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1. INTRODUCTION

This workshop guide has been prepared as a result of a Ph.D. research aim of which was to link the activities and strategic decisions of product development teams to the massive societal transformation which is required to take place for humanity to become sustainable. This overall aim is part of a long-term, broad scale and multi-level change agenda, i.e. business transformation (as an integral part of societal transformation) for sustainability. The particular problem identified in my research was the need for linking day-to-day actions of product development teams to long-term societal visions of sustainability and the current lack of tools which would enable this sufficiently.

As a result of this research I developed a scenario method by integrating knowledge from futures studies, sustainability science, and system innovation theory and lessons from previous work carried out by many other researchers in the past twenty years. Figure 1 shows the outline of the scenario method.

As the operational tool of this scenario method I developed a workshop consisting of many modules aiming to take the undertaking group through a transformative journey during which some insights will be gained about the systemic interrelationships between their organisation and the rest of the world and how they can align their decisions and strategies towards achieving a sustainable society by developing visions and scenario maps to identify innovation paths.

During my research it became clear to me that such a tool needed to be pervasive to be effective. For this pervasiveness to be achieved, I also realised, as a result of my close relationships with some motivated individuals working in the industry and activists putting effort in transforming organisations, the tool needed to be at the disposal of internal and external change agents. This document is prepared with the aim of providing a step-by-step guide for those change agents who would like to run the workshop in an organisation.

There are two versions of the workshop slightly different from each other. The first version is designed to be used directly within an organisation. The second version is a variation of the first version and designed to be used for a group of individuals from different organisations who are willing to run a workshop within an organisation. These two versions have slightly different agendas and content.
Figure 1. Outline of the scenario method

**Develop Understanding of the System**
- Analyse the interdependencies between the environment, society and economy and build a model of the world based on this analysis
- Analyse the interactions between the organisation and the environment, society and economy and build a model based on this analysis and referenced to the world model

**Identify Risks**
- Identify sustainability risks
- Identify risks to business
- Identify mitigation/adaptation measures
- Prepare a risk map showing how risks influence each other

**Identify the Social Function**
- Identify the social function being met by the organisation’s products/services
- Analyse how this social function is currently being met
- Identify main and enabling technologies jointly fulfilling the social function currently

**Develop Vision**
- Develop a sustainable society vision within which the sustainability risks are mitigated/managed/adapted to thinking changes which needs to take place at institutional, social/cultural, organisational and technological levels
- Develop a vision articulating how the social function is being met in this society and the role of the organisation in fulfilling the social function in this society

**Develop Scenario Map**
- Develop backward flowing scenarios to identify preceding technological and organisational changes necessary to reach the present state
- Develop forward flowing scenarios to identify successive technological and organisational changes necessary to reach the envisioned state

**Stakeholders**
- Identify present and future stakeholders
- Place them on the scenario map where they can be of high influence

**Products/Services**
- Identify products/services and combinations which enable the identified social function to be met
- Place them on the scenario map where they can be introduced if that particular state is reached in the future

**Action Plan/Strategy**
- Develop an action plan or strategy identifying the steps to be taken starting immediately and the people responsible to carry out the tasks and the people responsible to follow-up
This guide has three main sections. Initially, it provides information about how to prepare for the workshops. Then it gives an overview of the workshop modules. Finally, it provides detailed instructions on how to run the processes in each module.

2. **PREPARING FOR THE WORKSHOP**

*Inviting Participants*

This is a participatory workshop. You should aim for as much diversity as possible. From inside of the organisation include in the group representatives from all departments involved in product development directly or indirectly; i.e. product designers, design engineers, innovation/business strategists, managers, sales and marketing experts, and sustainability/environmental managers etc. From outside the organisation, try to include in the group representatives of all major stakeholder groups; i.e. customers/clients, suppliers, governmental representatives (people from councils who are dealing with businesses/industry are ideal), competitors, industry partners, representatives of industrial associations from your sector, as well as family members of employees, etc. Also, if there are any volunteers, include some participants who would role play to represent the future generations. It may not be possible to cover all of these groups in each workshop. In some cases presence of some groups such as competitors may not be desirable by the organisation. In these cases volunteers can be allocated to role play and represent these groups if their presence is seen as essential. Also, pay attention in providing gender and age diversity. Make sure you consult with the company regarding which external stakeholders to be involved in the process, explain the benefits of involving external stakeholders but do not force any stakeholder group in if the company is not comfortable with the participation of that particular group. This may result in the withdrawal of the company from the undertaking. If you are facilitating a workshop for a group of individuals instead from different organisations, the stakeholders will be role-played by the participants. In this case, ask for volunteers to represent each key stakeholder group.

The ideal number of people is between 10 and 15. If the number of participants is lower than 10, completion of some tasks may last longer and, there may not be sufficient diversity. However, I ran workshops with as few as 4 people and managed to generate satisfactory outcomes which could have been improved considerably by adding half a day more to the agenda. If the number is more than 15, the group starts to become hard to deal with and you may need a co-facilitator, and again, completion of some tasks may last longer due to potential opinion conflicts etc.
If possible, invite everyone personally. This will increase the chance of them accepting to participate. Of course you cannot and should not force anyone to participate or continue participation but try to get participants’ commitment to attend all of the sessions since the workshop modules are progressive and, therefore, continuity of participation is important. Also, some people feel frustrated if others come and go as they please while they commit their time and effort to the whole process. Kneading latecomers in the process requires repetitive reviews and therefore takes time and bores other participants.

