

INNOVATION – A KEY TO SUSTAINABILITY

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ABSTRACT

From the beginning of time, mankind has been in pursuit of knowledge and has endeavoured to use this knowledge to improve quality of life. However the by-products of modern civilization cause legitimate concerns such as rising carbon dioxide levels in the atmosphere, bio accumulating toxins and threatened ecosystems.

Price, quality and function drive business but it is increasingly realised that ecological and social factors affect consumer behaviour. Society is taking an active role in determining what is acceptable and what is unacceptable. The challenge to business sustainability is to understand and anticipate societal needs, as well as the effects of innovation and new technology and include these factors in the delivery of products and services to the market.

Major changes have been seen in recent years in the business landscape: use of internet, industry convergence, declining moral standards, etc. Business is realising that cutting costs, evolutionary changes and increasing efficiency alone, will not sustain long-term business success.

The challenge, based on problems and needs, is to deliver more with fewer resources and to deliver new products and services faster and cheaper within the broader concept of sustainability, taking into account social, political and cultural conditions.

A short case study will also be presented.

Keywords: *environmental, societal, economics, innovation*

INTRODUCTION

Both the words 'innovation' and 'sustainability' are very often used in business. It is also deemed that innovation will always be sustainable. There is nothing further away from the truth. It is not always clear if innovation will bring greater risks than benefits. The innovation by financial experts that created the financial meltdown is a typical example of the downside risk being greater than the upside benefits to society.

If we look back over time, innovation had a very high survival value for humans in the development over the centuries, perhaps the highest value of all. But to ensure this we need a clear understanding of the meaning of innovation and sustainability. So often innovation and creativity are used as synonyms and sustainability is seen as the ability to keep on producing profits over a long period of time. It is essential to have a proper understanding of innovation and sustainability to understand the essential interrelationship to ensure not only the survival and the prospering of a business but also a sustainable society.

1. Innovation

Innovation is not a single act or step to change the way society operates. Innovation is the ability to put the creative insight to practical use, to make something better. Innovation is a process that is not only based on challenges, problems and needs but has to take into account social, political and cultural conditions prevailing in the prospective market. It can only be called innovation if the practical end is new, better and a step forward. Innovation is a complete process from idea (creative) to research, development, demonstration (pilot facility) and to commercialisation. This process is analysed as follows:

1.1 The initial idea

The start of the innovative process is a new idea through creativity. It is not an imitation of something existing and is not something carried over from earlier times - it is original. Creativity is the great enabler of innovation. The pursuit of this new knowledge is intrinsic to humankind. The ability to think and formulate ideas gave humankind the aptitude to build new concepts. As important as the initial idea is, it is not sufficient and is not truly an innovation until it has undergone further development.

1.2 Research

Ideas put forward certain concepts and need to be tested in an environment where this new idea is evaluated, free from preconception and bias. It is important that the robust independence of the research process as well as the independence of the researcher is ensured. If this is not the case, good ideas can be dumped and not properly researched because of the preconception of the researcher or the person that has to ensure that the idea is taken through its steps to become an innovation.

1.3 Development

After proof of fundamental concept through research, there has to be a development process to apply the elements of practicality and economy to the now proven fundamental concept. This is to create a theoretical application of the idea on the current situation and to prove that the new idea can be integrated into the current business environment where the cost of implementation is less than the benefit it will create. Here again it is essential that the people responsible for this development phase have the ability to think efficiently and innovatively, that is, have the ability to recognise patterns, relationships and visualise the relationships between elements and perceived new patterns of meaning, leading to better and more useful conclusions. There must be an assurance that ideas, facts, impressions and elements from experience are linked, so that new configurations of meaning can be recognised. This will ensure that a new idea, where the concept has been proven, is not dumped due to the shortsightedness of the person responsible for development of this concept.

1.4 Demonstration of a working concept

In this phase the best idea or ideas are tested in a pilot form or a scalable manufacturing process. This is a critical phase where cost/benefit analysis, as well as budgeting, needs to be done at all times so that the risks of future large costs without benefits are reduced to a minimum. This is the phase where the scalability of the proven idea is actually put into practice. The proven concept is mixed with existing knowledge and new concepts to realise the theoretically proven idea. At this stage the development team must be open to new inputs and new practices. Only after the successful completion of this phase is it possible to contemplate commercialisation.

