

Managing Innovation Report

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Introduction

Innovation is defined as the new ideas, new imaginations or creative thoughts that can be applied to a system or organisation in the form of a method or technique, according to Loukis, Charalabidis and Androutsopoulou (2017). Open innovation is a model which assumes that organisations should use external and internal ideas, external and internal paths for marketing, to make advancement in their business (Martín-de Castro, 2015). Open Innovation introduced an idea that organisations can make use of the knowledge from various sources for enhancing innovation and deliver value to customers (Martín-de Castro, 2015). Open Innovation was not designed only for private organisations, the model can be adopted by other innovative entities that non-profit organisations and universities.

In business innovation model, the organisations are responsible to rethink about their current business for generating revenue streams. For this purpose, organisations have to improve their existing business model to increase the value of their business.

Innovation Theories

Martín-de Castro (2015) further stated that there are two innovation theories used for this report. The first theory used for this report is the Open Innovation theory. Open Innovation is defined as the use of purposeful outflows and inflows of knowledge for accelerating internal innovation while expanding markets for the use of innovation externally.

Open Innovation Model Processes

Open innovation defines the process through which organisations utilise and access external innovation. Open Innovation model processes are capable of combining external and

internal ideas into systems and architectures. According to Martín-de Castro (2015), open innovation model processes employ business models for defining the requirements for systems and architectures.

Principles of Open Innovation Model

To implement open innovation model, the organisations should focus on the following principles of open innovation model:

- The organisations must find and gain the knowledge and expertise of individuals outside the organisation.
- The organisation must know that external research and development may create value in the market whereas the internal research and development is required for claiming a portion of that value (Open Innovation, 2020).
- The organisations should focus on building better business models rather than focusing on the market needs first (Open Innovation, 2020).
- The organisations must make better use of the internal and external ideas to make progress in the market.
- The organisation should gain profit from others using their IP and should buy other organisation's IP when it makes advancement in the business model of the organisation.

Benefits of Open Innovation Theory

Martín-de Castro (2015) mentioned in the study that there are several benefits for the organisations that adopt Open innovation model for their businesses:

Quality of Services and Products

Open innovation can help the organisations to increase the level of their performance, in this way TerraCycle can generate revenues and work on the different process of innovations. Schuurman (2015) argued that integrating the feedback from the partner firms during the innovative process can enable TerraCycle to target their development efforts to improve the quality of their services and products (Brant and Lohse, 2014).

Less Costs and Risks

Obtaining the technology and skills from external sources is beneficial for the organisations and to gain these benefits TerraCycle need to create inputs and reduce the risks and costs linked with the development of a product (Brant and Lohse, 2014).

Flexibility

As the market conditions are changing rapidly, Open Innovation will be beneficial for TerraCycle as it permits the organisation to become flexible and adapt the knowledge based on shifting commercial needs (Brant and Lohse, 2014).

Monetisation

Open innovation will enable TerraCycle to spread its business model and make advancement in their technology (Brant and Lohse, 2014). TerraCycle can monetise their development investments through Open innovation. Through Open Innovation, TerraCycle organisation can employ their ideas in the market.

Open innovation will allow TerraCycle to gain profit from the assets of their partners that includes investor relationships and reputations (Brant and Lohse, 2014). New opportunities open when the trust is developed between partners which may further deepen the collaboration and sharing between TerraCycle and other organisations. Moreover, Schuurman (2015) added that open innovation produce benefits that are helpful for innovation and technological advancement. Furthermore, Open innovation divides the labour and specialisation in development, in this way opportunities are provided for the TerraCycle organisation to commercialise new solutions.

Limitations of Open Innovation Model

According to Schuurman (2015), the open innovation model will impose a few limitations on TerraCycle, as the model advocates the use of organisational form that has further limitations in the complex (problem-solving) environment such as innovation. In order to implement open innovation model, TerraCycle should know that as the problems become more complex, the limitations of hierarchy (authority-based) are reached quickly, and another hierarchy (consensus-based) is introduced.