When inviting participants (and also during the workshop) communicate the purpose of the workshop clearly and respond to any questions the potential participants might have. The generic purpose you can use is ‘to identify alternative innovation paths for [The Organisation] towards system level innovation for sustainability’.

**Resources needed to run the workshop**

The resources you will need to run the workshop are:

- A room large enough for the group;
- Two tables (preferably rectangular/square), chairs;
- A lot of wall-space;
- Markers and felt-tip pens;
- Blocks of sticky notes (such as Post-it™): 7.6cm x 7.6cm square blocks and three different colours of equal size or smaller (5cm x 3.8cm rectangular) blocks;
- A maximum of 100 x A4 papers (one side used is perfectly fine);
- A maximum of 10 x A3 size papers (one side used is perfectly fine);
- A2 size flip-chart;
- Coloured self-adhesive circle labels of 1 to 2 cm diameter;
- Masking tape;
- Scissors;
- Coloured ribbon or thread of some sort; and
- Camera (to document the outcomes for later transcription/computerisation/communication of the outcomes).

You will also need to organise water, coffee/tea (and lunch if the sessions will run whole day).
**Getting ready for the workshops**

In order to be able to run a successful workshop you need to do some preparatory work. Below is a checklist of what needs to be done before the workshop:

- Invite the participants and check if they are still committed a few days before the workshop;
- Send the agenda of the workshop to the participants a few days before the workshop;
- Make sure you have all of the stationery you need;
- Make sure the venue is booked for the workshop;
- If you are from outside of the organisation collect some information about it by scanning media and also talking to some of the participants if possible;
- Prepare a short presentation to clarify the terminology used, to inform the participants about the purpose and agenda of the workshop, about the requirement of system level innovation for the humanity to achieve sustainability and how the organisation will benefit from the workshop. The presentation should briefly inform the participants about current facts in relation to sustainability issues to the extent that you think necessary. Pick some globally and locally
significant indicators as well as indicators which might be directly related to the organisations activities and products/services. If the group you are going to work is consisting of enthusiastic participants you may consider sending some reading material before the workshop. But be careful not to do this to an extent which would overwhelm them;

- Research and prepare a list of sustainability risks comprehensive enough to cover all issues which might be relevant to the organisation’s business. You will use this list to compare the risks list prepared by the group in the risks module and to make suggestions to expand the list prepared by the group if anything important is missing;

If the company has carried out any life cycle assessments, environmental and/or social risk assessments etc, has written any reports about their sustainability performance or has made claims about their corporate social responsibility in any written form etc. try to read these, at least summary and conclusion sections. The findings of this preparatory work can help you understand the organisation’s current position in relation to the sustainability issues, and help you identify which sustainability risks are more relevant to the organisation in preparing the risks list.

3. Overview of the Workshop

Table 1. A generic agenda for the workshop

<table>
<thead>
<tr>
<th>Duration</th>
<th>Module</th>
<th>First Half</th>
<th>Third Half</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 min</td>
<td>Check-in &amp; Introduction</td>
<td>35 min</td>
<td>Check-in &amp; Review</td>
</tr>
<tr>
<td>40 min</td>
<td>‘We are a system’</td>
<td>50 min</td>
<td>Scenario Development -I-</td>
</tr>
<tr>
<td>30 min</td>
<td>Tea/Coffee</td>
<td>30 min</td>
<td>Tea/Coffee</td>
</tr>
<tr>
<td>80 min</td>
<td>Risks to Sustainability &amp; Implications</td>
<td>80 min</td>
<td>Scenario Development -II-</td>
</tr>
<tr>
<td>15 min</td>
<td>Review of the day &amp; Closure</td>
<td>15 min</td>
<td>Review of the day &amp; Closure</td>
</tr>
<tr>
<td></td>
<td>Check-in &amp; Review (30-35 min)</td>
<td></td>
<td>Check-in &amp; Review (45-60 min) or Lunch (45-60 min)</td>
</tr>
<tr>
<td>60 min</td>
<td>Social Function</td>
<td></td>
<td>Products/Services</td>
</tr>
<tr>
<td>45 min</td>
<td>Visions -I-</td>
<td></td>
<td>Stakeholders</td>
</tr>
<tr>
<td>30 min</td>
<td>Tea/Coffee</td>
<td></td>
<td>Tea/Coffee</td>
</tr>
<tr>
<td>60 min</td>
<td>Visions -II-</td>
<td></td>
<td>Action Plan</td>
</tr>
<tr>
<td>15 min</td>
<td>Review of the day &amp; Closure</td>
<td></td>
<td>Completion &amp; Evaluation</td>
</tr>
</tbody>
</table>

Table 1 provides a generic and indicative agenda. If you are running the workshop over two full days rather than four half-days there will be a lunch break after first and third halves and there will not be a need for review. The lunch can be allocated 45-60 minutes. Each half day lasts around 210 minutes (3.5 hours). If you choose to run the workshop over four half days, on the second and fourth day, you will need an extra 30 minutes for Check-in & Review. You can either start half an hour early or finish half an hour late than the first and third days. If you run the workshops over two-full days, you will
have 15 minutes extra since you will not be doing the Review of the day & Closure session before lunch. You can use this 15 minutes in any way you see suitable.

