

SUSTAINABLE MANUFACTURING THROUGH GREEN ENTREPRENEURSHIP –THE ONLY WAY TO SURVIVE IN LONGRUN

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Abstract

The business sustainability in the long run is affected by various factors. One of such important factor is going green. In order to sustain in business, entrepreneurs have to go green. During last 30 years or more, the world has seen a big movement towards environment. Many people, including movie and TV actors, musicians, politicians and scientists, are giving away social messages about the importance of creating an environmental conscience society. Environmental issues have been transmitted in various modes, emphasizing on what “common people” should do on their personal and business life. So Green Entrepreneurship is just about taking conscious action in day to day activities of business to address this problem. These actions can be as simple as creating a recycle and reuse policy in the company for materials or it can be more advanced, as using new techniques that reduce emissions of gases on production or using cleaner energy from renewable sources. This conceptual paper discusses the concept of green entrepreneurship by relating business manufacturing process with the Organisation for Economic Co-operation and Development (OECD) Sustainable Manufacturing Indicators. In this paper, basic seven OECD principles are discussed and author has attempted to elaborate how an entrepreneur can go green at every step to sustain business in long run.

Keywords:

Green Entrepreneur, Green Entrepreneurship, OECD Sustainable Manufacturing Indicators, Seven Green Steps

Introduction

Green Entrepreneurship is one of those concepts that every manager, every top executive and every entrepreneur should know by heart and apply to their daily business life. However, there are still many companies and new business projects that miss the importance of going green and refer it to a basic secondary level or just do not include

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green initiatives at all. On the other hand, there are several companies that have taken conscious actions to become “greener” and environment friendly. For instance Google has set up a project to create their own energy via renewable sources, like wind and sunlight.

The first attempts to define the green entrepreneur and describe his/her characteristics are in the 1990s. Hall (2013) mentions that the term “green entrepreneurship” appeared for the first time in the book “The Green Entrepreneur: Business Opportunities That Can Save the Earth and Make You Money” by Gustav Berle (1991). Berle’s definition is short, morally focused and accurate: “Green entrepreneurship is taking responsibility to create the world we dream of.” As noted by Farinelli et al. (2011), “A correct understanding and clear definition of green entrepreneurship models becomes especially important in a reality where big corporations prefer to invest in green marketing (creating a green image without real, measurable and strategically directed change in their business processes) rather than in green innovations.”

The concept of green entrepreneurship and green entrepreneur can be understood as-

“Green entrepreneurship is the activity of consciously addressing an environmental/social problem/need through the realization of entrepreneurial ideas with a high level of risk, which has a net positive effect on the natural environment and at the same time is financially sustainable.”¹

“Green entrepreneur is someone who starts and runs an entrepreneurial venture that is designed to be green in its products and processes from the very moment it is set up.”¹

Every year more and more nations are becoming environment conscious. Many governments have created laws to reduce environment related problems. On one hand, governments are rewarding the companies that are conscious and acting to resolve such problem and on the other hand, punishing those that are being an active part of the problem. Also many nonprofit organizations are telling people all over the world how they can help reduce the problem, by purchasing products from companies that are friendly to the environment.

1. <http://greentproject.eu/wp-content/uploads/2016/01/Definition-green-entrepreneurship.pdf>

Going green is not an easy task

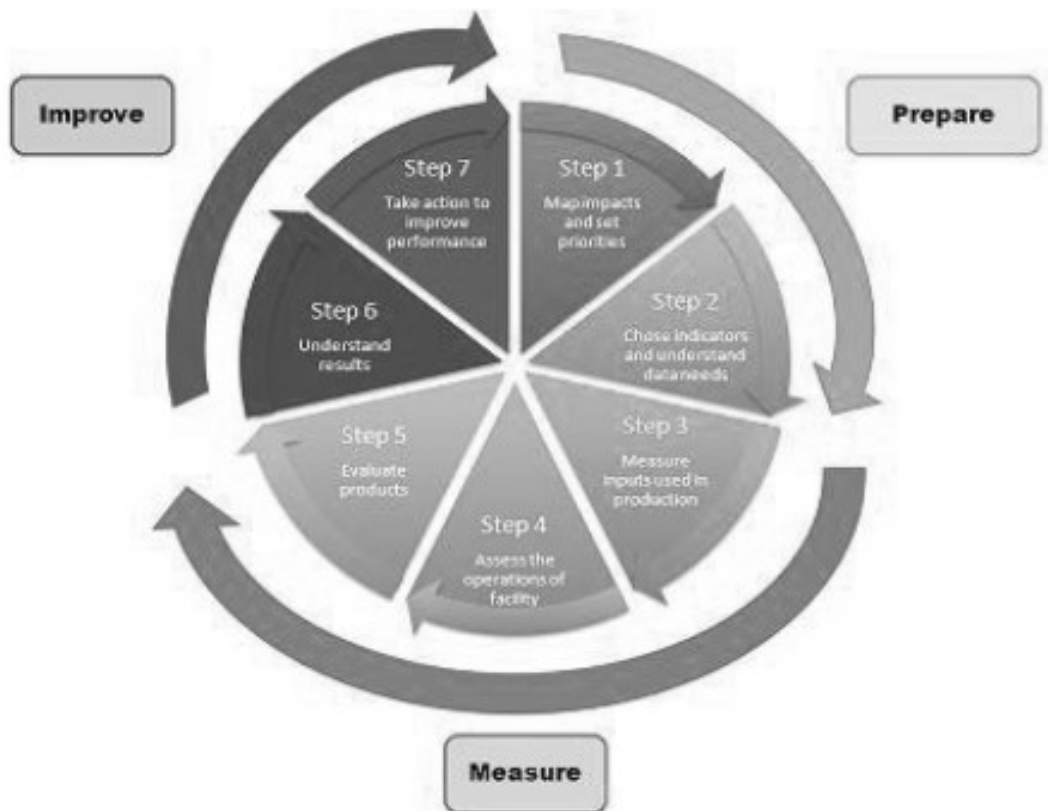
Costs are definitely an important factor to weigh in Green Entrepreneurship. Green Entrepreneurship has its own advantages but going green is a big obstacle and is associated with high costs. However there are two counter arguments that have to be analyzed regarding cost related issues. First, there are some steps that can be taken to reduce pollution and reduce costs at the same time. For instance recycling and reusing

