

# Study of the Key Success Factors in Early Stages of Innovation at a Global Scale

A Business Case of PepsiCo International

Viridiana Pineda

**MASTER S THESIS**

Packaging Logistics  
Lund University



# FIPDes

Food Innovation & Product Design

This Master's thesis has been done within the Erasmus Mundus Master Course FIPDes, Food Innovation and Product Design.

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FIPDes has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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**LUND**  
UNIVERSITY

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Division of Packaging Logistics

Department of Design Sciences

Faculty of Engineering, Lund University

P.O. Box 118, SE-221 00 Lund, Sweden

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FIPDes, Food Innovation and Product Design.

[www.fipdes.eu](http://www.fipdes.eu)

ISRN LUTMDN/TMFL-13/5103

ISBN 978-91-7473-590-1

# Abstract

Innovation is an important factor for growth nowadays as it helps the companies to remain competitive in the market. There are different levels, types and approaches to build and manage innovation and the most important approach to consider according to the author is the fact of building innovation complying with consumers' needs and wants.

Global scale innovation is categorized as a very recent topic that is gaining popularity among companies because of the current economic and cultural implications known as globalization. Cultures vary in nature and there is still a lot to learn in order to understand diverse aspects comprised in each one of them. It is very important to take cultural aspect into account when creating global innovation to be successful. During the past few years many theories have been developed in order to study consumers from a cultural perspective nevertheless more studies need to be done as there is a lack of established methodologies to design in a cross-cultural context. To focus in consumer studies is important but also in product development and designers have found the challenge to develop products to fit many different markets. It was found that some industries are experiencing this as well and have created some methodologies for internationalizing and localizing their products.

PepsiCo is one of the companies who are interested in global innovation as they have presence in many countries all over the world. The aim is to achieve efficiency and decrease duplications. The informants described the processes, challenges, main actors, success factors and cultural overview from their perspective in the empirical study. The key success factors were obtained from analyzing the theory and the empirical study. The most relevant results obtained were seven key success factors for global scale innovation.

# Executive Summary

## Study of the Key Success Factors in Early Stages of Innovation at a Global Scale

A Business Case of PepsiCo International  
V.Pineda

Global scale innovation is a new topic that is continuously gaining importance among companies, moreover multinational ones. The main aspects related to innovation in general were studied as well as the most important aspect of culture and cultural differences. Many theories related to the global consumer studies were reviewed. A qualitative study was performed in order to gain more knowledge about the success factors of global innovation; a business case of PepsiCo international was executed. Semi-structured interviews of individuals involved in global scale innovation were completed. The results and analysis had an outcome of seven success factors of innovation in a sequence, and are linked between them. The purpose of the study was achieved as there was a contribution to the topic and some key success factors were identified.

**Keywords:** Global innovation, culture, cross-cultural collaboration, global consumers

### Introduction

PepsiCo is the third largest food manufacturer of the world; present in more than 200 countries it has a wide portfolio of brands that are spread all over the globe. The company believes that innovation drives its expansion globally, as they develop their businesses and grow their position country by country (*PepsiCo 2011 Annual Report*).

Innovation is nowadays an important asset for organizations. Geroski, *or method of industrial production; a new market or source of supply; a new form of*

Machin, and Van Reenen (1993), proved that the rate of innovation was related to profitability and that innovation employs both direct and indirect effects on firm performance.

The differences of creativity, invention and innovation were carefully studied. Innovation according to Schumpeter (1934) is:

*"The commercial or industrial application of something new – new product, process commercial, business or financial organization"*

The types of innovation were identified as product, service and a combination of both (Luecke and Katz 2003; Albury 2005). The levels of innovation were as well reviewed and include incremental, discontinuous, architectural, system, radical, and disruptive (Verloop 2004). These different levels of innovation have different impact in terms of timing and profitability fig. 1

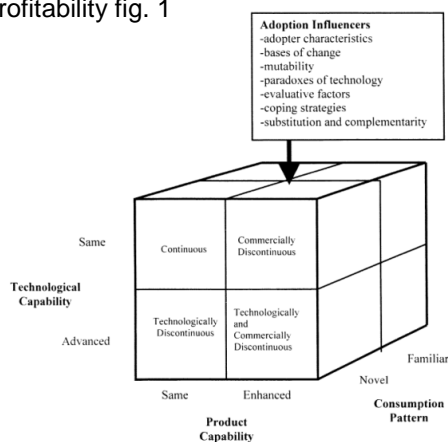


Figure 1 Levels of Innovation Veryzer 1998

of new product innovation processes. There are processes classified as linear (Sperry et al 2009) and chaotic (Khurana and Rosenthal 2007) and the difference lies in the levels of convergence and divergence in early stages. It was concluded that the best methodology approach depended on the project's aims and the level of innovation required.

The Fuzzy Front End of innovation was pointed of one of the most critical step in the whole innovation process (Sperry et al 2009).

Cultural aspects were also included in the studied. Globalization has made culture the most important asset to work with (Lee, 2004) As culture becomes an

significant issue, designers have to be aware of it because after all is the creation of new products that shapes everyday lives and cultures (Moalosi et al. 2007).

Different cultural models were studied such as Hofstede's model and its five six dimensions, Schwartz and its model of values and the World Map of Value proposed by Inglehart and Welzel (2010). These models group countries and cultures according to different characteristics or values.

A lack of in-depth research and appropriate methods to assist designers on how culture can be consciously integrated in product design was identified. (Onibere et al. 2001; Kotro and Pantzar, 2002). Internationalization and localization from the IT field was proposed as a possible way to perform global scale innovation.

The purpose of the study was to find the key success factors of innovation at a global scale.

## Methodology

A qualitative study was performed in a top down approach. According to Patton (2001) qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, like real world situations where researchers don't interfere.

A case study of PepsiCo being the Global groups the business unit was performed. According to Eisenhardt (1995) the case study is a research

strategy which focuses on understanding the dynamics present within single settings.

The data for the first part of the study (documentation) will be obtained from books, journals (mainly business and international marketing), doctoral thesis and other officially validated sources. Another type of data will be collected from interview made with specialists on the subject

A careful selection of senior managers and directors working for the R&D, Marketing and Insights departments was done in order to perform semi-structure interviews. The names of the respondents are to keep confidential as requested; a coded table is shown below to specify position and countries or regions of the informants. Interviews were performed either face-to-face or by telephone when it was long distance. The interview started with a short presentation of the topic as well as thanking the respondent for his time; the total length of the interviews oscillated between 30 to 40 minutes.

Finally thematic analysis was chosen as the most suitable methodology; it is a method for identifying, analyzing, and reporting patterns (themes) within data and describes this data in profound detail (Braun et al. 2006).

## Results

The results were classified into three different sections: Global Innovation, Cross-cultural collaboration and Global consumers.

In the Global Innovation section the aims of global innovation were studied and the main aim pointed by the informants was to find big bets and develop strategies in a global scale or for cross-cultural markets (HM, IM, SB, LR, RP, ML, 2013).

Regarding the actors in the process, many of the informants stated that at least a representative of the Insights, Marketing, R&D, Supply Chain, Finance, Operation, Sales and Commercialization departments should be involved in the innovation process (HM, SB, RP, IM, DS, IB 2013).

The challenges mentioned were to find a common food product for several countries due to the cultural differences (HM, SB, LR, RP, DS 2013), to be two-minded to think global and at a certain point localize the project (SB, LR, CA 2013). Another challenge is related to the technology capability, flexibility and availability (HM, IM, LR, RP, IB 2013). RP, IM, DS, IB 2013).

Critical tasks in early stages are market assessment, analysis of insights and building the right segmentation which are viewed as essential ( SB, RP, IB 2013).

Regarding Cross-cultural Collaboration it was found that it was signaled by the informants as a challenge (IM, LR, CA 2013). Many skills were listed as fundamental for individuals participating in global innovation (HM, IM, RP, DS, LR, IB, ML, CA, SB 2013). Effective communication was one of the most repeated skills between informants (HM, RP, CA, IB 2013).



On the way of the company to build a global innovation process there is a matter that needs to be clarified and well defined. In one side global groups must work in relevant projects for several countries so a certain empowerment for them in those projects its suggested (IM, 2013). Also SB (2013) mentions the fact that they “not invented here” syndrome should be eliminated from the mind of the people involved in the projects because it might prevent cross-cultural innovation from happening.

Alignment is needed among a greater number of people than usual and it takes time and energy a lot of resilience needed to make things or products happen (DS, 2013)

Cultural awareness is maybe the most important topic that the author wanted to explore; in the beginning the research was mostly related with consumers but throughout the research it gained more and more relevance from the collaborations point of view. This aspect was actually observed as critical from some of the informants (HM, DS, CA 2013).

Finally regarding Global Consumers, informants insisted that consumer upfront work was the most important activity in the process (HM, RP, LR, SB, IB 2013). Various sources of inspirations were discussed with the informants as well as their ways of integrating consumers in innovations processes.

It was seen that internationalization and localization practices are a performed at a certain level by the company with existing brands where it is easy to do it; for some other brands and specifically

for breakthrough products these practices results to be more difficult because consumer preferences and technology flexibility.

## Analysis

Short-term innovation and quick results was pinpointed as part of PepsiCo's culture and it was also mentioned that they are trying to re-adapt this culture in order to perform globally (DS, CA, LR, 2013). The author thinks that the reason of this is related to Cagesse's study (2012) about risk management and the author suggests **resilience as a first key success factor** of global scale innovation supported by (DS, ML 2013).

Talking specifically about early stages the author is convinced by the informants and the theoretical framework that establishing a good vision, objective and identifying a good business opportunity, in general **a good upfront consumer research cross-culturally**, is indeed the **second key success factor** for a global scale project.

Martin et al. (2007) states that cultural competence comprises the following: cultural awareness, attitude toward cultural difference, knowledge of different cultural practices and cross-cultural skills. Cultural awareness was observed as critical from some of the informants (HM, DS, CA 2013) The author therefore states **cultural competence as another key success factor** for cross-market innovation and they translate this into being open minded (SB, LR, ML 2013).

**Alignment of global and local teams is established as a key success factor** dependent from effective communication. This fact is reinforced with theory as Koput et al. (1997) established that when goals are not clear, screening is difficult and it is not sufficient as the primary link between the flows of idea searching and implementation.

One of the similarities was found in **technology flexibility** as an innovation enabler (HM, RP 2013; Miles and Snow, 1996). Another similarity is the **communication** as a central success factor (Minaret et al. 2000; IM, 2013). Both of these aspects are marked by the author **as key success factors** for global innovation.

It is very clear that the informants are aware of the difference in preferences of consumers from country to country and it is known that commonalities must be found in order to perform global scale innovation. **Grouping consumers in smart way** is presented as the last key success factor of global scale innovation according to the author.

The most important recommendations for the company are: First is to promote cultural awareness among collaborators by giving them common training, using the existing tools for more personal communication and to help them understand each other better. The second is to work in building a model of constructive collaboration and equitable recognition when working globally.

## Conclusion

The purpose of the study was achieved as there was a contribution to both academy and the industry by finding key success factors for global innovation projects. An important knowledge acquired is that global innovation is not the same as traditional one-market innovation, as there are important extra elements to be taken into account.

It is important to acknowledge that cultural competence should not be given for granted by multinational companies as it is not necessarily an automatic aspect employees learn along the way.

Finally a critical aspect is the fact of not taking into account these key success factors might prevent global innovation from happening and might also result in a waste of resources.

Future studies of how to include these factors into proper built methodology is suggested by the author.

# Acknowledgements

I would like to thank my family in first for supporting me at every moment of my career and for believing in me. Special thanks for my Dad, who has been my guide since I started in the Food domain and has given me constant advice and helped me enormously throughout the way. Thanks to Laurent for encourage me to choose what I wanted to do and to be by my side all along.

I want also to thank Andreas, who agreed to be my supervisor and gave me a clear guide during the whole thesis journey. I want to include PepsiCo in my list, because they support me with all the tools I needed to do my thesis and also the interviewees for sharing their experience and knowledge with. I want to include my colleagues who stayed together and united academically and personally, I appreciate every time we studied together and shared precious moments made the pathway easier. I was lucky to have built very special friendships. I want also to thank the FIPDes staff members for giving me the opportunity of being part of this outstanding experience.

I would like to thank God for giving me the opportunity to live this amazing experience and finish it successfully...



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# Introduction

*This chapter is dedicated for the reader to understand the overall context of the master thesis. It starts with an empirical background, a short description of innovation's importance in cross-cultural consumer research and a brief in early stage innovation. Then the problem discussion will be presented followed by the purpose of the study and finally the limitations of the project.*

## Background

PepsiCo is a global food and beverage company, who makes, markets, sells and distributes a range of foods and beverages in more than 200 countries and territories. The company manufactures markets and sells a range of salty, convenient, sweet and grain-based snacks, carbonated and non-carbonated beverages, dairy products and other foods (Reuters). In terms of innovation PepsiCo is constantly engaged with the idea of bringing new experiences to its consumers, according to its culture the company believes that innovation drives its expansion globally, as they develop their businesses and grow their position country by country (*PepsiCo 2011 Annual Report*). Winger and Wall 2006 state that in the food industry, like any other industry, is indispensable to consider product and process innovation as a vital part of a smart business solution.

At the present time there is an exponential increase in the competition to get a bigger market share in the food industry. There are countless number of brands and companies that are fighting to get into the consumers shopping bag and this is where innovation plays an extremely important role in the game. Innovations in services have led to the greatest level of growth and dynamism over the past several years in terms of economic activity (de Brentani, 2001). Tohidi, (2012) in his research concludes that innovation is one of the most important and most complex issues organizations faced with today and that it is the success key for organizations.

It was observed that multinationals have a huge challenge and great opportunities at the same time in terms Cross-Cultural innovation research. PepsiCo deals with global brands and has managed since many years to create successful outcomes, nevertheless there is a bigger challenge related with high levels of innovation and assertive cross-cultural winning developments. Cross-cultural consumer research has been studied since long ago and its practice has been growing due to the globalization and the fact that the world is becoming one big economical order but the cultural perceptions, attitudes and habits persist among its different units (Manrai, 1996).