If you are facilitating a workshop not for an organisation but for a group of individuals who potentially can carry the knowledge of the method to their organisation and facilitate a workshop there themselves, then there is no need for running the stakeholders and action plan modules. However, during the introduction session you will need to include in the presentation you will make a case of a hypothetical company for the participants to work on and before moving onto the following modules you will need to run a session for the group to identify the characteristics of this hypothetical company. You can develop some options for the participants to choose from. Below is a table showing the attributes that you can mix and match in developing the hypothetical company case. In developing the options consider the backgrounds of the participants and try to suggest options which they can relate to.

**Table 2. Attributes to choose from for the hypothetical company**

<table>
<thead>
<tr>
<th>Size</th>
<th>Location</th>
<th>Industry</th>
<th>Sustainability Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Developed</td>
<td>Manufacturing</td>
<td>None</td>
</tr>
<tr>
<td>Medium</td>
<td>Developing</td>
<td>Service</td>
<td>Compliance</td>
</tr>
<tr>
<td>Large</td>
<td>Under-developed</td>
<td>Manufacturing and service</td>
<td>Strategic</td>
</tr>
</tbody>
</table>

Even though you will not run the stakeholders and action plan modules, you can use the allocated time to explain, if these individuals facilitate a workshop in their organisation, how these modules are run.

**Modules**

Below is a table showing the activities which take place during and the outcomes of each module in order of succession. This table is for your reference but it is recommended to show it to the participants during the Introduction session so that they will know what they are going to do and will be able to understand how one module will be linked to the following ones.

**Table 3. A summary of activities and outcomes for each module**

<table>
<thead>
<tr>
<th>Module</th>
<th>Activities</th>
<th>Outcomes/Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check-in &amp; Introduction</td>
<td>1. The participants check-in; 2. The facilitator briefs the group about the purpose and agenda of the workshop and gives a short presentation clarifying the concepts used.</td>
<td><strong>Outcome:</strong> Everybody checked-in, common understanding of the purpose of the workshop and the concepts used, group ready to start.</td>
</tr>
</tbody>
</table>
### ‘We are a system’

1. The group builds a world model showing the interrelationships between the environment, society and economy; 2. The participants position their organisation on this world model and articulate the interactions taking place between each sub-system and their organisation; 3. (Optional) The participants draw a life-cycle map of one of their organisation’s product/service.

**Outcome:** Participants understand the irreversible and hierarchical relationships between the environment, society and economy. The participants understand the major interactions taking place and dependencies between their organisation and the three sub-systems.  
**Deliverable:** A world model based on the hierarchical interdependencies between the environment, society and economy showing the interactions taking place between the organisation and the three sub-systems.

### Risks to Sustainability & Implications

1. The group prepares a list of risks to sustainability; 2. The facilitator checks this list against a pre-prepared list compiled from different resources (e.g. Kates et al., 2001; MEA, 2005; IPPC, 2007; UNEP, 2009) and makes suggestions to expand the list if any risk relevant to the organisation is missing; 3. These risks are mapped on the world model the group built in the previous module and the dynamic relationships between them are identified; 4. The participants identify implications of the risks to sustainability to the business of their organisation.

**Outcome:** The group understands how long-term wider-scale sustainability risks which threaten the society do and will affect the organisation’s business and products/services it delivers.  
**Deliverable:** A list of risks to sustainability; a risk map (mapped on the world model developed in the previous module) showing dynamic relationships between risks; a list of implications of risks to sustainability on the organisation and the products/services it delivers.

### Social Function

1. The group identifies the social function fulfilled by the products/services offered by the organisation.

**Outcome:** The group starts to think conceptually and is able to shift the existential focus of the organisation from itself to the wider context of society.  
**Deliverable:** Written expression of social function.

### Visions

1. The group develops a normative vision for a sustainable society within which the risks identified in the previous section are mitigated/managed/adapted to; 2. The group develops an organisational vision (can be referenced to the social function the organisation would like to fulfil) compatible with the vision of a sustainable society.

