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A Strategy Process for Early Stage Ventures to Develop Sustainable Value Opportunities

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Abstract
A Strategy Process for Early Stage Ventures was developed as a 'light touch' workshop process to give early-stage ventures a quick way to improve their strategy and as a consequence, business resilience and sustainability. It consists of five tools to use sequentially: idea definition; idea prioritisation and selecting; value mapping; eco-ideation and roadmapping. This process helps organisations develop future-value opportunities taking into account sustainability. It can be run within one day and it is suited for time-constrained early ventures and larger firms who collaborate with technology ventures as part of their innovation and technology management processes. The tool has been used with eight case companies across different industries and was found to be helpful to identify and prioritise opportunities, and develop a viable business strategy by all participants.

1. Introduction

Under growing global sustainability pressures (e.g. climate change, resource scarcity, water shortages or floods, working conditions, community engagement; see WBCSD, 2015), businesses will need to increasingly adapt their strategies and day-to-day decision-making and operations to fully incorporate the triple bottom line (people, profit and planet; Elkington, 1997) to develop sustainable businesses. For example, climate change, which is being linked to extreme weather events, periods of drought and flooding (IPCC, 2014), is creating increasing immediate challenges for businesses. Such events might affect the supplier base or manufacturing operations directly or indirectly. In the past, companies may have approached these challenges reactively, but there is also a business case for resilience (i.e. being able to withstand, and work with changing circumstances) to proactively incorporate the triple bottom line, including societal and environmental concerns, in addition to economic concerns in decision-making and everyday business operations.

Early stage ventures are an important source of innovation in an economy and serve as the basis for future industry. Time and resource-constrained, early stage ventures need to focus on their core issues to move from start-up and niche to growing, resilient and sustainable businesses. This paper proposes an efficient strategy process that can help early stage ventures develop sustainable value opportunities – to incorporate the triple bottom line of 'sustainability' in their future strategy. The approach is considered to be also relevant for larger companies, which need to innovate for the future and are also resource and time constrained.

The early strategy and innovation processes are considered to be an important stage, because once product specifications and business model strategies are established, it is hard to adapt them at a later stage for sustainability (Herstatt and Verworn, 2001; Bocken et al., 2014). In the early stages of a business, product parameters are still flexible and a change of strategy and direction is still possible, so there is an opportunity to develop a business, which is socially, environmentally and economically sustainable from the outset. Sustainability provides a mechanism and driver for companies to consider a broader set of stakeholders and interactions in creating value opportunities (Bocken et al., 2013). The inter-connected nature of business with networks of stakeholders and industries through product use and disposal suggests a long-term vision and holistic solution is required, focusing on redesigning strategies for sustainability to co-create value. As Phaal et al. (2012) assert 'industries emerge and decline on the basis of complex interactions between society, industry, government, and academia, and the various choices and investments made by managers and policy makers'.

Value creation is central to the long-term existence of firms. Whereas from a traditional strategic planning perspective, the ultimate objective of the firm is to maximize economic return for long-term survival (Ansoff 1965; Wind 1979), sustainable value creation thus requires firms to create and align value and interests for a wider range of stakeholders, explicitly including societal and environmental concerns (Stubbs and Cocklin 2008; Bocken et al. 2013). Early stage ventures have the opportunity to design their businesses sustainably from the start. Strategic planning is arguably most useful in periods of 'reconception' when there is the opportunity and need for 'total reassessment', such as when large resource commitments need to be made and during the early stages of ventures when a clear sense of direction is necessary (Mintzberg 1990; Cooper 2006; Bocken et al. 2014).

A Strategy Process for Early Stage Ventures is described (referred to as the 'ESV' process), designed to ensure that sustainability is considered explicitly from the

start. Participants are prompted to consider the purpose of their business and question the environmental and social viability of their product/ service, supply chain and business model, while developing an understanding of key stakeholder partnerships.

2. Research gap and rationale

There is a limited number of easy-to-use tools to help early stage start-up companies consider sustainability as part of their strategy process. However in the early stages, the biggest impact could be made so that businesses can be established that are sustainable from the outset (Bocken et al., 2014). This toolkit has proven to be useful to create awareness of sustainability with owners/ MDs and help them reconsider their value propositions and key activities through the sustainability lens.