The second theory TerraCycle will be using is the Business model innovation. It defines innovation processes on the basis that how the organisations deliver and creates value which is opposing to the concept of creating new service and product (Santoro et al., 2018). Business model innovation helps to develop the concept that supports organisations financial viability that includes the processes and mission to make the concept fruitful for the organisation.

Business Model Innovation Processes

The business model innovation processes have been intact with sound business principles. These business principles have been outlined with the help of core business principles:

- Value proposition: the creation of unique and new value for customers
- Resources: Resources required for delivering the customer value proposition must be kept secure
- Processes: The organisation must identify the fundamental business processes for delivering the customer value proposition
- Profit model: The organisations must design a profit model to gain profit

The organisation must focus on these four features for making innovation in its business model.

Principles of Business Model Innovation

For applying the business model innovation, organisations should consider the following processes:

Analysing the Current Business Model

The organisation must identify the market and its offerings that how the value proposition of the organisation was created, how the revenue was generated (Kylliäinen, 2020). The organisation can design a business model canvas for this process.

Confront the Business Model

Innovation is essential for the advancement of business and for this purpose the organisation must create ideas that propose a challenge in the market and ensure that what the current market demands. Out of the box ideas are required to innovate the business of the organisation. When the organisation is struggling with the advancement in their business, they must confront their business model for innovation (Kylliäinen, 2020).

Consistency of Business Model

The organisations must ensure that the business model is kept consistent with long term vision of the organisation.

Plotting and Testing

The organisation must make iterations in the business model based on the findings, the organisation must test the business model and the success and failure factors associated with it.

Benefits of Business Model Innovation

Financial Sustainability

The biggest advantage of business model innovation is that it will provide contributions to making TerraCycle sustainable and can cope with the shifts in market conditions. Most of the organisation close their business doors because they have been unable to manage their financial situation. Therefore, a business model innovation will be beneficial for TerraCycle to make a profit each month.

Investment

The investors are well informed of the fact of business failures. Investors want to have a clear knowledge of the TerraCycle plans for profitability. A proper business model and profit statement will provide a huge benefit to TerraCycle over the competitors in the market and profitable investment will be provided by the investors (Ingram, 2020).

Plans for Advancement

An innovative business model will provide benefits and profit to TerraCycle consistently. A solid business model will be helpful to build cash reserves in TerraCycle that will be used for investing in equipment, development efforts and property (Ingram, 2020).

Moreover, business model innovations yield higher revenues as compared to the process and product innovations. According to Geissdoerfer, Vladimirova and Evans (2018), sustainable business models provide the benefit to mitigate higher risk and resilience. Business model innovation focuses on stakeholder value and benefit rather than focusing on customer benefit (Geissdoerfer, Vladimirova and Evans, 2018).

Limitations of Business Model Innovation

TerraCycle should know that in business model innovation, the business model canvas has limitations that make the canvas less dynamic. The business model canvas has multiple theoretical views that are not linked with each other. The business model canvas does not consist of theoretical features of dynamic capabilities that declares its static foundations (Rodrigues and Lopes, 2018). The business model canvas monitors and evaluates its results, and it consists of a rudimentary indicator for measuring the value that revenue generated minus cost structure

(Rodrigues and Lopes, 2018). Moreover, the business model canvas does not comprise two main elements of a business model that the customer need and the product or service. The business model canvas does not allow to represent two-sided markets and networks.

Application of the Open Innovation Theory in the Historical Development Context

Company Background

Leading consumer product companies, cities, facilities and retailers are partnered with TerraCycle to reprocess packages and products from cigarettes butts to dirty diaper that would end up burnt or landfilled otherwise. TerraCycle is working with top product companies to integrate products which are difficult to recycle such as ocean plastic. It is one of the fastest developing companies and is the world’s leading company in terms of using and collecting non-recyclable waste (Li, 2015). TerraCycle has implemented a business model canvas to make advance their business in the market as shown in the table.