**Outcome:** The group involves in development of societal visions for sustainability and understands the systemic relations between the future of the society and their organisation. The group understands how institutional and social/cultural changes need to go in parallel with organisational and technological innovations to achieve sustainability.  
**Deliverable:** Vision(s) of a sustainable
<table>
<thead>
<tr>
<th>Scenario Development</th>
<th>1. The group is divided into two sub-groups; 2. One group develops forward flowing, explorative scenarios; 3. The other group develops backward flowing, normative scenarios; 4. Some group members switch between groups to cross-fertilise each flow; 5. Two groups share their work with each other; 6. Aligning paths are identified and further work can be done to help some other paths to align.</th>
<th><strong>Outcome:</strong> The group gains an understanding on the availability and characteristics of the possible innovation paths the organisation can utilise towards system innovation. <strong>Deliverable:</strong> A scenario map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products/Services</td>
<td>1. The group brainstorms to generate product/service ideas which can be introduced if particular events anticipated happen; 2. These ideas are mapped on the scenario map; 3. (Optional) The product/service ideas are evaluated.</td>
<td><strong>Outcome:</strong> The group gains an understanding on the availability and characteristics of products/services that can be introduced along the innovation paths developed in the previous module. <strong>Deliverable:</strong> A scenario map with the products/services layer added onto it.</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>1. The group prepares a list of stakeholders; 2. The group maps the stakeholders on the two-axis stakeholder model; 3. The group maps the stakeholders on the event trees or connections of the scenario map where they are likely to be most influential.</td>
<td><strong>Outcome:</strong> The group gains an understanding of the current and future stakeholders, their intentions and possible influences along the innovation paths identified. <strong>Deliverable:</strong> A list of stakeholders, a stakeholder map and a scenario map with the products/services and stakeholders layers added onto it.</td>
</tr>
<tr>
<td>Action Plan</td>
<td>1. The group reviews the scenario map; 2. The group identifies actions to be taken in the following week, month, year; 3. For each action identified, a responsible person is allocated; 4. A follow-up meeting to review the scenario map is scheduled in a year’s time.</td>
<td><strong>Outcome:</strong> The group identifies the immediate steps needed to be taken to realise the innovation paths towards system innovation for sustainability and commitment is established to the action plan developed. <strong>Deliverable:</strong> An action plan agreed upon by the participants and documented in written form.</td>
</tr>
<tr>
<td>Completion &amp; Evaluation</td>
<td>1. The facilitator provides a short wrap-up and receives written/oral feed-back from the participants about the overall workshop; 2. The group celebrates completion in a way of their choice.</td>
<td><strong>Outcome:</strong> The workshop is complete and evaluated. <strong>Deliverable:</strong> Participant evaluation of the workshop.</td>
</tr>
</tbody>
</table>
4. **Step-by-Step Process Guide for Each Module**

*Module 1: Check-in & Introduction (About 45 minutes)*

1. Welcome everyone and remind the participants the purpose of the workshop (have it written and hung-up);
2. Run a quick check-in session. If you know the participants just ask them how they’re on that day. If you don’t know the participants or if some/all of the participants don’t know each other, request them to tell their names, what they’re doing and the reason of their participation in the workshop;
3. Following the check-in make a quick presentation to bring all of the participants on the same ground. Depending on the group the presentation should cover some or all of the following:
   a. The purpose, agenda and the flow of the workshop;
   b. An up-to-date and brief summary of sustainability issues (graphically represented statistics about the issues relevant to the organisation and its context works well);
   c. Clarification of the concepts that will be used during the workshop (i.e. vision, social function, scenario map, etc.);
   d. The group culture/ground rules;
4. If the group consists of unrelated individuals (not from an organisation), at this point introduce the options (you developed as part of the workshop preparation) for the hypothetical company for the group to work on. Run a quick discussion for the group to choose one of the options. Allow the group to make alterations on their choice to make the option more relevant to their learning goals;
5. Before moving into the next module run an ice-breaker.

**Notes:** There are many ice-breakers used by group facilitators. You can find these on the Internet through a simple search. Ice-breakers serve to warm people up to each other and encourage them to actively participate in the workshop. They do not have to be related to the content of the workshop but if they’re related it helps with the flow and motivate participants about the subject. I generally use two different ice-breakers. The first is called ‘The Magic Wand’. To run this ice-breaker, ask members of the group to make a consensus decision on which five things to change in the world if they had a magic wand and why they want to change these things. Let them yell-out what they think and write these down on the flip-chart. Then guide them into discussion towards a consensus decision. This ice-breaker helps to align the values in the group. The second ice-breaker is called ‘Leadership Metaphors’. To run this ice-breaker give five minutes to each participant to think
share his/her vision about what kind of a leader he/she is using metaphors. An example is ‘I am like a lighthouse lighting the path of the people who walk in the dark’.

**Module 2: ‘We are a system’ (About 40 minutes)**

1. On a piece of paper draw three equal-size circles and write environment, society, economy in each of them (Figure 3);

![Figure 3. Three circles](image)

2. Instruct the group to build a world-model using these circles representing environment, economy and society considering the interrelationships and dependencies between them. Tell them that they can change the size of the circles and place them in any way they think to represent the relationships. Allow 10 minutes for this;

3. After they have built the world model, instruct them to place their organisation on this model and articulate the interactions taking place between their organisation and each of these three components. When they’re finished, request them to explain their model;

4. Summarise what the group has done during the module to complete the module. Take photos of the model the group developed as digital copies.

**Notes:** The participants will be discussing with each other during this exercise. Do not intervene unless necessary. It is important that you don’t guide them in any way; they should build the model entirely by themselves. If the group gets stuck ask questions like ‘What are the main interactions taking place between the environment and the economy?’; ‘How do these two components relate to each other?’; etc. They might want to change the model in the second part of the exercise. This is allowed; they can change the model until they’re satisfied. It is expected that the group will draw a model similar to the strong sustainability model (concentric circles). If the group would like to deviate from the world-model they built in the second half, allow this. The important thing is the
participants’ understanding of the interdependencies between these three components which generally is expressed verbally during the discussion and may not necessarily be visually represented by concentric circles. So prioritise what’s said over what’s drawn and listen to the discussion to judge whether they understand the systemic relationships. See Figure 4 for some models produced by some groups to have an idea about what is the expected outcome.