*Performance With Purpose* is part of PepsiCo's mission, which relates the rentability and growth of the company linked to the social and environmental responsibility. The business has recently encouraged the necessity to create products beneficial for the consumer's health and wellness in a global scale. Global market for healthier products is growing rapidly in developed and developing countries due to the fact that consumers are more aware and concerned about their food choices and how these will impact in their health. This new health approach combined with a global vision represents an opportunity for the company to impulse innovative initiatives.

It is necessary to understand early stages or *green fields* of innovation in cross cultural consumer research to improve the innovation journey. In the healthcare industry *Johnson & Johnson* provides an example for future reference to other companies and industries by developing an exclusive Early-Stage-Innovation Center where scientist and business experts are gathered to build up the next generation of healthcare solutions. The conceptual design stage is critical when assessing the innovation potential of a product. In this stage, there is a shortage of methods to help companies identify the most innovative product concepts (Justel et al 2007)

The fact that this new global approach in PepsiCo is on its development turns out to be a great opportunity for the company to acknowledge an overall approach of what a global scale innovation should include. This is the reason why the author thinks it is a good moment to go in deep about what important aspects should be included at this stage and what other aspects are not of significant relevance.



## Problem Discussion

There is a limited knowledge regarding the factors that affect the early stage of the innovation processes for cross-cultural projects. According to Kurkkio 2011 there are few studies in process development innovation and even fewer specifically for early phases. The challenge of the project is to investigate these key useful factors that will improve the performance. In global companies some of the procedures are very well established and have solid guidelines which sometimes prevent abrupt changes in terms of processes.

In some of the cases the reason for the rigidity in the processes is linked with lowering the risk of failure. Although novel food products are often developed to satisfy the changing needs of consumers, failure rates for these innovations are high (Onwezen, M; Bartels, J 2013). Because of this failure risk there is always uncertainty in the initial steps which sometimes prevents to go farther in novel ideas. Cagesse in her study of financial risk identifies the negative impact of uncertainty in innovation within entrepreneurial firms.

## Purpose of the Study

The main purpose of the work is to improve the innovative capability of the company by finding key factors for developing effective global consumer research practices in the early stages of the design process.

## Disposition

This study will undergo the sequence showed in figure 1. Once the background is presented there will be a section for the theoretical framework where facts from relevant research studies will be discussed. Following the methodology part will be shown, then the empirical study will be presented followed by the analysis and finally the conclusions and recommendations.

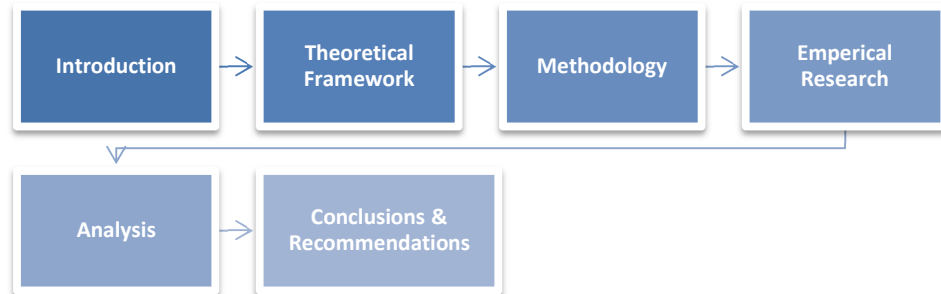


Figure 2 Disposition of the Master Thesis Project

## Limitations

The internal research phase will be done primarily with people involved in cross-cultural consumer research meaning that local project management will be limited in the study. Not all of the countries participating in global scale innovation will be included in the study, only the ones who are accessible to the author.

The author will focus on a new and unexplored business area from the company and thus not necessarily affect other areas. Another limitation is that only the company employee's point of view will be discussed and no consumer perspective will be acquired.

# Theoretical Framework

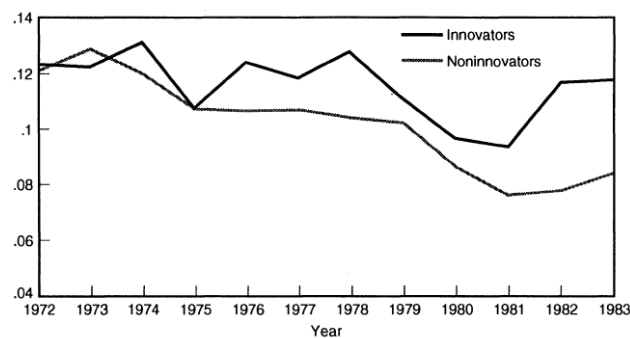
*In this part of the thesis, a summary of the most relevant work in the field will be done in order to facilitate the reader's understanding of the topic. This part of the study is essential because some of the data will be extracted to build up a theory in the analysis part. The theoretical framework will be divided into two general themes which are innovation and cross-cultural consumer research.*

## Innovation

Innovation is a widely discussed topic in many disciplines such as science; technology, management, economics and more. There are several definitions that will be discussed in the theoretical framework, followed by the description of the types and levels of innovation according to theories of Verloop (2004), Gaynor (2002), Jacobs and Snijders (2008) and others. Then different innovation processes and its stages will be described. Finally a theory review of the current innovation methods in consumer goods organizations and the factors involved will be presented.

### Innovation within Organizations

While many authors state that innovation is the key for the growth, some other have searched for evidence to prove it; one example is Eisenhardt and Tabrizi 1995, who proved that the rate at which new products flow to market is a



Source: Geroski, Machin, and Van Reenen 1993

**Figure 3 Innovators and non-innovators profitability from 1972-1983**

fundamental influence on the performance of high-technology firms. Geroski, Machin, and Van Reenen (1993), also proved that the rate of innovation was related to profitability and that innovation employs both direct and indirect effects on firm performance, see figure 2. The results of the observation in the indirect effects indicate that innovation allows firms to grasp the implications of new technologies (Cohen et al., 1990), cope more effectively with radical environmental change (Tushman et al., 1997), and formulate more robust business plans (Dean & Sharfman, 1996). Baker found in her research that in *Fortune* magazine's rankings of companies by innovation over the last 15 years show those innovation rankings are correlated with shareholder return.

## Creativity, Invention & Innovation

Many innovation researches and studies start relating the words creativity, innovation and invention by defining them and pointing out the main differences. This exercise is actually important part for the reader to understand that these words are not the same and that they possess key factors that differentiate them.

When discussing the word creativity, many individuals would say that is the ability of a person to come up with something new, most of the time related to artwork or technological ideas but the truth is that creativity could be related with any kind of activity, product, service or process. According to the Oxford Online Dictionary creativity is the use of imagination or original ideas to create something; inventiveness. Vernon (1984) gives a more complete explanation by defining it as:

*“a person's capacity to produce new or original ideas, insights, restructurings, inventions or artistic objects, which are accepted by experts as being of scientific, aesthetic, social, or technological value”*

While the Oxford's definition states, “to use imagination to create” plotting the word as an action Vernon's definition shows it as a “capacity of someone to produce ideas”. Even though they are related, their meaning remains different. Craft (2001) discusses different levels of creativity in her research analysis.

Many authors state that innovation is using creativity to add value, economic, social, psychological or aesthetic (Kumar 2009, Hughes 1998). This statement relates innovation with creativity but yet it does not give the difference. The economist Theodore Lewitt differentiated both terms by saying that creativity is thinking up new things while innovation is doing new things. He stated that Ideas are useless unless used.

Invention in the other hand is defined as the action to invent something that has not existed before, to be the originator (Oxford Dictionary). Invention need not fulfill any useful customer need and need not include the exploitation of the concept in the marketplace. Innovation goes beyond only creating something new (O'Sullivan 2009).

There is wide range of approaches to innovation. An important character in the history is the economist Joseph Schumpeter, who was one of the first's actors in developing entrepreneurial theories. His personal contribution to the definition states that innovation is:

*"The commercial or industrial application of something new – new product, process or method of industrial production; a new market or source of supply; a new form of commercial, business or financial organization."*

This definition includes two vital terms which are newness and business, and these terms normally constitute most the different definitions of this word. Another definition of innovation is given the Austrian-American economist Peter Drucker who in a more recent generation defines it as:

*"Innovation is the specific instrument of entrepreneur ship. It is the act that endows resources with a new capacity to create wealth. Innovation indeed creates a resource and endows it with economic value."*

For purposes of this study the author has decided to focus on Gaynor's explanation (2002) which says that innovation is the translation of knowledge and thinking into action; the author thinks this explanation is simple but very concrete. Gaynor (2002) also states that innovators are not always the idea generators; they integrate data, information, knowledge, and experience from many different sources. Four important key features of innovation are also important for the

research, which are: insight, new combinations, entrepreneurship, adding value (Verloop, 2004).

Finally, to conclude the definition section the author believes that the best way to relate these three concepts is to say that innovation is a commercial activity that involves an invention of a product or service that adds value in a creative way. Figure 1 below is a graphic representation of the innovation definition proposed by Trott (2003).

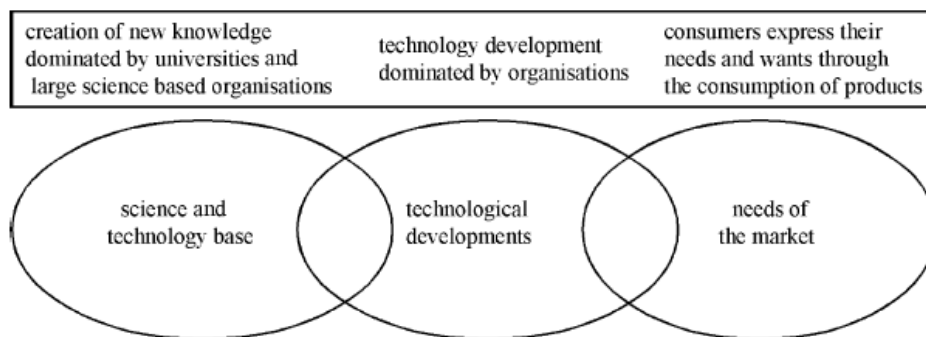


Figure 4 Conceptual framework of innovation

## Innovation Types

There are three types of innovations according to many authors, which are product, process and service innovations. (Luecke and Katz 2003; Albury 2005)

According to White et al. 1988 product innovation is the development of new products or the changes in design, components and/or materials in the manufacturing of existing ones. Product innovations may be tangible manufactured goods, intangible services, or a combination of the two (Greenhalgh et al. 2010). OCDE defines process innovation as the implementation of a new or significantly improved production or delivery method. Related terms that are often used interchangeably include product design, research and development, and new product development (NPD) (O'Sullivan, 2008).

Another type of innovation widely studied over the last decade, the service

innovation. Van Ark et al. (2003) defines it as a new or considerably changed service concept, client interaction channel, service delivery system or technological concept that individually, but most likely in combination, leads to one or more (re)new(ed) service functions that are new to the firm and do change the services/goods offered on the market and do require structurally-new technological, human or organizational capabilities of the service organization. As it can be appreciated, the service innovation is more complex because it can involve many factors and actors at the same time. One example of last decade's service innovation is the e-commerce because it found a new breakthrough channel to reach consumers.

Some state-of-the-art innovations are combination of product and service combines the innovation in product and also in service to give a more added value.

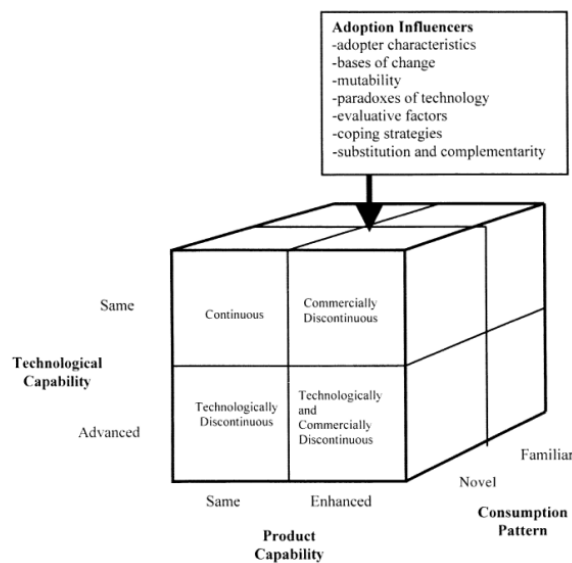
### **Innovation Levels**

The levels of innovation are related with the degree of novelty of a good or a service and this relationship was proposed for the first time by Schumpeter 1394. The degree of a novelty product or process makes an impact according to its level in the perception on the consumer and/or the corresponding way the production is carried out in a company (Tidd et al., 2001). According to Verloop (2004) the common types of innovation levels include incremental, discontinuous, architectural, system, radical, and disruptive. For purposes of this study the incremental, radical and disruptive classification will be used and its relationship with Gaynor's classification (2002) is incremental, new-to-market and breakthrough respectively. Figure 2 is a graphical representation of the innovation types.

Incremental or continuous innovation concerns an existing product whose performance has been significantly enhanced or upgraded (OCDE 2001); it either improves something that already exists or readjusts an existing system or technology to work for some other purpose (HBP, 2003).

Radical, revolutionary and discontinuous innovations are basically synonyms (HBS, 2003). Discontinuous innovation refers to change that sweeps away much of a firm's existing investment in technical skills and knowledge, designs, production technique, plant and equipment (Utterback, 1996) The result of this innovation is usually something new to an existing market that could be either a new product to the market or a new process for the company, in brief a novel replacement.

A disruptive or breakthrough innovation in the other hand is that which tends to change the business model of the company and most of the times creates a new market (Christensen, 2003). Most of the cases the innovations are radical and might begin in a small scale, high prices and with few early adopters nevertheless its probability to grow a market is high (HBS, 2003).



