HOW TO MAKE A BUSINESS CASE

LAB BOOK

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About This Session

This session provides the methods for making a convincing business case. A business case means justifying an organization's expenditure based on the positive economic consequences to that organization. Increasingly – due to recent policy and payment reforms – health care entities have business opportunities that they can capitalize on. But to do so successfully, they must demonstrate that they are creating significant economics. This session shows you how to do this.

Learning Objectives

Here are the learning objectives for the session:

1. To define what is meant be the term "Business Case"
2. To enumerate the reasons for having to articulate a business case for an initiative
3. To distinguish among the health and service, social and business cases for an initiative
4. To define what is meant by an external and an internal benefit and identify which category is relevant for the business case
5. To itemize the steps in making the business case
6. To identify the two possible distinct areas in which the benefits fall
7. To be able to define the formula for calculating the Return on Investment (ROI)
8. Given data, to be able use the ROI formula to calculate an actual percentage return
9. To define what a Hurdle rate is and how it is used to make choices
10. To identify the true cost savings from an intervention
11. To be alert to the possibility that the benefits may extend beyond the period during which the costs are incurred
12. To recognize that simply knowing the ROI for two mutually -exclusive projects does not enable a choice to be made between them
13. To recognize the value of calculating an Incremental ROI in assessing the appropriate depth or breadth of an intervention
14. To be mindful in doing business case analyses of the importance of adopting an appropriate perspective
15. To distinguish between a cost-effective solution and one that has simply a high ROI
16. To conduct basic sensitivity analysis around your best estimates

Outline

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    3. Reasons for making a business case
    4. Brighter prospects for compelling business cases

B. Variables in a business case analysis
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    1. Estimating gross benefits
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D. Illustration of a business case: Care coordination

E. Common failings in making business cases
    1. Including irrelevant costs in the benefit measure
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    4. Using the average rather than an incremental ROI

F. Helpful hints in making a business case
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A. Introduction

What exactly is a business case? Simply put, it is the justification of an organization's expenditure based on the positive economic consequences to that organization. The perspective adopted is that of the entity that makes the investment and incurs the expense.

There are other cases that can and are made. You are making the health (and well being) case when you assert that your initiative will achieve its stated health and well being-related outcomes. The social case is made when an initiative's cost is justified based on the ***overall*** positive economic consequences, irrespective of to whom they accrue.

The perspective taken in the social case is broader than in the business case. The distinction revolves around what are called externalities, or external effects – external to the investing entity.

In the social case, all economic consequences are relevant and considered, even any spillover effects, called externalities. Externalities are consequences borne by, or enjoyed by, organizations other than the one doing the investing. The social case might be more applicable to a governmental agency that is responsible for concerning itself with overall, or societal, wellbeing.

A narrower perspective, one that considers internal, but discounts if not ignores, external consequences, is generally of greater relevance to a player in the medical sector, such as a hospital or a health plan.

Anyone making a business case or for that matter a social case, faces a major challenge. Making a business or social case forces a comparison of an initiative's costs with its benefits. They involve conducting cost benefit analysis. But here is the problem: costs are denominated quite easily in dollars, but outcomes and benefits are not always expressed naturally in monetary terms. Somehow, you must convert the benefits into dollar terms, if they are not already naturally expressed that way, in order to make the case.

The question may have occurred to you as to why the tools to make a business case can be useful? The answer: you and everyone else live in a competitive world. To win resources internally for a project within your organization, you must show it makes economic sense.

And if you are proposing to sell a service externally in the marketplace, you need to prove to the potential client or partner that it will receive benefits that exceed the costs you are asking them to pay. There is another reason to assess the benefits relative to the costs of an initiative undertaken in your own organization: doing so satisfies the need to accountability – a demonstration that you are mindful of the scarcity of the organization's resources.

We see business cases being made anytime resources to support an expenditure are being sought. Pleading a business case for a health-related initiative or intervention is becoming increasingly common. This is probably due to an increased emphasis on controlling costs in a world where expenditures on healthcare are enormous and rising. I will explain three diverse business case examples within healthcare. Think about their common features!

