

Skills for the Workplace

Module Assignment Submission

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Executive Summary

Stockholm products is a company based in Sweden part of a conglomerate of Munich Gases. Having been established for over 80 years the company has a rich history for research and development and are front runners for supplying carbon dioxide to the drinks and beverages industry and liquid oxygen to the health care markets. With a workforce in excess of 32,000 in more than 70 countries across the globe, last year the company sales revenue was a staggering £12.1 billion and having set aside £100 million annually for research and development a 10% budget on a single project has been discussed as whether to invest in a new teeth whitening product or not.

Introduction

The focus of this report is to investigate the impact strategic management and innovation has on Munich Gases approach to developing a new teeth whitening product.

By examining concepts of strategic management and innovation, the author is expected to apply critical thinking to a case study scenario that ultimately recommends either yes or no to one of two possible investment opportunities. A decision is required to determine whether the company targets the professional or the consumer market. In order to do this, the author will also critically evaluate the concepts of open and closed innovation and why it is important in the ever evolving business world.

According to (Ansoff, 2007) it is imperative to be able to recognise, analyse and apply creative thinking not only as an individual, but also as a team within the organisation. Ojugo (2019), maintains that Team Working (Together, Everyone, Achieves, More, With, Realistic, Knowledge Incorporating, Innovating Necessary Goals) is an important ingredient for any organisation to flourish. Hagemann, 2017 expresses taking a holistic view so you can view the whole industry the world over.

(Schumpeterian) explains a successful business must be ready willing and able to explore open and closed methods of innovation, the author will elaborate on Schumpeterian's models and take the point of view from one of the management team and discuss whether the new product was financially and ethically viable or not.

Schumpeter's Theory of Innovation

Schumpeter's theory, is a concept that is largely congruous with contemporary understanding of what we know to be the business cycle and that age old alliance between investment and production to create and maintain market share. So changes in investment, with increased returns on that investment are suggested as the main factors driving fluctuations in the business world. Schumpeter points to business innovation as the main driver for increases in investment and thus movement of capital will manifest as fluctuations in business.

So what is innovation? According to The Oxford Dictionary, innovation is [quite simply] the introduction of new things, ideas or ways of doing something. Schumpeter expands on this by suggesting that innovation can also mean changes in the following:

- Production methods and/or transportation,
- Bringing a new product to market,
- Business environment such as bringing a new product to market
- Organizational structure to facilitate it

- change in the industrial organization, opening up of a new market, etc.

Schumpeter went on to explain that a two strand approximation process facilitates innovation. The first stage focuses on the basic impact of ideas that are themselves innovative, leading to the second stage which addresses the subsequent market reaction as a result of applying said innovations.

Approximation Strands

Approximation Strand 1

This strand assumes a stable economic system is in place. It is further assumed that a firm's costs are marginally equal to their revenue so if a new strand of production presents itself this would require financing through bank lending, because there is no surplus money to finance anything but the status quo. So marginal cost (mc) equals marginal revenue (mr) and price equals average cost (ac).

The additional funds supplied by the bank enables the firm to bid on higher prices for activities which will eventually mean, reducing other expenditures to be gradually withdrawn from other inputs that are increasingly less vital to their business due to the investment. The aforementioned sees increased investments lead to higher prices. As the process expands it attracts other firms to invest and grow the innovation. As output increases profitability will inevitably decrease because the innovation machine has saturated and a new "gig" is required. So firms begin to pay back the bank meaning money coming in is reduced and prices begin to fall leading to recession until the economy returns to balance.

Approximation Strand 2

This second approximation strand is about the effects of the first approximation strand which is primarily concerned with speculation. Speculators assume good fortune to be long term and borrows significantly to satisfy this and feeds the growth further. The investment frenzy inevitably leads to debt as some investors struggle to meet their obligations eventually leading to depression in the market as the bottom line begins to fall.

Schumpeter's theory of innovation is not without its critics and there are some notable shortcomings. For example:

- Schumpeter's theory of the business cycle heavily relies on sociological factors as opposed to economics and this makes it difficult to be objective about what he espouses objectively.
- There is little difference between what Schumpeter says and what we know of theories about over-investment where saturation either devalues the potential of the product or limits of the innovation are reached way before the investments stop. The only distinguishing element of note identifies investment variation during a period economic stability.
- Schumpeter's theory like others fails to recognise other factors other than innovation that may cause economies to fluctuate.

Shortcomings aside, Schumpeter's innovation theory is widely accepted as an important gauge in modern economies to explain and even predict trends economic fluctuations. Hence seemingly random falls and rises in stock market shares appear to be explained in layman's terms by referring to an as yet unseen, yet revered and "desperately emotional" entity known as market confidence.