Source: Adapted from  
Veryzer, R 1998

**Figure 5 Levels of product innovation**

In real life incremental innovation is what most companies are looking for in order to obtain short term revenues and to reduce the risk in investments because it is easier to work on an existing brand, product or process than to carry out a whole new development. Nevertheless incremental innovation does not always represent substantial difference for consumers therefore neither for the revenues.



In the other hand radical or disruptive innovation are more linked to long-term investments which involve risk and uncertainty. Caggese (2012) in her study of entrepreneurial risk identifies the negative impact of uncertainty in innovation within entrepreneurial firms. Developing highly innovative product offerings involves considerable risk along with requiring both insight and foresight. Still sometimes due to the high degree of technological newness, it is difficult for users to evaluate concepts and prototypes of radical innovations as no reference products exist (Veryzer, 2003) this one reason why companies fear a high risk of failure. According to several authors many companies encounter problems in developing radical innovations (Cooper and Schendel, 1976; Anderson and Tushman, 1990). The uncertainty-innovation relation has an important impact in business cycle and growth because entrepreneurial innovation is a source of growth and of economic expansion (Caggese, 2012). This is why many scholars and businesses have studied and developed systematic methods to follow called innovation processes.

Khorakian (2011) studied the possibility to include risk management principles in some of the stages of innovation processes. However the study recognizes that adopting rigorous risk management at some stages of the innovation process could be valuable, but too much, or inappropriately implemented might stifle innovation.

A summary of the main types of innovations was made including incremental, discontinuous and disruptive. Research will be focused mainly on discontinuous innovations and part in disruptive innovations due to their greater impact in terms of innovation capability. Following some of the innovation methodologies will be discussed.

### **Innovation Methodologies**

A process is defined as a series of actions or steps taken in order to achieve a particular end according to the Oxford English Dictionary. The end in an innovation process generally is to reduce the risk and to become successful in the marketplace. Hansen and Birkinshaw (2007) define innovation management as the active and conscious organization, control and execution of activities that

lead to innovation. A very concrete definition for innovation process was stated by Cooper (1994) and it says that it is a formal blueprint, roadmap or thought process for driving a new project from the idea stage through to market launch and beyond. Jacobs and Snijders (2008) give a more general definition by saying that it is the development and selection of ideas for innovation and the transformation of these ideas into the innovation.

As innovation is not a new practice, there has been an evolution in the subject throughout time and diverse process approaches have been studied by several scholars, economists and others. One example is Koen, who breaks innovation process into three stages, Fuzzy Front End, New Product Development and commercialization as seen in figure 4 below.

#### Order and Chaos in Innovation

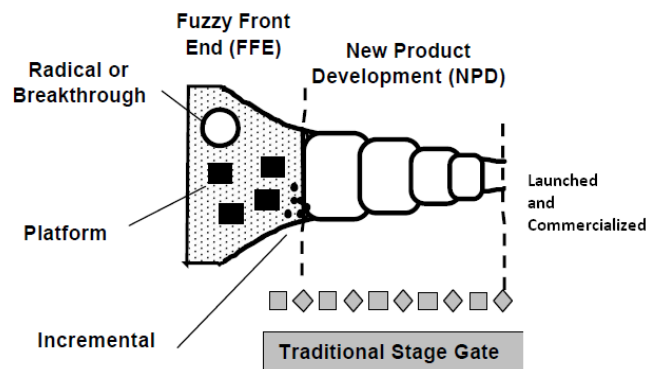
The author decided to classify the innovation processes found in literature into two main categories, which are linear and disordered processes. Linear processes assume that each step is deterministic and that must be completed successfully before going to the next step, it demands well-structured and planned activities that use screening between stages (Sperry et al 2009), meaning that the process is rigid. One example of a linear process is the famous Stage Gate Process of Robert Cooper. Sperry (2009) also highlights that in these kinds of processes, the phase of the idea generation does not involve any tasks or activities; it is just a phase where ideas are simply created.

Van de Ven found that innovation is a repetition of convergent and divergent thinking, that innovation projects were not consistent from project start to finish, and that outcomes were only partially stable and often were precursors to other ideas.

Disordered processes vary among them in chronological tasks assignment nevertheless still the nature of them is that there is convergence, ideas have a clear vision and are generated according to it; they follow a free flow pattern, moreover in the beginning of the process, they look for receiving a lot of feedback. The idea generation is very important, the process starts with chaos

but throughout time it stabilizes. Some examples of these models are the Delft, Agile model and Khurana et Rosenthal's model.

Sperry et al. (2009) state that the kind of process to be implemented varies according to the project's aim, according to its level of innovation, and that is related with the flexibility in innovation of a company.



Source: Koen, 2007

Figure 6 Innovation process broken into three parts

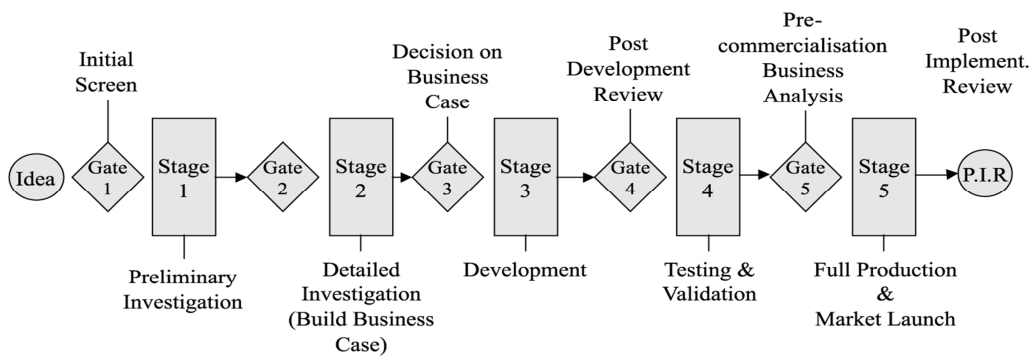
## Stage Gate

Robert Cooper created the very well-known Stage Gate Process <sup>TM</sup> in 2001. According to its author, the Stage-Gate<sup>®</sup> process is a conceptual and operational plan for moving new product projects from idea to launch and beyond, a proposal for managing the new product development (NPD) process to improve effectiveness and efficiency.

The process is linear, as previously mentioned, and consists of five stages, from an idea, through preliminary investigation, business case, development, pilot, and finally to full production and market launch, providing it passes the Go/Kill criteria. In each stage there are cross-functional and parallel activities to be completed and approved by management in order to continue to the following stage. At the beginning of each stage there is a gate where all the task are properly checked, usually this is where decisions are made to continue or stop the project.

The traditional Stage Gate<sup>®</sup> process was designed for a single product rather than for radical innovation platform which may requires a multimarket,

multiproduct plan (Koen, 2007) Figure 4 is a graphical representation of this process.



Source: Cooper, 2001

Figure 7 Stage Gate® process

### User-Centered Design

This is a relative new approach that became popular around 1980's in California thanks to Daniel Norman, a professor who was interested in user's guidance from the design perspective. User centered design (UCD) then is a term that broadly describes the process where users influence from start to end the product development (Norman 2004). After Norman's first approach others were interested and models like the Cooperative design or Scandinavian design, the Participatory design and the Contextual design, were created. All of these models follow the ISO standard Human-centered design for interactive systems (ISO 9241-210, 2010) that states principles of using such as user involvement throughout the design and development, understanding user, tasks and environments, design addressing the whole user experience and others.

Braun (2009) in his doctoral thesis classified and defined the components of the user-centered thinking system into human, product and context. He mentioned that the approach of the UCD is a holistic one, where the objective is to develop products that meet the user's expectations not only pragmatically but mostly in hedonic terms. The human or persona, as others might call it, is one major component and it can be subdivided into physiology and psychological subsystems which at the same time comprise many divisions such as biological

systems and ergonomics for physiology and cognition emotion and knowledge for psychology (Braun, 2009). In psychology the cultural aspects are very important for the research and will be discussed broadly in further chapters. The product is another component of the system and it represents basically the solution to a current user's problem that takes in account pragmatic (usability) and hedonic (desirability) qualities and requirements from the user. The last component is the context in which can be divided into technical, social, political, organizational and cultural contexts.

Interrelations among the components are also discussed by Braun (2009). First the human-product interaction, exchanges of information, energy and physical objects take place. The main point is the use of the product as a tool for a goal achievement pragmatically but also hedonic. The product-context is more related to organizational contexts. The Context-human relationship deals more with cultural issues than the other too, because in this case context determines how humans feel, think and act and helps to understand human action as it can be only understood in combination with the context characteristics. In terms of culture the dynamic perspective is very interesting because it comprises the enculturation process where humans are taught social structures values and norms.

The process in of UCD does not really changes compared to the innovation methodologies discussed above as it includes the conception (FFE), design & realize (NPD) and service (commercialization). The main difference lies in the facts that it involves UCD users along the whole process and pinpoints that hedonic aspects are of extreme importance.

Two innovation methodologies were discussed in this section, including the Stage Gate® and the User Centered Design. The main difference between these methodologies is that in UCD, there is an early stage user integration and chaos of convergent and divergence vs. a well-organized structure and the user integration is not well defined in Stage Gate®. The following section will discuss deeply the relevant factors in early stages of innovation from insight gaining to the entrance of the NPD.

## Early Stages of Innovation

The innovation processes have main components that go from the idea stage to the commercialization of the product. In this section the early stage is going to be detailed as it comprises a very (if not the most) important part of the process where strategies and visions are aligned and established. The famous Fuzzy Front End will be introduced along with other important aspects.

### *Fuzzy Front End*

The early activities of ideation, initial evaluation, concept development, and business case examination are commonly called the fuzzy front-end (FFE) of new product development. In these stages, ideas and product ideas are molded, and justified before the obtain approval to move to full scale development, commonly known as NPD (Khurana et al. 1997 ). Even though there is a continuum between the FFE and the new product development, the activities in the FFE are often chaotic, unpredictable and unstructured (Koen, 2007). According to Sperry and Jetter (2009), once the project has entered to the NPD there are fewer uncertainties, nevertheless the results at the end are not as satisfactory as it should be as less than 60% are successful; this means that there is still a lot of uncertainties during the process and suggests that the FFE is not effective. Khurana and Rosenthal (1997) show the importance of the product portfolio planning and mapping of all new product initiatives across the business for balancing risk and potential return, while ensuring consistency with the product and business strategy. This is called Pre-Phase Zero: Preliminary Opportunity Identification Market and Technology Analysis. Once aligned, the idea can move linear into Phase Zero: Concept and Definition, Phase One: Product Definition and Project Planning, and then NPD.

It is important to consider the different levels of innovation previously mentioned when trying to understand the FFE because it changes according to level. Koen (2007) presents the diverse approaches of the FFE in the different levels of innovation. He states that for incremental the early stages are very clear, since the whole process is completely aligned with the company's existing strategy and the product and the market are already set, so the front end is most of the time

very simple and the transition into de NPD is smooth and gentle. Meanwhile the FFE for the radical innovation has to begin with an effective strategic vision with clarity, support and stability. This vision might come from the need of the company's expansion into new markets. When goals are not clear, screening is difficult and it is not sufficient as the primary link between the flows of idea searching and implementation Koput et al. (1997).

Koen (2007) suggests that for the radical innovations the project team need first to understand how the market is segmented and the consumer needs, then developing adequate concepts according to the research, then developing the product family and in the end build a business case that need approval from senior management. He mentions that the breakthrough innovations also need a strategic vision but many of them occur by accident. They have to be managed more carefully in the beginning by including encompassed methodologies to manage the risk and uncertainty of dealing with discoveries which have not yet occurred. This means that standard financial methods for analyzing these types of projects do not work well. These innovations will only succeed in a caring organization where the company doesn't stop the vision of the pioneer individual or team.

According to Sperry et al. (2009), since only 33% of all ideas made it to development, the front-end activities strongly impact overall product development success; therefore success might influenced by uncertainties, especially in the early stages of innovation.

### ***Opportunity Identification and Analysis***

As previously mentioned, one important aspect before going into details in New Concept Development (NCD) is that before specific concepts can be developed the people involved need to clearly understand how the market is segmented, the unmet customer needs in and strength of the competitors within each segment (Koen, 2002). The fact of gathering relevant insights is critical and this is well known in marketing environments. The term insights is defined by the Oxford Dictionary as the capacity to gain an accurate and deep understanding of

someone or something, in this case, of the user. A wide variety of techniques are used to obtain this insights some examples are interviews, observations, artifact analysis, self-reporting among others. Once the insights are well understood by the researchers, the ideation and new concept development phases can start.

In some of the cases, and most of the time triggered by entrepreneurs, the process of innovation starts with opportunity identification followed by an insight process to better understand the market and its needs. These activities comprise the previously mentioned Pre-Phase Zero. According to Narayanan (2010) the process of this identification is unspecified and no detail is provided to systematize it.

### ***Idea Generation and Creativity***

Insight gaining followed by concept development is considered to be Phase Zero according to Khurana and Rosenthal (1997). In this part of the early stages creativity plays an important role because one of the priority criteria in concept development is to produce original ideas that are accepted by the consumers as Vernon's definition states. Market advantage is always pursued by companies.

According to Titus (2000), the act of generating novel, applicable ideas is the activity most frequently associated with creative problem solving. Creative problem solving is an important skill that professionals in concept generation must have as there is a direct relationship between the quantity of ideas obtained and the quality of the final concept (Osborn, 1963). There are many methods created to enhance individual's creative thought . The most common techniques for concept development are brainstorming, role playing, prototyping and empathy maps but Smith (1998) identified more than 170 techniques. Herring et al. (2009) categorized in five groups which are inspiration, research, refine, co-creation and representation.

### ***User Integration***

The UCD methodology described in the chapter above deals considerably with user integration. Evaluation is an important activity throughout this process and can be applied constantly at the beginning and end of all the stages of the



Innovation process. Rose (2006) says that the continuous and immediate evaluation and verification of findings of each process phase, enhances process quality and efficiency. Besides, research proves that user involvement throughout all phases add significant value (Shaw, 1985; Maidique, 1985; Gemunden, 1992). This can help to minimize risk of market failure (Kausch 2007).

