



Technology innovation for sustainable development



Today, the vast majority of ventures bringing in technology knowledge-based innovation products to the market will develop a business plan at the very beginning of the venture activity which is essentially a road map that outlines the commercial goals of the product, and details how you plan to achieve these goals. This includes the necessary financial and human resources, as well as a description of key events, or milestones, that need to be achieved along the way. Which also serve as indicators of progress towards the stated commercial goals. It is also well-known that a business plan is a living thing. In other words, it keeps changing and needs to be updated several times along the way. The business plan also enables the entrepreneur to estimate and provide a quantitative value of the company. Or what is termed, Company Valuation. Where the return on investment is one of the key metrics, for example, that is used to estimate the potential valuations and also in deciding which company to invest in by investors. In general, any venture needs to be commercially viable to be sustainable over time. As you may remember this course aims to assist those wishing to develop innovations that can make a contribution to sustainable development.

Notes

Summary



0m 17s



- Specify desired **Impact**
- Verify need for Impact
- Establish a Plan

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Therefore, commercial success alone is not sufficient. Positive social impact is also equally important in that equation. Now the business plan provides you the blueprint for the commercial objective. Now how do you generate a blueprint for assuring social impact? That's the crux of this lecture. Now the definition and measurement of impact is by no means a trivial matter. However, there are specific methodologies or tools that have been developed to address this. And we will spend the rest of this lecture outlining them. In order to ensure that your innovation venture provides a positive social benefit, it is necessary that you define the long term goals or impact you desire, at the very onset of your activities. If you are unclear on this, take the time to carry a research to understand what it is exactly that you wish to achieve in society with your innovation in the long term. Here, beware of the common trap with new technologies. That is a hammer looking for a nail. In other words, a new technology looking for an application or social impact. Make sure to confirm as meticulously as you can that there is a match between your innovation and the impact you wish for.

Notes

Summary



1m 30s



- Specify desired **Impact**
- Verify need for Impact
- Establish a Plan

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Once you have defined your long-term goals or desired impact, you need to spell out in detail the sequence of events to get there. In other words, much like the business plan, you need to generate an impact framework plan, or impact value chain, as your blueprint to impact attainment.

Notes

Summary



2m 46s



- **ToC:** How & Why desired Change will happen.
 - Define **Impact**
 - Identify Series of necessary **Events**.
- => **Pathway of Change.**

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One of the most widely used methods to help you map out your impact framework plan, or impact value chain, is one that is known as the Theory of Change. What is theory of change, exactly? Theory of Change, or simply ToC, is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. You develop your theory of change by first identifying the desired long-term goals or impact. And then working backwards to identify and define all the necessary and sufficient conditions or sequence of events that are required and must be in place for the impact to occur. This gives rise to a set of sequential interdependent outcomes that are sometimes termed collectively as a "Pathway of Change". In the next slide, we illustrate the canvas tool for describing this process systematically.

