Univerza v Mariboru

Fakulteta za kemijo
in kemijsko tehnologijo

Bachelor thesis

ASSESSMENT OF THE INNOVATION SYSTEM IN SMES USING INNOVATION TAXONOMY AND PONDERING METHODS

June, 2021

Ana Gallardo Gandarillas

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Ana Gallardo Gandarillas, študent-u/-ki univerzitetnega študijskega programa 1. stopnje Izmenjava UN, se dovoljuje izdelati zaključno delo.

Mentor/-ica: doc. dr. DUŠAN KLINAR, univ. dipl. inž. kem. tehnol.
Somentor/-ica: CIRIL BEZLAJ, univ. dipl. inž. el.

Naslov zaključnega dela:

Vrednotenje inovacijskega sistema v MSP z uporabo razvrščanja in tehtanja pomena inovacij

Naslov zaključnega dela v angleškem jeziku:

Assessment of the innovation system in SMEs using innovation taxonomy and pondering methods

Rok za izdelavo in oddajo zaključnega dela je 30.09.2021. Zaključno delo je potrebno izdelati skladno z »Navodili za izdelavo zaključnega dela« in ga v treh izvodih oddati v pristojnem referatu članice. Hkrati se odda tudi izjava mentor-ja/-ice in morebitne/-ga somentor-ja/-ice o ustreznosti zaključnega dela.

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Obvestiti:
- kandidat-a/-ko,
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- odložiti v arhiv

INDEX

DECLARATION

I declare that I have written this thesis myself. Amy contributions made by others are indicated separately. I have reviewed the literature in the field of my thesis under the following keywords:

Source: Science Direct (https://www.sciencedirect.com/)

Keyword	Number of references
Pondering of innovations	4242
Ten types of innovation by Doblin	14
Innovation in SMEs	15204
Ranking of innovations	39894

Source: COBISS+ (https://plus.si.cobiss.net/opac7/bib/search/advanced?db=cobib)

Keyword	Number of references
Innovation model	768
Types of innovation	143
Cycling Innovation Process	2
Marketing innovations	424

Source: Google Scholar, Google Books (http://scholar.google.com/, http://books.google.com/)

Keyword	Number of references
Cycling innovation model in SMEs	11600
Marketing inside SMEs	64900
Product innovations	3.560.000

Total number of articles reviewed: 23

Total number of books reviewed: 3

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                                                                                    Ana Gallardo

                                                                                    Signature

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To my family, for being my pillar and for having supported me from a distance, for always trusting me and supporting me in everything I do. And to my friends, the ones I have always had, the ones in my city, for always being there when I needed them, as well as all the friends that this experience at the University of Maribor has given me. I will never be grateful enough for all the people I have been able to meet and who have given me great moments, becoming my family in Maribor, friends that I know that from now on I will always have.

Assessment of the innovation system in SMEs using innovation taxonomy and pondering methods

ABSTRACT

In this bachelor thesis, the different types of innovation within a company are studied and analysed. The companies studied are SMEs i.e. from 10 to 250 employees. Smaller companies are mainly confronted with the problem of resources and larger companies with their strategic orientation. We have studied the ten types of innovations according to Doblin (Doblin 2014), and we realise that they have a rather marketing-oriented focus, so we analyse five groups of innovations that we consider to be the key (marketing, product, organisational, business model and technological innovation). Five groups of innovations have been weighed on a scale from 0 to 100 % according to their importance to contribute to the economic success of the company. All groups have been weighted and ranked in order of priority to initiate the innovation process in the SME, starting with marketing, followed by product, technological, organisational and business model innovations. We found innovation process needs to be implemented as a continuous cyclical process. If the company wants to be successful, it is a continuous cycle model, which should never stop. Once a particular innovation is chosen, it will be studied and tested whether the investment can be successful. If so investment process will be executed, if not, the cycling process will start again until gives a positive result. This way one of the innovation is recognized as most important according to circumstances in SME involved at a certain moment.

Vrednotenje inovacijskega sistema v MSP z uporabo razvrščanja in tehtanja pomena inovacij

POVZETEK

V predstavljeni diplomski nalogi preučujemo in analiziramo procese inoviranja v majhnih in srednjih podjetjih. Preučujemo majhna in srednja podjetja (MSP) to so podjetja, ki zaposlujejo od 10 do 250 ljudi. Podjetja na spodnji meji (manjša podjetja) se v glavnem soočajo s problemom virov, večja pa s svojo strateško usmeritvijo. Preučili smo deset vrst inovacij, ki jih je opredelil Doblin (Doblin 2014) in spoznali, da so usmerjene predvsem v marketinške aktivnosti. Tako smo analizirali še druge skupine inovacij, za katere menimo, da so ključne (marketinške, izdelčne, organizacijske, inovacije poslovnih modelov in tehnološke inovacije). Spoznanih pet skupin inovacij smo razvrstili po metodi tehtanja pomena na lestvici od 0 do 100 % glede na njihov pomen pri prispevanju k gospodarskem uspehu podjetja. Vse skupine so bile ponderirane in razvrščene po prednostnem vrstnem redu, da prikažejo potek procesa inoviranja v MSP, začenši s trženjem, sledijo inovacije izdelkov, tehnološke inovacije ter organizacijske in inovacije poslovnih modelov. Ugotovili smo, da je potrebno inovacijski postopek izvajati kot stalen ciklični proces, ki se ne sme ustaviti. V kolikor želi biti podjetje uspešno je potrebno model inoviranja neprekinjeno izvajati v smislu cikličnega vračanja ali povratne zanke takrat, ko smo preverili ali je ena od inovacij ovrednotena kot primerna za investiranje. Ko je določena inovacija izbrana, jo je potrebno preveriti kot investicijo ali obeta ugodne rezultate ali ne. V primeru pozitivnih rezultatov se lahko naložbeni postopek izvede, v nasprotnem primeru se ciklični proces vrne na začetek in pričnemo obravnavati inovacije znova. Cikliranje skozi inovacijske skupine se ponavlja dokler ne ugotovimo, da je določena inovacija tista, ki jo iščemo. Tako je ena od inovacij prepoznana kot najpomembnejša glede na okoliščine, ki vladajo v danem trenutku v MSP. Model cikličnega procesa je pregleden in nudi učinkovito metodo za pričetek izvajanja inovacijskega procesa v MSP.

Assessment of the innovation system in SMEs using innovation taxonomy and pondering methods

Ključne besede: Model inovacijskega procesa, inovacije po skupinah, tehtanje pomena inovacij, ciklični inovacijski proces, inoviranje v MSP, deset vrst inovacij po Doblinu, razvrstitev inovacij po pomenu, marketinške inovacije, inovacije novih izdelkov.

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1. INTRODUCTION

Nowadays the world and society are in constant change. The world is evolving by leaps and bounds, therefore society needs to evolve with it. This implies that companies need to renew, adapt and update quickly if they do not want to become obsolete and fail. As the Spanish writer Miguel de Unamuno said: 'Progress is about renewal', this quote later gave rise to the saying: 'Renew or die', a philosophy that can be applied in this case. For all these current advances and changes in our society, companies are faced with the need to innovate if they want to survive.