Braun (2009) describes two roles that the user can play in early stages of innovation, first is to act as an inspirer and the second is to act as an informer. An inspirer is the one who increase product innovation and spark by playing along with the development team. This person usually has to have a certain profile of innovator in order to receive good outcomes. The informer acts more as a research object whose needs, premises and requirements determined by his/hers abilities, goals and tasks are determined to acquire information for further developments.

Sanders (2006) states that the market-driven era is giving away to the people-driven era which implicates five important aspects: people who are not designers are designing, line between product and service is no longer clear, the boundaries between the design disciplines are blurring, focusing on experience rather than products and finally the fact of empathizing with needs and dreams of people.

### *Enablers of Innovation*

Drivers of innovation refer to the factors that enable innovation practices within a company. There are many factors but the author has decided to mention some of them. The main drivers for innovation are: talent, flexibility, communication and relationships.

According to Jim Clifton (2007), Gallup chairman and CEO, there are four types of people who drive innovation: inventors, entrepreneurs, extreme individual achievers in their fields (such as the arts, entertainment, or sports), and super mentors. His theory says that where these people settle is where new economic empires will be built. Therefore the first driver for innovation according to Mika (2007) is to look for talent and foster it. In a survey, some employees from different firms (figure 6) and states that engaged employees are likely to be the

company's best source of ideas and that they agree that the company encourages new ideas.

Figure 7 shows the importance of innovative skills within innovative and non-innovative companies where that innovators value technical skills and creativity more than non-innovators do. Around 10% of the non-innovators believe that these two skills are not important.

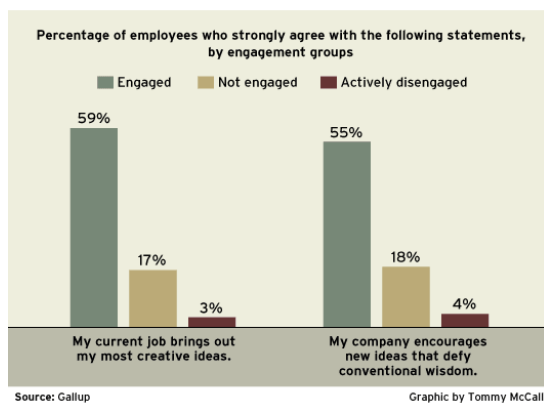


Figure 9 Innovation and Creativity at Work

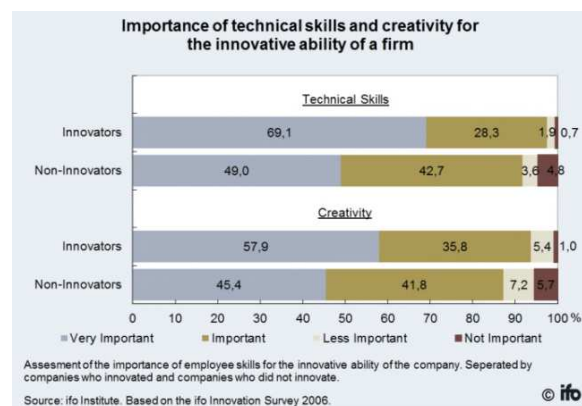


Figure 8 Importance of technical skills and creativity for the innovative capability of a firm

A second enabler for innovation according to Miles and Snow (1996) is flexibility, as they have identified that companies able to develop innovative products and technologies ahead of the competitors tend to be managed in a flexible way. According to Georgsdottir et al. (2004) flexibility is the capacity to change and to adapt to a challenging environment. They say it can be either adaptive (challenges are present in the environment) or spontaneous (change without any external pressure).

Duncan (1976), highlights that an important characteristic to observe is the way communication takes place in innovative companies. Minaret et al. (2000) state that communication is seen as a central success factor for innovations and Heath (1994) supports this theory by saying that communication co-creates shared social meanings and hence facilitates cooperation. Communication is an

interface function (Cornelissen et al., 2006; Cheney and Christensen, 2001) and as such central for business today.

Other important aspects for enhancing innovation are the information flow and cross-functional work. According to Cabello et al. (2006) not only internal relationships within the company are important but also between designers, suppliers, clients and other companies, as it may have advantages for innovation because it enables new alternatives to be simultaneously put to test, thus providing a rapid learning process. Henry Chesbrough, the father of open innovation established that it is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology. Alternatively, it is "innovating with partners by sharing risk and sharing reward."(100 Open)

A broad summary of these sections reveals that the Fuzzy Front End of Innovation is a very important phase in the innovation process comprised of the strategic part with opportunity identification and analysis and the development part with idea generation and evaluation. It is also important to take in account the early user integration and the characteristics that enable innovation. This is the end part of the innovation reviews and following the culture aspects will be discussed.

## Cross-cultural Consumer Research

*A review of cross-cultural aspects is made in this part of the research project. There are several implications regarding cross-cultural products development such as culture awareness, globalization, consumer research and the way culture influences consumer research and its limitations. There are some theories that will be reviewed in this section to that will complement the theoretical framework from the cultural perspective.*

### Globalization

Nayef R.F (2006) studied many different definitions that exist for globalization and he found a remarkable variation among them. He states that it is not an easy

word to define, as there are not clear boundaries. Nikitin et al. (2000) showed that the factors involved in globalization are economic integration; the transfer of policies across borders; the transmission of knowledge; cultural stability; the reproduction, relations, and discourses of power; he states that it is a global process, a concept, a revolution, and “an establishment of the global market free from sociopolitical control.

Some terms such as national interdependence, closer markets, shrinking world, integrated economies and others are often related to globalization definition (World Bank,2001; Larsson, 2001; UNESCO, 2001) The definition that Nayef (2006) proposed after his study says that globalization is a process that encompasses the causes, course, and consequences of transnational and transcultural integration of human and non-human activities.

According to the United Nations the number of migrants in the world has more than doubled since 1975. In 2002, about 175 million people resided in a country besides their country of origin. The International Organization for Migration states that the major causes of people moving are war, violence, persecution, and discrimination; environmental and man-made disasters; family reunification; and the search for better economic prospects. This of course represents an effect of the globalization and also a rich exchange of culture and tastes within the host countries and the immigrants.

Recalling ongoing globalization tendencies and increasing competitive pressure, this field of research is highly relevant for any corporation serving different markets around the world in competitive industries (Braun, 2009). Globalization has made culture the most important asset to work with (Lee, 2004) As culture becomes an significant issue, designers have to be aware of it because after all is the creation of new products that shapes everyday lives and cultures (Moalosi et al. 2007).

## Culture

Culture comprises many aspects but a very simple explanation it could be that it is the way of living of a determined group of people. Wederspahn (2000) starts

his definition with an identifiable group of people sharing values, beliefs, customs, which are learned mostly informally and it includes unique language, art, music, literature among other things. He states that culture changes slowly due to the influence of other cultures and internal development and innovation. This is particularly important for the research purposes because as previously mentioned product development builds up culture in lives therefore the interactions among this need to be understood.

### Cultural Models

As cultural research has gained popularity in the last decades, theories are being developed to try to understand the nature of the subject, the components, similarities and differences between them.

A very well-known model in intercultural studies is the “Iceberg Model of Culture” in figure 8 below. This model focuses mainly in the elements that makes up a culture and emphasizes that most of the time the tip of the iceberg represents the visible elements of a culture from another’s perspective but that it hides most of these elements what brings difficulties in understanding. For example, the visible parts in culture appreciation could be music, architecture, and art as they are easily appreciated while the hidden elements are for example history, norms and values. This model is very easy to picture and helps us very easily to conclude that even if we look at the tip of the iceberg, any deductions can be made that could help to design a product from a cultural perspective.

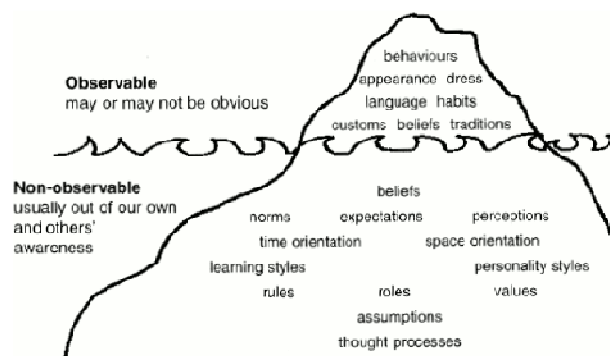


Figure 10 Iceberg Model of Culture

Geer Hofstede, a Dutch researcher in organizational studies is one of the most recognized authors in terms of cultural theories. He studied the influence of culture within an organizational and categorized four groups of values or cultural dimensions which are power distance, individualism vs. collectivism, masculinity vs. femininity and uncertainty avoidance.

According to Guterman(2011) the psychologist Shalom Schwartz developed some cultural dimensions but from a more “values” perspective. He identified that some values could be referred as predominant among members of a society and that these values defined the central traits of the societal culture and that these traits justify individual and group actions and goals. Schwartz identified three main problems that people need to confront and he created his cultural dimensions which are conservatism vs. autonomy, hierarchy vs. egalitarianism and mastery vs. harmony.

Braun (2009) studied diverse models of culture and concluded that most of them are questionable in terms of validity, reliability and explanatory power. He says that these dimensions can serve as a guide but not as a base. Instead he proposes to focus in values and believes (Schwartz), which directly affect the behavior of a person because they are linked to emotions, they are motivational constructions and they are a start point of evaluation that influences decision-making. He also categorizes the values in operative, adopted and intended values. Operative values are the most important ones as they are relevant for goal achievement.

As designer's profile in product development is a crucial factor for success, in cross-cultural product development there are some extra skills needed besides the traditional ones. Braun (2009) highlights the fact that the product development teams in some companies work in a cross-cultural context and that is a must to consider international business management. According to Trout (2006) successful marketers and designers are the one who must get emerging markets right. Lahiri et al. (2010) stretched the fact that designers need to get a deep almost tactile awareness of the culture and the context of their target market never letting the global threads of networks and supply chain to wrap them in a cocoon.

Self-culture awareness it's a concept that might sound very easy to deal with,

nevertheless, as many things are done subconsciously, it is not that obvious to be aware of our “cultural baggage” as Wederspahn calls it. This is important in order to have a point of comparisons and look beyond the tip of the iceberg. Davey (2010) states that awareness of our own cultural conditioning and knowledge about other cultural systems build the foundation of cross-cultural training while paving the path towards cross-cultural competence. Tomlinson et al. (2001) state that cultural awareness comprises the gradual development of inner sense of the equality of cultures, an important understanding of self and other people’s cultures, and a positive interest in how cultures both connect and differ. He stated that this can help people to gain sensitivity and empathy towards diverse cultures.

Cross et al (1989) define cultural competence as a set of congruent behaviors, attitudes and policies that are integrated in a system, organization or group which enables the people in that system to work effectively in cross-cultural situations. Cultural competence comprises four components: (a) Awareness of one's own cultural worldview, (b) Attitude towards cultural differences, (c) Knowledge of different cultural practices and worldviews, and (d) Cross-cultural skills. Developing cultural competence results in an ability to understand, communicate with, and effectively interact with people across cultures (Martin et al. 2007)

### ***Food and Culture***

Cultural influences on foodways have received more and more attention as migration has increased the ethnic and cultural diversity of Western societies (Sanjur 1995; Keenan 1996; Kittler & Sucher 1997; Fee 1998; Harris-Davis & Haughton 2000; Curry 2000) As the research is linked to concept development of food products it is important to take a look at the diverse cultural aspects involved with food as it is one of the most visible culture representations.

There might be a difference among cultures about meanings and taste in food nevertheless there is some evidence provided by human psychology that shows existing resemblances. One example is that anthropologists and sociologists have identified many non-biological influences on food choices and food behavior. For example food is used to build and maintain social relationships in

all cultures. Food is an extremely valuable social instrument for humans because it promotes social interaction (Rozin, 1996). Clendenen et al. (2004) observed that the people could eat as twice as much if they shared the table with more people.

Even though these resemblances exist and are very important, as previously mentioned, there are variances among cultures and these can't be ignored even if the world moves towards globalization. Differences can be found in diverse aspects not only in taste buds, but also in consumption moments, distribution channels, social contexts and others. Examples of these differences can be found along history and will be discussed as follows. One example is the Coca-Cola Company when they tried to increase their marketshare of soft drinks in India, where only a small percentage of households consume soft drinks and, different from the USA market, they consume this product in special occasions rather than with their everyday meals. This gives a first hint about the importance of a research from a cultural perspective and creates awareness, which later will facilitate the cross-cultural market research and NPD.

Other examples involve distribution channels such as internet penetration which percentage of population with access differs from region to region; for instance in Africa only 15.6% and in North America 78.6%. Among Europe, online penetration in Ukraine, Turkey and Greece in June 2012 was comparatively low at 34.1%, 45.7% and 53% respectively compared with the UK, Netherlands and Norway, at 83.6%, 92.9% and 96.9% respectively (Internet World Stats, 2012).

In the case of tastes and consumption moments West (2013) highlights some examples that are presented as follows. In taste, Irish consume on average 155 liters of beer each per year compared with only 29 liters by the Italians and only 41 liters by the French. However, while the Irish only consume an average of 0.7kg of coffee per person per year, the Norwegians and the Finns consume in excess of 10kg, and while the Americans are the largest consumers at McDonald's restaurants at 0.433 per 10,000 population, the Belgians come much further down the list at only 0.062 per 10,000 population.

In consumption moments, for example, Spain, usually a light breakfast is taken followed by a mid-morning breakfast, tapas at 1pm with a three-course lunch



following at 3pm, tea and pastries 5pm, evening tapas at 8pm or later, and even a three-course dinner at 10pm. The fact that they do it this way does not mean that is a global practice, therefore products have to be tuned according to specific countries tastes and moments of consumption as they are not the same in Mexico, France and The Philippines.