Example

Bariatric surgery, commonly known as gastric bypass surgery, is sometimes performed on severely obese individuals. It is generally regarded as being effective – meaning that it results in significant weight loss. While advocates of the procedure stress that it works, they have gone beyond making the health case for the procedure. Advocates have added a somewhat convincing business case to the health case in order to promote the procedure's utilization. Their business case begins with a recognition that the severely obese are at greater risk of diabetes and other chronic conditions. As a consequence, they have annual medical expenditures that far exceed expenditures for those with a normal BMI. Improvement and avoidance of health problems, most notably diabetes, have been shown to save money on net. Although the cost for the procedure is roughly $20,000, advocates argue that the reduction in health problems, resulting from the surgery, will lead to cost savings that far exceed that.

Example

You have often heard that it is cheaper to prevent disease than to cure or mange it. Essentially, that assertion is an abbreviated business case for disease prevention. Resources are required for a prevention program; but if it works, resources that would have been required for treatment are then unnecessary and thus saved. The business case for prevention is based on the belief that the treatment resources saved exceed the prevention costs incurred.

An example here is HIV prevention. A non-profit organization in D.C. that specializes in programs to prevent teenage HIV infections had for many years struggled to secure resources for its efforts. Recently, it resorted to making the business case for its program. The case was made to the local business community on which the organization relied for funding. The case centered on the established fact that the lifetime costs to treat a teenager with HIV is over $600,000. The CBO's prevention program required only one or two infections to be avoided annually for the cost savings to cover the organizations entire annual budget. The business community was receptive to this business case being made - thinking this outcome was plausible. Convinced in this way, it then began to provide more generous support to the program.

Example

A third example of a business case is that for palliative care. **Palliative care** is a kind of **care** for people who have serious, life threatening or terminal illnesses. It is different from **care** to cure illness, called curative treatment. The primary purpose of **palliative care** is to improve the quality of the patient's life, but not necessarily to extend it. While saving money is not the primary goal, it has been shown to do just that – with shorter hospital and ICU stays. The business case for palliative care is built on the evidence that reductions in hospital costs exceed the costs of running the service. Those who advocate for palliative care do so because of their belief it is in the best interests of patients. But by adding a business case, these advocates can garner more support and resources.

B. Variables in a Business Case Analysis

These three examples have three characteristics in common: First, the existence of a financial burden if the intervention were not to be made. Second, the capacity of each intervention to reduce the weight of that burden; and third - the argument that the intervention cost less than its benefits. We will be exploring these business case characteristics in greater depth later in this session.

The key to making a business case compelling is to demonstrate that there will be an adequate financial return on investment.

Most often business cases made in the health sector start with the recognition that a financial burden will persist if nothing were done. The case is then built around efforts to mitigate or lighten that burden. Here are some specific examples of economic burdens related to health conditions:

- ✓ The cost to Medicare of a hospital readmission within 30's days of discharge is about $18,000.
- ✓ More than 25% of Medicare expenditures are provided in the last year of life.
- ✓ Cost per hospital stay for those adults that die in the hospital is over $112,000.
- ✓ The annual Medicare spending for an individual with three or more co-morbidities and with dementia is about $50,000.

The heavier is the economic burden of the status quo, the larger is the potential benefit from lightening it. Therefore business opportunities are brightest when burdens are heaviest

I should mention that not <u>all</u> business cases in health care are based on reducing medical utilization thereby lowering costs. There are times when a business case can be built instead around the prospects of generating higher revenues. An example would be a program to lower 30-day hospital readmissions. This effort could, under certain circumstances, result in higher payments from Medicare. Another example would be the added revenues stemming from successful participation in a value-based purchasing program.

To sum up – when making the business case, you should consider both cost avoidance and revenue enhancement as being potential sources of the economic benefits.

Programs and initiatives that yield benefits seldom do so without expense. So in making the business case, costs must be recognized – they must be subtracted from gross benefits. The case cannot begin to be convincing unless the net benefits are positive.

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C. Steps in Conducting a Business Case

At this point I will summarize the set of sequential steps you must take when making the business case:

1. Measure and add up the expected benefits. These are in the form of cost savings and any revenue enhancements. Call these gross benefits
2. Estimate the total costs of the program
3. Subtract these costs from the gross benefits. That gives us the program's net benefits
4. Often, the net benefits are expressed as a percentage of the program costs. This percentage is called "return on investment" or ROI, for short
5. The ROI is compared to a "hurdle" rate - a minimum percentage that any investment must generate to be considered
6. If the ROI is above the hurdle rate, then the program investment would be deemed worthwhile

Here is a highly simplified example of the steps involved in making these calculations.

