

Louvain School of Management

Analysis of the responsible innovation concept and identification of the key managerial implications

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I. Introduction

1. Context

“Act so that the effects of your actions are compatible with the permanence of genuine human life” (Hans Jonas, 1985)

By nature, Man has an appetite and desire to invent, to create and to innovate (Pavie, Jouanny, Carthy & Verez, 2015). Those capacities to innovate have enabled man to transform the world into a society in which scientific discoveries, technological advances and product, process, organisational and even marketing innovations constitute an integral part (Owen *et al.*, 2013).

In recent years, innovation has taken a central place within companies. According to a survey conducted by PwC on the value that 246 CEOs attribute to innovation in 2013 compared to 2009, it can be observed that attitudes are changing. From a priority focused on efficiency and increasing company performance, three quarters of executives now consider innovation to be crucial to the company’s survival (PwC, 2013).

Innovation is today at the heart of companies’ concerns to survive in an increasingly competitive environment (Ettor & El Kahri, 2017). Few could argue that it is not favourable to act responsibly, or at least to innovate responsibly (Owen *et al.*, 2013). With the emergence of concepts such as Corporate Social Responsibility (CSR) and the rise of social, environmental and economic challenges, an increasing number of people are aware of the need to continue to innovate. Innovations to create not only value in terms of short-term profit but also generate some value at an ecological, social or welfare level. All this can be done by respecting the values of the members of the society, while developing a sustainable competitive advantage for the company (Ingham, 2011). Beyond that, if we take the definition of innovation as *“the process by which novelty is taken up and circulated in the public sphere [...] producing some kind of profound reordering of what-has-been”* (de Saille & Medvecky, 2016, p. 7), two main components of innovation being novelty and change can be highlighted (Gailly, 2018). It is precisely in the situation of innovations involving uncertainties that the responsibility of an innovator, decision-maker, or a company must be questioned—we have a responsibility toward the society, environment and economy in which we live (Pavie & Egal, 2014). In addition to

that, some important groups of citizens ⁽¹⁾ are requesting it from politicians. The rise of the ecological party at the European Parliament and at the last Belgian elections show that more people are putting pressure on policy makers to be responsible, particularly in terms of environmental responsibility. Responsible innovation (RI) appeared in Europe in 2004 through the VivAgora association ⁽²⁾. It brought together citizens concerned with the social, health, environmental and ethical issues of science and technology. It was popularized in the light of the questioning of banks' responsibility during the 2008 financial crisis (Pavie, 2014).

Innovation is also a foundation and at the heart of capitalism's dynamic, driven by entrepreneurs who rely on it (Boutillier & Uzunidis, 2014). Restricting innovation in a liberal economy appeared to be challenging, even *impossible*. And since banning or restricting innovation seems unfeasible (Pavie, 2018), all what seems to remain is developing responsible innovations and regulations *a posteriori*. However, these regulations might often arrive after the market adoption ⁽³⁾ when the harmful consequences could have already appeared or when society no longer wants to tolerate them. Moreover, in a globalised market, the scope of national laws is very limited and therefore developing *a posteriori* regulatory mechanism seems very complicated (Pavie, 2018). In conclusion, it is in this globalised and capitalistic context, where prohibition and *a posteriori* regulation are often not effective, that a more responsible innovation dynamic should be promoted. Especially in a context where the brand image is a valuable asset and where clients, employees and society are critical toward companies that they do not consider *desirable*.

Under these circumstances, the number of publications about RI has increased significantly during the last years. On the contrary, if we look at the popularity of the term in comparison to the publication's number that attempt to deepen the concept, we realize that the term is more often mentioned than it is defined (Google Scholar, 2019). To the extent that Owen and Goldberg (2010) and Hellström (2003) denounce a real *flood* of RI references. According to Pavie and Egal (2014), responsible innovations are now a necessity. However, the concept is too little or too poorly defined, imprecise, confused with other terms such as CSR and

⁽¹⁾ i.e., the recent youth protests urging politicians to take responsibility and take action towards climate change

⁽²⁾ VivAgora Association (www.vivagora.org)

⁽³⁾ Referring to Moore's (1991) innovation adoption curve

sustainability. This could lead to a confused implementation and application (Koops, Oosterlaken, Romijn, Swierstra & Van den Hoven, 2015).

2. Objective and research motivation

Albert Camus said that “*misnaming things is adding to the misfortune of the world*” (Camus, 1944, author translation, p. 22). Since words are tools, which allow us to think about the world—misusing them can cause major damage (Muchnik, 2010). The same is true for responsible innovation. Even though this concept is increasingly used in the scientific literature and various publications, there appears to be no consensus on what it exactly means and how RI should be approached by companies (Koops *et al.*, 2015). The misunderstandings associated with the RI concept and its almost *trendy* use may lead to approximative applications, often where only one aspect will be considered *e.g.* developing *social* innovations (Pavie *et al.*, 2015). It is therefore necessary to clarify what responsible innovation—which is described as a *buzzword* (Bensaude Vincent, 2014)—could mean. This could enable companies to understand and develop adapted and relevant RI policies.

The objective of this thesis will be to conduct an analysis of the responsible innovation concept and to identify some of the key managerial implications *i.e.* some of the advantages, disadvantages, key success factors and risks. This will be an attempt to clarify this widely used concept, to situate it within the current innovation environment. We will try to understand what its corporate application concretely means. It is important to mention that, in this thesis, we will give an *interpretation* of its meaning. We will nevertheless follow a rigorous and objective methodology to do so.

3. Methodology

In this work, we will develop two approaches, a theoretical and a practical one. Our theoretical part will be a literature review on existing responsible innovation publications, but also on responsibility, innovation and other concepts often associated with RI which we will call “*concepts related to responsible innovation*”. Our practical part will be a confrontation between theory and field reality in companies, based on interviews with several managers. The purpose of this double approach is to address two aspects of responsible innovation. One will describe

the vision of the theorists and academics (II and III) and one will discuss the managers' point of view (IV). This should allow us to test and mitigate the theoretical assumptions.

The theoretical part (II and III) will be based on a literature review of various peer-reviewed scientific articles, monographs and reports from different organisations, such as the European Commission or the UN. We will first present a clarification of the innovation concept chosen for this thesis and the importance of innovation for companies (II.2). Then, we will propose a clarification of the responsibility concept (II.3). Afterwards, will attempt to clarify the concept of responsible innovation (II.4), by carrying out an analysis of RI related concepts. The last step will be to analyse publications already established on RI by authors with a *different* understanding of it. Finally, we will present a summary of the responsibility characteristics identified in eight of the RI related concepts and in eight existing RI definitions. This will allow us to propose our own understanding and working definition of RI (III), allowing us to analyse RI innovation mechanisms, advantages and disadvantages, key success factors and risks.

The theoretical versus practical confrontation (IV) will be based on interviews with a sample of managers from seven companies of different sectors and sizes. Those are considering themselves active in the field of responsible innovation. By using a semi-directive questionnaire, we will discuss their vision of responsible innovation, which mechanisms they put in place, the advantages and disadvantages they identified. This information will be used to test our theoretical assumptions (III).

Lastly, we will end our thesis with a conclusion some of the key theoretical and practical managerial implications we will be able to confirm. We will also mention the limits of our analysis and will propose potential further research.

4. Scope of the thesis

The purpose of this thesis will not be to propose a definition of what responsible innovation is. Neither will it propose an exhaustive list of what responsible behaviours are when innovating. Moreover, this work won't propose a framework or guide to be followed to help identify *all* managerial implications to successfully thrive as a RI company.

The purpose of this thesis will be to rethink the concept of responsible innovation from the beginning: how this concept appeared and on which existing concepts it is based. The objective will be to help managers and innovators better understand what RI may mean beyond the existing definitions which do not reach a consensus. We will try to better understand some of the concrete managerial implications which occur when companies decide to innovate in a responsible way. In this work, we will place our reflexion of RI in a liberal and non-regulatory context, where companies are the only ones limiting and making their innovations more responsible when needed. We will focus our analysis to the specific case of radical innovations, leading to greater uncertainty and significant changes for the market or company. Although, we won't consider transformational innovations in this thesis since they generate complex consequences on the entire economy. In addition, we will limit the analysis of RI to companies defined as "*an organisation that sells goods or services in order to make money*" (Cambridge Dictionary, 2019).

II. CONCEPT AND SCOPE CLARIFICATION

1. Methodology

The clarification of the concept and the scope of responsible innovation will be based on an analysis of scientific articles in peer review, monographs and reports from different organisations, such as the European Commission and the Organisation for Economic Cooperation and Development (OECD). To carry out this, we will start by presenting a clarification of the concept of innovation chosen for this thesis and reminding its importance today for companies. We will then propose a clarification of the responsibility concept, its origin, as well as the current importance of considering it in companies, especially in innovative ones. The RI concept hasn't just emerged one day, it might take its roots in different concepts of responsibility, such as the Technology Assessment, the Corporate Social Responsibility, the Value Sensitive Design, the Triple Bottom Line, the Precautionary Principle, the Sustainable Development, Responsible Research and Innovation and finally the Life Cycle Assessment concept. The last step in this section intends to clarify and give an interpretation of what the RI concept could mean. To do so, we will list the characteristics of the eight RI related concepts as well as the eight existing RI definitions proposed by the most cited authors in the different related publications (*list of authors in Appendix 10, p.143*).

2. Innovation

Since the beginning of 2019, the word “innovation” has been mentioned in more than 30,000 publications (Google Scholar, 2019). That is why we argue that innovation is a widely used concept and one could assume that it is largely mastered and that its meaning is not questioned. However, if we take the business definition from the Cambridge Dictionary (2019), innovation is defined as “*a new idea, design, product, etc.*”. In comparison, invention is defined as “*a product (or a way of doing something) which has never been made or never existed before*” (Cambridge Dictionary, 2019). We could thus question the difference between an innovation and an invention. Therefore, in the next section, we will discuss what innovation may mean and why it seems to be a priority for companies today.

2.1. What is innovation?

Many definitions of innovation can be found, going from “*the process by which novelty is taken up and circulated in the public sphere (including the application of something existing to*

something entirely different), producing some kind of profound reordering of what-has-been” (de Saille & Medvecky, 2016, p. 7) to a more detailed one *“a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)”* (OECD/Eurostat, 2018, p. 1). When looking at these definitions from a managerial and organisational point of view, the common characteristics highlighted are novelty (for the company or the market) and change (Gailly, 2018). Innovation can be categorized based on the newness and the change (*Appendix 1, p.137*). First, is the novelty related to what is proposed to customers (what) or to the way the product or service will be offered to customers (how)? Second, it is important to qualify the change, is it relative or revolutionary?

In some understandings of innovation, the novelty is mainly attributable to technological and scientific advances. This does not include innovations and novelty in the broad sense of the term (Van Oudheusden, 2014). As an example, in the previous version of the Oslo Manual (OECD/Eurostat/UE, 1997) technological innovations were the only ones to be defined. They are considered to be *“innovations (that) can occur both in the production process and/or products of the firm and in ancillary supporting activities supplied by its purchasing, sales, accounting, computing or maintenance departments (TA) requires an objective improvement in the performance of a product or in the way in which it is delivered”* (OECD/Eurostat, 2005, pp. 35–39). This includes the product innovations (goods and services) and process innovations. Non-technological innovations are *defined* as all the innovations activities that aren’t considered technological, this includes the marketing innovations and the organisational innovations (Mothe & Uyen Nguyen Thi, 2010). Beyond this typology of innovations, broken down into two axes: “what is new” and “how big is the change”, the Oslo Manual (OECD/Eurostat, 2005) proposes a dispatching of innovations into four main categories: product, process, marketing and organisational innovations.

2.2. The need of being an innovative company

According to Deshpande *et al.*, innovation was *always* seen as a driving force of the economic growth. It is an essential element for some companies to survive in an increasingly competitive environment (cited in Ettor & El Kahri, 2017). In 2018, for the third consecutive year, global R&D spending reached more than 2,000 billion USD (The Global R&D Outlook, 2018)

representing approximately 2.36% of the world's 2018 GDP (International Monetary Fund, 2019). This appetite for research and technological progress increases the speed at which products or processes are considered outdated. This fast outdateding forces some companies to innovate ever more and faster to stay competitive (Ettor & El Kahri, 2017). Accordingly, companies can use innovation strategically to develop a competitive advantage in both local and international markets (Keupp, Palmié & Gassmann, 2011). Innovation used in a business strategy context can allow companies to be more efficient, to create more value and growth. Due to an evolution in consumer expectations, competitiveness might now be based on development of new products, whether goods or services. Therefore, the long-term competitiveness of companies can be mainly defined by their ability to develop products or processes to meet new and changing consumer needs and requirements (Hitt, Hoskisson & Kim, 1997). Indeed, companies must focus on innovations—considered as an *engine of renewal*—in order to continuously reinvent themselves and survive in a globalised, changing and dynamic environment (Danneels, 2002).

Beyond innovating to survive sustainably in a competitive market, innovation might also be driven by the boldness of innovators and individuals in general. We could argue that innovation is fuelled by a permanent dissatisfaction. It would therefore be *impossible* not to innovate (Pavie *et al.*, 2015). According to an article in *Le Monde* (2014), beyond the population's willingness to innovate and the pressure of the market to remain competitive, states also play a major role in innovations since they finance and push university research. States have a strong interest in supporting research since it can enhance the attractiveness and competitiveness of countries. Additionally, these financial supports may lead to many innovations. These future innovations may be helpful to find solutions to current issues or to limit risks of past innovations (Vermersch, 2001; Randegger, 2007) (*illustration in Appendix 2, p.137*). However, it is not just a matter of innovating as much as possible. It is a matter of doing it conscientiously and carefully because innovations might solve some of the state's problems but can also lead to new ones. As an example, the Belgian government has massively subsidised the implementation of new offshore wind turbines (Dendooven, 2019). Mainly to limit the risks caused by past investments in nuclear energy. Yet, according to the Royal Institute of Natural Sciences of Belgium (IRSNB), these turbines may create new risks and issues for the environment and marine biodiversity (La Libre, 2018).

2.3. Analytical framework chosen in relation to innovation

In this thesis, we will limit ourselves to the analysis of so-called radical innovations. It appeared to us that the greatest challenge of RI is the uncertainty (of impacts) inherent to innovation. This uncertainty is accentuated during radical innovations, which by nature, are profound changes in the characteristics of the product, service, organisation or process leading to a new standard for the market or the company (Gailly, 2018). In case of incremental innovations, novelty and change are sometimes difficult to perceive. In consequence, will leave them aside for the rest of this work.

3. Responsibility

Now that we have a better understanding of how innovation can be defined, we will look at the meaning of the first word in RI, *i.e.* responsibility. The objective is to better understand the RI by separately analysing the terms constituting it. First, we will return to the roots of the term “responsibility” and present some of its different meanings. Then, we will explore what the term may mean in a business context. Finally, we will question the necessity of acting responsibly when innovating.

3.1. Origin of the word

The emergence of the concept of responsibility in science and technology implementation has really seen a breakthrough following the use of nuclear technologies when developing the nuclear bomb during World War II. From that moment on, many organisations were created, such as the Committee on Scientific Freedom and Responsibility (CSFR), to raise the question of the responsibility of engineers and scientists regarding the consequences of their research. The aim was to encourage scientists and engineers to take the interests of society into account and to prepare for the consequences, especially the most pessimistic ones. The use of nuclear energy as a weapon triggered the first real reflexion on the innovator’s responsibility regarding their (technological) innovations (Temri, 2018). Although, this question of responsibility is not only addressed in scientific journals. If we refer to the novel “*Frankenstein, or, The Modern Prometheus*” published in 1823, Shelley questioned the creator’s responsibility regarding the development of something new with potentially disastrous consequences (Pomian-Saadjian, 1991).

The word “responsibility” comes from the Latin “*respondere*”, meaning literally “answer for one’s actions” (Grinbaum & Groves, 2013). When an action with *negative* consequences has been taken, it is expected that the error should be repaired and the authors sanctioned. This can be compared to the notion of *accountability*. But when the author is legally bounded to answer, the concept of *liability* is mainly mentioned (Temri, 2018). Responsibility also contains an important moral dimension, as shown in the French definition of responsibility being: “*The moral obligation to fix a mistake, to fulfil a duty, to assume the consequences of one’s actions*” (cited in Pavie, 2012, author translation, pp. 13–14), bringing in a way the English concept of *accountability* and *responsibility* together.

3.2. The growing question of responsibility in companies

The question of having to answer to one’s actions as a citizen living in a society is at the root of the responsibility concept. Yet, who is responsible when it comes to companies? Are all the employees, the managers or the decision makers equally responsible? According to Pavie (2012) the freedom of choice of the employee should be questioned. In other words, are they *personally* responsible for these actions? Employees should be able to question the responsibility and desirability of their work based on their values. Therefore, promoting a strict separation between the values of an individual at work and in their private life would impede companies from acting as a group of *responsible* citizens.

In 2005, the newspaper “*The Economist*” published an article on corporate responsibility (cited in Blowfield & Murray, 2014). It mentioned that managers who decided to apply this concept seriously would encounter dissatisfaction from their shareholders and could be considered *bad* managers. If we refer to the newspaper’s speech today, things have drastically changed. Most managers nowadays think that corporate responsibility can create value, even generates profit, and is consequently considered as such as a priority for decision makers. Companies should have a fundamental role to play in acting responsibly toward the society in which they are active and from which they depend in terms of resources, raw materials or regarding the human resources they employ (Blowfield & Murray, 2014).

Additionally, to the company's ethical ⁽⁴⁾ motivations, legal requirement, direct stakeholders' expectations (suppliers, employees, clients...) (Ingham, 2011), the competitive arguments can also encourage to act responsibly. Indeed, responsibility can lead to a competitive advantage since customers and society expectations can have a great influence on the long-term survival of a company. More and more customers are expecting companies to act responsibly and even to find solutions to current social and environmental challenges (Blowfield & Murray, 2014). This can put a double pressure on some companies. First, they should answer for their actions and fixing mistakes in relation to the goods and services they offer. Second, they also might have to find solutions to the challenges that society is facing.

In conclusion, the concept of responsibility could have a triple meaning. First, companies might have a responsibility to act ethically. This is generally based on the alignment between the values of the company and the employees. Secondly, companies have legal liabilities toward the society and its normative system. Finally, there might be an expectation coming from the society and stakeholders, expecting companies to act responsibly and be held accountable for their business activities (de Viron & Gailly, 2018).

3.3. The importance of responsibility in innovation

The question of acting responsibly might be even more crucial when considering innovative companies. Jonas and Arendt mentioned being worried about discoveries having unpredictable impacts (cited in Jensen, 2007). They had a very pessimistic view of the technological age and the innovations resulting from it. Beck mentioning that if we continue to "play the gods" the society might have to face some *"negative effects and imbalances that have a cumulative character, adding up to unpredictable and potentially devastating chain of events"* (cited in Jensen, 2007, p. 117). The question of corporate responsibility is even more interesting when developing radical innovations. Indeed, unlike incremental innovation, those completely change the relationship between companies and consumers, suppliers or the economy in general. Radical innovations may by nature create new categories of products and services (Leifer *et al.*, 2000). This notion of complete change and uncertainty led, to a certain extent, to the emergence of the concept of responsible innovation. It emphasises the importance of

⁽⁴⁾ Ethics being defined as *"a system of accepted beliefs that control behaviour, especially such a system based on morals"* (Cambridge Dictionary, 2019)

anticipating and assessing the consequences and externalities associated with innovations. It is at what Moore calls the “Chasm” stage (*figure 1*) that first uncertainties and unpredictable consequences arise. There is a need of integrating responsibility during the entire life cycle of innovations, and not only predicting and anticipating what will happen before the *Chasm* (cited in Pavie, 2012).

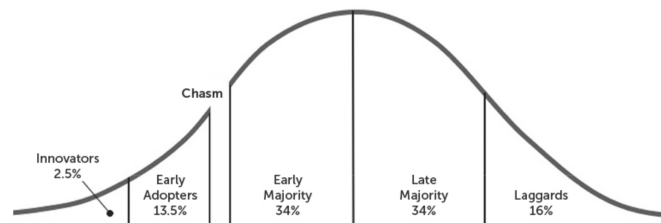


Figure 1. Crossing the chasm

Source: Moore cited in Pavie (2012)

The example of the Liquid Crystal Displays (LCD) television can be mentioned. This technology was completely new and a big change on the screen market. However, with the increased LCD demand, studies were made on the availability and the externalities regarding the use of key chemical components. At the time LCD screens were developed, the impacts of the massive use of those components were unknown and there were no incentives to anticipate potential issues or limit the production of those screens (Pavie, 2012). Beyond television screens, the innovators' responsibility is particularly important to question when it is known that they develop technologies likely to have major repercussions, particularly on the global economy (Bresnahan & Trajtenberg, 1995). According to Bresnahan and Trajtenberg, these technologies, called General Purpose Technologies (GPT) allow the development of additional innovations based on the same technology (cited in Jovanovic & Rousseau, 2005). This includes the Internet, electricity and more recently the CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) allowing defective genes in human embryos to be corrected at a derisory price. Although, as stated when defining the scope of this work, those transformational innovations have complex consequences going beyond what companies could assess. Thus, the analysis conducted in this thesis won't be made relevant for this type of innovation.

Whereas, in our work, radical technological and non-technological innovations will be at the heart of the concept of responsible innovation since they “*have by nature an impact that the market does not expect*” (Van den Hoven, Doorn, Swierstra, Koops & Romijn, 2014, p.55). Even if incremental innovation may also sometimes lead to important uncertainties. As an example, in the '70s, when Ford decided to move the fuel tank of the Pinto model to the back

of the car in his innovative manufacturing process to reduce the production time (Pavie, 2012). Unfortunately, this new design increased the chance to catch fire after rear collisions. The question of Ford's responsibility regarding its innovation then arises: can we be held responsible for the innovation's unpredictable consequences? Therefore, a responsibility based on a notion of care and responsiveness seems more adapted to uncertainties associated with innovations (Owen *et al.*, 2013). On the whole, acting responsibly in a complex and uncertain environment could mean that innovators should have processes to anticipate potential consequences and have effective response mechanisms.

Additionally, to a responsible process, some authors such as Halme, Korpela, Van Oudheusden and Van den Hoven argue that acting responsibly means that the purpose, product or service proposed *is responsible*. It means to develop a solution to social and environmental problems (Halme & Korpela, 2013), to make innovations more ethically acceptable, sustainable and socially desirable (Van Oudheusden, 2014) or to develop innovations doing *more good* than before (Van den Hoven, 2013). It has been mentioned in various studies that RI, as presented in the scientific literature, has so far considered western values to define what a *good* or what a *bad* innovation is (Setiawan, 2018). It is reasonable to admit that the social, ecological or economic *desirability* of an innovation is based on values that may vary from one culture to another and might even vary from one person to another. As an example, a smart electricity meter was introduced in the Netherlands. The aim of this small device was to have a better control of the private electricity consumption (potentially hour by hour if wanted). This was supposed to help the Netherlands to meet the 2020 EU CO₂ emission requirements. Nonetheless, it was argued that this device had the possibility to *spy* on the house's electricity consumption. Privacy concerns were therefore raised (Van den Hoven, 2013). We can observe a value opposition between the importance of reducing CO₂ emissions and the importance of preserving the user's privacy. Privacy being considered more important; the innovation was considered irresponsible⁽⁵⁾. This is a subjective decision based on values⁽⁶⁾. In contrast, the citizens rating system in China promotes a reduction in privacy in favour of a reduction of the societal problems (non-payment of debt, traffic violations, *etc.*) (Trujillo, 2017).

⁽⁵⁾ Irresponsible being defined "*as not thinking carefully enough or not caring about what might result from actions taken*" (Cambridge Dictionary, 2019) and in the case of this thesis as, mainly mean the opposite of responsible

⁽⁶⁾ Value being defined as "*the principles that help you to decide what is right and wrong, and how to act in various situations*" (Cambridge Dictionary, 2019)

Consequently, responsibility in innovations may be a question of introducing care and responsiveness in the process and might be a question of developing innovations with responsible outcomes, potentially leading to trade-offs between values.

4. Concepts related to responsible innovation

After describing innovation and responsibility separately, it's now important to understand what they mean when brought together. In this chapter, we will describe eight concepts considered to be close and sometimes even mixed up with RI. They were selected based on their redundancy in the RI literature or based on an apparent "confusion" with RI when discussing with our relatives. Several ideas behind the concept of responsible innovation are not new and are inspired by previous, often better-defined, related concepts being:

Technology Assessment (TA)	Precautionary Principle (PP)
Corporate Social Responsibility (CSR)	Sustainable Development (SD)
Value Sensitive Design (VSD)	Responsible Research and Innovation (RRI)
Triple Bottom Line (TBL)	Life Cycle Assessment (LCA)

Table 1. Related concepts analysed in this thesis

The main common point of all these concepts is that they deal in some way with the issue of responsibility in a corporate context. This might help us understand the origin and importance of the particular case of responsibility in innovative companies. It's important to know what common characteristics emerge from such concepts used for years. This can help us understand how the perception of responsibility within a company can be applied to the case of innovation generating uncertainty and potentially unforeseen consequences. Each of the concept is more or less represented in the scientific literature. We collected data related to the number of articles, thesis, books, abstracts and short opinions, from academic publishers, professional societies, online repositories, universities and other websites mentioning a concept through a search on "Google Scholar" (Appendix 3, p.138). The query was based on the complete term. For example, instead of searching CSR, we searched Corporate Social Responsibility. We specified in our query that related concepts should be mentioned in the full text and not only in the title since we wanted to estimate the *popularity* of the term and the generalisation of its use rather than the number of articles published each year on the subject.

The results show that the concept most widely mentioned in the literature is Sustainable Development (SD), despite a decline in recent years. For the other related concepts, the number of publications is stable, and they seem to be at a similar level of *popularity* (except for the concept of Value Sensitive Design (VSD) which is rarely the subject of publications). We could also observe that Responsible Innovation (RI) is an increasingly used concept. However, the number of publications dealing with it remains limited, almost at the same level as the least mentioned related concept, the VSD. We will now present what these concepts close to RI can mean and what addressing the question of corporate responsibility might consist of.

4.1. Technology Assessment

4.1.1. Context of emergence of the concept

The impact of science and technological innovations on our societies represents a broad field of investigation in social and political sciences. Through the history of innovation, interactions between science and society have been a field of fundamental and interdisciplinary research, with many applications in our contemporary societies. The study of science-society interactions is interesting because final recipients, namely individuals, perceive only on very rare occasions the political and social dimensions of scientific and technological innovations (Delvenne & Brunet, 2006). Some mention that it is natural to think that technological innovation is *always* linked to an increase in risks and this raise new development of new dilemmas. We might ask ourselves whether the improvement of the human condition through technological and scientific novelties is achieved only at the cost of greater social anxiety (Beck, 1992).

4.1.2. Description of the concept

The Technology Assessment (TA) is a complex concept. Authors and researchers do not agree on many aspects whether it's related to the definition or its general philosophy. Yet, during our readings on TA, Decker and Ladikas's definition was cited several times. We have therefore decided to use their definition of TA in which "*technology assessment (TA) is a scientific, interactive and communicative process which aims to contribute to the formation of public and political opinion on societal aspects of science and technology*" (Decker & Ladikas, 2004, p. 14). TA can seek to create a public and political awareness. It can provide knowledge and assistance to foresee societal problems such as unanticipated consequences related to a

technology. However, it isn't a tool allowing to know which decision should be made, the final decisions should be left to the decision makers (Bunders, 1990).

TA is based on three pillars: science, interaction and communication. Science can allow to assess the consequences of a technology, how to implement it and how to manage its development. When technological developments cause legitimacy or trust issues, TA can offer a method to mitigate these problems by promoting interactions between stakeholders *e.g.* interactive risk assessment, mediation or citizen participation. The social aspect refers to everything related to technology relevant to society, *i.e.* economic, ethical, social and environmental dimensions of technology. Scientific results (which have not yet led to technological innovations) can also lead to interesting questions for TA. Nonetheless, sometimes it can be difficult to distinguish how a scientific result might evolve into a technology. As a result, TA can carry out projects related to scientific research if the aim is to determine the potential early warnings that could be generated by the translation of the research into a technology (Smits & Leijten, 1991).

The potential results of TA project depend on many factors related to the organisation undertaking TA, the context, objectives and project management (Decker & Ladikas, 2004). First, TA always takes place in a particular social, political or scientific context (legislation may be amended, public opinion may change, *etc.*). It is important to consider a moving environment when starting a TA project (Schot & Rip, 1997). As an example, in the early 2000s, Nanotechnologies were expanding rapidly, and some influential entrepreneurs expressed misgivings about them. They feared the consequences that this technology could generate and launched a TA project. This tension, typical in debates about new technologies, creates an opportunity at the early stages of what may be the next technological revolution (Guston & Sarewitz, 2002). Launching a TA to determine the potential risks of a technology could dissuade some actors from using it, even before the results are communicated. Similarly, putting experts on a subject can create a greater technological progress and can in consequence affect the situation. A good understanding of the situation is crucial ahead of defining the objectives and should be used to set those. Before you start designing, you need to know what kind of results are expected. This can influence and help design the TA project. A TA should start with the context study, followed by a definition of the objectives and expectations and finally the

design (*figure 2*). This process can be repeated during a TA, depending on changes in the context (Decker & Ladikas, 2004).

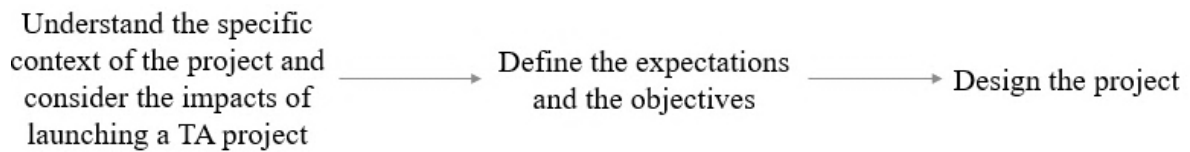


Figure 2. Technology Assessment simplified diagram
Source: Author Based on Decker & Ladikas, 2004

Second, even if the situation is correctly assessed, the right objectives are set, the best methods are chosen and a perfect project is designed, the whole plan may fail if it is poorly managed (Rip, Misa & Schot, 1995). To implement a TA project, several methodologies can be retrieved. Different methods are used to collect data, generate knowledge, facilitate communication, acquire ideas for conflict resolution, *etc.* In many cases, it might be necessary to combine different methods or create new ones to achieve a valuable result (Decker & Ladikas, 2004).

Once completed, as mentioned above, it is not only the result that produces an impact, but all the activities settled during the process or even the simple fact that the project is ongoing. This process may be less linear than it seems to be, because it needs a regular monitoring of the present situation. However, the more advanced the project is, the more difficult it might be to reshape it (Rip *et al.*, 1995).

In conclusion, TA can help find new solutions and new alternatives influencing decision makers (politicians, industry players, *etc.*). When those options are developed and legitimized, the *best* decisions for society can be made. Since very few elected representatives have knowledge of technology and the public involvement is limited, TA is important to help decision makers to assess the impact of new technologies. Furthermore, TA is a quite flexible process. It allows to analyse technologies at all the stages of development and is relevant even for *old* technologies (Schot, 1992). Although, TA can have some disadvantages. Since it is mainly defined as an informative process, the decisions taken strongly depend on the subjective opinion of decision makers (Smits & Leijten, 1991). Also, information used in the TA projects isn't often neutrally collected by those performing the TA. This can lead to biased results. Then, from a practical point of view, predicting the effects of a new technology is not easy, many *mistakes* may have been made in the past (Collingridge, 1980). Finally, even if TA's are possible at all stages of a

technology's development, it is more complicated to influence those already well established (Collingridge, 1980).

4.2. Corporate Social Responsibility

4.2.1. *Context of emergence of the concept*

The origin of the corporate responsibility is not clear and is not attributed to a specific author. According to A.B. Carroll (1999), the idea of a corporate responsibility appeared at the same time as the first businesses. At all times, some companies have positioned themselves regarding social problems. However, the concept has evolved over time in parallel with economic and social development. The modern approach dates to the 1950s when the term Corporate Social Responsibility (CSR) was coined. Several definitions have been proposed over the years, with many similar characteristics. The recurrent ones are the importance to consider the various stakeholders, the economic, social and environmental aspects the company can influence while doing so voluntarily (Carroll, 1999).

4.2.2. *Description of the concept*

Most authors mention that CSR is about including the point of view of stakeholders and considering social, economic and environmental aspects related to the company (Witkowska, 2016). The following definition is a combination of these characteristics: *“the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organisations at a given point in time”* (Carroll & Shabana, 2010, p. 89).

The various CSR definitions highlight that companies should *sacrifice* part of their profit for the good of the social interest (Benabou & Tirole, 2010). Companies should voluntarily go further than what the law and the projects they contract require (Gottschalk, 2011). Involvement in CSR is not required by law, some companies freely seek to maximize social well-being and to go beyond traditional models of what a company may be. To encourage those, some international organisations and states promote CSR in their programmes (Witkowska, 2016). The European Union defines CSR as *“the integration of social and environmental concerns in business operations and in interactions with stakeholders on a voluntary basis”* (cited in Witkowska, 2016, p. 29). As an example, Backman mentioned that the *“employment of*

minority groups, reduction in pollution, greater participation in programme to improve the community, improved medical care, improved industrial health and safety [...] programme designed to improve the quality of life” are good illustrations of what CSR measures can look like (cited in Carroll, 1999, p. 279).

To synthesize what CSR may be, Crane *et al.* identified six key aspects on which most researchers and stakeholders agree (Bondy, Moon & Matten, 2012):

- Getting involved in CSR is voluntary;
- Integration or management of external effects related to company's products;
- Several stakeholder groups are involved—the company must address many actors;
- It is necessary to integrate economic, social and environmental responsibility into the company's day-to-day management and decision-making process;
- CSR must be part of the company's identity and part of its values;
- CSR goes beyond philanthropy and is a way of thinking business.

Applying the CSR concept can have advantages. First, in terms of a company's products, it makes possible to differentiate oneself from the competition by offering a different value proposition. Second, accepting corporate responsibility with social and environmental considerations often improves a company's reputation and can make easier to attract talents attentive to these kinds of considerations (McElhaney, 2009). Nonetheless, some challenges might appear *e.g.* companies must be honest when developing CSR policies, *greenwashing* may reduce the previous benefits (Schroeder & Schroeder, 2004).

4.3. Value Sensitive Design

4.3.1. *Context of emergence of the concept*

Researchers have long been interested in designing systems that support sustainable human values. Although, since Norbert Wiener's work (1954), an interest in computer technology, values and design has emerged. In recent years, it has led to Computer Ethics, Social Informatics, Participatory Design and Computer-Supported Cooperative Work (cited in Friedman *et al.*, 2008). They are in a way trying to determine the values that are important to the human being when designing projects. This may be defined as the Value Sensitive Design (VSD) (Friedman, Kahn & Borning, 2008).

4.3.2. *Description of the concept*

VSD is defined as a theoretical approach to technology development aiming to consider human values throughout the development process. An integrative and iterative tripartite methodology, composed of conceptual, empirical and technical aspects can be applied. This approach should address some aspects of ethics or interactions between computers and humans that were neglected by previous concepts. For instance, Social Informatics is an analytical method for studying the social interactions associated with current technologies. But it does not really help to induce changes in design or development process of a product (Friedman & Kahn, 2007). VSD is seen as a proactive method that can impact the development of a product from the beginning of its conception and throughout the design process. VSD aims to extend the range of values that can be promoted. Even if some methods focus specifically on values related to privacy, to democracy or cooperation only.

To do so, conceptual, empirical and technical aspects should be integrated. Theories dealing with human interactions shouldn't be left aside. Since values are not often specific to technologies or human beings, but rather emerging from the interactions between people and social systems. These values can influence the product design, and similarly, the outcome might shape individual behaviour and social systems in the future (Friedman & Kahn, 2007).

During a VSD project, some questions should be asked regarding which values should be highlighted and how the trade-offs between values should be managed. It might be important to conceptualize values to identify potential value-related problems that may be encountered during a project. The interest is to identify how stakeholders (direct and indirect) can be impacted by technological designs. Unfortunately, indirect stakeholders are too often forgotten. As an example, a patient data platform was created to facilitate the doctor's work. Yet, the indirect stakeholder (the patient) wasn't sufficiently considered. This raised privacy issues that might have been mitigated by using VSD (Friedman, Kahn & Borning, 2008).

Empirically research might be necessary to understand human values and interactions. An empirical analysis might include data about *human* behaviours. Information can be collected through interviews, surveys or any other means. This can help to understand the preferred values and define whether a design is *appropriate* and the improvements to be made. In

addition, empirical research can lead to other advantages. In addition, performance and usability should also be considered. A design can be positive toward human values but reduce the ease of use of the product, and vice versa. Sometimes, improving performance and promoting values go hand in hand, but it can be necessary to make compromises (Friedman, Kahn & Borning, 2008). For example, the implementation of an online calendar, as organisational innovation, may not improve the privacy of employees, while it may promote other values such as cooperation or autonomy. Platforms seeking to improve collaboration between workers that include features that are minimally invasive, do not give too much information from users but limit the information available to other workers and others do the opposite. The trade-off between privacy and knowledge of the activity of others is assessed differently in the different designs of these products (Friedman & Kahn, 2007). As a conclusion, Value Sensitive Design is defined as is a “*theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process*” (Himma & Tavani, 2008, p. 24).

As already mentioned, VSD has advantages but also limitations. Some values are considered universal while applied differently in some cultures or contexts. Sometimes a group of people think to have the *right* values and impose them to others. While, this problem can be limited if the design applies only to a group of people sharing common values (Albrechtslund, 2007). Furthermore, even if VSD emphasizes values, ethics is not always involved. This concept can be built around harmful values that could go against certain groups of people. An extreme example could be promoting segregation or the suppression of privacy (Borning & Muller, 2012).

4.4. Triple Bottom Line

4.4.1. *Context of emergence of the concept*

The concept of the Triple Bottom Line (TBL or also called 3 P's for people, planet and profit) was popularised by John Elkington in the 1990s. It describes the economic, social and environmental aspects and impacts of companies' activities (Elkington, 2004). This method can allow to determine the value of resources used to allocate them as efficiently and effectively as possible (Roberts & Cohen, 2002). The “Triple Bottom Line” refers to the three limits (social, environmental and economic) not to be exceeded. Although, the word “Bottom Line” could

also mean “net income” at the end of the balance sheet where the three axes would be related to the financial performance.

4.4.2. *Description of the concept*

TBL may integrate more aspects than just an economic perspective and wants to increase the attention toward social and environmental dimensions. It is defined as “programme, policies or activities designed to create or retain jobs and wealth in ways that contribute to environmental, social, and economic well-being over time” (Hammer & Pivo, 2016, p. 26). This topic is raising interest among more groups of people, as we can see from the increasing number of articles, reviews and conferences on the subject (Hammer & Pivo, 2016). Economic development is usually defined in terms of wealth creation measured in terms of employment, per capita income, tax base and gross domestic product (Blakely & Bradshaw, 2002). The term “economic development” and “economic growth” are often used interchangeably and are related to the TBL’s economic development concept. However, differences between the two can be observed (Salvatore & Arndt, 1988). The economic growth can be associated with a change in the size of the economy. When economic development refers to changes in the structure of the economy that facilitates the economic growth or to a qualitative improvement in social conditions due to the economic activity. The confusion between these terms is based on the conviction that structural economic development is a precursor to economic growth. A positive correlation between economic growth and development has been widely discussed (Easterlin & Angelescu, 2012).

The contribution of economic performance to human well-being creates a lot of debate among researchers (Diener, Helliwell & Kahneman, 2010). Sources of controversy include differences in definition and measurement of well-being. Should we take the economic well-being, the life expectancy, happiness, purchasing power into account? Although debates continue about relationship between economic growth and the well-being, consensus can be achieved on the fact that economic growth is an incomplete measure of economic development or well-being. Such as, the increased need of cleaning-up pollution, controlling crime and treating cancer can increase GDP (Hammer & Pivo, 2016).

The Triple Bottom Line argues that economic systems are meant to serve human welfare. That human, economic and environmental welfare are intrinsically linked. Therefore, all three should be considered in the design of a product or innovation. The core objectives of economic vitality, resource stewardship and community welfare will be common. Although the means to achieve them will vary depending on contextual factors, such as project types, community characteristics and scale. More importantly, the economic development of TBL requires new forms of impact measurement and more nuanced understanding of the interactions between economic, environmental and social factors. For example, green building practices can contribute to the environmental bottom line by saving energy and reducing the use of toxic products. This could contribute to the social bottom line by reducing *negative* health impacts. All this can be achieved through the capture of market premiums or improved employee health, retention and productivity thus considering the economic bottom line. In conclusion, by integrated social, environmental and economic factors, TBL programmes might provide a more meaningful and productive framework for achieving and measuring economic development (Hammer & Pivo, 2016).

One of the main advantages of TBL is to be easily understandable and the visual representation helps to understand the concept (*Appendix 4, p.139*). Moreover, the implementation seems easy, making it very attractive for companies afraid of difficult barriers to overcome (Roberts & Cohen, 2002). The Triple Bottom Line also has some inherent flaws. An impact assessment regarding social and environmental aspects isn't highlighted. This may call into question the usefulness and efficiency of this VSD interpretation (Vanclay, 2004).

4.5. Precautionary Principle

4.5.1. *Context of emergence of the concept*

The development of *modern* technologies in the second half of the past century has led to the emergence of new risks. These could be physical, such as risks to nature, ecosystems, health, or more abstract, such as risks to human rights, or risk to jeopardize some values (Godard, 1997). The PP was born in the '70s as a result of environmental movements denouncing the impact of certain innovations on the environment (Gardiner, 2006) and was popularized by Hans Jonas in 1979 in his book "*Das Prinzip Verantwortung*" ⁽⁷⁾ (Whiteside, 2006). The

⁽⁷⁾ The Principle of Responsibility

Precautionary Principle (PP) is designed to protect the society from new risks especially in terms of ecology, health or even ethics. Risk coming from technological or scientific innovations that try to free us from current issues the society is facing (Vermersch, 2001). For too long some individuals and some companies have made decisions based on economic profit and short-term perspectives without considering the consequences on society in the medium to long term. A good example is the climate change and the damages already considered as irreversible. In the last decades, the debate was relaunched on the scientific, technological, philosophical, legal and regulatory scene related to the potential responsibility of certain companies in these damages (Cameron & Abouchar, 1991; Gardiner, 2006).

4.5.2. *Description of the concept*

The purpose of the PP is not to determine, according to the risks that have been previously identified, if a scientific or technological novelty must be placed on the market. This is prevention. Precaution is based on the uncertainty of new situations. The faster and the more important technological advances are, the less scientific knowledge allows to predict with an acceptable level the consequence on health, ecology or economy (Vermersch, 2001). According to Godard (1997), the lack of knowledge to forecast risks with certainty does not preclude the need to prevent them. That is to say, despite the lack of scientific information, innovators should anticipate risks. According to Hunyadi (2004), the main differences between prudence, prevention and precaution can be seen through the magnitude (the impact of the risk) and the probability of this to happen (*figure 3*).

Risk	<i>Prudence</i>	<i>Prevention</i>	<i>Precaution</i>
<i>Magnitude</i>	Known	Known	Uncertain
<i>Probability</i>	Known	Uncertain	Uncertain

Figure 3. Difference between Prudence, Prevention and Precaution
Source: Author Based on Hunyadi, 2004

As mentioned by Gardiner (2006), the PP remains poorly defined and there appears to be no agreement on its exact meaning and implications. Nevertheless, most authors agree on the fact that the PP can be defined as followed: “*When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically*” (Gardiner, 2006, p. 35). We can mention the case of the sale of tobacco. Indeed, for a long time, it has been little questioned due to lack of evidence that smoking could have harmful effects. According to the PP, measures

should have been taken even before casual relationships were identified (Graham, 2004). Managing the company while considering new scientific knowledge proficiency can allow to identify emerging risks with a greater predictability. This is aimed to encourage innovators to be more flexible, sequential and reversible in their choices and prevent the risk of damages in a proportional and effective ways at an acceptable economic cost. As Cameron and Abouchar (1991) mentioned, the debate is also relevant to the legislative scene. A French law called the Barnier Act states *“that the lack of certainty, taking into account current scientific and technical knowledge, shall not delay the adoption of effective and proportionate measures to prevent a risk of serious and irreversible damage to the environment at an economically acceptable cost”* (Godard, 2001, author translation, p. 1).

The PP is often wrongly considered as a preferred inaction to action with uncertain consequences, whereas it is an invitation to action, proactivity and to do everything possible to act better. Precaution is not a *zero-risk* situation but encourages the decision makers to assess the impact and probability of the risk incurred to make *appropriate* decisions. It can also be seen as a duty to react and manage pitfalls that would appear which requires to monitor the situation (Kourilsky & Viney, 2000). As mentioned by Meskens (2013), a fair management of the risks is difficult due to the uncertainty of its magnitude and its probability. Yet, decision makers should also consider different opinions regarding facts and values. They should integrate objective arguments such as a probability of risk but also subjective and political arguments on facts and society’s values related to innovations (*Appendix 5, p.139*) (cited in Gailly, 2018).

Kourilsky and Viney (2000) proposed a synthesis of the key elements that can be found in the different interpretations of the precautionary principle. This allows to give a better idea of a procedure likely to frame reflexions about this principle (Kourilsky & Viney, 2000, author translation, p. 56):

- *“Any risk must be identified, assessed and graduated;*
- *The risk analysis must compare the different scenarios of action and inaction;*
- *Any risk analysis must include an economic analysis that must lead to a study cost/benefit (in the broad sense) prior to the decision;*
- *Risk assessment structures should be independent but coordinated;*
- *Decisions must, as far as possible, be reviewable and solutions adopted reversible and commensurate;*
- *Removing uncertainty imposes a research obligation;*

- *Decision-making circuits and security systems must be not only appropriate but coherent and effective;*
- *Decision-making circuits and security devices must be reliable;*
- *Evaluations, decisions and their monitoring, as well as the mechanisms that contribute to them, must be transparent, which requires labelling and traceability;*
- *The public must be informed as well as possible and its level of participation adjusted by the political authority.”*

The biggest advantage is that, to some extent, the application of this principle, in addition to the law of some countries, may oblige some companies to really explain and justify their decisions (beyond short-term profitability). This could force them to quantify risks and to inform a public partly suffering from a loss of trust (and legitimacy) in scientists and decision makers (Tubiana, 2000). On the other hand, the PP can be a cumbersome burden and a heavy process for companies to manage in terms of time, financial or human resources. The consequences on competitiveness could discourage companies from developing radical innovations that can lead to more uncertainty. This could also weigh on the competitiveness of countries where the PP is a legal obligation compared to other countries where it was not mandatory (unfair competition). Another issue is the application of what is called the *strong* precautionary principle defined as: *“When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof”* (Sachs, 2011, p. 1296). This burden of proof can negatively affect companies and they may decide to remain on the *safe* side when doing business. Even if potential innovations would have had preferred outcomes (despite the risks) than inaction. This may deprive future generations of solutions to important problems (Randegger, 2007). As example, we can cite the REACH regulation in the EU, which places the burden of proof on companies regarding risks related to chemical substances. Companies are required to identify and manage the risks of the chemicals they produce and sell in the EU. They must prove that the product is safe and communicate the potential risks to the users of the product (European Chemicals Agency, n. d.).