Figure 4. The models produced by some groups in the ‘We are a system’ module
Module 3: Risks to Sustainability & Implications (About 80 minutes)

1. Give the group a large piece of paper (A2 size) and instruct them to brainstorm and write down the long-term wide-scope issues threatening the sustainability of society currently. Encourage them to think globally as well as locally and write down as many items as they can in 10-15 minutes. If they have missed an important sustainability issue, suggest them to write it down as well (refer to the sustainability risks list you prepared prior to the workshop). Hang the paper on the wall;

2. Give each participant five of the self-adhesive circular labels. Instruct them to use these stickers to vote for the issues on the list that they think to be most relevant to their organisation. It is up to them how to allocate their votes; they can use more than one label on one issue;

3. Write down the sustainability risks which received the most votes (top 6-7) from the participants on another large paper leaving space in between each of them. Put the paper on the table, in front of the participants;

4. Instruct the participants to draw a simplified causal loop diagram in order to understand the dynamic interactions taking place between the sustainability risks (see Figure 5 for an example);

![Figure 5. A risk map showing dynamic interactions between sustainability risks](image)

5. Once the dynamic risk map is finalised by the participants, instruct them to think about the implications of each of these risks and write those implications (in smaller fonts than risks themselves) under the associated risks. Encourage the group to think and write down both threats rising from these risks as well as opportunities;
6. To complete this module (depending on the time left) either go through the output and summarise the main points or ask the participants to provide a summary of what they have produced during this session.

Notes: Causal-loop diagrams are a visual systems dynamics tool used to show the dynamic interactions and interrelationships between system components. The dynamics in a system can be represented by two types of feedback loops; i.e. positive and negative feedback loops. Positive feedback loops reinforce and negative feedback loops counteract change. Using causal-loop analysis for the sustainability risks, the participants develop an understanding of the interrelationships between the sustainability risks relevant to their organisation and the decision whether to develop or discard a product/service concept can then be based on the real capacity of that concept to mitigate/manage/adapt to the sustainability risks in overall and so when one risk is being mitigated another one will not be amplified. In the risk map shown in Figure 5, which is a simple causal-loop diagram, Risk 1 increases the occurrence/likeliness of Risk 2, Risk 2 increases the occurrence/likeliness of Risk 3 and Risk 3 increases the occurrence/likeliness of Risk 1, however; Risk 3 decreases the occurrence/likeliness of Risk 2. Therefore, while there is a reinforcing dynamic relationship between Risk 1, Risk 2 and Risk 3, the relationship between Risk 2 and Risk 3 is a balancing dynamic. If there were only these three risks, mitigating Risk 1 would initially result in Risk 2 to decrease. A decrease in Risk 2 would increasingly result in a less increase and thus a gradual decline and possibly diminishing of Risk 3. Therefore, decision to focus on mitigating Risk 1 would be a wise decision to mitigate all of these three risks. However, when Risk 4, Risk 5 and Risk 6 are considered, it becomes clear that focusing solely on mitigation of Risk 1 is not likely to achieve any significant improvement in the system. An analysis of the causal diagram suggests that a combination of risks needs to be targeted at the same time and more than one combination can provide satisfactory overall risk mitigation in the system. Once the participants develop and analyse the dynamic risk map, they can then evaluate product/service concepts based on their potential to bring high leverage to risk mitigation in the system.

This module is a very demanding module in terms of analytical thinking. Also some participants might find it boring and/or depressing. Therefore it is a good idea to run an energiser between steps 4 and 5 or at the end of the entire module depending on the energy level of the group.
**Module 4: Social Function (About 60 minutes)**

1. Refer to the presentation you made in the Introduction module and remind the group what social function means;
2. Facilitate a discussion for the group to identify the social function being met by the products/services of the organisation;
3. Write the social function down on a large piece of paper (A3 size) and hang it up on the wall also take photographs of it as digital copies.

**Notes:** The outcome of this module is very important since the visions which will be developed in the following module will be based on the social function identified in this module. If the organisation provides services rather products, the social function identified by the group resembles an organisational mission (e.g. ‘to facilitate change towards sustainability’, ‘to improve public health’, etc.). If the organisation provides products rather than services, the social function needs to be identified for each product separately if all of the products cannot be grouped under the same social function. However, generally the group realises at this stage that their business does not necessarily rely on the specific products they provide but on the core capacities embodied in the organisation. You will need to encourage them to think as conceptually as possible. For example, if the organisation you are running the workshop for is an appliances company producing washing machines, refrigerators, and cookware the first level of conceptualisation may result in identification of social functions like ‘provision of clean clothes’, ‘food preservation’ and ‘food preparation’ respectively for the given appliances. This level of conceptualisation, even though is sufficient for product/technology innovation, is not sufficient for innovation at organisational level. You can work with these social functions but along with them if the group discovers a more essential social function their products are fulfilling then the innovative potential of ideas which will emerge from this second level conceptualisation will be higher and likely to be more radical. So, the social function at the second level conceptualisation for the appliances company could be stated in several different ways, for example, ‘providing time-saving and health-promoting solutions’. There is endless scope of innovation based on this social function. I found it more effective to encourage the groups to generate both of these social functions; one for the specific product/service and one for the organisation. For service providing companies, there is generally no difference in between these two unless it is a large organisation providing several distinct services.
Module 5: Visions (About 105 minutes)