Over the past few decades there has been an increasing focus on structured approaches to help companies make business decisions that lead to enhanced processes, products and services, aligning investments in research and technology with business goals (Roussel et al. 1991; Cooper 2006). A management tools-oriented approach provides a practical means for strategy development, with tools combined together to facilitate a strategic planning process (Foden and Berends 2010). While many such approaches emerge from large manufacturing firms, lean and agile methods applicable to smaller resource-constrained firms are scarce (Kerr et al. 2013). Such ‘light touch’ methods are also of interest to larger organizations (Sonnenberg and Sehested 2011).

The ESV process was developed as an agile workshop method to provide start-ups with an efficient way to develop and improve their strategy and their future resilience and triple bottom-line sustainability (people, planet, profit; Elkington, 1997). As it can be run within one day, it is suited for time-constrained early ventures, and larger firms at the front end of their innovation process. The action research approach (Platts 1993) used to develop the process has a practical orientation, and although it was originally developed for start-ups, the individual tools in the process have been applied within larger mature organizations in a variety of sectors. The process described aims to identify and explore a range of new opportunities for products and services, to define a vision for new value propositions and innovation options to improve sustainability, based on a roadmap for action. The tools and frameworks used as part of the process are described next.

3. Process development and description

The ESV process is workshop-based, with a typical agenda shown in Table 1. The full workshop lasts 5-6 hours. In total, the process was trialed with eight early stage ventures based in different industries, ranging from electronic devices to stationary products and software. The process combines five previously developed independent tools, summarized in Table 2 and described in more detail in subsequent sections.

09.45	Arrival
10.00	Welcome and introductions
10.05	Aims of the workshop
10.15	Tool 1: Presentation of ideas/opportunities generated as pre-work
10.30	Tool 2: Scoring Opportunities using pre-selected criteria
11.00	Tool 2: Portfolio matrix 2x2 and selection of most promising option
11.30	Tool 3: Value Mapping of the most promising opportunity
12.30	Lunch
13.00	Tool 4: Brainstorm on product features for the selected opportunity
13.20	Tool 5: Opportunity exploration
15.15	Wrap-up and Feedback
15.30	Close

Table 1. Typical workshop agenda

Tool sequence	Description of tool	Development History	References
1.Idea definition	A template to define the main opportunity / idea / application to be investigated	Developed as input for a 'light weight innovation strategy' workshop process	Farrukh et al. (2014)
2.Idea prioritisation and selection	A process used to differentiate and select which innovation projects to pursue during the early stages of the new product development process	Developed as part of industrial sponsored research to prioritise and select early-stage innovation projects	Mitchell et al. (2014)
3.Value mapping	A framework to help companies incorporate 'sustainable business modelling' into their business planning process and redefine their business models for sustainability	Developed as part of a European-funded project, SustainValue	Short et al. (2013) Bocken et al. (2013)
4. Eco-ideation	Idea generation tool	Developed in	Bocken et al.

	building to facilitate the generation of eco-innovative product and process ideas	collaboration with Unilever to facilitate the generation of radical product and process ideas	(2011)
5. Roadmapping	A visual framework incorporating market, product / service and technology dimensions to clarify vision and develop strategic plans	Developed to help technology ventures explore value opportunities	Phaal et al. (2012)

Table 2. Strategy Process for Early Stage Ventures incorporating five different tools

3.1 Tool 1: Idea definition

The first activity in the process is for the company to conduct some pre-work before the workshop. Each participant is asked to contribute a small number (4-7) of possible ideas or options the company needs to evaluate in its strategy. The ideas are drafted using a structured template (Figure 1) specially designed for printing onto repositionable sticky notes. The template is based on roadmapping and business case thinking, explicitly including Why, What How and When questions for consistency, encouraging participants to consider both commercial and technical / resource aspects from the start.

OPTION		Initials: *A.B*
TITLE	*Overall summary description of product/process/service/ system opportunity*	
WHAT	*What are the unique/value features of the opportunity?*	
WHY	*Why should we invest? e.g. market potential/strategic benefits*	
HOW	*How can we realise/do it? e.g. technology/resources*	
WHEN	*Over what time frame? Circle ST/MT/LT*	

Notes for filling in template above (which will be printed out on post-its)
1. *Please fill in your description of the option over the grey italic writing*
2. *Please do not write any further to the right than the column for your initials*
3. *Please do not use more than two lines to answer each question*
4. *Please use 14 point text, italics, black ink*

Figure 1. Structured template to capture potential ideas from participants before the workshop

3.2 Tool 2: Idea prioritisation and selection

This tool prioritizes and helps to select the best innovation projects to pursue, based on a multi-factor scoring system and structured scaling statements to assess different projects in a consistent and traceable fashion. Project selection criteria are agreed before the workshop, engaging all participants, stimulated by the two standard sets of factors defined in Table 3: '

- Opportunity' is defined as the magnitude of the opportunity plausibly available to an organisation.
- 'Feasibility' is defined as how well prepared the organisation is to grasp the opportunity.