4.6. Sustainable Development

4.6.1. *Context of emergence of the concept*

In the 1970s, a debate on a change in social, political and economic relations spurred by some large NGOs, such as Greenpeace, called into question the economic growth they considered

uncontrolled (Aubertin & Vivien, 2006). During the same period, in 1972, a team of MIT researchers was recruited by the Volkswagen Foundation and the Club of Rome to carry out a study entitled “*The Limits to Growth*”. The purpose was to show the non-sustainability of the current raw material consumption and to determine in how many years certain materials would be depleted. The publication generated lots of debates and greatly contributed to the promotion of this issue into the public debate (Meadows, Meadows, Randers & Behrens, 1972). It has been later codified by the International Union for Conservation of Nature and Natural Resources (IUCN) in a report on the World Conservation Strategy:

“Human beings, in their quest for economic development and enjoyment of the riches of nature, must come to terms with the reality of resource limitations and the carrying capacities of ecosystems, and must take account of the needs of future generations. For if the object of development is to provide for social and economic welfare, the object of conservation is to ensure Earth’s capacity to sustain development and to support all life” (IUCN, 1980, p. 8).

Until then, the Sustainable Development (SD) was mainly seen as a concept aiming to protect nature and the environment from human development. Due to the rise of the concept and first codification in 1980, it became broader than just the concern for biodiversity and nature. Indeed, it also can encompass the legitimacy of individuals’ aspirations for economic and social development (Godard, 1994). In 1987, with the report “*Our common future*” (referred to as the Brundtland Report), sustainable development left the relatively closed sphere of ecologists and politicians to be at the heart of public talks (Gendron & Revéret, 2000).

4.6.2. Description of the concept

In the literature, two definitions of SD are often used. One codified by IUCN in 1980: “*For development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and nonliving resource base; and of the long-term as well as the short-term advantages and disadvantages of alternative actions*” (IUCN, 1980, p. 18). The other mentioned in the Brundtland report, often considered as the most widely used:

“Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts; firstly, the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; secondly, the idea of limitations imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs” (World Commission on Environment and Development, 1987, p. 41).

The first definition highlights the multidisciplinary dimension of development often mentioned as the three pillars of SD (economic, social and ecological) also referred to Elkington’s (2004)

Triple Bottom Line. Brundtland's definition highlights an ethical dimension of SD, mentioning a responsibility toward future generations. The current generation should manage the resources of the planet in a way that the future generations would be able to meet their own needs (Gendron & Revéret, 2000). It is in this perspective that the concept of *weak* and *strong* SD appears. An interpretation of the concept considered *weak* mentioned that all the 3 pillars are united under the same notion of capital. The low sustainability scenario requires the maintenance of global capital from one generation to the next—which would allow them to meet their future needs. This means that with the principle of *weak* sustainability (*illustration in Appendix 6, p.140*), compensation and substitution from one pillar to another is accepted if the amount of overall capital remains sufficient for future generations to meet their needs (Gendron & Revéret, 2000).

As for so-called *strong* sustainable development (*illustration in Appendix 7, p.140*), the substitution of performance from one pillar to another is not considered sustainable, as they would be non-substitutable and complementary. The environmental capital should absolutely be maintained at a constant level. Indeed, as Daly (1990) mentioned: “*Once the complementarity of natural and manmade capital is accepted then it becomes clear that development is limited by the one in shortest supply*” i.e. the environmental one (Daly, 1990, p. 3). As Pavie (2012) mentions, even though Brundtland's definition is clear and unambiguous, when it comes to implementation some companies allow themselves some freedom. Certain companies add a “*sustainable development*” labels to their products when they do not really respect its key principles as defined in most of the literature. Pavie (2012) considers that the SD is represented by three main principles. Those should allow companies to achieve their (economic) development by considering the environment and the society. All this while having a long-term reflexion to guarantee future generations enough capital to meet their needs (Pavie, 2012, author translation, p. 9):

- “*The principle of equity making possible to ensure that the needs of a greater number of people are met, and not only the richest, by considering the development of the countries of the South today but also for future generations;*
- *The principle of prevention, which consists in anticipating and preventing, if possible, the environmental consequences of projects;*
- *The principle of participation, which emphasizes the collective responsibility for sustainable development, in fact, the effort of a single company concerning a single product (in its value chain, for example) does not guarantee the respect for future generations and the prevention of possible impacts, mainly on the environment but also on the other two factors—social and economic.”*

Beyond the overall benefit of becoming a more equitable, viable and an acceptable company at the same time—which can be done for moral ⁽⁸⁾ or value-related reasons—SD has other advantages. The sustainable company can be able to benefit from advantages. Financial optimization or greater productivity due to less wasting of natural resources, increased sales through the marketing using the concept of sustainability, improved employee retention rates and productivity through higher consideration of their working conditions are some examples. (Lauriol, 2004). Even gain a first mover and anticipation advantage due to the fact when sustainable companies voluntarily go further and beyond the existing legislation (Kadri, 2009). This positioning is not just improving internal resources, the companies can develop a sustainable competitive advantage. CSR companies can push the development of innovations considered disruptive to competitors (Lauriol, 2004). In other words, they are ahead of the learning curve ⁽⁹⁾ in terms of sustainability and gain a competitive advantage over companies that do not force themselves to go any further (Laszlo & Laszlo, 2011).

4.7. Responsible Research and Innovation

4.7.1. *Context of emergence of the concept*

Responsible Research and Innovation (RRI) has gained importance in Europe in recent years, as part of the European Programmes like Horizon 2020 ⁽¹⁰⁾. The term “responsible research” gained recognition in 2002 and was used in terms of cooperation between various organisations to foster dialogue in a global context and research on the ethics of science and technology (European Commission, 2002). The RRI was first mentioned in 2013 (European Parliament, 2013) when establishing the Horizon 2020 programme. This programme focuses on promoting the cooperation between science and society and on strengthening public trust in science. Philosophy and bioethics have been a starting point for addressing issues and challenges related to scientific and technological developments. This was an attempt to revitalize ethical studies, draw attention to ethical dilemmas and principle, promote participatory position in addressing ethical and social issues (Zwart, Laurens & van Rooij, 2014) and promote anticipatory governance capacities (Barben, Fisher, Selin & Guston, 2008).

⁽⁸⁾ Moral being defined as «*relating to the standards of good or bad behaviour, fairness, honesty, etc. that each person believes in, rather than to laws*» (Cambridge Dictionary, 2019).

⁹ The learning curve in business shows a “rate of improvement in performing a task as a function of time, or the rate of change in average cost (in hours or dollars) as a function of cumulative output” (BusinessDictionary, 2019)

⁽¹⁰⁾ Horizon 2020 is the European Commission €11 billion investment in new solutions for societal challenges and drive innovation-led sustainable growth (European Commission, 2019)

4.7.2. Description of the concept

A definition of the RRI was proposed by von Schomberg (2011) as:

“a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in society)” (von Schomberg, 2011, p. 9). RRI wants research and innovation to be *ethical* and socially *acceptable*, *i.e.* in line with the fundamental values of the European Union. Indeed, some past shortcomings in privacy when implementing certain computer technologies can be mentioned. Therefore, it can be necessary to perform risk assessments to ensure the safety of (innovative) products developed from a social, environmental or ethical point of view (Owen & Goldberg, 2010). Additionally, those innovations should be sustainable. In practice this can mean several things. First, is that companies should act *rightly* and contribute to the (environmental) sustainability objectives set by the EU (von Schomberg, 2014). Second, the products should be socially *desirable*, *i.e.* that the products have positive social impacts such as the increase of the quality of life or promotion of gender equality. Therefore, reviewed research and innovation objectives must be set, even if the economic dimension is still considered essential for the survival of companies (von Schomberg, 2014).

In the EU vision of RRI, two aspects to responsibility can be mentioned: the product and process aspects. First, products should be designed in a way that the environmental preservation, health protection and long-term sustainability were considered. Second, at the process level, RRI seeks a more adaptative, responsive, inclusive and multidisciplinary innovation process. This can be achieved by involving different stakeholders, each becoming co-responsible for the innovations. A transparent stakeholder integration could help develop research and innovation considering societal aspects. Risk assessments can also be needed to easily adapt innovations when needed and avoid *negative* impacts (von Schomberg, 2014).

The advantages of the RRI are that it can limit unintended *negative* consequences through risk assessments. In addition, through the involvement of stakeholders, this concept might help the public to have a renewed confidence in the companies developing RRI policies. It should also help maintain a competitive advantage in the long term because some future aspects influencing the company's business will have been considered (emerging risk, costumers' expectations, *etc.*) (Sutcliffe, 2011). Indeed, the basic assumption underlying these frameworks is that the

future is predictable and calculable. However, it can be difficult to accurately assess *a priori* unforeseen consequences and long-term *negative* effects of innovations (Lee & Petts, 2013). Finally, RRI suppose that every actor will cooperate. Nonetheless, stakeholders might have very different or even opposite point of view and objectives and it can be difficult to find areas of agreement (van Oudheusden, 2014).

4.8. Life Cycle Assessment

4.8.1. *Context of emergence of the concept*

The study of environmental impacts of products has a history that dates to the 1960-70s. Especially in a comparative context, as products typically have several distinguishing features and alternatives. For instance, fluorescent light bulbs have longer life spans and consume less energy than traditional incandescent ones, but they require more material and contain heavy metals. For many of these products, the environmental impacts are not related to the product but to its production, transportation, or disposal. Gradually, the importance of addressing the life cycle, performing the Life Cycle Assessment (LCA) of a product or of several alternative products has increased (Guinée *et al.*, 2011).

4.8.2. *Description of the concept*

The Life Cycle Assessment has been defined by the European standard as “*the compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle*” (ISO, 2006, p. 3). Where the life cycle is defined as “*the consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal*” (ISO, 2006, p. 3).

First, the LCA considers the *entire* life cycle of a product, from the extraction of raw materials to the end of its use. It is focusing on the environmental aspects that a product can have throughout this cycle since social and economic aspects are not usually considered. However, other tools can additionally be used to take these aspects into account. The LCA is an iterative process, *i.e.* some results from previous phases are used in the following phases, allowing consistency and robustness. Moreover, due to the complexity of the LCA, it might need to be transparent so that the different steps are carried out in the most efficient and the interpretation of the results is well thought. To achieve the LCA, it is necessary to consider all aspects related

to resources and the environment. The advantage being that it is easier to identify alternatives to analyse. Finally, LCA is mainly based on the natural sciences but can also use other scientific approaches such as economics and social sciences. If none of these approaches are possible, then it should be possible for decision-makers to decide based on values (ISO, 2006).

Having good objectives is key in LCA to determine the application you are looking for, the reasons why you decide to perform it, the people with whom the results should be shared and communicated. First, data must be iteratively collected and computed to quantify the relevant product inputs and outputs. Second, as data are collected, more is learned about the system, sometimes problems may be identified and require a review of the purpose or scope of the study. The third step consists of applying a Life Cycle Impact Assessment (LCIA) consisting in assessing the potential environmental impacts by involving inventory data with specific environmental impact categories and indicators. The impact assessment may include the iterative process of reviewing the purpose and scope of the LCA study to determine whether the objectives of the study have been achieved, or to modify the purpose and scope if needed. Transparency might be essential to ensure that assumptions are clearly described and communicated. Finally, results should be consistent with the defined objective and scope. It should allow to draw conclusions, to explain limits and should allow recommendations to be made. Decision makers should consider that the results are based on a relative approach, indicate potential environmental effects and do not predict actual effects on exceeding thresholds, safety margins or risks (ISO, 2006).

The LCA has many advantages compared to other methods of measuring the environmental impact of products or processes. Due to its broad applicability and its validity, the LCA methodology has gained worldwide acceptance as a useful tool for strategic planning, process development as well as policymaking. In the case of comparative studies, LCA can compare different amounts of resources needed for a same purpose. Nevertheless, the decisions that follow the conduct of an LCA study are still a matter of values and opinions (Kralisch, Ott & Gericke, 2015). In addition, it is not always easy to collect relevant data. Not all types of impacts are equally covered in a typical LCA. Some aspects receive limited attention due to the subjectivity of the weighting of the importance of certain environmental aspects. To sum up, methodological choices and assumptions may influence the LCA results and the recommendations drawn from these (Finnveden *et al.*, 2009).

4.9. Summary of the concepts related to responsible innovation

Now that the eight concepts related to responsible innovation have been defined and briefly analysed, we have summarized them all in a table so that they can be easily compared (*Appendix 8, p.141*). The following information was retrieved:

- Some of the key authors who wrote about the concept;
- Some of the concept's key characteristics;
- The key objectives of the concept;
- When could the concept play a role when innovating;
- Some recommendations to implement the concept.

By comparing these different concepts, we can notice that some characteristics are highlighted in almost every concept. Indeed, the stakeholders involvement during the process, the risk assessments to anticipate future consequences and the need to be adaptative in the event of *negative* impacts are characteristics that are almost unanimously accepted. Some others are highlighted, such as going beyond what the law requires or considering the social and environmental dimensions in addition to the economic ones. These characteristics are almost consensual. Some others are less represented. Nevertheless, it is interesting to keep them in mind, in case they are redundant when analysing the existing RI definitions in the next section.

Relatively few differences can be observed between the different concepts in terms of characteristics. Although, these concepts might mainly differ regarding their level of complexity *e.g.* the TBL sharing the same idea as CSR, although being more simplistic. In addition, some concepts emphasizes the possibility to make the processes more responsible such as the TA or the LCA. When others highlight the need to have responsible outcome such as the TBL or the SD. As for most of the concepts, it is necessary to do both (*Summary in table 2*).

<i>RI related concepts</i>								
	Technology assessment	Corporate social responsibility	Value sensitive design	Triple bottom line	Precautionary principle	Sustainable development	Responsible Research and Innovation	Life Cycle Assessment
Characterisitics								
Stakeholder involvement	+	+	+		+	+	+	
Risk assessment	+		+		+	+	+	+
Voluntary	+	+	+	+		+		
Adaptative and flexible	+	+	+		+		+	+
Reflection on motivations			+					
Reflection on what is known					+			
Solve society issues and needs*		+				+		
Inter-generation equity						+	+	
Consider society	+	+	+	+	+	+	+	
Consider environment		+		+	+	+	+	+
Consider economy		+		+	+	+	+	

Table 2. Simplified summary of the main characteristics and definition of the RI related concepts

We have sought to analyse the eight related concepts to better grasp the main ideas behind the “corporate responsibility”. The characteristics highlighted can allow us to get an insight into the characteristics that “corporate responsible innovations” could bring together. The interest of this approach is to be able to see the bigger picture and not to be too influenced by the already existing definitions of RI that we will present and analyse in the next section. We will then be able to compare the highlighted RI related concepts characteristics with those of RI existing definitions.

5. Existing definitions of the responsible innovation concept

According to Riggs, an explicit and contextual definition is necessary to correctly identify concepts. In addition, they must be defined by terms considered complex but widely understood to ensure a good communication and use in broad context. This comprehensiveness should allow a frequent, correct and accurate use (Riggs, 1979). Indeed, having different definitions for the same idea considerably hinders the ability of the so-called specialists to exchange with each other, limit authors to rely on each other’s works and slowing down the progress of the research (Meadow & Yuan, 1997). The number of publications mentioning the concept of RI is growing very rapidly (*Appendix 9, p.142*). More and more authors are referring to the terms in publications showing that the concept is becoming more accessible. Nevertheless, it can be observed that unlike the number of publications where RI is mentioned, the number of publications about responsible innovation remains relatively constant. This is an indicator that allows us to argue that this concept is increasingly used but not increasingly deepened.

Various definitions, from complementary to heterogenous and from theoretical to practical, are widely available in scientific journals, specialized books and even on online blogs. Authors mainly want to promote a simplified and accessible approach. Whether definitions are distinctive or slightly different from each other and whether the core concept of the definition is “innovation” or “responsibility”, the number of different interpretations is important. For this reason, to carry out a relevant review of the existing RI definitions, we will analyse the interpretation of authors considered experts by their peers. To do so, we will gather information on all RI scientific publications available on “*Google Scholar*”. Definitions used in the 20 most cited publications written by different authors will be preselected. Then, we will only present and analyse the RI definitions presenting a *significant added value* (Appendix 10, p.143) according to us. Those presented that will be presented are written by sixteen authors and can be classified based on their responsibility emphasis. The eight publications have a clear emphasis on the responsibility of the process or the outcome.

<i>Emphasis on</i>		
<i>Process</i>	<i>Process and outcome</i>	<i>Outcome</i>
de Saillies & Medvecky	Owen et al. Blok & Lemmens Grunwald Van Oudheusden Van den Hoven Pavie	Halme & Korpela

Table 3. List and classification of the RI authors

5.1. S. de Saillie and F. Medvecky

Between 2010 and 2018, the number of scientific publications concerning the concept of RI or RRI increased steadily each year. de Saillie and Medvecky stated that the lack of clarity regarding RI definitions and the incorrect amalgam to consider that responsible innovation is the opposite of the irresponsible innovation is regrettable. In their article “*Innovation for a steady state: a case of responsible stagnation*” they wanted to propose a first approach to define RI. They argued that RI is at the centre of a two-by-two matrix opposing the terms innovation and stagnation and responsibility and irresponsibility (de Saille & Medvecky, 2016). According to them, RI is meant to prevent irresponsible innovation but also irresponsible stagnation coming from a lack of investment in research and development. The stagnation being understood as a prolonged period of very slow growth measured by GDP (de Saille & Medvecky, 2016). “*Although there is no singular definition of RI, in general, it calls for continuous engagement of the public along the entire innovation pathway from research to the*

market, and careful assessment of possible risks, benefits and motivations—including impact on values, morals and social relations, as well as on health, the environment and the economy” (de Saille & Medvecky, 2016, p. 4). The consultation and involvement of stakeholders during the entire innovation process is a key aspect of RI in de Saille and Medvecky’s interpretation. The importance of a long-term reflexion from the innovators concerning the economic, social and environmental consequences is also highlighted.

5.2. R. Owen, J. Stilgoe, P. Macnaghten, M. Gorman, E. Fisher and D. Guston

Owen *et al.* (2013) undeniably argue that the human nature pushes to be creative and innovative. For years, this need for innovation was often satisfied without measuring or questioning the consequences. However, some excesses have led innovators to question their responsibilities. Initially, responsibility linking the innovator to the innovation was limited to an implicit contract involving compliance with certain laws or standards (Owen *et al.*, 2013).

Innovators and scientists appear to be more and more entitled and legally bounded to retrospectively manage the externalities of innovations developed due to government regulatory mechanisms. This liability based on the knowledge the innovator should gather at launch is difficult to assess. Due to the emergence of scientific discoveries and technologies, regulations, laws and standards might no longer be adequate to protect the society, the environment and the people from these innovations. It might neither be rational to expect the innovators to perform a full analysis of unforeseen externalities during the knowledge gathering stage (externalities, the current norms, laws and standards in the society). Therefore, nowadays, the need for a reviewed and adapted concept in innovation and scientific discoveries, such as responsible innovation, makes sense. It can be considered as an ideal for the various stakeholders, since they are considered. Nevertheless, according to Owen *et al.* (2013), this concept lacks a consensual definition and clarity in both theory and practice.

The question of responsibility and the increase of research on responsible innovation after the financial crisis of 2008 led to an idea of RI to prevent innovators to become irresponsible if left uncontrolled. But what about innovations and *negative* externalities that couldn’t have been foreseen? What about the pure research and scientific freedom of exploring the unknown?

According to Dave Guston, RI will need to be more than just the dual objective of *no negative externalities* and having economic and social expectations (cited in Owen *et al.*, 2013). RI should face different challenges. The first is the questioning of the purpose of scientific research and innovations—why innovate? The second is the redefinition of what we understand as “responsibility” in this context. According to Owen *et al.* (2013) the irresponsible innovations and scientific research can be considered as such because they were part of a globalised and complex context making scientific innovations or discoveries rarely attributable to a single person. This separation in time and space between the different contributors is what John Bessant calls “*knowledge spaghetti*”. Innovation is not as simple as one person with an idea, following a linear process and therefore the responsibility of the foreseen or unforeseen outputs cannot easily be traced back (cited in Owen, 2012). On the contrary, innovation is a multiplayer discipline and it is in this context that *irresponsibility* might occur. Beck calls it “*collective irresponsibility*” and this is much more difficult to regulate. It might also be necessary to change toward a common responsibility instead of a sole one (cited in Owen, 2012). RI is understood as how through care and responsiveness innovators can create and seize opportunities when unforeseen events arise, and new insights (knowledge) emerge. In other words, RI defined as a “*collective commitment of care for the future through responsive stewardship of science and innovation in the present*” (Owen *et al.*, 2013, p. 36). Four dimensions can allow the responsible innovator to build a global reflexion which is used to collectively adapt decisions (collective responsibility) to better define or redefine a trajectory for the innovation, which is uncertain and unpredictable (Owen *et al.*, 2013). These 4 dimensions form a cyclical process (figure 4).

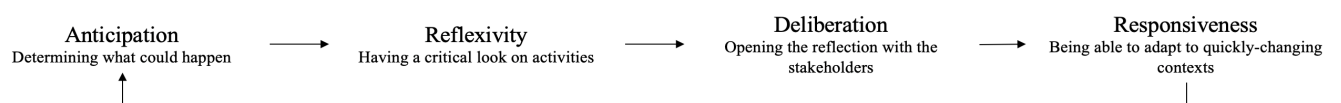


Figure 4. The 4 dimensions of Responsible Innovation according to Owen *et al.*
Source: Author based on Owen *et al.* (2013)

Responsible innovations can still lead to unpredictable futures, but where the best decisions should have been collectively thanks to an iterative reflective process (Owen *et al.*, 2013).

5.3. V. Blok and P. Lemmens

In the book “*Responsible Innovation 2*”, Blok and Lemmens (2015) propose a critical analysis of why RI might face important challenges. They reviewed the existing literature and pointed

three main reasons¹¹ why the RI concept might be difficult to put into practice. First, they analysed the origin of the concept they consider relatively new and suggests that current way of innovating is irresponsible. Indeed, according to them, companies mainly seek economic growth and value creation for shareholders without considering the potential impacts on individuals, societies and ecosystems. According to them, “*Responsible innovation = regular innovation + stakeholder involvement with regard to ethical and societal aspects [...] to balance economic (profit), sociocultural (people) and environmental (planet) interests*” (Blok & Lemmens, 2015, p. 20). When talking about *Regular Innovation*, it is mainly referred to technological innovation creating economic value which is considered as *good* (Blok & Lemmens, 2015).

Yet, it is important to mention that in their work, Blok and Lemmens (2015) review the practical ability to effectively involve stakeholders to better enable the 3P’s (Profit, People, Planet). They acknowledge that the implementation of the RI concept based on this definition might face three main challenges. First, the intrinsic unpredictability of innovation and uncertainty of the outcomes. Second, it might be difficult to reduce the asymmetry of information and the fundamental differences in power, purpose, values, motivation and vision of the different stakeholders considering innovations. Finally, the uncertainty of achieving more responsible innovation by involving stakeholders with regards to the ethical and societal aspects of innovations can be discouraging.

5.4. A. Grunwald

Following numerous references on Technological Assessment (TA) and Science, Technology and Society studies (STS)⁽¹²⁾, both including a certain notion of responsibility in the scientific and technological field, Grunwald published an article highlighting the links between these concepts and RI. The idea is that both TA, STS and RI can allow an integrative approach to better understand and gain knowledge about *negative* side effects of technological innovations. Indeed, including different stakeholders into the reflexion process might allow to better react when those *negative* impacts are detected. In addition, RI might add a moral and ethical

¹¹ The three reasons will be detailed at the beginning of the next page.

⁽¹²⁾ “*Science, technology and society (STS) is the study of how social, political, and culture values affect scientific research and technological innovation, and how these, in turn, affect society, politics and culture*” (Hom, Plaza & Palmén, 2009, p.111)

dimension to answer the question of whether a newness leads to a “*better technology in a better society*” (cited in Grunwald, 2011, p. 15). RI may thus be about assessing the responsibility to innovation broadly speaking and not only to the technological ones. This could happen by taking into consideration society’s demand and values, real impacts of innovation on society and, finally, by increasing and diversifying the stakeholders originally involved in TA and STS (Grunwald, 2011). A definition as such is not presented by the author but a synthesis of what RI may be and tends to do is proposed. It is here understood as a very broad concept covering different issues previously embedded in other related concepts such as TA, ethics in engineering and science as well as risk and anticipation measures facing unpredictable phenomena. RI can add a dimension of reflexion to creation and implementation of new technologies, characterized by the integration of ethical and social thoughts as from the beginning of the innovation process. It should be based on a transparent distribution of the responsibilities to the various stakeholders involved (Grunwald, 2011).

5.5. M. van Oudheusden

In view of the rise of the phenomenon of responsibility, whether RRI or RI in Europe, van Oudheusden analyses the implementation of the different RI frameworks identified and their political aspect. He underlines that as responsible innovation is a recent concept, the different public policies or stakeholders are not yet sufficiently informed about its implications. This might include how stakeholders are consulted and should participate in discussions related to innovations. But also, how power and different value norms may influence the debate, and how RI is currently not really pushed onto the public and political debate (van Oudheusden, 2014). The emergence of RI might mainly be caused by the current way of innovating that often doesn’t sufficiently consider social needs, morals or values. Moreover, innovators are often no longer considered as the only legitimate actors in these processes. In the author’s opinion, the purpose of RI is to give back part of the power of innovators to society by respecting society’s opinion when developing scientific or systemic technological innovations and by being socially responsible. Based on the RRI definition proposed by von Schomberg, van Oudheusden proposes another interpretation of what responsible innovation might be. RI is seen as “*an inclusive and interactive process that actively solicits society’s opinion about innovation processes and (the responsible innovation) aims to render innovation more ethically acceptable, sustainable and socially desirable*” (van Oudheusden, 2014, p. 70). RI should

include, scientific, technological, social, procedural, system innovations, *etc.* (van Oudheusden, 2014)

5.6. J. Van den Hoven

Following various cases of miscarried innovations in the energy sector in the Netherlands, van den Hoven proposes to review the concept of Value Sensitive Design (VSD) ⁽¹³⁾ which is relatively close to the one of responsible innovation. Indeed, VSD underlines the importance of considering moral and ethical concerns in the early stages of the innovation process allowing to tackle those before spending years investing in the R&D phases. It is in this logic of the importance of predictability of innovations that Van den Hoven emphasizes the need to pay attention to value-related questions before the market launch. Even if by nature innovations are unpredictable, innovators have a duty in addressing the moral and ethical issues raised when innovating. It is not a question of being held responsible for unpredictable phenomena, but rather a responsibility of questioning the current way of innovating. It is about a responsibility in relation to what *we* should have known, what *we* knew and what *we* should have assessed as the limits of our knowledge compared to the choices made (Van den Hoven, 2013).

The first step in defining the concept of RI was for Van den Hoven to clarify what he meant when talking about responsibility. Responsibility is generally assigned to someone based on intentions or on how certain actions impact the world. In case of RI, all the actors who have initiated, driven, influenced, modified, or simply impacted directly or indirectly it are held responsible. Van den Hoven considers that a RI implies that decision-makers gain knowledge about potential outcomes and are entitled to carry on them a moral and value reflexion during the first stages of the processes. RI is considered to be a “*new technology, products and services leading to moral improvement*” (Van den Hoven, 2013, p. 111). Additionally, it “*is the endeavour of attempting to add morally relevant functionality which allows us to do ‘more good’ than before*” (Van den Hoven, 2013, p. 111).

⁽¹³⁾ “*Value Sensitive Design is a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process*” (Friedman, Kahn & Borning, 2008, p.70). The concept was previously developed in the section 4.3 (p.19).

5.7. X. Pavie

At the heart Pavie's interpretation of RI, there is a need to understand the future integration of these new products and services into the society. Nowadays, many of the products and services used daily are yesterday's innovations with impacts few had anticipated (text message service and the Internet, *etc.*). This uncertainty and loss of control in innovation drive the rise of RI. The main issue is, according to Pavie, to reduce the notion of uncertainty associated with innovations as much as possible (Pavie, 2012). Pavie's definition of RI is based on the European Commission's definition of RRI.

However, according to Pavie's, it is not the research of what is best for the environment (pollution reduction, preservation of the nature, *etc.*), the society (human health, privacy, education, *etc.*) or the economy (social innovation). What might be the most important is the integration of all these factors into the development and reflexion process. RI can be seen as a way of controlling and analysing the consequences to reduce the uncertainties inherent to innovations (Temri, 2018). Pavie defined three main axes allowing the innovator to better understand what responsible innovation is. First, innovators should monitor the needs of individuals to be able to question the answers provided. Secondly, innovators should ask themselves if they are able and willing to anticipate the direct consequences of their innovations on its beneficiaries. In connection with this second axis, the third allow the responsible innovator to question the potential indirect impacts of innovations. Additionally, innovators should provide solutions regarding the *negative* externalities. It is essential to know how to position yourself as an innovator if the product and services developed have impacts outside the framework from which they emerged and with indirect consequences on society. In other words:

(the) objective (of RI) is to integrate measures throughout the innovation process as a whole, from conception to market launch, to preserve the environment, and also consider its impacts on social and economic dimensions [...] it should consider direct and indirect impacts on social, economic and environmental factors. [...] innovation is not per se research exclusively at addressing environmental challenges, human health and working conditions [...]" (Pavie, Scholten & Carthy, 2014, author translation, p. 34).

5.8. M. Halme and M. Korpela

Following all the publications and the emergence of the concept of Corporate Social Responsibility (CSR) in recent years, the idea was born that investing and developing the

concept of CSR in companies could stimulate innovation. In their publication, Halme and Korpela propose to analyse which resources are used by SMEs to develop successful RI strategies. Like many others, they argued that no definition is broadly recognised. Beyond that, they also argue that a clear and precise definition of RI could be an unattainable ideal (Halme & Korpela, 2013).

Nevertheless, a working definition of (corporate) responsible innovation was proposed by Halme in her paper, “*Philanthropy, Integration or Innovation?*” and used as basis for the research on how SMEs are carrying out RI (Halme & Laurila, 2008). Responsible innovation is thus defined as “*a new or significantly improved product, service or business model whose implementation at the market solves or alleviates an environmental or a social problem*” (Halme & Korpela, 2013, p. 548), with a clear emphasis on the outcome of innovations.

5.9. Summary of the definitions of responsible innovation

After gathering some visions of responsible innovation through the related concepts and the definitions of different RI authors, a table grouping the particularities of each vision of RI is proposed (*Appendix 11, p.144*). To synthesize an author’s point of view, we have chosen the following five topics:

- The definition;
- The key objective of responsible innovation;
- The various actors involved;
- What is the responsibility emphasis on? (outcome, process, process and outcome);
- Some of the key characteristics of each vision of responsible innovation.

The different definitions of responsible innovation have a lot in common with the characteristics of the related concepts we gathered. The idea that a company must go beyond its legal and economic obligations, take more into account social and environmental aspects and include various stakeholders comes up frequently. In addition, many authors emphasize the importance of adaptative risk assessments to prevent or reduce potential *negative* consequences associated with innovations (*summary in table 4*).

Most of the related concepts analysed focused on the company’s responsibility toward society in broad sense. Some authors introduce here a reflexion on the motivations and invite to integrate moral and ethical notions in the innovation process. Many authors have recently

proposed different definitions of RI; definitions, working definitions or an attempt to clarification. They generally admit that no consensus exists. Nevertheless, it became clear during this existing definition's review that although author's definitions sometimes have different origins, unique characteristics or even emphasis on a key characteristic, they overlap on many points.

These points are, first, the importance given to an early stage reflexion on the potential consequences in the future of those innovations. All the authors agree that innovation is uncertain, unpredictable and that it would be idealistic, even impossible to expect innovators to be able to anticipate all the consequences of their innovations to come. Hence, one of the main ideas behind RI is to identify potential outcomes. Innovators should be able to understand the limits of what can be predicted. They should also understand that our current knowledge does not always allow to anticipate and to react when unpredicted (*negative*) externalities appear.

The second point is the importance of values, ethics and concerns in relation to the improvement of social, environmental and economic condition. Many authors integrated these concerns directly into the first reflexion on impacts, where Halme and Korpela argued that concerns about social and environmental issues should be at the origin of responsible innovation as a proposed solution to those problems.

Finally, the last overlapping point is the importance of opening the innovation process to stakeholders or society in general. Several authors repeated that innovators are no longer considered as persons of trust when it comes to important decisions. The way to open dialogue, reflexion and innovation process varies. A common trait is to involve stakeholders, in anticipatory and reflective discussions. This could allow to improve the decision-making process and could allow to shift from an individual responsibility of companies and innovators to a mutual and collective one.

In addition to their similarities, we can mention that the definition of Grunwald and Van den Hoven differ from the other ones. They mainly focus on the social impacts that innovation can have and do not insist, unlike the other authors on the importance of the environmental dimension. Halme & Korpela, Van Oudheusden and Pavie differ by emphasis the need of seeking to solve specific society issues. Then, it is interesting to note that only Owen *et al.* and

Grunwald mentioned the characteristic of flexibility and adaptability, even though this characteristic was predominant in the related concepts we analysed earlier.

In conclusion, the different existing definitions of RI consider a process approach and an outcome approach or both. The process approach means a responsibility in the governance of innovation, questioning managerial practices that allow companies to include a form of responsibility in the innovation process. The outcome includes the responsibility of the innovation as such, in terms of its desirability, sustainability and feasibility is questioned (Pavie *et al.*, 2014).

	<i>RI authors</i>							
	Owen et al. (2013) (book)	Blok & Lemmens (2015) (book)	Halme & Korpela (2013) (Journal)	Grunwald (2011) (Journal)	Van Oudheusden (2014) (Journal)	Van den Hoven (2013) (Book)	de Saillies & Medvecky (2016) (Journal)	Pavie (2012) (Book)
	Characterisites							
Stakeholder involvement	+	+		+	+		+	+
Risk assessment	+			+		+	+	+
Voluntary	+	+	+	+	+	+	+	+
Adaptative and flexible	+			+				
Reflection on motivations	+	+	+	+	+	+	+	+
Reflection on what is known	+			+		+		+
Solve society issues and needs*			+		+			+
Inter-generation equity					+			
Consider society	+	+	+	+	+	+	+	+
Consider environment	+	+	+		+		+	+
Consider economy	+	+	+		+		+	+

Table 4. Simplified summary of the main characteristics and definition of the RI authors

In the last two sections (II. 4 and II.5), we have proposed an interpretation of what innovation and responsibility may mean. We then analysed some of the key characteristics of RI related concepts as well as the key RI authors characteristics to highlight the overlapping ones. In the next section, we will propose a working definition of RI. This interpretation will be based on the characteristics that are most widely agreed upon and analysed in the literature. Then, an analysis of some of the key managerial implications will be made.

III. Theoretical analysis

1. Methodology

In the previous chapter, we were able to get a better idea of the different RI existing definitions found in the literature. In addition, we were able to have an insight of the main redundant characteristics of what “responsibility” can be in a corporate context thanks to the RI related concepts. In the next section, we will cross reference the existing RI definitions and the analysis of the responsibility concepts used for years applied to the particular case of innovation to propose an interpretation of RI. In this chapter, we will detail some of the key characteristics of RI. Based on the literature and on our RI working definition, will analyse possible application mechanisms, mention some of the advantages, disadvantages, key success factors and risks.

2. Chosen definition for this thesis

Based on the redundant characteristics of RI related concepts and RI existing definitions, a personal interpretation of responsible innovation will be proposed. Our working definition will allow us to identify and analyse some of the key RI managerial implications. Firstly, we will highlight the common and redundant characteristics that we retained from the related concepts. Secondly, we will complete and *adapt* these characteristics of “corporate responsibility” to the particular case of innovations on the basis of the redundant characteristics found in the existing definitions of RI.

2.1. Our working definition of responsible innovation

The involvement of stakeholders is considered extremely important in corporate responsibility, whether in an informative or participatory way. Another important characteristic is the anticipation of actions’ consequences and their potential risks *i.e.* the risk assessment. A third characteristic is the idea that the involvement should be voluntary, going beyond the law and profit requirements. Indeed, it has been argued that one of the issues that has led to the question of corporate responsibility in scientific or technological development is that laws are often outdated and are therefore no longer appropriate. That is why some companies are taking the lead. The voluntary aspect pushes them to go further than the law, but also further than what the economy and the profit requirements pushes them to do. Over half of the RI related concepts analysed highlight the need of a flexible and adaptative decision making process. This should

allow companies to better adapt to the conditions in which technologies, science and companies evolve daily. This should allow them to be more able to react, repair the damages of their actions when unforeseen consequences appear—to *respondere*. The last characteristic, almost unanimously mentioned in the related concepts, is the importance of considering the 3P's—People, Planet, Profit represented by taking the society, the environment and the economy into account.

Now, having a look at the key characteristics identified in RI existing definitions, we can see that some have already been highlighted in the related concepts, such as: the stakeholders involvement, the risk assessment, the voluntary process beyond the law and profit requirements and finally the importance of considering society, environment and economy. This is initially quite reassuring, as we can observe a continuity over some of the key characteristics of well-established “corporate responsibility” concepts in the existing RI definitions.

However, two main differences between the redundant related concept characteristics and the RI definitions ones can be highlighted. First, the flexibility and adaptability of the process is not as much highlighted in RI definitions, except for Owen *et al.* (2013) and Grunwald. They advocate an iterative, inclusive and responsive dynamic process. Nonetheless, we decide to include this characteristic in our working definition of RI. We argue that RI might need adaptative decision-making innovation processes since decision makers should react when unexpected (*negative*) consequences occur. Second, questioning the innovation motivations which was not highlighted in the related concepts turned out to be put forward in all RI authors' definition. It appears to be important to question the motivations behind an innovation, what objectives does it serve? What world do we want for tomorrow? Since one of the important aspects of RI is to go beyond economic and legal constraints, reflect on what the company wants to participate in is important. As an example, a company could innovate to achieve some of the “Social Development Goal”¹⁴. Nonetheless, since the company choose other objectives than just compliance with the law and profit increase, a critical reflexion on motivations and goals to innovate can be necessary. Therefore, in our opinion, RI can be defined as *an adaptative and voluntary innovation process that consists in critically reflecting on the*

⁽¹⁴⁾ “The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity” (United Nations Development Programme, 2019)

motivations and potential risks associated with these innovations by integrating the social, environmental and economic aspects through the involvement of stakeholders.

In the next section, we will deepen the key aspects of RI mentioned in our working definition.

3. Characteristics of responsible innovation

Based on our working definition of responsible innovation, we can analyse the eight different characteristics we identified as some of the key RI components. Those being classified in characteristics corresponding to the responsibility of the innovation process or to the responsibility of the innovative outcome:

<i>Process</i>	<i>Outcome</i>
The adaptative characteristic	The social characteristic
The voluntary characteristic	The environmental characteristic
The critical reflection on motivation characteristic	The economic characteristic
The risk assessment characteristic	
The stakeholder characteristic	

Table 5. Characteristics and classification of our RI working definition

3.1. The adaptative characteristic

This characteristic refers to two aspects of adaptability. First, a company wishing to adopt a RI model must accept responsibility for the consequences of its innovations, whether direct or indirect (Temri, 2018). Given the uncertainty associated with radical innovations and their potential evolution, the direct or indirect consequences are difficult to predict before a market launch ⁽¹⁵⁾ (Leifer *et al.*, 2000). In response to uncertainty of consequences and potential irreversibility, the Precautionary Principle recommends a perspective of flexibility in the decision-making process to best adapt decisions when in the future greater knowledge and measurability of them should be available. In other words, we must make current decisions bearing in mind the fact that they might probably have to be amended afterwards. As mentioned earlier, this lack of knowledge appears mainly in radical innovations since, as mentioned in Christensen's Model, incremental innovations have “*minor impact on the market and does not change conditions of use radically [...] it usually builds upon existing knowledge [...]*” (Van den Hoven *et al.*, 2014, p. 55). On top of desire to reduce risks for society and environment, it is also a question of reducing future costs. In fact, bad decisions with unexpected *negative*

⁽¹⁵⁾ Before the adoption by the “*Early Majority*” if we refer to Moore's adoption curve (cited in Pavie, 2012).

consequences potentially can generate high costs and precautions, flexibility and adaptability in the decision-making process allows to reduce them (Gollier & Treich, 2003). The 3M company is a good example of an adaptative innovation process characteristic, they developed what they call the “*Pollution Prevention Pays*”. The respect for the environment and consumer health is at the heart of this programme, through the integration of those concerns in a continuous reflexion during their innovation processes. To better estimate the potential *negative* impacts, 3M carries out an analysis and a permanent evaluation of consumer needs and use of products. This continuous assessment of outcomes (with a focus on ecology and health) requires voluntary participation of many employees going from transport or marketing to R&D teams (Pavie, 2012). A reformulation of products, modification of processes is possible thanks to the flexibility of the innovation processes (Susag, 1982). This permanent assessment can allow adjustments to the environmental consequences and health risks in case of product misuse (Pavie, 2012). Owen *et al.* (2013) described this as : “being able to adapt yourself to new knowledge and develop a dynamic learning process”. As mentioned in the TA principle, adaptability also refers to innovation process itself. Indeed, following in a fast moving societal and business context should be needed when innovating. Companies should consider the context when starting process and be aware that it is not static (Schot & Rip, 1997). Public opinion or legislation may change, so it might be necessary to carry out a new risk assessment and amend the design of the innovation.

3.2. The voluntary characteristic

Choice toward a RI process should be made on a voluntary basis. One of the aspects of RI is to impose constraints in addition to the economic (profit) and legal ones that a traditional company has. This characteristic was first mentioned in the CSR concepts where the voluntary process of going further ahead of the law and the profit objectives (*illustration in Appendix 12, p.145*) was a necessary condition (Gottschalk, 2011). Responsible companies should push forward legislation. Given the speed of technological advances or scientific discoveries, states might take some time to adapt laws to radical innovations, since they bring profound changes and new standards on the market (Gailly, 2018). Thus, laws might not be adapted (Owen *et al.*, 2013). The proactivity close to voluntariness is also in concepts such as the PP (Kourilsky & Viney, 2000) or VSD that encourages doing more than *necessary* (Friedman & Kahn, 2007).

3.3. The critical reflexion on motivation characteristic

Once decision has been made to introduce an additional constraint, the next step is to determine the one that best suits the company. At this point, a critical reflexion on motivations might be necessary (Owen *et al.*, 2013). The drivers of innovation may be to address a problem dear to the company or a social or environmental need of the company. Either, the driver can still be to innovate to stay profitable and competitive, although the 3Ps should be equally considered. Companies can choose to define its own criteria to create its objectives or decide to follow those established by recognised organisations such as SDG's. The first can lead to the development of specific company's criteria, which best suits the business activities. While the second is based on existing criteria that could be less fit to the company but recognised by many people and facilitating communication with stakeholders (Marris & Rose, 2010).

3.4. The risk assessment characteristic

Since technological innovations often have unforeseen detrimental implications researchers and organisations should need to ask themselves the “*what if?*” question. This can be done to determine what is known, what is likely, what is plausible and what is possible. It comprises the ability of expert stakeholders to imagine and shape the issues raised by innovations from economic, social and environmental perspectives through an array of feedback mechanisms (Guston & Sarewitz, 2002). Assessment is here distinguished from prediction in its explicit recognition of the complexities and uncertainties of science and society's co-evolution (Barben *et al.*, 2008). Risk assessment should be done before the start of innovation development so that decision-makers can be aware of it before the design. They can then try to limit the impacts on the three P's. However, some risks might not be identified at the beginning of the innovation process, so risk assessments should be carried out throughout the process. Communication should be established between those who perform the assessment (these may be internal to the company or external stakeholders such as scientists) and decision makers. This can help to better assess the risks and can help take the *right* decision to reduce *negative* impacts on the 3 Ps. Risk assessments can be performed in laboratories by internal or external experts. Although, in order to limit any unpredicted effect, launching pilots can be a good practice, allowing to analyse on a smaller scale the effects of the innovation on the early adopters, on the environment (Barben *et al.*, 2008). Nonetheless, the chain reaction that an innovation can cause sometimes requires a complex macroeconomic analysis to understand the global effect on the

3 Ps, meaning that companies might face difficulties to evaluate the indirect impacts arising from their innovations.

3.5. The stakeholder characteristic

Stakeholders are defined by Freeman as “*any group or individual who can affect or is affected by the achievement of the organisation’s objectives*” (cited by Ingham, 2011, author translation, p. 15). The stakeholders involvement is seen as an essential point in understanding RI. Whether stakeholders are involved in a participatory way from the moment of the R&D to the market launch (de Saille & Medvecky, 2016) or in an informative way as in the PP and TA. Upstream public engagement should involve anticipatory discussions of possible and desirable futures. Opening the debate on the potential consequences of innovations on society is what naturally seems to be the *right thing* to do if innovation takes place in a democratic society. Logically, participation in debates on important consequences that might affect the whole society should be open especially when the magnitude of the externalities is uncertain (Owen *et al.*, 2013). All the more when the research ahead of the innovation might be funded by states, based on the citizens’ tax contribution (Marris & Rose, 2010).

The stakeholder characteristic can be seen as covering two main aspects. First, RI companies should consider the interests of stakeholders (direct or indirect) when launching an innovation (Ingham, 2011). Second, stakeholders should be involved in the innovation process (Ingham, 2011). The objective of this open reflexion, questioning the innovators’ motivations and direct or indirect consequences, is to broaden and enrich the perspective in terms of identifying potential issues related to an innovation (Marris & Rose, 2010). Although, it is important to be aware that when many stakeholders are involved, their vision and objectives may differ. In consequence, being flexible and accepting that trade-offs could have to be made might be essential. As mentioned by Blok and Lemmens (2015), it would be *impossible* to integrate each stakeholder’s views because of the asymmetry of information, power, motivations and values existing between them. Taking all opinions of direct and indirect stakeholders might not lead to more responsible outcomes in the end and might even be counterproductive (Blok & Lemmens, 2015). In conclusion, this characteristic highlights the importance to consider the opinions and interests of stakeholders and that companies should communicate with them frequently.