paper- a sheet of paper that was previously just used on one side now has to be used on both sides, something that will reduce in about 50% the consumption of paper. Also used paper can be sold to recyclers, who can pay for something that previously was just trash and had no economic value.

The second argument is setting up green projects that are costly, for instance installing a solar energy panel power plant. However if it's properly set up, the energy costs in the long run (maybe 5 years or more) will show up as an investment with economic returns rather than an expenditure.

The baseline is proper monitoring. Some changes are very simple to apply whereas some involve huge costs. But proper monitoring and implementation could help a business easily turning into the green direction. Small changes are not difficult to implement and they can be the beginning of the road to greener solutions.


The OECD Sustainable Manufacturing Indicators



Source:

<https://www.oecd.org/innovation/green/toolkit/actionstepsforsustainablemanufacturing.html>

OECD Sustainable Manufacturing Indicators have been mainly classified under three heads namely: Prepare Measure and Improve. Further, these three heads have been classified under seven steps-

- Step I- Map your impact and set priorities Prepare
 - Step II- Select useful performance indicators
 - Step III- Measure the inputs used in production
 - Step IV- Assess operations of your facility Measure
 - Step V- Evaluate your products
 - Step VI- Understand measured results Improve
 - Step VII- Take action to improve performance
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In order to go green, an entrepreneur has to think of all these steps from environment friendly point of view and follow them on a continuous basis. Green entrepreneurship is thus basically involving concern for safe environment at each and every level of decision making so that the business can sustain in long run and earn profits along with fulfilling its social responsibility.

The steps in the light of environment friendly attitude can further be elaborated as following-

PREPARE

Step I- Map your impact and set priorities

Bring together an internal “sustainability team” to set objectives, review your environmental impact and decide on priorities. Thus step I deals with the planning part i.e. what a business wants to achieve and where it wants to lead or end up. The focus of every entrepreneur is on the motive of business, keeping environment concern as a main agenda along with profit maximisation. The aim of this first step is to establish a general understanding of positive and negative environmental impact of the business by mapping activities and determining which ones affect business performance the most. There will be many ways to reduce the environmental impact of such activities and improve its performance. For example, exercising due diligence regarding the environmental condition of real estate purchases for land and building, timely servicing of equipment will help maintain its energy efficiency, prolong its lifespan and minimize repair costs; purchasing energy-efficient equipment can cost extra but will save substantial sums in the

long run. Another example of green planning is having green infrastructure which includes permeable surface, green walls, green roofs and street trees.

Step II- Select useful performance indicators

Identify indicators that are important for your business and what data should be collected to help drive continuous improvement. OECD has defined 18 indicators categorised as Inputs, Operations and Products. All those 18 indicators have been made keeping in mind the environmental issues and concerns. An entrepreneur has to decide that which indicators they can emphasise as per their business requirements. 18 indicators can be illustrated as-

Overview of the OECD Sustainable Manufacturing Indicators

Source:

<https://www.oecd.org/innovation/green/toolkit/oecd-sustainable-manufacturing-indicators.htm>

Thus an entrepreneur can plan in which areas they can improve their performance keeping in mind the environmental issues. Whether they can benefit more by using less of non renewable sources of inputs, or by using lesser water and electricity during operations, or by using more recycled/reused content in products, or a combination of various indicators, is a question that needs to be answered at this step.

