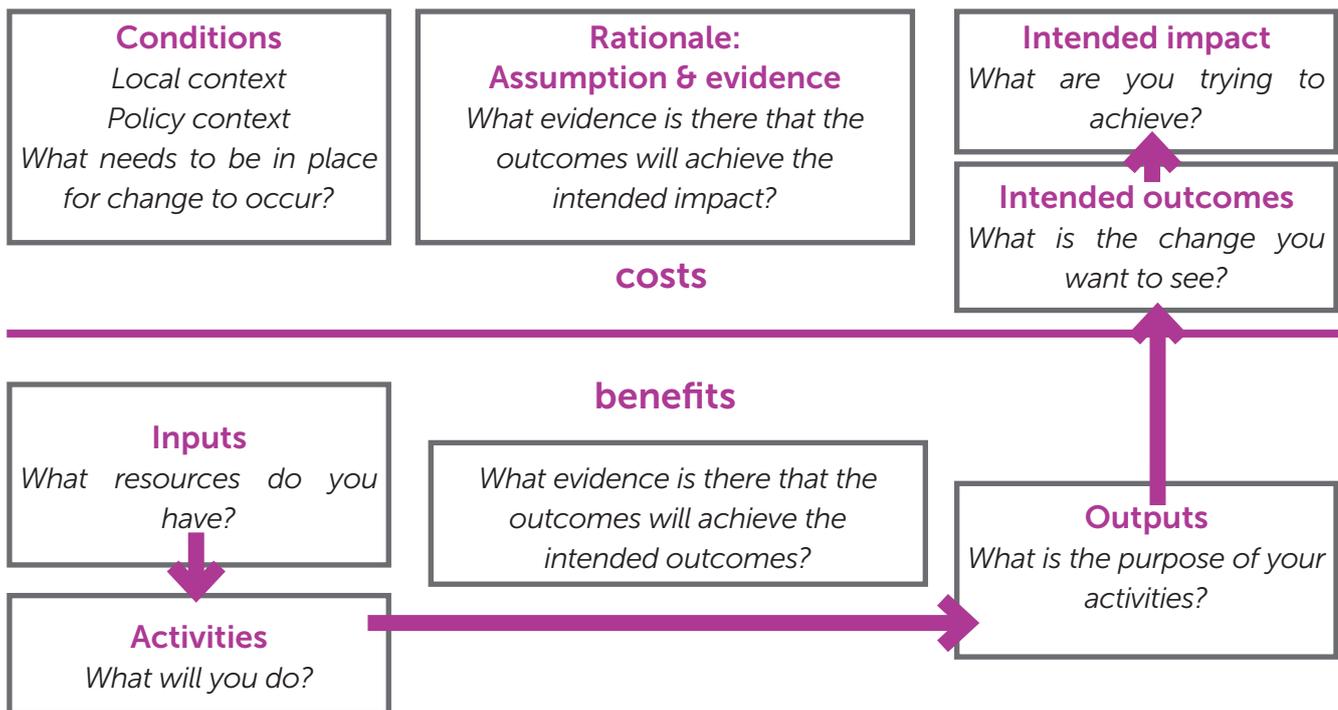


1. Describe

The first step in any cost-benefit analysis is to describe what you are trying to achieve and how you will go about it. This is known as a theory of change, a logic chain or a logic model.

The diagram below shows the questions you need to answer in order to paint a coherent picture of the change you are trying to bring about. Start with your intended impact and work your way backwards, ensuring that there is a logical relationship between each of the questions, e.g. is the change you are likely to observe a good indicator of what you are trying to achieve?

Project objective: summarise your intended impact



When you start to design a new intervention, the answers to these questions may be entirely descriptive. As your thinking develops, it's important to get as many numbers as you can into the model, as these will form the basis of an ex-ante (before you've delivered anything) cost-benefit analysis. An example of one way of presenting a completed logic model is shown on the following page.

Don't forget to note any evidence which links your outputs with the intended outcomes and impact - this will be important when you think about the quality of evidence around benefits, and whether there are any big assumptions you need to test at the end of the cost-benefit analysis process.

Once the programme is under way, the cost-benefit analysis needs to be reviewed regularly, based on more up-to-date evidence, rather than hoped-for outputs and outcomes. It may help to update your logic model. At the end of a programme, re-visiting the logic model and re-calculating the cost-benefit analysis as part of the evaluation can help identify whether the project was worthwhile, and help provide evidence for future cost-benefit.