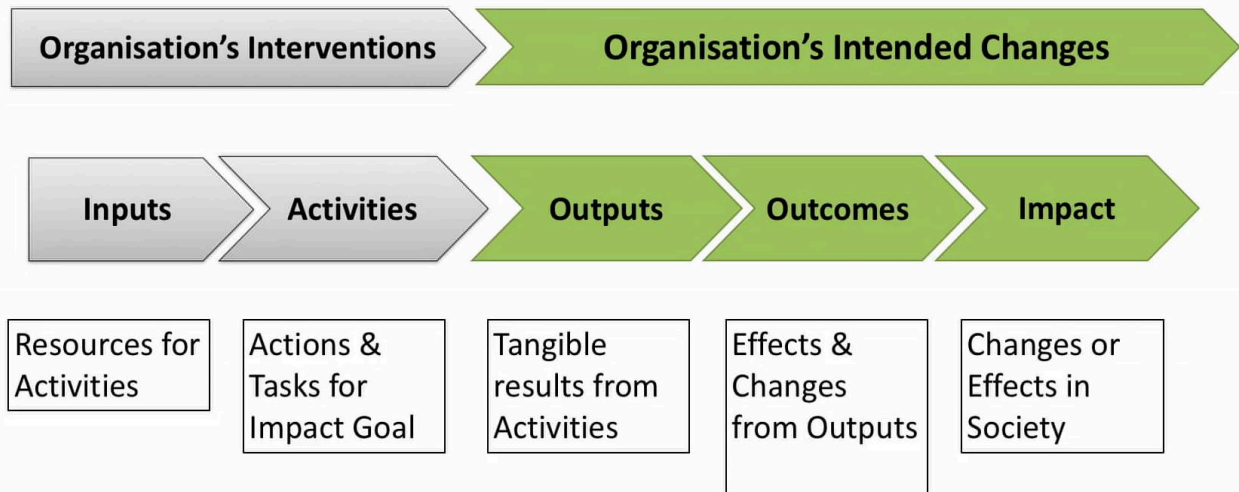
Notes

Summary



3m 05s

Impact Framework: The Canvas



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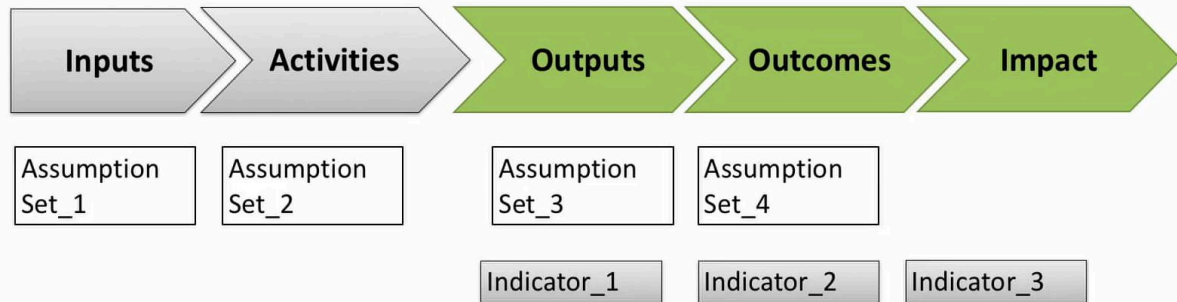
Globally, your impact framework, or impact value chain canvas, can be thought of as two parts: The organization's planned work or interventions and the organization's intended results and changes. In order to construct the full impact framework, or impact value chain, it actually requires 5 steps or stages. The first stage is inputs. Which can be defined as the resources that must be deployed in order to enable the implementation of tasks. This could be human, financial or other types of resources. The second stage is to specify a set of actions or tasks that your enterprise or organization needs to perform in order to help realize and support your impact objectives. These are collectively known as Activities. The third stage is to specify your expected outputs which can be defined as the tangible products and services that result from the activities undertaken. And the fourth stage is your expected outcomes, which essentially refers to the changes or effects on individuals or the environment that you expect to follow from the delivery of products and services. Then we come to the impact, which are the effects and/or changes in society or the environment that follow from the outcomes that have been achieved.

Notes

Summary



4m 04s

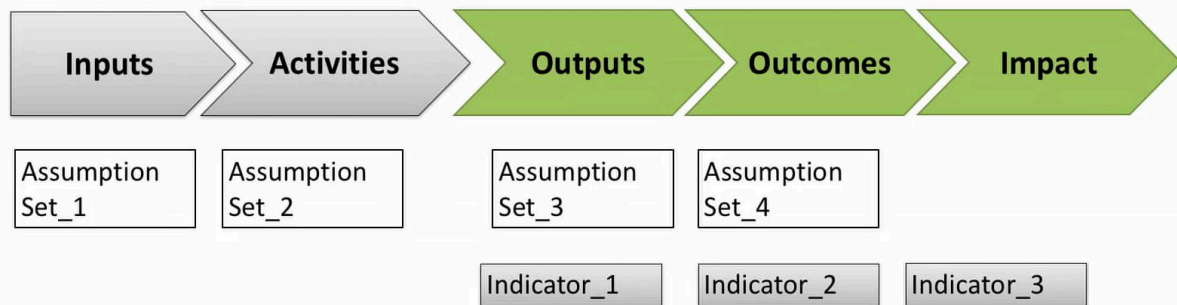


Now in putting together your impact framework, there are various assumptions you need to make at every stage of the process. The question that always arises is whether these were the right assumptions. In other words, did these assumptions provide all the necessary and sufficient conditions at every stage to ensure successful progression to the impact objective? As we move down the framework and produce outcomes, it remains necessary to check and explain if and why they are necessary. We also have another very important step. Which is to measure and monitor the implementation and effectiveness of our initiative. By collecting data on each segment of the chain, the initiative can identify what is or is not happening and find out why. This may require interrogating your assumptions and modifying them accordingly, if required. Now in order to carry out your measurement and monitoring of your progress, you need to establish suitable indicators. An indicator is basically a metric that provides information to monitor performance and measure achievement. It tracks information about outputs and outcomes and includes quantitative and qualitative data.

Notes

Summary





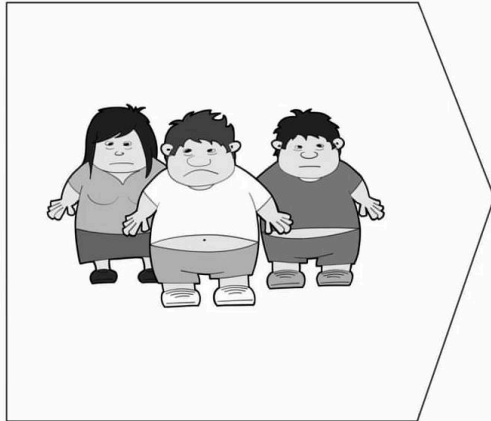
Your indicators should be specific, simple and practical, and show changes over time. Try and use established standard indicators where possible. The list and guidance on indicators is provided in the references. However, in general, be aware that the ability to collect good quality data about social performance of a project, can be a major challenge. This can be a complex and costly process, which has had the effect of deterring and discouraging many enterprises and organizations from doing it well, or doing it at all. We will now try and illustrate the impact framework concept, which a rather simple example.