According to the company Deloitte, since 1955, only 12% of the Fortune 500 companies are still working, and in the following 10 years, 50% of the S&P 500 companies will be replaced.

Innovation is a term that is the order of the day, people may be tired of hearing this word, but it is going to be around everybody for a long time.

To start to understand the innovation, firstly it is needed to know the correct definition of the term. There are lots of different definitions but in conclusion, every each of them agrees. According to the Organisation for Economic Co-Operation and Development (OECD): 'Innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. Generally, innovation means the introduction of something new in the world but specifically new to the company.

Innovation will also drive the companies to get a higher position among their competitors, approaching economic growth, more efficiency and productivity. Without innovations, there will be no progress in the companies as there not appear anything new inside the company.

When someone talks about innovation, people usually associate it with the technical field, but it is much more than that, it can also be related to marketing or business model.

When someone talks about innovation, the term R&D is directly implied. Research and development mean the introduction of activities for companies to innovate and introduce new services or products or simply improving their already existing ones.

R&D plays a vital role in the innovation process, it is a crucial and key factor to develop new competitive advantages. If a company devote resources to research and development it will consequently gain knowledge. Organising R&D is easier for the larger company, but this does not

mean it is impossible in small ones. The OECD released - Science, Technology and Innovation: Implications for Growth where one talk about the support that the government have been giving to SMEs to increase R&D.

The companies that are going to be in the focus of our study are SMEs.

SMEs mean small and medium-sized enterprises. These enterprises represent 99% of the whole EU businesses. Different factors determine the size of a company. The classification in the European Union is shown in the table below.

Enterprise Type	Staff headcount	Annual Turnover	OR	Annual Balance sheet total
Medium-sized	<250	≤ € 50 million		≤ € 43 million
Small	<50	≤ € 10 million		≤ € 10 million
Micro	<10	≤ € 2 million		≤ € 2 million

Table 1. EU Enterprises Classification

- Annual turnover. It is determined by calculating the income of the enterprise per year is established after deducting any rebates, the problematic turnover involved in product sales and service provision within the scope of the company's normal activities should not include value-added tax (VAT) or Other indirect taxes.
- Annual balance sheet total. It refers to the value of the company's main assets.

Innovation may at first seem easier to achieve the larger the company, but both small and large companies have their benefits and disadvantages.

On the one hand, large companies more likely innovate due to their economic power, so these companies should be able to support the R&D easily. Economic power allows them to arrange the proper level of resources. Larger companies also have access to a large amount of customers (also large market shares) which allow being successful with the project more probable. When companies like 'Apple' or 'Samsung' launch a new product, millions of people are waiting for it.

On the other hand, for small companies, working with a small number of employees will make them easier to control and organize. One of their advantages is their flexibility and quick response due to the small organizational size and few procedures and processes to approve. The new idea can be introduced in the market in a shorter time. Furthermore, small firms should not have as much risk as big ones due to they have less to lose.

Despite this, large companies are still more innovative than SMEs as we can see in the figure below, where it is represented the number of innovative firms (product/process or organisational/marketing) as a percentage of total firms (within the scope of national innovation surveys) within each group. This data is from the OECD 2019 Innovation Indicators, where it is collected data from business innovation across the 37 countries and partner economies belonging to the OECD.
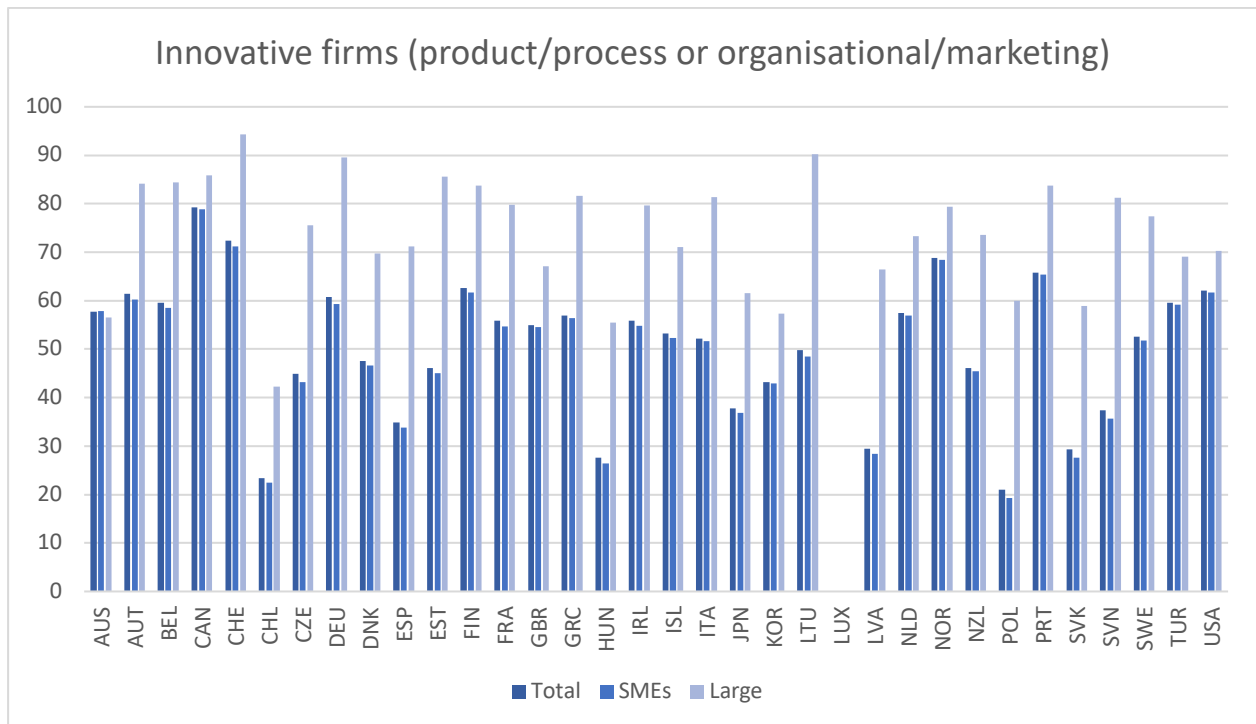

Figure 1. Innovative firms (product/process or organisational/marketing) as a percentage of total firms (within the scope of national innovation surveys) within each group. Source: OECD, 2020.

In order to make an analysis and help the small and medium-sized companies to grow up, initially, it was thought that the best option to develop this thesis would be the process of asking the SMEs questionnaires related to innovations. Knowing their answers one could understand their weakest points what give room for improvement or give them advice for the improvement. But thinking about it more carefully, we modified our initial idea and we realised that there are many individual elements related to innovation that need to be taken into consideration. We saw the best option to analyse the crucial, essential or most important innovative elements to establish a successful innovation process in the SME. These elements have different levels of importance, so it was necessary to ponder them from 0 to 100 per cent, the more percentage it is associated with the more important that element will be. With this method, it will be much easier to understand the level of innovation in practice, as it would be judged by pure intuition. Once the different innovations are measured and studied, the companies will have a much clearer idea of their organisation and disposition. And then, an assessment could be done in order to achieve higher levels of innovation. Furthermore, it will be easier to see where it is weak and to make a questionnaire more in line with its needs.