Because food, culture and new product development are strongly related, it can be assumed that a good understanding of the interactions, plus a well addressed design based on this understanding, might give satisfactory outcomes in terms of successful innovation.

### **Cross-cultural Market Research Theories**

West (2013) mentioned in his article that Marketing across national borders, whether within nearby countries or on a more global basis, requires research into the cultural, social, linguistic and habitual differences that, in some cases, can differ widely even between nations in close geographical proximity. He suggests a careful balance in both marketing and delivery to ensure that the customer experience reflects the consistency and values of the brand in each country. This means achieving consistency while considering local preferences, and cultural differences.

There is a lack of in-depth research and appropriate methods to assist designers on how culture can be consciously integrated in product design (Onibere et al. 2001; Kotro and Pantzar, 2002). Research has been made in order to assess and create new methodologies that involve cross-cultural consumer market research.

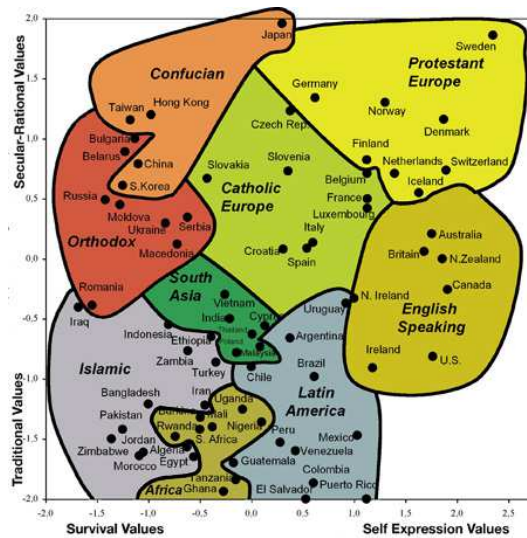
While theory development in international marketing showed considerable progress in the last ten years, advancement in the research methodologies has generally tended to lag behind (Aulakh et. al, 1993).

Malhotra (1996) says that the market research problems are more complicated in a global scale than in the domestic field. He proposes some criteria to consider at a cross-cultural level of market research. Conceptual equivalence for instance implies that the meaning of research notions, stimuli, and materials should be

alike across cultures. In summary, the research problem should be defined in a way that it is conceptually equivalent for individuals in the various cultures being investigated. Another criterion is comparability as he states that it is of ultimate priority for research validity as many similar projects have failed because of issues in this criterion. He suggests conjoint analysis as an effective mean of conducting individual or group-level analysis and that might be useful in a global scale study.

Pawlowski (2008) proposes user profiling method which aims to list main characteristics of the cultures based on the context to be studied that could serve as a guideline for self-reflection and point of comparison. He remarks the importance of culture awareness at the beginning of the project and he suggests user integration to enrich culture profiles with perspectives and attributes from the user. With user integration he introduces the culture clouds term which intends to present the user's perspective that links cultural aspects with external resources.

Another interesting model proposed by Inglehart and Welzel (2010) groups the countries into clusters that have value commonalities rather than graphical location and it is called the World Value Survey Cultural Map of the World (Fig 9). The authors state that the map was designed to provide a comprehensive measurement of all major areas of human concern, from religion to politics to economic and social life and two dimensions dominate the picture: (1) Traditional/ Secular-rational and (2) Survival/Self-expression values. These two dimensions explain more than 70 percent of the cross-national variance in a factor analysis of ten indicators-and each of these dimensions is strongly correlated with scores of other important orientations.



Source: WVS, 2013

Figure 11 The Cultural Value Map of the World

Two common terms in informatics and computer software design is internationalizations and localization of products. Aykin (2000) gives a definition for each term and states that internationalization (I18N) is the process of designing an application so that it can be adapted to various languages and regions without engineering changes. In other words, to design the base product features in such way that later can be adapted to different markets by doing slight modifications. In the other hand localization (L10N) is the process of adapting an application for a specific region or language by adding locale-specific components and translating text. This would be steps to make the slight change.

The localization Industry Primer (LISA, 2001) argues that as globalization involves business procedures such as technical, managerial, marketing, personnel and others, it necessary to make all of them as easy as possible for practical reasons; and this could be achieved through localization. Aykin (2000) highlights once more that designers should understand the requirements of the user for a determined product. He mentions that in some of the cases designers are not aware of why are the localizing products and that even cultural boundaries are getting blurry, cultural difference do exist and must be taken in account. Finally he suggests to design in function of acceptable characteristics for most countries and to perform usability evaluations.

Even if this methodology is applied nowadays mostly in computing product design, it could be interesting to try exploring and fitting it to all kinds of products. Even though there are multinational companies that in a certain level internationalize and localize food products, there is not much research done in cross-cultural market research and new products development for food products.

In this section the different theories regarding cross-cultural product design were discussed. The most important fact is that there is not enough development of methodologies in this field according to various authors. There is a possible theory that an extrapolation exercise from the computer science might improve product development in other industries.

## Methodology

*In this section the methods used for the research as well as the description of the methodological approach will be presented as well as the elements that are to be*

*included. A review of the methods for data collection will be done and it will be divided into documentation, observation and interviews. Finally the plan for the analysis will be established.*

## General Approach

In the project, deductive reasoning or *top down* approach will be performed. Deductive reasoning, according to Burney (2008), is a type of research method that starts with general information and finishes with the specific aspects and it is based in laws, rules and accepted principles. In this particular case, specific observation will be made and in theory and conclusions will be made from these theories.

The scope of the project is a research about how to perform global scale consumer research in early stages and what the challenges are. It deals with the exploration of the topic and its focus is to understand the steps and the characteristics of the early stage of the innovation process and identify the key factors of success.

A theoretical framework is developed in order to gather all the research previously done related to the topic that will help the reader to understand the context and the theories done about the results. Once the theoretical framework is built, interviewing sessions will support or not the theory reviewed and a conclusion will be made.

This research is classified as a qualitative study. According to Patton (2001) qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, like real world situations where researches don't interfere. It is also characterized by the fact that the results does not come from any means of statistical procedures or quantification (Strauss et al. 1990).

## Case Study

A business case approach will be done as it is a business unit that will be analyzed. Yin (1981, 1984) described the business case analysis and he defined

it as a research strategy that can involve either single or multiple cases, and numerous levels of analysis (Yin, 1984). According to Eisenhardt (1995) the case study is a research strategy which focuses on understanding the dynamics present within single settings. This type of studies can be used to provide description (Kidder, 1982), test theory (Pinfield, 1986; Anderson, 1983), or generate theory. In this particular study the aim is to provide description and generate a soft theory.

Eisenhardt (1995) says that the aim of this type of studies is to understand how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences. She mentions that case normally they are a combination of data collection methods such as archives, interviews, questionnaires, and observations.

The unit of analysis will be the global innovation department of the company as they are the ones working with new project development for diverse countries. The author has chosen to use interviews and questionnaires, to try to understand the perspective and experiences from the people involved in the Global Innovation area. The type of case study will be observational as Bogdan et al. (2007) define it as the major data-gathering involves participant observation with interviews and the study in this particular case involves a delimited group of people working in the same area.

## Theoretical Framework

The theoretical framework previously presented includes many aspects related to concept development in a global scale. First the innovation part is developed and it includes aspects such as types, levels and processes to give a broad view of the topic; this part moves from broad to deep and end with emphasis in the early stages of innovations and new approaches provided from different authors. As the second part of the theoretical research starts, basic definitions are given related to cultural aspects and finally relevant aspects from international marketing research and design are highlighted. The aim is to relate the innovation in early stages with the consideration of cultural aspects in cross-

cultural projects and to later make a comparison with PepsiCo in the empirical study which includes the informants' perspectives.

## Data Collection

The data collection will be done in a time frame that starts from the beginning of the thesis and will end before the analysis of the data starts. The data for the first part of the study (documentation) will be obtained from books, journals (mainly business and international marketing), doctoral thesis and other officially validated sources. Another type of data will be collected from interview made with specialists on the subject.

## Interviews

Interviews are considered prime source of information as they helped the author to make conclusions of real life versus theory explored. Marvasti et al. (2010) says that interviews are a basic form of data collections and that they may provide meaningful data by acquiring in-depth respondent's knowledge.

In qualitative interviews the interviewer does not do the research to test a specific hypothesis (David et al., 2004). According to Corbeta (2003) the interviewer is free to conduct the conversation as he thinks fit, to ask the questions in the words he considers best. Other authors support this theory by saying that is a way for the interview to explore new paths, which were not initially considered (Gray, 2004). He also states that in qualitative studies this phenomenon is referred as constructionism as it is an orientation aimed at understanding variable constructions of knowledge (from the respondent).

A careful selection of senior managers and directors working for the R&D, Marketing and Insights departments was done in order to perform semi-structure interviews. The names of the respondents are to keep confidential as requested; a coded table is shown below to specify position and countries or regions of the informants. Interviews were performed either face-to-face or by telephone when it was long distance. The interview starts with a short presentation of the topic as

well as thanking the respondent for his time; the total length of the interviews oscillated between 30 to 40 minutes. The permission to record is demanded and the confidentiality issues are clear up. The specifics of the interview questions and structure are detailed in the appendix.

## Observations

According to Mack et al. (2005) Participant observation is a qualitative method originated from ethnographic research, where the objective is to help researchers learn the perspectives held by study populations. A tool in qualitative research to achieve this purpose is observation alone or by both observing and participating. Participant observation is performed in locations relevant to the research questions; this is why informal conversation and interaction with members of the study population are also important.

The main advantage of this methodology is that information obtained could be more reliable compared to information obtained directly from the individuals as their actions reflect more than their words. In the other hand some disadvantages are the fact that it is difficult to document these observations and that they could be subjective while research should be objective. (Mack et al. 2005)

Along the study some active observations were made in order to acquire some additional information. The author participated in some teams with cross-cultural projects, which allowed learning more about the perception of one country towards another. These observations were limited and some of them won't be detailed due to confidentiality issues.

## Documentation

Document analysis is a systematic procedure for reviewing or evaluating documents. These include advertisements; agendas, attendance registers, and minutes of meetings; manuals; background papers; books and brochures; diaries and journals; event programs (i.e., printed outlines); letters and memoranda; maps and charts; newspapers (clippings/articles); press releases; program



proposals, application forms, and summaries; radio and television program scripts; organizational or institutional reports; survey data; and various public records (Bowen, 2009)

Some advantages according to Bowen (2009) are the fact that are not time consuming, the large availability of information and the cost-effectiveness of the method. In the other hand Yin (2004) highlights possible bias as for document selection, low retrievability and insufficient details.

## Analysis

There are diverse methodologies that could be used in order to analyze the empirical data obtained from all of the data sources previously mentioned. The author has chosen to perform a thematic analysis which will be detailed as follows.

Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data and describes this data in profound detail (Braun et al. 2006). However, Boyatzis (1998) argues that it also often goes further than this, and interprets various aspects of the research topic. According to Guest et al. (2012) thematic analysis is the most useful in capturing complexities of meaning within a textual data set and also the most commonly used method in qualitative research.

Thematic analysis was compared to other analysis of qualitative research (Guest et al. 2012) Boyatzis (1998) characterizes it not as a specific method but as a tool to use across different methods, where some resemblances among all of them could be recognized. One example could be the fact that thematic analysis follows a similar step by step process than that from the grounded theory from Corbin et al. (2008) with the difference that in thematic analysis a theory construction is not imperative. Thematic analysis differs from other analytic methods that seek to describe patterns across qualitative data.

The step-by-step methodology description of Braun et. al (2006) was followed to perform the analysis; first step was to familiarize the author with the data

acquired, going back and forth between the entire data set; the second step was to generate initial codes in a data-driven way, meaning that notes were done where similarities appeared; the following phase was to search, review and definition of themes, by grouping data into similar context; the last stage was producing the report. It was highlighted that one of the benefits of this approach is its flexibility (Braun et al. 2006).

The author is convinced that this method for the analysis is the one that suits best for the research topic and the obtained sources of data.

**Table 1 Informant's departments, positions and countries they work with.**

Informant	Department	Position	Country/Region
<b>HM</b>	R&D	Director	USA Caribe & South America
<b>IM</b>	R&D	Manager	
<b>SB</b>	Marketing	Director	Western Europe
<b>LR</b>	R&D	Manager	UK, Turkey & Russia
<b>RP</b>	R&D	Director	Mexico/World
<b>DS</b>	Insights	Manager	Europe
<b>CA</b>	Marketing	Manager	Western Europe & US
<b>IB</b>	Marketing	Director	US, Canada, UK
<b>ML</b>	R&D/ Insights	Senior	US/Russia

# Empirical Study

*The empirical study presents the evidence gathered from interviews, observations and documentation. In this section a very specific approach to global scale innovation in PepsiCo will be presented. The information gathered was grouped into themes which will cover several of the topics reviewed in the theoretical framework. A summary of the relevant findings will be shown at the end of each subchapter.*

## Innovation at a Global Scale

Innovation at a global scale is something relatively new for the company even though it is a multinational that has existed for more than forty years. Initially merged with Frito Lays®, the group has been growing through the years with the acquisition of several medium sized well established brands such as Tropicana, Quaker, among other local brands that change from country to country; these brands have expanded significantly since their acquisition (DS, 2013). PepsiCo as a multinational recognizes the importance of innovation and promotes it by investing in deep consumer research, research and development centers and in all the people involved in innovation projects.

The fact that the company has grown worldwide with global brands (and also local) allowed the top management to see that the system could be improved by implementing a global innovation process. Three years ago the Global groups were formed in order to promote this global scale innovation (CA, 2013). In this section the general overview of the informants regarding the general process will be discussed.