Program Gross Benefit	$250,000
Program Cost	$200,000
Program Net Benefit	$50,000
RoI	25%

Gross benefits are $250,000. Program cost is $200,000 and that must be subtracted from gross benefits. That leaves $50,000 as the net benefit. Note that the ROI is 25% - found by dividing the net benefit of $50,000 by the cost - $200,000. That ROI means that the project not only returns the investment dollars, but generates a 25% return on that outlay. While a positive return is a necessary condition to undertake the investment, it is not sufficient. The return has to exceed the hurdle rate – a stipulated minimum return. The hurdle rate recognizes that any investment has an opportunity cost. That means the money devoted to that investment has alternative uses and could have yielded a return if spent elsewhere. For an investment to be truly profitable, the outlay must generate a return above the next best investment alternative.

D. Illustration of a Business Case: Care Coordination

In the following example, we once again show how to estimate the return on investment. But here, unlike the first example, we make the calculation for a specific project and show the sources of the gross benefits. The hypothetical project is to create a care transitions program for seniors that will assist bridging hospital discharge to the home. The projected benefits here are assumed to stem from cost savings associated with reduced 30-day hospital readmissions, but also from the added revenues to the hospital resulting from the avoidance of penalties imposed by CMS for excessive readmissions.

The formulae and calculations required to arrive at the ROI are contained in the last column in the table below. The result is a return of 125% on the project investment of $30,000.

Column	Variable	Value	Calculation
1	Number of clients	150	Given
2	Cost per client	$200	Given
3	Total program costs	$30,000	1 x 2
4	Readmissions avoided	6	Given
5	Variable cost per readmission	$10,000	Given
6	Cost savings	$60,000	4 x 5
7	Added revenues: reduction in CMS penalties	$7,500	Given
8	Total benefits	$67,500	6 + 7
9	Net benefits	$37,500	8 - 3
10	ROI	125%	9 ÷ 3

You may be familiar with certain Care Coordination Programs such as GRACE - which stands for Geriatric Resources for Assessment and Care of Elders and a program with a similar purpose called the Transitional Care Model. ROI's have been estimated for these initiatives. The results are impressive - returns of 257% and 95%. In both instances the economic benefits stem from cost avoidance – savings from reduced utilization of the emergency room and inpatient facilities.

Exercise: *Your task here is to do a ROI calculation. The table below contains blanks for certain variables. However, you have the data required to fill those in once you know the formulae.*

Column	Variable	Value
1	Number of clients	1000
2	Cost per client	$2,000
3	Total care coordination program costs	
4	Readmissions averted	140
5	Variable cost per readmission	$15,000
6	ED Visits averted	500
7	Variable cost per ED visit	$800
8	Total Benefits (Cost savings from averted readmissions and ED visits)	
9	Net benefits	
10	ROI	**(Insert % here)**

Clearly, in making the business case, the availability of accurate data is going to be a challenge. So is the validity of the attribution of outcomes to the intervention. In contrast, the method of estimating ROI looks relatively straightforward. However, that is not so as we will see in the next section.

E. Common Failings in Making Business Cases

There are some predictable and common failings that must be avoided when making a business case:

- ✓ Including irrelevant costs in the benefit measure
- ✓ Failing to consider multiple periods
- ✓ Using ROI inappropriately to select between projects
- ✓ Using an average rather than an incremental ROI

First - do not include irrelevant costs in your benefit measure. This is especially important when building a case around cost avoidance. If your program reduces medical utilization, the resulting savings, and therefore the benefits, are correctly measured by the variable and not the average cost of the averted services. Average cost includes fixed as well as variable costs. You are unlikely to be able to reduce fixed costs when utilization falls. For example, most palliative care services are not large enough to influence expenses associated with the larger hospital infrastructure. Therefore, cost savings estimates should be based on the variable component of hospital costs. This typically is between 40 to 60 percent of total costs.

A second common error is the failure to consider multiple periods. Many programs involve delayed & continuing outcomes. Program benefits therefore are often deferred, and can extend into the future for several years. Thus, one needs to identify and then add up the benefits and costs over these multiple periods, and consider not just those accruing during the period of investment. But this poses a challenge: future dollar amounts need to be discounted to a present value equivalent. After all, a dollar to be received ten years from now is not worth a dollar in today's terms. This is so because of the existence of a positive rate of interest. The discounting process is tricky, but the formulas for doing do are readily accessible on You Tube and in other places.