1. Tell the group that now they will develop a ‘systemic’ vision for a sustainable society in the long term (i.e. fifty or more years later) and investigate the role of their organisation and how the social function they identified is being fulfilled in this society;

2. Label four A2 size papers as technologies, institutions, environment, individuals (see Figure 6) and either put these on the table or hang them on the wall leaving some space in between them (four corners of the room is ideal as it leaves space for people to move around);

3. Refer back to the sustainability risks identified by the group in the risks module and remind them to the group. Tell the group that now they will develop a normative vision for a sustainable society within which the risks they identified are mitigated or adapted to by articulating aspects of the society from its institutions to individuals. Instruct them to fill in the papers you’ve hung up on the wall or put on the table. Use the guiding questions shown in Figure 6 to stimulate their thinking. Give these questions (also add more yourself) to the participants in printed/written form. Allow five minutes for each paper and either get them swap the papers or walk to another paper in the room until each participant has worked on each of the papers;

4. Once finished, gather papers together on the table and review the vision enabling some changes to be made until the group is satisfied with the entire vision;

5. Next, put another A2 size paper on this vision, right in the middle and write ‘organisation’ on it. Instruct the participants to develop a vision for their organisation in this society starting with the fundamental question ‘does our organisation still exist in this society?’ (everyone will say ‘yes’ to this since otherwise would cause an existential crisis but this will force them to think the conditions the organisation needs to meet in order to still exist in the society therefore will enable transformative thinking);

6. Once the group is finished with the organisational vision, put an A3 size paper on the others, right in the middle of the organisation sheet and write ‘social function’ on it;

7. Tell the group that they now will develop a vision for the social function they identified in this society. Instruct the group to articulate how the social function is being met in this society. Encourage them to think in products/services and combinations of these as much as possible linking these to the characteristics of the societal vision they developed;

8. When the group is finished, depending on the time left, either summarise the output of the module or get the participants summarise what they have produced;

9. Take photographs of the resulting vision as a reference for later transcription.
Figure 6. The vision model and guiding questions

Note: This is a difficult session for the participants. It is long and 'heavy' as some of them describe it. Therefore giving a break in the middle (see the generic agenda given in Table 1), ideally between steps 4 and 5, is essential to get the most out of this module. When the group comes back from the break run a quick and fun energiser and before moving on review what the group has done until that point to bring people back in the process.

Module 6: Scenario Development (About 130 minutes)

1. Tell the participants that for this module they will produce event trees. Explain them what an event tree is and how event trees are used in developing the scenarios using the model (Figure 7) and an example prepared by you;
2. Clear one of the walls (you will need a lot of wall space for this) and stick a masking tape on the wall from one corner to the other. Divide the masking tape in three and starting from the left hand end, label the partitions as short term, medium term and long term respectively. If possible, place the vision developed in the previous module right at the end of this timeline, on the following wall in order not to take space from the scenario development wall;
3. Divide the group in two smaller sub-groups and instruct one group to move to another table;
4. Give each participant a block of square sticky notes of the same colour;

![An Event-Tree](image1)

**Figure 7. Scenario development using event trees**

5. Instruct one of the sub-groups (‘the forward flow group’) to brainstorm for 10 minutes and write down as many events relevant to their organisation as they can think of which are likely to happen in the near future on the sticky notes, one event for each sticky note. Tell them to stick these on A4 papers, one on each paper, right in the middle. Give the participants blocks of smaller size sticky notes and instruct them to think about the influences leading into the events and the consequences rising from each event. Tell them to try to rotate each event tree in the sub-group so that everyone gets familiar to the events and adds influences/consequences that are not thought of by the other participants. Tell them that each consequence is also an event with several influences and consequences and if they think one consequence is significantly relevant to the organisation they should write it as an event on a separate A4 and build an event-tree around it. Tell the group that they should focus on the vision and generate new event trees targeting to move towards the vision;

6. Instruct the other sub-group (‘the backward flow group’) to review the vision and brainstorm 10 minutes to write down as many events relevant to their organisation as they can think of which can enable the vision to come true in the long term future on the sticky notes, one event for each sticky note. Tell them to stick these on A4 papers, one on each paper, right in the middle. Give the participants blocks of smaller size sticky notes and instruct them to think about the influences leading into the events and the consequences rising from each event. Tell them to try
to rotate each event tree in the sub-group so that everyone gets familiar to the events and adds influences/consequences that are not thought of by the other participants. Tell them that each influence is also an event with several influences and consequences and if they think one influence is significantly relevant to the organisation they should write it as an event on a separate A4 and build an event-tree around it. Tell the group that they should focus on the present and generate new event trees targeting to move towards present;

7. While this process is going on, ask for volunteers in each sub-groups to exchange with each other in order to enable cross-fertilisation;

8. Give participants a maximum of 45 minutes for this task and tell them that now they will start to build the scenario map and that they can add new event trees as they are building if they think necessary;