3.6. The social characteristic

The social characteristic concerns the interactions between the company and society. It appears to be expected in RI that the company should try to reduce its impact on the 3 P's. However, whatever 3Ps aspect it chooses to deepen, the innovation developed need to be socially acceptable, *i.e.* to consider certain social challenges and the point of view of stakeholders (Grunwald, 2011). Being a RI company may lead to two different perspectives. First, the company should assess and be aware of the potential risks that could arise during the development of innovation based on the risk assessment that we previously introduced. Second, the company should take these risks into account and a responsible innovation should limit its *negative* impacts on the 3Ps (Van Oudheusden, 2014). Looking back at the related concepts and the RI authors, we can see that concerns linked to limiting *negative* impacts on human health, on working/living conditions and promoting ethical and morally acceptable solutions might be good illustrations of the RI social aspect. The manager can try to go further by just not doing anything wrong and might try to act positively. *Doing no harm* would mean reducing its impact, minimise affecting the human health *negatively*, *etc.* Nonetheless, some companies might also try to *do good*. This can mean promoting access to education, even if we do not consider this a requirement to innovate responsibly (Pavie, 2012). Companies going further than what is expected might have to make choices, trade-offs between the RI aspects that the company wants to promote (Van den Hoven, 2010). Indeed, whether due to the involvement of stakeholders or not, the RI can often lead to conflicting choices in terms of values (concerning the 3P's or other RI characteristics). Therefore, sometimes decision makers should decide which value should *guide* their choices (Taebi, Correljé, Cuppen, Dignum & Pesch, 2014).

3.7. The environmental characteristic

This characteristic emphasizes that a company determined to embark on RI should be aware and consider its environmental impacts. RI company should respect the resources that are essential for its functioning and should limit as much as possible any *negative* influences it may have on the environment. When innovating, respecting environment can start with the raw materials needed to manufacture the product and stops at the end of the life cycle (Pavie, 2012). As for the social characteristic, looking back at the related concepts and the authors, we can see that efforts to limit environmental pollution (CO₂, toxic products, *etc.*), reduce energy consumption and preserve the biodiversity are often mentioned.

3.8. The economic characteristic

This characteristic refers to the economic objective as existing in the traditional conception of the company where social and environmental characteristics are less integrated. The economic aspect can be seen in two ways. First, a company should seek to be profitable to survive in its competitive environment. This characteristic persists in RI, however, this not the only goal anymore (Elkington, 2004). Second, a company should reduce its impact on the 3P's, and in this context, could seek to develop a more sustainable profitable business model (Hammer & Pivo, 2016), to create wealth and to improve the material living conditions of the society (Pavie, 2012).

3.9. Summary of the characteristics of the responsible innovation

It is important to remind that the different key characteristics highlighted previously are only a possible interpretation of what can enable an innovative company to act responsibly, through a process or an outcome. A blind and simplistic application of them will not guarantee a *desirable* result. In this chapter, we have tried to propose a personal interpretation of what RI may be based on an analysis of the corporate responsibility concepts used for years and the RI existing definitions (*table 6*). We compared the different characteristics found in the related concepts and existing definitions and mentioned a “+” when the characteristic was highlighted. We left a blank when no reference to the characteristic was made. The most recurrent ones allowed us to propose a personal working definition of RI. It will be used for the rest of this thesis and will allow us to analyse its different application mechanisms, to mention the advantages and disadvantages and to look at the key success and risk factors in a theoretical way. A detailed table can be found in the Appendix 13 (p.146) An adherence score was also made based on the number of similar characteristics between the related concepts and the RI authors. Compared to our working definition, we can observe that concepts such as CSR, VSD, PP, SD and RRI are sharing 75% of the characteristics with our interpretation of RI. And that Owen *et al.* (2013), de Saille & Medvecky (2016) and Pavie (2012) mentioned 85% of the characteristics of the working definition in their research. Notwithstanding, the characteristics of the LCA concept and the definition proposed by Van den Hoven (2013) are less represented in our RI working definition, sharing less than 50% of similar characteristics.

Characteristic	RI related concepts								Existing definitions of RI							Characteristic mentioned	Characteristic retained for RI working definition
	Corporate social responsibility	Value sensitive design	Precautionary principle	Sustainable development	Responsible Research and Innovation	Technology Assessment	Triple bottom line	Life Cycle Assessment	Owen et al. (2013)	de Saille and Medvecky (2016)	Pavie (2012)	Blok and Lemmens (2015)	Grunwald (2011)	Van Oudheusden (2014)	Halme and Korpela (2013)		
	About the process																
Voluntary	+	+		+		+	+		+	+	+	+	+	+	+	+	
Stakeholder involvement	+	+	+	+	+	+			+	+	+		+				
Risk assessment		+	+	+	+	+		+	+	+	+		+		+		
Reflection on motivations		+							+	+	+	+	+	+	+		
Adaptive and flexible	+	+	+		+	+		+	+				+				
Reflection on what is known			+						+		+		+		+		
	About the outcome																
Consider society	+	+	+	+	+	+	+		+	+	+	+	+	+	+		
Consider environment	+		+	+	+		+	+	+	+	+	+		+			
Consider economy	+		+	+	+		+		+	+	+	+		+			
Solve society issues and needs*	+			+						+				+			
Inter-generation equity				+										+			
Adherence score to the RI working definition	6/8	6/8	6/8	6/8	6/8	5/8	4/8	3/8	8/8	7/8	7/8	6/8	6/8	6/8	5/8	4/8	

*Society's needs are considered as critical needs that need to be answered such as health, education, housing, employment, prevention of exclusion (Pavie, 2012).

Legend: + Mentioned or similar idea mentioned

Characteristic not reaching consensus (<50% mentioned)

Table 6. Summary of the RI characteristics

4. Different mechanisms for responsible innovation

Historically, decision makers were often not concerned about *negative* impacts of innovation on the society or the environment. First, regulations were often made afterwards leading to a consequentialist vision of responsibility. Regularly new technologies emerge in a legal vacuum and little efforts are often put into determining the issues an innovation could create (Pellizzoni, 2004). Companies that react to impacts when innovations are already adopted, are often too late (Adam & Groves, 2011). Secondly, the moral luck was also often counted on, meaning, hoping no one will blame the companies because some consequences would have been difficult to predict (Williams, 1981). However, we argue that these two methods are not satisfactory. Therefore, having RI processes and RI outcomes might be an alternative.

4.1. Responsibility of the innovation process

In our RI working definition, we presented five process characteristics. How can these characteristics be embedded together into a “*responsible innovation process*”? As mentioned earlier, Owen *et al.* (2013) presented a framework composed of four dimensions (anticipation, reflexivity, deliberation and responsiveness). This is a good illustration of how to include and order these responsibility characteristics into a framework (*see figure 4, p.37*).

First, RI companies should anticipate by involving stakeholders to imagine, criticize and address issues related to emerging technologies using different feedback mechanisms (risk assessment and stakeholder characteristic) (Ravetz, 1997). Second, companies should have to step back and take a critical look at the company’s activities and commitments. It is necessary to recognise the limitations and gaps in knowledge that the company may have in certain situations (Wynne, 1993). Innovation reflexions should also be opened, not only to those usually involved in the process, but also to other internal and external actors. It could stimulate a critical reflexion and help identify unknown innovation’s externalities (stakeholder characteristic) (Marris & Rose, 2010). Finally, the responsiveness (adaptability characteristic) should be integrated throughout the process. Develop processes capable of bouncing back, changing direction according to contexts in line with public values or stakeholders’ ones is highlighted as a key aspect of RI. It is about being able to modify the planned process by accepting that there may be a lack of knowledge or control over certain factors. Responsiveness is seen as the ability to adapt to emerging data (Stirling, 2008).

Pavie's (2012) 5-step method might be another good illustration of how to order and integrate the responsible characteristics into the innovation process (*figure 5*).

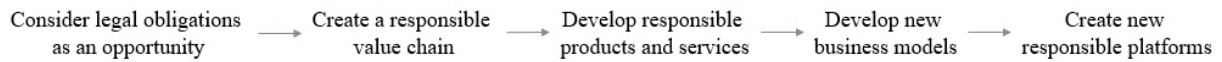


Figure 5. The 5 steps of Responsible Innovation according to Pavie
Source: Author Based on Pavie, 2012

The first step is to consider future legal obligations as an opportunity (voluntary characteristic). The idea is to anticipate legislation and apply it before being forced to do so. By anticipating before others, when these regulations finally arrive, the company is one step ahead. The second step is to create a responsible value chain (stakeholders characteristic). The challenge is to create a value chain where all actors would be oriented toward responsibility. Agreement on commitments made and the objectives that the company wants to share with its suppliers should be promoted among the stakeholders. The third step is to develop responsible products and services. The idea is to market those promoting responsible consumer behaviour (economic, social and environmental characteristics). The fourth step is to start new business models. It is a question of rethinking the value chain up to the final consumer and involving suppliers and customers in a way of consuming differently. As example FedEx, has launched a new service that no longer consists in sending a letter from point A to B, but rather printing it as close as possible to the recipient and so to limit the impacts of transport. Finally, RI companies should promote the creation of responsible platforms, going even further than new business models. The aim is to imagine new paradigms (motivation reflexion characteristic). This concept may seem vague, but the author illustrates it with the example of a micro-credit bank in Bangladesh. Through their loans, many people have been able to lift out poverty by starting small businesses. At first glance, this bank activity seemed risky, the repayment rate reached 98% which is a very satisfactory result. This bank changed to have a positive impact on populations. Pavie highlights that a company doesn't become responsible in one day.

We have presented two models of RI developed by different authors, to visualise how to order the RI process characteristics. They may diverge in terms of how to be implemented and in terms of RI process characteristics, even though many similarities exist regarding our working definition, keeping in mind that no specific recipe exists. If we also had developed a model, or a framework to order and prioritize the characteristics it would probably have been different from those developed above.

4.2. Responsibility of the innovative outcome

In the previous section, we have mentioned two examples on how to order and include the RI process characteristics identified in the working definition. In our interpretation, we also specified the need to include social, economic and environmental aspects. As mentioned in the previous section, through risk assessments, responsible innovators should be able to have a more global vision on potential consequences on society and environment. They could then try to *do no harm* and in the best case to *do good*. Nevertheless, what is meant by *harmful* and *good*? How can decision makers define if the company's outcome is responsible and effectively limits the *negative* impacts on the 3P's? In this thesis, we will consider that a company innovates responsibly if its outcome meets this rule, where, the increase of one of the values doesn't drastically decrease the others (Pavie, 2012):

$$\begin{aligned} & (Economic\ Value_{t=1} + Social\ Value_{t=1} + Environmental\ Value_{t=1}) \\ & > (Economic\ Value_{t=0} + Social\ Value_{t=0} + Environmental\ Value_{t=0}) \end{aligned}$$

The idea behind this rule is close to the same idea promote by the PP, mentioning that environmental and social values should be at least preserved at an acceptable economic cost. This method of respecting the increase in overall 3Ps capital can be compared to the *weak* sustainable development mentioned in the related concepts chapter (p.26). As a reminder, it stated that a compensation and substitution from one of the 3Ps to another is accepted if the amount of overall capital remains enough for future generations to meet their needs (Gendron & Revéret, 2000). Furthermore, it can be compared to a utilitarian⁽¹⁶⁾ vision of the concept of responsible innovation. As mentioned by Grinbaum and Groves (2013), responsibility can be seen as a duty of the various innovators to anticipate the consequences of their actions, exercising foresight through an increase in knowledge related to the consequences and impacts of innovations. Ideally, the innovator should have a utilitarian conception that “*strives to assess, with precision, the contribution each action makes to the aggregate happiness of society*” (Grinbaum & Groves, 2013, p. 122). To define what a higher economic, social and environmental value could be, we will present two approaches: relying on external organisations or define internal criteria.

⁽¹⁶⁾ Utilitarianism being “*the system of thought that states that the best action or decision in a particular situation is the one that brings most advantages to the most people*” (Cambridge Dictionary, 2019)

4.2.1. *Rely on external organisations considered legitimate*

A legitimate question that can be asked when deciding to embark on RI is: how do we know if the efforts that the company is putting in place are responsible and limit the *negative* impacts on the 3Ps? All this might be quite subjective. One solution might be to align its responsible objectives with those of an organisation recognised for its commitment to economic, social and environmental responsibility (Williams, 2015). This method of estimating the responsibility of the outcome is based on external organisations' rules highlighting *negative* impacts to limit and *positive* goals to achieve. This can be considered as a normative⁽¹⁷⁾ system of responsibility as mentioned by von Schomberg:

“products be evaluated and designed with a view to their normative anchor points: high level of protection to the environment and human health, sustainability, and societal desirability [...] rather than pre-empting views and concepts of the ‘good life’, the European Treaty on the European Union provides us then with normative anchor points (they) provide a legitimate basis for defining the type of impacts, or the ‘right’ impacts of research and innovation should pursue” (von Schomberg, 2012, p.3).

These objectives in terms of outcome's responsibility are therefore often considered politically accepted and legitimate, but as they are not based on legal standards, they are subject to changes as a result of various public debates. Aside from a normative system linked to rules clearly formulated, in an EU document for instance (*see Appendix 14, p.147*), it can also be argued that respect for the moral rules common to a group of individuals also constitutes a normative vision of RI. Indeed, RI can be *“understood as moral requirements to care about the object of responsibility [...] It is such requirements [...] that give rise to the variety of other requirements that seem to follow from our responsibilities, including requirements to act, and requirements to care about acting in certain ways”* (Björnsson, 2017, p. 34). In this context, we can mention the 17 Sustainable Development Goals (SDG) of the United Nations. Each of these goals focuses on solving a societal problem *e.g.* gender equality or marine biodiversity. Each company is free to align itself with some of them, to integrate their indicators and objectives into their business operations (UNDP, 2019). We can also mention the Global Reporting Initiative, highlighting certain sustainability issues through standards objectives that various actors can follow (Global Reporting Initiative, n.d.). As a final example, the World Business Council for Sustainable Development (WBCSD) is an organisation that helps some companies to better integrate the SDGs when they are seeking to be more responsible (WBCSD, n.d.).

⁽¹⁷⁾ Normative meaning *“something in relation to rules, or making people obey rules, especially rules of behavior”* (Cambridge Dictionary, 2019)

The advantage of relying on external organisations is that the company can find ideas when seeking to reduce its *negative* impact on the 3 Ps. These organisations have pre-defined ideas of which impact should be reduced as a priority and guide the company when it comes to assessing if they are on the right track. Another advantage is that companies can communicate their objectives more effectively because these organisations are generally well known (Donaldson & Dunfee, 1999). When a company claims to integrate an SDG, many people might know what they are doing and many of them might agree on the fact that this is the *right* thing to do. However, it can be challenging to rely on an external organisation. The objectives might not be relevant to the company's sector or current situation. It can thus lead to some inconsistencies. Those external standard objectives may need to be modified, but then you may no longer be considered as member of these organisations' programme (Scheyvens, Banks & Hughes, 2016).

4.2.2. *Define one's own criteria internally*

More companies are using their values as a mean of differentiation and image enhancement strategy. Values are linked to the company's internal behaviour as well as its behaviour toward society and refers in a certain way to the company's ethics, morals and ways of acting (Gasmi, 2014). They can be seen as a constraint and/or objective dictated by regulations that are external to the company. Nevertheless, companies can be considered as interpretative structures. In other words, even if the weight of value constraints coming from the market is certain, values are considered as a company's own construction (Brecht & Desreumaux, 1998). In an article on the company's CSR performance indicators, which can be compared to RI outcome performance indicators related to environment, society and economy, Berlant (2007) sets out certain limitations on use. Beyond difficulties of measuring the real impacts of RI policies on the 3Ps, it is even more complicated to agree on what is considered *good*. Several environmental, social and economic challenges or standards are often mentioned, but some companies could not be considered as developing RI because of what is meant by "*negative*" impacts. If we take the example of 3D printers, one of the *negative* societal impact we could mention is the ability to print undetectable and unregistered weapons. In Europe, it is generally considered as a *negative* impact and a "responsible" 3D printing company would have mechanisms to prevent this (RTBF, 2018). On the contrary, in the United States some companies developing 3D printer technology find that this consequence is something rather *positive*. Defense Distributed, a private defense technological development company

specialized in 3D printing offers 3D gun printing models to *protect* the society. From the point of view of their values—the fundamental right to own a gun—what they do *is* responsible. They allow Americans to protect themselves at home (Defense Distributed, 2019). This shows that what is implied when talking about the outcome of RI may not mean the same for everyone. A company can effectively be engaged in a RI dynamic according to own standards and value systems. This position can be complicated to manage, compared to companies that respect almost unanimously recognised value systems and objectives such as the SDG's, Amnesty International or WWF.

To conclude, we consider that companies may achieve a responsible outcome if they take the 3P's into account and reduce their innovation's *negative* impacts in view of their own values or by relying on external organizations defining guidelines. This means that they might have every interest in operating in a market that shares this same value system, or otherwise they risk that their innovation face controversies.

5. Advantages and disadvantages

In the previous section, we have identified some of the key characteristics of RI and decided to continue the analysis based on our working definition. This personal interpretation of RI will help us to apprehend some of the key managerial implications related to RI. The advantages we will highlight can encourage companies to embark on RI or to continue on this path. On the other hand, it is important to list some disadvantages to better capture the reasons that can hinder companies from developing mechanisms to innovate in a more responsible way. Even if advantages and disadvantages might be related to each company, we will try to identify the ones likely to appear in most companies. To do so, we will base ourselves on the existing RI literature and on the related concepts sharing many RI characteristics. We will also review the literature specific to the isolated RI characteristics. This will help complement the existing theory on RI managerial implications.

5.1. Advantages and motivation factors

Different motivational factors can push companies to engage in RI. On the one hand, we can mention utilitarian motivations linked to an overall increase in 3 Ps that might lead to an economic profit gain. Even if the initial motivations are utilitarian, this does not prevent the

results, the innovations, from being more responsible in the end (Caillé, 2013). A utilitarian approach to responsibility with a “*consequentialist perspective which focuses on the outcomes of an action and has little regard for its intentions*” (Renouard, 2010, p. 86), would be the best way to make responsibility in innovation accepted and popularized (Pavie, 2012). On the other hand, we can mention normative motivations, linked to the company’s moral obligations and the way they should behave, based on moral rules (Binniger & Robert, 2011). Highlighting the advantages companies could gain should encourage companies to develop RI policies beyond purely moral drivers—normative motivations. In this section, we will analyse different advantages linked to making innovations more responsible. Various advantages can help the company develop its competitive advantage. Those being:

Competitive advantages

Increased company and employee’s performance
Promoted development activities
Be ahead of new regulations and market trends
Improved brand image

Table 7. Advantages of RI identified

5.1.1. Increased company and employee’s performance

Based on the definition of a company’s performance as “*the level of achievement of results in relation to the efforts made and resources consumed*” (Issor, 2017, author translation, p. 96), developing a RI process can make companies more efficient. This can be done by optimizing the use of two key resources: raw materials and human resources. Porter and van der Linde (1995) mentioned that an innovation process that tries to reduce its environmental impacts, namely by reducing pollution, should be more efficient. The second pole of resource optimization is at the stakeholders involvement level, especially customers. Informing decision makers on what stakeholders, especially clients, are looking for can help (Sloan, 2009) and might allow to better target and set objectives to achieve better results with relatively similar efforts (Harrison & Wicks, 2013). Then, among stakeholders, employees involvement can also be a source of increased performance. A positive correlation between their implication in the decision-making process and their job satisfaction, leading to greater productivity is often mentioned (Lam, Chen & Schaubroeck, 2002). In addition, companies developing responsible outcomes can also meet the “moral and value” needs of employees. This can make the current ones more loyal and attract new talent. All this should lead to an increase of the company’s overall performance (Frimousse & Peretti, 2015).

5.1.2. *Activities' development promoted*

Studies often mention that companies including a reflexion on sustainability might be encouraged to develop innovations solving or limiting sustainability issues (Ayuso Ángel Rodríguez & Enric Ricart, 2006). This could force RI companies to think differently and develop new ideas. The involvement of stakeholders in the innovation process can also enhance and push the company's current innovations activities (Ayuso Ángel Rodríguez & Enric Ricart, 2006). Close to the concept of "open innovation", by proposing a flexible and inclusive process, RI can create new organisational structures that generate new ideas and knowledge to develop the existing business activities (Chesbrough, 2004). These practices can allow the development of a creative attitude within the entire organisation (Ayuso Ángel Rodríguez & Enric Ricart, 2006)—which might lead to the development of future innovations outside the R&D department which often has a monopoly on generating new ideas (Viki, 2016). Additionally, a flexible innovation process as proposed by the RI, may allow innovators to frequently rethink their innovation design and promote the development of their activities (Eisenhardt & Tabrizi, 1995). This might encourage the review of past innovations that could be adapted in new ones (Rammel & van den Bergh, 2003). Reviewed innovation should allow to keep the same skills set, accelerate the process, reduce costs and develop the company's expertise while increasing the opportunities for the future (Athey & Schmutzler, 1995).

5.1.3. *Be ahead of new regulations and market trends*

The voluntary characteristic of RI, to go beyond existing laws, can be a good investment and a significant competitive advantage. According to a report by Mazars (2019), the voluntary nature allows companies to anticipate new laws and regulations and constitutes a very good return on investment. Indeed, (rapidly) complying with new legislations can be expensive, when anticipating them might reduce the costs (International Institute for Sustainable Development, 2013). Once again, the involvement with stakeholders and transparency in the communication process can also help anticipate and react to quick environmental, social and economic changes when they arise (Mazars, 2019). Plus, going voluntarily beyond what is required in terms of risk assessment might allow companies to better prevent damages. In other words, this can reduce the cost of trial and errors when launching innovations (von Schomberg, 2014). Companies can also avoid potential fines or pollution penalties more likely to arise when they

are not going voluntarily further than the law, when there is no buffer between what they do and the legal limits (International Institute for Sustainable Development, 2013).

5.1.4. *Improved brand image*

Companies developing CSR policies—which we can relate to RI—are seen as companies paying attention to other aspects than profit-seeking. This can help develop a *good* brand image, and it can be profitable. Indeed, consumers having a positive brand image of a company tend to be more loyal and buy more (Dagenais, 2014). According to Porter and Kramer, this improved brand image and reputation might help develop a competitive advantage. Companies promoting responsibility efforts might more easily promote differentiation characteristics (cited in Wu & Wang, 2014). Additionally, developing RI mechanisms, especially outcomes with limited *negative* impacts on the environment and society can lead to a better acceptance (and success) of technological innovations (or novelty in general) (de Jong, Kupper, Roelofsen & Broerse, 2015). Benefiting from a positive brand image can also impact the cost of human resources. According to a study conducted by Tulasi and Hanumantha companies engaged in responsibility practices are perceived as more attractive by current and future employees, allowing the company to pay lower wages while remaining an attractive employer (cited in Frimousse & Peretti, 2015).

5.1.5. *Advantages increasing the company's competitiveness*

The different advantages mentioned above can help to company to develop a sustainable competitive advantage. Ingham (2011) has proposed different RI strategies to develop this advantage for responsible companies. The first is a competitive differentiation strategy that should allow them to develop RI mechanisms to be perceived as *unique* by a clientele sensitive to responsible approaches, namely thanks to an improved brand image and a company's activity development. Then, as mentioned above, RI can reduce costs and increases business performance, enabling the company to develop a competitive advantage based on cost. The last one consists in developing a sustainable competitive advantage through a breakthrough strategy, mixing the two strategies mentioned above. RI might help companies innovate with the most efficient processes possible—especially when it comes to limit the *negative* impacts on the environment—which can encourage companies to propose products with very limited features, some leading to new business models. Elahi (2010;2013) explains that beyond the

competitive advantage created by the outcome, RI processes could also lead to an increased competitiveness. As mentioned above, going deliberately beyond legal requirements, like when performing extensive risk assessments might be a competitive advantage. Companies involved in SD including large parts of their stakeholders can generate capacities and resources that are considered valuable and difficult to imitate. This may be due to the complexity of the RI processes, particularly the number of people involved. Likewise, having many interactions with the stakeholders can lead to a better understanding of the market expectations, often looking for *sustainable* innovations (Rodriguez, Ricart & Sanchez, 2002).

In conclusion, four key advantages linked to the development of responsible innovation were mentioned. These advantages, when considered in a competitive context, can thus help the companies develop sustainable competitive advantages to better survive in a changing and globalised market while innovating in a responsible way.

5.2. Disadvantages and disincentives

RI seems to lead to several advantages. Nonetheless, it might create some disadvantages and difficulties that RI companies need to consider. As for the advantages, we will mention the recurring difficulties mentioned in the literature when companies are innovating responsibly. These will be classified in difficulties related to the internal implementation and challenges linked to the development of a competitive advantage through RI (*Table 8*). In this sense, it is important to distinguish the disadvantages caused by internal implementation challenges and the ones resulting from facing non-RI competitors. Indeed, developing RI, when competitors on the market aren't, might be discouraging for RI companies, facing in a way an *unfair* competition.

<i>Internal implementation</i>	<i>External competitiveness</i>
Difficulties linked to stakeholder involvement	Cost of responsible innovation
Difficulties to predict the consequences of innovation	Transparency issues
Difficulty to implement a technological risk assessment	Slowed down innovation process

Table 8. Disadvantages of RI identified

5.2.1. *Difficulties linked to stakeholder involvement*

Responsible innovation often refers to stakeholders involvement, however it might be idealistic to assume that stakeholders are always willing to cooperate and align their interests to seek agreement regarding innovations. A major problem is that the differences in power between the stakeholders can have a significant impact on the innovation process *e.g.* an innovation project where stakeholders are involved but one of them finances the project and is expecting a ROI (Van den Hoven, Lokhorst & Van de Poel, 2011). This is called “strategic behaviour”, it means that stakeholders act to maximize their interests, which may run counter to the project. In an ideal situation, the various stakeholders should be honest and transparent about their motivations, which is far from reality (Levy, 2007). The problem is that different stakeholders may have different or even conflicting objectives. Accordingly, it may be necessary to highlight one of the characteristics or make compromises since meeting everyone’s objective at the same time may seem *unfeasible*. In this case, by using a questionnaire, the stakeholders can select criteria they consider the most important and remove some from the equation. Once all this is established, the company can begin development, integrating those deemed important and inviting stakeholders to share their vision throughout the process (Saaty, 2001). Although, since everyone has different visions and perspectives, it can also be an opportunity to unlock options that have not yet been explored. A lack of diversity in stakeholders opinions could also be a concern, so it is important not to be afraid to have broad panels of opinions, as it makes this type of initiative useful. Ligardo-Herrera *et al.* (2018) recommends establishing a list of traditional stakeholders by sector, *etc.*—the decision-makers can then add some relevant ones. Once stakeholders have been listed, the most influentials should be identified. However, companies must encourage stakeholders to be open-minded and make efforts to reach consensus (Swierstra & Rip, 2007).

Moreover, stakeholders can play a different role depending on the company’s sector, the confidential aspect of a project or its complexity. Some innovations areas might totally be out of their comprehension, so integrating them into the innovation process may be complicated (Pavie, 2012).

One of the aspects emphasized by RI is the broaden reflexion thanks to involved stakeholders that can provide some knowledge and advices. However, when many stakeholders are involved

in decision-making, it can lead to unclear situations. None can really be held responsible or feels responsible for potential *negative* consequences (Van den Hoven *et al.*, 2011). Furthermore, without a better delimitation of responsibilities, it may not be possible to determine who is responsible in case of problems or legal action (Balkema & Pols, 2015). And this becomes even more accurate when it's about innovation projects with a wide scope and involving many people. Stakeholders may be spread over many locations or poorly organized, making it more difficult to coordinate the RI (Blok & Lemmens, 2015). Therefore, the final number of stakeholders considered *relevant* and involved should depend on the company's willingness to consider the stakeholders and afford increased complexity in the innovation process (Ligardo-Herrera, Gomèz, Inigo & Blok, 2018).

5.2.2. Difficulties to predict the consequences of innovations

One of the key characteristics of RI we identified is to try to anticipate impacts that an innovation could generate and to limit them if they are considered *negative*. Nonetheless, the future is far from easily predictable even with the various tools offered. This is why, based on our working definition, RI emphasis and promotes a certain degree of adaptability. This can help and can make possible to change direction quickly if previsions are not accurate or if a change in context takes place. Consequently, this is not a real disadvantage but a limitation of one of the key RI characteristics. Assessing the risks related to innovations is not easy, but RI companies shouldn't be bewildered by this challenge (Lee & Petts, 2013).

5.2.3. Difficulty to implement a technological risk assessment

To anticipate and limit the *negative* impacts on the 3 Ps, risk assessments are generally recommended. As mentioned previously, it is already challenging to predict the consequences of innovations. Besides, having enough internal resources to perform those risk assessments can be really challenging, especially for SMEs or start-ups. Skilled employees may not be directly and continuously available to perform regular risk assessments throughout the innovation process. Hence, external experts may need to be hired to conduct those studies. This can be expensive and an inconvenient for smaller structures that may not have the funds to commission these types of assessments (Grunwald, 2009).

5.2.4. *The cost of responsible innovation*

According to Bruijnis, Blok, Stassen and Gremmen (2015), responsible innovation can have a higher financial cost. First, when talking about product innovation, the raw materials may be more expensive because they are produced on a smaller scale. Secondly, the innovation process might be more expensive as well. Indeed, involving more stakeholders, performing risk assessments, in other words, having a responsible innovation process might be more costly. Consequently, RI processes might lead to more expensive products, which is important to consider regarding what customers are willing to pay for (Bruijnis *et al.*, 2015). As an example, we can cite the cultivation of plants to create energy from biomass in developing countries relying heavily on fossil fuels. Biomass seems to have multiple advantages: relatively easy to produce, carbon neutral, less harmful to health than many alternatives. Conversely, it is slightly more expensive to produce than alternatives, which may be a major barrier in some of the poorest regions (Gamborg, Millar, Shortall & Sandoe, 2011). Consequently, this increase in innovation costs could be passed on to the product price. This may lead to a competitive disadvantage if the responsible aspect is not considered as a *valuable* additional feature.

5.2.5. *Transparency issues*

Innovations are often seen as a source of competitive advantage for companies. This advantage is often based on an information asymmetry between the company and its competitors. A sustainable competitive advantage may emerge from the ability of an innovator to identify asymmetries in the market or to create them to seize an opportunity (Dutta & Crossan, 2005). Caution should therefore be exercised when RI companies are involving and sharing potentially confidential information with their stakeholders. This opening to external actors could reveal some of the company's core competencies, current R&D projects, internal confidential information important to maintain a sustainable competitive advantage (Bigliardi & Galati, 2013). The RI companies can thus be torn between the benefit that stakeholders might bring them and the risks that might arise when involving them.

5.2.6. *Slowed down innovation process*

Whether when launching risk assessments or when integrating various stakeholders into the process, those RI process characteristics may make it longer. As a result, the company might be slower than its competitors when it comes to seize opportunities. Some sectors are fast-

developing and require a great agility from innovators to face a fierce competition, this is why it can really be a challenge. Yet, we could argue that companies that invest in responsible innovation agree not to play *at the same level* as those that innovate quickly without considering RI processes. They would rather choose to gain a competitive advantage by offering slower propositions bringing a *significant* added value to customers (Blok & Lemmens, 2015).

6. Attention points

In the previous sections, we were able to present some of the key advantages and disadvantages related to RI. We will next present some of the key success factors and risks mentioned in the literature. Those will be regrouped under the term “*attention points*”. We decided to highlight five of them we found relevant and redundant through the RI literature and during the related concept literature review. Getting into RI might not be easy for a company, it does not only require applying all the principles literally to be considered a “responsible innovator”. The attention points include the points that are often mentioned as enabling the company to succeed, and risks too often overlooked as they play an important role in the failure of to-become-RI companies. Those identified and presented are:

- Adapt the company’s strategy and organisational structure
- Understand the market and the readiness to pay
- Develop measurement and feedback tools
- Develop an adapted culture and management style
- Promote the importance of responsible innovation

Table 9. List of the attention points identified

6.1. Adapt the company’s strategy and organisational structure

One of the key risks when developing RI mechanisms is having a company strategy and structure not adapted to the new *way* of innovating (Millar, Hind and Magala, 2012). For this reason, companies wishing to innovate more responsibly should need to pay attention to how these new RI objectives might influence the current situation. CEOs have generally understood this well. It appears that they consider the integration of the responsibility in the overall strategy of the company essential because it can create new business and innovation opportunities (Castiaux, 2009). Ingham (2011) proposes different steps to align and integrate RI strategies in the current ones, especially when it involves responsible radical innovations generating

significant changes. First, decision makers should identify the reasons why the company wishes to develop RI mechanisms. To increase the chances of success, decision makers should involve the relevant stakeholders from this first step. This could enrich the debate and give rise to a “shared awareness” of the importance of RI and help internal stakeholders have a better understanding of the opportunities that it might generate. Making internal stakeholders participate to the co-creation of the company’s new RI objectives and process can increase the legitimacy of this transformation and minimise the risks of resistance from the organisation *e.g.* the employees (Kiesnere & Baumgartner, 2019). Secondly, it is important to develop a global corporate strategic vision in line with the desire to innovate in a more responsible way. A vision that can contribute to the coherence and give meaning to the RI actions that will be carried out. The same applies to the company’s mission, which must make the link between the vision and the actions, these must be in accordance with the objectives set by the decision makers based on a debate open to the *relevant* stakeholders. It is important that these objectives are reachable. Nevertheless, they should remain challenging for the organisation since too easy goals might not motivate employees to acquire enough new knowledges and competencies to succeed in RI. By integrating these different steps, companies can generate consistency between the strategy and the organisational structure. Indeed, authoritarian and abrupt changes may only reinforce the resistance that the organisation can have toward new processes. Accordingly, relevant stakeholders should be involved at the beginning of the RI transition (McCann & Holt, 2010)

In a similar way as Ingham, Maon, Swaen and Lindgreen developed a model to align and integrate CSR strategies in the current ones. For instance, by additionally addressing the importance of evaluating the responsibility strategy (cited in Ingham, 2011). Some mechanisms should be put in place to evaluate, verify and report on progress and success in terms of RI. In order to set and stabilize the new strategy and structure, the company should share new knowledges and experiences acquired within the *new* RI company (Ingham, 2011). This should help reach the final stage of a business strategy and organisational structure when integrating responsibility in the innovations is anchored in the system, culture and value of the company (Maon *et al.*, cited in Ingham, 2011). Else, a company where the responsibility of the innovations is not integrated in the strategy might risk failing in achieving the expected benefits (Pavie, 2012).

6.2. Understand the market and the readiness to pay

One of key aspect we insisted on in the previous sections is the voluntary aspect of RI. Notwithstanding, in order to go voluntarily beyond laws and profit requirements, it may be necessary to already know the existing ones well. Pavie suggests that it might be useful to try to predict the future laws and market expectations. Indeed, on top of the moral driver to be responsible, reflecting about future regulations can allow companies to have advantages over competition by being prepared (Rennings, 2000). Some contexts and markets are more propitious to RI than others, responsibility can somewhat be facilitated by regulations favourable to companies wishing to develop so. However, the company has often little influence on those regulations, except when deciding where to implement itself (Iyer, 1999). Understanding the market doesn't only mean knowing the regulations. It is also a matter of knowing and understanding the market and its expectations. This can be essential for all companies and is therefore equally applicable to those involved in RI. Consequently, it can be key to look at the different competitors. Some RI companies could integrate and consider them into the innovation process, although probably not in the same way as the other stakeholders (Cetindamar, 2007).

Then, to responsibly innovate, it can be necessary to integrate the expectations, behaviours and the customer's willingness to pay (Iyer, 1999). Making an innovation more responsible does not necessarily bring an added value for all potential customers. As RI potentially might increase the company's product's price, companies should make sure the added value perceived by the customer is at least equivalent to the price increase. In fact, responsibility is an increasingly important concern for some costumers. Yet, customers are rarely willing to pay for it (Hellström, 2003). Consequently, RI companies should either understand the readiness to pay of their customers, either not reflect the increase of RI operational costs on price and find other ways to stay equally profitable.

6.3. Develop measurement and feedback tools

In our interpretation of RI, be flexible, adaptative and frequently reflect on innovation motivation are some of the key aspects. The idea behind the adaptability is the idea that RI companies should be able to react when unforeseen event arise. Accordingly, it might be important to set up a mechanism to measure the effective level of responsibility of innovations,

in other words, their actual direct or indirect impacts on the 3Ps. These measurement tools should allow innovators to react quickly if *negative* consequences appear. On top of that, it can also evaluate the level of responsibility of innovations and might help decision makers identify improvements for the future (Pavie *et al.*, 2014).

Some of those existing measurement and feedback tools consist of *relevant* open questions to create a self-reflexion on innovations. Answering these questions can help estimate how far responsibility has been pushed, whether certain aspects have been neglected, *etc.* The advantage of these tools is its relative flexibility. Since the purpose is to promote reflexion on certain topics without proposing an exhaustive list of what to do, they can adapt to most RI companies. Nevertheless, the tools are only informative. Decision makers should, based on the results, find adequate solutions and prioritize the potential improvements (RRI-Tools, n.d.).

Besides, some checklists tools can also help achieve responsibility at *all* corporate levels *e.g.* management, ideation, R&D. These tools give an overall score of the RI company (Responsible Innovation Compass, n.d.). As for the other tool, the objective is to see where the company stands regarding certain aspects of responsibility and what the next steps to go further may be. Even tough, depending on sectors, it may be more complicated to meet certain of the checklist criteria. As an example, the pharmaceutical industry has generally more complex R&D processes than other industries (Wickson & Carew, 2014). Once the analysis is complete, it is possible to represent the results in a spider chart according to the chosen criteria. According to Wickson and Carew (2014), a project almost never reaches the maximum score in each category (*illustration in Appendix 15, p.147*). Not reaching the maximum score everywhere does not prevent the project to achieve a satisfactory degree of RI. Consequently, it can be necessary for the decision-makers to deliberate about the criteria that are relevant and need to be put forward (Wickson & Carew, 2014). These tools also allow to compare different RI projects and their progress. Funders could thus determine which projects have the best potential for responsibility. As for innovators, they could report their progress to the management, public opinion or funders while being pushed to improve the responsibility of their innovations over time (Wickson & Carew, 2014).

6.4. Develop an adapted culture and management style

We mentioned above the importance of having decision makers able to promote a change in strategy and organisational structure. But it is also important to review more implicit aspects of the company, such as the management style or corporate culture. Diamond and Allcorn mentioned that if some employees behave in an irresponsible way this may be because they don't pay attention to the ethical acceptability of their company's outcomes. This may be the consequence of a leadership problem. Some employees can feel *imprisoned* by a higher authority and don't feel they are allowed to make their own choices (cited in Mostovicz, Kakabadse & Kakabadse, 2009). Consequently, the manager should be the first actor to promote RI projects. He should integrate responsibility into his behaviour and decisions making (Pavie, 2012). Nevertheless, a particular leadership style might not guarantee a success in the transition to RI. It is up to managers to find one adapted to the new corporate responsibility objectives and that suits them.

One of the starting points to create a favourable RI corporate atmosphere is to share responsibility values and to be able to engage its members who are the pillars of these values (Ingham, 2011). An adapted leadership might also be the key skill to create a responsible innovation-friendly corporate culture (Miller & Brankovic, 2011). As mentioned by Castiaux (2009), a company where it is fully integrated into the innovation strategy goes hand in hand with a company where responsibility is an essential element of culture. One of the main barriers to changes toward RI remains the potential resistance from some stakeholders *e.g.* particularly employees. Thus, having an adapted leadership can help to develop a RI corporate culture (Pavie, 2012) that might reduce the employee's resistance to change. Indeed, it is often said that *informal* systems such as culture and leadership, are the actual drive for sustainability. Consequently, it can be crucial to responsibly manage social, environmental and economic performance altogether, from employees to top management (Epstein, Buhovac & Yuthas, 2010).

6.5. Promote the importance of responsible innovation

In a study published by Futerra in 2005, while 30% of consumers say they are buying or will buy more ethically, only 3% do so (cited in Carrington, Neville & Whitwell, 2010). We could discuss whether developing responsible innovations might give rise to a competitive advantage

thanks to the potential customer loyalty and purchase increases. Indeed, it appeared that “pro-responsible companies” consumer intentions are not often translated into concrete actions. Nevertheless, there can be some ways to increase the value consumers might give to RI in their decision to buy (Carrigan & Attalla, 2001). To be able to offset the cost and disadvantages of developing RI mechanisms, companies can actively promote all the efforts they make in relation to RI. They should regularly share those to “capitalise” on the positive feelings that the population have toward this kind of action (Xie, Bagozzi & Grønhaug, 2015). Carrigan & Attalla (2001) mentioned that customers are often poorly or misinformed about companies’ ethical efforts. Moreover, the way companies often communicate can increase the confusion about these practices. So, to promote actions related to responsible innovation, companies should inform potential customers in a clear and adapted way, relevant to their target audience. In addition, customers are often unconvinced and cynical about the company’s responsible efforts (Carrigan & Attalla, 2001), which means that they might need to persuade consumers of the RI benefits for society, environment and economy (Devinney, Auger, Eckhardt & Birtchnell, 2006). Even though, RI companies should keep in mind that price, quality and perceived product value often exceeds other criteria in the purchasing decision (Carrigan & Attalla, 2001). To this end, promoting a price reduction and a quality increase on top of RI arguments can lead to a more effective sales pitch.

Another point is that the lack of information as a barrier to the development of RI is also perceived by decision makers and managers. If RI may have many advantages related to business performance and competitiveness, this is still not enough to convince all companies (Porter & van der Linde, 1995). In this thesis, we based our arguments in favour of adopting RI on the assumption that decision makers have a good idea of its advantages, whereas in practice they often don’t (Porter & van der Linde, 1995).

6.6. Is a RI process necessary to achieve RI outcome? And otherwise?

In the first part of this work, we have classified the characteristics found in related concepts and in the existing definitions of responsible innovation in two types of responsibility: the RI process and the RI outcome. We have listed some of the advantages, disadvantages and attention points related to both. We can now ask ourselves if to reach a responsible outcome, a RI process is necessary. For example, if an innovator decides in a totally authoritarian way

without considering the stakeholders or questioning the innovation motivations to launch a new product, will this product automatically be an irresponsible innovation? We do think that the answer is not so clear-cut. We believe that a responsible process can allow companies to ask themselves the right questions at the right time to better anticipate the consequences related to the outcomes. Therefore, they might better estimate the risks in the development phase and limit the *negative* impacts to the best of their ability by keeping in mind the required benefits. The Brundtland report also considers that during the development of a more responsible process or innovation, decision-makers respect certain codes of conduct and integrate ethical and moral considerations (cited in Pavie *et al.*, 2014).

But, does a process considered responsible guarantee a responsible outcome? Nothing could be less certain. First, innovations are highly unpredictable, as mentioned by Owen (2013), Von Schomberg (2014), Block & Lemmens (2015). Developing a RI process doesn't intend to predict all possible and plausible consequences. The objective is rather to propose a first approach, an anticipation of what could happen if these innovations survive the Moore Chasm (*see chapter II.3.3*). It should encourage innovators to ask the *right* questions at the right time. But it would be idealistic to think that a RI process would be able to counter one of the primary characteristics of innovation, its unpredictability, which might always create uncertainty about outcomes and related to responsibility despite a responsible process. The Biofuel example can be mentioned, a very promising technological innovation in the field of energy. It seemed to be renewable, less polluting and with positive social consequences as it was produced locally. The development process seemed to be responsible since many stakeholders were involved to reflect on its potential impacts. Still, a couple of years after launch, unpredicted *negative* consequences appeared. Biofuels caused an increase in the food price, which *negatively* impacted the poorest populations. Despite a process involving many stakeholders, and an apparent precaution taken by decision makers regarding the launch of Biofuels, we can argue that it is almost *impossible* to guarantee a forecast of all the impacts (Block & Lemmens, 2015). While innovations' consequences are by nature unpredictable, a thorough responsible innovation process gives insight on issues that would otherwise be only noticed once on the market. This can prevent the companies from producing irresponsible outcomes. At last, the process of RI cannot guarantee responsible outcomes, but greatly reduces the risk that it won't.

7. Limitations

In the previous sections, we presented an overview of the concrete managerial implications resulting from being a company launching responsible innovations. Nevertheless, this list of advantages, disadvantages and attention points (including key success factors and risks) is largely based on our working definition of RI. Indeed, the theoretical managerial implications found in the III.5 and III.6 sections are mainly based on an analysis of the different characteristics identified in our working definition and how all those characteristics brought together can impact the company. It is important to notice that the advantages, disadvantages and attention points can be specific to each company, depending on size and sector. Our objective was to propose a non-exhaustive list of some of the key consequences related to the implementation of RI that could affect most companies based on the scientific literature. It is also important to mention that a company considering all the attention points is not guaranteed to succeed in RI. This is why, in the second part of this work, we will meet different managers considering themselves part of a RI company. This will allow us to test our theoretical assumptions with what companies of various size and sector identify as the main managerial implications.

8. Theoretical analysis summary

This chapter III closes the theoretical part (II and III). In the previous sections, we tried to clarify the concept of RI based on the analysis of related concepts and existing definitions proposed by various authors. Thanks to this dual analysis, we were able to present an interpretation of what RI may be: *an adaptative and voluntary innovation process that consists in critically reflecting on the motivations and potential risks associated with these innovations by integrating the social, environmental and economic aspects and involves and considers the stakeholders*. We were then able to list some of the key advantages, disadvantages, key success factors and risks mentioned in the RI or corporate responsibility literature when relevant. In the table below (*Table 10*), we summarize the key theoretical managerial implications associated with the development of RI in the company we identified. This table represents our theoretical assumptions that are going to be challenged during our interviews in the next part of this thesis, the practical part (IV).

Working definition RI characteristics	
▪ Adaptive ▪ Voluntary ▪ <i>Go beyond current regulations and profit requirements</i> ▪ Critically reflect on innovation motivations ▪ <i>Define some innovation motivation internally</i> ▪ <i>Rely on external objectives such as the SDG's</i> ▪ Identify potential risks ▪ <i>Develop a risk assessment mechanism (internal or external)</i> ▪ Integrate the social aspect ▪ <i>Limiting negative impacts on human health</i> ▪ <i>Limiting negative impacts on working/living conditions</i> ▪ <i>Promoting the ethical and morally acceptable solutions</i> ▪ Integrate the environmental aspect ▪ <i>Limiting environmental pollution (CO2, toxic products, etc.)</i> ▪ <i>Reducing energy consumption</i> ▪ <i>Preserve the diversity</i> ▪ Integrate the economic aspect ▪ <i>Create enough wealth for the company to stay competitive</i> ▪ Involve and consider the stakeholders	Advantages ▪ Increased company and employee's performance ▪ Promotes company's activity development ▪ Be ahead of new regulations and market trends ▪ Brand image improvement Disadvantages ▪ Difficulties linked to the stakeholder management ▪ Cost of responsible innovation ▪ Slowed down innovation process ▪ Difficulty to implement a technological risk assessment ▪ Difficulties to predict the consequences of innovations ▪ Transparency issues Attention points ▪ Adapt the company strategy and organisational structure ▪ Understand the market and the readiness to pay ▪ Develop measurement and feedback tools ▪ Develop an adapted culture and management style ▪ Promote the importance of RI

Table 10. Summary of the main theoretical managerial implications of RI

IV. Theoretical vs. practical confrontation and identification of some of the key managerial implications

1. Methodology

In this section, we will confront the theoretical managerial implications of RI with the RI experience of seven managers. Seven managers from companies committed to developing more responsible innovations were interviewed, since between four and ten study cases are generally recommended when conducting empirical studies (Eisenhardt, 1989). We proactively contacted companies, claiming ⁽¹⁸⁾ to be both innovative and responsible. After some exchanges to make sure they were developing RI, we held an interview with the most appropriate employee available, often the innovation or CSR managers. We chose a semi-directive questionnaire (*Appendix 16, p.148*), to have as much as possible unaffected opinions but still to orient the discussion around what was previously discussed in this thesis. After some open questions, we also presented some of the managerial implications found theoretically to obtain additional insights. Depending on the situation, we have tried to follow the same questionnaire structure for all the interviews. The questionnaire is structured the same way as the theoretical part: characteristics of the RI, advantages, disadvantages and attention points.