Further information

[Our Place Logic Model written guidance](#)

[Creating your theory of change – NPC's practical guide](#)

Project: Somers Town Job Hub

Conditions

Local context: High levels of unemployment, particularly amongst young people. Employment research undertaken by Somers Town Neighbourhood Forum found that local people faced issues around lack of jobs, but also poor awareness of local services, poor access to services (too far to travel) and related language, I/T skills, health, childcare and absence of employability skills. The area has a vibrant and diverse community – with the neighbourhood forum and community organisers being highly active in the area.

Policy context: Somers Town has higher than average unemployment levels for Camden and for London as a whole, particularly amongst young people. Statutory services to tackle unemployment are spread around north Camden and not joined up. For instance, the nearest JCP is in Kentish Town.

What needs to be in place for change to occur? The research identified that residents were in need of a one stop shop to address what was often a complex and generational bound set of barriers. The Partners through a series of targeted research and consultation programmes found that residents repeatedly put forward the idea of a local Jobs Hub, that would bring together solutions to many of their identified problems. These included a more joined up and cohesive approach between the statutory and voluntary services, greater support to develop their employability skills, whilst also enabling them to link into other key services which should be co-located at the same hub. These services would include welfare and benefit support/advice, information about local childcare, information about and delivery of some ESOL/language classes and health services.

Intended impacts

- Unemployment rate in Somers Town is closer to the Camden/ UK average; specifically a lower rate of unemployment amongst young people.
- Higher levels of community cohesion, resilience and empowerment: develop ideas locally and shape decisions that will bring opportunity and enterprise to this deprived area.
- Improved language skills means more people from BME communities can access jobs, training and volunteering.
- Improved access to childcare means more women have improved opportunities to access jobs, training and volunteering.
- Improved health and wellbeing means people come off benefits, or access the most appropriate benefits and improve their job prospects.

Programme objectives

Through the establishment of a common purpose we aim to develop a shared culture and by so doing enable a more cohesive approach to information sharing, open dialogue and the co-location of services.

- A sustainable Jobs Hub in the heart of Somers Town so that residents are able to access the wealth of resources, expertise and support in one place
- Co-located services will include Job Centre Plus, welfare and benefit support/advice and some health and wellbeing services within the hub, with direct connections to the Local GP surgery
- Strong and effective and productive relationships are developed with local employers
- Better integration and measurable cost savings in pooling and aligning service delivery between statutory and VCS providers.

Intended outcomes

- More jobs secured for local people
- More training places secured for local people
- More work placements secured for local young people
- More local people accessing the most appropriate benefits and welfare services
- More opportunities for jobs, training and employment with local employers
- More effective in disseminating information about jobs at a local level
- More people linked in to bespoke support and training programmes
- More people connected to the wider support services, such as language, health, childcare
- More local people able to tackle their own employability issues.
- Closer working, more effective delivery and cost savings between statutory and community services.



In kind costs

In kind costs are provided free of charge but should be counted, because there will be an associated 'opportunity cost' – if the resources were not used on the project or programme, they could be used for something else.

The two main types of in kind support are:

Volunteer staff time

The simplest method is to use the following formula to calculate the economic value of volunteers' time:

number of volunteers x average number of hours x average hourly wage

The more closely the wage rate relates to the activity being undertaken and local pay rates, the more accurate your estimate will be.

Free use of community facilities or venues

Estimate the length of time over which you will benefit from using these facilities and multiply this figure by an hourly rental rate.

Evidence shows that cost data may be underestimated, if the source is subject to some uncertainty. This is known as 'optimism bias' and there are correction factors which should be used to adjust for this, detailed below.

When this information is entered into the New Economy spreadsheet, many of the calculations are taken care of automatically.

Further information

[Volunteering England online guidance](#)

CONFIDENCE GRADE FOR COST DATA					
Confidence grade	Colour coding	Data source	Age of data	Known data error	Optimism bias correction
1		Independently audited cost data	Current data (<1 year old)	+ -2%	0%
2		Formal service delivery contract costs	1-2 years old	+ -5%	+5%
3		Practitioner monitored costs	2-3 years old	+ -10%	+10%
4		Costs developed from ready reckoners	3-4 years old	+ -15%	+15%
5		Costs developed from ready reckoners	4-5 years old	+ -20%	+20%
6		Uncorroborated expert judgement	5+ years old	+ -25%	+40%