2. DESCRIPTION OF THE PROBLEM

2.1. How innovations are defined

In this research, it is essential to have clear the concept of innovation. As it was said before, according to the Organisation for Economic Co-Operation and Development (OECD): 'Innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.

Synonyms for innovation can be found in a variety of words, which help to understand everything it contains: invention, creation, novelty, change, improvement, idea, scoop, discovery, improvisation, introduction or alteration.

Innovation activities include all scientific, technological, organisational, financial and commercial actions leading to innovation. Successful activities are considered as well as those that are still ongoing mainly on purpose to build a capacity for innovation.

The OECD is an organisation founded in 1961 to advise members to establish better policies and improve the economy and social well-being. Member countries are usually developed countries. OECD has 37 country members which try to grow economically and progress as a society.

2.2. Areas of innovation inside the company

From the innovation term, we can classify different innovation types inside the company in the function of the area where it is applied. We can differ among the following types of innovations.

2.2.1. Product innovations

Introduction of new products, services, or programs. It can be also an improvement of a good or service. The product innovation can be performed in different ways as cost reductions to be more competitive in the market, product improvements, line extensions where new features are involved, new uses of the products, introduction in new markets, development of a new category for the company or the creation of a new product that did not exist yet.

Here are not included design changes that are not understood as a significant change in the main characteristics or do not change the use of the product.

2.2.2. Process innovations

An improvement or introduction of a way of production or delivery method to get benefits like faster processing or lower costs or increment of the quality. Achieving efficiency betterment involves changes in the equipment, techniques and/or software.

Inside process innovation, there exist two kinds of processes:

- Production processes. The part directly connected to the production of the product.

- Business processes. The business model enables firms to commercialize new ideas and technologies. In addition, this model itself may be a source of innovation and may have a competitive advantage. This model needs to take place if it is wanted to make a business transaction. There are three types of models: Industry model innovation, revenue model innovation and enterprise model innovation (IBM, 2009).

2.2.3. Marketing innovations

Marketing is probably an aspect that many companies do not give as much importance to as they should because it is not frequently something that is sold to the clients. Marketing is essential due to is the direct connection with the customers and consumers at all levels. Marketing is vital to every company. It provides information to make changes in the company. Product design, packaging, promotion, pricing or product placement are different ways of marketing innovation. Post consumption activities.

2.2.4. Organisational innovations

Changes in the organization involve a new method in business practices, workplace organization and environment, management or external relations.

Organisational innovations do not include changes in business practices, workplace organisation, or external relations that are practices, workplace organisation, or external relationships that are used in organisational methods, management strategies, mergers or organisational methods, management strategies, mergers or acquisitions are not part of organisational innovations. acquisitions.

All kind of innovations running inside the company could be found inside one of these groups. There is no innovation outside mentioned groups.

Every group of innovation can provide success to the company. Each company should study its environment and position to analyze which kind of innovation should be more appropriated to apply. If a company only focus on one group of innovation it can also bring some problems. For example, there is a big relationship between product innovation and process innovation. If a company only focus on process innovation it may suppose a lack or hindrance to catching the opportunities in product innovation. This occurs due to process innovation only provides cost reductions.

The main problem, as was mentioned in the introduction part is that as we are considering small and medium-sized enterprises makes the innovation process harder to achieve. This occurs primarily due to a lack of resources, which is a handicap and limits the company to achieve the desired innovation. Despite this, once sufficient resources are in place, other problems arise, like the complexity of the innovation process.

The problem is how to address the complexity of the innovation process, the solution could be a mix of innovations.

Since there are available different elements of innovation, it will be better the more elements are used, the easier will be to get success. Regarding the quantity of elements that are used, we can differ from:

- Simple or elementary innovation. When one or two types of innovations are used.

- Sophisticated or complex innovation. It uses more than three types of innovation.

All in all, our main problem will be to analyse the critical innovation elements that will make the company rise, pondering them from 0 to 100% of importance. With this study, firms will be able to identify their weaknesses to be strengthened and their strengths.

The analysis can help to explain SMEs' behaving in establishing innovation processes and open possibilities for their evaluation and improvement.

With all this knowledge, it will be much easier to make a proper questionary analysing the status of innovations inside SMEs.

3. METHODOLOGY

3.1. Natural science vs Social Science

Science can be defined as the group of systematics activities aimed at obtaining and organising knowledge about different types of phenomena to explain and predict aspects of reality. Science can be classified into two wide groups: natural science and social science. Social science focus on studying human society whether natural science studies natural phenomena.

When we are talking about innovation in companies, we are in the social science field. Social science is the part that is involved with the human part and its internal personal relationships. On the other hand, natural science covers the physical world and explains the laws which govern the natural world and predicts its behaviour.

This study will be applied to this social-cultural background or way of thinking which will influence further work.

Systems theory (Theories of Adolescent Development, 2020) identifies processes that explain how a system retains its functions while continuing to integrate new information from the environment and adjoining systems.

Every system is limited by space and time, influenced by its environment, defined by its structure and purpose, and expressed by its function.

System thinking is the ability or skill to solve problems in complex systems.

Ludwig von Bertalanffy, Béla H. Bánáthy or Talcott Parsons are some well-recognized researchers in this field (Newman 2020).

From this theory coming out that researchers background or its mindsets have a large influence on current work during this research.

As we are aware of this, the principle of this theory would help to draw conclusions or new ideas which come out from the research.

3.2. Inductive methods vs Deductive methods

To reason in every research field, one can differentiate between two main approaches: Inductive methods and deductive methods.

3.2.1. Deductive methods.

Deduction means going from the general to the particular. This method derives its conclusions from fundamental assumptions and general truths established by other methods. It consists of four steps:

- Selection of the problem.

- Definition of terms and formulation of assumptions.

- The hypothesis from the assumptions.

- Test and verification of the hypothesis.

The deductive method is simple due to its analytical, real, powerful and exact.

3.2.2. Inductive methods.

Induction means going from the particular to the general. Induction or empirical method reasons from particular facts to general principle. It consists of the following steps:

- Selection of the problem.

- Collection of data.

- Observation.

- Generalization.

The inductive method is realistic as it is based on real facts, reliable and dynamic.

4. RESULTS AND DISCUSSION

4.1. Ten types of innovation according to Doblin

There exist different kinds of innovation seen from various perspectives.