### Aims

Several aims of Global Groups were highlighted by the informants; a main objective that tend to be recurrent is the fact that these groups are trying to find big bets and develop strategies in a global scale or for cross-cultural markets (HM, IM, SB, LR, RP, ML, 2013) It was mentioned that the expansion of the

existing brands in the markets to fill the gaps where there were some was also one of the targets (HM, ML, LR, 2013)

The relationship and collaboration with local markets was also highlighted by some of the informants (HM, LR, ML, 2013) this is an important point that will be discussed in later. Even though it was less frequent the development of breakthrough innovation was as well pointed as objective (CA, DS, IB, 2013) which is closely related to leveraging expertise and putting all resources together to maximize scale (SB, RP, IB, 2013) . DS (2013) proposes a different but very interesting response for this question by saying that the aim is mainly to drive efficiency, pointing out an example of centralized companies with slow growth but in an efficient way. This perception matches partially the fact that acceleration of growth was part of the aims of these Global Groups (IB, 2013). The author thinks that the fact that breakthrough innovation is long term does not necessarily accelerate growth but keeps it constant; this will be discussed in more detail in the analysis chapter.

Grouping all the answers the author proposes a general objective as understood for the Global Groups at PepsiCo by saying that the general objective is to promote long term growth of the company by creating global strategies In collaboration with local markets to develop existing brands where there are gaps and to create breakthrough innovation in a synergic way by centralizing expertise where the brands are solid.

Generally speaking it can be said that the main idea of the Global Groups of PepsiCo is very clear among all of the informants. The differences in specific point could be related to each specific role, because it is not the same to talk from a technological perspective than from a business one, nevertheless it is very important that everyone is aware of all the implications from a holistic perspective.

## Processes

The informants where questioned about the steps they followed when innovating in a global scale. The Stage Gate® process was mentioned as the main guide of innovation development (HM, IM, LR, DS 2013) which is the traditional way and it

is used since many years ago (HM, DS, 2013). IM (2013) mentioned the importance for a company to have a guideline for the innovation process. A more general overall process that included finding business opportunity, ideation, concept creation and product development was shared by several informants (HM, IM, DS, ML, IB, 2103).

Some of the informants included the cross-market factor within their explanation by mentioning that the business opportunity needs to be relevant for multiple countries where commonalities needed to be found (IM, RP, DS, CA, 2013). DS (2013) relates the local and the global innovation process by saying:

*“This is (the Stage Gate®) the process to do it in one market or in thirty markets, the difference is at what stage you do tasks”.*

Differences were highlighted between the innovation process for developed and developing countries (LR, 2013) and IB (2013) supports this by saying that the strategies won't be the same for all set of countries that it will depend on the development of the countries. This can be confirmed by the author's observations according to the different locations of the informants and the projects they worked in. ML (2013) compared the drivers for innovation between the US and Russia. Even though they did not mentioned specifically the differences between a local and a global innovation process, they recognize it as some of them précised that steps to follow are in an “ongoing” research status, where the company is trying to figure out the best way to perform a global scale innovation process (DS, IB 2013).

Basically the current guideline of the company to perform global innovation is an under construction process and it seems that everybody is aware of it. Many of the informants recognize the importance of an overall cross-cultural perspective and some others mention that there is still a way to go for the optimization of the process. This is in general a good sign as it is hard to come up with due to the size of the company; changes are not easy neither quick to adapt into such a huge system.

## **Early Stages of Innovation**

The insights regarding the critical steps of the early stages of innovation were

numerous and most of them different in nature. Consumer immersion insight upfront was mentioned as a critical task (HM,LR, ML 213) Two examples linked to this with positive outcomes were described (LR, SB 2013). A confidential consumer research methodology was highly praised ( SB,LR,DS 2013).

The task of clearly defining the purpose of the innovation, really defining a key insight as critical (DS, 2013) This is complemented by the fact that market assessment, analysis of insights and building the right segmentation are also essential ( SB, RP, IB 2013). Evaluation of the developed concepts was emphasized as a critical step of the early stages (IM, RP 2013). IB (2013) mentioned that from the Global perspective finding commonalities about the insights is of major importance.

LR (2013) highlighted timing as a critical factor more than task, as she mentions that early stages should be longer in time to get the consumer and bet right. This particular issue will be discussed more in detail in a later chapter. Another important factor mentioned by some of the informants was the fact that early stages should work in a multidisciplinary way with participation of different team and from different locations (HM, LR, RP 2013). These factors will be as well discussed in further chapters.

Nor ideation neither concept development were signaled as critical tasks in the process. SB (2013) stated that ideation has very solid methodologies and that with the right teams and tools it was not something to discover.

*“An ideation process workshop is kind of very strict with very strong methodology and protocol the value added of the marketer is in the first section (market assessment)” (SB, 2013).*

It is important to observe the diversity of responses of the informants regarding this part of the innovation process. A general idea could be that all of the steps that integrate the early stages of the innovation process are critical because they really define the success or failure of a project. LR (2013) pinpoints in general the importance of the early stages and recognizes that there are some areas opportunities in filling the consumer gaps or white spaces. This is supported by another informant as she says:

*“When we are developing new innovation the upfront work is one of the most important tasks, that is the foundation for the success of a project” (ML, 2013)*

## **Main Actors**

A very important aspect in innovation like in every other activity is to know the actors who should play a role in the process and the activities assigned to each of them. Many of the informants stated that at least a representative of the Insights, Marketing, R&D, Supply Chain, Finance, Operation, Sales and Commercialization departments should be involved in the innovation process (HM, SB, RP, IM, DS, IB 2013).

This common statement mentions the “who” part of the course nevertheless the specific activities of each actors is not clearly stated. SB (2013) mentions that the reason why all of them should be included is to make sure that you have commitment of all of them right from the start and to make sure that it is viable from all the perspectives. DS (2013) describes the in which stage the actors should appear along the process of innovation. Three informants mentioned the local teams as an actor that should be involved at the beginning of the process (HM,CA, DS 2013) at least as an observer (HM, 2013).

A main point obtained is that some of the parties agree what teams should collaborate in the early stages of innovation. To bring R&D into early stages of innovation, meaning ideation and concept creation, results in a very positive outcome (HM, RP, LR, 2013) which is supported by the top management (CA, 2013). In the other hand isolation was proposed for marketing teams these stages (SB, 2013), this is partially supported by the opinion that only insights and marketing should be in charge of these first parts of the process (CA, 2013). This is not a difficulty issued by the global context but at all innovation contexts. It is something that happens between these areas of expertise and in the author’s opinion they are complementary and both parties should work in absolute collaboration by putting themselves more often in the shoes of each other. As the scope of the project is limited this subject won’t be covered in detail however it is essential to keep it in mind as a key success of innovation.

A project leading team was mentioned as an actor in the global innovation process (IM, LR 2013) and was highlighted as indispensable for successful outcomes.

*“The activation or innovation leading teams know how to perform project management and they enable the stage gate process and they go for the right decision”(LR, 2013)*

In general the author agrees that all of the parties should be somehow involved in the innovation process which a respective activities or roles in it; this will indeed help everyone to be aware and help forecast possible difficulties which in the end saves time and resources.

## Challenges

One of the main challenges assigned to the global scale innovation process is to find a common food product for several countries due to the cultural differences (HM, SB, LR, RP, DS 2013). Many informants agree with this aspect and recognize that finding commonalities that they can turn into business opportunities is not an easy task. A mistake made in previous years is to think that a product that works in the US will work all over the world which obviously resulted in failure because the consumer is not the same (LR, ML, HM 2013).

Another challenge is related to the technology capability, flexibility and availability (HM, IM, LR, RP, IB 2013). In this point there are two important aspects, the first one is the fact that even if different markets are aligned and the opportunity exists, the capability of the current lines or the flexibility to adapt them might not be sufficient to cover the demand for the products; the second is the fact that there are some lines that have extra capacity for production so the products must be ideally designed based on this which forces in a way to fit the consumer needs into a specific product type. In the US R&D works together with manufacturing so they know the capacity of the lines (ML, 2013) and sometimes product innovation is driven by this fact while in other countries product innovation is driven by a business opportunity.

Unfortunately, investment issues are always relevant like in any other industry; huge money amounts for a specific project are difficult to obtain moreover if it's for a global scale project. The author thinks that the technology feasibility



analysis should play an important role in the early stages of innovation and that a very deep analysis between cost and benefit in a long term should be done to foster innovation and manage high levels of risk. IM (2013) mentions that sometimes they need to look for low investment initiatives and alternative methods should be explore that deliver optimum results.

Cross-cultural collaboration is as well perceived as a challenge among informants (IM, LR, CA 2013). IM (2013) pinpoints that international communication is complex and that people from different countries have different ways of working and of communicating. The way of thinking and expressing culturally between two countries represents a challenge when it comes to align projects (CA, 2013). This is a new insight not previously found in the theoretical framework as it is not very obvious to get this is why next chapter will discuss more in detail interactions and cross-cultural collaboration.

Finally a challenge faced by the people in the company is that they need to make innovation that shows results in short term (DS, CA, LR). This is part of the characteristic culture of PepsiCo, which according to DS (2013), they are aware of and they are trying to change in order to perform better in innovation in long term. This is linked with the fact that global groups are relatively new and that it is slow to change a culture of such size.

### **Success Factors**

The informants were asked about their opinion regarding the success factors of innovation in a cross-cultural context. In this part the answers were varied and very relevant according to the author. To ensure the voice of the consumer when looking for a business opportunity is a success factor (HM 2013) as well as complying with the consumer's desires and wants and the because when you do so it's difficult to get it wrong (LR 2013).

To consider the global/local aspect is very relevant for outstanding outcomes in global innovation as people involved need to be two-minded to think global and at a certain point localize the project (SB, LR, CA 2013). This is one of the main differences in respect with local innovation projects. CA (2013) suggests more face to face interactions with cross-cultural teams as well as common trainings in order to understand this global/local vision. LR (2013) remarks the importance of

understanding clearly the importance each of the parties involved in global projects.

A success factor is the alignment among all countries involved (IM, CA, DS 2013). The fact of having a competitive advantage was also mentioned as crucial (HM, DS, RP 2013). ML (2013) mentions that a success factor is to be patient and doing the needed work up front as longer timings will permit to find the right synergies among countries. An integral answer was obtained from one of the informers who established the following:

*“ (the most important element for success) is to grab common insights and build solutions that can provide the consumer a much better satisfaction of what they currently have in an affordable way for both the consumer and the company in combination with an experienced multidisciplinary and local team” (RP 2013)*

IB (2013) mentions markets wanting innovation (pulling instead of pushing) and good collaboration among teams as relevant elements of success.

There are several important aspects to be considered for success in global innovation; even though they are individually relevant, they are closely connected to each other for example, alignment is one of the main aspects that are directly linked with the activities all along the innovation process. As previously said, collaboration will be discussed in the next chapter for the reader to obtain more insights from the informants that the author gained during the interviews.

## Cross-cultural collaboration

Cross-cultural product innovation not only entails the differences in cultures among consumers but also among collaborators. This is an aspect that sometimes might be taken for granted by multinationals by as they operate in several countries but it is actually a real challenge because of the intercultural interactions as sometimes only the tip of the iceberg can be seen. CA (2013) mentions an example when communicating messages during a cross-country project are often perceived as something when at the end it results other than the expected among the cultural parties involved.

This chapter includes the informant's perspective about global vs. local aspects, alignment and communication as a powerful tool, the required skills of people in this kind of projects, networking among them and finally the promoted cultural awareness.

### Global vs. Local

In order to develop a global project there are two macro elements that together make synergy to achieve successful results, these elements are the global and the local teams. As previously mentioned, the aim of the global groups is to develop the strategy for cross-cultural projects. The specific activities of the local teams were not specified as well as the time when they should enter the process. One of the informants gave a hint that in their personal case as local team, they are involved from the qualitative and quantitative research stage of the process (CA, 2013). IM (2013) commented that the project leadership is transferred from the global to the local teams at some point.

Some of the leaders of the global groups pinpoint the importance of collaboration with local business units (HM, IM, SB, RP, LR, IB 2013). One of the interviewees argues the value of the local teams in global projects by saying:

*"They (local teams) know better the consumer and the local implication of a new technology or innovation and can add value to the idea construction and re-application success"(RP, 2013)*

The communication between these teams (global and local) is of ultimate importance according to IM (2013). On the way of the company to build a global innovation process there is a matter that needs to be clarified and well defined. In one side global groups must work in relevant projects for several countries so a certain empowerment for them in those projects its suggested (IM, 2013). Also SB (2013) mentions the fact that they "not invented here" syndrome should be eliminated from the mind of the people involved in the projects because it might prevent cross-cultural innovation from happening. In the other side interest to participate from the beginning of the project was shown by local teams (CA, 2013). It was found useful to include the local teams since the beginning even just as slight influencers in order to promote a clear alignment (HM, SB 2013).

The author thinks that empowerment is also a typical obstacle in local product innovation, nevertheless in global scale projects the complexity of it is bigger as more people is included in the scope. It is of great significance to recognize that both elements are essential and that they complement each other. A positive outcome could come from the definition of activities for each of the members and each of the groups at every stage of the global process, not meaning that has to be the same for every project but at least to develop a general recommendation guideline.

### **Alignment & Communication**

Alignment has been highlighted as a central aspect all along the empirical study (IM, SB, DS, CA 2013). This matter impacts several dimensions and some examples are alignment on the way of working between regional and local teams (IM, 2013), decision making among countries and globally speaking (CA, 2013), empowerment of the global teams across regions (LR, 2013), task assignment all over the process (CA, 2013) also language harmonization for consumers and collaborators and processes (RP 2013) processes in developed and development countries (LR, 2013) as well as many other dimensions.

Alignment is needed among a greater number of people than usual and it takes time and energy a lot of resilience needed to make things or products happen (DS, 2013) Communication is directly linked as it is a mean for alignment but it is as well considered as complex (IM, 2013) because of the large amount of units involved. Short term results and timing previously mentioned are factors that impact directly the process.

The author thinks that a vital matter would be to think about the right timing for communication to flow efficiently among all the parties in order to align them towards a specific purpose. It appears that this is a complex key element of the global innovation process and its naturally advancing slowly in the company as many things need to be tight up (DS, 2013). The author proposes a precise alignment for internationalization and localization processes.