Open or closed for business

Innovation is can broadly be placed in two categories. These are either an open or a closed approach. Innovation management and its demands have changed a lot over the past several years.

Traditionally, the research and development department within a company is the main source of innovation but increased demands are often better suited by opening up innovation to the outside world, which challenges the classical understanding. Here we look at both approaches: open innovation and closed innovation (Tidd, and Bessant,2009).

The Difference

Open and closed innovation are primarily different by the way in which innovation is generated. Closed innovation companies operate under a self-contained innovative environment while open innovation companies source external knowledge for their innovation management strategies (Tidd, and Bessant,. 2009).

Closed innovation companies operate under the view that innovations are created by staff within a company, from ideation to development and marketing. The innovative process exclusively takes place within the company. It is impossible for closed innovative companies to open to the outside for information if they remain under such a model. All technology, know-how, intellectual property and processes stay under the closed innovative company's control. In order to implement a successful closed innovation within a company, certain factors must be taken into consideration, such as the high demands that closed innovation places on employees (Trott, 2008).

Open innovative companies expand the innovation process beyond the four walls of a business, expanding company boundaries to the outside world to increase innovative potential by making active and strategic use of the environment around them. Innovation in open innovative companies comes then through the combination of both internal and external ideas, processes, technologies and sales channels with the aim to produce the most innovative services, products and/or business models. Customers, suppliers, LEAD users, employees, competitors and companies of other industries can all influence an open innovative company's ideation processes (Trott, 2008).

What About the Role of R&D?

Research and development departments are not done away with in open innovation. With closed innovation, R&D is responsible for the development, design and marketing of in-house innovations. This can be a benefit as it can offer a long-term competitive advantage for some companies.

However, when innovation comes from both inside and outside, R&D is vital to help capture a large part of the external value and still plays an active role in the process of innovation (Trott, 2008).

Open Innovation is Constantly Growing

Closed innovation has gradually become less important over the past few years. This is due to several factors, including the increasing availability of venture capital, the mobility and availability of qualified specialists and the growing number of competent customers as well as suppliers who are specialized and available as partners in cooperation (Tidd and Bessant, 2009).

As a result, the innovative environment of companies is growing to be widely important and the quality and quantity of wisdom from outside sources is continually increasing, adding more value to the improvements of a company's innovative structure and processes.

What price innovation?

“We are betting – taking calculated risks rather than random throws of the dice but nonetheless gambling – that we can make this new thing happen (manage the complex project through to successful completion) and that it will deliver us the calculated value which exceeds or at least equals what we put into it.”

Tidd, J. and Bessant, J (2009),

According to Tidd and Bessant (2009), innovation and the choice to invest in it is a calculated shot in the dark that may appear random but essentially assesses appetite for risk and reward. In a series of case studies in their 2009 publication they explore innovation, elevating it to being the most important component of a business's arsenal. *Innovation is driven by the ability to see connections, to spot opportunities and to take advantage of them* (Tidd, Bessant 2009).

The central strand running through their work is that innovation matters and it is not as simplistic as that light bulb moment that suddenly alters the trajectory of all before it. Innovation can therefore mean working more smartly to achieve outcomes in spite of monetary investment or resourcing. This is often referred to as hidden innovation, a concept discussed at length in a 2006 report entitled 'The Innovation Gap' published by the UK organisation NESTA.

The central strand running through the report is that hidden innovation is not part of the traditional stream of indicators, such as research and development investments or patents. The research focuses on the following six sectors listed below. They embody the term “hidden innovation” to which four applicable hidden innovation types would apply:

- Education
- Rehabilitation of offenders
- Oil exploration/production
- Retail level banking
- Legal aid service provision
- Construction

Four hidden innovation types

Type 1 – This type is considered to be almost identical to traditional indicators but cannot be measured. The example given is oil exploration and the application of new technology.

Type 2 - Innovation that is neither scientific or has a technological angle, typically intangibles such as organizational forms/business models. The example given here is the development of new relationships between construction projects made better by improving interactions between the client and the supplier.

Type 3 – This type combines existing technology and processes. It is typified by the way banks have consolidated some back office services to develop other innovations for customers namely internet banking.

Type 4: Locally-developed, small-scale innovations that take place ‘under the radar’, not only

of traditional indicators but often also of many of the organizations and individuals working in a sector. For example, the everyday innovation that occurs in classrooms and multidisciplinary construction teams.