To get in touch with how wide innovation can be, the consultancy Doblin (Doblin, 2014), developed the 'Ten Types of Innovation' framework that will present one view of the innovation system in the SMEs.
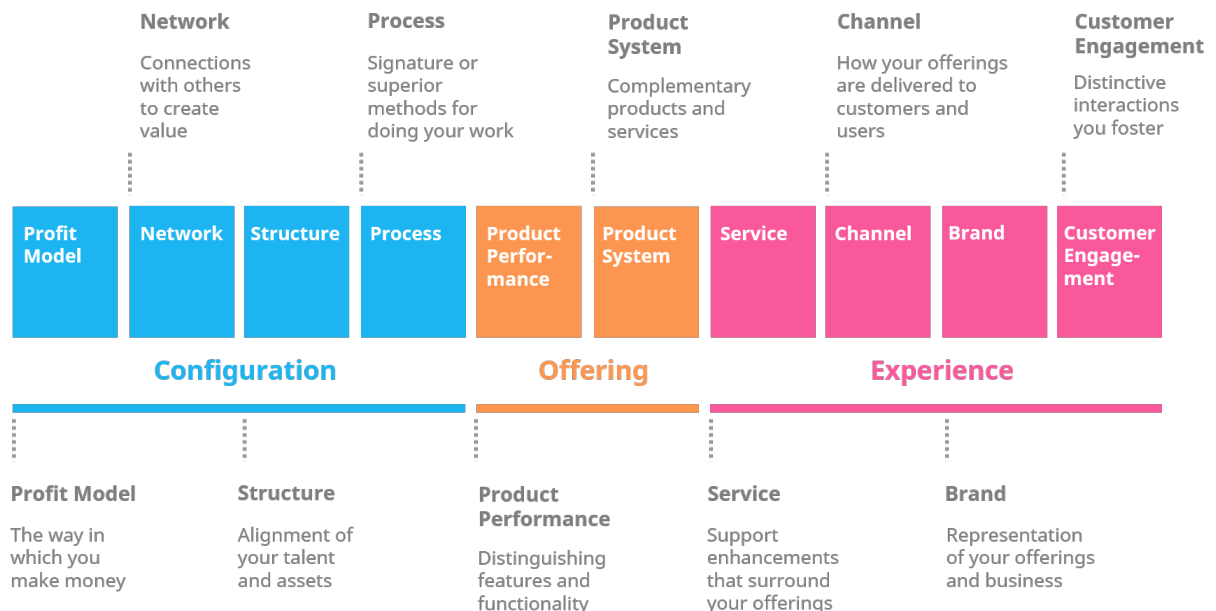

	Network	Process		Product System	Channel		Customer Engagement
	Connections with others to create value	Signature or superior methods for doing your work		Complementary products and services	How your offerings are delivered to customers and users		Distinctive interactions you foster

Profit Model	Network	Structure	Process	Product Performance	Product System	Service	Channel	Brand	Customer Engagement

Configuration — **Offering** — **Experience**

Profit Model	Structure	Product Performance	Service	Brand
The way in which you make money	Alignment of your talent and assets	Distinguishing features and functionality	Support enhancements that surround your offerings	Representation of your offerings and business

Figure 2. Ten types of innovations according to Doblin (Doblin, 2014)

Doblin realized that there may be different types of innovation, but all of them have something in common, they share the same basic elements.

These ten basic elements can be classified into three different groups.

- Configuration. Internal workings.
- Offering. Aspects of the services and products the company provides.

- Experience. Customer experience and create a good relationship between the customer and the product.

At first, glance, looking at the 3 classification groups, it can be seen that both the offering group and the experience group are oriented towards the marketing field, as they have a more or less direct relationship with the customer, and the only group that has a direct connection with the customer is the marketing one. The configuration group is aimed at a more pure economic field. Within each of the three groups, Doblin proposed ten different types of innovation:

Configuration:

1. Profit model.

   One of the most critical parts of innovation is the way profit is reached or the business model. It would represent the redefinition of the business model to earn money. Usually, firms only have one model, so rethinking this model can give some advantage to the competitors due to it may be a good way to improve the innovation and incentives with customers.

   To improve the profit model there are various possibilities like:

   - Focusing on more profitable existing customers giving them advantages or features of the product.

   - Improving processes through working with suppliers and customers. There might be vendors who add senseless costs which add no value to the product.

   - Making a good advertisement will encourage more clients.

2. Network.

   Nowadays everything is connected. Connections with other companies will create new opportunities. Firms should benefit from the processes, technologies, offers and channels to improve. These networks and partnerships may add more value to the company and will make it stronger among its competitors. Companies must rely on the knowledge and experience of their alliances to be successful. Another form of network is open innovation.

Alliancing with a larger company could provide huge profits like the integration in its business. Also, finding a new selling place can help to improve and increase the quantity of production.

3. Structure.

   Structuring the company may mean the extent of innovation and will generate profit and create a network, like intrapreneurship. Here is included organizational design, competencies and assets, management structures and incentives. The organizational structure and incentive systems constitute the cost structure, as well as the employees behaviour. More than 80% of competencies should be covered inside the company. If we do not provide at least 80% or more of the competencies inside the company, the external costs will probably be too high. The competencies include, inter alia, first the need to purchase material, then the ability to produce what it is desired, and last and most important the capacity to sell the final product.

   Furthermore, to provide these correct competencies, there should be an organization of the management in an appropriate way. The organization should supply the right talented workers for the job. The right motivation to the employees will make them work more usefully and efficient. This motivation is usually produced by an attractive salary.

   Moreover, bottlenecks in the production process are a common problem in companies, and better resourcing on the production side of the business structure could be a major improvement. These would indirectly provide an increase in the quantity of products.

4. Process.

   Processes that add value to the key business processes and creating methods to stand out from the competitors. They are used to deliver and develop products and services. This type of innovation can be achieved by looking for more productivity and efficiency and can lead to significant improvements in costs.

   Selling processes are something that is short term oriented. Innovation in these fields can bring quick or short term results (what is always desired).

The division of the innovation according to Doblin (Larry Kelley, 2013) seems to be directly oriented into the selling process what means orientation to work short term results.

For example, a modification in the supply chain can lead to an improvement in the quantity of the products.

Offering.

5. Product performance.

   This type of innovation focuses on the product features and the value provided to customers. Usually, leads to its modification in the design and revolves around the R&D department, so a good investment in the R&D area could provide success.

   The idea of adding new features helps to achieve product differentiation which gives the company the possibility to increase its price.

6. Product system.

   How to create complementary products and services. It is based on how products and services interconnect to create a scalable and robust system. This connection generates a value bigger than the product itself could not achieve. For example, the creation of iTunes by Apple to improve their sales inside their variety of products.

Experience.

7. Service.

   Offering a bigger service value will make the customers more loyal. Good customer service will provide a standalone advertisement for the firm. Improvement of the utility and the performance. For example, supermarket chains, build customer loyalty with their cards by providing discounts and benefits.

8. Channel.

   The method provides a connection between the offerings and the customers and users, ensuring that products or services reach the market better.

9. Brand.

   It will help customers and people to recognize and remember the products and offers. Having a good recognition of the brand will provide a great advantage and position in

the market and between competitors. Brands like Apple or Samsung keep their high position due to they have a strong identity and values which people agree with.

10. Customer Engagement.

A relationship with the customers to know their expectations and perceptions, gathering information to act later making improvements in the product. Customer engagement means also the voice of the customers, this recommendation can help to significant improvements of the existing products at relatively low costs.

A good engagement with the customers can provide some ideas which can lead to a differentiation of the product or a new platform of the product.

Using multiple elements will make better profits inside the company. The fewer elements are used, the more simple the innovation will be. Otherwise, the more elements that take into account, the more sophisticated will get, but also it will be more difficult to pull off. This is shown in the graph below, as more types are used will suppose a better financial performance.

Figure 3. Diagram of the Stock Price through 2007-2011 according to the number of types of innovation used. Source: Ten Types of Innovation: The Discipline of Building Breakthroughs, 2013, Wiley.

Innovation through the 10 types that Doblin created can lead to success and there are many ways in which you can be innovative in your company, as long as you are willing to keep an open mind and look for opportunities.