Opportunity factors		
Dimension	**Factor**	**Description**
Volume	Market size	Size of potential market, or number of potential adoptions, reasonably available to us
	Our sales potential in a given time	Sales volume or number of adoptions anticipated in a defined time (say, 5 years)
	Synergy opportunities	Possible additional benefits to other projects or activities; or the possibility of new opportunities in combination
	Customer benefit	Identifiable benefit to customers (internal or external) or potential adopters
	Competitive intensity in market	Number or significance of the competition
Margin	Increased margin, or benefit per unit	Improvement in product margin (e.g. by cost reduction or price premium) compared to existing products; or benefit to us per adoptions
	Business cost reduction or simplification	Contributes towards cost reduction or simplification of business process
	Industry / market readiness	How easy will it be for customers or adopters to take up the product; do they have to change their behaviour or processes?
Platform for future growth	Market growth	Anticipated growth rate of market
	Future potential	Product is a platform for future products or could open new markets beyond the

		project timeframe
Intangibles	Learning potential	Will improve the knowledge or competence of the business
	Brand image	Will improve the image of the company with investors, customers or other stakeholders
	Customer relations	Project is important for retaining key customers
Feasibility factors		
Dimension	**Factor**	**Description**
Characteristics of the product	Product differentiation	How well the product is differentiated from those of major competitors
	Sustainability of competitive advantage	Our ability to sustain our competitive position (e.g. IPR, brand strength)
	Technical challenge	How confident are we that the proposed product is technically feasible at all?
Skills and knowledge	Market knowledge	Our understanding of size and requirements of the market
	Technical capability	Do we have the required technical competences to complete the project?
Business processes	Fit to sales and/or distribution	Fit to our sales competences and/or distribution chain
	Fit to manufacturing and/or supply chain	Ability to manufacture or supply the product
	Finance	Availability of finance for the project
Organizational backing	Strategic fit	How well does the project fit our company strategy?
	Organizational backing	Level of staff or management backing at an appropriate level

Table 3. Opportunity and Feasibility factors provided to each participant prior to the workshop

During the workshop the Opportunity and Feasibility criteria agreed in advance are used to identify the most interesting options to explore further. Scaling statements define and calibrate what the factors mean in detail, so that consistent scoring is achieved for each idea. Options are scored in sequence for each particular factor, with a summary of the scores collected and transferred onto a 2x2 matrix, as shown in Figure 2.

Typically, applications placed on the top right (high Feasibility and high Opportunity) are of immediate interest, but applications in other quadrants are also considered if they represent suitable long-term opportunities, enable other

applications, or support longer-term prospects. Normally, the new venture is encouraged to take forward only one idea at a time. This is to enable best utilisation of the limited time and resources these companies commonly have and ensure the successful execution and implementation of an idea.