The third common error is to favor one project over another because it has a higher ROI, without bothering to consider the relative scales of the two investments. This is a serious error when the projects being considered are mutually exclusive – meaning you choose one or the other, but not both.

Example

In the following example you can see the trap you may fall into by using the magnitude of the ROI as the criterion for selecting between two projects.

	Program A	Program B
Gross Benefit	$250,000	$350,000
Cost	$125,000	$200,000
RoI	100%	75%
Net Benefit	$125,000	$150,000

B is a larger scale program than A – it involves a larger investment. The gross benefit of B is also larger – by $100,000. When we calculate the ROI's we find that it is 100% for A, and 75% for B. It would appear that A is preferred. But look closely. Would you not rather have Program B – after all it has a higher net profit than A - despite having a lower ROI? Using net benefit as the criterion for selecting between mutually exclusive programs will not steer you wrong. Choosing based on the level of ROI may. You may be better off with a lower rate applied to a larger scale, as in this example.

Exercise: *Deciding between two projects: ROI versus net benefits. Below you will see the investment data for two alternative projects that are mutually exclusive. You must decide which one to pursue. While you can certainly calculate the ROI for each, the proper criterion for selection is which one has the larger net benefit.*

	Project A	Project B
Gross Benefit	$300,000	$400,000
Cost	$150,000	$225,000
ROI		
Net Benefit		

Fill in the blanks in the table above

Which is the preferred investment? _____

The fourth and final error in making business cases is to use an average, rather than an incremental, ROI to decide whether an investment is worthwhile or not. One is more prone to this error when the question is how extensive a program's scale ought to be? When confronted with an extent or scale decision, you must use incremental analysis. Otherwise you may overinvest or underinvest in the program. In the flowing example, we use risk stratification of a population to determine just how many people should receive a service.

Suppose you must decide how many seniors with multiple chronic conditions should receive a health risk assessment. The assessment is costly to administer, but will result in lowered medical utilization in the future. You are considering whether to provide this to both groups, or to only the one at the highest risk for medical utilization. The group at more modest risk has three to four chronic conditions, and the highest risk group has more than four such conditions. The table contains the hypothetical costs and benefits associated with each of the two options – the smaller and the larger scale interventions.

	Cost	Benefits	Net Benefits	RoI
Highest Risk (Top 10%)	$100,000	$140000	$40,000	40%
Top 20%	$200,000	$235,000	$35,000	17.5%
Moderate Risk (Second 10% Only)	$100,000	$95000	-$5000	-5%

Note that were both groups to be provided the service, the ROI is a reasonably high 17.5%. If just the highest risk group received it, the ROI would be 40%. If you calculate the incremental ROI – meaning the ROI on expanding the program from the top 10% to the top 20%, this incremental rate is negative 5%! What this means is the program should be restricted to the top 10% - a conclusion you would not have arrived at you had been guided by the average rate across both groups. Another way of seeing that the program should be limited, is to examine the amount of net benefits. Net benefits are larger for the smaller program - $40,000 versus $35,000 were it to be extended.

Exercise: *Calculating the incremental return on investment. Suppose you must decide how many seniors with multiple chronic conditions should receive a health risk assessment. The assessment is costly to administer, but will result in lowered medical utilization in the future. You are considering whether to provide this to both groups or just the one at the highest risk for medical utilization. The group at more modest risk has three to four chronic conditions, and the highest risk group has four or more such conditions. Below are the hypothetical costs and benefits associated with each of the two options – the smaller and the larger scale interventions.*

	Cost	Benefits
Highest risk only (4 or more)	$125,000	$200000
Highest and next highest risk combined (3 and more)	$250,000	$335,000

Now you must fill in the blanks in the table below:

The ROI for just the highest risk group	
The ROI for both groups combined	
The incremental ROI for the more modest risk group	

F. Helpful Hints in Making a Business Case

In this final section I offer three hints that may be productive for you as you deploy the business case methodology. 1. Be mindful of perspective. 2. Check for cost effectiveness - asking are there better ways? And 3. Conduct sensitivity analysis.

Be mindful of perspective. A program may create externalities – benefits or costs accruing to entities not undertaking the investment. Be sure to adopt the perspective of the investing party & consider only the benefits and costs meaningful from its perspective. But note that generating benefits for others may create an opportunity for an organization to seek a subsidy or compensation from the external beneficiary of its investment. If the subsidy is forthcoming, what was previously an external benefit becomes an internal benefit to the organization. Therefore it becomes relevant in making the business case. I am reminded of a community clinic that opened an urgent care center just across from a hospital. The hospital benefitted from its existence because it experienced fewer uncompensated ED visits. The community health center convinced the hospital to pay a portion of its operating costs. That subsidy became part of the clinic's now stronger, business case for the urgent care center.