When we were authorised to record the interviews, they were transcribed in the form of *verbatim* ⁽¹⁹⁾ and submitted to the companies. Once validated, the qualitative elements were analysed and gathered in a comparative table (*Appendix 39-42, p.278*) with confirmed, invalidated, mitigated or new managerial implications. This facilitated the comparison of qualitative results and to draw conclusions. We have decided to proceed with a colour system for each managerial implication mentioned, green representing companies agreeing, orange representing mitigated answers, and red when companies weren't concerned. To draw the conclusions, "confirmed" is based on a majority of greens, "mitigated" when a majority of nuanced answers or at least one *negative* is mentioned, and finally "informed" when the number of disagreements is at least as important as the other opinions.

⁽¹⁸⁾ Usually on their website

⁽¹⁹⁾ A word-to-word transcription of a speech.

In the next section, we will first introduce the company shortly, as well as mention some reasons of selection. Then, the advantages and disadvantages mentioned by the interviewees will be compared with those identified through the literature review. Finally, the attention points identified by the managers will be put into perspective with the results of the theoretical analysis. At the end of this section, an overall comparative analysis covering the important points mentioned in the various interviews will be presented, allowing us to carry out a theory-practice confrontation. Since most of the interviews were conducted in French, the sentence will be translated in the best of our ability when an interviewee will be quoted. The different companies we interviewed are either generalist well public known companies ⁽²⁰⁾, either companies that are currently facing some discussions and public debate about their corporate responsibility ⁽²¹⁾.

Companies facing public debate about RI		
Engie	Energy & Utilities	M. Spelkens - Head of CSR Benelux
Flash (Circ)	Micro-mobility	M. Van Landeghem - CEO Benelux & M. Spitaels - Strategic Partnership Manager Benelux Circ
Generalist companies		
Carrefour	Retail	M. Lesne – Innovation Director
Procter & Gamble	FMCG	M. Beznik - Head of R&D and Sustainable Innovation
Proximus	Telecommunication	M. Sonck - Head of Enterprise Innovation
Deutsche Telekom	Telecommunication	Mrs. Klesper - Senior Vice President Group Corporate Responsibility
Cofinimmo	Real Estate	M. Van Buggenhout - Head of Property Services, CSR and Innovation Process

Table 11. Different companies interviewed

2. Interviews analysis

2.1. Engie

2.1.1. Context

With a global presence in 72 countries, Engie is one of the world's leading energy companies. On the one hand, their activities are focused on energy production, mainly electricity and offshore and onshore gas, on the other hand, on utilities (maintenance of power plants, thermal and industrial structures). In the Benelux, Engie employs 22,000 people and capitalises 46% of the market share. Their best-known brand, Electrabel, is historically the largest electricity supplier in Belgium. Engie's ambition is to become the leader in the energy transition (*see*

⁽²⁰⁾ It is true that telecoms companies are facing public debates about the major layoffs they plan in the coming years, especially given the fiercer competition (RTBF, 2019). However, we decided to not consider these being part of the "Companies facing public debate about RI" group.

⁽²¹⁾ Micro-mobility companies are currently facing a societal debate about their unregulated use, questioning the responsibility of companies for the "wild" launch of these new means of transport on the streets (La Libre, 2019). And the Energy sector, facing the pressure related to climate change, the entire sector has made commitments to the energy transition, and is considered in that way facing public pressures to develop environmental and social responsible innovations (Le Soir, 2019)

official commitment in Appendix 26, p.219), capitalising on technological and societal innovation as they call it, meaning developing new consumption modes (Engie, 2019).

2.1.2. *Understanding of RI*

According to the company's CSR manager, M. Spelkens (*interview transcript in Appendix 29, p.222*), the concept of responsible innovation appeared in 2009 when Engie understood that the current economic model was no longer viable. *“That, in fact, new concepts had to be introduced such as environmental, human and social concerns”*. RI is seen as *“how can I build something with my external partners to improve my business and in the same time improve the society with a big S”*. It appears to be a question of developing innovations that *“make sense”*, which can be understood by users, employees and external stakeholders such as *“civil society, NGO's, political authorities, trade unions, associative movements and the academic sector”*. But RI should also be about being agile, proactive and flexible in relation to this change of *“model”*, it is the only way to be responsible in innovations. Of course, as Engie is developing technological innovations, they should be very careful about what they launch. They have *“three R&D centres around the world that are really far ahead of quite a few years, but we will never launch a new product or service until we have spent five years testing it in a laboratory or in hyper-protected environments”*. M. Spelkens agreed with all the characteristics of our working definition of RI, except for the voluntary characteristic. He considers that this idea of going beyond what is required regarding the law and profit requirements is *indirectly* voluntary. According to him, *“from the moment you are pushed by your environment [...] to do things, it is no longer entirely voluntary. You do it because it is in the logic of things, but it is not you who always took the initiative [...] very often it is done in coordination with the other stakeholders”*.

2.1.3. *Managerial implications*

To succeed in developing RI, Engie believes that several measures are necessary. First, the company need to have good understanding of the environment in which it finds itself. This means *“understanding what game we play, knowing the stakeholders, knowing the issues of the society or environment in which you are, knowing your company [...] where the skills are located”*. This requires mechanisms to effectively involve those stakeholders *e.g.* thanks to stakeholders mappings. Else, this also requires an adaptation of the organisational structure with new multidisciplinary teams that help define clear objectives and develop a *“responsibility code of ethics for innovations, which is then spread throughout the group”*. This code is like a

guide to follow and help to measure the success of RI (*see code in Appendix 27, p.220*). In fact, one of the attention points mentioned by M. Spelkens is the importance of sensitizing the individuals behind innovations to responsibility. This can happen through clear RI objectives. Consequently, Engie can develop solutions that meet the customer's needs. Through laboratory testing requesting significant internal resources, they ensure their feasibility and effectiveness to avoid launching irresponsible innovations. Furthermore, Engie advises to have regular evaluation mechanisms (internal and external from neutral organisations) to guarantee the responsibility of the outcomes, in other words, to *“correct the trajectory (of the innovations), and to be able to boost those working on them”*. To successfully commercialize these RI, Engie has developed a communication strategy that is *“transparent, understandable, clear and targeted to specific target audiences”*. Through nonfinancial KPIs that are shared with competitors, Engie can *“ensure that end consumers can compare those with more or less similar products or services”* and so avoid doing *greenwashing*. Finally, RI mechanisms need to be consistent with the company's activities, it is essential to have a global strategy in line with these efforts.

The advantages are numerous. First, M. Spelkens mentioned the development of a way of working collaboratively that allows *“to bring together the skills and resources of different departments and to put it around a new project”*. Through this, Engie can develop projects valuing its brand image to be *“more modern [...] aligned with the global evolution of the society”*, which could also create a competitive advantage. Although, in the utilities sectors they prefer to say “partners” instead of “competitors”. Second, thanks to the risk assessment mechanisms and feedback tools, Engie identified opportunities to better anticipate the consequences of the practical implementation of these innovations. They mentioned that *“(an innovation) it's a very nice idea on paper, but if we want to realize it in practice there are many contingencies and constraints that make it not work. So, it's a little bit I don't know if we call it risk management but it's in any case anticipation (and therefore it helps to make innovations more responsible) and above all to develop solutions that are realistic and not Belgian surrealistic”*. Lastly, if you *“introduce innovation KPIs into your overall analysis of business performance [...] it also contributes to (increase) it”*.

On the other hand, Engie faces some challenges related to this “change of model” that integrates social and environmental concerns beyond economic performance objectives. In particular, as

this change in the way they do business can lead to *“losing talents [...] who may no longer be able to find their way into the new way of working”*. This can also lead to an increase in the costs since they *“must constantly redefine and re-sensitize people what it is like to be responsible”*. Furthermore, investing in these new technologies and energy production methods may not be rewarding for Engie, as a complete change of model implies a greater risk of mistakes in these RI choices. Developing RI can also slow down the innovation process. However, they feel that *“the implementation is also faster, because you have more means. So, you put more money and more energy and more resources into it than an SME, which may take a little more time because they haven’t found financing. They have to find the right skills, one in the other it balances out”*. The idea of SME having fewer resources to perform RI can also affect the preliminary studies concerning the innovations, where Engie has enough resources to perform those risk assessments. Yet, since Engie is active in industrial fields, M. Spelkens admit that *“you will never have a 100% certainty”*. Therefore, they are doing everything they can to minimise those risks. Finally, the company may also face transparency issues by involving many stakeholders, but they consider that RI didn’t increase the problem and that RI managers should *“develop a climate of good understanding between the different participants (and thus) there shouldn’t be any leakage”*.

2.2. Flash (Circ)

2.2.1. Context

Flash is the biggest free-floating ⁽²²⁾ micro-mobility start-up in Europe offering a short-term electric scooter rental service, which means offering a service for your first and last mile of a journey. The company based in Berlin is active in many countries mainly in Europe. A mobile application using a GPS propose to find and unlock available electric scooters. Since January 2019, Flash (renamed in June “Circ”) is a fully fledged legal entity for the Benelux. They promote a micro-mobility system with *“responsible rides to enhance our cities and build a cleaner, safer, more connected world”* (Circ, 2019). Flash develops its own scooters with an innovative but responsible design approach—greener and safer. But Flash also promotes its innovative in-house e-scooters through the responsible management of the different host cities

⁽²²⁾ Free floating means without a docking station. This type of mobility has increased in cities in recent years and in some there are no regulations e.g. Paris and Brussels. This leads to the cluttering of sidewalks with bicycles and scooters and is triggering a social debate about the responsibility of micro-mobility companies (Le Monde, 2018)

as their key stakeholder (*see official commitments in Appendix 20, p.180*). We have met two interviewees: the Benelux's CEO, M. Van Landeghem and M. Spitaels a Partnership Manager.

2.2.2. *Understanding of RI*

It must be understood that RI, and responsibility in the broad sense is in Flash's DNA. The company was created in reaction to the irresponsible behaviour of American micro-mobility companies like Lime and Bird. According to the CEO (*interview transcript in Appendix 22, p.182*), RI means "*that you create an added value either for the end user or for you as a company or your employees or for, in our case, the government which is an important stakeholder [...] if it's any of those, and it becomes greener, then it's a responsible innovation*". It is important for Flash to consider, to co-develop what the consumer needs and requires in partnership with stakeholders, in this case the cities: "*(Flash) wants a (micro-mobility) solution, and it's really a solution we want to bring together (with the authorities) to the cities*". Moreover, it appears to be important to consider the end consumer as well, and to include the way they will use the e-scooter into the innovation process. Becoming a responsible innovator is investing in qualitative and maybe costlier product innovations, voluntary go beyond what the law expects from an e-scooter provider that will last, promote greener, safer, quality of life improving solution answering the main stakeholders needs.

2.2.3. *Managerial implications*

The success of the responsible e-scooter and innovation process of Flash relies on five main aspects. First, thanks to voting mechanisms, decision makers have a good understanding of customer expectations (cities and users), "*especially in terms of knowing and helping to create the (adapted and expected) legislation (regarding European users)*". This allows the innovation team to prioritize the projects. Once an innovation is launched, Flash can count on data-driven mechanisms giving feedbacks. Helping the team to adapt and make the e-scooters more responsible thanks to additional features allows to be more green or safe (adapt the bell, battery, wheels, rechargeable batteries, *etc.*). Thanks to a strict quality assurance in the innovation manufacturing process, their new products are as safe and reliable as they were supposed to be, and if not, they are not launched on the market. Tools and KPI's are important to measure the responsibility of the innovative products. Flash set them at the beginning of the activity and the responsibility of a product is evaluated in terms of increase of the quality of life

e.g. less noise, pollution and time in the traffic. Indeed, Flash considers that their e-scooters are a responsible innovation if they are removing one car net from the streets. They are also able to develop responsible e-scooters thanks to the important involvement of their key stakeholder *i.e.* the cities. It is very important for them to co-develop the regulations, understand and answer the needs of the cities even if it is not the most profitable option for them. Lastly, since the company is a start-up, all employees are really involved and happy to work in responsible way, they can all have an impact on the products and don't have to worry about a hierarchical structure.

The interviewees recognised that applying RI mechanisms leads to some advantages. First of all, thanks to their effective stakeholders management and strong relationship with the cities, they hope to be the only micro-mobility company allowed to stay in the cities and so develop a sustainable competitive advantage difficult to reproduce. Secondly, by collecting data, Flash is trying to reduce the *negative* impact e-scooters can have on nonusers *i.e.* cluttered sidewalks. This is why the only *place* e-scooters are, is where they are the most needed and generate a greater value for the end users. Thanks to the responsible placement of their e-scooters via an effective data analysis, measurement and feedback tools, they can have “*the least number of scooters (to) provide the greatest number of rides*”. This led to a greater ROI per scooter, but also to a greener solution per ride. In addition to that, by pushing themselves beyond the law and profit requirements they promote the company activities development. M. Spitaels said: “*we are looking to optimize our product so we can really push our product and have it on the market instead of just waiting (for the legislation to be adapted). Now, we can see indeed that the product that we have in this (pushed) proposal here is really ground changing. It's a big plus*”. He mentioned that their previous e-scooters weren't fit for the German market because of stricter rules. All the other firms decided to abandon the German market, but Flash decided to voluntarily adapt and make their e-scooter safer for all their markets. The interviewees consider that this corresponds to be voluntarily responsible. They are now benefiting from a better product due to the challenge they set for themselves. The brand image is also improved. Although, not yet for end consumers, but with the cities thanks to a “*the month to month [...]. That's not maybe the brand as a whole, but it's really showing to the different cities that what we are doing on the long-term is really paying off*”. The last advantage is that by acting so responsibly in the development of their innovation they can go “*through that together and do*

nice things that are durable instead of coming in, doing something for six months [...] (so) we will be able to (be there) on the long-term”.

Nonetheless, acting responsibly is not always easy. First the increase in the cost of innovations can be challenging. M. Van Landeghem said: “*the biggest difference is that RI is costlier [...] by definition*”. Flash is always trying to make their innovations greener, safer and to add value for the stakeholders by designing qualitative e-scooters. Secondly, the delays may be more important since Flash is trying to adapt and review its e-scooter as much as possible. In addition, the involvement of the stakeholders, especially the cities can be difficult. The co-development of the regulations and the additional features of e-scooters can be slowed down since city councils’ decisions take time and are complex to manage. This is why the company has several Partnerships Managers as a contact point to develop good and trustful relationships with the cities. Finally, predicting the potential unexpected consequences can also be a problem. However, they “*developed a continuous review system allowing to react as fast as possible when a new problem arises*”.

2.3. Carrefour

2.3.1. Context

Carrefour Belgium is the Belgian branch of the Carrefour Group, a French group in the retail sector, one of the world leaders. The company operates with several hypermarkets, markets and express in own name and with a franchise system. Carrefour is ranked 3rd in terms of market share in the retail sector, with more than 10,000 employees and 1000 points of sale in Belgium. Carrefour opened its first store in Belgium in 1969 and aims today to become the driving force of the food transition in Belgium. The actions toward change in eating habits, campaigns such as Act for Food (offering quality, reliable and affordable food), Drive services or Box services with fresh products promote balanced meals (Carrefour, 2019) are some illustrations of how Carrefour is trying to act responsibly (*Appendix 17, p.152*).

2.3.2. Understanding of RI

For the Director of Innovation, M. Lesne, (*interview transcript in Appendix 19, p.154*) responsible innovation is above all be informed and try to better understand the consequences of innovation. For instance, when considering developing AI marketing or organisational

innovations M. Lesne rely on different articles on LinkedIn to better understand the consequences. It also means collaborating with smaller structures (start-ups) that develop eco-innovations or purely social innovations with a positive impact on society. While, by keeping in mind that the company *“lives on money and we have to keep doing business”*. M. Lesne is responsible for the *“last mile”* at Carrefour Belgium, and as he mentioned *“during the last mile I know I’m not going to pollute”* and this is being a responsible innovator as well. According to him, RI does not require a responsible “process”, because the team of three people is agile and fast. M. Lesne is thus pleased not to worry about complicated processes (as may be the case at Carrefour Group). To guarantee the responsibility of an innovation (only concerning the marketing and organisational innovations), he relies on different things. First, on debates and discussions with his team, allowing him to question the “responsibility” of these new ideas since *“all our reflexions on innovation [...] naturally, I hope, are made with a view of saying ‘here we are doing well’”*. Second, on the reactivity and judgment of customers. Indeed, *“in any case, the consumer is going to react”*. In this way, Carrefour is avoiding ponderous RI processes, and can function with *trial and error* to guarantee the responsibility of their innovations in the long term. *“That’s what is great in Belgium, we are given this flexibility”*. When an innovation is considered irresponsible by the society *i.e.* the customers, Carrefour withdraws it from the market. In M. Lesne’s opinion, this is how Carrefour can develop and *guarantee* more responsible innovations reaching and staying on the market.

2.3.3. Managerial implications

In view of the *“cowboy”* way of doing things, as he calls it, few managerial implications specific to RI have been mentioned by M. Lesne. The first he mentioned is that his very flexible and *processless* way of innovating allows to stay within reasonable innovation costs and not lengthen innovation processes. M. Lesne agreed that Carrefour Group can longer the process by being very careful about what they launch, by involving many stakeholders and by performing risk analysis with experts. An important point mentioned is the added value of the stakeholders involvement, especially employees. Yet, this mechanism for *“bringing back good ideas”* is still complicated and is not codified. It relies on the willingness of the innovation director to discuss from time to time with employees or suppliers. But developing RI has different advantages, first, it allows Carrefour to be *“doing well”* from an ethical point of view. RI also makes possible to differentiate oneself from competitors in the retail sector as

“(Carrefour) has to be stronger than the competitors [...] we must have an (innovation) process that is effectively more responsible”.

2.4. Procter & Gamble

2.4.1. Context

Procter & Gamble (P&G) is an American multinational company founded in 1837, specialized in FMCG (Fast-Moving Consumer Goods). The company has many brands divided into five segments *i.e.* beauty, healthcare, grooming, fabric care & home care, baby, feminine and family care. About twenty P&G brands have revenues exceeding \$1 billion each year and products are sold worldwide, mainly in North America, but also in Europe, Asia, Latin America, Middle East and Africa. The company has promoted its interest in developing more sustainable innovations (*Appendix 23, p.200*) to go toward responsible consumption. Each of the main brands is committed to reduce *negative* impacts and/or having positive impacts on society and the environment. P&G wants to invent the *responsible consumption*.

2.4.2. Understanding of RI

Procter & Gamble is gradually committing itself to responsible innovation and to a strategy where responsibility is key (*interview transcript in Appendix 25, p.202*). According to M. Beznik, head of R&D and sustainable innovation, RI has many aspects. First, it is necessary to commit to limit *negative* impacts or to have positive impacts in relation to social and environmental aspects. For example, “*responsible innovation is working on reducing resources by 50% (for a product)*”. Companies should impose themselves new constraints and objectives publicly declared. RI is about doing voluntarily more than what is legally expected. Once selected, social and environmental objectives should be defined and KPIs must be created. This is because RI “*(is to have) a responsible ambition (but) it is (also) necessary to deliver the related innovations*”, to go beyond fine words and to act. It is important to know that in order to have a responsible (innovative) product, a RI process is needed. In order to respond as effectively as possible to these new constraints, it is necessary to work with the various stakeholders, this allows to know their opinions and expectations. Working with various external partners, can help achieve the objectives set thanks to knowledge and know-how the company does not possess. This can help testing innovations to identify the potential *negative* consequences that could arise through risk assessment and/or launch pilot tests when needed.

Yet, RI does not mean philanthropy, the company also has financial objectives to meet, illustrated by P&G's mottoes, "*force for good, force for growth*".

2.4.3. *Managerial implications*

To properly develop responsible innovations, M. Beznik explained us the various important points to follow. First, companies must find a viable RI business model. As it is not a question of philanthropy, it is important to find a way to combine RI to business needs. The company's growth can't be limited since Wall Street has expectations that must be met. In addition, it is very important to set KPI's and measures of success, since it's not about claiming empty objectives. When long-term goals are set, the progress of a project is easier to follow. The stakeholders management is also a key element of RI, companies must take the time to know their opinions, expectations and they should understand the current and future consumers habits. It is also necessary to be surrounded by partners such as NGOs or other companies having expertise in the fields where you do not have enough knowledge to develop RI's. Indeed, when setting new environmental or social constraints, companies do not always have all the know-how to succeed. Stakeholders can also be very useful in providing external advice on the strategy adopted and on the achievement of the goals. Moreover, sometimes it is necessary to overturn and help to shape the law, not always adapted to RI or new business models. Responsibility is a subject that has become more important in recent years. Nevertheless, people are not always willing to pay for it, so it is necessary, according to M. Beznik, to "*make sustainable irresistible*". This means that the responsible feature of innovations must be so attractive that customers won't mind paying more. Finally, RI mechanisms must be supported by an appropriate corporate culture. The employees should have responsible *mindsets*, encouraged by the top management. This is important to achieve the responsible goals and avoid *greenwashing*⁽²³⁾.

According to M. Beznik, RI also makes possible to reconcile *good* and growth, to do *good* while his company flourished. RI can improve processes and increase efficiency. To give an example, "*(in the) supply chain, I have production systems, the less water I use, the less I have to recycle my packaging, the better. The P&G operation in the hundreds of plants we have*

⁽²³⁾ Greenwashing "*is the behaviour or activities that make people believe that a company is doing more to protect the environment than it really is*" (Cambridge Dictionary, 2019)

around the world, there is a direct correlation (between performance and RI)". If a brand seeks to reduce the resources needed for its packaging, the production chain could be simplified because fewer resources would be transported. Being ahead of the law and being a leader in responsible consumption is an opportunity to shape the law, *"you are writing the game, it's really better than following it"*. Anticipating the laws and setting new objectives is a way to improve the company's creativity and activities development. Also, if the company is going ahead of what is expected, it can increase competitiveness through the intellectual property gathered before other competitors. Responsibility in innovation also has a positive impact on the people working in the company. It is a vector of motivation that can help to recruit talents. Finally, the brand image is improved through these RI's and led to a global increase in brand sales.

RI can be challenging since is not intuitive, no handbook exists, and no company can be taken as a model. This is the case for P&G, they must *"write"* the handbook. So, they *"declare (RI objectives) (they) don't know anything about it and (they) partner with (external stakeholders)"* to help them. The second disadvantage identified is that there is not always an appropriate business model for RI. A model must be found to meet Wall Street's financial constraints and expectations. Unfortunately, this is not always possible, and some very promising ideas cannot be developed. Thirdly, RI can increase costs. Sometimes, not because of the process but because the *responsible* raw materials can be more expensive. This may be a problem when starting, but could be limited when the market expands, and economies of scale can be achieved. RI processes may become quite complex since P&G is increasing the number of stakeholders considered. As more partners are involved and no handbook is available, many uncertainties linked to the development of new products and adequate new business models must be considered. Avoiding *greenwashing* is also a big challenge, P&G must be very careful, they must *protect* themselves by keeping the company honest. Finally, by consulting many stakeholders and partners, the company may face leakage problems but *"we need to lean forward, let's just go, let's try, let's experiment and if we see that we have leakage problems, then let's retract back"*.

2.5. Proximus

2.5.1. *Context*

Proximus is a Belgian company, active in the telecommunications sector. The company is active in the B2C and B2B markets. In the B2C sector, Proximus offers fixed and mobile telephony, television and the Internet in Belgium and Luxembourg. Their B2B segment is much larger, serving customers all over the world. They offer solutions related to fixed and mobile telephony but also all kinds of IT solutions for companies. Proximus is the leader on the B2C market in Belgium where competition is moderate, while competition on the global B2B market is more important. Nevertheless, Proximus is a major player in this sector. They attach a great importance to innovation, particularly enabling a better digital life through innovation (*Appendix 30, p.244*), because the historical segments of the company are losing speed and it is necessary to find new markets for the future.

2.5.2. *Understanding of RI*

According to M. Sonck (Head of Enterprise Innovation), responsible innovation includes several specific points, however, not particularly developed as such in their innovation process (*interview summary in Appendix 32, p.246*). The central point is to reconcile the company's objectives with social and environmental ones and to achieve those objectives by working (and innovate) ethically. These new goals sometimes go further than regulations and can be an additional constraint. To do this, it is necessary to involve the stakeholders, to know their opinions regarding innovation. It is also key to surround yourself with partners who would have the skills that the company fails to succeed in achieving the objectives. To be able to produce RI's, risk assessment processes must be included in the innovation process to limit the potential *negative* consequences that could occur. This means to be able to be agile and react quickly in the event of an unforeseen problem. Proximus doesn't officially call these efforts as "*responsible innovations*", therefore in this interview the opinion of M. Sonck is more of a personal input about his experience of having included an innovation pillar inside their global CSR Strategy and not developing irresponsible innovations.

2.5.3. *Managerial implications*

M. Sonck told us what Proximus put in place to ensure that innovation processes are effective while being responsible. First, the company decides to fix some constraints and to go further

than what the regulations impose *e.g.* being a CO₂-neutral company. Moreover, committees are consulted. These groups, internal or external, take a critical look at the innovations and the risks they may bring. On top of that, it is important to carry out risk assessments to reduce probability of *negative* consequences. As it *will never* reach zero, risks must be accepted. Being flexible enough is important to adapt the innovation according to the inputs of the stakeholders or the consequences of innovations. The last point is that these values of responsibility and ethic, the motto “*use technology, not abuse it*”, must come directly from the company’s management and be part of the company strategy.

M. Sonck also presented us the various advantages of making the innovation process more responsible. Firstly, it brings added value for the consumers that are asking for more responsibility. He agreed when we mentioned the fact that it stimulates the creativity by adding constraints, which allows to develop more innovations. It also differentiates you from your competitors and gives you a competitive advantage because struggles can be tough, and margins can be reduced if you don’t react. The company’s image is also improved in the eyes of the stakeholders. Finally, working in an ethical, responsible way allows everyone involved having more esteem for their work, to feel good about doing things *right*.

RI also comes with its drawbacks. Indeed, many actors, committees must be consulted. This can complicate and prolongs the innovation process. Plus, these groups having different objectives it might be impossible to achieve them all. Consulting all of them creates a risk of leaks and that some information ends up where it shouldn’t. It can happen, but you shouldn’t focus on it. Finally, working in a more responsible and ethical way should prevent Proximus from launching itself on the market of its main customers. Agreeing to miss out on interesting opportunities to keep good contact with their customers. Being responsible also makes them lose opportunities if a customer request does not seem ethical, they might not accept it.

2.6. Deutsche Telekom

2.6.1. *Context*

Deutsche Telekom is a large German telecommunications company, operating mainly in Europe, but also in other countries such as the United States. The company is active B2C and B2B. Its B2C market is mainly related to the sale of telecom products such as fixed or mobile

telephone services to customers. The B2B market is more extensive and consists of the sale of various telecom services or the construction and use of IT infrastructure for businesses. The competition is fierce, with many players. Therefore, the company seeks to establish itself as the leader in the European telecom market by investing in projects and developing the technologies and business models that can shape the future of tomorrow's telecom. In this context, the company attaches increasing importance to responsibility of its innovation process (*Appendix 33, p.247*). This makes possible to develop innovations, driven by additional constraints, limiting the *negative* impacts on the society and environment.

2.6.2. *Understanding of RI*

According to the company's CSR director (*interview summary in Appendix 35, p.249*), Ms. Klesper, Deutsche Telekom is gradually becoming more and more involved in RI over the past 15 years⁽²⁴⁾. This evolution was progressive because it was important to follow the market, its expectations and because they weren't always focused on acting responsibly. For the company, RI means setting, voluntarily, environmental and social objectives that, in their situation, are in line with several SDG's. These are about having positive effects on the environment, such as a reduction in CO2 emissions through dematerialised products, or on society, in all kinds of areas such as healthcare. But RI is not only about *positive* outcomes, it is also necessary to be responsible throughout the innovation process. Responsibility in outcomes and processes go hand in hand. To have a more responsible process, the innovation teams work with many stakeholders such as suppliers and NGOs in an agile and adaptative way. This allows to identify potential *negative* consequences more quickly, using risk assessments regularly. For the moment, the development of RI is voluntary, but according to Ms. Klesper it *will* soon be mandatory.

2.6.3. *Managerial implications*

For Deutsche Telekom's CSR director, several things need to be implemented or understood to develop effective RI processes. First, it is necessary to carefully analyse customers' awareness of RI. Do they know what it is? Does responsibility create value for them? Would they be willing to pay for these? If the demand for RI is not yet high enough, it is necessary to promote

²⁴ It is important to note that since this interview is oriented toward the product innovation responsibility, recent event in job cuts (RTBF, 2019) weren't analysed and considered as part of some potential organisational innovations' responsibility.

it through multiple media. Indeed, the company does not only want to develop RI's to improve the company's impacts on social and environmental aspects, it is also necessary that these innovations meet the company's economic constraints. It can be a key element to create measurement and feedback tools. Those help to regularly and effectively involve the stakeholders. There are also helpful to perform risk assessments allowing to influence the innovations development to reduce risks of unexpected *negative* impacts. It also allows to be more adaptable if, despite risk assessments, the innovation had unintended consequences and it is necessary to react quickly. Another key point is the integration of RI into the strategy. The company's management must integrate the responsibility in the global strategy of the company. The last point is the importance of the corporate culture. Indeed, to launch innovations that are responsible while having an adapted company's strategy, to promote a change in mindsets is also needed. It is important that management and employees understand the value of responsibility and that it makes sense for them to apply it in their daily work. If the culture is not adapted, it can be complicated to achieve success in developing RI. Finally, the company needs to stay honest, avoiding potential risks of *greenwashing*.

The CSR director identified many advantages related to RI. First, placing additional constraints on ecological aspects often reduces the resources needed for innovation and increase the efficiency of use. It goes even further; these additional constraints make possible to boost creativity and thus to develop totally new innovations compared to what could have been done otherwise. These constraints also make possible to be ahead of the various regulations and to be prepared for the day when they might be stricter. At the level of the company's employees, RI creates meaning and increases employee motivation. Although, it is not clear if this has an impact on their productivity. Given the importance that responsibility is taking on in the company, it has become a critical factor in attracting talents and is therefore a real recruitment argument. Giving demands for responsibility in public's opinion, companies applying it can benefit from an improved reputation, as long as they do not fall into the trap of *greenwashing*. Finally, all this can provide an increased competitive advantage over the other telecommunications companies. Nevertheless, including responsibility in its innovation process is increasingly essential and all players should be involved. When responsibility *will* be considered by all companies, this might not be a source of competitive advantage anymore.

Many disadvantages and challenges related to RI were mentioned. According to Ms. Klesper, the company needs to remain honest and credible regarding its RI strategy toward external stakeholders, it is essential to avoid *greenwashing*. This would greatly reduce many of the benefits of RI identified earlier. Gathering and considering the opinions of the various stakeholders can also be a challenge since these can sometimes be numerous and have very different objectives. Accordingly, it can be difficult to reconcile the points of view and satisfy everyone. Extended processes due to stakeholders involvement, different risk assessments can be costlier than more traditional innovation processes. Finally, the finding of a suitable business model for RI is a great challenge. Indeed, the company also has financial objectives, and need to find a viable model to cover both. However, it is not always so simple and very good ideas cannot be developed because no viable model has yet been identified.

2.7. Cofinimmo

2.7.1. *Context*

Cofinimmo is a real estate company operating in 4 different countries: Belgium, France, Germany and the Netherlands. Cofinimmo works mainly in B2B and has divided its activities into two segments. The first is the health real estate, *e.g.* nursing homes, rehabilitation institutes, sports halls. The other segment is office space, rented to companies of all sizes. This is in their historical segment of the company. In addition, the company also owns many coffees shops. Developing innovative is essential to preserve the sustainability of the portfolio (*Appendix 36, p.252*) and because in this sector competition is quite strong and margins low.

2.7.2. *Understanding of RI*

According to the head of sustainable development & innovation, M. van Buggenhout (*interview transcript in Appendix 38, p.254*), RI is a question of taking social and environmental aspects into account in the innovation process by bringing additional well-being. A framework like the SDG's can be used to determine RI objectives. Considering these aspects, the company exceeds the law requirements, although in the real estate context, social and environmental regulations are initially very strict, and it may be difficult to go ahead of them. To determine the impacts of an innovation, risk assessments allow to reduce the probability of *negative* consequences occurring. However, it is important to work in an agile and adaptative manner to quickly respond to potential problems as they occur anyway. To improve innovation processes, it is

necessary to consult stakeholders. They are considered as important assets as knowing their point of view, expectations, allows Cofinimmo to develop tomorrow's innovations more effectively.

2.7.3. *Managerial implications*

According to M. van Buggenhout, certain things should be known and implemented to effectively integrate responsibility in the innovation process. First, companies should set objectives and new constraints to improve social and environmental aspects. Using SDGs can make it easier to determine KPI and different success measures to assess progress toward objectives. Second, in the real estate sector, errors have long-lasting consequences, so mechanisms must be put in place to minimise the possibility of error. To do this, it is necessary to carry out small-scale tests, buildings life cycle analysis to maximize their value over time. To support these mechanisms, it is important to involve stakeholders and collect feedback from users. This can also be useful to identify the needs of the customers and what brings them value. The last point to be considered is the mindsets, from two different points of view. First, the concept of RI must be clear to all those working in the company and be part of the company's culture. And secondly, Cofinimmo tries to change the vision of real estate for its clients. Indeed, when trying to improve the environmental specificities of a building, it can be at the detriment of comfort. Clients must realize that, sometimes, trade-offs might be made. For example, improving one feature of a building, such as its insulation or CO₂ consumption, can reduce other features such as comfort. This is the essence of responsible innovation, considering the different stakeholders require trade-offs.

Many mechanisms should be put in place, but the company can benefit from some advantages. First, it allows them to differentiate from the competitors by adding features and by launching new products or services. In addition, it can increase the margin on products. When building a facility, willing to be more responsible can increase the construction costs, yet, these buildings have more value and retain it over a longer period compared to traditional construction. Engaging in RI gives additional meaning and motivation to the people working in the company. It would even allow creativity to be generated and more daring innovations to be developed. And thanks to all this, the company can be seen as a *good* company and its image is improved in the eyes of customers.

Unfortunately, there are some general and real estate related disadvantages. First, to reach an agreement on what RI might be. According to M. van Buggenhout it is difficult to define responsibility, as we all have different value systems. The same difficulty applies when it comes to reconcile the different expectations and objectives of stakeholders. In addition, the involvement of stakeholders, the building of life cycle studies and the various tests to be carried out may lengthen the process. Moreover, in the real estate sector unexpected consequences can appear very slowly since processes are quite long. Doing things differently than what the company was used to do can therefore be riskier since, the feedback is often received at the end of the investment and it is likely that it is too late to react. This makes adaptations post-launch more difficult. Moreover, it is not always easy to innovate because the company does not have control over the activities of its tenants, thus limiting the control Cofinimmo has on the responsibility of the outcomes. Finally, regulations are already very strict, so it is not always easy to go further to try to differentiate yourself from the competition.

3. Theoretical vs. practical confrontation

In this section, the objective will be to compare the findings from the interviews with the managerial implications identified in the previous section (III). We will highlight the convergence and divergence areas and we will mention the additional managerial implications identified by the managers. For the sake of clarity and in order to discuss the key managerial implications, we will mention the new ones only if they were proactively identified by at least two interviewees. The other ones will be annotated as “personal opinion”.

3.1. Characteristics of RI

In the first part of this thesis, we attempted to clarify and to propose a working definition of what the responsible innovation concept may mean. Indeed, the RI concept does not reach consensus and some companies do feel this concern related to its lack of clarity. As mentioned by Cofinimmo, “*what does it actually mean to be responsible?*” Indeed, what are the characteristics of a RI? P&G also mentioned that “*there is no handbook for it, we are writing it*”. In this theoretical vs. practical confrontation, we were pleased to see that most of the theoretically mentioned characteristics are also reflected in the companies’ conceptions of RI.

The first characteristic that arises on a regular basis concerns the responsibility of the outcome. All the interviewees agreed that RI should consider the 3P's when launching innovations. As in our theoretical part, this means that companies might need to stay profitable to survive on their market, but that they should *do no harm* (mainly on human health, working conditions, the environmental pollution and consumption of resources). They should even try *to do good* by developing morally and ethically desirable solutions. Some interviewees had clearer objectives than others, such as Deutsche Telekom mentioning CO2 emission reductions and limiting *negative* impacts on human health as in our theoretical part. As for Engie mentioning that they “*understood that the existing economic model will not work for very long, and that new concepts had to be introduced such as environmental, human and social concerns*”. Sometimes, as Flash mentioned, considering the society means providing a better “*quality of life (with) less noise pollution, green playing fields, not spending time in the car [...]*”. Almost all the managers we've met understand the need of adding the social and environmental dimension to the economic aspect of their corporate activities. P&G and Engie respectively stated: “*we had the impression that talking about profit in the context of sustainable development and therefore responsible innovation could be taboo. And in fact, people understand very well, even more so when it comes to a listed company that you have to make money first to be able to invest behind it*”, it is about “*improving my business and in the same time improve the society with a big S*”. Although, as we mentioned in the theory, Cofinimmo highlighted that it can often be a question of trade-offs between the 3P's. It might be a question of prioritizing the subjective values that can guide the decision of the innovators when it comes to the responsibility objectives of the outcomes.

Secondly, involving the stakeholders in the innovation process was mentioned by all the companies except Carrefour. The emphasis was mainly put on by Flash, for which being responsible in their innovations is about creating a trust relationship with the cities in order to “*bring (the micro mobility solution) together to the cities*”. For P&G, Deutsche Telekom and Engie, the stakeholders involved in the innovation process are mainly seen as resources to achieve responsibility objectives, since they “*know more on how to market things and how to have successful (RI) outcomes*”. This vision is close to what we stated in the theory; indeed, we mentioned the need to involve stakeholders to enrich the perspective and help companies reflect and develop RI's. They mention that this can be achieved through “*partnerships with civil society, NGOs, political authorities, trade unions, the associative movement [...]* the academic

sector [...] (it) means working together in a collaborative manner.” However, as stated in the literature review it is also important to simply listen and take the interest of your stakeholders into account, as for Cofinimmo. It is mainly about listening and considering the opinion of stakeholders as they mentioned: “*whether the process is responsible or not, you have to ask your customers, your stakeholders*”. Proximus added that they really listen to the point of view of their stakeholders, and if “*they say it’s not a good thing, then we will not launch it*”.

Thirdly, the idea of performing risk assessments seems to be a key component of large companies developing product and process innovations. It was a key component for all the interviewees except for Carrefour and Flash. The larger companies, such as Engie mentioned that they can perform five years in-house testing because they have the resources to do it. P&G, for instance, has “*a whole dashboard to review the innovation and know a little bit about what it does. In this case, it is done in the form of pilots*”. This is in line with what we stated in the theoretical analysis about risk assessment being conducted by internal experts or with pilot launches to determine risks. Although, Flash didn’t mention any prelaunch risk assessments process. Whereas, they are trying to reduce the potential *negative* impact by developing an effective Quality Assurance in the production process. As for Carrefour is developing mainly marketing and organisation innovations, the innovation director stated that “*to better understand (the consequences), because there are things I don’t understand or know, everything like AI, all that I am interested in, but not an expert. So, I’m trying to understand through something like LinkedIn (articles)*”. Compared to the literature review, no emphasis was put on the importance to perform the risk assessment throughout the process or on the importance of a good communication between the actors of this assessment.

Finally, the critical reflexion on innovation motivations was reported as a key component of RI as well. We mentioned in the theoretical analysis that when an additional constraint in terms of innovation was introduced, companies had to determine what objective (other than profit and legal compliance) they wanted to pursue. We stated that companies could either develop their own objectives in terms of responsibility or decide to follow some legitimated well-known goals, as the SDG’s. Two of the seven companies mentioned the SDG’s helping them motivate their innovation choices. Cofinimmo explaining that “*we do not innovate to innovate. We innovate to respond, at some point in time, to a need that we have identified [...] the SDGs are a pretty good framework because they cover a lot of things.*” Deutsche Telekom confirmed that

they were also launching “*adequate products filling the needs of the market [...] working with the SDG’s [...] to determine goals*”. However, most of the companies we’ve met mentioned that internal responsibility objectives are guiding their innovations. In the case of P&G, each of their brands are setting very clear ambitions they want to achieve for 2030 with environmental and/or social aspects. Engie can, for example, rely on multidisciplinary teams “*to think about what it is like to be responsible in today’s market [...] develop (ing) a kind of responsibility charter in terms of innovation*”. Although sometimes the ambitions are not officially set or communicated throughout the company as it is the case for Carrefour who simply mentions that “*all our reflexions on innovations [...], naturally, I hope, are made with a view to saying: here, we are doing well*”.

Compared to what we theoretically stated, the adaptative characteristic doesn’t seem to be a key element. In the literature review, we mentioned that companies should innovate in an adaptative way since uncertain consequences could appear post-launch. Consequently, innovators should be able to adapt their innovations to react. Secondly, we mentioned that being adaptative could be needed since companies were evolving in a changing environment, especially concerning the legislation and the stakeholder’s expectations. While some, such as Flash and P&G didn’t mention it, Engie stated that flexibility is needed to change the way companies are considering innovations, to change the business model. Their understanding is not really linked to the fact that innovators must react and adapt their innovations when unpredicted consequences arise. Cofinimmo also added that “*any innovation, whether responsible or not, must be adaptable [...] the round trips and feedback from users then make possible to improve it in order to best meet the needs of these same users. I don’t think it’s specific to a responsible innovation process.*” Yet, Proximus, Carrefour and Deutsche Telekom argued that this adaptability was important. Especially when trying to act responsibly even when the context is changing, the latter saying that “*working very agile by prototyping and testing regularly in order to have the perception of the different stakeholders. This allows to have a better idea of the potential negative impacts that could arise and allows to work on their mitigation.*” Although, since three companies out of seven mentioned it, we can still consider this as a potential feature of RI.

Nonetheless, one characteristic of RI we identified in the literature review was not perceived in the same way by companies. The idea that RI must voluntarily go beyond law and profit

requirements doesn't reach consensus. Flash and P&G consider this characteristic as an integral part of how they act responsible, as *"when you decide to do responsible, you can get ahead of the game"*. While others recognise its importance, but not as a key characteristic. For example, Cofinimmo mentioning that *"in real estate, the law is (already) very challenging and ambitious and it will become more and more"* and Engie adding that *"from the moment you are pushed by your environment, by politics or by trade unions to do things, it is no longer entirely voluntary"*. Deutsche Telekom even stated that although they are doing voluntarily for the moment, it *will* soon be mandatory for every company. Compared to the literature review, none mentioned that laws concerning innovations might be outdated as a reason to go beyond what is legally required.

In conclusion, through the interviews, we attempted to test eight of the RI characteristics of our working definition. Seven were corroborated during the interviews with the managers, a summary is proposed in the table below (*table 12*):

Something they perceive (+) / they don't (-)	Theoretical analysis	Interviews							Conclusion
	Litterature review	Carrefour Belgium	Flash (Circ)	Procter & Gamble	Engie	Deutsche Telekom	Cofinimmo	Proximus (B2B)	
No opinion () Mitigated opinion (~)	Characterisitics of RI								
Stakeholder involvement	(+)		(+)	(+)	(+)	(+)	(+)	(+)	Confirmed
Global risk assessment	(+)	(~)		(+)	(+)	(+)	(+)	(+)	Confirmed
Voluntary basis	(+)		(+)	(+)	(~)	(~)	(~)		Mitigated
Flexible and adaptative process	(+)	(+)			(~)	(+)	(~)	(+)	Confirmed
Reflection on innovation motivations	(+)	(~)		(+)	(+)	(+)	(~)		Confirmed
Take the society into account	(+)		(+)	(+)	(+)	(+)	(+)	(+)	Confirmed
Take the environment into account	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	Confirmed
Take the economy into account	(+)	(+)		(+)	(+)		(+)	(+)	Confirmed

Table 12. Summary of the RI characteristics identified

3.2. Advantages

During the interviews held, many advantages were mentioned by the interviewees. First, we compared the results linked to the advantages previously identified in the literature; we will then compare the additional advantages mentioned in interviews.

The first advantage identified in the theoretical analysis was the potential increase of the company and employees performance. We stated that the company could optimize the use of its resource, better understand the customer needs and having motivated and efficient employees thanks to RI initiatives. Most interviewees agreed with the employee's performance's advantage. According to M. Beznik, working at P&G, *"when you have ambitions, it always creates a passion for innovation that is multiplied [...] It is a vector of*

motivation and, at the end of the day, of performance.” Concerning, the increase of the company’s performance itself, the interviewees were less convinced. However, M. Beznik also mentioned: *“there is a direct correlation in the operations, the less packaging I have, the less I must recycle it, the better it is”* corresponding to what we stated previously. Some parts of the innovation process can be optimized, although, not all of them. M. van Buggenhout’s opinion is more clear-cut, he also thinks that this can be a motivating factor, but he is much less convinced by the impact on performance. According to him, *“it is not easy to show that a so-called responsible company performs better than others [...] but it doesn’t degrade it.”* In addition to this, according to M. Spelkens, *“when you introduce innovation KPI’s in the global analysis of the company’s performance, it is clear that it also contributes to it (the performance)”*. Indeed, if the management considers the achievement of innovation’s KPI to be a factor of the performance of the company, it should increase as responsible innovation might require many new KPI’s. He raised here the question of *“which are the company’s performance criteria?”*. Interviewees didn’t highlight the advantage of better understanding the customer’s expectations and thus performing better as we argued in the literature review.

Secondly, most of the interviewees agree that RI can help develop the company’s activities. As mentioned in our literature review, companies believe that adding new social and environmental constraints *“boosts the creativity and allows to develop innovations”* as Ms. Klesper said. This might help innovators to think about new ideas or opportunities that they would not have thought of in a more classical innovation context. This is corresponding to what we previously stated, that involving more stakeholders in the innovation process could lead to new innovative ideas. Furthermore, due to the need of being adaptative, the company might have more occasions of improving its different existing products and develop incremental innovations.

“Being ahead of new regulations” was also confirmed by most companies. We argued in the theoretical part that including responsibility in the innovation process and working with new constraints could be a good way to prepare for the future legal standards, reducing the risks of not complying quickly enough. While most companies agree on this point, the motivations differ from what we identified in the literature. Indeed, we identified that being ahead of the law would reduce the costs of complying with it and that involving stakeholders could help to anticipate market trends and react quickly to the various changes. In practice, it is a question of being ready when certain regulations come into effect and of saving time compared to

competitors by already being compliant. However, according to Engie, *“it can be a bit complicated (to be ahead of regulations), because, in our industrial activity, the regulator is faster than us. Modifying our electricity production processes takes 15 years”*.