9. Instruct the forward flow group to go to the left hand end and the backward flow group to the right hand end (during this process you could get some help from a co-facilitator if available) and start placing the event trees considering the chronological order within which they might happen. Once both of the sub-groups placed all of the event trees on the wall instruct them to explain what they have come up with starting with the forward flow group. It is likely that both sub-groups generated two or three very similar event trees with the same central event. Place these side by side or combine them. These are important event trees as they connect the forward and backward flows;

10. After the sub-groups summarised their event trees, give them a yarn of coloured ribbon, scissors and adhesive tape/masking tape and ask them to connect event trees considering the flow. This way the group will identify paths from present to the vision. During this process ask participants if any more event trees are needed to help with the flow of events. If time permits you can introduce some disruptive events and ask participants to complete the event trees by writing influences and consequences and to place them on the scenario map establishing connections with other event trees;

11. Summarise what the group has done during the module to complete;

12. Number each event tree and take photographs of the resulting map as a reference for later transcription.

Notes: Event-tree approach addresses the multiplicity and non-linearity of influences resulting in a particular event (an event can be a situation or a process). The core event of the event-tree or any of the outcomes of an event becomes an influence for other event trees. Event-trees enable indefinite extension of the scenarios and therefore generate flowing scenarios rather than snapshots. The ability to indefinitely extend can also enable the resulting scenarios to be linked to other scenarios in
a systemic way. For example, using the event-tree approach to developing scenarios, an organisation can later link the scenario map to other relevant scenario maps such as sectoral, industrial or regional development scenarios or stakeholders’ scenarios. Event-trees also enable the resulting scenario map to be re-addressed and changed easily as time progresses and future unfolds.

This module is also a very long and demanding module. Therefore give a break somewhere in the middle (see the generic agenda given in Table 1), ideally between steps 8 and 9. When the participants come back from the break, before moving on, run a quick and fun energiser.

In developing the event trees, encourage the participants to think about institutional, social/cultural, organisational and technological influences leading into events as well as institutional, social/cultural, organisational and technological consequences which might rise from the events. This will enable the group to link societal changes to organisational changes and major technological developments to the product/service innovations.

**Module 7: Products/Services (About 50 minutes)**

1. Tell the group that in this module they will generate some product/service ideas which can be introduced if particular events in the scenario map happen;
2. Establish sub-groups of 5-6 people. These sub-groups should be seated around separate tables;
3. Explain/remind the rules of brainstorming (see Justice & Jamieson, 2006, p. 180; Michalko, 2006, p. 311) to the sub-groups;
4. Instruct them to brainstorm and generate product/service concepts that can fulfil the social function they identified previously for the product/service their organisation provides the society with. Give the participants 20-30 minutes for this task;
5. Following brainstorming, instruct the group to write down each product/service concept on a sticky note (smaller and different colour than the ones used for building the event trees) and stick them on places on the map where they can be introduced. The product/service concept can be attached directly on event trees or along the path connecting one event tree to the other;
6. (Optional) Run a process to evaluate the product/service ideas which are placed on the scenario map. A simple way to do this is -similar to the voting process you ran in the Risks module- to give five of the circular labels to each participant and ask them to vote for the ideas they think to be feasible. This time do not allow them to allocate labels however they want but tell them that they can use only one vote for each product/service concept. The aim of evaluation should not
be to eliminate all other ideas and remain with one or two but to have a diversity of ideas while also expressing the current perception of the feasibility of them. Therefore, the evaluation process should only focus on the evaluation of short-term ideas in order not to jeopardise premature dismissal of product/service ideas for the longer term. Also, this process should not involve deletion of any of the ideas from the scenario map even if they were voted off during the evaluation as these ideas might prove useful later;

7. To complete this module, go over what the group has done and summarise the outcome.

Notes: Even though in the original schedule only 50 minutes is allocated to this module, it is one of the most important modules since the outcome provides the organisation with concrete innovation ideas at the product/service level. Therefore, this module legitimises the time allocated by the organisation and potentially can enable a not-so-much-engaged organisation to get engaged with the idea of system innovation for sustainability as the participants will understand opportunities lying ahead. For this reason, if the organisation would like to put more time and effort in, this module can be expanded to a half or full-day workshop of its own. If the organisation you are working with decides to run a workshop for generation of product/service concepts, you might want to consider running a less generic process than brainstorming and one specifically developed for generating new product/service concepts. One such process is SCAMPER (Michalko, 2006, p. 72).

Module 8: Stakeholders (About 50 minutes)

1. Tell the group that in this module they will investigate the stakeholders of the organisation in order to gain an understanding of present and future stakeholders and at which parts of the scenario map these stakeholders can have a role to play;

2. For the purposes of this module you can chose from one of the two stakeholder models shown in Figure 8. Model I works better for organisations in which hierarchical relationships are easy to distinguish and there is a significant supply chain. Generally established manufacturing companies fall under this category. Model II better suits for organisations in which power relationships are either not very significant or, as a result of complex organisational structure, hard to distinguish. This second model best suits emerging service companies or start-ups. Also, from a socio-cultural context perspective Model I better suits organisations situated in hierarchically structured societies. You can select which model to use or you can consult the participants on which of the models they think they will be able to investigate more about the organisation’s stakeholders;
3. Before placing the stakeholders on the model (whichever to be used), tell the group to brainstorm and write down all stakeholders of the organisation. Tell the participants to consider not only the present stakeholders but also the potential future stakeholders. The generic categories are regulators, media, peers, shareholders, competitors, clients/customers, suppliers, and employees;