Just because you can demonstrate a high ROI, does not mean the business case for your program is compelling. It may generate a good ROI, but an alternative program may offer an even higher one. Are there other ways and means, other programs, to achieve the same purpose? If so, is your program the most economic, or cost-effective way? To be convincing with your business case, you need to demonstrate that your program is more cost effective than the alternatives.

I suggest that you always do sensitivity analysis as part of your business case calculations. The values of the key variables in the business case assessment will be subject to uncertainty and debate. So, to avoid accusations that your ROI is dependent on questionable assumptions, try a reasonable range of values. See if you can show that, even were the ROI calculation to assume more pessimistic values, the ROI would still be favorable. If so, your business case can be considered more "robust".

Example Here is an example of sensitivity analysis in action.

	Pessimistic	Most Probable	Optimistic
Gross Benefit	$325,000	$350,000	$375,000
Cost	$225,000	$200,000	$175,000
RoI	44%	75%	114%

This time, instead of assuming a single value for each of the key variables, three values for each are chosen and placed in the table. A pessimistic number (worst case scenario), an optimistic one (best case scenario), and the most probable value. Sometimes this is referred to as a triangular distribution.

The result is a range of ROI's – anywhere from 44% to 114%, with 75% being the most probable result. To the extent that the hurdle rate is less than 44%, the investment looks worthwhile. That conclusion holds even under the least favorable set of assumptions. Sensitivity analysis is a useful tool to fend off critics who assert you are being too optimistic!

Exercise: *Sensitivity analysis*

Suppose a ROI calculation needs to be made for a proposed respite program for homeless clients that a CBO is considering. Making the calculation difficult is a divergence of opinion on the effectiveness of keeping clients out of the ER, the goal of the program. Skeptics in the CBO believe that the reduction in the number of ER visits will be only 25 whereas others that are more upbeat about the program's potential believe it will result in 50 averted visits to the ER. Furthermore, the skeptics believe that the program will cost more than the optimists have forecast.

Your task is to calculate the range of ROI's that stem from these assumptions: what is the ROI if the skeptics and right and what would be the ROI if the optimists were correct? Fill in the blanks in the table below.

	Skeptics	Optimists
Program cost	$75,000	$67,000
Number of ER visits averted	200	250
Cost of an ER visit	$400	$400
Total costs saved (gross benefits)		
Net benefits of respite		
ROI of respite		

There is another substantial benefit that can be derived from conducing sensitivity analysis. The analysis can provide a deeper understanding of the factors that drive the result. Sure, we know that the effectiveness of a program, the costs of implementing it, and other variables will influence the return on investment. But would it not be useful to know the relative importance of each factor in shaping the ROI? Sensitivity analysis can tell you that. One easy way to measure degree of influence is to experiment: Vary each input in turn by, say 10%, and then calculate the resulting percentage change in the ROI. The ROI will be affected more by changes in some variables than by others. You ought to spend the most time to insure the accuracy of those variables that your ROI depends on most heavily. Don't waste precious time to acquire the most accurate data possible on variables that are inconsequential in the scheme of things. Furthermore, if a variable is of lesser importance in shaping a result, disputes over its accuracy should be minor.

You may hear another charge from critics that those avoided costs that may have been central to your business case cannot be spent. That would be a specious argument. The costs that you are avoiding through your efforts would otherwise have to be expended. Therefore, an avoided cost is just as important and tangible as, say, added revenues. Finally, any project is likely to have a series of outcomes that may be impossible to dollarize, but nevertheless are beneficial in nature and significant in magnitude. Outcomes such as enhanced client, provider, and staff satisfaction, for example, may ensue from a project and have financial implications. While not being part necessarily of your business case, these difficult to monetize outcomes can be offered as "icing on the cake." They can make your business case more appealing and get you over the line on a marginal call. Finally "threshold analysis" is something that you can perform to overcome skepticism about how worthwhile your project is.