TerraCycle’s Business Model Canvas

<p style="text-align: center;">Offer Customers</p> <ul style="list-style-type: none"> ✓ Consumer goods ✓ Environmental choices <p style="text-align: center;">Value chain</p> <ul style="list-style-type: none"> ✓ Motivating people to collect wastes 	<p style="text-align: center;">Customers</p> <ul style="list-style-type: none"> ✓ Market consumers ✓ Manufacturing companies <p style="text-align: center;">Value Proposition</p> <ul style="list-style-type: none"> ✓ Cash compensation ✓ Protecting the environment and
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<ul style="list-style-type: none"> ✓ Paying by cash or "points" ✓ Recycling or upcycling the waste <p>Key Partners</p> <ul style="list-style-type: none"> ✓ Recycling companies ✓ Shipping and freight companies <p>Core capabilities</p> <ul style="list-style-type: none"> ✓ Manufacturing skills <p>Distribution architecture</p> <ul style="list-style-type: none"> ✓ Combining customers and partners ✓ Media publicity ✓ Contests and curriculum <p>Customers Segment</p>	<p>saving resources.</p> <ul style="list-style-type: none"> ✓ Cooperation for collection and further usage of waste considered non-recyclable. <p>Key Activities</p> <ul style="list-style-type: none"> ✓ Design reusing/recycling process ✓ Organize collection marketing and PR. <p>Key Resources</p> <ul style="list-style-type: none"> ✓ Human resources ✓ Volunteers ✓ Technological know-how ✓ Brand recognition ✓ Operational know-how <p>Channels</p>
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<ul style="list-style-type: none"> ✓ Perishable goods producers ✓ Retail sector ✓ Municipalities ✓ NGOs and individuals with specific environmental concerns 	<ul style="list-style-type: none"> ✓ Customer approaches TerraCycle for corporation ✓ Customers reach directly
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Revenue Model

<p>Cost structure</p> <ul style="list-style-type: none"> ✓ Compensation for the collectors ✓ Other kindness activities 	<p>Revenue streams</p> <ul style="list-style-type: none"> ✓ Sales of reclaimed materials ✓ Zero waste box revenue ✓ Annual fixed fee for collection programmes ✓ Revenues from selling used materials
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Source: Bukowski and Rok (2019)

TerraCycle took its start with eco-friendly fertilizer which is produced from waste and worms. It is directing towards eliminating the waste and save resources and it makes an important impact on the world-wide environmental concerns. In twelve years, it aimed at making waste into new use again. The reuse of cigarette butts and many other recycles are incredibly far beyond once imagination, these are further recycled into plastic pellets to produce industrial

goods. Due to low subsidies and donations from government, TerraCycle has started social entrepreneurship to instrument the social mission of telling world the value of environment protection. Collectors are paid in cash and the financing problem is solved and, in the meantime, promote the company's value and social impact is improved through their products in the market (Li, 2014). During twelve years, TerraCycle has developed over 200 products and these products are licensed to the manufacturers. TerraCycle were involved in the manufacture of fertilisers that are made by Vermicompost. Vermicompost are formed when organic waste is fed to worms. The worms are liquefied into compost tea and this is done by mixing the compost tea with warm water and air in vats. In 2007, TerraCycle expanded its production into upcycling and started to develop their products from waste materials. TerraCycle was unable to upcycle the plastic packaging waste, these wastes were then recycled into raw materials which are used in the plastic products. TerraCycle is a recycling company introduced different recycling programs that enabled the individuals to collect waste items. In 2019, TerraCycle revealed a loop that provides a packaging platform for companies having consumer packaged goods. This system provides shipping facilities through UPS and ships personal care products, food materials and cleaning products in a reusable container. These products are distributed from these reusable containers.