The study of the different parts and types of innovation will help to understand the company's philosophy in further depth, and this will make it easier to analyze and advise on how to be more innovative.

Once the research of the classification of the 10 types of innovation according to Doblin has been done, it can be concluded that within the 10 types of innovation, 6 of them, specifically: product performance, product system, service, channel, brand and customer engagement, are directly linked to the group of innovation within the marketing process.

From the text above one could learn that some innovation consulters like Viima (Viima Web, 2020) are oriented toward innovation which gives quick or short term results on the company revenue. It seems that improvements in the selling processes are the best way toward very quick results.

Viima (Viima Web, 2020) is a platform that is used for collecting ideas and developing these ideas into innovation coming from stakeholder groups inside the SMEs. Viima collects the ideas to study, redefine and develop them to make them more successful and will select the most appropriate ones and after will proceed to analyze the innovation process. It is a good option for companies that look for measurable innovation results in a short period of time.

The question is why a large consulting company like Viima basically focus their process on work in the selling process and they do not focus that much on the previous processes. This may occur due to reacting in the selling process will produce quicker results and the benefit will be able to be seen in a short term period. An easier way to improve the selling process is owning an effective and powerful marketing part. In order to modify the process will be possible to make two changes: the price and the quantity. Making a bigger promotion will help to change the price and finding new customers or doing a large market share will provide a proper change in the quantity. In conclusion, it is understood that focusing on only one of the four innovation groups (process, product, marketing and organisational) does not help to solve the complex problem easily but would only lead to short-term improvements. When a company wants to achieve long-term

results, it is necessary to apply a proper mix of the innovations from the four groups mentioned above.

Nowadays, many companies are under pressure to make innovative changes in a short period of time in a constantly changing marketplace. We can distinguish between two techniques for introducing innovative elements: Marketing pull and technology push.

Technology push implies a situation in which designers make a product using the available technology when they see a possibility or advantage in the consumer. Here, in this development, the company see the market need before the consumers do.

On the other hand, market pull is a technique where designers or producers make a product or service when the market demands it. The own customers define the solution and the producers deliver it.

If new technologies and customer needs are combined, it will lead to a successful new product innovation that will differentiate it from the rest.

All in all, marketing innovation is a good first step to get in touch with the customers who can provide information to start the innovation process in a quick term, but it is not enough to get long-term success. The ponderation of these Doblin innovation elements (Doblin, 2014) according to our understanding here in this research we believe can be in a range from 60% to 70%.

4.2. Relevant innovation in the SMEs

As it was explained before, the OECD classifies innovation into four different types (OECD, 2010):

1.) Product
2.) Process
3.) Marketing
4.) Organisational

Ad.1) Product innovation

Probably the most common type of innovation that every people think about when they hear the word innovation, and consists of the introduction of a good or/and service. This type can be divided into two cases:

- The new product, creation of a new innovative product.
- Improvement of the product. Modification of the existing product with some improvements like new characteristics or features.

Ad.2) Process innovation

Introduction of a significantly improved or new production or delivery method focusing on technologies, skills or facilities. This type of innovation can lead to lower production costs and time and can help to eliminate bottlenecks inside the production process. Process innovation is only seen at the company level, customers do not see it.

There can be two groups inside:

- Technological innovation. Any technological activities related to the process of the product. It is a must inside companies if they want to be competitive and keep a good position in the market.
- Business model innovation. Any activity which is related to to the economic or business part. It consists of two elements (Boston Consulting Group, 2009) :
    - Value proposition. It answers the question: What are we offering to whom? It has three subelements:
        - Target Segment(s). Which customers we want to attend to and which need we will cover.
        - Product or service offering. What is served to the customers.
        - Revenue model, what we will receive in return.
    - Operating model. It answers the question: How do we deliver the offering? It has three subelements:
        - Value chain. How the company plans to deliver the products and what to outsource.
        - Cost model. How to configure the assets and costs to achieve the value proposition.
        - Organization, how to organize the workers in a profitable way.
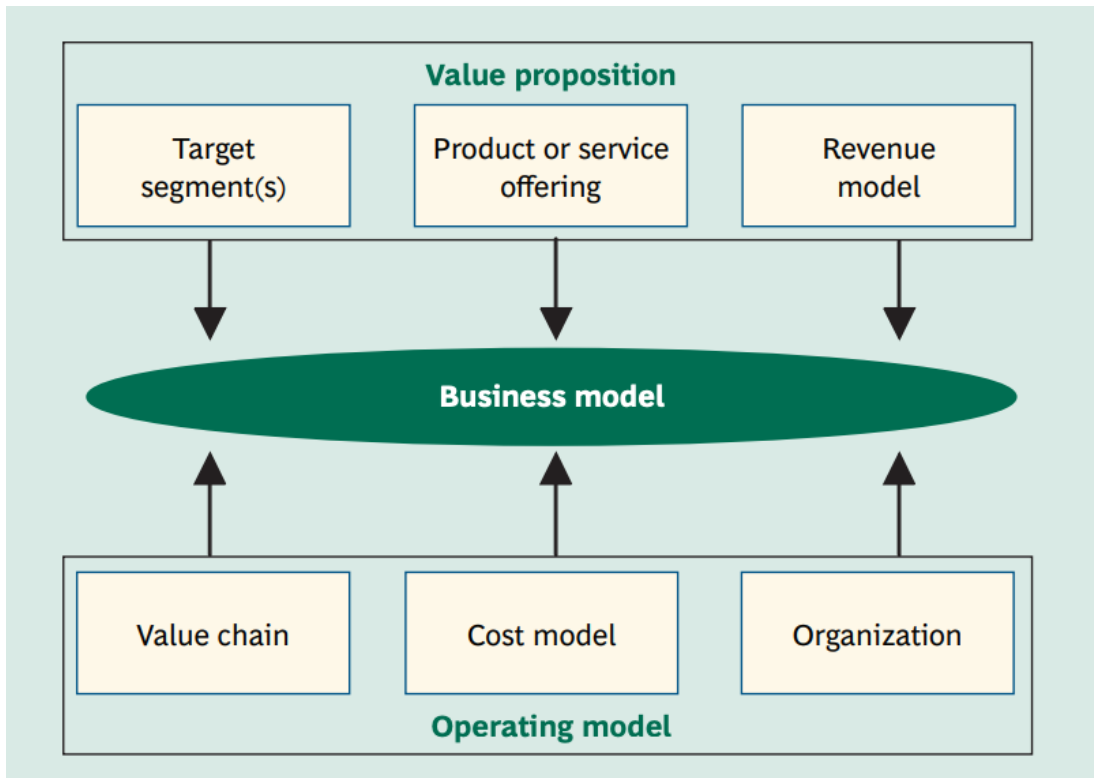
Figure 4.Business model and its components. Source: BCG research.

Ad.3) Marketing innovation

Introduction of a new marketing method that has not been previously used inside the company. Marketing enables the company to contact and connect with the customers who provide information so the company can react to it and make the proper changes. This can suppose changes in product design, packaging, promotion, placement or pricing (OECD, 2005).

Ad.4) Organisational innovations

Introduction of a new organisational method in the firms business, workplace organization and external relations.

Organizational innovation aims to:

- Optimise the company's performance by reducing administrative or transaction costs.