Tidd, J. and Bessant are very forthright when they explain the importance of innovation and why it ought to be considered the rule rather than the exception to companies. They go as far as saying that any company that fails to invest in innovation puts their very future at risk. So success or failure is a result of a company's ability to successfully employ innovative practices.

This cautionary sentiment is something Chandy and Tellis (1997) mentioned in their report entitled "Organizing for Radical Product Innovation". They suggest that radical innovations are important to the success of a company, because innovation eventually defines market share and will either inflate or depress fortunes and interestingly, it is not certain that the size of a firm is important to its success. They cite Xerox as a company that managed to gain a huge market share by being innovative in plain paper copying. Polaroid climbed to similar heights but are also an example of complacency leading to a very public demise as the advent of digital media transfer deemed their previously innovative practises obsolete or niche.

The aforementioned NESTA report (2006) mentions the importance of context and perception when referring to innovation. There is a disparity between what is perceived to be innovative practices and those that fall short. In a nutshell the UK performs poorly when measured against traditional metrics of innovation, yet this is not reflected in the UK's standing as the 5th largest economy in the world. For example, UK business consistently commits less resources on research and development than counterparts in Germany, France and the USA. In 2002, the European Council agreed targets for research and development in the EU of 3% per GDP. By 2003, EU members were reported to have maintained this target as a minimum yet the UK only spent 1.9% of GDP.

Despite this fact the NESTA report suggests there is ample mitigation to explain why traditional metrics do not reflect the UK's position and states that policy needs to reflect the reality of innovation in the UK. The UK economy is distinguishable from its counterparts due to its unique position as a thriving service economy and also performs extremely well in the pharmaceuticals industry, this trajectory can only have come about by employing forms of innovation that may be considered hidden. Clearly the UK's methods are not reflected in the traditional metrics that are themselves outdated. The UK performs well in some sectors and thrives due to its ability to ensure it is appropriately placed in what are a set of interdependencies that rely on that important relationship between the client and the service provider, supply and demand.

Being radical is perhaps the by-product of a culture of innovation. It is often the case however, that businesses will "cannibalise" elements of their business to obtain a product foothold. This is demonstrated by the retail giant Tesco, where in order to tap into the convenience store market they established smaller Tesco metro stores that were physically smaller. The effect is the loss of some patronisation of the larger more established store in order to obtain a viable market share.

Organisational development

In order for innovation to be successful it is important to embed practices within the culture. This facilitates opportunities for continuous improvement incrementally as the need arises or circumstances demand. The Deming cycle, was established by a W. Edwards Deming in the 1950s

and shows a simplified model that suggests planning must be at the heart of an organisation trying to maintain a culture of innovation. This is summarised in the European Commission's analytical paper - *Organisational development, improvement and innovation management in Public Employment Services (2012)*.

Planning helps organisations to frame what they hope to achieve and helps to frame their approach and what they hope to achieve and how to measure and recognise opportunity and direction (<http://ec.europa.eu/progress>).

In order for plan to be implemented properly they must be permanently monitored to recognise when processes or practices are no longer support innovation. The mechanism that best describes this is a quality circle, as illustrated below in Figure 1.

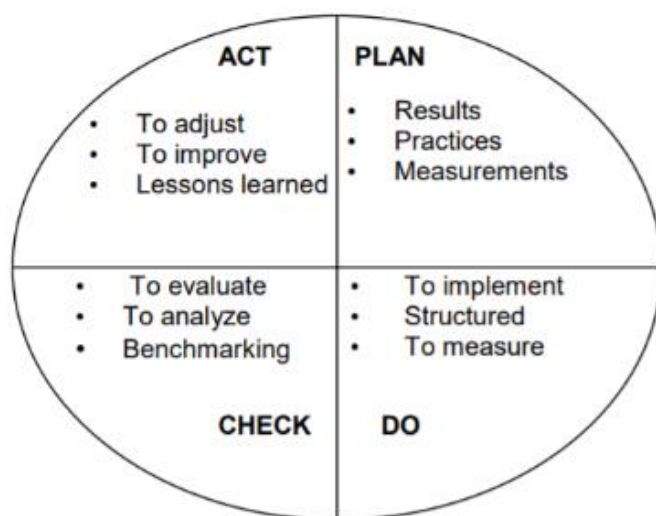


Figure 1: Quality Circle extract taken from *The European Commission Mutual Learning Programme 2012*

The process of innovation suggests a staged approach to ensure a product or direction is appropriate or worthy of committing resource. The following seven stage model to develop a product.