Essentially, threshold analysis is performed when there is an absence of key data required to make the business case. The most difficult-to-acquire data is generally a reliable measure of program effectiveness. In contrast, a cost estimate of implementing a program is much easier to come by. When you do not have the evidence about effectiveness; do not despair! You can still make a compelling case based, not on evidence, which may be absent, but on plausibility, instead. Here is how to do it: You calculate the theoretical level of the effectiveness of your program that would be required for the program to cross an acceptability threshold. One such threshold might be the "breakeven" effectiveness level: here the question would be "how effective must my intervention be in order to cover costs – no more no less?" Another possible threshold could be a targeted hurdle rate of return: here the question would be "how effective must my intervention be in order to achieve a ROI of that level?" Often the threshold is so minimal, so easy to cross, that an appeal based on plausibility rather than hard evidence can convince skeptics of the economic worth of your program.

Example

Suppose a CBO is proposing to offer a care transition program for discharged patients to a hospital that is at full financial risk for readmissions. The overall fee being requested is $40,000. That will cover 200 discharges. The cost of a readmission for the hospital is, say, $10,000. For the program to pay for itself, that is to breakeven, the CBO must reduce the number of readmissions by just 4. So if the CBO succeeds in as few as 2% of the cases, it will be a cost-beneficial offering from the hospital's perspective. While the CBO may have no evidence that its program will, in fact, accomplish that, it seems plausible – given the low bar. The business case pleaded to the hospital might even be bolstered by resorting to evidence that other, similar programs have been shown to reduce readmissions by much more than 2%. *Sometimes making the business case convincingly requires the art of persuasion.*

Glossary

Business case - a justification for a proposed project or undertaking on the basis of its expected economic benefit to the party that is investing in it.

Cost-Benefit analysis - a form of economic evaluation where the program consequences are valued in money terms to make them comparable with the program cost.

Cost-Effectiveness analysis - a form of economic evaluation where two or more interventions are compared using identical consequences that are then compared to their relative costs.

Diminishing marginal returns - a common phenomenon where the marginal benefit from an activity falls as a function of its volume. Put another way, the total benefit rises as more of the activity is undertaken, but it rises at a diminishing rate.

Discounting - process of determining the present value of a stream of benefits from a project that accrue in the future. Given the time value of money, a dollar is worth more today than a deferred dollar - given its capacity to earn interest.

Economic burden – the financial consequences of a medical or health condition or disease. The starting point for estimating the benefits from an intervention designed to quell its effects.

External cost (benefit) – a cost (benefit) borne by someone other than the decision maker – by a third party.

Externalities – occur when the action, choice or behavior of an individual decision-maker impacts the well-being of others. Some consequences are therefore external to the one making the decision.

Fixed cost - a cost that remains the same regardless of the volume of an activity. A fixed cost is irrelevant in decisions involving the appropriate choice of volume.

Gross benefits – the sum of the economic benefits from an investment before the costs of making that investment are netted out.

Health case – a justification for an intervention based solely on the anticipated positive health outcomes for the target population, but with the economic consequences (costs and benefits) being ignored.

Hurdle rate – the minimum return on investment that a project or program must generate in order to be deemed worthwhile. The hurdle rate reflects the fact that investment dollars have alternative uses.

Incremental return on investment (IROI) – the percentage return on just the added dollars needed to increase the scale of an investment. Found by dividing the incremental net benefits by the incremental investment outlay.

Internal versus external benefit – the benefits accruing just to the entity that is making the investment or incurring the expense - as distinct from those accruing to third parties.

Investment – a current outlay for a project that results in benefits over time.

Net present value (NPV) - defined as the "discounted" present value of all net benefits associated with an investment project.

Net benefits - the gross benefits from an investment less the cost of making that investment.

Principle of perspective - states that people typically make choices based on their own narrow perspective — by considering only the benefits they receive and the costs they incur.

Return on investment (ROI) – the percentage return on an investment found by dividing its net benefits by the investment outlay.

Sensitivity analysis – analysis in which key assumptions are changed systematically to assess their effect on the final outcome. Often used in a return on investment analysis to determine how sensitive the result is to the values assumed for certain variables.

Social case - an initiative's outcomes will generate economic benefits, irrespective of to whom they accrue, that exceed the overall costs.

Variable cost - cost that changes with the volume of an activity undertaken. Also known as differential or incremental cost.