- Create a better working environment, making workers more efficient and productive, benefiting from and productive, benefiting from methods of distribution of responsibilities and decision-making power.
- Increase, reorganise and improve external relations with other companies.
- Increase the procurement of non-trade assets.
- Decrease the amounts of provisions.

In order to take the right path towards innovation, it is important to have a holistic view of the situation and to have a global vision of things, not only to focus on individual aspects. The human brain works holistically, the right hemisphere is the creative part and is associated with music, drawings or images, and the left hemisphere is in charge of the analytical and functional part, i.e. the logical, mathematical and language part. Both parts are indispensable for good and correct management in the company. Therefore, it is necessary to have this holistic vision but always having clear objectives and priorities and knowing which steps to follow to be innovative.
According to this understanding, the prioritization of the innovations has the same level of importance as the content itself.

4.3. Pondering method

Once we have studied the different types of innovation within the company, to have a more defined vision of how to start the innovation process, we will establish a method of weighing the different types of innovation in a range from 0% to 100%. The higher the percentage, the more importance and priority will be given to that type of innovation and the company should start with that process as long as it has the necessary resources to achieve it.
To start the process, the most effective way of working will be a sequential one and parallel way whenever possible, in order to optimise the development.

4.3.1. Marketing innovations

The importance of resources means that the company should dedicate some resources to the innovation process, as opposed to the controllable or intentional activities in the innovation process. Dedication of resources means that someone can work on the innovation problems and some financial resources are provided.

Marketing innovations are on top of priorities because the overall success of innovations is realised in the market. If we want to understand the needs and wants of customers and how customers are divided and described according to their properties, marketing activities or a marketing team must be established and work successfully. When we achieve successful operation of the marketing team, the general innovation process could start and can be successful.

The marketing team or the person working in the field of marketing should possess or have competence in the marketing sense to work on marketing issues. Company managers ask (check) themselves about the competencies in this field.

Taking all these factors into account, we have come to the conclusion that marketing innovation should be weighted with an importance level between 65% and 85%.

Taking a more in-depth approach, within Doblin's 10 types of innovation, we would go on to analyse:

- First of all, the branding process is essential to have a good and strong recognition of the company. Brand identity and its positive image to the market can be achieved with the proper combination of various elements, such as the brand logo, design, colours palette and typography, slogan or advertising. But it is not only that, it is a 'corporate image' (Jacob Cass, 2010) due to it involves also what the company believe and their reason to exist. This could be achieved by the engagement of a designer.

- Next, should be mentioned customer engagement, which is the key to maintaining contact with the consumer. The company need to plan a good strategy to achieve a positive interaction with the customers. This can be achieved with a quick response either through email or social media. Having good reviews will make people trust the brand more. In addition, the company can offer discounts and advantages or even giveaways to keep loyal customers here and keep them trusting the brand.

- Then, channel strategy provides a way to expose or deliver the products or services to the customers. The channel can be direct to the customers, or indirect if intermediaries are needed. There are different channels of distribution like direct sales, retailer or selective distribution.

- The product performance and system innovation can provide novelty to the brand by adding new features or complementary services to the products which will differentiate the product. To make this happen, for example, the efficiency can be improved or the product failures can be prevented.

- Lastly, service is a crucial key to be competitive. It means the support that is provided to the customers, once they have purchased the product and before. A good service will help to retain customers and make them loyal. It is important to listen to the customers and arrange feedback in a certain period of time.

4.3.2. Organisational innovations

The organization is essential if we want to maintain a certain order within the company. Oslo Manual defines this innovation as the implementation of a new innovation inside (Oslo Manual, 2018):

- Business practices in the company like reducing administrative or transaction costs or reducing supply costs.

- Workplace organization. Improving workplace satisfaction will suppose an increment of the employee's productivity.

- External relations like open innovation is a good example of this concept. Chesbrough (Chesbrough, 2003) emphasizes the company's advantages of "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively". Open innovation means that external individuals can contribute to achieving goals and sharing knowledge is useful for both parties.
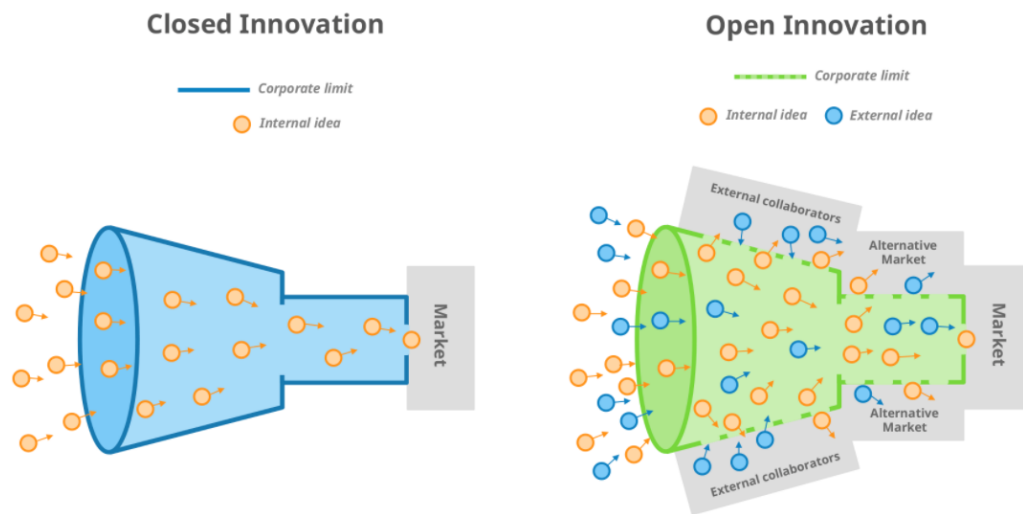
Figure 5. Closed innovation vs Open innovation. Source: Viima, 2018.

Organizational innovation will not have been used previously inside the company.

If Ten types of innovation by Doblin are taken into account, one should consider the formation

of the 'Structure' and establishing a 'Network' as a type of organizational innovations.

If a ponderation of the organizational innovations can be rated between 45% and 60%.