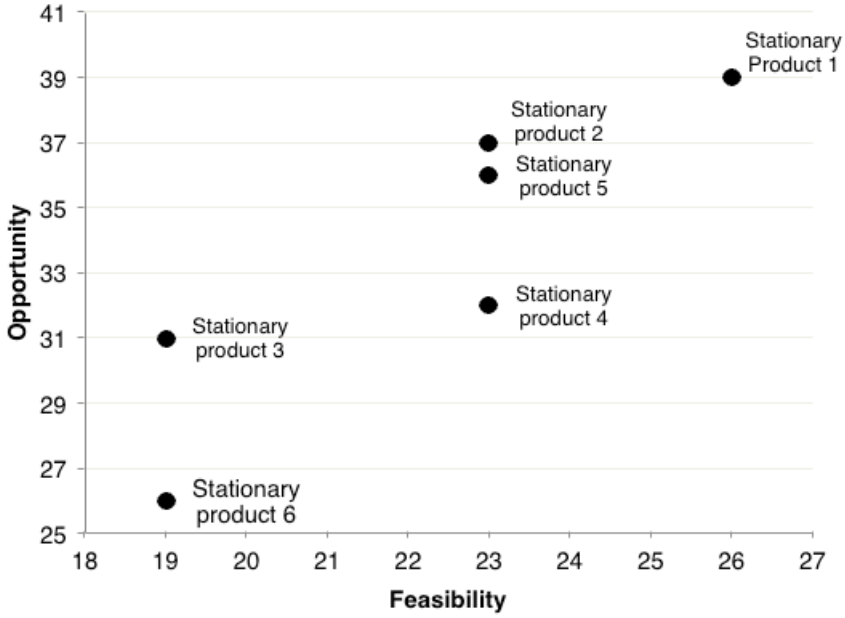

Figure 2: Prioritization chart using Opportunity-Feasibility axis

3.3 Tool 3: Value mapping for sustainable value creation

The next step in the process is to consider the selected idea based on sustainable value creation. Sustainable value creation is considered from the following perspectives: the value or benefits the company and selected product currently hold; value that may be currently missed or destroyed by the business operation; and any future value opportunities the company needs to consider and build in its strategic plan. These types of value creation are considered for key stakeholder groups, including customers, employees and partners, while emphasizing society and the environment as stakeholders for sustainability. In the value mapping tool (Figure 3), blank segments are included so that participants can add their own stakeholders. Value destroyed and missed are considered explicitly. The tool seeks to take a system-wide/network perspective to ensure a holistic perspective rather than narrowly considering a single, firm view of value or benefits. ‘Environment’ and ‘Society’ are included as key stakeholders in this part of the

workshop process to emphasise the importance of the value captured, but also value destroyed (e.g. deforestation, natural and human resource exploitation), missed (e.g. underutilized skills), and opportunities for the society and environment. Hence, this process is a key component to ensure sustainability is incorporated at the early stages of the strategy development process.

The value mapping tool is applied in four steps:

1. The key stakeholders for the business are identified, including all the relevant people, groups, and organizations that have some sort of 'stake' in the business. Environment and Society are given stakeholders that every business has to consider due to the emphasis on long-term sustainability.
2. The business purpose is articulated and the value and benefits (such as economic, social, environmental and ethical) that each stakeholder derives from the business activities are captured.
3. This step focuses on any negative impacts the business may have on each stakeholder and any value and benefits may be missed or destroyed because of this.
4. The final step considers future opportunities that may arise for each of the stakeholders. These may be exploitation of emerging technologies, new partnerships and collaborations that offer potential solutions, new market opportunities, relocation of activities such as outsourcing or localized production or change of raw materials, for example. Future opportunities can also be viewed as positive actions to counterbalance, mitigate or eliminate missed or destroyed value identified instep 3.

All steps start with the Owner stakeholder, then addressing the rest in sequence finishing with Society and Environment. This was found to be the most effective way of helping a small company think in a holistic, system-wide way, to avoid a narrow focus on the firm alone.