4. Once the group has written down all stakeholders of the organisation, give them an A2 size paper with the stakeholder model drawn on it. Instruct them to place the stakeholders they identified in the previous task on the model giving a number to each of the stakeholders;

5. Once the group is finished, take a photo of the stakeholder model for later transcription;

6. Tell the participants to write down each stakeholder on a small sticky note (different colour) and place the note on the scenario map where that particular stakeholder can have a significant influence. On each note, how the stakeholder might influence can be written as well (compete, collaborate, regulate, protest, etc.). If a stakeholder can have an influence on more than one part of the scenario map, separate notes needs to be prepared. The stakeholders can be attached directly on event trees or along the path connecting one event tree to the other depending on the type of influence;

7. Once the group is finished take photos of the scenario map, which now has three layers being events, products/services and stakeholders, for later transcription;

8. To complete this module summarise what the group has done and tell the group that now the scenario map is finalised. For your reference,
Figure 9 shows the generic structure of the finalised map and Figure 10 shows a section from a real scenario map.

Figure 9. The generic structure of scenario maps
**Module 9: Action Plan (About 50 minutes)**

1. Ask the participants to review the scenario map. Make them stand as a group in front of the map and tell them to summarise the identified innovation paths starting from present time. Encourage each participant to talk about a portion of the map;
2. Ask them if there is anything about the map the group thinks that should be changed. Encourage them to consider the paths in terms of their consistency. Allow the group to discuss and make some changes of they see necessary;
3. Once they are finished with reviewing/revising the map, tell them to take their seat for a plenary session;
4. On an A2 write down the actions the participants agreed on to take next week, next month and next year to keep the organisation on the innovation paths towards a sustainable future along with deadlines, action responsibilities and follow-up responsibilities. One task in a year’s time should be to review and revise the scenario map in line with the developments which would take place until then;
5. Go over the action plan and reiterate the action and follow-up responsibilities;
6. Take a photo of the resulting action plan as a digital copy.

Notes: If you are having a workshop with a group of unrelated individuals, you cannot run this module but instead tell the participants how they can run this module in their own organisation.
Notes: If you are having a workshop with a group of unrelated individuals, you cannot run this module but instead tell the participants how they can run this module in their own organisation.

Module 10: Completion & Evaluation (About 30 minutes)

1. To start this module, briefly go over what has been done during the entire workshop by inviting participants to summarise the activities and outcomes of each module;
2. Request the participants to provide you with some verbal feedback on each of the modules. Alternatively, you can give participants a questionnaire to complete to receive some feedback about the workshop. In this questionnaire you can ask the following questions:
   a. What do you think was the best, most useful, or most interesting part of the workshop - and why?
   b. What do you think was the worst, least useful, or least interesting part - and why?
   c. How do you think the workshop can be improved?
3. Note down important points raised by the participants or collect the completed questionnaires for future improvement of the workshop;
4. Ask for a volunteer to transcribe the outcomes into digital format and post to the participants unless you would like to do this yourself. Inform the volunteer when you will transfer all of the outcomes including the photos of the outcomes you have taken during the workshop;
5. Thank the participants for their participation, the effort and time they put in the workshop and congratulate them for the outcomes they produced;
6. If the workshop was for a group of unrelated individuals, give each participant a copy of the current version of the Facilitator’s Guide;
7. Ask them how they would like to celebrate their achievement and proceed with celebration.

Important Points/Tips

Frequently run vision checks. If the group is not reminded of the vision they developed frequently they may lose track of it since it generating event-trees is fun and if there is no intention to identify which events will take the organisation to their envisioned future, then the scenario development process can go anywhere. A vision check can be done at appropriate times like after the breaks. In order to run a vision check quickly, go over the vision and explain the participants what they have envisioned. A more effective way of running vision checks is by asking the participants to explain the vision they developed. A quick vision check can be used as an intervention when you see the group is not referencing the vision in developing the scenarios.
The ice-breakers and energisers you choose should be compatible with the characteristics of the group and the socio-cultural context you’re in. Some ice-breakers/energisers may not be appropriate in some cultures or some people may find them uncomfortable. One strategy is to suggest an ice-breaker/energiser, model if possible and ask how the participants feel about it. If acceptance seems low suggest another one.

Get a quick verbal feedback from the participants at the end of each half-day if time permits. This will enable them to point out any issues they encountered when the experience is fresh in their minds giving you information on how to improve the specific modules of the workshop.

There are no strict rules on how to run workshops. The material provided in this document is limited and serves as a guide, not as a blueprint. Preparing and facilitating workshops require you to use a set of skills such as leadership, creativity, intuition, intervention, being present, powerful listening and speaking, understanding interpersonal dynamics in a group etc. These are also very useful skills in daily life. I strongly recommend you to consider receiving at least some basic facilitation training if you are interested in bringing change within your organisation and in the society.

**HELPFUL RESOURCES**

I have extensively utilised the below resources for improving my facilitation skills, during preparing the workshops and to provide some basic current facts about sustainability issues to the participants who attended the workshops that I run. Please add any resources you find useful which are not included in the list.

**Group Facilitation**


**Workshop Preparation**


*Creativity Tools*


Sustainability Facts


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