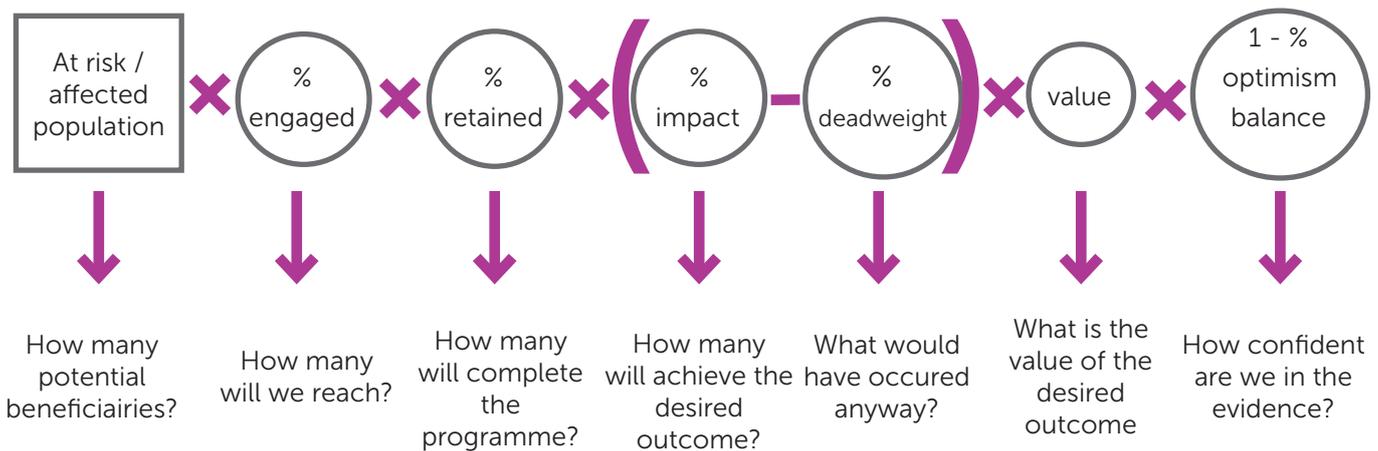
Source: HM Treasury & New Economy, Supporting public service transformation: cost benefit analysis guidance for local partnerships

Use the lowest assessment in any of the descriptive columns to identify the confidence grade, and adjust the costs upwards by the optimism bias correction



Benefits

The diagram below shows how to calculate the maximum potential monetary benefit for each outcome.



Source: HM Treasury & New Economy: Supporting public service transformation: cost benefit analysis guidance for local partnerships

For example, the target population may be all the over 65s in an area, but a new day centre can only cater for 25% of them (engaged). Of those, only half will attend regularly (retained). Three quarters of the regular attenders see improvements in their health (impact) but 20% of them have also joined a new gym (deadweight).

Outcomes may be easy to quantify and value like a job (a hard outcome), or more difficult to quantify and value like self esteem (a soft outcome). It may be the individual who benefits (increased wages, improved well-being), the state (reduced cost of services) or society more broadly (less crime). The important thing for a cost-benefit analysis is to be able to put a credible monetary value on your outcomes. So while they may not be the only outcomes of interest, you need good data on those for which you have a robust value.

Identifying **deadweight**, also known as the counterfactual, i.e. what would have happened anyway, is particularly important. Without it you will overstate the benefits of your intervention by claiming improved outcomes that might be the result of something entirely unrelated to what you are doing – e.g. long term trends or other initiatives going on at the same time. For example, some people on an employment programme may get a job as a result of a new factory opening locally, and not because of the programme.

To estimate the amount of deadweight, you need a **control** – i.e. a group of people or an area, with similar characteristics to the people or area you are trying to influence, but not benefiting from the intervention. By measuring the outcomes for both,

you can then subtract improvements that are occurring without your intervention, and estimate the change that is down to you.

The resources below give **values** for a range of benefits – both hard and soft. As with costs, the value of benefits can be overstated as a result of **optimism bias**, and the table below shows the adjustments which should be made to correct for this.

Adjustments may also be made for **leakage** – where benefits occur outside the geographical area of interest; **displacement & substitution** – where increased outcomes for beneficiaries result in reduced outcomes for others; **multiplier effects** – where improved outcomes have a knock-on effect; **drop off** – where benefits diminish over time.