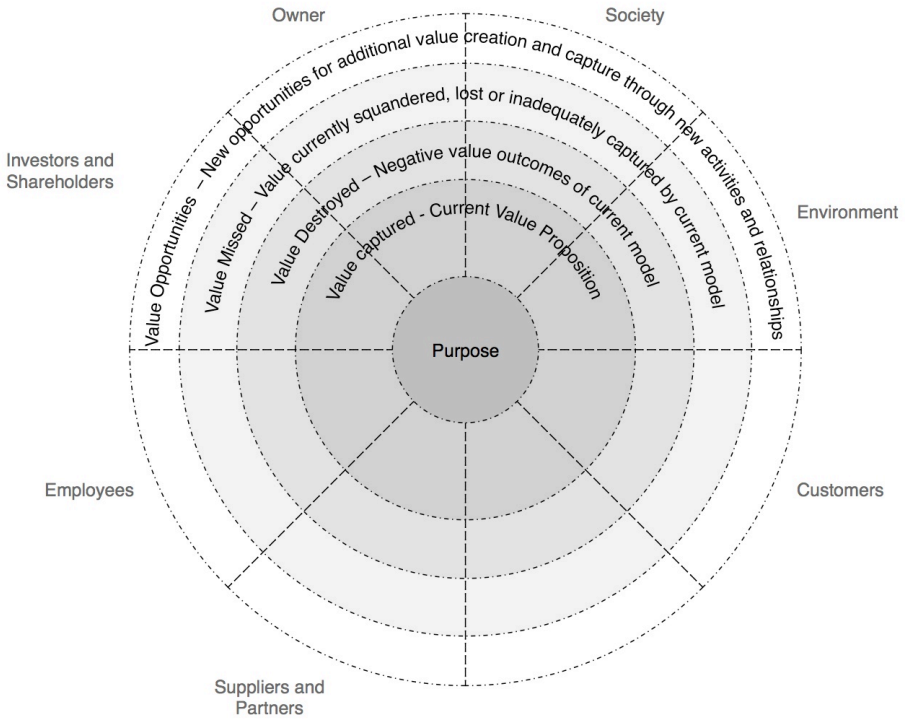

Figure 3. Value mapping tool format (Short et al. 2013; Bocken et al., 2013). Note. The stakeholder 'owner' is added to this value map.

3.4 Tool 4: Eco-ideation to identify eco-innovative product and process options

This is an optional step, predominantly applied in cases where the product is still in concept development, to help clarify the requirements for a prototype and embed eco-innovative thinking in this process. The eco-ideation tool provides a visual framework for a structured brainstorming process to help participants generate product or process ideas with a significantly lower carbon footprint across the product life cycle (Bocken et al. 2011). It contains fourteen questions equally split between product and process. Each question contains three indicators shown in a visual traffic-light configuration. These indicators are presented on a sliding scale between the best ('green') and worst ('red') imaginable performance. The participants are asked to consider their current or planned product performance

and generate ideas to help them move their future product performance towards the green end of the traffic-light system.

In workshops with early stage companies it was found that the most effective question out of the fourteen concerns Product / Service Functionality (Figure 4). This question asks whether the product serves several functions (green), or if they are any complementary products required to make the main product work (red), multi-functionality being one of the key eco-innovation strategies (Bocken et al., 2011).

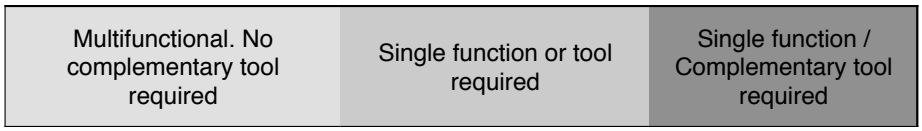

Figure 4. Eco-ideation question: Product / Service functionality. The right side of the diagram is the 'red' part of the traffic light. Source: Bocken et al. (2011)

3.5 Tool 5: Roadmap

The final step in the process is to develop an overall business strategy, incorporating all the analysis and insights obtained from the previous steps into a coherent framework that encompasses market, application and technical views. For this the 'emergence roadmapping' tool (Phaal et al. 2012) is used, which helps organizations to clarify the nature of a future value opportunity scenario, and to articulate the route towards it as a series of demonstration-based milestones. They may include technical, commercial and other aspects, such as partnerships, regulatory compliance and management competence. The tool is applied as follows:

1. The idea is articulated, by discussing the target market and desired future performance or functionality required by potential customers. These aspects are quantified as far as possible (for example, potential market size, units sold, performance parameters). The timeline for its realization is also captured. The outputs from the previous customer stakeholder and value mapping analyses are used to develop the market perspective.
2. The 'demonstrator' milestones required to achieve the common long-term goals are mapped. If the eco-ideation tool has been used, its output enables the milestones to be populated with the green post-it placed as the last milestone, red as the first, and the yellow in between. Further elaboration on these demonstrators may take place if necessary.

3. After the idea has been explored and specific implementation milestones proposed, important enablers and barriers to progress are discussed and logged. These can be business, commercial or technical aspects of the implementation plan.
4. At the end, the idea, first milestone and specific first actions are summarized, to create an 'elevator pitch'.

4. Case studies

Workshops were used as the method to assess the ESV process' effectiveness. The objective of the workshops was to help early stage ventures develop their business strategies by assessing markets, opportunities and applications of their offering to improve their business sustainability strategy and business resilience. The companies were keen to consider sustainability in their business planning to identify new opportunities for value creation and developing a more holistic business strategy. The process was developed and tested in collaboration with 8 firms (see Table 4). For each of the tools, an individual assessment form was used to assess tool effectiveness (e.g. quality and quantity of the ideas). In addition, the overall effectiveness of the process was assessed.