1.5 Commercialisation

Now that the creative idea has been technically proven, that it is commercially scalable and that there is theoretical proof of economical benefit, the process of commercialisation can be started. It must be remembered that at this stage the people involved in the process have been working in isolation and are far advanced in their thinking processes with regard to the new idea. Therefore the development team should not be seen as the implementation team as they will find it difficult to work with others who do not immediately see the benefit of this new concept which could lead to major conflict and the death of the new concept.

At the beginning of the commercialisation phase, the protection of intellectual property and the different business models have to be investigated.

Although the above steps seem like a linear process, in practice it is often messy and fraught with dead-ends. The whole process of initial idea to the start of commercialisation is the innovative process and can be seen as innovation. Innovation can focus on existing processes or a complete new process can be created. From the aforementioned, it is clear that innovation is not only the creative new idea but also a complete process of creativity, new ways of thinking, alternative recognition of patterns and relationships that are combined with existing knowledge. This is creativity brought down to ground level.

1.6 Sustainability

Sustainability is wrongly defined as the ability to create economic gain in the long-term for the shareholders. This is only one part of sustainability. The market recognises ecological and social factors, more now than ever before as part of sustainability. People fear the unknown, especially when they believe that innovation could adversely affect their health or threaten established social systems. Sustainability is to enable prolonged human existence. New products do not only have to be faster and cheaper, but also need fewer resources and less impact on the environment.

What constitutes sustainability is not determined by business, but by society taking a more active role in determining the elements of sustainability. Sustainability offers a broader concept taking into account environmental, social, political and cultural conditions. What is acceptable and what is unacceptable in new innovation drives consumer behaviour.

Sustainability has three major elements against which it is measured in the long-term:

- environment - sustainability is defined by any action that has a positive or at least minimal negative ecological impact now and in the future;
- social - sustainability in social terms should improve the quality of life for humankind: this implies the current generation not negatively affecting future generations;
- economic - sustainability in economic terms refers to ensuring that any action should warrant an economical benefit. This benefit should be in the short-term as well as in the long-term.

1.7 The integration of sustainability and innovation

Sustainability is of utmost importance for any enterprise to succeed. Should no innovation take place, the future survival of the enterprise will be uncertain. This is however only true if the new innovations are turned into sustainable businesses that are accepted by the society at large. For this to be realised, both innovation and sustainability will have to be integrated into business processes. This can be achieved by ensuring that all people in an organisation are aware of the demands and limits imposed by the issues of sustainability. It could easily be said that this hampers creativity and innovation. It should rather be seen as an overall directing force to ensure the benefit of innovation in society. This is also a risk mitigation process against large financial losses where great amounts are spent on research and development only to find that the end-product is not sustainable.

To ensure that the outcome of the innovation process is successful that is, sustainable in the long term, management has to ensure the following.

1.7.1 Sustainability is part of the creative process

Management needs to ensure employees understand the link between needs of communities and how to address these problems. This is not only a matter of technical training, but they also need to understand issues including how markets work, what markets need and how people interact and evaluate. This will ensure that creativity is directed to take sustainability into account. Taking sustainability into account will ensure that the employees understand the current world challenges from different perspectives.

1.7.2 Sustainability considerations are part of the management of the innovation development process

The development process ensures the conversion of an idea into financial value. This is an ongoing managed and evaluated process, ensuring a positive outcome. This management process should incorporate additional criteria for evaluation of sustainability issues, ensuring that the final outcome is not only a complete innovation (idea to product) but that the innovation is sustainable. The management process has to be evaluated to incorporate sustainability in such a way that it can be formally assessed.

1.7.3 External viewpoints enrich the creative and innovation development process

Sustainability cannot only be assessed by the enterprise. An enterprise would need the input of external views. In the development, the earlier external views are considered, not only on the technical side but also on the societal impact and concerns, the bigger the chance that the innovation will be successful and last-minute market failures are avoided. Various different approaches are available to engage stakeholders and measures need to be taken to ensure that information does not get into the wrong hands.

1.7.4 Develop an innovation process to best leverage the value of intellectual capital

There is always a risk in engaging stakeholders outside the enterprise during the development process but protecting the intellectual property of the enterprise can control this. The decision to protect the newly created knowledge should be done as soon as some likelihood of success is anticipated. This is done through patents, copyrights, secrecy or publication in the public domain. In considering protection of intellectual property rights, the enterprise should determine which means would generate the most business and societal value. In this process, the distribution of value should be balanced, ensuring reasonable sharing of benefits with specific groups.

CONCLUSION

The integration of sustainability, thinking and innovation process is not a limiting factor for an enterprise, but rather an opportunity in the best interest of the project and society, who ultimately pay for failure.

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