Open Innovation Model and Business Model Innovation

The application of open innovation model in TerraCycle is dependent on the external sources as it is the principle of open innovation model to gain knowledge and expertise from external sources/individuals and this is critical to the process of innovation in any organisation. The open innovation model will aim to improve the abilities of TerraCycle to provide new ideas for solutions and products through external ideas given by partners and consumers to accomplish

success in the market. TerraCycle applies the open innovation model to build external strength through recycling or upcycling programs. The company aim to collaborate with leading consumer product companies and retailers to find various solutions. These programs will provide product support for entrepreneurs which will help the entrepreneurs to build new services and products. According to Mortara et al. (2009), TerraCycle will have to focus on building independent open innovation teams that will work within the company and this will be the best choice to implement open innovation. Moreover, TerraCycle will need the skills to implement open innovation because lack of appropriate skills will be an obstacle in implementation of open innovation (Mortara et al., 2009). TerraCycle may adopt this model on stages between entrepreneurs and team or maybe on stages between the company and consumers. The open innovation model will involve the consumers in the production process and TerraCycle will use the suggestions given by external ideas/partners and these ideas can be processed in order to develop new products. According to Lee, Park, Yoon and Park (2010), it is suggested that more focus should be given on the latter part of the traditional open innovation model so that the model is applied within TerraCycle. Open innovation model is applied to companies that are working with other firms which are specialised in marketing, which had an active collaboration and contribution in the innovation process as it is the case with TerraCycle which is partnered with leading consumer product companies and retailers.

According to Cosyns and Cornfield (2018), waste is something that has no value and if it is left untreated, it offers negative value to the society and environment. TerraCycle will be applying the business model innovation for waste upcycling and recycling. There are three mechanisms for achieving sustainable business model innovation to create value from waste that involves the reduction of waste, for example, revert the waste to production stream for recycling,

create value from waste in the form of upcycling (Cosyns and Cornfield, 2018). Reduction of waste will improve based on the current business model but TerraCycle must apply business model innovation to create value from the waste.

Application of the Given Theories in Future Development Context

Recycling programs which are funded by various brands retailers and manufactures are offered by TerraCycle to the world and other organisations to help them collect and recycle the hard to recycle waste in terms of future perspective. Start the collection in-home or anywhere and send the waste to be recycled by the TerraCycle. Rewards can be earned or favourite non-profit. After thorough planning and rigorous testing, TerraCycle has revealed Loop, which they believe would be revolutionary in packaging and will provide pathways for more development in the packaging industry. The new shopping system should provide various products in refillable and reusable packaging. Moreover, many products which were viewed as unproductive to processes such as pens, razor blades and diapers will be recycled (TerraCycle, 2020).

Every operation of TerraCycle provided the idea of circular economy. The recycling course would be highly sustainable and efficient, otherwise, it will affect the TerraCycle's brand and reputation. The company majorly works on its collection programmes and this will help other manufacturing companies. Program extensions goal would be to reassure that the products made from recycled materials are recyclable and the tack back for the system exists. It will not take substantial resources to create a system like this because the already existing and functioning point's collection could be used (Bukowski and Rok, 2019).

In the next decade, the open innovation model will play a significant role in developed economies. Innovation will be fuelled by new emerging technological trends and sustainable

development goals will join them. Rapid growth in the economy of China poses challenges and opportunities in the implementation of open innovation model. Consumers of middle income will increase and that will cause a tremendous increase in growth all over the world. The innovation will evolve itself therefore there must be policy prepared in order to adjust. Financial support for start-up projects will be created by the rise of crowdfunding. Consistent increase in innovation ecosystem will have vital implications for antitrust regulation. According to Bogers, Chesbrough and Moedas (2018), anti-trust protection will be needed by the consumers but corporation among the competitors will be pro-social in some contexts of open innovation.

Conclusion

Innovative business model and operation method is provided by TerraCycle, which is a typical social enterprise, and a source of inspiration for many others. The model social entrepreneurship will be an example for people to cope against urgent challenges of social pressure. In order to maintain a balance between social morals and economic profits, appropriate operations are necessary for a social enterprise to achieve its social mission. Consequently, the social enterprises will make path to create new business models (Li,2014). It is crucial to identify and address the innovatory abilities according to the context of open innovation as shifting from closed to open innovation pose challenges. According to Lee et al. (2010), small and medium-sized organisation are good at innovations but lack potential resources that's why it is suggested that they should collaborate with other firms at the stage of commercialization to boost open innovation.

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