MEASURE

Step III- Measure the inputs used in production

Identify how materials and components used into your production processes influence environmental performance. As seen from the above indicators, the first set of indicators relates to the raw materials and intermediate products used in production processes to make products. Here are some simple steps that any business can take to save resources mainly Raw materials-

- Decrease the amount of raw materials used by improving the efficiency of operation.
- Buy durable, long-lasting materials and equipment.
- Use raw materials that are non-toxic or that pollute less, such as water-based paints rather than solvent-based paints.
- Use recycled materials where possible
- Create less waste by reducing the amount of packaging.

- Encourage recycling wherever possible—consider working together with other businesses to share the cost of recycling.

Step IV- Assess operations of your facility

Consider the impact and efficiency of the operations in your facility (e.g. energy intensity, greenhouse gas generation, emissions to air and water). This step focuses on the key processing and manufacturing functions and designing of activities and the related back-office functions from more environment friendly point of view as well as reducing the emissions that arise from these operations. There are various small initiatives that an entrepreneur can take so as to make the operations more fruitful.

- Review water usage and see if one can eliminate any waste by, for example, replacing leaking fixtures or turning water off when not in use.
- Reduce water pressure where possible.
- Buy vehicles that are fuel efficient or use alternative power sources.
- Minimize driving by planning deliveries and pickups carefully.
- Keep your vehicles well maintained.
- Educate drivers about fuel-efficient driving (e.g., driving at the speed limit, reducing idling time, keeping tires inflated).
- Purchase energy-efficient equipment, such as those with the Energy Star seal. This equipment can save you up to 75% in energy costs.
- Install occupancy sensors on lights in less-used areas.
- Use energy-efficient light bulbs.
- Make use of windows and blinds to help manage temperature and lighting conditions.
- Install reflectors on light fixtures to make them more efficient.
- Turn off equipment, such as computers, monitors, photocopiers and appliances, when not in use.
- Use cold water instead of hot where possible.
- Consider alternative electricity sources, such as wind-turbines or solar panels.
- Keep equipment well maintained.
- Consider using new teleconferencing technology rather than travelling.
- Use less paper or renew/recycle the waste paper.

Step V- Evaluate your products

Identify factors such as energy consumption in use, recyclability and use of hazardous substances that help determine how sustainable the end product is. These are the items or goods that a business deliver to market and that – in their own right – will have a range of environmental qualities and impact arising from their composition and use. Some examples of eco-friendly products are:

- Products that are renewable and biodegradable - paper or cloth bags; toys and other materials made of wood, clay, or straw; organic cleaning solutions; etc.
- Non-motorized vehicles: bicycles
- Transport systems that run on renewable energy: electric vehicles, solar-powered planes, solar-powered pumps
- Rubber products: tires, tubes, etc.
- Products made of straw, reeds, bamboo: mats, curtains, toys
- Products made from cotton: dresses, curtains, etc.
- Organic dyes, food additives, etc.
- Packing material made out of eco-friendly chemicals.
- Cruelty free products that do not perform animal testing.
- Product that can be disposed of in a manner that is neutral to the environment.

IMPROVE

Step VI- Understand measured results

Read and interpret your indicators and understand trends in your performance. An entrepreneur can now understand and realise the benefits of a better environmental performance. The work involved in identifying and tracking indicators will yield significant information that can help to improve knowledge, strategy and results. The next step is to understand the different ways to review and analyse the information generated by the indicators to identify options for improving the performance of your facility. Thus this step involves an overview of the above mentioned performance indicators and how those indicators can further be improved and made more environment friendly. What corrections can be made and how the overall results can be improved.

Step VII- Take action to improve performance

Choose opportunities to improve business performance and create action plans to implement them. In the previous step, an entrepreneur has established the baseline performance on selected indicators. Entrepreneur has reviewed the data and taken decisions on options for improving performance. Now, one needs to make decisions happen – by setting clear targets and creating a tangible action plan. Thus, in the last step an entrepreneur needs to keep on improving his goals and include more and more sustainable manufacturing indicators so that the business can sustain for longer period.

Conclusion

To sum up, the “green” entrepreneurship is an economic activity whose products, services, methods of production or organization have positive effect on the environment. This effect could be a result of any of the following: Offering products or services the consumption of which leads to a change in the consumer’s behaviour, reducing the negative effect on the environment; Equalizing the ecological and the economic goals of the company; Introducing innovative ecological solutions to problems connected with production and consumption of products and services; Developing business models which, when applied to use, might lead to a sustainable economic development; Discovering new possibilities on the market which are in connection with the demand and new way of living of the society.

Entrepreneurship is considered to be the moving force of the economy, assuring economic growth, technological and organizational innovations, and new workplaces. Training staff to work in the field of “eco-entrepreneurship”, as well as finding ecologically engaged people who have developed a plan for solving an environmental issue, is the key strategy for the success of the “green” idea.

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