Further information

- [NEM Unit Cost database & cost-benefit analysis tool](#)
- [HACT Social Value Bank](#)

Confidence grade for benefits data

Confidence grade	Colour coding	Data source	Evidence base (engagement/impact)	Age of data	Known data error	Optimism bias correction
1		Figures taken from agency data systems	Randomised control trial in UK	Current data (<1 year old)	+ -2%	0% 
2		Figures derived from local stats	International randomised control trial	1-2 years old	+ -5%	-5% 
3		Figures based on national analysis in similar areas	Independent monitoring of outcomes with robust evaluation plan	2-3 years old	+ -10%	-10% 
4		Figures based on national analysis	Practitioner monitoring of outcomes with robust evaluation plan.	3-4 years old	+ -15%	-15% 
5		Figures based on generic national analysis	Secondary evidence from a similar type of intervention	4-5 years old	+ -20%	-25% 
6		Uncorroborated expert judgement	Uncorroborated expert judgement	5+ years old	+ -25%	-40% 

Source: HM Treasury & New Economy, Supporting public service transformation: cost benefit analysis guidance for local partnerships

Use the lowest assessment in any of the descriptive columns to identify the confidence grade, and adjust the benefits downwards by the optimism bias correction factor.

3. Identify

Once you have estimates of all the costs and all the benefits relating to an intervention, you need to first of all to consider **timing**. Is the time horizon for your analysis one year? Five years? Twenty five years? And when are costs incurred and benefits realised?

Costs are relatively straightforward to estimate if the business as usual case (or counterfactual) is no intervention. Where a cost-benefit analysis is based on change in services to deliver better outcomes at lower cost, it is important to identify the **marginal cost** of delivering the intervention i.e. the difference between the cost of the current delivery model – business as usual – and the new delivery model.

Where benefits are costs avoided by public services, it is important to consider **cashability**. This is because a reduction in the use of public services does not automatically result in savings which can be used elsewhere. The New Economy spreadsheet automatically adjusts for cashability in the financial case, to take account of this.

It is important to understand the **incidence** of costs and benefits – who bears the costs and who realises the gains. This shows who stands to gain or lose from the intervention, and will help to identify whether the benefits will be fiscal, economic or social.



The table below gives examples of government agencies that benefit from improvements in different outcomes.

Fiscal benefits are savings to the public sector due to a specific project, as a result of costs avoided, or increased revenue from taxation. Note that benefits and taxes are transfer payments, i.e. money is transferred between groups but there is no increase in economic activity, so they are not included in some of the calculations.

Economic benefits accrue directly to individuals as a result of increased output and income from employment, and indirectly through multipliers leading to net growth in the local economy. Allowance is made for deadweight, leakage and substitution (see 2. Measure).

Social benefits are gains to society from improvements in health, educational attainment, access to transport or public services, improved safety or reduced crime.

Public value benefit – the overall value to society – is fiscal benefits except transfer payments (taxes and benefits), plus economic plus social benefits.

Example programme	Fiscal benefits	Economic benefits	Social benefits
Employment mentoring for people	Reduction in unemployment payments	Increased output resulting from increased employment	Improved health & well-being (e.g. confidence & self esteem)
Tackling antisocial behaviour	Reduction in police, housing and local authority time spent responding to incidents	Increased patronage of local businesses resulting in net growth in local economy	Reduced fear of crime amongst local residents
Drug treatment	Savings in health and criminal justice costs	Opportunity cost of avoided time spent by public sector agencies	Improved health and life expectancy of individual

Source: HM Treasury & New Economy, Supporting public service transformation: cost benefit analysis guidance for local partnerships

Further information

[NEM Cashability Discussion paper](#)

Outcome measure	Agencies that benefit from improvement in outcome
Reduced number of individuals claiming Jobseeker's Allowance (JSA)	DWP, HMRC, NHS
Reduced number of individuals claiming Incapacity Benefit (IB) or Employment and Support Allowance (ESA)	DWP, HMRC, NHS
Reduced number of individuals claiming Lone Parent Income Support (LPIS)	DWP, HMRC, NHS
Increased number of people holding Level 2 and Level 3 skills	HMRC
Reduced adult mental health problems (number of individuals with anxiety and depression)	NHS
Reduced avoidable A&E attendance	NHS
Reduced number of domestic violence incidents	Local authorities, NHS, criminal justice agencies, third sector
Reduced number of anti-social behaviour incidents	Local authorities, police, housing providers
Reduced number of crimes against individuals, households and businesses	NHS, criminal justice agencies
Reduced housing evictions	Housing providers
Reduced statutory homelessness	Local authorities
Reduced number of children in care	Local authorities
Reduced drug abuse	NHS, criminal justice agencies
Reduced alcohol dependency	NHS
Reduced levels of truancy from school	Local authorities, schools, criminal justice agencies
Reduced numbers of children excluded from school	Local authorities, schools
Reduced hospital inpatient admissions	NHS
Reduced Adult Social Services residential care needs	Local authorities

Source: HM Treasury & New Economy, Supporting public service transformation: cost benefit analysis guidance for local partnerships

4. Calculate

The next step is to put all the data you have collected in a spreadsheet – the New Economy model is straightforward to use and will automatically perform the calculations below.