- Idea Submission/Briefing – presentation of the idea
- Evaluating and Screening – Research
- Business Analysis - feasibility
- Development – preferred option/direction
- Testing – preferred option/direction
- Validation and Regulatory Approval – finishing the product to go to market
- Commercialization - Delivery

The above helps to foster trust and provides the platform for innovation amongst individuals and within the team to recognise and establish business advantage (<http://ec.europa.eu/progress>).

Case Study – Developing a new product for the teeth whitening market

Munich Gases are an industrial gas company based in Sweden with a history of supplying liquid oxygen to health care markets and CO₂ to the drinks and beverages industry.

After 12 months of research, the company have reached a point where they wish to review a project which could command up to 10% of their R&D budget. The project concerns developing a new plasma based product that whitens teeth which they wish to bring to market. Intriguing as this opportunity might seem there is a split in which direction to take, the choice is whether to recommend investment or not and if recommendation is recommended there is a further decision to be made either to:

- A. Target the professional market by licensing the product to dentists with large cylinders of plasma, or;
- B. Target the commercial market as a cleaning tool for consumers

For the purpose of this report there is an overwhelming desire to bring a product to market, so closing down the project at this advanced stage of research/development would appear to be a lost opportunity to establish a market share.

Bernard Bing – Product Development Manager

Is a vital member of the research and development team and his research expertise is primarily concerned with the marketability of a viable product worthy of investment. Crucially he believes there is a market for the product and appears to support a more open innovation approach that minimises commercial risk by realising external expertise by targeting the professional market.

By utilising the innovation inherent in organisations and personnel external to the company, this open innovation approach makes it possible to remain current and relevant, whilst foregoing the burden of maintaining a revenue stream by engaging professionals. This approach is supported by the Licensing Manager who also recognises the benefits of exiting without committing any further additional costs whilst maintaining a revenue stream that licensing the product would provide.

Evidence of commercial interest

The exponential rise in social media and the cult of the celebrity has meant the need for the would be famous and those with such aspirations to be seen, at their best. From reality TV contestants to professional sports personalities, developing a product which supports this growth sector is savvy. Aligning the means of production with industry innovators ensures longevity, because the intellectual ownership of the active ingredient in any related product put to market.

Disruptive Innovation

Disruptive Innovation can and should to a certain degree enhance productivity within an organisation. Due to the fact products can be sold at a higher margin to demanding customers; This ensures a win - win situation. On the other hand disruptive – commercialisation which use more simpler, more user-friendly products, which are more cost effective and targeted to new or less demanding customers.

Some of the key elements of disruption can result to customers being limited to absorption as-well as technological progress, which tends to be more rapid, generally, this is faster than the ability of the market to employ it. Companies focus on better products to be sold with higher margin to unsatisfied customers. (Developing Innovation and Creativity Slides, 2019)

Due to technological progress the trajectory of the disruptive innovation after some time crosses the trajectory of demands of more demanding customers and starts to replace: incumbents who are not principally ready to react adequately, as they are motivated to succeed at „better“ markets, not to defend themselves on „inferior“ ones. (Developing Innovation and Creativity Slides, 2019)

Disruption is successful, and generally, it is easier to defeat your competitors, especially if they run for cover attempting to escape the reality. Generally, the competition who fights will no doubt gain the upper hand and win. Innovation must be disruptive for all companies in the industry. (Developing Innovation and Creativity Slides, 2019)

Recommendations

It is recommended that the board approve the following:

- An investment to develop a cleaning product containing an active ingredient that whitens teeth.
- A marketing regime that works towards targeting industry professionals forming new partnerships ensuring the longevity of the product and a guaranteed market share.

Conclusion

Innovation is essential to the very survival of a business. It is important to recognise that the path to innovation is both nuanced and mechanical. This report has discussed the merits of recognising this and the importance of that which is hidden or unseen in relation to facilitating and maintaining market share through constant review of practices to support a culture of innovation.

Whilst the size of a firm may reflect its income stream and reach, this does not necessarily guarantee longevity in innovative practices or perceptions of success. The UK is the 5th largest economy in the world yet it falls far short of its European counterparts when we look at traditional forms of investment.

This is evidence of the importance of radical innovation and unique opportunities that “hidden innovation”, or un-traditional innovation metrics fail to recognise. To conclude the innovation that un-conventional practices lead to suggest that an open innovation model approach to product development reaps the more successful outcomes because it relies on relationships (both social and professional) allowing skill sets to converge that are not necessarily inherent within a single

organisation. Innovation is essential to all businesses or related ventures and to ignore it almost guarantees oblivion.

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