Multiple Choice Quiz

(Correct answers appear after the quiz)

1. The main difference between a business and a social case is that

a. The social case excludes the economic consequences whereas the business case includes them
b. The business case is presented to a business audience whereas the social case is presented to social welfare organizations
c. The business case considers all benefits whereas the social case considers only those that have social merit
d. The business case disregards external benefits whereas the social case considers all benefits irrespective as to which party receives them
e. The social case excludes from consideration all benefits that accrue to the investing entity whereas as the business case considers the benefits to the investing entity

2. In conducting a business case for an investment which variable would not usually be considered?

a. The cost of the status quo - the cost if no investment were made
b. The external benefits – benefits conferred by the investment on other parties
c. The number of negative events the investment is designed to abate
d. The cost of each of these negative events
e. The amount of the investment

3. What is the ROI given the following data?

Program Cost: $5,000
Program Gross Benefit: $6,000

a. 20%
b. 11%
c. 120%
d. 5%
e. None of the above

4. Assume that a project was been estimated to generate a 50% return on investment. Assume further that the project cost was $20,000. One can conclude

a. That the net benefit from the investment was $5,000
b. That the net benefit from the investment was $10,000
c. That the gross benefit from the investment was $10,000
d. That the gross benefit from the investment was $30,000
e. Both b and d are correct

5. If the hurdle rate for investments was 20% and the estimated ROI on a specific investment were 25%, then

a. The net return on that investment would be 5%
b. That investment should be undertaken
c. The hurdle rate needs to be increased to make that investment worthwhile
d. That investment should not be undertaken
e. The total return on that investment would be 45%

6. Suppose an intervention is introduced that reduces the average length of stay for a group of 10 patients from 5 to 4 days. To calculate the total cost savings from the intervention, one would

a. Multiply the variable cost of a bed night by ten
b. Multiply the average cost of a bed night by ten
c. Estimate the magnitude of fixed costs of a bed night
d. Estimate the total cost of 40 bed nights
e. Subtract the average variable cost of a bed night from the average total cost and then multiply the result by ten

7. If an expenditure creates benefits over multiple years, then

a. It should be considered as an investment
b. Each year's benefit should be counted in the ROI calculation
c. The nominal value of benefits accruing in the future have a lower present value
d. The future benefits need to be discounted to a present value equivalent
e. All of the above

8. Suppose you must decide between two mutually exclusive investments – meaning it is either A or B that is undertaken but not both. Suppose further that A has a ROI of 10% and B a ROI of 15%.

a. You can definitely conclude that B is the better option
b. You can conclude that neither is worthwhile because both rates are low
c. You can conclude that B is the better option if you also know that the outlay or cost of B is larger than that for A
d. You can definitely conclude that A is the better option
e. Even if you know the relative scales of the investments, you cannot conclude which is preferred

9. Imagine that your community-based organization is considering offering a nutritional support program for low-income seniors. The potential recipients of the service can be classified as either extremely needy or moderately needy for the service. To determine whether you should limit the service just to the extremely needy or else extend it to the modestly needy as well, what piece of information would <u>not</u> be helpful?

a. The added cost of expanding the service to those of modest need
b. The added benefits of expanding the service to those of modest need
c. The incremental ROI of expanding the service to those of modest need
d. The ROI from offering the service to both groups
e. The hurdle rate for investments

10. What does it mean to check your investment to see if it is cost-effective?

a. That the ROI exceeds the hurdle rate
b. That the benefits are worth the costs
c. That your investment is the most efficient way to achieve a purpose
d. That you have explored reasonable ranges of the key variables in your assessment
e. That your intervention does what it is supposed to do

(Correct answers are: 1d, 2b, 3a, 4b, 5b, 6a, 7e, 8c, 9d, 10c)

Suggested Readings

1. The California Health Care Foundation: Palliative Care In California: The Business Case for Hospital-Based Programs, November 2007.

2. Deborah Bachrach, Helen Pfister, Kier Wallis, and Mindy Lipson (Manatt Health Solutions): Addressing Patients' Social Needs: An Emerging Business Case for Provider Investment, May 2014.

3. Health Affairs, 23, no.4 (2004): 159-166: Exploring The Business Case For Improving The Quality Of Health Care For Children (Project HOPE - The People-to-People Health Foundation, Inc.)

4. Eric A. Finkelstein, Benjamin T. Allaire3, Denise Globe, John B. Dixon: The Business Case for Bariatric Surgery Revisited: A Non-Randomized Case-Control Study. PLoS ONE 8(9): e75498.

5. Victor Tabbush: Overview of Preparing Community-Based Organizations for Successful Health Care Partnerships. The Scan Foundation, August 2012.