Ensure that all the values (costs and benefits) are converted to **the same time period**, e.g. at 2015 prices.

Convert all the values to a '**present value**' (PV) by discounting – this allows for the fact that we place more value on things we have now than on things that we can't have until some time in the future: 'jam today is better than jam tomorrow'. The HM Treasury Green book discount rate is 3.5%.

$$\text{Net present value (NPV)} = \text{PV of benefits} - \text{PV of cost}$$

When comparing projects with similar costs, usually the one with the highest NPV is chosen.

Financial case

Local authority and central government commissioners are primarily concerned with the impact of a programme on the public purse (exchequer). This implies taking into account only the fiscal costs of delivering the project and the resulting cashable fiscal benefits:

$$\text{Net Present Budget Impact} = \text{PV of fiscal costs} - \text{PV of cashable fiscal benefits}$$

The return on investment on investment from an exchequer perspective is the ratio of the cashable fiscal benefits to the fiscal costs:

$$\text{Financial Return on Investment} = \text{PV of cashable fiscal benefits} \div \text{PV of fiscal costs}$$

When investing in a project, it is important to know how quickly a return on that investment is achieved:

**Payback period =
year in which the cumulative PV of the savings > the cumulative PV of
the costs**

Economic case

Public value includes fiscal benefits (minus transfer payments), economic benefits and social benefits. The economic case is based on the relationship between the public value costs and benefits, and shows the overall value to society of a programme or intervention. The public value costs may be the same as the fiscal costs.

**Net present public value =
PV of public value benefits – PV of public value costs**

In the New Economics spreadsheet, if cashable savings are greater than fiscal costs, the net present budget impact is shown as a negative. In many cases it will be positive, i.e. fiscal costs are greater than cashable savings. Nonetheless, projects which have a positive overall net present public value, i.e. including economic and social benefits as well, are still considered value for money. The following ratio allows such projects to be compared and prioritised, taking forward those with the highest value for money BCRs:

**Public value for money BCR =
Net present public value (benefits>costs = net public benefits)
Net present budget impact (costs>benefits = net fiscal costs)**

5. Present

Having filled in all the elements of the cost-benefit analysis, look again at all your key assumptions and ensure that these are explained as fully as possible. Sensitivity analysis is when you change some of these assumptions and see what difference it makes to the overall benefit-cost ratio. Be wary of assumptions which make a big difference but which are not based on strong evidence. This is important information for anyone wanting to understand how robust your calculations are, and you should always **highlight the impact of changing the assumptions that make the most difference to your estimates.**

There may be benefits associated with your intervention that you have not been able to monetise, e.g. soft outcomes where there is little or no robust evidence about the magnitude of improvement you are hoping to achieve. Cost benefit calculations should play a major role in deciding whether to undertake a project, but they are not the sole deciding factors, and alongside the numbers, it is important to **highlight significant social costs and benefits which have not been monetised.**

Before you start delivering your programme, many of your inputs to the cost-benefit analysis will be your best guess. As you deliver your intervention, you should update the numbers in the logic model/theory of change, and in your cost-benefit analysis, as you collect more data. After the programme is complete, the cost-benefit analysis is finalised on the basis of actual rather than anticipated outcomes, as part of the evaluation.

Frequently asked questions

Q. How much resource will it need to do a cost-benefit analysis?

A. The hardest part, is getting all the data together. You need someone who can take responsibility for sourcing all the data you need.

Q. Do you need specialist input?

A. It's easier if you have someone who is comfortable with the methodology to check that your assumptions are reasonable and you are getting sensible results.

Q. Where is help and advice available?

A. See the My Community website and Our Place Resources page for guidance and information on training events - mycommunity.org.uk

Q. Does SROI (Social Return on Investment) do the same thing?

A. SROI (Social Return on Investment) uses stakeholders to identify proxies to value outcomes. This can result in different valuations of the same interventions. The tool and unit cost database ensure a consistent approach across Our Place programmes.

Q. What is the difference between cost-benefit analysis and a financial/business case?

A. The business case shows how any devolved or aligned budgets will be used, and sets out the benefits and efficiencies to be gained from redesigning a service. The cost-benefit analysis is a part of the business case, and includes a financial case – financial return on investment and payback period.

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