4.3.3. Product innovations

The life cycle of a product represents the steps that follow the product once it has entered the
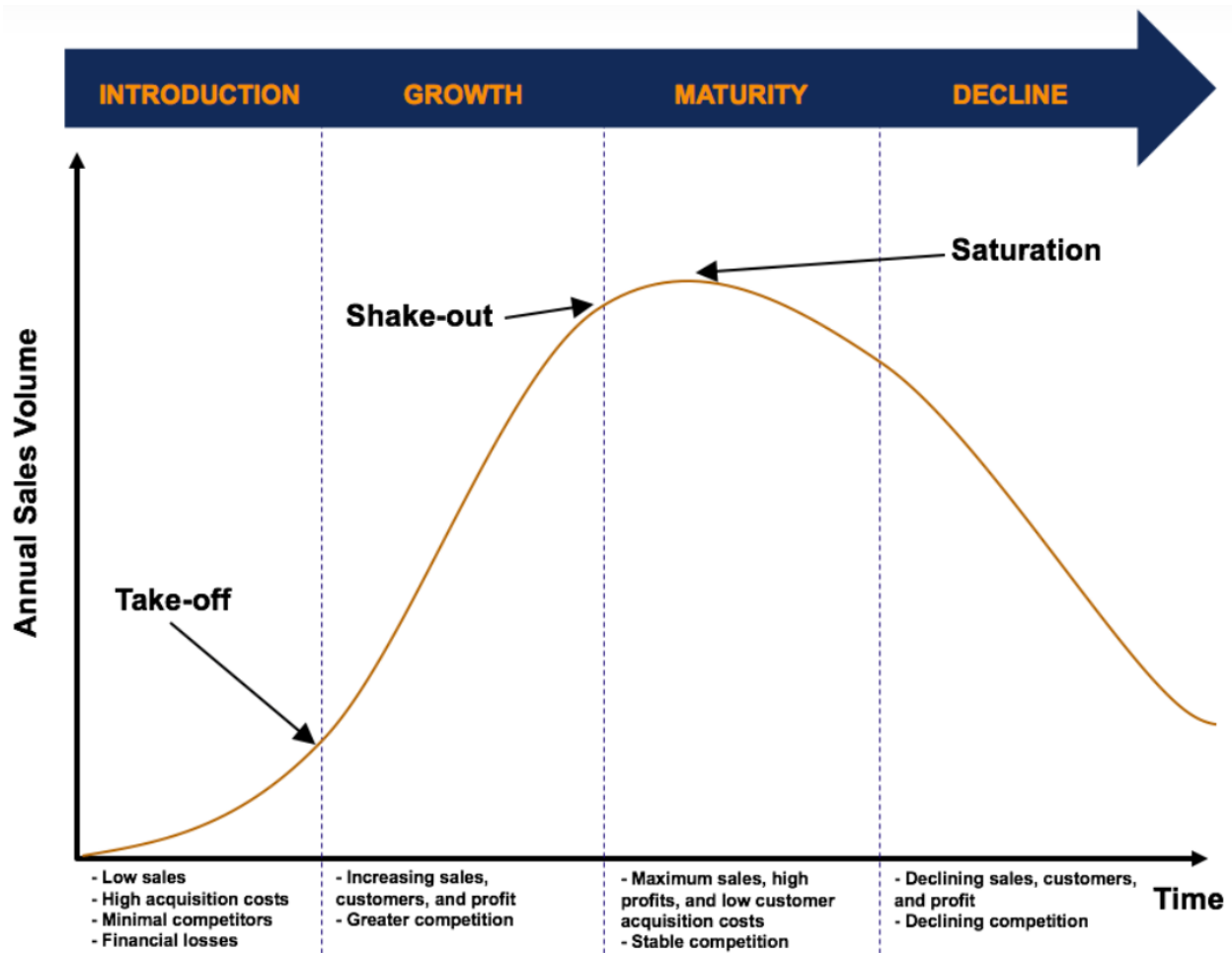
market.

Figure 6. Product Life Cycle curve. Source: Corporate Finance Institute

Product innovation is indispensable if we want our product or service to remain on the market for a longer time. Marketing tools cannot save the situation meaning having in mind the life cycle of the product if we do not have a good basic product.

Innovation in a new product or redesigning an existing product can bring you to a new level of production or a new level of added value.

The new product will fulfil the appearing needs of the customers due to with the time new understandings of customer needs appear. In the deep understanding of the situation on a market or marketing research, some new marketing pull ideas for new products will be provided. On the other side, forces of technology push want to shape new products which fulfil the marketing needs and wants. Making an equilibrium between all these forces from marketing and

technology are essential for a good position in a market and keep a good position among competitors.

It is essential to be aware of the current position of our product in a market meaning in a way of market share and reach added value.

In the 10 Types of innovation by Doblin, we can include here 'Product Innovation' and 'Product System', even we have already included them in the marketing innovations section.

All in all, if we make a final ponderation we can rate product innovation from 75% to 95% due to its highest importance inside the innovation field.

4.3.4. Process innovations

As it was described before, process innovations can be classified into two groups:
- Business model innovation, related to mainly economic contents.
- Technological innovation, related to technical and technological contents.

Inside the business processes, we will not consider here the marketing processes but we will take into account the business model. The pondering of the business model processes can be given in a range of 50% to 75%.

On the other hand, when we talk about technical and technological innovations, it could mean new technology of the production and new equipment (machines) or new materials.

New technology inside the company can be provided by vendors or technology providers or it can be developed by the own company. On the other side, the new equipment or machines usually are supplied by an external agent from outside the company. New materials are also usually provided from suppliers even they can be developed inside the company.

The ponderation in the level of importance is from 70% to 90%.

If we look at the 10 types of innovation by Doblin, we should consider the 'Process' and the 'Profit Model' which means basically the business model.

5. CONCLUSION

Once the analysis and study of the different types of innovation have been done and the key points of each one of them have been analysed and weighted in order of importance and preference for the company, we will proceed to make some diagrams to have clearer ideas and to see it in a graphic way that will help us to establish all the ideas previously developed.

Firstly, we will make a diagram or outline of the different types of innovation in such a way that they will follow a process of preference to begin the innovation process. It should be borne in mind that this process will not be ideal for all types of companies, as each one has its own needs and resources, but it will be the general and basic scheme for most companies. To begin with, we will start the process with the marketing department. We consider this to be essential, as it will provide us with consumer information, which is essential to start the process off on the right foot. We will proceed with product innovation because no matter how much the marketing department does a good job, it will not achieve anything if we do not have a good product or idea for remodelling our product. For the same reason, technological innovation will continue, because it is essential to have the right machinery and technology to produce the product. We will continue with organisational innovation, where the whole team will have to be organised in the optimal way to carry out the process. Finally, we will have the business model, once all the previous steps are known, we will be able to create a model according to the needs. Once finished, we can go back to the beginning, as we consider it a circular process, where feedback is necessary to find out the type of innovation which is important in the current situation.