Then, we mentioned in the literature review that RI can lead to a brand image improvement, this was corroborated by all seven companies. Theoretically, we stated that this improved brand image might lead to different advantages such as more loyal customers and a better acceptance of innovations since they are developed by a company perceived as *good*. This can also lead lower wages while staying attractive for new talents. Interviewees agreed that having a good brand image was an advantage, although they didn't deepen the reflexion further than this. We can, nonetheless, note that this image enhancement isn't always toward the costumers. Indeed, for Flash, their responsible attitude linked their innovative micro-mobility solution mainly had an impact on their key stakeholder, the cities.

Consequently, as stated in the literature, RI could help developing a competitive advantage. We have seen that there might be several ways to increase the company's competitive advantage. First, by going beyond the law and adding constraints, the company should develop new processes, new products or types of organisation. These can provide a competitive advantage because they may be innovations that the company would not otherwise have thought of. In addition, thanks to the risk assessments that are carried out throughout the process, the company can adapt better and thus survive better compared to other companies. Furthermore, RI companies may also be able to save on insurance costs. Finally, involved stakeholders might be a valuable source of knowledge and know-how. All this can provide a competitive advantage according to the literature. Interviewees strongly agree that being a responsible innovator can lead to a stronger position than the competitors. Like, by being ahead of regulations, as in the literature, or by giving additional value to consumers through responsibility. However, Deutsche Telekom, believes that this might not be a source of competitive advantage in the long run because being responsible *will* become a standard and every company *will* get involved in RI. Notwithstanding, we do believe that even though RI could become mandatory, some internal (less competitor-oriented advantages such as the promotion of activity develop or employee motivation) advantages may persist.

Some advantages identified have been confirmed by companies and new ones have been highlighted throughout the interviews. We will cite the ones that have been mentioned by at least two companies. First, RI can attract new talents, we mentioned it quickly in the theory, but we did not mention it as an advantage. This is something experienced by two large companies, Deutsche Telekom and P&G, they have stressed this point very strongly and consider it a real advantage. According to M. Beznik, *“it (responsibility) is an entry point for the young talents that we want to recruit”*. It can also help to be a *good* company, more ethic. It is a question of *“feel good”* as Proximus said. It is very positive to the employees but also for the brand image. Secondly, the quality of the products developed seems to be improved. Indeed, RI could help developing realistic and long-lasting new products according to Flash, Engie and Cofinimmo. As RI can lead to higher qualitative products, these should last longer like the new Flash scooters. In the real-estate sector, *“a building for which we considered environmental aspects will keep its (economical) value through time”*.

Something they perceive (+) / they don't (-)	Theoretical analysis	Interviews							Conclusion
	Litterature review	Carrefour Belgium	Flash (Circ)	Procter & Gamble	Engie	Deutsche Telekom	Cofinimmo	Proximus (B2B)	
No opinion () Mitigated opinion (~)									
Advantages									
Increased company and employee’s performance	(+)		(+)	(~)	(+)	(+)	(~)	(+)	Confirmed
Promotes company’s activity development	(+)		(+)	(+)	(+)	(+)	(+)	(+)	Confirmed
Be ahead of new regulations and market trends	(+)			(+)	(-)	(+)	(+)		Mitigated
Brand image improvement	(+)		(~)	(+)	(+)	(+)	(+)	(+)	Confirmed
Increased value for the consumer			(+)					(~)	Personal opinion
Attract new talents				(+)		(+)			New
Being a "good" company (ethical motivation)		(+)		(+)			(+)	(+)	New
Help develop realistic and long-lasting products			(+)		(+)		(+)		New

Table 13. Summary of the advantages of RI identified

3.3. Disadvantages

Responsible innovation is considered to bring several major advantages; however, some disadvantages and challenges were identified in theory and in practice.

It was often mentioned during our interviews, that the number of stakeholders to involve might be difficult to manage, as according to Proximus *“there is always someone who will not agree 100% because of some little details”*. Deutsche Telekom added that *“it can be a challenge to gather all the points of view and expectations of all stakeholders involved”*. Indeed, we had previously highlighted the potential challenges related to the stakeholder characteristic of RI. First of all, the objectives of the stakeholders may be very different or even opposed. Secondly, stakeholders are not always straightforward about their objectives and sometimes hide their motivations. In addition, stakeholders are often spread over a large geographical area, and it is

not always easy to bring them together. Finally, it might be difficult to determine who is responsible (in case of problems) when so many people are involved. However, in practice, during our interviews, we found that the main challenge related to the stakeholders involvement was the different opinions to manage. As an example, M. Van Buggenhout told us: *“we know that in Brussels, there is a lack of habitation so the region will say ‘build more habitation’ and the inhabitants will say ‘we need less habitation’, [...] this can be a difficulty”*. It is not always possible to reconcile the point of view of every stakeholder. Nonetheless, according to M. Sonck, *“if you do it (working with the stakeholders) smart, (it’s) not at all (a problem)”* but M. Sonck also mentioned that everything was not optimal yet, problems exists in the management of stakeholders. So, a good example of stakeholders management is Engie, who has mapped his stakeholders and has been working on stakeholders management for 15 years. This has allowed them to be *“really used to it, it has become part of the company’s habits to deal with quite a few different stakeholders (it’s) rather an advantage”*. Therefore, stakeholders can be a factor of success. Since Flash is able to stand out mainly because of their efficient way of dealing with the micro-mobility expectations of local authorities. They can count on Partnership Managers acting as a contact point with cities and helping them to understand their needs and how these micro-mobility solutions work. M. Spelkens stated that to succeed in RI you need to develop multi-disciplinary teams, with people from *“technology, legal, engineers, [...] CSR [...], they developed a kind of responsibility code in terms of innovation, which is then shared across the company”*. The integration of internal stakeholders such as employees is very interesting as it might allow a better awareness, global commitment and legitimacy of RI. This shows that when companies can overcome the stakeholders involvement challenges, it might become an advantage to develop successful RI’s.

Another point identified in the literature is the increased costs linked to RI. It has been strongly confirmed during our interviews. The first reason is that, according to P&G, *“the bio-based product costs more due to costlier bio-based ingredients”* as the size of the market for RI products is not yet big enough to make enough economies of scale. The second reason is that companies might need to develop new processes costly to implement, maybe due to the cost of performing regular risk assessments or resources invested to promote responsible innovation behaviours inside the company. However, according to M. Sonck: *“No (it does not cost more), not at all. Now, if I refer to what I just said about data, what is very expensive is the security aspect. But we are also securing customers, but it’s certainly very expensive in terms of*

infrastructure, but we can't do otherwise, it wouldn't be responsible." It costs money, but it's something they'd never want to take away. Consequently, the potential higher cost of responsible innovation was confirmed in our interviews.

The fact that being a responsible innovator makes the innovation process longer, due to the larger integration of stakeholders and to the numerous risk assessments performed through the process, has been sustained during our discussions. It was said that these challenges may negatively impact the competitiveness of the company, as innovation is a very fast and reactive area. Although, as some manager see it as a problem, P&G acknowledges it's avoidable. M. Beznik explains that *"processes can't be longer, it is not acceptable, they can only be more complex and responsible"*.

We argued in our literature review that it could be difficult to predict the potential *negative* consequences of innovations as it can be a very approximative exercise and the future is only partially foreseeable. However, this inconvenience does not reach a consensus among the interviewees. Most of the companies agree on the fact that they need to "have their feet on the ground" and to be careful and ready to react if an unpredicted *negative* consequence occurs as mentioned by Carrefour and Cofinimmo. Yet, for Deutsche Telekom, Ms. Klesper stated that *"the challenge of limiting the potential negative impacts of responsible innovations is mitigated by multiple risk assessments through the innovation process."*

The idea of transparency and leakage issues has been strongly affirmed during the interviews. We identified in the literature that the asymmetry of information was essential in the development of a competitive advantage. Although, M. Beznik mentioned *"it is true that, when you work with more partners, we expose ourselves more to the outside, we have risks of leakage, [...] however, we need to lean forward, [...] and if we have leakage problems, let's retract back"*. This idea was shared by most companies. It is a risk, but this should definitely not stop them from innovating in a responsible way as we understand it in our working definition.

The last disadvantage we identified from literature is that it can be difficult to implement a technological risk assessment. Sometimes you are developing in-house technologies and it is difficult to find experts to perform assessments. Or it can be costly to hire external experts. However, most companies did not even mention it, so if it is an inconvenience, it is not the most

relevant one. This might be linked to the fact that all the companies we interviewed are relatively large companies with enough funds to perform those when necessary.

Companies also identified two disadvantages we didn't highlight in the theoretical part. The first point is that it might be very difficult to find a suitable business model. Responsible innovations may need new kinds of business models according to M. Beznik. Indeed, *“the barrier is ‘is there a business model for it?’ , [...], there are very good inventions that will never be marketable”*. Currently, companies working toward more responsible innovations are facing the unknown. The absence of consensus about RI is something mentioned by companies as it is something affecting the way they handle it. Secondly, RI sometimes requires investments. Companies do not always know the ROI they can get from these responsible innovations. This can be a significant barrier, especially when the shareholders are expecting a profit increase.

Something they perceive (+) / they don't (-)	Theoretical analysis	Interviews							Conclusion
	Litterature review	Carrefour Belgium	Flash (Circ)	Procter & Gamble	Engie	Deutsche Telekom	Cofinimmo	Proximus (B2B)	
No opinion () Mitigated opinion (~)									
Disadvantages									
Difficulties linked to the stakeholder management	(+)	(~)	(~)		(-)	(+)	(+)	(+)	Mitigated
Increased cost of innovation	(+)		(+)	(~)	(+)	(+)		(~)	Confirmed
Slowed down innovation process	(+)	(+)	(+)	(~)	(~)		(+)	(~)	Confirmed
Difficulties to predict the consequences of	(+)		(~)	(~)	(~)	(-)	(~)	(~)	Mitigated
Transparency issues	(+)		(-)	(+)	(~)	(-)	(-)	(~)	Infrimed
Difficulty to implement a technological risk	(+)		(-)		(~)				Infrimed
No consensus on RI (difficult to find RI business				(+)			(+)		New
New way of working lead to talent loss					(+)				Personal opinion
Investing in new way of doing is risky					(+)		(+)	(+)	New
Trade-off between RI characterisites needed							(+)		Personal opinion
Difficult to prevent consumers to act irresponsibly							(+)		Personal opinion
Decline client's demands when irresponsible								(+)	Personal opinion

Table 14. Summary of the disadvantages of RI identified

3.4. Attention points

The interviewees confirmed four of the attention points identified in our theoretical analysis. Those were specifically mentioned as key success factors or risks, or as an integral part of how the companies were achieving the development of RI and so an implicit attention point to consider.

The first key element highlighted in the interviews was the adoption of a coherent corporate strategy responsibility. Five respondents recognised the importance of this element mentioning that adapting the global strategy and the company structure to the RI efforts was essential to succeed. As Deutsche Telekom said, *“responsibility and sustainability are, of course, implemented in the strategy”*. We indeed mentioned that having a global strategy oriented

toward responsibility was helping companies to reach their RI objectives. P&G even pointed out that their strategic objectives “*force for good, force for growth*” was adopted for P&G at the same time as the various brands announced their ambitions in terms of responsibility. This allowed P&G to be consistent, as mentioned in the literature, with the innovation and global strategy of its brands. Engie and Flash, for which responsible micro-mobility was the reason behind its creation, have had a global corporate strategy focused on responsibility before the development of RI. As Engie explains, their overall objective concerning the energy transition and their organisational structure promoting *co-elaboration* ⁽²⁵⁾ facilitate the development of RI’. The *co-development* makes possible “(in the RI) to find skills internally and often also externally, which makes possible to develop new products”. Engie creates new multi-disciplinary teams, develops responsibility objectives together, so that RI is a global and legitimate commitment. At Proximus, the question of responsibility in innovations began to arise when a reformulation of the global CSR 2020–2023 strategy was carried out by the new CEO, Ms. Leroy. It now includes innovations and the innovation department as main pillars of the corporate responsibility.

Secondly, we mentioned in our literature review the importance of measurement tools. Those can help react quickly if *negative* consequences appear, and help the company evaluate its level of responsibility to identify future improvements. This point of view was confirmed by five of the seven interviewees. They mentioned that there is a particular need for “*KPIs that makes possible to determine whether or not my (responsible) innovation is successful*” but also “*to measure the company’s responsibility in the products it produces*” on the basis of public nonfinancial KPIs in the case of Engie. To optimally support the development of RI, P&G recommends to “*sets an ambition, declare it publicly, because we want to be held responsible for this and (develop) KPI’s to measure progress because it is not just let’s be nice and looking good*”. It was mentioned during the interviews that it is essential to set clear objectives at the beginning of the RI process. Engie even recommends developing shared RI KPI’s with the sector to help compare the different responsible product offered. Measurement and feedback tools can be useful since they can easily be shared with the public or the shareholders. In terms of future improvement, we can see that Flash uses data collection mechanisms and feedback tools to define hotspots where the e-scooters are being used most. This helps them to make e-

⁽²⁵⁾ Originally from French: “co-elaboration”

scooters greener since they are increasingly shared. It is important to mention that compared to the RRI measurement tool we used as an example in the literature review, none of the companies we've met used such external tools. All the companies mentioned using internal KPI's. Deutsche Telekom stated that they were involving NGOs giving them an external post-launch feedback based on SDG's. This could help compare the results to the RI expectations and see if and how it had positive impacts on society.

Third, P&G and the other companies agree that *“culture is absolutely fundamental, it is endemic [...]”*. To succeed in RI, companies recognise that an internal sense of commitment and a leadership promoting RI are essentials. This cultural change and the promotion of the ethical acceptability of the work carried out, as discussed in theory, can be difficult, especially for employees. The interviewees recommend to *“empower the people behind the processes”* and to *“give more responsibility to employees and convince them to act responsibly”* concurring to what we said previously about leaders promoting responsibility and encouraging employees to act according to their values. Cofinimmo underlines that a cultural change is also necessary to ensure that the company's adapted global strategy can be followed, *“it is first the culture, then the strategy”*. The idea that a company where responsibility is fully integrated into the innovation strategy goes hand in hand with a company where responsibility is an essential element of culture was, indeed, already mentioned it in the theoretical part. We also stated that it was important that managers promote a freedom of choice toward the employees. Flash illustrated this when stating that since they are a non-hierarchical start-up, every employee has the chance to have a real impact on the innovations.

The last attention point corroborated by the interviews is the importance of promoting RI, we indicated in the theory that RI efforts should be promoted among consumers in a clear, adapted way to promote an added value for the buyer. As P&G says, *“make sustainable irresistible”*. In addition, companies may have to persuade consumers of the real benefit for society, environment and economy of their innovations and avoid being perceived as *greenwashers*. Therefore, Engie pushes to develop *“public KPI's [...], which means that the end consumer can also check everything that is said [...] it is a guarantee of conscientiousness, to show that the finished product or service is at the service of RP”*. Nevertheless, Cofinimmo mitigated this attention point by explaining that it is difficult to promote RI since everyone finds different advantages to it. Moreover, the consumer's behaviour appears not to be consistent, thus, the

best way to promote RI would be to achieve “*not just one (customer) criterion but enough criteria for it to be adopted*”.

However, to thrive in RI, we saw in the literature that it was essential to have a good understanding of your market, the current legislation and especially the willingness of potential consumers to pay for those. This opinion is not supported by all companies met as only P&G and Deutsche Telekom concurred mentioning that they needed “*awareness of the consumer [...] will they pay for these innovations?*”. Flash, Engie and Cofinimmo mitigated their opinion, although they recognise the value of “*understanding in what game you play*” or that as a company they “*never ask enough questions [...] to your customer’s*”, the question of readiness to pay is less crucial (or not mentioned). As stated by P&G “*it’s a big bet [...] people don’t buy and 60% will tell you: of course, I’ll buy*”. In other words, companies must make RI irresistible and that “*it doesn’t have to be more expensive*”. Cofinimmo adds that understanding people’s enthusiasm for RI, and estimating an acceptable selling price, is very complicated. “*There are people who are very responsible when they are at home, in a family context but when they arrive in an office (not anymore), we do not always have behaviours that are coherent according to the situations in which you find yourself*”. In consequence, we mitigated this attention point as the readiness to pay wasn’t a concern for the majority of the companies we interviewed.

The five previous attention points were addressed in the theoretical analysis and could therefore be corroborated or mitigated during the interviews. In the meantime, the interviewees highlighted three new elements: avoid *greenwashing*, shape the law affecting your innovation and find a suitable business model. Although finding a suitable business model was only mentioned once by P&G and mitigated by Engie, we decided to leave it out of the key managerial implications of RI analysed.

An attention point that frequently arises in interviews is avoiding *greenwashing*, as it is seen as a major risk related to RI. As previously stated, it’s important to report and promote the efforts made by companies regarding RI. But as explained by P&G “*risks of getting involved in an environmental fight and ultimately being criticized and therefore losing reputation*” are important. This could cancel the previous positive effects on the brand image. For this reason, Cofinimmo considers that this is a real attention point; companies cannot “*greenwashing at*

vitam eternam”. As a result, to reduce the *greenwashing* risks, it might be imperative to remain totally honest and credible in the eyes of the stakeholders, and mainly consumers as according to Deutsche Telekom. In addition, P&G advises companies to be surrounded by internal and external experts to challenge the feasibility and effective responsibility of an innovation. It appears to be important to launch only “*ambitions that are well worked out [...] with (experts) [...] support to really work on ambitions that are real and that it is not just something like that*”.

The last element making a significant difference in the development of RI is the ability to co-construct the law affecting your innovations. We mentioned in this thesis that RI is mainly voluntary and that companies are at the forefront of the law, which can be an advantage. Nevertheless, three companies pointed out that this may be an opportunity to shape the laws affecting your innovation in collaboration with the authorities. It is an important aspect of Proximus’s success in the field of healthcare drone deliveries, ensured that by “*working together with regulators, via Agoria, (it) ensure that the regulation is a good one*”. After all, when companies set the “*standard so high, (they are) in debates [...], in co-creation of laws or we disrupt the law [...] if we decide to be in the responsible party, we will be able to anticipate the game. In fact, you are writing the game, it’s really better than following it*” and this can be a major success factor. Particularly when a RI is not currently possible because of a lack of legislation, such as for the recycling of P&G’s diapers as they are not legally recyclable because considered as unrecyclable waste.

Something they perceive (+) / they don't (-)	Theoretical analysis	Interviews							Conclusion	
	Litterature review	Carrefour Belgium	Flash (Circ)	Procter & Gamble	Engie	Deutsche Telekom	Cofinimmo	Proximus (B2B)		
No opinion () Mitigated opinion (~)										
Attention points										
Adapt the company strategy and organisational	(+)		(+)	(+)	(+)	(+)		(+)	Confirmed	
Understand the market and the readiness to pay	(+)		(~)	(~)	(~)	(+)	(~)		Mitigated	
Develop measurement and feedback tools	(+)		(+)	(+)	(+)	(+)	(+)		Confirmed	
Develop an adapted culture and management style	(+)		(+)	(+)	(+)	(+)	(+)	(+)	Confirmed	
Promote the importance of RI	(+)		(~)	(+)	(+)	(+)	(~)		Confirmed	
Find a suitable business model				(+)	(~)				Personal opinion	
Avoid "greenwashing" (work ethically)				(+)	(+)	(+)	(+)			New
Shane the law affecting your innovations			(+)	(+)				(+)		New

Table 15. Summary of the RI attention points identified

4. Theoretical vs. practical confrontation summary

This concludes our comparison between the theoretical approach based on the scientific literature and the empirical analysis based on interviews with seven managers that consider

themselves active in RI. It was planned that we would have an additional interview with an insurance company but due to a selection bias, this interview was not kept for analysis. Here, we refer to a systematic error in the sampling of subjects for study. This term includes all the biases that may lead to the fact that the subjects actually observed during a survey do not constitute a representative group of the populations supposed to be studied and therefore do not make possible to answer the questions asked (Delgado-Rodríguez & Llorca, 2004). Indeed, although this insurance company defined itself as responsible, the interview showed that the company had, and recognised having no idea of what RI was. However, there is some information that we can draw from this. There is a real misunderstanding around this subject, which legitimate the approach of this thesis to clarify this concept. Secondly, we can question the motivations of this company to hold this interview while admitting not knowing what RI was. We could think of a real pressure of showing that one's company is responsible at every occasion they can.

After analysing the seven interviews, we are able to present a table summarizing (*table 16*) some of the key managerial implications of RI discussed *i.e.* the advantages, disadvantages and attention points. The exchanges with the interviewees made us realize that the field reality does not necessarily reflect the perceptions of RI theoreticians and academics.

Aside from the managerial implications that we have cross-referenced during the interviews, two things were striking us. To begin with, it seemed to us that the “responsible innovation” concept is not institutionalized or formalized in the companies interviewed, as it can be for SD or CSR. In fact, during our initial contact with innovative companies, we found that few of them hold positions referring to “responsible innovation”. While many of them mention positions restricted to the sustainable aspect of their innovations, such as “manager of sustainable innovation”. This does not integrate the complete notion of responsibility as we understand it in this thesis, but rather the notion of developing innovations integrating society and environment. In the same way, it was rare to see statements on companies' websites referring to RI practices beyond the usual discourse on safety, the environment and the consideration of society. For instance, many sites mention that “*through innovative solutions develop a better service*” or “*we develop innovative solutions that consider challenges of society*”. Yet, it is not a *problem* if they do not specifically use the term “responsible innovations” but use other terms referring to the same main ideas. The objective of this

theoretical vs. practical comparison wasn't to *rate* the level of compliance of companies to our understanding of RI. Nevertheless, we had the feeling during our interviews that companies do not seem to insist on the "responsibility" as "*respondere*" to innovations as a source of uncertainty by nature. But that they were rather referring to the sustainability and social commitments in relation to new goods, services or marketing practices. Companies seems to naturally agree to be precautionary when discussing the uncertainty and difficulty of understanding the (potentially *negative*) consequences of innovations. Although, very few spontaneously mention it and we had the impression that what was key in RI is to question the current responsibility of the innovation *e.g.* is my product "*good*" and considered "*responsible*" today? This doesn't really correspond to the idea popularized by Jonas mentioning that RI is about the immediate and future impacts of innovations. Consequently, we did not have a genuine feeling that the managers we have met question and perceive the additional precautionary measures to be taken regarding the uncertain nature of the innovations. However, this may be because the companies interviewed mainly referred to incremental innovations, as Flash, Carrefour or Cofinimmo, leading to less uncertainty in the outcomes. Else, none of the companies clearly mentions a difference between radical and incremental innovation when it comes to RI.

Then, we feel that for some companies, RI is already naturally embedded in the innovation process. This appeared particularly during interviews with Carrefour and Proximus. They are the ones who have the least institutionalized RI, with respectively no process or with a very limited process. These companies weren't highlighting or mentioning a need for responsible innovation processes since, on the one hand, for Proximus, "*not all people are bad. For innovation, it's the same thing, some people innovate for the wrong reasons, but there are not that many of them.*" The need to develop RI (processes) is deemed necessary nor critical. Likewise, for Carrefour, mentioning that "*naturally, and I hope, it is done (innovations) with a concern of saying here, we are doing well*".

Working definition RI characteristics	
- Adaptive - Critically reflect on innovation motivations - Define some innovation motivation internally - Rely on external objectives such as the SDG's - Identify potential risks - Develop a risk assessment mechanism (internal or external) - Integrate the social aspect - Limiting negative impacts on human health - Limiting negative impacts on working/living conditions - Promoting the ethical and morally acceptable solutions - Integrate the environmental aspect - Limiting environmental pollution (CO2, toxic products, etc.) - Reducing energy consumption - Preserve the diversity - Integrate the economic aspect - Create enough wealth for the company to stay competitive - Involve and consider the stakeholders - Voluntary - Go beyond current regulations and profit requirements	
Legend : Confirmed, New, Mitigated, Infirmated,	
Advantages	
- Increased company and employee's performance - Promotes company's activity development - Brand image improvement - Attract new talents - Being a "good" company (ethical motivation) - Help develop realistic and long-lasting products - Be ahead of new regulations and market trends	
Disadvantages	
- Cost of responsible innovation - Slowed down innovation process - No consensus on RI (difficult to find RI business model) - Investing in new way of doing is risky - Difficulties linked to the stakeholder management - Difficulties to predict the consequences of innovations - Difficulty to implement a technological risk assessment - Transparency issues	
Attention points	
- Adapt the company strategy and organisational structure - Develop measurement and feedback tools - Develop an adapted culture and management style - Promote the importance of RI - Avoid "greenwashing" (work ethically) - Shape the law affecting your innovations - Understand the market and the readiness to pay	

Table 16. Summary of the theoretical vs. practical confrontation

5. Limitations

First, we contacted different innovation and CSR managers and asked if they were “*working toward more responsible innovations*” since we were looking for companies considering themselves active in RI. Nonetheless, after the interviews, we realized that two out of seven companies weren’t *officially* developing RIs. We are convinced that their perspectives on the subject is valuable since it allows to highlight that companies recognise themselves as responsible innovators even though nothing is *specifically* put in place internally.

Secondly, our practical research about the definition and the implications of RI is based on the analysis of seven companies. The size of the population might not be representative of the Belgian market. Even though, we were in contact with companies from different sizes, sectors, working in B2B and B2C, allowing us to point out differences related to that. However, we can ask ourselves if these companies are representative of those of their own size and sector.

Moreover, the people we have been collaborating with during the interviews were always working in innovation and/or responsibility. Although, they were not always the most aware persons in the company to answer questions about the vision of RI, as well as the implications linked to it. Furthermore, since we interviewed only one person per company, we can’t guarantee that the interviewee is reflecting the company’s points of view. Accordingly, some of the information we gathered were more personal opinions as the interviewees mention “I”. This can lead to a lack of representativeness and objectivity. The fact that we interviewed internal employees of the innovation or responsibility department can be another source of subjectivity since, being proud of their accomplishments, they might exaggerate the effects of their work.

Furthermore, willing to determine the differences between literature and field reality, we let the interviewees give their point of view regarding their interpretation of RI and its implications. Yet, to investigate further, we asked questions that might have influenced the interviewees and their opinion about what we found in the literature.

Lastly, it is important to mention that one of the interviews, the Deutsche Telekom one, was performed via Skype due to organisational issues. Meaning that the understanding can be limited compared to a face-to-face interview.

V. Conclusion

1. Contribution and implications

Many studies available mention the responsible innovation concept, although few offer an analysis of what it may mean and of the managerial implications linked to its development in companies. The objective of this thesis was to propose a rigorous analysis of the concept of responsible innovation as well as the identification of some of the key managerial implications based on theoretical and empirical research.

First, a definition of RI based on different concepts related to RI, as well as on existing RI definitions proposed by various authors was established. To achieve this, we made some choices about the authors and the related concepts that were considered. For the related concepts, we chose to analyse some of the most recurring terms in the literature concerning corporate responsibility and, for the authors, we based our choice on the apparent scientific community's recognition of the said authors. This double approach has led us to identify eight characteristics which, combined, allowed us to propose a working definition of RI being *an adaptative and voluntary innovation process that consists in critically reflecting on the motivations and potential risks associated with these innovations by integrating the social, environmental and economic aspects and considers and involves the stakeholders*. We were then able to present an overview of some theoretical managerial implications. Our objective was to propose a list of some of the main consequences related to RI that may concern many companies.

Then, an empirical research was conducted based on interviews of seven companies developing RI, making it possible to compare and test our theoretical findings. This enabled us to bring more practical insights to some concrete implications of these responsible innovation's practices on the Belgian market. Most of the characteristics mentioned in our definition were confirmed during the interviews. The companies described RI as a reflective process leading to reviewed motivations that should consider society, environment and economy through careful consideration and involvement of stakeholders, mechanisms of control, and risk assessment. Even though the voluntary component (understood as going further than the law) was confirmed, the definition of "voluntary" was mitigated by companies because, in their view, RI is mainly motivated by the stakeholders' expectations and so the development of responsible

innovation is not really voluntary. RI is thus understood as **an adaptative innovation process that consists in critically reflecting on the motivations by integrating the social, environmental and economic aspects, through risk analyses and by considering and involving stakeholders** (removing the voluntary part of our theoretical working definition).

Additionally, thanks to the field analysis, we were able to confirm that RI can lead, among other things, to a competitive advantage. Indeed, RI companies can expect several benefits such as increased corporate performance through the optimal use of their resources and the introduction of new non-financial performance indicators. As employees' motivation increases, it is expected that they will be more productive at work and highly committed. Setting responsible innovation objectives can drive companies to be more inventive and help develop their activities with more qualitative, realistic and long-lasting (product) innovations. The companies, whilst giving out a positive brand image, have a positive impact on their revenue and might also attract new talent. The latter being seduced by the fact that companies launching responsible innovations can be seen as *good* and *ethical*.

In opposition to confirming many of the advantages linked to RI, these interviews allowed us to nuance the fact that many of the disadvantages we believed related to RI were not perceived as problems for the companies. Those corroborated are, firstly, a higher cost of developing and producing innovations, due to the additional price of "sustainable" raw materials, but also the potential additional expenses and resources that the company should mobilizes to behave responsibly during the innovation process. All these risk assessment mechanisms and stakeholder implications that help ensure that innovations are responsible, can also lead to a slower and more complex innovation process. This might slow down market launches and thus negatively impact competitiveness when RI companies are facing competitors mainly motivated by profitable and rapid market launches. Moreover, companies sometimes mention that a major concern related to RI is that, due to lack of clarity and consensus, they have to find a suitable business model for it by themselves. This can in turn amount to riskier investments, caused by uncertain ROIs. On the other hand, transparency issues and difficulties linked to risk assessments were infirmed by the companies interviewed, reducing the list of disincentives related to RI.

With regard to the main attention points: making the company's overall strategy responsible as well as adapting its organisational structure, culture and management style, developing measurement and feedback systems, and finally promoting the importance of RI, were theoretically identified and are echoed in the interviewee's discourses. The interviewees added two aspects to consider while developing RIs. First, companies should avoid at all costs falling into *greenwashing* and, for this reason, it is necessary to be transparent and cautious in setting achievable responsibility objectives. Secondly, it was also mentioned that to ensure successful RI, companies should help shape the laws that might affect their future.

In conclusion, we would like to highlight that responsible innovation is a relatively vague concept that does not reach consensus through the research community on what it may mean. Consequently, what is presented in this thesis are some of the most generic managerial implications. Therefore, the managerial recommendations we mention based on our interpretation of RI must be taken with caution. Furthermore, the implications identified are general and probably not applicable in the same way in large and small companies. This is why, decision makers are strongly encouraged to define their own meaning of RI relevant to their sector, size and the type of innovation, and to reflect it with respect to the rest of their business operations. Having a clear understanding of RI internally is key, as confusion between being responsible and doing *good* can exist, as our interview with Carrefour pointed out. There might sometimes be confusion, as M. Sonck from Proximus mentions, about RI and the various related concepts such as CSR or working *ethically*.

2. Limitations of this thesis

This thesis has been written as objectively and diligently as possible. The point of view of relevant authors has been considered. We have confronted the theory gathered to the field reality through interviews. Based on these, we have analysed the definition and implications of the RI concept. However, our thesis has its own limits due to several factors.

First, we started this thesis by mentioning that limiting innovations in a capitalist and globalised system was not something we considered *feasible*. However, some regulations limiting controversial scientific research programmes already exists. This is an important point since we analysed the concept of RI and its implications with a vision of innovations in a liberal and non-

regulatory context, where companies are the only one limiting and controlling their innovation potential when needed.

Secondly, six out of the seven interviewees were Belgian employees of mainly European established companies, even though many of them are active worldwide. The Belgian branches may work differently than the other ones. The results we gathered from the interviews might therefore not be representative of the vision and implications of RI outside of Belgium.

Thirdly, our analysis is done using the working definition of RI developed during this thesis and based on those written by RI authors and on the characteristics of several concepts close to RI. Consequently, it could have been different if we had worked with the definition of other authors or with other related concepts. Consequently, our conclusion would be different too.

Finally, as conscientiously as this thesis has been conducted, being students finishing our master's degree, our analysis may lack practical and pragmatic RI insights. Consequently, the interviews were an excellent opportunity to adopt a less academic view of the subject. We realize that a more prolonged exposure than a few hours in innovative and responsible companies would have been an important added value and would have allowed a greater perspective and a deeper understanding of the complex and challenging topic that RI poses. Indeed, interviews leave room for subjectivity in both the interviewees' answers, but also in our interpretation of these answers, facing a personal bias in the result interpretation. This uncertainty prevents us from precisely understanding the companies' involvement in responsible innovation.

3. Potential further research

The purpose of our thesis was to give a possible interpretation of the RI concept and to determine some key implications for companies. However, this work has some limitations, and further research may verify or deepen the conclusions made. We discuss some proposals for further studies.

First, we have mentioned that it seems to us that some companies were inherently considering themselves responsible and that consequently, a thorough and institutionalized consideration of

RI sometimes appeared not to be a key point to evaluate in the innovation departments. We may question, in this respect, whether our educational programme at the LSM (whose motto is “*Excellence and Ethics in Business*”) makes us more attuned to the question of responsibility in innovation. This raises questions about the role that the new generation of students and managers can play in RI behaviours and how an education background mentioning responsibility, sustainability and CSR, sometimes at the same level as profitability, would influence the companies of tomorrow.

Secondly, in the introduction and in the limitations, we noted that we have not considered regulations to limit innovation. It would be interesting to look at it to understand the impacts on innovation if scientific research or other R&D activities as we know today may be (legally) restricted. We may wonder whether a global legal system and global ethics committees in combination with more responsible innovators would ultimately not be the most effective way to reduce the possible drifts associated with innovations and their unpredictable consequences. In addition, it would be interesting to approach the underlying question of where the limit and impact of regulations on innovations lie. When and how could companies be the only one in charge of defining innovation limits?

Thirdly, in our analyses, we did not differentiate between radical and incremental innovations, partly because the companies we interviewed did not do so either. Although, it is conceivable that the process of RI is different for incremental and radical innovations and the implications too. It might be interesting to see what literature can teach us about this, but also to repeat interviews with companies that innovate incrementally and radically to look at potential changes in the implications.

In addition, we interviewed companies from different sectors and found that RI was applicable to all of them. Nevertheless, some implications affected some sectors more than others. Our small population of interviews does not allow us to draw any overall conclusions. We can ask ourselves whether all sectors can apply RI, and especially develop this question for companies in less industrialised countries.

Furthermore, one of the risks of responsibility in the corporate world is *greenwashing*. The phenomenon has been mentioned several times. Nonetheless, the subject has not been fully

researched. This risk influences companies in their decisions but also their willingness to engage in RI. This is an additional area to explore as it has some implications on how companies successfully communicate with the market.

Also, as our definition has been conceived based on the ones of some authors and some related concepts, it would be appropriate to repeat this exercise with other authors and concepts to prove or disprove the robustness of our proposal. During our thesis, when we came to measure the responsibility of the outcome, we limited ourselves to redundant examples of the literature such as how to “take into account society, the environment and the economy”. Nevertheless, it would be interesting to carry out studies to see more precisely what constitutes a socially, environmentally and economically responsible innovation, and even deepen the question of what could be relevant KPIs to measure the companies’ responsibility in innovations.

As KPIs could be defined thanks to future research, it would also be interesting to investigate the potential existing best practices about RI. Since the current research about RI are often theoretical. Analysing best practices in RI-active companies could motivate and push other ones to commit to RI.

Finally, in this thesis only the opinions of companies and our views as management students were considered. Therefore, it would be interesting to carry out a study to estimate the importance that customers attach to RI, beyond the studies conducted on CSR and other related concepts.

VI. References

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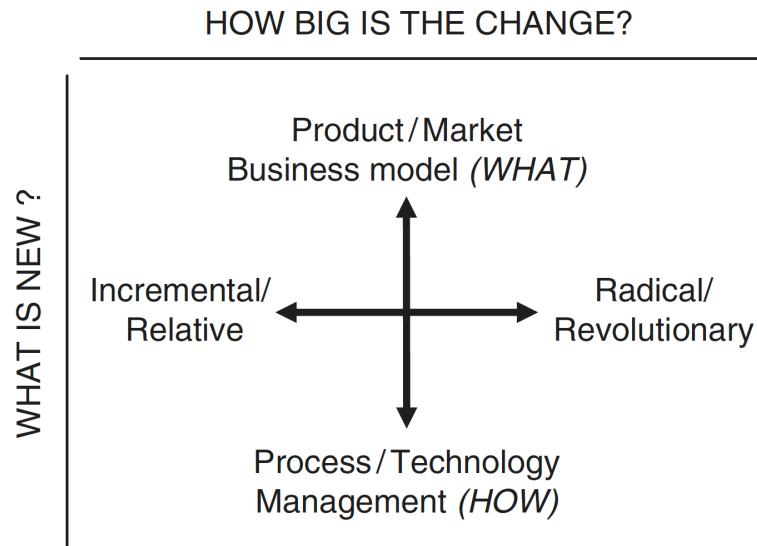
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- Williams, E. (2015). *Green Giants: How Smart Companies Turn Sustainability into Billion-Dollar Businesses*. New York: Amacom.
- Witkowska, J. (2016). Corporate Social Responsibility: Selected Theoretical and Empirical Aspects. *Comparative Economic Research*, 19 (1), 27–43. doi: 10.1515/cer-2016-0002
- World Commission on Environment and Development. (1987). *Our common future*. Oxford: Oxford University Press.
- Wu, J. (2013). Landscape sustainability science: ecosystem services and human well-being in changing landscapes. *Landscape Ecology*, 28 (6), 999–1023. doi: 10.1007/s10980-013-9894-9.
- Wu, S., & Wang, W. (2014). Impact of CSR Perception on Brand Image, Brand Attitude and Buying Willingness: A Study of a Global Café. *International Journal Of Marketing Studies*, 6 (6). doi: 10.5539/ijms.v6n6p43
- Wynne, B. (1993). Public uptake of science: a case for institutional reflexivity. *Public Understanding Of Science*, 2 (4), 321–337. doi: 10.1088/0963–6625/2/4/003
- Xie, C., Bagozzi, R., & Grønhaug, K. (2015). The role of moral emotions and individual differences in consumer responses to corporate green and non-green actions. *Journal Of The Academy Of Marketing Science*, 43 (3), 333–356. doi: 10.1007/s11747-014-0394-5
- Zwart, H., Laurens, L., & van Rooij, A. (2014). Adapt or perish? Assessing the recent shift in the European research funding arena from “ELSA” to “RRI”. *Life Sciences, Society and Policy*, 10 (11), 1–19. doi:10.1186/s40504-014-0011-x

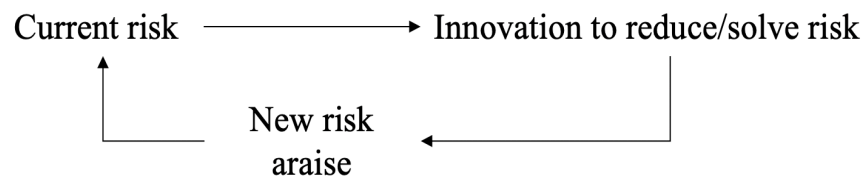
VII. Appendix

Appendix 1 – Typology of innovations



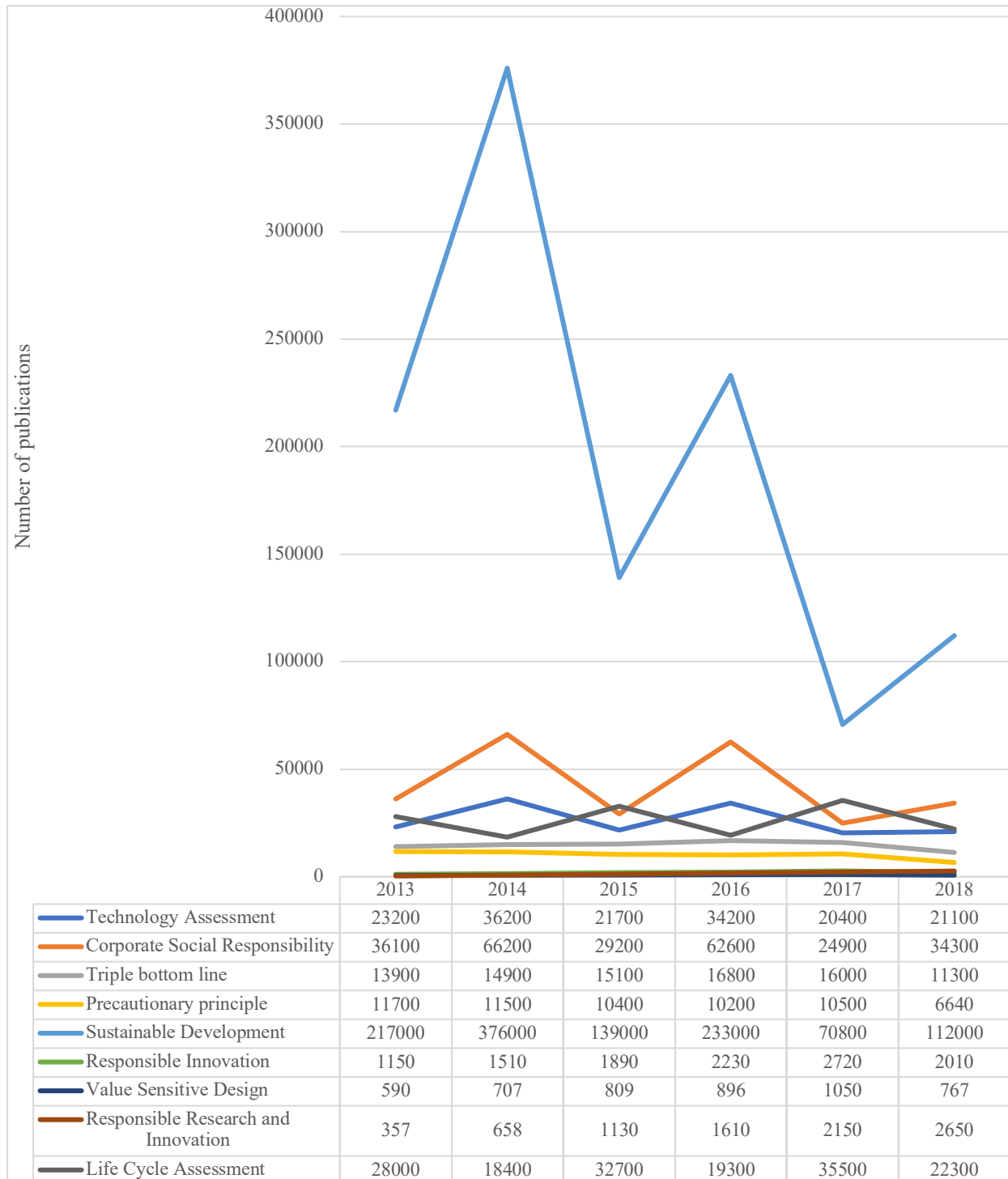
Source: Gailly, 2011, p.20

Appendix 2 – Diagram of innovations aiming to reduce a risk related to past innovations



Source: Author, 2019

Appendix 3 – Variation of the number of publications per year related to the different concepts related to responsible innovation since 2013



Source: Author based on Google Scholar, 2019

Appendix 4 – Illustration of the triple bottom line definition of sustainability



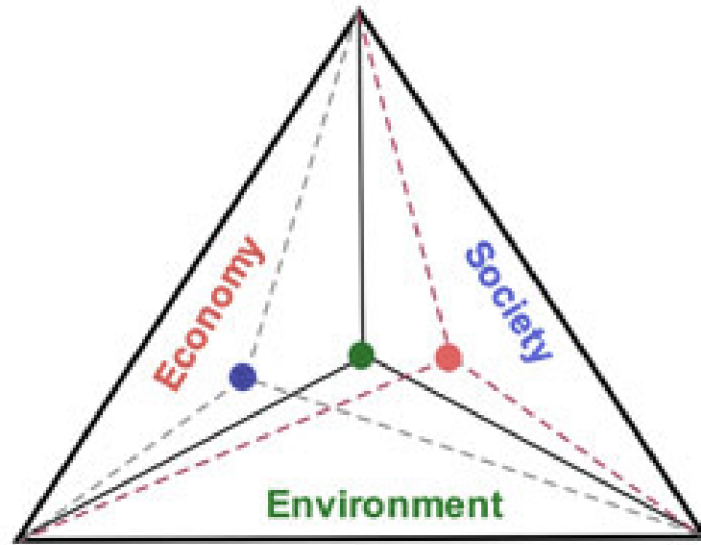
Source: Wu, 2013, p. 1002

Appendix 5 – Illustration of the fair risk management

		Consensus on values?	
		Yes	No
Consensus on facts?	Yes	Regulation <i>Ex. Car accidents</i>	Negotiation <i>Ex. Fossil fuels</i>
	No	Pacification <i>Ex. Mobile phones</i>	Deliberation <i>Ex. Nuclear energy and GMOs</i>

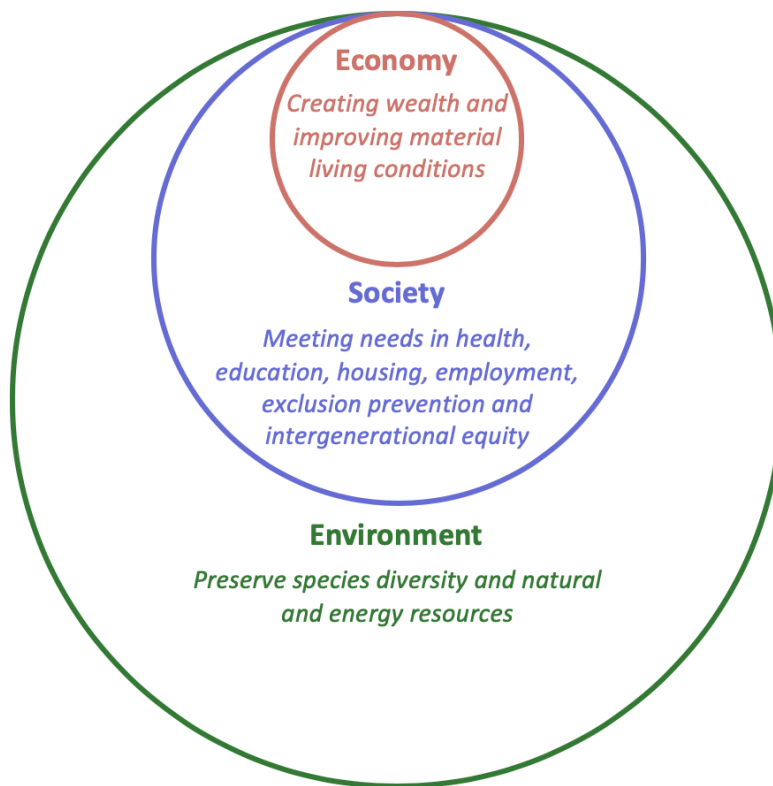
Source: Author based on Meskens cited in Gailly, 2018