	Company profile	**Company size (people)**	**Who** was involved (how many from company and how many facilitators)?	**How long** did the process take?
1	Last-mile logistics	1	2 company people (CEO & technical consultant) 2 Facilitators	5.5 hours
2	Unmanned Aerial Vehicles (UAV) equipment	1	1 company person (founder & CEO) 3 Facilitators	5.5 hours
3	Electronic devices for transport	2	2 company people (founder & CEO) 2 Facilitators	5.5 hours
4	Software App for digital advertising	2	2 company people (CEO & technical) 2 Facilitators	5.5 hours
5	Photovoltaics	3	2 company people (CEO & Business development) 2 Facilitators	5.5 hours
6	Model hobbyist products	3	2 company people (CEO & Business development) 1 Facilitator and 2 internal	5 hours

			observers	
7	Musical instruments	3	1 company person (CEO) 2 Facilitator and 1 internal observer	5 hours
8	Stationary products	1	1 company person (CEO) 2 Facilitators, 1 internal observer and 1 student	5 hours

Table 4. Test cases for Strategy Process for Early Stage Ventures

Through the workshops, it was found that all companies were able to:

1. Articulate the selection criteria important to their company; group the different ideas and clarify potential market segments.
2. Identify one product or market segment that offered clear competitive advantage to their business and prioritize the development of the rest of the options. In one occasion, the company was uncomfortable focusing on only one idea, as they thought they might miss an opportunity, which could be more profitable. The facilitator offered to repeat the application of tools 4 and 5 for the top three ideas before a final decision was made, and the company agreed to explore one idea during the workshop and the other two subsequently.
3. Identify the stakeholders and the value offered to each of them, understand the different customer segments available to them and clarify the role of their suppliers and partners. In a few occasions, the start-ups focused on the needs of the end-user rather than their immediate customer; clarifying the roles and benefits to both was informative and helped companies develop a more realistic strategy.
4. Obtain insights into the selected opportunity, quantify the target market and business potential and derive a workable and realistic action plan for the implementation of the selected idea. Examples of strategic insights included the recognition that companies had substantially underestimated the time and/or investment required to achieve profitability, had planned to invest in capital equipment or facilities that were now not considered necessary, and lacked fundamental market and/or technical knowledge or skills.

Overall, feedback from companies indicated that the process helped them prioritize their options, select and explore the best and develop a realistic action plan to help them reach profitability faster. There were small issues associated with the application of the tools. Sometimes, there was lack of clarity on the ‘homework’ for the companies. In addition, the term "Value captured" was confusing to most start-ups, so we used the term "benefits" instead. There was a range of lessons learned:

1. To provide clearer instructions for the homework
2. To use a simple language

3. If there was only one good idea we did not through the detailed project evaluation step
4. The eco-ideation tool worked well for product-based companies in the initial phase of development, but less when a full prototype had been designed.

4.1 Illustrating the process – Model Hobbyist products company

The case of company Model Hobbyist is presented as an example. Model Hobbyist was set up by a husband and wife team in late 2009 to provide natural, realistic, high-quality scenic materials and products for the model hobbyist market, via national retailers and online. It employed one person who was mainly dealing with the production of goods and additional temporary personnel to assist when sales volumes were high. Although the company was selling a range of products it was not yet profitable and was considering designing and installing new equipment to help increase production volumes. It was also contemplating the development of additional products, such as specialized electronic components. The owner was keen to develop a new product for the rail hobbyists to fill a clear and large gap in the market, although it was evident that the development would be complicated and time consuming.

The application of the idea prioritization and selection tool highlighted that there was one new product with a large market potential that was easy to produce. It also made the firm realize that new and difficult product ideas such as the ones for the train hobbyists should be put on-hold till the company became profitable. The company decided to explore this new product idea in the workshop. The value mapping tool helped the company identify and group additional stakeholders, and highlighted benefits offered to all stakeholders, including the product's environmental sustainability. At least three more "Customer stakeholders" were identified beyond the traditional customer base of the company (education/ students, crafts and exhibitions). During the workshop, the product's environmental sustainability was highlighted as a unique selling point for the nascent business offering a differentiation against its competitors. A few issues about the product's packaging, which did not necessarily include environmentally friendly materials, were identified to make the company's brand more consistent. Online selling opportunities were highlighted as important for the company to increase its sales without increasing its overheads. During the roadmapping session, the company realized that they could break-even if they focused their sales activities on this new product alone. They could manufacture the required volumes without the need for purchasing expensive capital equipment. They could also easily expand this

product range (for example, different colors and materials) with minimum effort and cost.