## Required Skills

Many skills were listed as fundamental for individuals participating in global innovation (HM, IM, RP, DS, LR, IB, ML, CA, SB 2013). Effective communication was one of the most repeated skills between informants (HM, RP, CA, IB 2013) including communication with collaborators and with consumers. RP (2013) enforces the importance of know how to build strong networking with local teams. IB (2013) states that sharing periodically with the teams the updates of your work is key and this could be an example of effective communication. This is supported by HM's (2013) statement that says that people should keep the same speed of information along the process.

Because of the length of the process DS et CA (2013) strongly suggest resilience as a skill of the participants. According to RP (2013) broad expertise and the ability to interact with different countries in long distance are also important. This is evidence that directors and managers should be actively involved in the process but it is not mentioned exactly in which steps.

The fact of being open-minded is listed as one of the key skills as markets and preferences are different (SB, LR, ML 2013). This is closely related to the ability of having the global and local hat on suggested by SB (2013) and also mentioned by other informants (HM, LR 2013). Abilities in interpersonal relationships were also mentioned as a must (LR, DS 2013) as well as interest in other perspectives, other markets and existing solutions for the same problems (SB, 2013). To be a good listener is also linked with this human relationship aspect (IB 2013).

The informants were asked their perspective regarding extensive expertise as part of the requirements for working in a global scale project and there were several opinions. DS (2013) said that mostly managers and directors are involved in decision making and in the global innovation process. HM (2013) mentioned that is not often that positions for juniors are to be involved cross-cultural projects. Nevertheless, some of the global scale project required skills, such as open mindness, are not necessarily level-driven but it's about life experiences and education (SB, LR 2013). The author thinks that a certain level of expertise combined with this skill might be the optimal match.

Finally the qualities that are more related more with traditional innovation processes are creativity, curiosity proactivity and reactivity (CA, IB 2013). All of the above mentioned skills and abilities form two main groups; the first group represents innovation and managements skills while the second tends to be more intercultural skills.

## Global Networking

The author observed that there is strong global network among the PepsiCo teams from all over the world that is in continuous communication. There are many tools in the company that allow the teams to be connected at any time so in terms of means it can't be perceived as an important gap to fill.

Regarding the global projects, there is a group of people in charge of a specific task related to informing the countries about an update and putting them in contact so they can discuss commonalities (HM, IM, SB, LR, DS 2013) and the author thinks this people in charge act as facilitators but is not clearly pointed in which stage of the process.

HM (2013) talks about R&D communities globally connected by some initiatives as an example of a network mean. A particular forum created by the marketing department was pointed as an effective activity that kept inform, in an organized way, all the parties involved (IM, 2013). Global forums were mentioned as one of the means of sharing new findings, products, methodologies and relevant innovation aspects (HM, RP, CA 2013). The fact that it would be a good thing to open these events to local teams was one suggestion of one of the informants (CA 2013).

Some more traditional communication means were mentioned and as examples of transmitting ideas informants mentioned digital presentations, conference call, videoconference and meetings (LR, SB, CA, RP 2013). Meetings were signaled as the most effective mean (CA ,2013) compared to the others except videoconference as it is relatively new. ML (2013) tells that in her experience there is a huge change when you work with someone over the phone than physically. Nevertheless cost represents a huge obstacle for doing this often (HM, CA 2013).

The effectiveness of networking according to the mean was not deeply compared nevertheless the author agrees that face-to-face gatherings could result with better outcomes. Also, only networking among similar disciplines was mentioned.

### **Cultural Awareness**

Cultural awareness is maybe the most important topic that the author wanted to explore; in the beginning the research was mostly related with consumers but throughout the thesis it gained more and more relevance from the collaborations point of view. This aspect was actually observed as critical from some of the informants (HM, DS, CA 2013)

There are numerous ways to promote this among the company, for example through networking and interaction with the technology means previously mentioned, also by giving insights to the teams and constant update about the global project status, which allow them to acknowledge other teams' opinion and perspective (HM, RP, IB 2013). Exchanges of people between countries are currently made and this is mentioned as a powerful tool to encourage cultural awareness (HM, ML 2013).

Knowledge of all markets helps people involved in the projects to observe cultural differences within consumers (IB, 2013). RP et IB(2013) suggests supermarket visits to observe the diversity of existing solutions (products) and recognize the common ones for multicultural consumers is part of the cultural awareness practices that the company promotes. Technical aspects, such as comparative of regulatory affairs, promote cultural awareness among product developers (IM, 2013). Both of these methods are quite interesting and easy to perform according to the author and have a double scope of marketing and R&D.

As previously mentioned, senior and expertise positions are involved in these assignments and one informant pointed out that the company trusts these expert positions to do cultural exchanges between them(DS, IB 2013), nevertheless it was not specified if the results observed were satisfactory and if this was promoted among all levels. Culture has being shaped to the multinationals perspective and France is one example (CA, 2013).

Cultural awareness was compared to personal awareness as relationships need to be discovered while knowing a person (DS, 2013); it was also related to multifunctional team interaction as the interactions are done among people with different technical language and different expertise (SB, 2013). IB (2013), highlights that a certain level of knowledge and cultural awareness in respect with the markets is required for the team members of worldwide projects.

Various interviewees affirmed that PepsiCo is aware of the importance of this aspect and that is trying really hard to develop the strengths in cultural awareness (LR, DS, CA, IB 2013). Common trainings between countries departments are suggested so perspectives can be somehow aligned (CA, 2013). The author thinks that this recognition of the need is really useful start point for next steps in the development of global innovation.

Global innovation might be prevented because of cultural unawareness as this naturally complicates communication among the members and along the process. In general the author agrees that there is still some way to follow in order to improve cultural awareness among the company, at all levels and countries included.

## Global Consumers

Consumers are the star-center of the projects as they are the reason why these are developed so to dialogue about them is obviously essential. Informants insisted that consumer upfront work was the most important activity in the process (HM, RP, LR, SB, IB 2013).

The difference with traditional project innovation deals with the fact that there is a group of targeted people instead of just one particular market. Commonalities need to be found among global consumers and the development of the project will be focused on these commonalities (SB, RP, DS 2013). The author thinks a good comprehension and understanding about the differences is important. This is supported by an argument from an informant that states:

*“if you respect your market and understand and respect your consumer then you can’t get it wrong (process innovation) but you can’t assume that consumers are the same everywhere.”(LR, 2013)*



IB (2013) said that many commonalities are found among consumers because in the end the human behavior has a resemblance despite the culture. In the contrary, a group of global consumers might have a similar need and habit but the difference lies in the product solution to fill this need (SB, 2013). DS et RP (2013) mentioned that there are some new ways to group consumers considering cultural differences.

The author thinks that the fact that there are differences in culture within consumers from diverse origins is present among all the informants. In this chapter the sources of inspiration for idea development and the interactions with consumers in early stages of innovation will be reviewed.

### Sources of Inspiration

It's very difficult to innovate like Steve Jobs or any other similar mastermind, in a sort of way where ideas appear on their mind suddenly; team work and iteration is needed when sourcing inspiration (SB, 2013). When sourcing ideas the author observed diverse methodologies that the marketing teams use.

Technology was mentioned by various informants as a source of inspiration (IB, HM, RP, IM, CA 2013) for example new technologies in ingredients, equipment and processes created and it was said that collaboration with suppliers to develop these technologies was promoted (IB, HM, RP). Fairs are places where these new technologies can be found nevertheless sometimes they tend to be repetitive (CA, 2013).

Own categories and brands of the company all over the world and past research was signaled as a source of inspiration (CA, IB, IM 2013) Other categories in the food industry and direct and indirect competitive review were also mentioned (SB, CA, IB, IM, RP, LR, DS 2013). Databases that include real consumer purchasing data was also included in the list ( IB, HM 2013).

Consumer immersion was established as vital for inspiration (LR, HM, RP, DS 2013) Some examples to achieve this are acquiring knowledge through blogs ( LR, ML 2013), observing local and artisanal features within the countries; an example of the Mexican and Turkish dishes was mentioned (RP 2013).

Nowadays social media it's quite used for communicating directly with consumers and obtains direct and quick feedback about an idea or a product (LR, 2013).

The author agrees that the current sources of inspiration are complete in the way that the company really knows where to find ideas. Consumer immersion on the other hand seems to be the most relevant among all but not the most recurrent answer.

### User Involvement in Early Stages of Innovation

The author observed diverse ways that user or consumer was involved as part of the early stages of innovation. Many informants agreed that the most essential aspect is to understand the habits in order to get good insights (RP, SB, DS 2013). Therefore the main role of the consumer is as an informer in a direct or indirect way (HM, SB 2013). The sources of inspiration were previously mentioned as ways to try to understand the consumers. The vitality of talking to consumers and making them comfortable so they can share their deeper needs was expressed (IB, 2013).

Another role of the user in these stages is to evaluate ideas or concepts that come from the company (DS, RP, 2013). The evaluation from consumers could be obtained in a traditional way such as focus groups but also go further into consumer's homes so they can obtain more in-depth feedback ( CA, SB, LR, HM 2013). A comparison between these two methods was not made nevertheless IB (2013) pointed out that the methodology could vary depending on the kind of idea you want to get.

It was mentioned that sometimes consumers are unable to express some of the needs (HM, RP 2013) and that stimuli was needed in order to obtain this information (SB, CA 2013). Technology foresights detected by the R&D teams are arguments that prove that the consumer can't predict what it would be useful for him technologically speaking.

*"We consumers are poor observers of our own behavior so a lot of the work we do it (company) is to try to uncover reasons why they are doing things, which they wouldn't be able to articulate" (DS, 2013).*

Idea co-creation was debated among several informants. Some of them included idea co-creation as a good and some informants thought that some of the best ideas came from consumers (IB, 2013). It was also suggested that guiding the consumer in the ideation part resulted useful as they need some sort of ideas to start (LR, ML). In the other hand idea co-creation was not perceived as a good practice as consumers did not really knew how to articulate needs (SB, DS 2013). The example of Henry Ford and the faster horses was mentioned (DS, 2013). The author thinks that an intermediate practice could be really useful.

User integration should be harmonized between countries as part of the global scale innovation projects. IB (2013) established that similar methodologies should be used among the countries involved in order to obtain satisfactory and more homogeneous results. The author agrees that this aspect should be adequate according to the level of innovation and the size of the project.

### **Internationalization & Localization**

Some of the informants discussed shortly the fact that they think a product development process or innovation process can be made in a global scale by creating a base and then adjusting part of it into the different cultures according to its preferences; a very recurrent example was a cracker or a chip with a different flavor topping (HM, DS 2013) An informant gave her own perspective of this activity by saying:

*“I don't think there is such a thing (global product development), so let's say you can create a tool box and that is 85-90% developed for the world and that could be adapted in 10-15% to an specific country” (LR, 2013)*

HM (2013) emphasized the fact that the local consumer's voice should be really hear in order to get successful results, so localizing the product is a very important aspect of the global scale innovation. In the other hand CA (2013) mentions a product example that is difficult to localize due to differences in preferences according to markets but she states that it is a particular case that is not necessarily applicable to all the products of the company.

Internationalization and localization practices are a performed at a certain level by the company with existing brands where it is easy to do it; for some other

brands and specifically for breakthrough products these practices results to be more difficult because consumer preferences and technology flexibility.

# Analysis

*This chapter of the thesis will discuss the most important findings in the theoretical framework related to the ones obtained in the empirical study. The aim of this exercise is to go through differences and similarities between theory and practice. The author expresses her opinion and tries to build theories with the obtained patterns. Aspects which are not relevant for the analysis will be excluded from this chapter.*

## Innovation at a Global Scale

Cohen (1990) described the positive effects that innovation has within a company including more robust business plans and Baker (2002) relates the term with correlated shareholder return. The author has observed that PepsiCo understands these facts as innovation is part of the culture of the company and part of tasks to perform in order to achieve their long term vision as innovation projects are carried out all over the globe. Leveraging expertise and putting all resources together to maximize scale (SB, RP, IB, 2013) highlighted as an aim of the Global groups matches Drucker's definition as it establishes that innovation endows resources with a new capacity to create wealth.

Talking specifically about global scale or cross-cultural innovation, part of the definition of Schumpeter (1934) fits with what PepsiCo is recently trying to implement (DS, CA, HM, LR, IB 2013) as this includes the application of a new commercial and business approach. The author thinks that the new products are secondary priority as the first important thing to do is to build up this global method and then execute it.

Regarding the levels innovation created by Schumpeter (1934), the author sees two different approaches; first approach is the global scale innovation process which is on its development and the author classifies this as radical innovation, because other companies have built or are building this global strategy since many decades. Second approach is related with the product innovation as it was

detected more incremental-radical (IM, 2013) levels in developing countries and radical-breakthrough levels in developed countries (IB, 2013).

Short-term innovation and quick results was pinpointed as part of PepsiCo's culture and it was also mentioned that they are trying to re-adapt this culture in order to perform globally (DS, CA, LR, 2013). The author thinks that the reason of this is related to Cagesse's study (2012) about risk management and the author suggests **resilience as a first key success factor** of global scale innovation supported by (DS, ML 2013) and by the theory that states that entrepreneurial innovation is a source of growth and of economic expansion (Cagesse, 2012). The Stage Gate ® was mentioned as one of the means currently used for managing risk in innovation (HM, 2013).

IB (2013) said that currently an established method for global innovation was not set up yet but described a series of steps of how her team was doing it which resembled traditional innovation with some variations. This makes sense as a lack of in-depth research and appropriate methods to assist designers on how culture can be consciously integrated in product design was mentioned in the theoretical framework. (Onibere et al. 2001; Kotro and Pantzar, 2002) DS (2013) mentioned that the process was the same for one or thirty markets but what the company was trying to figure out is what tasks to include at each stage. The author agrees that the innovation process is not to change radically just because it is performed globally but there are some different elements to include or emphasize which are vital for the success.