Appendix 6 – Illustration of the “weak” sustainable development



Source: Wu, 2013, p.1002

Appendix 7 – Illustration of the “strong” sustainable development



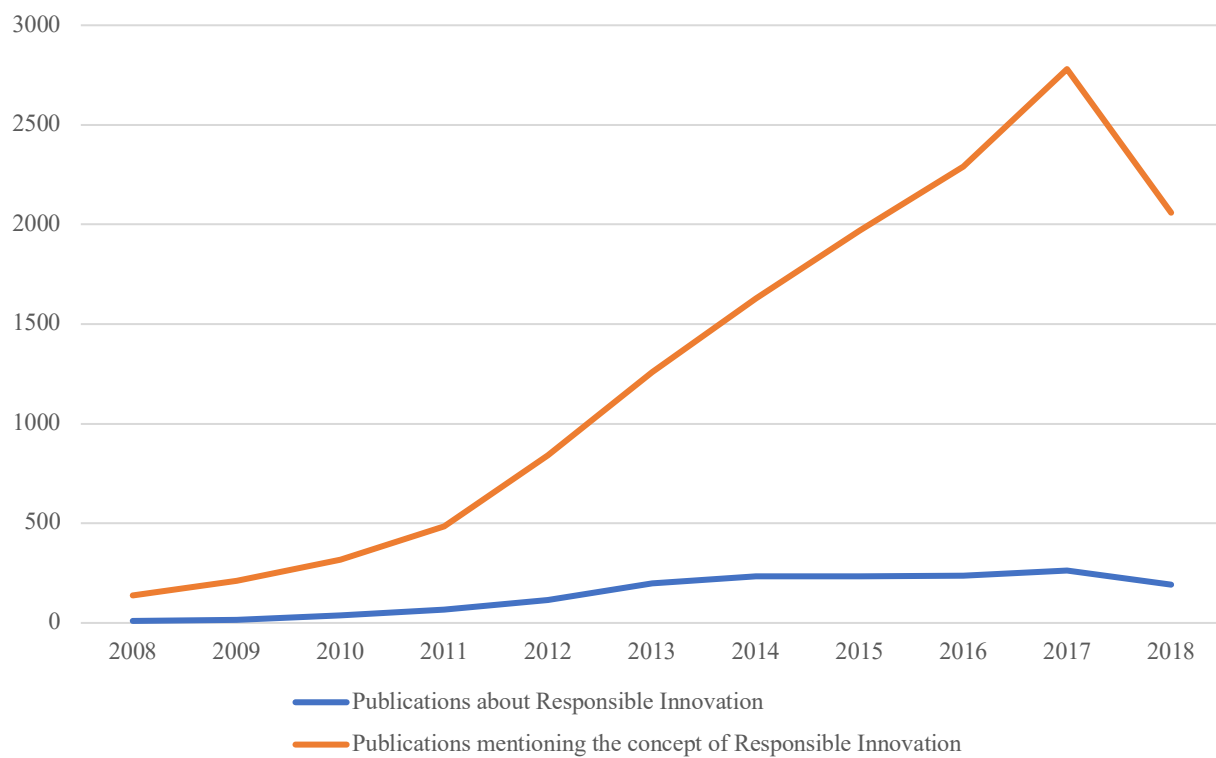
Source: Author based on Wu, 2013 and Pavie, 2012

Appendix 8 - Summary of the concepts related to responsible innovation

<i>RI Related concept</i>	Some of the key authors who wrote about the concept	The key objectives of the concept	When could the concept play an important role when innovating	Some recommendations to implement the concept	Some of the concept's key characteristics
<i>Technology assessment</i>	(Deeler & Ladizes, 2004), (Smit & Leijnen, 1991), (Delvenne & Brunet, 2006), (Bunkers, 2002), (Gardner, 2006), (Schwartz, 2002), (Birk, 1992), (Gardner & Korten, 2002), (Rip, 1997), (Misa & Schot, 1995), (Collingridge, 1980)	Technology assessment (TA) is a scientific, interactive and communicative process which aims to contribute to the formation of public and political opinion on societal aspects of science and technology.	Process	- Defining the expected impacts - Creating interaction among the stakeholders - Advising institutions about actions that could be done	- Advise but do not make decisions - Science, interaction and communication as pillars - Take economic, social and environmental issues into consideration
<i>Corporate social responsibility</i>	(Carroll, 1999), (Gonzalez-Perez, 2013), (Carroll & Naidu, 2003), (Gardner, 2006), (Carroll & Tloke, 2010), (Gardner, 2011), (Carré et al., 2012), (Bondy, Moon & Marten, 2012), (McElhenny, 2009), (Schroeder & Schroeder, 2004)	Corporate Social Responsibility (CSR) is the part of a company's business strategy that takes into consideration the social, economic and environmental aspects that affect the company	Process and outcome	- Integration of external effect related to a company's product - Involvement of more stakeholders in the designing process. - Integration of economic, social and environmental responsibility in the management.	- Voluntary basis - Take economic as well as social and environmental aspects into account - Stakeholder involvement - Part of the identity and philosophy of the company
<i>Value sensitive design</i>	(Friedman, 2002), (Kahn, 1997), (Friedman, Kahn, & Borning, 2008), (Hiruma & Tawani, 2008), (Wiener, 1954), (Albrechtsland, 2007), (Borning & Müller, 2012)	VSD is a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process	Process and outcome	- Considering the impact of the technology on direct and indirect stakeholders - Conceptualizing values to determine the potential problems that be created - Evaluating the success of a design through empirical research	- Proactive method impacting the development of a product through its design process. - Develops product promoting values in all kind of environments - Take the impact on stakeholders into consideration
<i>Triple bottom line</i>	(Elkington, 2004), (Roberts & Cohen, 2002), (Hammer & Pivo, 2007), (Blakely & Bradshaw, 2002), (Salvatore & Arnold, 1988), (Dierker, 1999), (Gardner, 2006), (Gardner & Angelissen, 2012), (Vandelay, 2004)	Program's policies, or activities designed to create or retain jobs and wealth in ways that contribute to economic, social and environmental well-being over time	Outcome	- Understanding the difference between economic growth and economic development - Trying to improve the well-being (which is not always linked with economic growth) - Taking into consideration the value of non-monetary factors of a business.	- Inter and intragenerational equity - Focus on well-being (created by not only economic factors) - Accounting of the economic, social and environmental impacts.
<i>Precautionary principle</i>	(Gardner & Abouchar, 1991), (Gardner, 1997), (Klein & Viner, 2000), (Tobias, 2000), (Vernerschi, 2001), (Godard, 2001), (Gardner, 2006), (Whitely, 2006), (Hunyadi, 2004), (Graham, 2004), (Meskens, 2013)	Take precautionary measures in advance of scientific evidence on present risks emanating from an activity	Process and outcome	- Assess risk impact - Assess risk probability - Adaptively and flexible decision-making process - Prevention of the risk of damage in a proportional and effective way at acceptable cost	- Risk assessment and alternative assessment - Proactive - Adaptive and ongoing (ex-ante and ex-post) - Transparent and informative towards public - Constraint harm to the Planet and People at acceptable cost for Profit
<i>Sustainable development</i>	(International Union for Conservation of Nature and Natural Resources, 1980), (World Commission on Environment and Development, 1987), (Daly, 1990), (Gardner & Korten, 2000), (Kalfi, 2009), (Pavie, 2012), (Meadows, Meadows, Randers & Behrens, 1972), (Daly, 1990), (Laszlo & Laszlo, 2011)	Development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs	Outcome	- Take the environment into account to preserve the biodiversity and the natural resources - Take the economy into account to create wealth - Take the society into account to satisfy needs of the current generation and the futures ones	- Take the Planet, People and Profit into account - Risk assessment mainly toward the environment - Need collective effort, stakeholders need to be involved
<i>Responsible Research and Innovation</i>	(van Schoenberg, 2011), (Zwart, Laurens & van Rooij, 2014), (Owen & Goddard, 2010), (van Schoenberg, 2014), (van Oudenenden, 2014), (Lee & Potts, 2013), (European Commission, 2002), (European Parliament, 2013), (Barben, Faber, Seim & Guston, 2008), (Sutcliffe, 2011)	a transparent, interactive process by which all actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its application, with the aim to allow a proper embedding of scientific and technological advances in society	Process and outcome	- Take the environment, society and profit into account - Develop research and innovation process that are ethical and socially acceptable thanks to adaptive, responsive, inclusive and multidisciplinary teams - Involve the stakeholders - Perform risk assessment	- Take 3P into account (respecting the EU values) - Be ethical and socially desirable - Involve stakeholders in a transparent, adaptive, inclusive and multidisciplinary way - Perform risk assessments for safe and responsible outcomes - Two aspects, product and process responsibility
<i>Life Cycle Assessment</i>	(Kralisch, Ott & Genicke, 2015), (Furuvik et al., 2009), (Gourue et al., 2011), (ISO, 2006)	The compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product throughout its life cycle, from consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal)	Process	- Collect data iteratively to quantify pertinent inputs and outputs of a product - Assess the potential environmental impacts thanks to impact categories and indicators - Review the purpose the scope to achieve consistent, complete and understandable recommendations - Transparency to ensure clear and well communicated assumptions and results - Compare different products with the same purpose to choose the best (with the least environmental impacts)	- Advise decision-makers who will make decision based on values and trade-offs - Risk assessment and alternative assessments - Transparent process - Iterative data collection when more and more data is available - Reduce impacts on the environment although other tools can be used to complete the social and economic dimension

Source : author, 2019

Appendix 9 – Number of publications about or mentioning the RI concept since 2008



Source: Author based on Google Scholar, 2019

Appendix 10 - 20 most cited publications written by different authors

Cites	Authors	Title	Year	Source	Publisher	QueryDate
910	J Stilgoe, R Owen, P Macnaghten	Developing a framework for responsible innovation	2013	Research Policy	Elsevier	22/04/19
707	R Owen, P Macnaghten	Responsible research and innovation: From science in society to science for society, with society	2012	Science and public	academic.oup.com	22/04/19
697	R Von Schomberg	A vision of responsible innovation	2013	philarchive.org		22/04/19
319	R Von Schomberg	Prospects for technology assessment in a framework of responsible research and innovation	2012	Technikfolgen abs	Springer	22/04/19
319	R Owen, J Stilgoe, P Macnaghten	A framework for responsible innovation	2013	Responsible ...	academia.edu	22/04/19
307	RJ Owen, JR Bessant, P Macnaghten	Responsible innovation	2013	Wiley Online Library		22/04/19
223	R Von Schomberg	Towards responsible research and innovation in the information and communication technologies and society	2011	Available at SSRN 2	papers.ssrn.com	22/04/19
162	V Blok, P Lemmens	The emerging concept of responsible innovation. Three reasons why it is questionable and calls for a radical	2015	Responsible Innovation	Springer	22/04/19
159	T Hellström	Systemic innovation and risk: technology assessment and the challenge of responsible innovation	2003	Technology in Soci	Elsevier	22/04/19
145	R Owen, N Goldberg	Responsible innovation: a pilot study with the UK Engineering and Physical Sciences Research Council	2010	Risk analysis: An in	Wiley Online Library	22/04/19
141	H Sutcliffe	A report on responsible research and innovation	2011	MATTER and the E diss	unimi.it	22/04/19
140	M Halme, M Korpela	Responsible innovation toward sustainable development in small and medium-sized enterprises: a resource	2014	Business Strategy &	Wiley Online Library	22/04/19
120	A Grunwald	Responsible innovation: bringing together technology assessment, applied ethics, and STS research	2011	Enterprise and Worl	run.unl.pt	22/04/19
118	M Van Oudheusden	Where are the politics in responsible innovation? European governance, technology assessments, and beyond	2014	Journal of Respons	Taylor & Francis	22/04/19
107	J Van den Hoven	Value sensitive design and responsible innovation	2013	Responsible innovation	Wiley Online Library	22/04/19
103	B Taebi, A Correlje, E O'Connell	Responsible innovation as an endorsement of public values: The need for interdisciplinary research	2014	... of Responsible .	Taylor & Francis	22/04/19
101	A Grunwald, C Groves	What is "responsible" about responsible innovation? Understanding the ethical issues	2013	Responsible innovation	researchgate.net	22/04/19
92	BC Stahl	Responsible research and innovation: The role of privacy in an emerging framework	2013	Science and Public	academic.oup.com	22/04/19
80	E Fisher, A Ripstein	Responsible innovation: Multi-level dynamics and soft intervention practices	2013	Responsible innovation	Wiley Online Library	22/04/19
76	A Nordmann	Responsible innovation, the art and craft of anticipation	2014	Journal of Respons	Taylor & Francis	22/04/19
75	M Burget, E Bardone, M Jir	Experiment earth: responsible innovation in geoeconomics	2017	Science and engine	Springer	22/04/19
75	J Stilgoe	Experiment earth: responsible innovation in geoeconomics	2015	taylorfrancis.com		22/04/19
75	BC Stahl, G Eden, M Jir	From computer ethics to responsible research and innovation in ICT: The transition of reference discourses	2014	Information & Man	Elsevier	22/04/19
71	G Gaskell, H Gottweis, P Macnaghten	Publics and biobanks: Pan-European diversity and the challenge of responsible innovation	2013	European Journal c	nature.com	22/04/19
68	F Wicksell, AL Carew	Quality criteria and indicators for responsible research and innovation: Learning from transdisciplinarity	2014	Journal of Respons	Taylor & Francis	22/04/19
64	P Macnaghten, R Owen	Responsible innovation across borders: tensions, paradoxes and possibilities	2014	... of Responsible .	Taylor & Francis	22/04/19
63	K Pandza, P Ellwood	Strategic and ethical foundations for responsible innovation	2013	Research Policy	Elsevier	22/04/19
63	BC Stahl, G Eden, M Jir	Responsible research and innovation in information and communication technology: Identifying and engaging	2013	Responsible innovation	researchgate.net	22/04/19
60	R Owen, D Baxter, T Ma	Beyond regulation: risk pricing and responsible innovation	2009	Responsible innovation	ACS Publications	22/04/19
59	P Xavier, C Daphne, SV	Responsible innovation: from concept to practice	2014	books.google.com		22/04/19
58	V Blok	Look who's talking: responsible innovation, the paradox of dialogue and the voice of the other in communication	2014	Journal of Respons	Taylor & Francis	22/04/19
54	A Grunwald	The hermeneutic side of responsible research and innovation	2014	Journal of Respons	Taylor & Francis	22/04/19
54	C Voegtlin, AG Scherer	Responsible innovation and the innovation of responsibility: Governing sustainable development in a global	2017	Journal of Business	Springer	22/04/19
53	S De Saillie	Innovating innovation policy: the emergence of 'Responsible Research and Innovation'	2015	Journal of Respons	Taylor & Francis	22/04/19
52	K Sykes, P Macnaghten	Responsible innovation—opening up dialog and debate	2013	Responsible innovation	academia.edu	22/04/19
52	V Blok, L Hoffmanns...	Stakeholder engagement for responsible innovation in the private sector: Critical issues and management p	2015	Journal on Chain a	wageningenacademi	22/04/19
52	DH Guston, E Fisher, A J	Responsible innovation: motivations for a new journal	2014	Taylor & Francis		22/04/19
49	BC Stahl, N McBride, K	The empathic care robot: A prototype of responsible research and innovation	2014	... Forecasting and	Elsevier	22/04/19

Legend : *Authors selected for the RI existing definition part*, *Authors already mentioned in the ranking*, *Authors not selected due to no additional perspective on RI definition*

Source: Author based on Google Scholar, 2019

Appendix 11 – Summary of existing definitions of responsible innovation

<i>RI Related concept</i>	Some of the key authors who wrote about the concept	The key objectives of the concept	When could the concept play an important role when innovating	Some recommendations to implement the concept	Some of the concept's key characteristics
<i>Technology assessment</i>	(Decker & Laidlaw, 2004), (Smith & Leijten, 1991), (Delvenne & Brunet, 2006), (Bunders, 1990), (Schot & Rip, 1997), (Schot, 1992), (Biese, 1992), (Guston & Sarevitz, 2002), (Rip, Misa & Schot, 1995), (Collingridge, 1980)	Technology assessment (TA) is a scientific, interactive and communicative process which aims to contribute to the formation of public and political opinion on the potential societal, economic and environmental impacts of science and technology.	Process	- Defining the expected impacts - Creating interaction among the stakeholders - Advising institutions about actions that could be done	- Advise but do not make decisions - Science, interaction and communication as pillars - Take economic, social and environmental issues into consideration
<i>Corporate social responsibility</i>	(Carroll, 1999), (González-Perez, 2013), (Carroll & Shabana, 2010), (Wikowska, 2016), (Benabou and Tirole, 2010), (Gotschalk, 2011), (Crane et al., 2008), (Carroll & Maignan, 2002), (McElhenny, 2009), (Schneider & Schneider, 2004)	Corporate Social Responsibility includes the point of view of stakeholders, taking into account the economic, social and environmental aspects that affect the company	Process and outcome	- Integration of external effect related to a company's product - Involvement of more stakeholders in the designing process. - Integration of economic, social and environmental responsibility in the management.	- Voluntary basis - Taking economic as well as social and environmental aspects into account - Stakeholder involvement
<i>Value sensitive design</i>	(Friedman, 2002), (Klein, 1997), (Friedman, 2008), (Wagner, 1994), (A Brechtshaus, 2007), (Borning & Muller, 2012)	VSD is a theoretically grounded approach to design technology that accounts for human values in a principled and comprehensive manner throughout the design process	Process and outcome	- Considering the impact of the technology on direct and indirect stakeholders - Conceptualizing values to determine the potential problems that be created - Evaluating the success of a design through empirical research	- Part of the identity and philosophy of the company - Proactive method impacting the development of a product through its design process. - Develops product promoting values in all kind of environments - Take the impact on stakeholders into consideration
<i>Triple bottom line</i>	(Elkington, 2004), (Roberts & Cohen, 2002), (Hammer & Pivo, 2017), (Blakey & Bradshaw, 2002), (Sabouret & Arndt, 1988), (Denser, Hellwell, & Kahneman, 2010), (Easterlin & Angelescu, 2012), (Vancley, 2004)	Programs, policies, or activities designed to create or retain jobs and wealth in ways that contribute to environmental, social, and economic well-being over time	Outcome	- Understanding the difference between economic growth and economic development - Trying to improve the well-being (which is not always linked with economic growth) - Taking into consideration the value of non-monetary factors of a business. - Understand the interaction between economic, social and environmental factors.	- Inter and intragenerational equity - Focus on well-being (created by not only economic factors) - Accounting of the economic, social and environmental impacts.
<i>Precautionary principle</i>	(Cameron & Abouchar, 1991), (Godard, 1997), (Kourilsky & Viney, 2000), (Tubiana, 2000), (Gordon, 2006), (O'Brien, 2006), (Hunzadi, 2004), (Graham, 2004), (Meskens, 2013)	Take precautionary measures in advance of scientific certainty to prevent risks emanating from an activity	Process and outcome	- Assess risk impact - Assess risk probability - Adaptively and flexible decision-making process - Prevention of the risk of damage in a proportional and effective way at acceptable cost	- Risk assessment and alternative assessment - Proactive - Adaptive and ongoing (ex-ante and ex-post) - Transparent and informative towards public - Constraint harm to the Planet and People at acceptable cost for Profit
<i>Sustainable development</i>	(International Union for Conservation of Nature and Natural Resources, 1980), (World Commission on Environment and Development, 1987), (Daly, 1990), (Gendron & Revet, 2000), (Auerling & Vivien, 2006), (Lauriol, 2004), (Kadiri, 2009), (Pavie, 2012), (Meadows, 1972), (Daly, 1990), (Laidlaw & Laidlaw, 2011)	Development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs	Outcome	- Take the environment into account to preserve the biodiversity and the natural resources - Take the economy into account to create wealth - Take the society into account to satisfy needs of the current generation and the futures ones	- Take the Planet, People and Profit into account - Risk assessment mainly toward the environment - Need collective effort, stakeholders need to be involved
<i>Responsible Research and Innovation</i>	(von Schomberg, 2011), (Zwart, Laurens & van Rooij, 2014), (Owen & Goldberg, 2010), (von Schomberg, 2013), (Gordon, 2006), (Laidlaw & Perts, 2013), (European Commission, 2002), (European Parliament, 2013), (Barben, Fisher, Selin & Guston, 2008), (Stuccliff, 2011)	a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (better) acceptability, sustainability and societal desirability of the innovation process and its marketable product (in order to allow a proper embedding of advanced technologies in society)	Process and outcome	- Take the environment, society and profit into account - Develop research and innovations process that are ethical and socially acceptable thanks to adaptive, responsive, inclusive and multidisciplinary teams - Involve the stakeholders - Perform risk assessment	- Take 3P into account (respecting the EU values) - Be ethical and socially desirable - Involve stakeholders in an transparent, adaptive, inclusive and multidisciplinary way - Perform risk assessments for safe and responsible outcomes - Two aspects, product and process responsibility
<i>Life Cycle Assessment</i>	(Kralisch, Ott & Grunke, 2015), (Frisvolden et al., 2009), (Guinée et al., 2011), (ISO, 2006)	The compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle (the consecutive and interlinked stages of production, distribution, use, and final disposal) or generation from natural resources to final disposal	Process	- Collect data iteratively to quantify pertinent inputs and outputs of a product - Assess the potential environmental impacts thanks to impact categories and indicators - Review the purpose the scope to achieve consistent, complete and understandable recommendations - Transparency to ensure clear and well communicated assumptions and results - Compare different products with the same purpose to choose the best (with the least environmental impact s)	- Advise decision-makers who will make decision based on values and trade-offs - Risk assessment and alternative assessments - Transparent process - Iterative data collection when more and more data is available - Reduce impacts on the environment although other tools can be used to complete the social and economic dimension

Source : author, 2019

Appendix 12 – Illustration of the different levels of responsibility of the company



Source: Author based on Pavie, 2012

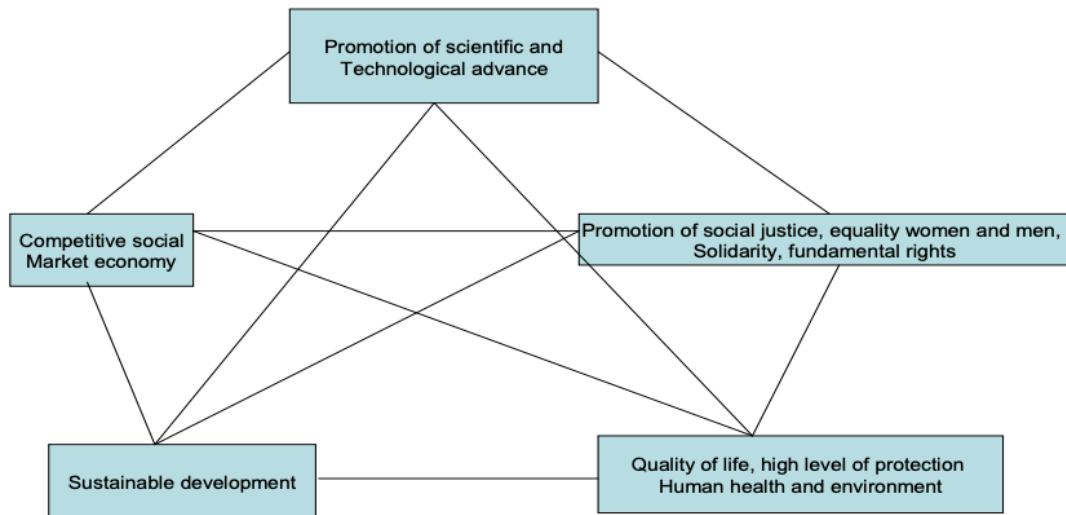
Appendix 13 – Detailed summary of the RI characteristics

Characteristic	RI related concepts										Existing definitions of RI						
	Responsible innovation	Technology Assessment	Corporate social responsibility	Value sensitive design	Triple bottom line	Precautionary principle	Sustainable development	Responsible Research and Innovation	Life Cycle Assessment	Owen et al. (2013)	Blok and Lemmens (2015)	Hajme and Korpela (2013)	Gruenewald (2011)	Van Oudenarden (2014)	Van den Haven (2013)	de Sille and Melvecky (2016)	Pavie (2012)
About the process																	
Stakeholder involvement	Yes	Yes (relevant stakeholders and communicative towards others)	Yes (interactive involvement)	Yes (empirical stakeholder participation)	No	Yes (inform stakeholders)	Yes (collective effort)	Yes (transparent and multidisciplinary teams)	No (though transparency is recommended during the process)	Yes (commitment accessible to diverse stakeholders)	Yes (collective responsibility)	No	Yes (actively involved in reflection process)	Yes (actively solicits society's opinion)	No	Yes (active public engagement from R&D to market)	Yes (transparent and active collaboration)
Global risk assessment	Yes	Yes (anticipation of consequences)	No	Yes (on values)	No	Yes	Yes (assess possible impacts)	Yes (assess the impacts to develop appropriate and desirable research and innovation)	Yes (assessing the potential environmental impacts)	Yes (law is outdated)	No	No	Yes	No	Yes (gain knowledge of risks)	Yes	Yes
Voluntary limits (beyond law and profit requirements)	Yes	Yes	Yes	Yes (proactive)	Yes	No (mandatory in some countries)	Yes	No (not mentioned)	No (not mentioned)	Yes (law is outdated)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flexible and adequate decision-making process	Yes	Yes (but difficult when project launched)	Yes (continuous process because part of identity of organization)	Yes (only during product development phases)	No	Yes (process needs to be reviewable and adaptable and reversible)	No	Yes	Yes (iterative data collection can lead to review the results and even objectives/scope)	Yes (iterative process)	No	No	Yes (improved version of TA process)	No	No	No	No
Critical reflection on innovation motivation	Yes	No	No	Yes (critical reflection on why developing this innovation on this values)	No	No	No	No	No	Yes	Yes (ethical reflection on innovation)	Yes (reflection on what is the objective)	Yes (reflection on what is the objective)	Yes (reflection on what is the objective)	Yes (add morally relevant function)	Yes	Yes (question the need to answer society demands)
Reflection on what is known	No	No	No	No	No	Yes (gather information about scientific uncertainties)	No	No	No	Yes	No	No	Yes (better understanding of knowledge we have)	No	Yes (judge limits of unpredictability)	No	Yes (ask if able to assess risks)
About the outcome																	
Solve specific society issues and needs*	No	No	Yes (solve societal problem)	No	No	No	Yes (current needs should be met as a priority)	No	No	No	No	Yes	No	Yes (need to meet needs)	No	No	Yes (solve ethical and societal challenges)
Guarantee inter-generational equity	No	No	No	No	No	No	Yes	Yes (innovation needed to be sustainable)	No	No	No	No	No	Yes (sustainable innovations)	No	No	No
Take the society into account	Yes	Yes (ethical and social dimensions of technology)	Yes (employment of minority groups, participation in programs to improve the community, improved medical care, improved individual health and safety)	Yes (take stakeholders values into account)	Yes (reducing negative health impacts)	Yes (prevent effects on human health and ethics)	Yes (promote health, education, employment and prevention of exclusion)	Yes (health protection based on EU values)	No (additional tools needed for that)	Yes	Yes	Yes (human health benefits, reduction of poverty, good labour conditions)	Yes (consider moral and ethics)	Yes (ethically acceptable, and socially desirable)	Yes (morally relevant to do more good than be (or) as on health)	Yes (human health, privacy, education...)	
Take the environment into account	Yes	No	Yes (reduction in pollution)	No	Yes (saving energy and reducing the use of toxic products)	Yes (prevent serious and irreversible damage to the environment)	Yes (preserve species diversity and natural resources)	Yes (environment preservation based on EU values)	Yes (but subjectivity of the weighting of the importance of certain environmental aspects)	Yes	Yes	Yes (minimize environmental pollution, energy saving)	No	Yes (sustainable)	No	Yes	Yes (pollution reduction, preservation of the nature, ...)
Take the economy into account	Yes	No	Yes	No	Yes (reducing operating costs, capturing market premiums or improving employee retention and productivity)	Yes (economically acceptable cost)	Yes (improving wealth and living conditions)	Yes (the profit dimension is essential for the survival of companies)	No (additional tools needed for that)	Yes	Yes	Yes	No	Yes	No	Yes	Yes

* Society's needs are considered as critical needs that need to be answered such as health, education, housing, employment, prevention of exclusion (Pavie, 2012).

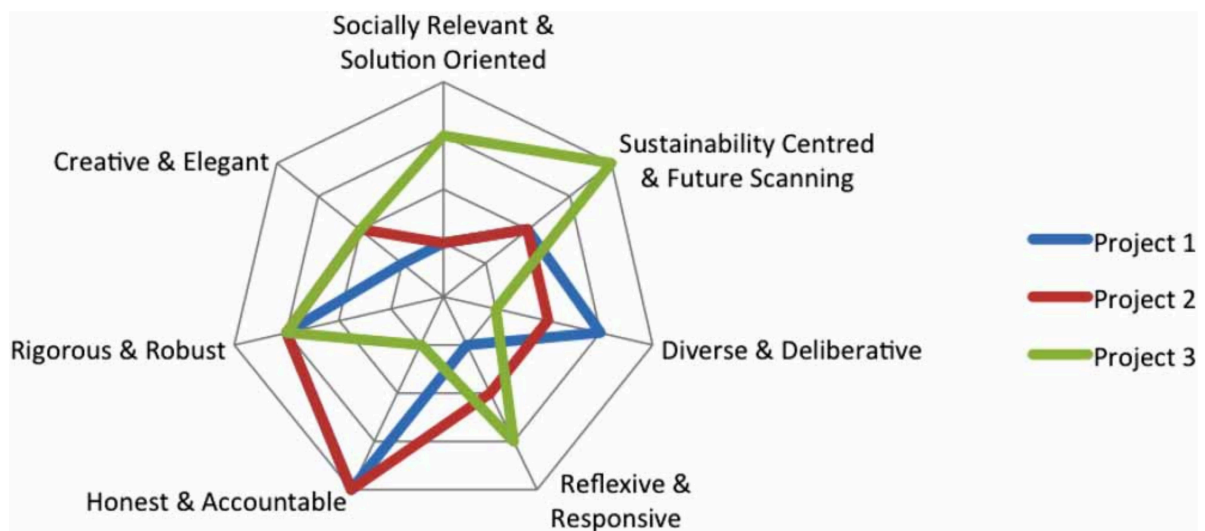
* Society's needs are considered as a critical needs that need to be answered such as health, education, housing, employment, prevention of exclusion (Pavie, 2012).

Appendix 14 – Normative anchor points derived from the Treaty on the European Union



Source: von Schomberg, 2013, p.11

Appendix 15 – Comparing projects based on quality criteria and indicators for RRI



Source: Wickson & Carew, 2014, p.14

Appendix 16 - Interview guide example

First of all, we would like to thank you for the time you have agreed to give us during this interview, all the data we will collect today will be really useful for our thesis.

Just a quick reminder, we are writing a thesis on the **rigorous analysis of the concept of responsible innovation (RI)** as part of our final year of master's degree in Business Engineering at the Louvain School of Management (UCLouvain). We started our thesis with a theoretical part based on an analysis of the existing scientific literature on this subject. In order to do so, we began by analysing the characteristics of other concepts that are somehow *related* to the idea of responsible innovation. Some of them include the CSR, sustainable development and risk assessment in technology and science. We compared the characteristics of these responsibility concepts well known with the characteristics identified in the different existing definitions of RI proposed by some authors. This allowed us to propose our own definition, since no consensus on the meaning of RI exists at the moment. Then, we identified the different possible mechanisms, advantages and disadvantages linked to our understanding of the RI concept. Finally, we identified a series of key success factors and risks to consider. The rest of our thesis focuses on comparing the theoretical elements to the field reality.

The interview will be structured in several parts. First, we will ask you general questions about you and your company. Then, we will discuss how your company integrates responsibility into the innovation mechanisms and discuss the advantages and disadvantages related to this. Finally, we will discuss the key success factors that have enabled your company to successfully implement these mechanisms of RI and remain competitive. Practically, for the interview, we will opt for a semi-directive approach where the objective is to give you as much freedom as possible to understand your opinion about RI without influencing you. Nevertheless, once you'll have answered the question, we will present you some findings from our theoretical literature in order to have an opinion on them as well. Feel free to let us know if you do not wish to answer a question, as well as if you wish certain data to remain confidential.

Context and concept clarification

In order to better understand the situation of the company and the context of the emergence of the concept of responsible innovation of your company we will ask some questions related to your activity, your customers and competitors. In our thesis we also defined, based on the literature, what we think are the key characteristics of the responsible innovation concept – in this interview we really want your individual opinion about it.

- Can you briefly describe yourself and your academic and professional background? (*name, age, academic background, previous positions, current position...*)
- Can you, in a few words, explain what your company is doing (*company activities and sector, value and mission, number of employees, countries of activity, typical project and customers...*)
- How would you describe the competition intensity in your sector (*any direct or indirect competitors*)?
- Do you consider your company to be innovative and what were the last projects you have been working on?
- Why is it important for your company to innovate?
- Could you tell us the story of appearance of the concept of responsible innovation in your company (*Why, When, How*)?
- What does it mean for you to be a «responsible innovator» – what are the key characteristics you identify?
- What do you think of the characteristics we identified through the literature in our working definition: *«responsible innovation is an adaptive and voluntary innovation process that consists in critically reflecting on the motivations and potential risks associated with these innovations by integrating the social, environmental and economic aspects and involves and considers the stakeholders»*?
 - Is RI an adaptative process?
 - Is RI voluntary?
 - Is RI about reflecting on the motivations of your innovation?
 - Is RI about carrying out a risk assessment?
 - Is RI about integrating social aspects?
 - Is RI about integrating environmental aspects?
 - Do you need to involve and consider the stakeholders?

Mechanisms

In our thesis, we decided to split the concept of responsible innovation between the responsibility of the innovation process (how can you act more responsibly during / before the market launch) and the responsibility of the outcome (for example: is this a responsible product or service?).

Mechanisms related to the responsibility of the process

- Do you consider that being a responsible innovator happens throughout the innovation process? And why?
- If yes, what are the things you do to become more responsible during the innovation process?
- What does your responsible innovation processes look like? (*Understand the responsible innovation process, the different steps and the interaction between them*)
- How is it different from a «classic» innovation process?

Mechanisms related to the responsibility of the outcome

- Do you consider that being a responsible innovator happens by delivering responsible innovative outcomes (*goods or services*)? And why?
- If yes, how do you define what a responsible outcome is? (*Based on internal values/objectives or relying on legitimate organization's like SDG's?*)
- How do you assess the level of responsibility of the innovative products? (*Post-launch and continuous assessments? Only when the product is launched? Based on what?*)
- What do you do differently than in a «classic» innovation process in order to have responsive innovative outcomes?
- Do you think it is possible to develop responsible innovative outcomes without having a responsible innovative process? And otherwise?

Advantages

During our thesis, we identified different advantages and disadvantages related to the practical implementation of responsible innovation mechanisms. The idea is to be able to compare the theoretical managerial implications we found with your personal experience with the responsible innovation concept. At the end we might discuss some of the managerial implications we found in the literature that you didn't mention in order to have your opinion about them.

- What are the benefits of a responsible innovation process for your company in particular and for the society in general?
- What are the benefits of responsible innovation outcomes for your company in particular, and for the society in general?
- What do you think of these advantages we identified through the literature?
 - Increased company performance and employee performance
 - Promotes firm's activity development
 - Be ahead of new regulations
 - Brand image improvement
 - Competitive advantage development

Disadvantages

- What are the disadvantages or challenges of responsible innovation process for your company in particular and for the society in general?
- What are the disadvantages or challenges of responsible innovation outcomes for your company in particular and for society in general?
- What do you think of these disadvantages we identified through the literature?
 - Difficulties linked to the stakeholder management
 - Cost of innovation
 - Slowed down innovation process
 - Difficulty to implement a technological risk assessment
 - Difficulties to predict the consequences of innovations
 - Transparency issues

Key success factors & risks

- What are the main key factors that you believe are synonymous with the success of your company in developing responsible innovation mechanisms?
- What do you think of these key success factors we identified through the literature?
 - Adapt the company strategy and organisational structure
 - Be aware of the market expectations (in terms of regulation and customer expectations)
 - Develop efficient stakeholder involvement mechanisms
 - Develop measurement and feedback tools
 - Develop an adapted culture and management style
 - Promote the importance of RI
- What are the main risks that could arise linked to the development of responsible innovation mechanisms?

Conclusion

Again, thank you very much for your time and for the information you provided us during this interview. We will send you the transcript of the interview as soon as possible, so that you can check that it reflects what was said during the interview.

Appendix 17 - Carrefour official commitments on website



Source: Carrefour, 2012

Appendix 18 – Carrefour interview transcript proof of non-reply for the confirmation

De : Chloé De Maesschalck <chloe.demaesschalck@student.uclouvain.be>
 Date : jeudi 27 juin 2019 à 12:53
 À : "arnaud_lesne@carrefour.com" <arnaud_lesne@carrefour.com>
 Cc : Thomas Peeters <thomas.peeters@student.uclouvain.be>
 Objet : Validation verbatim et informations retenues - Innovation Responsable

Bonjour Arnaud,

Comme expliqué via LinkedIn nous aimerions vous soumettre le **résumé des conséquences concrètes de l'innovation responsable** que nous avons pu identifier lors de notre discussion, ainsi que vous soumettre la **retranscription complète de notre discussion**.

Pourriez-vous confirmer que ceci reflète bien le contenu de notre discussion ?

Si vous pensez que quelque chose mérite d'être ajouté, enlevé ou tout simplement modifié, n'hésitez pas à le faire directement dans le document Word en pièce jointe.

Merci beaucoup pour votre temps, je vous souhaite le meilleur pour la suite.

Bien à vous,

mer. 10 juil. 2019 à 14:59, Chloé De Maesschalck <chloe.demaesschalck@student.uclouvain.be> a écrit :

Bonjour Arnaud,

Je me permets d'envoyer un mail de rappel, car sauf erreur de ma part, nous n'avons toujours pas de confirmation de **validation de la retranscription** de votre part.

Afin de pouvoir insérer ce document dans notre mémoire, pouvez-vous me confirmer par retour de mail que la retranscription reflète bien le contenu de notre discussion ?

Encore merci pour votre temps lors de l'entretien.

Chloé De Maesschalck et Thomas Peeters,

Chloé De Maesschalck



Chloé De Maesschalck

Arnaud LESNE; Thomas Peeters

vendredi 26 juillet 2019 à 12:54

[Afficher les détails](#)

Bonjour Arnaud,

Vu que nous devons rendre notre mémoire mardi prochain, sans nouvelles de votre part nous nous permettrons d'intégrer le verbatim en annexes.

Merci encore pour tout,

Chloé De Maesschalck et Thomas Peeters

Appendix 19 – Carrefour interview transcript

CDM:	Chloé De Maesschalck
TP:	Thomas Peeters
AL:	Arnaud Lesne (Innovation Director)
	arnaud_lesne@carrefour.com

----- Recording started after asking the interviewee's consent -----

AL : (...) et donc, en franchise, ce que j'allais dire, si tu te mets en mode un peu hélicoptère en franchise tu as, on va dire, à peu près 300 et des brouettes d'express. On va dire avec Mesdagh 400 Market, tout ça sans franchise. Mesdagh nous appartient, il est franchisé chez nous et finalement, on a très peu de magasins qui nous appartiennent en nom propre, puisqu'on a 45 hypermarchés nouveau modèle et 38 Market. Il n'y a que cela qui nous appartient.

CDM : Parfait, et du coup, par rapport à l'innovation et par rapport à votre travail à vous, c'est centré surtout...

AL : Moi je suis transverse soit express, Market ou hypermarché.

CDM : Mais que ceux qui vous appartiennent ?

AL : Non non non non. En fait l'idée, c'est une bonne question. L'idée souvent, normalement le système d'une franchise c'est quoi. Par exemple, Thomas demain a une idée. Il dit : « tiens, moi je vais lancer un magasin, je vais vendre que des bulots ». Ce qui serait un marché de niche on va dire et je vais ouvrir ma première buloterie au Cap-Ferret. Voilà, il va tester le modèle économique sur 100 mètres carrés avec apéritif, les bulots etc. sous toutes ses formes, il va y faire un exercice comptable de 12 mois et va montrer que ça marche, c'est quand même l'idée et une fois qu'il montre que ça marche, il va dire voilà : moi j'ai créé *Thomas la buloterie*. Il va vendre l'enseigne ou il va proposer à Chloé une première franchise et va lui demander des royalties ou des choses comme cela. Quand on lance une franchise comme ça, souvent on teste

dans nos magasins intégrés une innovation par exemple, et une fois que ça fonctionne, on peut proposer cette innovation à nos franchisés. Je t'avoue que moi, je fais un peu des deux. De temps en temps, je teste en interne, mais je connais beaucoup de franchisés en Belgique puisque, quand je suis arrivé, moi je suis arrivé en 2005, quand je suis arrivé en Belgique, je suis resté dix, onze ans avec les franchisés. J'étais directeur régional pour Carrefour Express, j'ai ouvert plein d'Express à Louvain-la-Neuve, Bruxelles etc. Ensuite, j'étais régional pour Carrefour Market, donc je connais beaucoup de franchisés. Donc, quand on a une idée à développer, tu vas la développer en interne. C'est bien, mais tu peux être bloqué aussi pour diverses raisons. Pour des aspects comme tu disais très justement en introduction : le changement, innover, les gens n'aiment pas trop. De temps en temps, il y a des pressions sociales ou autres et les gens disent : « mais tu es sûr, tu te trompes de route ». Si je vois que ça freine un peu, je vais peut-être le vendre à un franchisé, en disant : « tu ne veux pas m'aider parce que j'aimerais essayer quelque chose dans un magasin. Et puis lui, s'il me tend la main, s'il me dit : « ben oui, Arnaud, on va le faire à deux », je m'en sers aussi et je montre qu'au bout de 6 mois ça marche et après je vais voir intégrés tu vois les franchises. Donc, pour commencer le métier, donc, à mes yeux, lorsqu'on fait de l'innovation dans une entreprise, que ce soit chez Carrefour ou n'importe où, il y a deux grosses parties : il y a la partie on va dire interne, enrôler le personnel avec toi, enrôler l'équipe. Il faut être un vrai meneur, pour mener les gens à une aventure. Tenter de les entraîner avec toi, un peu comme quelqu'un qui a une équipe de foot et qui doit emmener les leaders, qui doit les emmener en finale et il doit les motiver. Il doit les écouter et dire : « oui ok, t'as raison, faut faire une approche comme ça », mais il ne faut jamais qu'il perde le fil rouge. Si ton fil rouge c'est de dire : « à partir d'aujourd'hui au foot on ne va plus jouer côté droit mais côté gauche », bah il faut qu'il prouve à l'équipe que ça marche mieux côté gauche. C'est un peu pareil avec une innovation. Lorsqu'on lance une innovation, on doit d'abord la vendre. Je n'ai pas la science infuse, sinon je serais CEO carrefour monde, ce n'est pas le cas, heureusement pour Carrefour. Il faut d'abord la vendre en interne. Quand tu l'as vendue en interne, honnêtement, tu vois ici au siège on est 900, t'as fait 60% du boulot. Parce que, quelqu'un qui a des idées et qui veut les partager, c'est qu'il a un petit peu, en général, une facilité à parler avec les gens. Dire : « Tiens, Chloé, elle est en master, elle a sans doute des choses à m'apprendre que moi je ne maîtrise pas, parce que j'ai 20ans de plus qu'elle, et puis elle a sans doute une approche différente ». Je n'en sais rien moi des modes de consommation qui existent aujourd'hui. Donc il faut être beaucoup à l'écoute. C'est un beau défaut chez moi, si ma femme était là, elle dirait que je passe ma vie à couper les gens, donc il faut être beaucoup

à l'écoute et être un peu rêveur, parce que, en fait, tu vois, on a un mauvais réflexe. Je trouve que ce soit ici en général on dit : « Tiens, on doit, on doit changer », je n'en sais rien, les magasins, ça ne marche plus un hypermarché. Par contre, aux Pays-Bas je ne sais pas, en Flandre, ça cartonne. Il faut aller voir pourquoi eux ils sont forts et pourquoi nous on est nul. Alors, on peut s'inspirer, mais finalement on fait le même métier et c'est un peu dommage. Il y a des gens qui l'ont très bien fait, pour moi, l'automobile. Nous, on est dans une vraie transition, le business il est dur dans le *retail*. Si ce n'était pas difficile, Delhaize serait encore belge, il n'est plus belge. Si ce n'était pas difficile, Carrefour serait numéro 1 en parts de marché. Il n'est pas numéro un ici, il est troisième. Si ce n'était pas difficile, Colruyt, qui est très fort en Belgique, il serait très fort partout, et ce n'est pas le cas. Il est très fort en Belgique, donc on est dans une transition au niveau de nos magasins, on n'est pas les seuls. L'hôpital est dans une transition aussi parce que tous ces métiers hospitaliers, même si c'est un univers que vous connaissez peut-être moins, moi je m'y intéresse, parce qu'ils sont dans tout ce que tu vois. Ils ont, tous ces médecins etc., un niveau d'étude très poussé, ils ont donné beaucoup de leur vie entre 20 et 30 ans. Sept ans, plus une année ou deux de spécialisation, et en même temps, il y a toutes les nouvelles technologies qu'on leur apporte. Un médecin peut t'opérer, j'exagère mais presque pas, à 1000 bornes sans problème. Les urgentistes, allez sur YouTube et tapez comment ça se peut pour montrer. Tout à l'heure tout ce qui est métier de plateforme du lancement comment moi je vais délivrer Chloé, comment Chloé quand elle sort de son crossfit elle dit : « moi je suis crevée je n'ai pas envie de faire les courses », mais moi je dois être avec Chloé, je dois lui apporter des coups de cœur voilà ce que tu peux manger ce soir. Un urgentiste, il doit être là au moment où malheureusement il t'arrive un pépin ou il t'arrive un accident cardiaque ou autre. Aujourd'hui tout ce qui est drone, je ne sais plus comment il s'appelle ce film. Moi j'ai trouvé ça extraordinaire. Si tu veux faire un truc, j'ai chopé cela sur YouTube c'est aux Pays-Bas à Rotterdam ça fonctionne déjà. C'est dingue. C'est un mec qui fait une attaque, maladie cardiovasculaire, donc moi je ne suis pas médecin heureusement pour la médecine, mais le gars fait une attaque dans la rue aujourd'hui. T'as des défibrillateurs, mais tu t'es déjà servi d'un défibrillateur ?

TP : J'ai dû apprendre une fois à faire cela.