If you do not agree with the result, you will go back to review, reorganize and repeat what is necessary to be satisfied and this process will proceed until that.
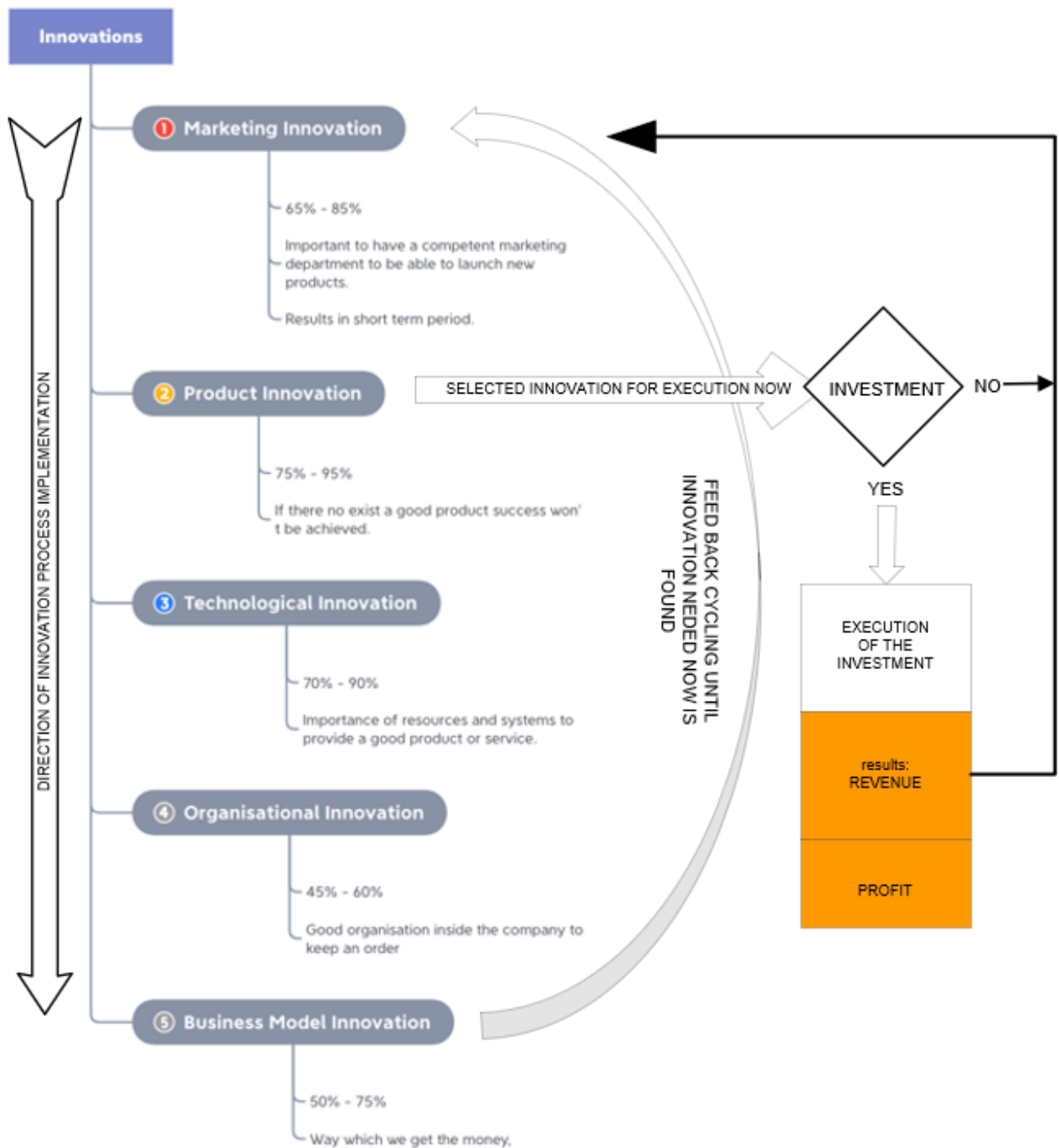
Figure 7. Diagram of the steps in the innovation process.

On the other hand, in the following diagram, the different types of innovation can be observed with the corresponding weighting range to make it more visual.

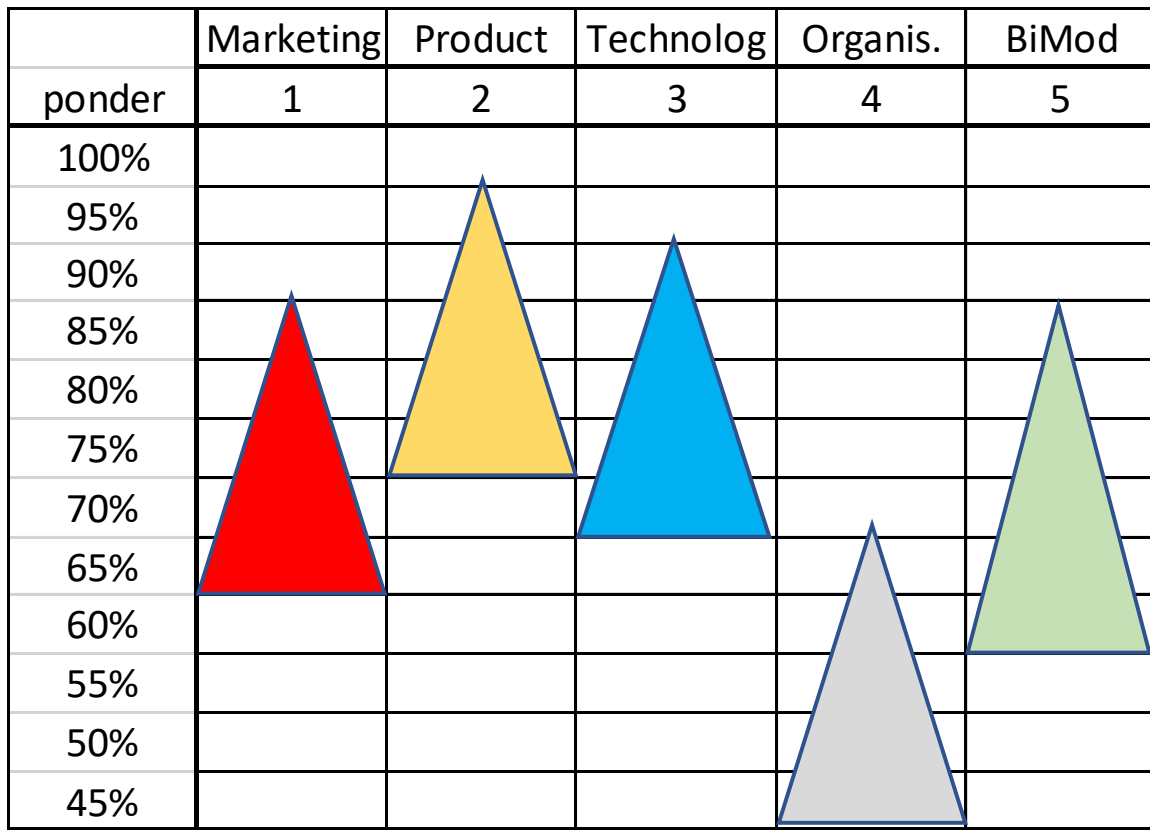|	Marketing	Product	Technolog	Organis.	BiMod
ponder	1	2	3	4	5
100%					
95%					
90%					
85%					
80%					
75%					
70%					
65%					
60%					
55%					
50%					
45%					

Figure 8. Diagram of the types of innovation according to the percentage of importance.

We can conclude that the assessment of the innovation process within SMEs is a process MODEL that should be implemented in SMEs to take advantage of the benefits of innovations.

First, we study the taxonomy of innovation in order to explain the elements that exist inside the SME, then we proceed to the weighting and ponderation of the different innovation methods to make an appropriate prioritisation of them, which will follow a continuous and cyclical process that will end at the moment of the investment decision (an investment cycle).

All in all, the innovation process is always an ongoing process that should never stop, if it stops, something is wrong. In this circular cycle, when you find out which innovation is really important at a certain moment of time, then you are judging about investment, and if the final result concludes in revenue, the procedure is successful. If there is no revenue, the cycle should continue. After the implementation of the investment, results are monitor according to usual investment assessing methods.

Furthermore, we believe that the model we have been developed is a useful model to start the innovation cycling process in all sizes of SMEs. The model of the innovation process for SMEs needs to be improved by testing with the questionary in some SMEs.

Therefore, every SME should take the consideration to follow a continuous process of innovation, to achieve higher profits and to be able to differentiate itself within its market and to gain an advantage over its competitors.

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