Notes

Summary



Theory of Change: Example



Body Mass Index (BMI):
 $\text{Mass (kg)} / (\text{Height})^2 \text{ (m)}$

TOC:

- If teenagers get football & lessons, they will play.
- If they play, they will lose weight.

=> Desired Impact

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Let's go over these five components and we will use a highly simplified example to illustrate them. The first thing to do is to define the impact you wish to have in a specified, defined social group or community. Now in our example, we have a problem of high proportions of overweight teenagers in a certain village. Overweight levels have been determined from the Body Mass Index, or BMI, BMI is obtained from the height and mass of a person as a ratio of mass in kilograms over the square of your height in meters. So our long-term objective, or social impact, is to reduce teenage obesity in this village. So our theory of change statement becomes: If teenagers receive a football and football lessons, offered by football icons, for example, then they would start playing football, and if the village teenagers play football regularly then they will lose weight, and teenage obesity will be reduced, which is the desired impact.

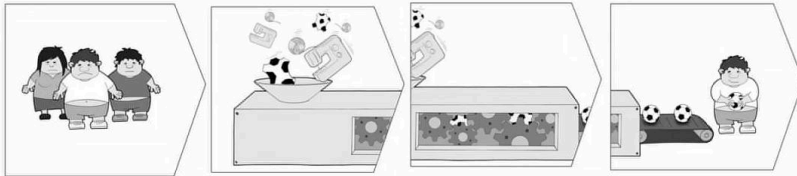
Notes

Summary



7m 40s

Theory of Change: Example



| Problem: | Inputs: | Activities: | Outputs: |
|-------------------|--|------------------------|--|
| -Teenage Obesity. | -Footballs -Soccer fields -Capital | -Publicity -Lessons | -1 child: 1 football -Registered teenagers. |

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Now let's try our theory of change statement into an impact framework, which is comprised of 5 stages. After defining the problem well, the first stage of the impact framework is inputs. Which can be defined as the resources that are deployed in order to enable the implementation of tasks. In our simple example, we define the resources needed as the availability of footballs, fields for playing, and financial resources to pay for these. The next thing we need to specify is activities. Which can be defined as the actions and/or tasks that must be performed in support of specific impact objectives. In our example, this could be actions undertaken to produce sufficient footballs, one football for every child, and to attract teenagers to come, such as by carrying out a publicity campaign that, for example, may include the participation of famous football icons in the region, who pledge to come and give football lessons. After that, we must describe the outputs, which can be defined as the tangible immediate practices, products and services that result from the activities undertaken. In our example, this could be, one, footballs autographed by the football icons, which are available for distribution to every teenager as part of our "one child, one football" campaign.

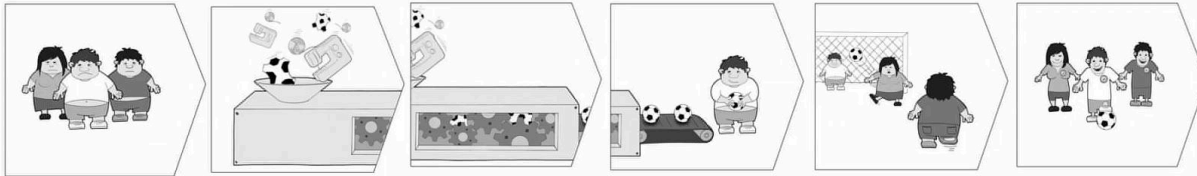
Notes

Summary



8m 48s

Theory of Change: Example



Problem:
-Teenage
Obesity.

Inputs:
-Footballs
-Soccer fields
-Capital

Activities:
-Publicity
-Lessons

Outputs:
-1 child: 1
football
-Registered
teenagers.

Outcomes:
-Regular
teenage
games.

Impact:
-Teenagers
in shape.

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And, two, the number of teenagers registered for lessons and teams following the publicity campaign. Then we define the outcomes, which essentially refers to the changes or effects on individuals or the environment that follow from the delivery of products and services. In our example, the key outcome would be the change in the amount of time the teenagers now spend playing football, instead of being couch potatoes at home. We then need to establish our impact drivers. That is, what are we going to do in order to influence, or to ensure, that this outcome is indeed achieved? For example, we might provide a pickup service that comes to pick up each of the registered kids at certain times during the week. Then we come to the impact, which are the effects or changes in society or the environment that follow from the outcomes that have been achieved. In our case, the impact desired would be the reduction in teenage obesity and overweight levels as well as the continued enjoyment of playing football. So overall, the theory of change process enables better planning, and better evaluation, and even allows the possibility to also measure progress towards the achievement of longer term goals that go beyond the identification of program outputs.

Notes

Summary



10m 23s

Theory of Change: Example



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In the next lecture, we will try and illustrate this methodology with a concrete example involving the GDX, Digital X-ray Imaging system. Goodbye.

Notes

Summary



11m 56s