From the author's perspective, innovation processes with outstanding outcomes include both, ordered and chaotic phases. The order phased in PepsiCo is the Stage Gate® process which was described as a guide for NPD (HM, IM, LR, DS 2013) nevertheless it is important to keep in mind that is not recommended for building up a multimarket or multiproduct plan (Koen, 2007). According to the author order does not match the cross-market relevance factor stated by many informants (IM, RP, DS, CA, 2013) A hint of chaotic phases are included as well as it was said that the marketing teams tend to iterate constantly (SB, 2013) and looked to receive constant feedback (CA, 2013).

User Centered Design process initiated by Norman, linked with the company's practices, was also analyzed. It was said that the user was indeed included in the innovation process since early stages but it was not mentioned if it was at every stage along the process. Also the information about the way how the project teams included cross-market consumers was detailed in a limited way (IB, 2013).

The author approves the UCD method from the standpoints that user plays an important role in early stages of innovation, that it must be the most important aspect of a project and the fact that it includes enculturation process nevertheless more clarity need to be showed regarding the user-context analysis as points to follow are not well understood. The confidential methodology praised by the informants of the company seems to analyze this user-context relationship but without a cross-cultural match.

Khurana and Rosenthal (1997) presented the theories regarding the fuzzy front end of innovation where ideas were created and justified before going into the NPD; the authors also assured that these mapping activities helped to reduce risk and create consistency with the business strategy. The author observed that the steps to follow early stages of innovation were clear among informants and that they understood that this was a critical part (HM, SB, CA, DS, RP, ML, IB 2013). The informants mentioned all the phases proposed by Khurana et al. (1997) included the *Pre-Phase Zero*, and even highlighted it as the most important phase (SB, DS, RP, ML 2013).

Something that was not differentiated was the level of innovation related with the stages; as previously mentioned Koen (2007) presented different approaches depending on the level of innovation and the most important aspect related to global scale innovation is that radical innovation has to begin with an effective strategic vision with clarity, support and stability.

Khurana and Rosenthal's (1997) *Phase Zero*, or the ideation and concept development were mentioned as part of the early stages of innovation (HM, DS, IB, SB 2013) and characterized as important but not critical (SB, 2013). Creativity to solve unmet problems was signaled to play an important role as it gave competitive advantage in the market (CA, SB, HM, RP, 2013). Many tools used in innovation for idea creation were discussed (HM, ML, SB, CA, DS, 2013). Evaluation from the consumer was also perceived as an essential part of the

early stages of innovation (IM, RP, 2013). Informants debated the actors that should be involved in this phase but this won't be discussed as it goes out of the scope of the study.

The author thinks that a well-established overall innovation process is important for innovation in general but not a success factor for global scale innovation. Talking specifically about early stages the author is convinced by the informants and the theoretical framework that establishing a good vision, objective and identifying a good business opportunity, in general **a good upfront consumer research cross-culturally**, is indeed the **second key success factor** for a global scale project. IB (2013) specifies importance in finding commonalities in cross-market insights.

Enablers of innovation found in the theoretical framework were compared to the success factors mentioned by the informants; the first difference lies in the fact that most of the information obtained in the theoretical framework is related to general not global innovation. One of the similarities was found in **technology flexibility** as an innovation enabler (HM, RP 2013; Miles and Snow, 1996). Another similarity is the **communication** as a central success factor (Minaret et al. 2000; IM, 2013). Both of these aspects are marked by the author **as key success factors** for global innovation and communication will be discussed in a further chapter;

The informants highlighted some enablers from a global perspective like cross-cultural collaboration and consumer research at a global scale and these will be individually discussed in further chapters.

## Cross-cultural collaboration

Cross-cultural collaboration is a surprise factor for the author as its pronounced impact in the process was not expected. It was mentioned by Braun (2009) that cross-cultural collaborations should be considered within innovation but not a really strong emphasis was made in this point. In the other hand this matter is perceived as a challenge among informants (IM, LR, CA 2013). The author divides the issue into two parts; the first one involves the differences in culture between collaborators as some of the informants stated that communication was



different and sometimes complex among countries (CA, ML, IM 2013). The second involves the two mind set of a global and a local perspective when working with these projects.

Cultural differences among collaborators are to be known and well understood before innovation is created. This means that cultural competence is required from the team members which according to Cross et al (1989) comprises set of congruent behaviors, attitudes and policies that are integrated in a system, organization or group which enables the people in that system to work effectively in cross-cultural situation.

Martin et al. (2007) states that cultural competence comprises the following: cultural awareness, attitude toward cultural difference, knowledge of different cultural practices and cross-cultural skills. Cultural awareness was observed as critical from some of the informants (HM, DS, CA 2013) The author therefore states **cultural competence as another key success factor** for cross-market innovation and they translate this into being open minded (SB, LR, ML 2013) and also by showing interest in other perspectives, other markets and other existing solutions for the same problems (SB, 2013). The author thinks that to be cultural competent means to have a global/local mindset that some of the informants highlighted (HM, RP, SB 2013).

As previously mentioned, alignment was perceived as crucial for global projects (IM, SB, DS, CA 2013). The author considers that alignment in general is important for every kind of project. The author also thinks that many of the gaps in the global projects in PepsiCo are due to the lack of global and local mindset overall. The evidence was mentioned by the informants as challenges; some examples are the misunderstanding because of differences in way of working between regional and local teams (IM, 2013), on decision making among countries and global teams speaking (CA, 2013), in empowerment of the global teams across regions (LR, 2013).

Communication is intimately related with alignment and the author thinks that once cultural competence is achieved, communication is the following thing to work on to build this alignment. Effective communication was one of the most repeated skills among informants (HM, RP, CA, IB 2013). This matches the theory communication co-creates shared social meanings and hence facilitates

cooperation (Heath) and the fact that Minaret et al. (2000) see communication as a central success factor.

The author also thinks that an activation or innovation team who lead the projects can help communication to flow better and therefore to align all the people involved. A leading team was praised by some of the informants as beneficial in global innovation (IM, LR 2013).

**Alignment of global and local teams is established as a key success factor** dependent from effective communication. This fact is reinforced with theory as Koput et al. (1997) established that when goals are not clear, screening is difficult and it is not sufficient as the primary link between the flows of idea searching and implementation.

An important aspect to consider in this success factor is in general the models of collaboration and recognition as nowadays it seems that the different groups are continuously looking to keep of the projects in house rather than sharing one. This might be due to the fact that when sharing a common project, it results difficult to give recognition or reward several teams nevertheless is something that needs to be worked on because this will in the end lead to a better and more results oriented global team. So another recommendation for the company is to create a system for global recognition to promote the constructive collaboration among its local and global teams.

## Global Consumers

The fact that global projects are created does not mean that local consumer is to be left out and take for granted that a single product fits diverse cultures desires. One of the informants recognizes and reaffirms this by saying that difference lies in the product solution in cross-cultural common needs. (SB, 2013)HM (2013) promotes attentiveness to the voice of the local consumer. Lahiri et al. (2010) mentioned in the theoretical framework that designers need to get a deep almost tangible awareness of the culture and the context of their target markets never letting the global threads of networks to wrap them in a cocoon.

Knowledge of all markets helps people involved in the projects to observe cultural differences (IB, 2013). The author reinforces the fact that consistency should be achieved while considering local preferences, and cultural differences. It was said that finding a common food product for several countries was another big challenge. (HM, SB, LR, RP, DS 2013).

It was previously showed in the theoretical framework some examples about the similarities that cultures might have between them (Rozin, 1996) and also about the differences regarding tastes and consumption moments (West 201). The author agrees with the informants that a common base should be found (IB, DS 2013) and the determined adjustments should be made individually (DS, RP, HM, LR 2013).

There is a new confidential methodology of the company to group cross-cultural markets and the author thinks it is a very interesting method believes it could work. This method was compared with the methodologies of Inglehart and Welzel (2010) and from Pawlowski (2008) which grouped values and aims and partial similarities were found but in the end they don't match in general scope. From the author's perspective, the one the company uses seems more accurate.

The author detected similarities between the fact that the company creates products in a global way and adapts them according to the countries and the theory of internationalization and localization of Aykin (2000). One informant even mentioned the localization term in the empirical study (DS, 2013). Another informant suggested that in order to create global products 85-90% should be built according to commonalities (internationalization) and 10-15% according to specificities (localization).

It is very clear that the informants are aware of the difference in preferences of consumers from country to country and it is known that commonalities must be found in order to perform global scale innovation. **Grouping consumers in smart way** is presented as the last key success factor of global scale innovation according to the author.

In this chapter a summary of the most relevant findings supported by empirical and theoretical evidence was done. Seven key success factors were found in total and a scheme that includes all of them is presented below in figure 11.

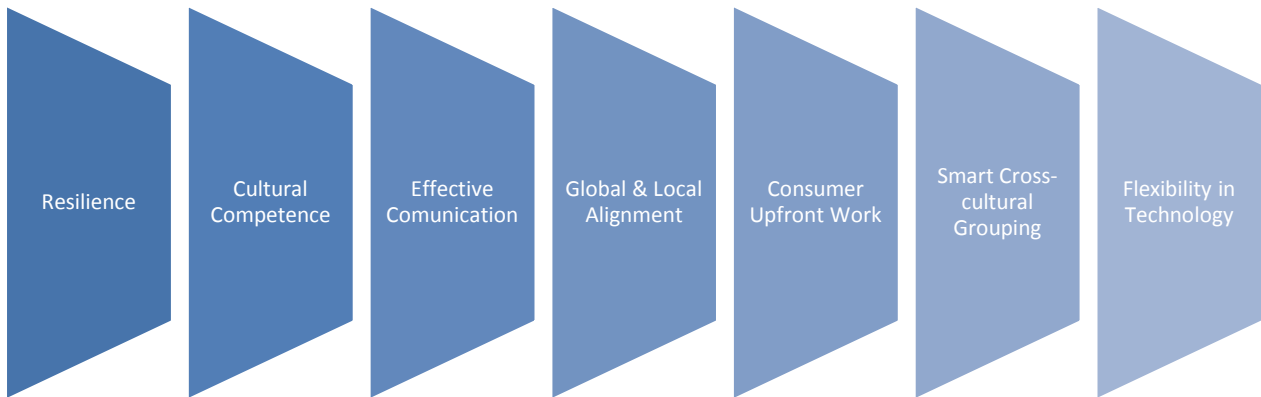


Figure 12 Key success factors of global scale innovation

# Conclusions & Recommendations

*This chapter comprises a general wrap up of the research study highlighting the most relevant knowledge acquired and suggestions for future research of similar nature. Also a relationship between the initial objectives and the outcomes will be discussed. The recommendations for the company regarding the key success factors will also be presented in this episode.*

## Business Case Findings

There are many important inputs obtained from this research paper. The first finding was that innovation for cross-cultural markets differs from single market studies from different angles. Some of these differences were pointed out as key success factors for global scale innovation. The first key success factor identified is resilience, as the level of the research is elevated and many actors are involved worldwide, it is clear that more time and resources is needed and that long term results should be expected. This is something that the company needs understand and somehow change in culture specifically for the global projects. All levels top-down, starting from the top management should be aware that the results of these kinds of projects can't be seeing in a short term.

The next factor is cultural competence as multicultural aspects have direct impact in some of the next success factors. Cultural competence comprises cultural awareness other important skills for multicultural interactions. The company trusts that these interactions are automatic and driven by level while the author thinks that this is not necessarily true. Cultural competence seminars and/or trainings for the people involved in global innovation are proposed in order to improve the performance of multicultural collaborations.

Effective communication is part of the key success factors as this is the base for overall alignment on the project. As previously mentioned cultural competence is one aspect but operational aspects are also considered in here as people should communicate timings, advances, new findings and more. Effective communication is a precursor for alignment and in the particular case of PepsiCo, the author detected a gap between the alignment of global and local teams. The

alignment between both of these groups is a key success factor as it involves the internationalization part of the product and the localization, which are essential for cross-cultural projects.

For both of these points, quality more than quantity in communication is suggested. For starters an activation or innovation team that leads the projects, analyzes global strategies and builds the links between local teams is strongly suggested. In the other hand currently many tools for communication exists, nevertheless the most effective way is face-to-face interaction. The author knows that sometimes there is a restriction financially and suggest the company to exploit the new generation communication means such as videoconferences which might improve long distance collaboration.

Consumer upfront work is the next key success factor and it includes understanding consumers from different markets and consumer immersion in order to get relevant insights, perform market assessment and accurate ideation stages. This factor is linked with another key success factor that is grouping the cross-market consumers in a strategic way to facilitate development. This is something the company is working on and they seem to have a good idea of how to do it.

Finally the last key success factor of innovation is the flexibility in technology. This aspect is particular aspect it's difficult because manufacturing plants across the globe were not necessarily standardized since the company started, even if they are currently creating similar products. The author suggests that an adaptability assessment should be done in current plants; for future projects, adaptable technology should be considered when designing and in case of investment in a new technology, flexibility should be a requirement for it.

As it can be seen the author gave the key success factors a sequence to follow as they are interconnected but they also have individual relevance.

## General Summary

This research was focused specifically in the early stages on global scale innovation; the study was developed with the collaboration of a multinational company of food products that is introducing this global approach since few years

ago. The purpose of the study was to find the key success factors of the innovation stages included. A theoretical framework was built in order to obtain relating findings in past research. An empirical study composed mainly by interviews made to people inside the company and observations of the author as she was part of the company during the time of the study. A thematic analysis was performed in order to arrive to relevant conclusions.

Common findings were found between the theoretical framework and the empirical study. The initial purpose of the study was achieved. The author recommends further studies to prove the validity of the theory found in this research. The author recommends for further research to compare other companies' methodologies of cross-cultural new product development.

Contributions to the academic research of the topic and to the industry were made. The author is in general satisfied with the results of the research and encourages further research in this particular topic as it is of great relevance and there are still many aspects to deepen in.





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