Their action plan involved market research and promotion of the new product to the market with a series of activities (such as press releases and exhibitions). Eight months after the workshop the company had successfully developed the product and was selling it online, with sales having increased significantly, bringing them very close to break-even.

4.2 Process feedback

Feedback forms were collected at the end of seven out of the eight workshops (except the first exploratory case). Figure 5 shows the detailed feedback.

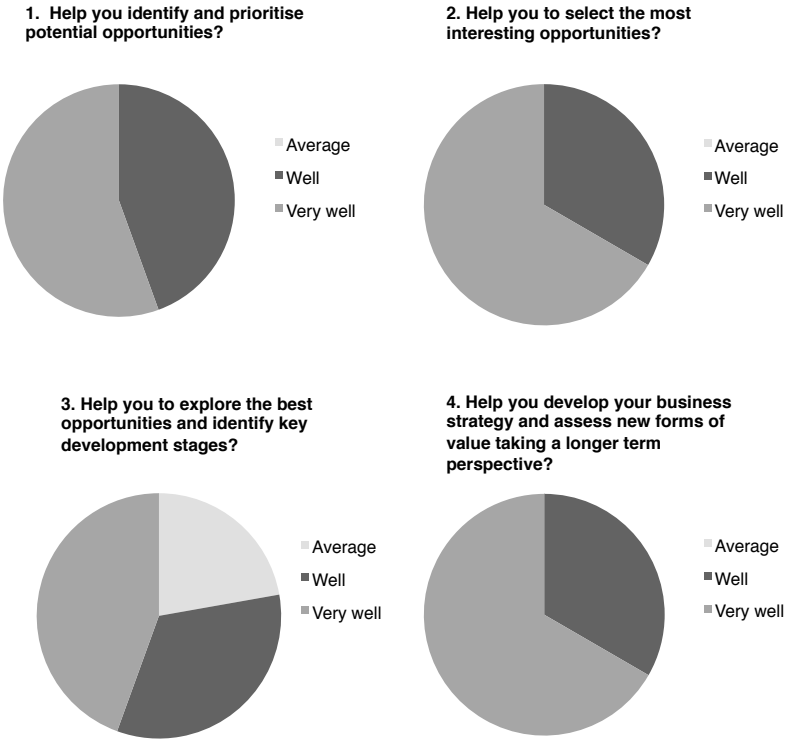

Figure 5. Detailed feedback for the ESV process from workshop participants.
Note. A 5-point Likert scale was used: Not well; Adequately; Average; Well; Very well.

All participants (100%) found the workshop helpful in identifying and prioritizing opportunities, and to develop a viable business strategy. The majority (78%) also found it helpful to select and explore the most interesting opportunity.

5. Conclusions

To date, few tools have been developed to help early stage start-up companies consider sustainability as part of their strategy process. These early stages are critical to ensure that companies develop a sustainable proposition, which is integral to the way business is done as it assist in developing new partnerships across the value network and stimulating innovation. Under increasing global sustainability pressures, there is an increasing need and business case for companies to operate sustainably. A Strategy Process for Early Stage Ventures focusing on sustainable value opportunities was developed, incorporating five management tools. The process has proven to be useful to create awareness of sustainability with owners/ MDs and help them reconsider their value propositions.

The process has been used to help early stage ventures develop a clear business strategy incorporating sustainability. The process and tools help firms develop ideas and select and explore the best current option using a rational process, taking into consideration all stakeholder needs and values, including Society and Environment, and design more sustainable business propositions and products. The efficiency of the approach is also thought to be attractive to larger more mature business, particularly at the early stages of their innovation process, which has been demonstrated through prior application of the individual tools in a range of sectors and organization types and sizes. The approach described in this paper forms part of an ongoing wider program to develop practical, efficient and integrated toolsets for supporting innovation and business strategy development. Current work is focusing on incorporating business model considerations, using methods such as Osterwalder and Pigneur's (2010) business model canvas. Future work will need to include the development of more easy to use tools and methods to help businesses include 'sustainability' into their core strategies.

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