AL : Tu as appris. Moi je n'ai même pas appris donc je ne saurais même pas l'allumer, je ne saurais même pas. C'est comme les extincteurs quelques fois un extincteur, tu ne veux pas et

donc il y a des mecs qui ont dit : « OK des défibrillateurs il n'y en a pas partout mais malheureusement encore quelqu'un a fait une attaque il faudra être très vite là parce qu'on sait que les 8-9 premières minutes sont essentielles », et donc ils ont relié cette technologie de drone avec le défibrillateur et aujourd'hui t'as des drones qui partent de l'hôpital de Rotterdam et qui couvrent un rayon de 20 bornes autour de l'hôpital. C'est magique. Ce film est magique ce n'est pas un montage, ça existe vraiment, c'est en tête. Pourquoi je vous parle de ça ? C'est tous ces métiers hospitaliers urgentistes d'opérations etc. sont dans une transition aussi. Et donc les personnes qui sont aux manettes ont une vraie spécialisation : il y a des cardiologues, des gens qui sont spécialisés dans les yeux, dans les mains etc. Ils doivent aussi avancer avec les innovations qu'on leur propose. Je ne sais pas si je suis clair ?

CDM : Oui, oui.

AL : Pendant 10 ans on va lui dire écoute gars tu veux être spécialiste du genou. Alors le mec il va être imbattable. Il va te dire si ton genou va craquer ou pas. Par contre, peut-être qu'il va être secoué pour ce qui se passe à ce niveau, il ne sait pas qui peut envoyer un drone pour aller où tu vas. Et ça, ça c'est un problème j'imagine. Aussi dans le milieu hospitalier, un autre milieu qui est en vraie transition et qui est blindé d'innovations - je ne sais pas ce que vous voulez faire dans la vie plus tard mais moi je dis souvent à mes enfants : « intéressez-vous à tout ça donc tout ce qui est moyen de transport, l'aviation etc. », on sait que c'est un secteur d'activité qui embauche beaucoup. Mais même l'automobile. L'automobile est-elle juste au bord d'un gouffre. Parce que si je prends l'exemple de mon gouvernement la semaine dernière ils ont annoncé qu'en 2040 c'est demain en 2040. Tu auras 40 ans... C'est bien tu sais. En 40 ans et donc c'est bien et donc ils ont annoncé que les voitures essence et diesel seraient interdites. Je ne sais pas si vous imaginez ce que ça veut dire et on dit mais alors c'est fini le gars et au-delà du fait d'interdire les voitures, ça veut dire qu'il faut réinventer tout un tas d'autres voitures. Mais il faut inventer tout ce qui va avec : où je les vends, comment je les vends, comment je dis à Thomas pourquoi aujourd'hui je me pose souvent la question pourquoi les concessions automobiles, pourquoi quand je roule je passe devant les garages, je vois un homme et je bosse. C'est moche déjà, mais je trouve une concession ça coûte un pont. Audi s'amuse à faire des bâtiments incroyables. Ça coûte une horreur. Pourquoi il y a des concessions parce que finalement, Thomas il va à la concession combien de fois dans sa vie. Dix fois ? Moi je dis souvent pourquoi on met des concessions automobiles encore aujourd'hui mais ça ne sert plus

à rien, pourquoi les gens tu veux t'acheter je n'en sais rien. Tu veux acheter une mini tu configures comme tu veux, si tu as envie de mettre ce rose tu peux le mettre. C'est vrai ce que je dis. Et donc tu vas t'amuser à le faire et pour toi c'est naturel. La génération qui est encore après toi c'est encore plus qu'évident et ta voiture finalement on peut très bien aller chez Thomas dire : « tiens en fait j'ai vu que t'as configuré la voiture on a vu hier parce qu'on en a capté ton adresse et puis tout ça. On a vu qu'elle est dessus et regardez si tu veux on la fait essayer ta voiture. On vient chez toi demain soir. *Non non, je ne peux pas je travaille ou je travaille chez Capgemini.* OK je vais être sur le parking de Capgemini juste à faire essayer ce qui fait que t'auras configuré ta voiture ils viendront la faire essayer derrière toi un truc de financement qui va te pousser ou Capgemini te dit : c'est ta caisse ». Thomas bac+5 j'ai pris Linux et la conception ne sert strictement à rien. Mais je jette juste un pavé dans la mare, quand j'étais jeune, je pense vraiment moi je joue quand je le dis avec mes enfants. Regarde-moi tous ces gamins, ça ne sert strictement à rien. En fait tous ces métiers d'innovation de l'automobile, et de l'hôpital sont vraiment dans une transition commune et donc on revient sur le sujet. Ça veut dire qu'il faut des équipes d'innovation pour essayer de changer les mentalités en interne, parce que le mec de chez Audi, enfin moi je ne vais jamais chez Audi enfin au siège, mais quand même chez Audi j'imagine qu'il y a un département lié à un département commercial, un département marketing.

Il y a forcément des mecs qui sont qui dessinent les concessions. Je vais arriver devant Roger qui est directeur immobilier Audi, je vais lui dire : « tu sais quoi, on arrête les constructions c'est fini. Parce que moi je suis directeur innovation Audi et maintenant on va tout faire sur smartphone. Regarde, ça fait déjà trois ans qu'on fait les configurations, on a déjà eu 14000 clients, ça marche super bien, c'est sympa merci, c'est chouette ». S'il fait ça comme ça, ça ne va pas bien se passer parce qu'il y aura un conflit social etc. Il faut redonner une vie à la concession en faisant d'autres que bâtiments, faudra réinventer sans rien y faire. Et bien nous là, on a la même chose avec les hypermarchés. Si vous habitez sur Bruxelles où vous habitez mais je n'ai pas le souvenir de vous voir le samedi après-midi en train de pousser le caddie à Auderghem en disant : « tiens c'était un copain tiens tiens ». On va aller passer trois heures à Auderghem et faire les courses un samedi après-midi. Il y a 30 ans et plus maintenant. Nous, notre concession, c'est nos hypermarchés. Il faut qu'on trouve quelque chose pour ça c'est nos actifs et dans l'innovation et bien, il faut convaincre ici. Quand tu vas au 8e étage il y a des gens qui dessinent les magasins etc. Tout doucement il faut leur faire comprendre que dessiner

un magasin c'est bien mais qu'un jour il ne faudra plus dessiner le magasin. On n'a plus besoin de magasins. Enfin j'exagère mais aujourd'hui on en a 800. Je vous l'ai dit en introduction.

CDM : Et du coup au-delà de redessiner les magasins, quels types d'innovations sont les plus importantes pour Carrefour aujourd'hui ?

AL : Moi j'en ai plein moi je me lève le matin, alors ...

CDM : Est-ce que c'est plus des innovations de produits, des innovations de procédés ? Parce que Carrefour produit aussi des produits ? Donc qu'est-ce que c'est l'innovation dans les procédés, dans les produits finaux, dans la manière dont vous organisez ?

AL : C'est vraiment un tout Chloé. C'est par exemple, c'est l'innovation c'est même ici tu vois tout en arrivant tu as dit : « c'est sympa ici ». Pourquoi tu as dit que c'était sympa ici ? Tu n'es jamais venue ?

CDM : Non.

AL : L'immeuble est basique, il n'est pas beau et pas sexy. On ne peut pas dire, c'est le siège de Carrefour car on ne prend pas de selfie devant le siège de Carrefour. Et tu es passée par les escaliers et tu as dit, c'est pourri ici, et tu as traversé la moquette qui je pense date de 1960 et après ici, on a essayé de faire un petit truc un peu plus sympa et donc t'as ressenti un truc sympa et je ne sais pas pourquoi tu as dit : c'est chouette ici. Donc, nous en fait, quand tu dis : l'innovation c'est quoi, ça touche particulièrement. Ça part du siège dans l'ambiance de travail et je peux te dire qu'aujourd'hui par exemple on est sur 8 étages ici, les deux derniers c'est une autre entreprise. Au mois de septembre on sera sur 6 étages. Pas parce que bon il y a eu des restructurations de personnel souvent mais ça s'est passé c'était l'année dernière. C'est plus dans l'esprit de travail tu vois vraiment les *open space* c'est tendance depuis 10 ans mais là on veut vraiment les faire encore d'une autre manière etc. Et on veut aussi la mobilité, on veut faire attention donc là on arrive dans le vif du sujet au niveau des ressources humaines. Ils vont dire à Thomas qui est par exemple directeur marketing chez Carrefour : écoute Thomas, tu habites Ixelles, et puis pour venir à Evere d'Ixelles. OK, tu as le tram mais même en tram, ça te soule et donc il ne vient pas au bureau. Et ça c'est maintenant et c'est fin août ou on va lui dire écoute

autant d'Ixelles tu as ta maison ou ton appart et là tu peux rester là et travailler. On n'en a pas. Bah tu peux rester une journée là et puis travailler mais on va lui dire aussi. Il y a 4 express 3 Market et 2 hypers. Alors tu peux installer tout ce qu'il faut, il ne faut pas grand-chose. 4G ça suffit et tu peux travailler 2 jours par semaine sur 5 jours. Presque la moitié ne vient plus au siège donc ça c'est une vraie innovation pour moi, pour vous ça vous paraît évident. Vous êtes étudiant, et tout. Mais pour nous, c'est une vraie innovation parce que ça engage plein de changements. Pour un manager il faut le manager et Thomas je le connais, à 9 heures il y a piscine, à 11 heures au tennis et à midi manger avec ses potes et à 15 heures il n'a pas allumé son ordi. J'exagère mais les managers qui sont ici depuis 20 ans on veut dire mais Thomas c'est un mec sympa oui mais il vient il ne met pas de cravate parce que moi cela fait 30 ans qu'on m'oblige à mettre une cravate. C'est tout ça peut vous faire rire. C'est comme ça. Moi de temps en temps je suis en chaussures mais dans des entreprises très traditionnelles comme les nôtres ces géants en baskets ou autres. J'exagère mais ça commence à rentrer. Il y a deux ans c'était *hard* donc c'est difficile de parler innovation mais ça je peux te faire un point d'eau au niveau ressources humaines c'est ça. Tu parlais Arnaud est-ce que dans les produits, les packagings etc. Évidemment. Évidemment moi j'ai des enfants qui sont hyper branchés à 20 et 17. Mais comme vous comme tout le monde et heureusement d'ailleurs essayons de faire un truc chacun pour calmer un peu le jeu sur notre surconsommation. Je ne fais pas un zoom spécifique sur le plastique et la pollution ça fait tout le monde en parle. Ce n'est pas mon job mais nous, dans la famille, on se dit tiens on vit encore plus ou moins à 4. On s'est dit tiens nous on arrête toutes les bouteilles en plastique, on ne boit plus de soft, du coup on boit de la bière et par exemple on avait des bouteilles d'eau en plastique mais on ne met pas les solutions avec qui tu vois quand tu mets un filtre et tout le bordel SodaStream. On voulait juste reprendre que la Belgique elle est très en avance par rapport à d'autres pays très en avance. Elle a un truc qui existe depuis 60 ans et qui est la consigne que d'autres pays ont abandonnée sous la pression de gros joueurs comme Coca, vous savez, qui a dit Vous écoutez quoi. Moi je trouve tout en plastique parce que regarde c'est quand-même mieux Bla bla bla bla bla bla bla. Si tu regardes tout au début l'histoire de coca c'est vrai ce que je te dis tout était en verre ; c'est eux qui ont imposé le plastique, eux ils ont fait mal. Et aujourd'hui il va falloir de gros accords qui existent entre Danone, Coca, Carrefour, tout récents. Vous les trouvez sur Dine pour les consignes avec une société qui s'appelle Loop je crois et ça date d'il y a un mois je crois ils ont signé un accord pour justement réimaginer tous ces produits en consigne. Parce que plus derrière on a toutes les solutions via ton smartphone mode pour reprendre les consignes parce que les gens écoutent un

mot gentil mais les consignes c'est super lourd, un bac d'eau en verre c'est lourd. C'est lourd ça me soule etc. Moi je suis français, le week-end j'ai un appart à Lille, si on a fait une soirée et qu'on dort à Lille je suis toujours effaré de voir en plein centre-ville de Lille de voir qu'il y a encore une colonne où tu jettes des ordures je pourrais acheter ce que je veux jeter ma femme dans la colonne d'ordures. Mais ils jettent tous les Français. J'ai honte. Une ville comme Lille c'est la quatrième métropole en agglomération en France. Dans cette population et ça ne va pas. Dans les produits, on innove beaucoup et on incite les gens à reconsommer du verre et on a fait cette campagne Act for Food. Vous avez sans doute vu, c'est la première fois que Carrefour a lancé une campagne mondiale souvent pays par pays on n'était pas d'accord, là au niveau mondial on a lancé Act for Food, For food il y a 14, 15, 16 engagements dans lesquels on va dire on va essayer de faire le bio moins cher parce que bio c'est sympa mais c'est cher on va essayer de faire du bio c'est quoi faire du bio, c'est vendre un avocat à Chloé qui a envie de manger un avocat mais qui finalement fait quatre fois le tour de l'Argentine avant d'arriver ici. Je ne suis pas sûr c'est ce que Chloé attend mais je ne le pense pas, je n'en sais rien mais voilà il y a le bio et notre façon de consommer l'électricité etc etc. On essaye, on est vraiment dans le changement. Quand tu me demandes si innovation il y a des produits oui à nos bâtiments qu'on doit réinventer mais c'est nous on est au même niveau comme les autres, ça existe partout à plus ou moins à celui qui a produit un peu plus de l'innovation mais on est tous là-dedans au niveau *retail* et moi plus spécifiquement cette année, par exemple depuis le début d'année, on va lancer trois grosses innovations. Moi j'ai jeté un jour j'étais avec un copain à l'aéroport, on s'en allait à Carrefour Roumanie parce que la Roumanie, si je te dis Roumanie tu vas me dire vous êtes d'origine roumaine oui je n'en sais rien j'ai de la famille roumaine les gens diront, caravane machin et tout. Non, j'exagère, mais ce sont des pays qui vont très bien économiquement, qui ont un certain train de vie, qui ont un taux de croissance qui va bien. Chez Carrefour ils se portent bien et sont aussi innovants et on s'en allait visiter un peu Bucarest. Je suis arrivé à l'aéroport comme vous. Je présente mon passeport reconnaissance sociale et je dis à un copain écoute nous les hommes on n'a pas de sacs à main. Moi je n'ai pas ça. Pas de sacs à main et si je vais là-dedans y'a tout, téléphone il y est un piège de dépannage, maquillage non pas de sac à main pourquoi je dis ça je dis à mon copain. Moi ça me sidère parce que Thomas qui habite place Flagey quand il descend à l'Express qui est au coin de la place Flagey il adore les sushis et il achète des sushis. Moi, je suis franchisé de l'exploite soulagée Thomas je le connais physiquement « mimi » je l'appelle par son prénom parce que je le trouve sympa, je sais que tous les midis il achète toujours un truc bio ou un truc sushi. Mais je ne peux pas lui

envoyer un push sur son smartphone en disant Thomas, tu sais quoi c'est ton anniversaire aujourd'hui et tes sushis, je te les offre. Je ne sais pas lui personnaliser et mon copain il dit et pourquoi tu dis ça et si on avait un système pour que Thomas quand il arrive en magasin au lieu de la carte au lieu de « Bonjour Chloé, vous avez la carte fidélité ? » toi tu l'as peut-être dans ton sac, des cartes qu'on t'a filées chez H&M, chez un marchand, machin etc...

CDM : Il y a une super application pour cela.

AL : Je n'en sais rien ! Mais voilà et ça peut être ça nous les hommes en général on n'a pas de sac à main et donc on n'a pas de carte fidélité et on la sort. Et plus, on est fainéant c'est à dire que ça c'est ma carte fidélité je l'ai là, je suis en caisse d'express je suis sûr que vous avez déjà le tour plein les bras de trucs, la fille dit : vous avez une carte Carrefour, vous dites non. Alors qu'en fait elle est là vous dites non, vous lui mentez, elle dans son job on lui fait quoi si tu ne manques pas la carte fidélité, ce n'est pas bien, je vais te mettre un avertissement dans ton boulot ça fait partie de ta fonction. Elle fait l'effort vous la regardez droit dans les yeux. Non je n'ai pas de carte de fidélité en fait tu en as une là et là mais tu ne la sors pas mais par fainéantise alors je dis aux copains oui pourquoi pas faire la reconnaissance sociale etc. ça doit coûter cher ou machin. Non, non Arnaud mais commençons par la biométrie ça peu de chose c'était tout récent, il y a un an comme ça dans l'avion, ce n'est pas très technique mais je m'intéresse à tout ça, lui c'est un cerveau. Le week-end, il me dit : écoute Arnaud on peut faire une reconnaissance biométrique. Ok on va appeler ça MyFinger et MyFinger on l'a installée le 20 mars. Cette année à l'Espace Froissart. Froissart c'est à côté de la Commission européenne, c'est un magasin qui est en test sur MyFinger et qu'est-ce qu'on dit. On sait que Thomas qui travaille à la Commission européenne le midi, 25 balais, il achète ses sushis chez « Machin ». Quand il arrive il fait : mets ton pouce. La fille dit : « Thomas tu as ton pouce ? » mais oui généralement on l'a parce qu'il y a aussi le fait de ne pas avoir sa carte. Et même si tu as l'application qui regroupe toutes les cartes moi je vais te dire un truc. Ce n'est pas moi qui le dis, ce sont des stats qui existent c'est déverrouiller son téléphone. Une action, une action. Après je rentre dans cette application le deuxième match. En général au bout de 3,8 écrans quatre écrans, les gens, on commence déjà à les souler. C'est trop long. C'est débile. C'est débile mais c'est trop long. Alors tu pourrais dire bah oui mais Arnaud ce n'est pas grave sur MyFinger tu fais ça puis tu me passes puis c'est tout mais même cela c'est vrai mais même ça le téléphone Bonjour Monsieur. Non parce que ça mon téléphone ça vaut beaucoup d'argent. Si moi je fais ça, je croyais que c'était sympa à

l'entretien, tu vas arriver, tu vas paniquer très vite. Déjà, tu as un petit sentiment de panique parce que j'ai ton téléphone dans les mains, ça a de la valeur pour nous. Ça c'est une innovation concrète qu'on a lancée. Je peux vous envoyer un petit film là-dessus. Et donc, l'idée c'est de reconnaître Thomas, forcément la data ça intéresse toutes les entreprises, c'est que Thomas il est à la commission européenne il mange des sushis et je pourrais par la suite lui envoyer des infos promotionnelles. La deuxième innovation qu'on a lancée, c'est un drive automatique c'est sur le parking de Auderghem, l'hypermarché. Et là on a dit écoute : « Chloé ça la soule de mettre un créneau horaire - je viens chercher mon drive à 9 heures ou mon Collect And Go sur Colruyt à 11 ». Parce que de temps en temps elle en retard, puis même ça la soule. Donc on a dit : « ok tu viens quand tu veux, c'est 24/24 c'est réfrigéré à 2 degrés. On peut mettre 50 commandes dedans ». Ce n'est pas les casiers comme là à poste. C'est un système d'ascenseurs à l'intérieur. C'est une grosse machine qui a été fait par un trouve tout à Cavaillon à côté d'Avignon. Donc on teste ça. Et la troisième plus grosse innovation, mais la vraie innovation c'est celle que j'aime le plus, qui me tient à cœur. C'est ShipTo c'est une petite SPRL qu'on a créée chez Carrefour. L'administrateur c'est le CEO de Carrefour Belgique – Pologne-Roumanie, parce que ça marche ensemble. Le gérant c'est moi, et ShipTo en fait les gens ne savent pas mais c'est Carrefour. Quand on entre dans ShipTo en fait il va me géolocaliser. Il va d'abord m'envoyer une pub. Il va mettre tous les magasins Carrefour dans un rayon de 4 km autour de moi. Et c'est exactement comme Uber, en fait Uber, moi j'ai envie d'un UberEats, j'ai envie d'un Cheeseburger. Ben tiens les gens se font livrer plein de conneries, des *cheese* et des pizzas. Pourquoi ne pas se faire livrer toutes leurs courses Carrefour ? Ça n'a rien d'original, faire livrer ça n'a rien d'original - ça fait 100 ans qu'on livre. Ouais on livre Chloé comment ? Chloé elle va descendre à Flagey à l'express et dire : « écoute, tu ne peux pas me livrer ? ». Ils vont dire : éventuellement, mais il faut faire 40 euros de course, et je vais te compter 10 euros et plus je viendrais ce soir. Il n'y avait rien d'organisé. Alors elle essaye chez Delhaize, ils vont dire : « si si, allez sur le site de Delhaize direct, et on va vous livrer ». On livre en moyenne entre 24 et 36 heures, et tu dois acheter pour 60 euros au minimum. Après tu vas sur Colruyt, qui est le troisième *retailer*, eux ils ne livrent, et Aldi, Lidl ne livrent pas non plus. C'est incroyable quand on dit ça, parce que tout le monde pourrait croire qu'on livre, mais pas du tout. Alors on a lancé ShipTo et ça c'est tout récent. On a lancé ça le 1er janvier on a testé en « *stoumeling* » entre septembre et décembre comme ça. Moi j'ai ouvert un magasin popup Store à Tomorrowland l'été dernier, et on avait testé aussi un peu l'été dernier. Et donc après on a testé en septembre toutes les conneries qui allaient ou qui n'allaient pas. Donc aujourd'hui,

voilà je suis là - je veux dire mais non je suis plus vraiment là. Ok maintenant il voit que je suis à Flagey il va m'envoyer tous les magasins qu'il y a autour de Flagey. Donc je rentre dans un grand magasin du Cinquantenaire et il me propose - c'est comme une application classique - tu peux acheter des petits déjeuners et tes produits etc. Donc je peux voir le produit, je peux faire un zoom sur le produit si je veux être sûr c'est bien celui-là, c'est des conneries mais quelquefois les gens ne voient pas. Je peux mettre un petit commentaire au chiper. Je veux dire à mon *chipper*, : « écoute, moi je veux un produit qui soit bien frais - la bouteille de rosé que j'ai commandé - je veux une fraîche. » Ça c'est top en e-commerce, c'est des petits trucs qui sont sympas. « Le pain que j'ai commandé, je veux des tranches etc. » je peux avoir les avis des consommateurs, tous les ingrédients etc. C'est classique et donc à la fin de mon truc, bon là il faut normalement que je commande minimum pour 20 euros. Mais au moment où j'appuie, moi j'ai embauché quinze livreurs à vélo, donc j'essaye de faire attention aussi à tout ce qui emprunte carbone et tout. Donc je m'interdis de livrer en voiture et en camion et en camionnette, vraiment mais pourtant la tentation est là, hein. Samedi dernier on a reçu sur la matinée trente missions, ce qui est beaucoup parce que ma mission c'est dire « Thomas au moment où tu appuies sur le bouton rouge » comme quand tu cherches un Uber. *Tack*, il y en a un qui dans les minutes qui te dit « Ok j'arrive » parce qu'il est là tout autour, il est dans sa voiture. Tu peux envoyer un message, je suis plus là, je suis là - on a copié. On a dit « Écoute au moment où tu appuies moi j'ai nonante minutes pour arriver où tu es ». Parce qu'on ne fait pas la livraison à domicile parce que si je livre à domicile ça soule les gens. Les gens ils disent « tiens, tu peux me livrer ce soir mes courses ? » et puis finalement le livreur arrive à 20 heures au lieu de 19 heures trente, quand il arrive chez moi je suis dans ma salle de bain, je n'ai pas envie d'ouvrir. Bref, on se dit finalement qu'est-ce qu'on s'en fout d'aller chez les gens, on peut livrer où tu veux. Si tu as envie d'être livré à ta salle de tennis, au cours de tennis. Il y a un mois, on a livré un gars dans un restaurant il va lancer une mission je ne sais plus où, on est allé dans le resto lui apporter ses courses et donc ShipTo ça commence à bien prendre. Nous au niveau du groupe, donc à Paris, on est pays test là-dessus. Ça c'est une vraie innovation puisqu'on est le seul à le faire en électrique, on est le seul à délivrer une capitale européenne comme Bruxelles en nonante minutes. Et pour l'instant du 1er janvier à samedi dernier, on est un autre 2600ème missions un truc comme ça sur Bruxelles. Ça commence, on a tout, on a le back office on voit en temps réel, tu vois je vois en temps réel où sont mes livreurs. Je sais qu'il y en a 14 actuellement qui sont en train de rouler à vélo. Mais moi j'adore tous ces petits jouets. Je vois depuis combien de temps cette mission est partie, depuis 11h50. Je reviens sur le personnel

Carrefour. C'est notre façon de manager ça, parce que moi mes livreurs je dis « écoute tiens un vélo à 3000 euros, je te le donne. Je te donne un téléphone, je te donne un lecteur un lecteur ING quand tu arrives chez Chloé tu dis « tiens tes courses » et tu fais payer le client. Et je te dis tes horaires c'est 8h30 jusqu'à 18h30 ». Ce n'est pas qu'on ferme à 18h30 - rappelez-vous, je vous ai dit en introduction on ferme à 20 heures mais comme on a 90 minutes pour arriver chez toi à six heures et demie on ferme la dernière commande. Mais moi je suis obligé de faire confiance à mes livreurs qui habitent - Je n'en sais rien moi - ici à Meiser. Il me dit à 8h je serais sur le vélo, je le géolocalise. Mais c'est des filous les gars ils peuvent s'organiser et tout. Donc c'est une innovation aussi dans le management dans le suivi du personnel dans l'animation d'équipes. Ça peut vous choquer, mais c'est plus de l'animation digitale. En fait moi, je peux vous montrer sans problème ce matin, on a un groupe WhatsApp comme dans plein de boîtes. Puis ce matin on s'est écrit « Bonjour » ils répondent tous en même temps - mais c'est tout nouveau pour nous. Et puis quand on s'engueule, on s'engueule par WhatsApp et puis quand je dis « eh gars, il est 11 heures je vois que ton téléphone est toujours en place Meiser, tu dors, je dors ? » et il me dit « Non, Arnaud je ne dors pas. ». Ça, ça fait partie de l'innovation aussi, c'est une culture différente pour nous, c'est *hard* mais rigolo.

CDM : Et du coup pour rebondir un peu par rapport à la responsabilité. Typiquement ce que nous on essaie de faire, c'est de comprendre comment les entreprises qui lancent des innovations intègrent cette question de la responsabilité. Qu'elle soit sociale, environnementale etc., par rapport à de nouveaux procédés etc. ou au final, ils ne maîtrisent pas forcément les conséquences directes et indirectes. Parce que c'est nouveau et on ne comprend pas forcément tous les tenants et aboutissants. Et du coup, nous, on essaie de faire, c'est de voir via la littérature de la Responsabilité Sociétale des Entreprises, du développement durable et d'autres principes comme le principe de précaution comment on pourrait intégrer toutes ces questions de responsabilité : faire attention, ne pas faire le mal dans l'innovation précisément. Comment on intègre ces questions-là dans l'innovation. Et je rebondis par rapport à ce que vous disiez, par exemple, tout ce qui est MyFinger, typiquement comment dans le processus et comment maintenant vous vous posez la question de savoir : « est ce qu'au final ce n'est pas trop envahissant au niveau de la vie privée » ? Ou par rapport à tout ce qui est avec Act For Food comment on vérifie que en fait on limite bien les conséquences négatives comme on voulait le faire ? Et comment on vérifie à long terme que les impacts sont bien ceux qu'on

voulait créer ? Ce qu'on aimerait bien savoir c'est comment vous comprenez l'innovation responsable, comment vous vous intégrez dans votre réflexion au quotidien ?

AL : Pour comprendre l'innovation responsable, il faut entre guillemets se cultiver et il faut suivre un petit peu ce qui se passe. Alors tu as différentes façons de suivre, soit tu t'instruis toi-même en regardant, en suivant les actualités, en regardant tout ce que tu peux trouver sur Internet. Moi, de manière assez basique finalement ça marche pas mal, parce que c'est un réseau comme un autre qui est LinkedIn et où moi je - après on peut me dire c'est ringard c'est tout ce qu'on veut mais je m'en fous. Quand j'ai une heure ou autre, mais très souvent tous les jours, même en mangeant, je scroll comme ça et je regarde. Et ce qui est sympa en fait sur les LinkedIn c'est de pouvoir avoir - comment je pourrais dire - par exemple je n'ai pas de compte Facebook parce que je trouve ça - pour moi c'est mort Facebook. Mais sur LinkedIn y'a vraiment de tout. Alors, de temps en temps ça fait un peu pollué par des petits trucs qui devraient plus se retrouver sur Facebook que sur LinkedIn - bon moi je ne suis pas là pour refaire le monde. Mais moi je m'en instruis, je m'inspire beaucoup avec ça.

CDM : Pour mieux comprendre les conséquences en fait ?

AL : Voilà, pour mieux comprendre un peu, parce qu'il y a des trucs je ne comprends rien ou je ne connais pas. Tout ce qui est intelligence artificielle, tout ça je m'y intéresse, mais pas du tout expert. Donc, j'essaie de comprendre au travers d'un LinkedIn. Je voyage encore relativement souvent dans des salons divers à Düsseldorf ou autres pour essayer de discuter avec des gens comme vous. J'étais à VivaTech à Paris au mois dernier, il y a une petite startup - je la prends toujours comme exemple. Tous les déchets plastiques etc. qu'on retrouve dans la mer entendu Copé, il a différentes façons de s'en occuper. Et lui il habite au Cap-Ferret et il y récupère, ils sont à deux, il récupère les plastiques. En fait m'avait attiré sur son stand une planche de surf, moi ma fille fait du surf donc naturellement je suis allé là-bas discuter avec le gars. En fait, c'était intéressant de voir comment lui récupérer les plastiques et te personnalise - on en revient à la personnalisation de ta mini etc. Il personnalise avec un petit site à ta planche de surf, mais à la base ta planche de surf c'est un gros ramassis de plastique dégueulasse, et il montre tout le processus de nettoyer et assainir le plastique etc. D'où la responsabilité derrière de voir comment lui, il vend un produit. Finalement, il vend du surf, moi je vends des poireaux et des légumes, mais lui il vend un produit et moi je vends un produit aussi. Mais lui dans son

approche, il montre vraiment ce qu'il fait et il prend un truc qui est en train de polluer, il fait en sorte qu'il soit plus polluant. Il en fait un beau jouet pour toi, il te l'ultra personnalise - la planche est translucide et magnifique. Il dit voilà le résultat. Et là-dedans, quand tu regardes même si moi je suis nul en surf, même si tu ne connais pas, tu comprends que lui il y ait affiché une belle responsabilité, il fait attention, c'est une petite startup, ils n'ont pas d'argent et ils essayent de lancer des trucs etc. Donc moi j'essaye de m'inspirer d'eux. Tu vas me dire, mais comment ? J'essaye de m'inspirer d'eux en me disant mes courses chez Carrefour, je peux te faire une expérience un peu personnalisée. Pour l'instant le petit bout que je maîtrise c'est le last mile. Le last mile je sais que je ne vais pas polluer. Intrusif, tu parlais de MyFinger tout à l'heure - il y a des choses qui sont pour le coup sympa, même si je ne suis pas fan mais je suis obligé de le faire, c'est tout ce qui est GDPR. Donc avant rappelle-toi, je t'ai expliqué que je partais à Bucarest en mars 18, et j'ai mis 6 mois. Les gens ont rempli tout un dossier pour être GDPR compliant. Et MyFinger est GDPR compliant, pour notre magasin test. Si on veut faire un roll out sur 20 magasins, il va falloir qu'on ait un serveur. Ça veut dire que des empreintes doivent être hébergées. Moi je me suis arrangé pour que ce soit un One-Way. C'est quoi un One-Way ? En fait je prends une photo de ton empreinte quand tu achètes ça, on te dit mets ton pouce comme ça et tu vois des points rouges. Les points rouges correspondent à un niveau de sécurité. Alors avec iPhone, admettons que l'échelle de sécurité soit de 0 à 7, un iPhone va être à 5. 7 c'est probablement les gens des passeports, les polices etc. Donc, nous on s'est mis à 3 parce que finalement ce ne sont que des points bonus. Au pire, tu me voles mes points bonus, tu vas me voler 50 balles. Mais on essaie de pas être trop intrusif, en prenant - mais c'est une très bonne question - parce que moi j'ai mis une hôtesse du 20 mars jusqu'au 31 mai dans L'Express pour expliquer ça et on a eu des remarques négatives. Et j'ai dit aux clients : « mais c'était incroyable. Vous êtes contre le fait que je prenne votre empreinte alors qu'à longueur de journée vous déverrouillez votre téléphone. Qu'est-ce que vous croyez, que c'est pour le fun ? » Qu'il n'y a rien derrière ? Quand tu montes dans ta voiture avec ton téléphone, et qu'il te dit que je mets 22 minutes pour aller chez moi. La voiture, je ne lui ai même pas dit que j'allais chez moi. Mais elle me dit apparemment, tu t'en vas. Tu veux aller chez toi, il te reste 22 minutes. Donc moi je pars du principe que, voilà on est dedans. Ce n'est pas pour autant qu'il faut être ultra-intrusif, parce que moi je suis le premier lorsqu'on m'envoie des « push à péter des câbles ». Mais si je peux faciliter un peu la vie de Chloé. Stop avec tes cartes, ton appli, vas-y, mets ton pouce. On essaye vraiment, enfin moi j'essaie pour répondre à ta question - parce que l'équipe innovation n'en a pas parlé, mais c'est qu'on est trois plus un mec de

Capgemini qui travaillent avec nous. Ce qui est très bien c'est plus agile et tout. Parce que sinon, ici on est parti pour 100 ans pour faire un truc. Mais on essaye vraiment sur le respect de la vie privée, vraiment de faire attention à ça. Mais c'est difficile, parce qu'on a une pression interne, au niveau business. Rappelle-toi du mec qui a dit : « Thomas mais tu viens sans cravate », il est là. Je ne l'ai pas inventé. Il existe. Mais le mec va me dire mais Arnaud pourquoi tu nous soules avec tes conneries on a besoin de faire du chiffre d'affaires. Donc il faut oser.

TP : Du coup est ce que vous avez des mécanismes que vous mettez en place pour essayer de voir s'il peut y avoir des soucis, par rapport notamment aux empreintes digitales ? De voir à l'avance et faire une étude pour voir avant de tester, comment est-ce que ça va être reçu. S'il y a des possibles conséquences négatives ?

AL : Moi je ne l'ai pas fait. Mais j'ai testé un petit en interne. J'ai lancé comme ça, tu sais du lobbying, tu le fais de manière politique mais tu peux le faire en interne quand tu connais bien la boîte. Tu sais sur quel bouton appuyer, tu dis tiens je vais lancer ça, le mec qui s'occupe de tout ce qui est GDPR il ne va pas être copain avec moi non plus. Par contre, le mec de l'IT, va adorer parce que c'est sexy, c'est sympa. Et il va être accompagné, va essayer de trouver des ambassadeurs, des sponsors qui vont pousser ton projet. Donc, pour répondre à ta question, je teste plus en interne. Tu vois, on est en train de préparer, on a décroché un nouveau Tomorrowland cette année. Et donc on va réouvrir un magasin dans Tomorrowland, et moi je veux intégrer dans un bracelet comme ça une fidélité temporaire juste pour 3 jours. Donc quand tu vas à Tomorrowland, tu as un bracelet où tu peux payer. Moi je ne veux pas faire ça, mais moi je veux juste faire un bracelet assez sympa on va dire dans lequel je remplace MyFinger, parce que finalement MyFinger, je vais avoir des gens qui vont me dire : « mais Arnaud empreintes digitales et tout... ». Ok tu as raison, tu peux choisir un petit bracelet sympa. J'essaye de trouver des alternatives, pour dire que je ne veux pas aller trop loin et on essaye de faire ça à côté.

CDM : Est-ce que le groupe Carrefour vous impose des restrictions en termes de : « vous voulez lancer cette innovation, mais vous devez faire appel à des scientifiques ou des personnes externes qui vérifient les risques entre guillemets à tout ça » ?

AL : Non. Il y a des gens qui vérifient l'aspect GDPR. Par exemple, les risques, ShipTo, il n'y a pas de risques, enfin je veux dire ils livrent à vélo et puis c'est tout. Le drive automatique, j'aurais pu le faire vérifier par des gens plus techniques. Parce que la machine avait fait 4 mètres de haut, mais non je ne l'ai pas fait vérifier. Je pars du principe que le type qui m'a fait un *renting* dessus avait les brevets etc. Donc bon, ok va fonctionner !

CDM : Mais par rapport au fait qu'on pousse entre guillemets, on propose aux consommateurs un nouveau mode de consommation est-ce que vous réfléchissez aux conséquences de ces nouveaux modes de consommation ?

AL : Sur tout ce qui est par exemple les couverts en plastique etc. Oui. C'est dire qu'il y a un service en entreprise qui est en charge de tout ce qui est sécurité alimentaire etc. Et je prends l'exemple, on a arrêté les plastiques dans mon magasin il n'y a pas si longtemps, il y a un an on a dit on arrête les couverts en plastique. Ce qui est bien, puisque c'est une horreur sans nom. Et donc là par exemple, on a sorti, on va les mettre à Tomorrowland, on en a commandé 30 000 et ce sont des couverts où l'emballage est en maïs alimentaire, tu peux presque manger l'emballage. Le couvert tu peux le manger aussi presque. C'est vachement bien comme produit, mais ça ne dépend absolument pas de moi. Pour le coup, il y a des scientifiques qui disent : « OK, ce produit a été validé ». Puisqu'il est branché, avec le logo Carrefour et c'est au niveau du groupe, à Paris. En fait, tout ce qui est MDD, tout ce qui est donc marque de distributeur innovant comme ça, en général ça ne part pas forcément de Belgique ça part plutôt du siège. Et ils ont plus les moyens de le faire. Tout à l'heure on parle des packagings. Tu vois c'est ahurissant de voir tous les plats, quand tu achètes des plats préparés, tout le plastique que tu jettes. Donc on essaye de trouver, maintenant que ce soit au bureau, la semaine dernière. Moi j'ai envie de faire pour Tomorrowland cette année, l'année dernière j'ai fait un magasin c'est la première fois je faisais Tomorrowland et j'étais effaré des quantités incroyables vendues. Et donc j'avais mis tous les fruits et légumes à l'unité sans emballage, sans rien. Par exemple, je recevais des paquets de nectarines par 6 et je les vendais par 1 - tu vas dire comment ça te fait plus de fric tout ça. Bon, il y avait peut-être un petit peu de ça, c'est vrai. Mais je jetais les plastiques et je me suis dit mais « olala tous ces déchets plastique ». Cette année, par exemple, en fruits et légumes on va sortir directement en vrac pour éviter cela. Mais quand tu demandes ça ici, mais vends le par 6 c'est plus intéressant, la marge est plus sympa. C'est encore réfractaire et encore des vieux réflexes. Il y a encore à apprendre : mais regarde Arnaud il y a

des emballages un peu plus sympas qui existent, on essaye de développer ces emballages là aussi et ça vient en général du siège à Paris.

CDM : Dans notre mémoire on s'est rendu compte que dans la responsabilité, dans l'innovation, ça pouvait arriver de deux manières principalement. Soit on responsabilise le processus vraiment, les idées, comment on se pose des questions, comment on réfléchit aux motivations, et vraiment la finalité - est-ce qu'au final le produit que je lance est mieux parce que j'y ai réfléchi de manière responsable. On a vraiment séparé : responsabiliser le processus d'innovation. Et au final, est-ce que c'est la finalité, si c'est responsable en fait peu importe la manière dont elle a été amenée. Est-ce que vous vous challengez dans l'équipe là de 3 ? Est-ce que vous vous posez des questions : sur au final est-ce que cette innovation est faite pour de bonnes raisons, est-ce que c'est uniquement des profits parce qu'on est poussé par le groupe. Est-ce que c'est vraiment parce qu'on veut changer les choses ? Est-ce que...

AL : Quelquefois on se pose la question entre nous. Moi si j'ai envie de faire un truc, et puis on me dit : « mais Arnaud, t'es sûr ? Ça apporte quoi finalement à Thomas ? » Moi je voulais faire, quand tu arrives sur ShipTo, je voulais faire un petit *Pacman*. Arrivé et tu pouvais jouer et gagner. Tu dis Arnaud qu'il faut aller vite, qu'il faut quatre écrans maximums, et en même temps, tu rajoutes un jeu. Donc tu vois, oui on se challenge beaucoup. Il y a un mélange des deux. Soit, est-ce que c'est intéressant pour le consommateur et surtout est-ce que techniquement on est capable de le faire. Est-ce que ça va coûter cher ou pas au groupe Carrefour de le faire ? Parce que parfois un truc tout con peut coûter 200 000 euros et il ne va rien apporter. Donc on essaye de regarder un peu le retour sur investissement. Maintenant, on part du principe qu'un département innovation, c'est un centre de coûts. Alors, ici on est challengé pour équilibrer un business model. Mais, quand tu fais une innovation, on a ouvert l'hiver dernier un truc qui s'appelait Factory et dans laquelle on mettait en avant, par exemple qu'on a plus besoin de packaging. Si tu viens manger, je reviens à mes plats cuisinés, chez nous. Déjà, on va les cuisiner nous-mêmes dans les ateliers à Tour et Taxis, moi j'ai loué des cuisines à Tour et Taxis. Il y a des cuisines partagées qui sont ouvertes 24/24h, 7 jours sur 7. Il y en a deux dans Bruxelles et ça c'est vachement sympa. Moi j'ai raisonné comme une startup, pas comme Carrefour. J'ai dit : « ok je prends la Factory, je vais embaucher des cuistots et ils vont cuisiner la nuit et très tôt le matin. Et ils vont amener les produits à Factory. » Et puis on

a eu la chance, par hasard. LCI, la chaîne info est venue. C'est retombé jusqu'à Bompard, notre CEO qui a débarqué à Bruxelles. Bref, ça a fait tout un bruit. Et en fait on avait décidé de cuisiner des quiches et des soupes et ne pas faire 50 mille trucs, on ne va faire que des quiches et des soupes et sans le packaging Carrefour. Parce qu'on ne l'avait pas, et puis on ne voulait pas de plastique etc. Donc le mec cuisinait jusqu'à 6 heures du matin et les déposait à 7 heures et demie dans les frigos. Et toi tu arrivais et tu venais manger une quiche. Et là, le dernier frein c'était de dire à Thomas il a mangé une quiche et peut la manger sur la table. Mais on ne va pas leur vendre des couverts en plastique etc. Et donc on a décidé d'acheter des assiettes sur des brocantes et on a tout lavé. Et notre CEO a dit : « mais ça c'est incroyable. Quelle belle idée ». Donc, d'une petite idée à la con où on s'est challengés entre nous. Moi j'étais déjà pour des couverts en maïs. Je trouvais que c'était extraordinaire, et un copain m'a dit on n'a qu'à acheter 500 assiettes. Tu les laves, quand on a fini de manger, tu les laves. Tout simplement. Chez McDo, Exki machin ils ont tous des trucs en plastique. C'est vrai parce qu'on discutait de McDo, en disant finalement imagine un petit peu. McDo le directeur marketing, il a dit des choses incroyables. Il a dit il y a quatre ans, si tu arrives au McDo de Waterloo qui était leur magasin école, il a dit j'arrête les caisses. Je mets tout sur les bornes. Tu avais l'habitude pendant deux heures. Et hop je mets 12 bornes et tout le monde est aux bornes finalement, de 7ans à 77ans les gens, toujours très vite, en 6 mois de temps. Alors lui il est fort, il a réussi à supprimer ce truc. Et pourquoi il a réussi à le faire, parce que le soft et la qualité des bornes. La qualité tactile est très bonne. Et le soft, il est très *user friendly*, c'est à dire tu prends un cheese il va te dire : « tu ne prendrais pas un petit truc de limonade, avec gâteau blablabla ». Donc c'est très bien fait. Et puis il y a, deux ans et demi. Ce même gars a dit chez McDo, Thomas il arrive en caisse puis après il attend. Bah on va faire machine arrière, on va aller livrer Thomas à table. Incroyable, ils vont livrer à table, et finalement ça marche. Et là où moi j'aimerais travailler chez McDo, parce que McDo il est décrié dans la presse pour le tri de déchets, ils sont juste à la rue. Moi j'ai envie de leur dire : « mais il y a un truc que je ne comprends pas, vous avez cassé les habitudes de avant l'achat, puisque tu as dit : « va à la borne ». T'as cassé la file d'attente. Mais pourquoi tu apportes à Thomas son cheese dans un papier, dans un carton, ses frites dans un carton alors qu'il est là à côté de la cuisine ». Je ne comprends pas des trucs comme ça. Thomas, il a tout suivi ce que McDo marketing lui a imposé depuis trois ans. Il n'a pas demandé de carton. J'étais dans un McDo il y a quinze jours, et c'est là où je me suis fait cette réflexion. C'est incroyable., j'attends le mec, il me sert mon McDo. J'étais là tout seul, et je te jure que c'est vrai, j'avais envie d'échanger avec quelqu'un et

demander pourquoi on m'avait, donné tous ces papiers. Je voulais juste un cheese, les frites limite, tu me les mets sur le plateau. Tu imagines les économies ? Si tu lances un truc comme ça, tu arrives au siège de McDo, ce sont des business men, ils vont dire on a 3000 restaurants, on va d'abord lancer sur 100 restaurants : 10 en France, 10 à San Francisco, on va regarder ce que ça fait. Tu fais vite un calcul, tu vas partir en courant. Tu vas dire les économies, enfin j'imagine ! Parce que finalement je retire une charge. Est-ce que je n'ai pas oublié quelque chose mais je ne pense pas. Peut-être qu'on va me dire Arnaud ton idée ça ne marchera pas, mais non. Est-ce que je vais choquer le client, est-ce que le client qui est à table il va dire mais moi j'aurais bien voulu mon carton ? Alors après, on peut me dire qu'il y a une sécurité alimentaire, mais je ne pense même pas parce que quand tu vas dans une cuisine McDo ces mecs sont contrôlés 50 mille fois par jour, c'est super clean. Donc le mec qui prend mon cheese et me le met dans un carton, il me le donne, je le sors du carton et je le jette. Ça dure 5 secondes.

TP : Est-ce que la RI se passe surtout dans votre équipe d'innovation, ou est-ce pour essayer pour voir un petit peu différentes parties prenantes, discuter avec eux ?

AL : Oui tout à fait, il y a un comité Innovation. Le premier mardi de chaque mois et dans lequel - moi je me balade beaucoup je n'aime pas rester trop ici je discute avec les magasins parce que tu vois il y a un mec qui peut être par exemple chargé des fruits et légumes à Arlon. Comment fait-il pour remonter une idée super ? Imagine le mec du McDo d'Arlon a l'idée dont je viens de vous parler. Comment il fait pour que ça remonte jusqu'au siège ? C'est galère, il va aller voir son manager, et il va lui dire qu'il s'en fout. Ou il va voir son directeur et veut que ça remonte au siège. Nous, on a le même problème. On a 10 000 personnes qui travaillent pour Carrefour en Belgique, c'est beaucoup. Dedans il y a des super gens comme dans n'importe quelle boîte. Des gens moyens et des gens pas bons. Et puis dans les super gens, il y en a un qui a une super idée et qui dit tiens les gros camions qui font tout le tour de la Belgique maintenant le camion il va être comme ça. Et qui peut être une super idée. Mais comment il fait pour en arriver entre guillemets pour venir m'en parler ou pour en parler au marketing ? C'est ça qui est difficile. Donc nous on essaye d'aller parler avec les gens en magasin. Je sais que ma collègue du marketing le fait beaucoup aussi. Et puis si on trouve un truc sympa, c'est un peu restrictif car après c'est selon mes goûts et mes humeurs. Mais à un moment donné il faut bien que la chaîne se fasse. S'il y a un truc sympa, je vais le remonter au comité digital Innovation. Je vais dire tiens, j'ai discuté avec la fille du drive, elle a une super

idée, on peut faire ça et ça coûte 20 000. Qu'est-ce que vous en pensez ? A ce comité digital, il y a quatre membres du comité exécutif qui sont là, et qui valident ou pas le dossier. Et après il y a ce qu'on appelle un comité dépense, donc ton dossier est validé en comité digital et puis tu dis j'ai besoin de 50 mille euros. Donc faut monter un petit business model.

CDM : Donc j'imagine que Carrefour a des objectifs en termes de RSE, que parfois les entreprises se basent sur les Sustainable Development Goals des Nations Unies. Comment est-ce que vous fixez les objectifs et comment est-ce que...

AL : Ce n'est pas ici, c'est au siège. On n'a pas de département, mais c'est une très bonne question. L'année dernière en septembre, quelqu'un était venu, un top 10, qui disait : « mais quand est-ce que vous allez vous décider à créer un département qui est en charge de ça dans chaque pays plutôt que de le globaliser ? ». Oui vrai, pour l'instant pas ici. Mais je pense qu'on va y aller, il va bien falloir.

CDM : Du coup, juste pour vous donner une idée. En fait, ce que vous faites en innovation responsable, comment vous intégrez la responsabilité qui de fait est très loin de ce que nous on avait trouvé.

AL : Ce n'est pas bien ?

CDM : Non, non pas du tout. Non, c'est juste comme ça je peux vous expliquer. Parce que vous, vous avez beaucoup échangé avec nous. Et du coup au début vous avez dit que vous étiez intéressé de savoir un peu ce que chez nous on avait appris dans notre...

AL : Mais moi j'aimerais bien ! Quand tu m'as écrit moi j'aime - je ne sais pas si après vous pouvez le faire ou pas mais moi c'est très simple. Si je peux avoir après votre mémoire.

TP : Ah oui tout à fait, avec plaisir.

CDM : Pour nous l'innovation responsable c'est principalement, comment en développant des innovations intégrer la question et ce qu'on en fait on est responsable ? Est-ce qu'on a raison ? Est-ce que c'est bien de lancer ça ? Et du coup comment est-ce

qu'on sait dire si c'est bien de lancer ça alors qu'on ne connaît pas forcément tous les tenants et aboutissants au moment où on décide de se lancer sur le marché. C'est vraiment comment les entreprises par un processus plus responsable peuvent en effet se poser les bonnes questions au bon moment, ce qu'on avait identifié c'était impliquer les parties prenantes : les clients, les fournisseurs pour qu'eux puissent donner leur point de vue sur : « ah mais attendez, si vous lancez cette innovation-là, il y aura des problèmes et ça va créer plus de pollution, par exemple ». Donc c'était vraiment comment dans le processus on intègre tout ça.

AL : Alors on bricole encore. Ça avance mais on bricole encore beaucoup. Une boîte dans laquelle j'étais à Paris et présentée à ma collègue du marketing il y a un an et demi. En fait tu décides : « Tiens, moi, je vais lancer un produit qui s'appelle ThomasBio et je veux faire du jus de fruits au jus de carottes. » mais il ne sait pas comment dessiner la bouteille. Il ne sait pas si la bouteille va être suffisamment vendeuse, si la bouteille il faut la faire en verre, en plastique, en maïs, tout ce qu'on veut. Si le bouchon doit être comme ça comme ça. Et donc cette boîte, au travers d'une plateforme elle part du début. Thomas se présente, il présente un petit peu son produit etc. Et il va échanger avec un panel de consommateurs et le consommateur. En fait il va dessiner pour toi. Un consommateur qui va dessiner, un autre va intervenir derrière : « non mais plutôt le truc bio tu le mets dans ce sens, là pas comme ça ». Et au final, c'est carrément participatif et c'est assez sympa et ça permet en temps réel d'avoir déjà des idées. Moi je voudrais qu'on fasse ça. Le mec qui me vend ça, lui c'est une plateforme qu'il a développée. Il me demande une licence qui coûte 50.000 euros par an, t'as le droit d'avoir dix personnes de Carrefour qui peuvent projeter des idées là-dessus. Et nous on partage avec vous les résultats et tous les KPI's qui sont derrière. On va dire écoute, sur les trois derniers mois, ton produit que tu as essayé de lancer, ça n'a pas fait vibrer les gens. On a mesuré, il n'y a que trois personnes par jour qui se sont connectées. Laisse tomber, ça ne marche pas. Mais on ne l'a pas signé, donc ça fait partie du job du début d'entraîner les gens avec toi quand tu es dans l'innovation il faut entraîner et sensibiliser les gens en disant : « regardez, cette startup qui est à Paris, elle peut nous aider à développer des nouveaux packagings, des nouveaux produits ». Plutôt que d'un soir inviter dix consommateurs à tester le chocolat bio, parce que le mec il est reparti avec un colis avec trois chocolats bio. C'est encore difficile de faire passer ça. Donc on ne dit pas qu'on est mauvais. Je dis juste pour moi, je le vois cela fait 18 ans que je suis chez Carrefour, France ou Belgique, ça avance bien mais vraiment il y a encore beaucoup

de boulot. C'est tant mieux, ce qui est grisant, mais qui dit beaucoup de boulot dit beaucoup d'engueulades. Parce que les gens disent : « ah directeur innovation c'est top », oui mais tu t'engueules tout le temps avec les gens, tout le temps. Moi je vais descendre ici et je vais dire : « pourquoi tu fais la caisse comme ça ? On regarde quand même... » et là, ils vont me dire mais non tu attends, on n'a pas d'argent, on n'a pas de budget, mon patron ne veut pas ça, ce n'est pas prévu, on a essayé ça ne marche pas.

TP : Mais c'est intéressant car c'est une question qu'on a dans notre mémoire, est-ce qu'il faut forcément avoir un processus responsable, pour que l'outcome ce qui se passe en réalité les conséquences soient responsables aussi ? Typiquement, ici j'ai l'impression que ce qu'il se passe, c'est que vous n'avez pas de processus d'innovation responsable. Mais ce qui est sûr c'est que l'outcome on cherche à ce qu'il soit responsable.

AL : Ah oui, évidemment. Imagine si demain je dis : « moi je vous livre nonante minutes, tout le monde avec un gros camion 250 chevaux diesel qui polluent à mort ». On va me dire ton idée est sympa, mais pourquoi tu as mis un gros truc polluant ? Ou tiens, je mets des sachets en plastique partout. J'ai vu ça sur LinkedIn l'autre jour, il n'y a pas très longtemps un automate qui met tes courses automatiquement, tu arrives en caisse et ton truc s'enchaîne. C'était très sympa voilà, ça scanne automatiquement, ça évite la file en caisse, c'est cool et tout. Et la dernière image. Tes courses passent dans un tunnel, ça scanne à vitesse lumière, il n'y a plus personne en caisse, ton truc est emballé et là tu vois le client qui repart avec un gros sachet en plastique. Moi ça me choque, il y a quelque chose que j'ai loupé. Parce que quand tu vas à Bali, c'est de notre faute aussi, on le dit dans tous les reportages. C'est très pollué, pratiquement toutes les rivières, c'est vrai c'est dégueulasse, quel dommage, quel beau pays. Mais est-ce que tu peux vraiment en vouloir à ces gens-là, tu ne peux pas dire à quelqu'un : « écoute pourquoi tu fais ça ? ». Au mieux on l'a toujours habitué à faire comme ça et puis de toute façon ils n'ont pas les infrastructures et tout pour l'instant. Voilà, l'histoire du Chinois qui fait toute son innovation et qui termine par le plastique je trouve ça dommage. Toutes nos réflexions d'innovations pour répondre à ta question, naturellement et j'espère se font dans un souci de dire « là, on est dans le bon ». De toute façon le consommateur ne nous loupe pas au tournant. Regarde Delhaize, ils ont sorti une action fidélité il y a six mois avec des jouets en plastique. Ils se sont fait défoncer, nous ça nous pend au nez. Parce que nous on ne rigole pas. Moi je veux dire tout le monde m'a dit « ah tu as vu Delhaize ? », moi j'ai dit : « attends mais

tais-toi parce que je ne pense pas qu'on soit super clean », ça peut nous arriver aussi il ne faut jamais se réjouir. Ce sont des millions d'euros de campagnes publicitaires qui sont allés à la poubelle. Il faut faire tout ce qu'on essaye de faire. Et c'est effectivement de le faire aussi dans un souci de...

CDM : Mais du coup ça passe par toutes les innovations ? Se poser la question de la responsabilité de l'outcome ?

AL : Moi oui vraiment clairement.

CDM : Et l'équipe ?

AL : Oui, Arthur qui travaille avec moi, il est très technique. Donc lui, son premier *step* c'est de dire : « Arnaud ton truc c'est débile ça ne marchera pas, on n'arrivera pas à le faire ». Mais à la fin on va quand même le faire, franchement, vraiment attention ! La dernière en date ce n'est pas une innovation c'est un « event » mais c'est Tomorrowland, on en profite pour tester des nouveaux trucs. Et un truc débile, et ça c'est mon fils qui a eu l'idée. Lui, il est *student* dans l'hôtellerie, il est dans un milieu où il a envie de vomir tellement qu'il jette tous les jours, il est très sensible à l'économie circulaire etc. Donc il dit dans ce milieu du tourisme et tout il y a un business de malade pour sensibiliser les gens. L'année dernière il travaillait comme caissier à Tomorrowland et il me dit « mais tu vois quand tu clôtures, tu dis 14 euros 80, au moment où j'appuie sur end, le ticket sort ». Mais pourquoi on donne les tickets, qu'est-ce qu'ils en ont à foutre les gens du ticket. Oui, il y a un point de vue légal. Mais donc, cette année, c'est une petite innovation. Ce n'est pas nul parce que, on a fait 300 000 euros de chiffre d'affaires sur 4 jours ce qui est énorme. Donc tu imagines cela fait X clients, X tickets, X papier, l'encre etc. Cette année, on a dit : on retire ce truc. Si quelqu'un demande un ticket, il suffit d'appuyer et là le ticket sortira. Il y a des gens si tu ne donnes pas le ticket ils t'attaquent en justice. Quand j'explique un truc comme ça les gens disent que ce n'était pas compliqué à faire. Bah oui en attendant on ne le fait pas. Personne ne le fait. Un autre truc qui me revient et qui était vraiment rigolo, c'était quand on a ouvert la Factory. Parce que Carrefour de plus en plus essaye de tester un petit peu sur la restauration. Ce n'est pas notre *core business*, mais on teste un peu des trucs. Moi j'ai dit OK la Factory il n'y aura que des bouteilles en verre. Puisque moi-même je me l'impose, donc les gens, bouteilles en verre. Tu veux des bouteilles en plastique je n'en

vends pas. Perso je vends des bouteilles en verre et tu peux repartir avec ton casier si tu veux. Mais si tu manges je mettrai des bouteilles de Spa en verre sur la table. Là pour le coup, je ne les vendais même pas, je les offrais. Tu as soif, tu prends de l'eau pétillante ou plate. Quand tu vas au restaurant, si on a pris une bouteille d'un litre peut-être qu'il reste ça. Qu'est-ce qu'il fait le restaurateur, il jette la fin de l'eau et il récupère sa consigne. Et moi j'ai dit : « poussons le truc, il reste ça on le laisse sur la table, c'est rare que quand Chloé va au restaurant, elle boive l'eau comme ça devant tout le monde ». J'ai fait ça à la Factory et les gens adorent. Je n'ai eu que des remarques positives. Et une cliente un matin, elle m'appelle comme ça et elle me demande si j'ai de l'eau. Je lui dis que l'eau est juste là. Et j'ouvre la bouteille, mais qui était déjà ouverte. Elle me dit : « non, non ça a déjà servi ». Donc je lui dis : « ne vous inquiétez pas c'est gratuit ». Elle répond : « mais je veux bien payer, je veux une nouvelle bouteille » et là je le prends mal, et moi quand je prends mal je suis assez insistant. Je lui dis « madame vous êtes seule, vous prenez un petit déjeuner, dans notre concept... » et elle me répond « quoi dans votre concept ? Qu'est-ce que vous en savez si un autre client n'a pas bu à la bouteille ? » et je lui réponds « oui mais la pratique de bon père de famille veut que vous avez déjà vu quelqu'un dans un restaurant boire à la bouteille ? Honnêtement ? Est-ce que vous avez déjà vu quelqu'un boire à la bouteille ? ». Elle m'a répondu que non, mais elle m'a demandé une nouvelle bouteille. J'avais juste envie de lui dire qu'elle était ridicule, ne viens pas chez moi. Donc ça se sont des petites innovations, quand on dit innovation, quand je te dis innovation les gens disent, je fais non. Arrête ! Innovation, c'est dire je te livre mais je ne prends plus de voiture, je livre à vélo et ça fait partie du boulot d'expliquer ça.

CDM : C'est vrai que la plupart des entreprises qui se disent innovateurs responsables développent un processus pour intégrer la responsabilité. C'est bien de pouvoir voir - on voulait savoir si des entreprises peuvent innover en faisant vraiment attention sans avoir un processus.

AL : Oui et non. Carrefour France, eux viennent souvent prendre exemple ici. Ils me disent : « purée, Arnaud tu as lancé ça en six mois et tout » parce que moi je zappe tout ça. C'est bien et ce n'est pas bien. Parce que c'est bien, moi je pars du principe que pour innover il faut être rapide. Parce que je ne rêve pas non plus. Moi je suis payé, je ne vis pas d'amour et d'eau fraîche. Et Carrefour vit avec de l'argent et donc on doit continuer à faire du business mais on doit aller vite dans l'innovation parce qu'il y a une compétition. On vit dans un monde économique. Il

faut faire attention à tout ce qu'on dépense et faire attention quand on dépense de l'innovation. Nous, on doit aller vite dans l'innovation, sans dépenser trop d'argent. Pour être plus fort que les concurrents. Et si on veut être plus fort que les concurrents. Oui, on doit avoir un process effectivement responsable etc. Mais on doit être agile, on doit aller vite et pour moi aller vite il faut une petite équipe. Dans mon équipe on est 3, on va plus vite.

TP : Donc c'est lancer des projets rapidement, quitte à se rétracter plutôt que de faire un long processus ?

CDM : Si vous vous rendez compte que votre innovation est totalement irresponsable, vous vous rétractez ?

AL : Exact, c'est ça qui est sympa en Belgique. On nous laisse cette souplesse. Parfois il faut l'imposer aussi, parce que sinon tu pars vite dans une structure, dans un processus où tu es parti pour 10 ans pour valider le truc.

CDM : Du coup ne disiez-vous pas qu'à Paris, eux ils ont un gros processus et que vous en finale vous pouvez aller plus vite. Est-ce que vous ressentez qu'à Paris, en faisant très attention à ce qu'ils lancent, en impliquant des analyses de risques avec des scientifiques, des personnes plus techniques, vous sentez qu'ils prennent plus de temps au final ?

AL : A fond, à fond. L'histoire de la Factory, c'était un magasin différent. C'était un magasin, je n'ai même pas mis l'enseigne Carrefour. J'ouvre un magasin, avenue Louise je n'ai même pas mis l'enseigne. Et le patron monde qui regarde comme ça. J'avais mis une bâche, j'avais fait un bleu un peu délavé, j'avais mis le logo Carrefour mais usé - juste le logo. Et il me fait : « qui a fait ça ? » et je dis que c'est moi et il me dit : « qu'est-ce qu'il y a, vous n'êtes pas fier de votre entreprise ? », je lui dis mais attendez c'est une accroche extérieure, c'est une découverte - c'était dans un garage, j'avais loué un garage qui avait fermé, il n'y avait même pas de portes. Il m'a demandé : « vous avez fait ça en combien de temps ? », je lui dis que la campagne Act for Food elle est sortie depuis septembre, là on a ouvert mi-octobre, donc un mois et demi. Et donc lui il a voulu faire une Factory en France. Et je t'assure que c'est vrai, ça date d'octobre - la Factory en France vient d'ouvrir à Marseille, derrière le Vieux-Port le 6 juin. Ils ont mis neuf mois pour faire un concept. Ce n'est pas pour nous mettre en avant nous mais qu'est-ce qu'on a

fait nous. On a récupéré tout ça, on avait récupéré plein de trucs. Tout est du récup. Ils ont voulu faire un truc mais ils vont acheter, moi je vais emprunter à notre fournisseur qui fait du gin etc qui a un énorme entrepôt avec plein de brol. On a vraiment fait un magasin, on n'a même pas de gondole quoi, c'était sur des étagères rouillées. Mais ils ont essayé de faire la même chose, ils sont tombés dans leur process et ils ont commencé à acheter des trucs et ça leur a coûté cher et pris du temps. Mais une fois de plus attention, c'est bien aussi d'avoir des processus, cela évite de faire des conneries. Je ne suis pas en train de dire il faut faire le cowboy, je suis déjà vu comme un cowboy ici.

CDM : C'est vrai qu'il y a des gros avantages à développer un processus notamment par exemple d'être sûr qu'on ne se lance pas dans n'importe quoi et qu'on ne développe pas des innovations qui feront scandales comme Delhaize.

AL : Bien sûr. En fait on doit faire attention. En fait l'innovation ça touche tous les départements. Donc le mec qui innove sur un produit oui il est comme Engie etc. Il a des process à respecter. Moi je n'innove pas sur un produit, ce n'est pas moi qui vais créer un nouveau volet. Moi je dis juste : vends tes patates en paquets.

CDM : C'est plus de l'innovation organisationnelle et marketing ?

AL : Voilà. Mes collègues qui travaillent à Massy sur le packaging etc. doivent faire attention à la qualité du plastique alimentaire qu'ils développent. Tu vas retrouver probablement s'il t'interroge le directeur innovation produit et il va avoir un discours tout autre que moi.

CDM : Mais c'est bien d'avoir des...

AL : Charlatans.

CDM : Non (rire). Mais comme quoi les processus responsables ne s'adaptent pas à tout type d'innovation.

AL : Non. Tout à l'heure on parle de l'automobile et de l'hôpital et le film que je te disais. Ces mecs-là effectivement ils ont un processus ça dure trois ans probablement avant mais, c'est

logique et heureusement. Tesla quand il a sorti sa voiture en disant tu ne tiens pas le volant, j'espère qu'il ne l'a pas fait en coup de tête. Si tu fais une interview comme ça en automobile tu vas tomber sur des trucs radicalement différents.

CDM : Et bien écoutez, merci beaucoup, on va vous laisser aller manger.

AL : Pas de soucis.

CDM : Mais du coup, on peut tout à fait vous envoyer notre mémoire quand on aura fini.

AL : Super.

Appendix 20 – Flash official commitments on website

The screenshot shows the CIRC website header with the logo 'cIRC formerly flash' and a 'We are hiring' button. The main content area is titled 'Our responsibility' and includes a paragraph about their commitment to improving cities. Below this, there are four columns of commitments: 'Getting closer', 'Extra mile', 'City partners', and 'Workers aboard'. At the bottom, there is a 'Partner with us' button.

cIRC
formerly flash

We are hiring

Our responsibility

Cities are about connections. And we're set on improving both. Before we start in a new city, we first talk with the local authorities and the community to make sure we're bringing something that adds to the lives of the people living and visiting there.

Getting closer We have a team you can talk to in every city. Tech is awesome, but human interactions are the best.	Extra mile Every ride you take with us is insured. Even when it's not required by law. There's no price for peace of mind.	City partners Being good neighbours means working with others to best meet the needs of people and the environment.	Workers aboard All the people who care for our vehicles and keep them charged are full-time workers. New jobs make cities happier places.
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Partner with us

Source: Circ, 2019

Appendix 21 – Flash (Circ) interview transcript confirmation

De : Chloé De Maesschalck <chloe.demaesschalck@student.uclouvain.be>

Date : samedi 22 juin 2019 à 13:53

À : Kurt Van Landeghem <kurt.vanlandeghem@goflash.com>

Cc : Thomas Peeters <thomas.peeters@student.uclouvain.be>

Objet : Verbatim transcript Flash (Circ) - Responsible Innovation Thesis

Dear Kurt,

For of all we wanted to thank you again for your time and Sylvester's during the interview. All the information you shared with us are going to be really helpful for our thesis.

As promised, you'll find attached the verbatim transcript of the interview. It is a Word document, you'll have the possibility to change anything you think we didn't understood correctly and sent it back in order to confirm this is a good reflection of what was discussed during the interview.

We had a small recording problem, indeed our recorder stopped at 48 minutes. So the rest of the information giving during the interview will be presented as bullet points at the end of the verbatim transcript based on written notes taken during the interview.

Could you please take a look at it, to **confirm that we have correctly understood the message you wanted to convey**. In addition, if you notice any important **missing information**, you can have it added.

- The competitive advantage benefit from Responsible Innovation is mainly linked to developing a stable and sustainable relationship with the cities and thus to increase the competitive advantage compared to the relationship Lime or Bird have with the cities which is a bit chaotic.



Kurt Van Landeghem <kurt.vanlandeghem@goflash.com>

Chloé De Maesschalck; Thomas Peeters

vendredi 26 juillet 2019 à 15:41

[Afficher les détails](#)

Hi Chloé

Sorry for the delay! I approve your deliverables. Good luck to both of you.

Kind regards,
Kurt Van Landeghem
+32486698909

Appendix 22 – Flash (Circ) interview transcript

CDM:	Chloé De Maesschalck (Interviewer)
TP:	Thomas Peeters (Interviewer)
KVL:	Kurt Van Landeghem (CEO Benelux Circ) kurt.vanlandeghem@goflash.com
SS:	Sylvester Spitaels (Strategic Partnership Manager Benelux Circ)

----- Recording started after asking the interviewee's consent -----

CDM: ... so first of all, we'll do just a quick context introduction- what about you? What's your academic background and how long have you worked for Flash?

KVL: Do you want to introduce yourself?

SS: I'm the partnership manager, responsible for the city's and big companies. I'm acting as a point of contact - really working together with the different stakeholders. And I think for Circ it's really important that we have good partnerships with both the cities and the companies. We want a solution - it is really a solution that we want to bring together to the city - it's a micro mobility solution in a whole and not just bringing a product that's an e-step or another vehicle. We really want to think with the cities and I'm acting as a point of contact there. So, before this I was a consultant, a senior consultant Capgemini and a funding consultant as well. And I studied bio engineering. So, I've seen a few companies in the consultancy world and then I came here.

KVL: So, I'm the CEO for the BENELUX only joined in February because we only built a legal entity in the second half of January. So, I was the first employee of the company and I have a background of 18 years in the consulting sector. Primarily international business consulting and I.T. consulting and my educational background is that I did a master's in economy economic science and also an M.I.T. Master's in Information Technology.

CDM: You already said that Flash is about a macro mobility solution. How would you then define what you're really doing? What's the DNA of a flash e-step?

KVL: So, in essence it's a service related to providing a micro mobility solution which means the first mile in the last mile of a particular itinerary from A to whatever C D E. Which means that if you want to go to work by train, obviously the train by definition does not stop in front of each and every house. Luckily it would make a lot of noise, and it would be extremely ugly and expensive for society. So basically, the first mile in the last mile of the itinerary is exactly what we offer.

TP: How would you describe the competition in your sector?

KVL: We have two American based competitors like Lime and Bird, globally will be the biggest and we are the biggest one at European scale. So, we are the biggest micro mobility company both in Europe and in the meantime also in Belgium. We started late, in February, and Lime was already active since last year in October. But in the meantime, Lime is active in three cities and we are active in five cities and Bird is only active in one city. So, we are by far the biggest. If you look at the short time, we are very active, we already generate 100000 rides in Belgium after three months. And a million in Europe. All of our competitors took like fourth to eight months to achieve them.

CDM: So, when you say the biggest, is it the number of cities, the e-scooter number or of rides that you count?

KVL: Rides.

CDM: Okay.

KVL: Why not scooters? Because unlike American companies we scale responsibly where American companies often scale quantitatively. Where clearly, we do proper data analysis. We are a data driven company. All we care about in the end of the day is the data. And based upon the data we decide where people need our services.

CDM: Do you describe your company as innovative, like is it really important for you to innovate?

KVL: Yeah. So, it's first of all that the type of service and then I referred to micro mobility. The only reason it can exist is because of the smartphone. Everybody has internet and the technology behind I.O.T or Internet of Things. Without all of that, such a service could not exist. But there is also the reason that such a service is only popping up the last twelve months. It's because of the new technology innovations that allow us as a company to provide such a service. That is the basis of the service. Where do we need to innovate as a company in order to keep our competitive advantage? That is relative to both the products and the service. When I referred to the products, I already referred to these recycled wheels which are biodegradable. As I said the break is recharging the battery (the recycled batteries). All of that is important. All the innovations relate to swappable batteries which means you can leave the e-scooter on the street and simply swap the batteries with an e-cargo bike. We already have cargo bikes in Liege, Namur, the coast. Which means, our solution, it's much greener because the deployment collection is limited. With the vans, we give priority to do quick fixes on the street on e-scooters and to do a rebalancing of the fleet with the cargo-bikes.

CDM: So, the cargo-bikes it's caring just the battery, full batteries, and they can change?

KVL: No. The swappable batteries are an innovation which we currently designed in our factory which we are producing, which will arrive in September - October timeframe. In the meantime, we already have our cargo bikes to do the rebalancing activities and the hunting activities. Rebalancing means you will want a ride to generate another ride and another ride. And another ride. If after all the rides, there is no second ride, then you do not have shared mobility anymore. You do not have a green solution because one ride means it's equally *ungreen* as a private owned vehicle. So, you will want to have downstream revenue. Therefore, downstream rides which means you need to properly analyse the data and rebalance the fleet to ensure that there are second and third rides. And that is what the cargo-bikes do.

CDM: Okay. And so that's about product innovation or is that service innovation?

KVL: That is about service innovation. For product innovation it relates to the swappable batteries etc. Due to which, later on the Cargo bikes they'll do more than the rebalancing and the hunting. They also swap the batteries which means the number of vans will go down. Which is greener, more technological and lead to even less traffic. But also, to a better cost structure as a company.

CDM: Then. So, as I said we identified some characteristics of what responsible innovation might be, but we're really interested to know what you understand it is, what would the characteristics of being a responsible innovator for you or a responsible innovation? What would that mean?

KVL: For me a responsible innovation means that you create an added value either for the end user or for you as a company or your employees or for in our case the government which is an important stakeholder in the equation. So, for example a responsible innovation relative to the users means often a better product but also a better usability of the mobile application etc. When is it responsible? When it relates to innovation due to which the service either increases or it remains equal, but it helps to drop the price.

CDM: Okay

KVL: If it's any of those it becomes greener. Then for me it's a responsible innovation.

CDM: Okay

SS: And I think an important thing there is that we focus on that the three parties are happy. So, when are we happy? It's when the scooters are being used. The users are happy when they can use the scooters. And the city is happy when they're being used in a city responsibly. So, it's a win-win for all three parties and really focusing on maximizing the value there. So, we're really looking at hot spots where the users will use them so we can create and generate value. They have something about it and the city doesn't have scooters all over the place. I think that's very responsible. Well I'm not just dumping it, looking to make profits. Then you have the city that is not happy because they have scooters everywhere. People are not happy because there are

scooters in the way. So that's really also being responsible and looking how you can find an equilibrium in that.

KVL: So, for us the mission statement is connecting the dots relative to the transportation. In order for us to be able to successfully be an extension of public transportation, we need to be equally available and reliable. Which means, users need to know when they book our service for the first and last mile that the product is available in a very safe way. And that when the product is there, that it also works, that the battery is fully charged, that the breaks are working. So, for us whatever we do, and we do continuous improvement of our product process or service. It is always in view of increasing availability and reliability of whatever we do in order to be the best extension of public transportation and therefore to beat our competitors.

CDM: Was responsibility always a key priority. Or is it something that came maybe later after the creation of Flash?

KVL: It was there from day one and it was the reason why our investors funded the company because they were upset with the American way of doing business also in Europe. Where Lime did dump scooters on the street in a quantitatively way without consulting the governments, without doing a proper analysis together with the public transportation companies. Without taking into account the needs of European citizens who by definition will want to be properly insured, who will want the product to adhere to the local legislation. All of that was the foundation for our investors to start Flash currently branded as Circ. So, for example in Belgium e-scooters are part of a separate category in the *weg code*. Until end of May the code said the vehicle could only drive 18 per hour and not 25. The European law said it's 25. However, in Belgium it was overwritten which is possible to 18 but maximum. Why? Because all American vendors they did not adhere to that. And they did put scooters on the street up 25 kilometres an hour. Why? Because they didn't care to do the investment to make their product adhere to that legislation. They said, «just dump it on the street as is» and that is where our product is designed in a way that we can't simply define which location the scooter is operating at what particular speed.

SS: So, this is in Oostende. First the city looked at having it at twelve kilometres an hour and then the other zone it's actually 18 kilometres an hour. So, there are other zones as well in De

Haan where you can only have a speed zone of five kilometres an hour. And then we just implement that. We geofence it. And then the user when they break down, they cannot speed up again.

CDM: And so, the 12 kilometres you decided that with the city council?

SS: Yes

CDM: And so, I guess there are some Limes there too? Or no?

KVL: No, we are exclusive at the coast.

CDM: But if you wanted to go there and set 18 kilometres or 25 everywhere you could?

KVL: Yeah. Yeah you can do it.

CDM: So, you are going beyond what is expected from you?

KVL: Yes.

TP: And that's a good point for the next question. We're talking about responsible innovations, but you know to have a responsible innovation, do we need to also have a responsible process? In this case maybe you can consider that taking into account what cities want exactly, this could be a point of being responsible.

SS: Yeah well, I think as well just a whole process of having a regulation in place. There is a lot of cities don't know. But they want to write it. So, when we go to the cities and we do a pilot, we work together with them, we talk with them, we look at the map. Then we actually start with a certain number of scooters. And then in the first month, they can actually gather a lot of data so they can they can create regulation. And we don't comment and say look «this is the one we prefer it», because every city has a different treatment recommendation. So, in Brussels it's totally different than in Oostende because you have the coast, you have the tourists. So, then it's very important to go together to the city. To look together to it because they don't know

about e-steps either. So, then it's a really good process of going through that together and making a nice thing that's durable for a long time instead of coming in doing something for six months and then a city saying, «we stop everything», or «you can't park here». It's not responsible and it's not feasible to have a business model like that.

KVL: We applied processes throughout each and every part of the organization. So, the operations within the warehouse, within the repair for the mechanics, for the drivers, to the data scientists' people, everybody adheres to particular processes. So also, within the repair shop in our logistics processes we have tweaked and optimized processes in a way be that the outcome is made safe and reliable vehicle. If throughout the process, the vehicle comes in and comes out not properly repaired, we didn't do the quality assurance in a proper way. Then you fail toward the users with regards to your mission statement to be reliable, therefore safe. So, the processes indeed are embedded throughout your entire organization. We moved in unfortunately yesterday, a little bit delayed, if not you would have all the processes imbedded. It takes another 4 days before these warehouses are fully operational with all the processes embedded. You know in our other warehouse in Forest, all those processes of implemented. We have a few days delay, but that's why I asked you to come here. So, that I could show you the warehouse. But that's how it works in a start-up.

CDM: You told us the e-scooter; this one is your own design. So, what does it exactly mean? Is it you manufacturing it, you have a production process that creates those e-scooter and nobody else is going to have those Scooter?

KVL: Yes, so our company is split in two parts. We have that in markets part which we are part of. And we have the vehicle part which is the manufacturing capacity, the product designers and they indeed they look at the marketplace. They see what the user requires, see what the market has to offer. What is now the key difference if you will want to do innovation, is either you assemble a product, and then you don't do innovation you just take best of breeds and you end up with the me-too products which happens to be the very best. or you go one step beyond. And you manufacture your own key components or your own vehicle and then you assemble it. And now you come towards an innovative product and it's the last one which we do and that's also the reason why we are the first company globally to be promulgated in Germany. So, in Germany they go from a governmental perspective one step beyond what Europe requires. And

what we do in Belgium «one step beyond» means they will want each and every vehicle to be homologated as if it was a German car. And it's because we own our global supply chain including the innovation that the product design, that we were able to tweak our product in line with the specific requirements to have a homologated product.

CDM: Okay. And so typically what are the mechanisms you put in place in order to assure during your innovation process, let's say the design really, that it is responsible? And how do you integrate responsibility at that level?

KVL: Yes

CDM: For example, risk management about new batteries?

KVL: I will give you an example, if you look at the scooter downstairs, you have a carriage for drinks, and in the next version it will be removed.

CDM: OK. Why?

KVL: Two reasons why. Because it's often used as garbage. Which is not green it and it's just not what we want there for not serving the next user and therefore not giving the next user the most optimal service because he gets shared scooter which is not clean anymore. Two because in the end of the day it doesn't help relative to the safety of the scooter because if you put up a drink holding a cup there you imply that users might be able to drink during. Which is not the case, because you need to have both hands to the steering wheel. It's continuous development. We will remove it and we will replace it.

CDM: That's how you make your process responsible, you adapt, and you react? And what are the mechanisms you put in place?

KVL: I will also show you something on the wheels.

CDM: Okay.

KVL: So, the process behind it this kind of an online voting mechanism that allows in markets people to prioritize what innovation we need and that goes to the vehicle part of the innovation. And based upon the prioritization which the in-market company needs, the vehicle company delivers it. So, the first type of scooter has such wheels. Then the in-between model had those wheels. It's such a black wheel. The third version has the holes in the wheel. Because on cobblestones it's much more comfortable. So, it's on top of the double suspension. It gives you much more comfort on the cobblestones. You have an awful lot of cities with cobblestones, Brussels, Liege, Namur.

CDM: And beyond comfort it's also safety?

KVL: Yes, and also typically what happens is once you start to use micro mobility as a service you start to consume much more battery of your cell phone. Which means the other competitors you probably are out of battery by the time that you want to lock your scooter again. Which would mean your credit card keeps on consuming money. So over here you simply put the cell phone in the USB, and you load your cell phones while you have your cell phone here. So, it's much safer because you can put the cell phone into the G.P.S. you can charge it so you can properly unlock whenever you are ready. So, all those features like on these models you normally have a bell like you need on a bike. Such a bell is the first thing which people vandalize. Once the bell is vandalized the product are such is not considered safe anymore because you do not have a bell. So, in the new product it's embedded so you cannot vandalize it anymore. All of them are really small product innovations. The battery was over there, we have put it over here because it's so much more stable. Everything changes.

CDM: And how do you manage all the, let's say, risk assessments? When you launch let's say such innovation you know changing the place is an innovation as such. For example, I can give you the example of the Ford Pinto. They decided for manufacturing processes to put the fuel tanks behind the car. And in certain cases when you had an accident from behind, the car burned. So, you know what I mean is, how do you make sure your innovation process is responsible with all those changes in the design of a step? Do you have like scientific experts who have an external opinion? How do you manage all this?

KVL: In our factory there is a very strict quality assurance process and the reality is whenever you upgrade to a product it goes over the production line. And the first time you put it through the production line it will never result in a product without flaws. And we have seen two statistics, that the first time you put it to the production line that you in total have to put it over the production line three times the first week you come up with a new model. And obviously after a couple of days or weeks it goes smooth. It's just one scooter here and there that does not pass the QA gate. The quality assurance gate. And that one particular scooter is going again over the line but initially the first week all of the scooters go over the line three times.

CDM: And did you develop some pilot tests? For example, I'm thinking you know those batteries that can be recharged, so obviously they may seem eco-friendlier but you're working with kind of new technologies and sometimes with innovation arise new unexpected consequences. So how do you manage all this?

KVL: That's a good question. So, for example, the recycle batteries, they last longer subject to you as a user using them much more responsibly. What do I mean? This particular battery if I simply put it random in a charger at any particular time - each and every battery has a memory with cells, and it has a lot of chemistry behind it. If you screw the memory of the batteries, the life cycle of the battery is limited, and the power of the battery reduces. So, what we have done with the recycle batteries, we more than doubled the life cycle of the product. But the new battery is much more vulnerable for misuse or abuse. So, what we have done in parallel is we have also decided to manufacture our own chargers and our own charging lines because not only the charger is impacting the life cycle and quality of the battery but also the charging lines and the power which you put through the charging lines. So, we are now installing manufacturing and fire kits which we can send in a container to different warehouses across the globe. And the purpose is that only with that particular charging line - that type of power installation - you are allowed to recharge the battery. So, you go beyond the product innovation in order to end up with a proper service. If not, you fail.

CDM: And as a conclusion, what would you say is the difference between a more responsible innovation process and a classic one like as they do maybe in America - what Lime is doing?

KVL: The biggest difference is a responsible innovation process is more costly and more time consuming by definition. That is, you always have to pick your battles and you always have to choose between speed, quality and innovation. If you take a proven product and a proven process you don't have to properly test it anymore because it's a proven product and serious. With the proper certificate, but if you innovate you have to go through the certification the QA test, the key learnings, once you implemented it becomes trial and error by definition and you again optimize both the product, the service and everything around it. So, the key difference is all of those costs.

CDM: So, as we said we identified the responsibility in the process and also really about the outcomes of the product, so what's the responsibility of the product?

KVL: I need to go to another interview, Sylvester can you continue?

CDM: So, the first question is how would you measure the responsibility of one of your outcomes? For example, what we saw in the literature is that either you focus on big organizations that fixed rules - let's say some trusted organization like the WWF - saying «you need to reduce consumption of mobility by X percent» and you are doing that, so you can say «we are responsible»? Or are you fixing your own standards and rules saying, «if we achieve that, we consider ourselves responsible and we consider our product or innovative e-steps responsible»?

KVL: So, we, before we started the company, we have already put forward our KPI, and the KPI is simple. We know that in average in the city people drive not more than six kilometres per day with the car which is two times three kilometres. So, it means that the whole of the cars in the city should not even be there. Because why the hell do you take your car for like two times three kilometres. If you can take an e-scooter or an electric bike or whatever. So, for us when do we achieve what we want to achieve it is when we at least remove 50 percent of the cars in all the biggest cities. Okay, now we already calculated that between 2020 and 2030 as opposed to 50 percent of the population who live in the city centers, 60 percent will live in the

city centers by 2030. Which means higher percentage of a higher population. Which is in quantitative numbers a lot of people. We already have traffic jams today congestion to the extent that cities cannot cope with it any longer due to the pollution and that due to the time it takes for people to be stuck in such conjunction, plus the economic impact. So, if we are going from 50 percent of people in the city canters to 60 percent. If those 50 percent currently all of them are in a car. And later on, you have 60 percent out of which halve is not in the car anymore. It basically means that you have reduced the number of cars of 40 percent in the cities.

CDM: That's like your main objective but it doesn't mean that if you achieve less than that you're not responsible?

KVL: You are basically responsible as of the day that you remove one car net, because you have to deduct the vans which we put on the road as opposed to the cost which we remove. So, it's the net gain. The net gain is: you remove one net car you gain. However, you also need to be realistic. There is also an ecological impact with such a micro mobility solution over the inbound-outbound. So, the net gain needs to be higher and anywhere in between the end goal and even if you meet it half way, for sure it's already a very responsible move for society.

CDM: Do you only take the ecological factor into account to say that you are responsible?

KVL: It's quality of life, it means less pollution, less noise pollution. The more your free up space in the city canters to create other zones: green zones playing fields etc. You also make sure that people are not spending time in the car but rather spend time with their family which is also good for society. So, it's much more than just removing cars.

CDM: You are not following SDG's, or you know big objectives that were fixed by big organizations in order to say, «we're responsible». It's what you take it's what fits your value that you say that's responsible?

KVL: Yeah.

TP: Okay. And maybe another question, do you think that we can achieve a responsible outcome without a responsible process?

KVL: No, no and you need to have both.

CDM: We just had some questions about the advantages and disadvantages. About doing responsible innovation, about integrating responsibility into your innovations. What are let's say the main benefits of RI either for your company as a business and for the society?

SS: I think now it is definitely the process that we're looking at. Is that by doing this responsibly we can stay in the market and we can offer a responsible product. If we would do this now and not think about this responsibly and just think about the profit that we want to make short term, then we would have an «okay investment» on the short term but not on the long term. And I think because our whole product has this focus on the responsibility, the advantage is that a lot of the cities also see that, and we'll be able to on the long term to keep those scooters micro mobility and invest in new solutions. So, I think it's important for us now definitely to show that micro mobility is something that can work. But only can work if it's responsible and hopefully that will mean that we'll stay in the market and the other competitors will not stay in the market in the long run. Which could mean that for now they are making more profit on a short term which is not the case for the moment. But for us too, to really focus on the longer and stay on the market. I think is a big advantage.

CDM: Okay. And maybe for the society then?

SS: For this society I think it's very clear now. You can see that the other companies are dumping a lot of scooters there. So, you have two people in the society: people who use the scooters and people who don't use the scooter. People using the scooters are always happy when there are scooters everywhere. People who don't use the scooters are not happy when there is a lot of scooters around. So, what we want to do there is really be responsible and place scooters on locations that people need them, so that they're not in the way or it's very limited. So, the people who don't use the scooters are actually not negatively affected by it. While still we bring the most value to the people who use the scooters. So that's a big advantage.

CDM: You said «people using scooters are always happy when they're scooters everywhere.» and you said then «we need to put scooters on the where people need them», but how do you manage the fact that people are going to say «I need a scooter down my house»?

SS: So, we're doing a lot of data science, so we can actually see where the scooters are being picked up and used. So, for example in Brussels we saw that in the beginning we had a really big zone. The problem is, if people use it, they started using it here and there, then they drive to their work here and they leave it there. If that's a location that not a lot of people are using other scooters it stays there and we have to go and pick it up. Now, if you look really at the data, we see that there's a lot of hotspots of people going to big areas where they leave it and other people use it again. So, what we do is we focus on those hotspots and actually make the zone of Brussels a lot smaller, so we don't place scooters everywhere. Just in the zones where we know that they'll be used a lot. We'll open up the hotspots and we can actually do for example between Knokke and De Haan, I can show you. There you can ride the scooter, but you cannot park it. Because we know if somebody parks it, nobody else will probably take it up, and it'll just be left there. So, by doing that – and it's important for the cities at first few months - we tried to look at cities to determine that, but we see that even the city or ourselves are a lot of time mistaken because you don't know what people are doing. And that's just that data gathering that you have to do. So that's something that we try to focus on, with the least number of scooters provide the greatest number of rides and then it's also the greenest for your scooter. Of course, if your scooter is there for the whole day not being used, it's not very ecological. So, here you have Oostende and De Haan. And then here people can drive it so they can drive from Oostende to De Haan, but they cannot park their scooter there. Then you have here for example, we have a really good overview of all the scooters where they are in the streets. If we see that this is a zone, but here this part is never being used, well with them we're going to close it down. For Oostende, there was a really big company and it is important that people could go from the company to the train station, we opened that up. So, it's very important for us to look at the zones and how it's being used, where you can park it, where you cannot park it, and that's a big difference. Also, with the other cities there is something interesting, as well for festivals or like long weekends we can also change that. For example, in a Namur there was a festival, so we changed all the hotspots to the places with more train stations because we know a lot of young people are going to come by train. Then, we thought they were going to drive to like five minutes' walk from the festival because it was easiest. But then we saw that they were actually driving out a lot further. So, we changed the hot spots in like half a day, the next day the scooters were gone in different locations.

CDM: And then do you agree with the City Council where people can drive the scooters or is that not part of the discussion yet?

SS: Yes always. For example, the elder men of Oostende called us saying is that there are problems at the station, there's a certain location where we cannot park them, or they cannot drive there. I would say two hours later it was implemented; they couldn't do it anymore. So, they call us, and we follow up on that. Even if it's not profitable for us we do it because we know that we can then stay in that city even if indeed they ask: «look, for example, that zone we don't have a lot of profits but there's a few people who need it because they don't have a bus». We'll do it, we know it's not profitable, but we know that we can really need work with the whole city.

CDM: Do you see any other big advantages for your company or for the society in general? Because otherwise we maybe could list you the advantage we found in the literature and maybe you can tell us what you think of it?

SS: Yes.

CDM: So first of all, we saw that the first advantage of doing responsibly is increasing firm performance. So typically, companies that are trying to reduce waste or develop innovative processes that can reduce energy consumption during the manufacturing stage, are performing better. And as well as employees are also motivated and perform also better, is it something you can feel?

SS: Yeah. And I think with the process here is that indeed we had the warehouse in Vorst it was a lot smaller. There was not really a great overview of everything that happens. So not only for the process got a lot better. We don't lose scooters that are broke, that are just standing there, that are not being used - but also for the people here is that the first thing that to mechanists said when they come in «woah this is a way better overview». For us also, as a working condition, it's always more organized. So, for their point of view it's a lot more fun as well to come in and not be in a situation where there's a lot of chaos that they can restructure everything, and we optimize the process. So, I think it's good for them - for the people who are there - as well. As the more processes you have the easier is to do your job. You don't have to have like a million processes because at a big company you don't achieve anything because

there's too many processes, but you have to have a good balance between having processes. But also, the liberty to indeed change your product and say, «well we need to remove this sort of product» and you have to be able to do that really fast. Otherwise you lose that.

CDM: Then the second one was that actually thinking about increasing the responsibility of the product allows companies to develop its activities. So, what I mean is that when you push your company saying «we need to be greener, we need to be more responsible for increase the safety of our customers» actually, you push yourself. And it helps you develop new ideas that you wouldn't have thought of if you just would say «just let's keep doing the most profitable».

SS: Yeah, I think maybe this answers the question that for example in Germany there was a really strict law where these e-scooters, and the ones that we had could not be used. So now we're developing specifically for a German market new scooters so we could be operating. I could work there, and we see the things that we implement that there's a lot of benefits. Indeed, with the batteries, with the bigger wheels. So that's something that would probably have gone slower if we had not pushed for any innovations to go to the German market. We could have said «well would just wait, all the other parties are not doing it they're just waiting to see if everybody waits. Then they'll change the law and then they will make it easier». But nobody has applied. So, we're looking to indeed optimize our product so we can really push our product and have it on the market instead of just waiting. And then after one year the German government probably would have said «well we don't have e-scooter» and change the law. Now we see indeed that the product that we have in this proposal here, is really also ground changing. It's a big, big plus.

CDM: Then obviously the one we identified is also the fact that when you were working towards more responsibility, your brand image is improved. How do you feel that?

SS: So now the brand is changing from Flash to Circ, it's not that it's really known yet. I think we're getting there. But what we are doing and really seeing is that maybe not the brands as a whole, but for example Oostende we followed everything. We scaled up from 250 scooters or 200 to 750 now and we see that a lot of cities look at what we did in Oostende: «we did it with this elder man, you can contact him». And they contacted him. They spoke with him like «How did it went in your city? ». And it's more than mouth to mouth but they could say «look we have

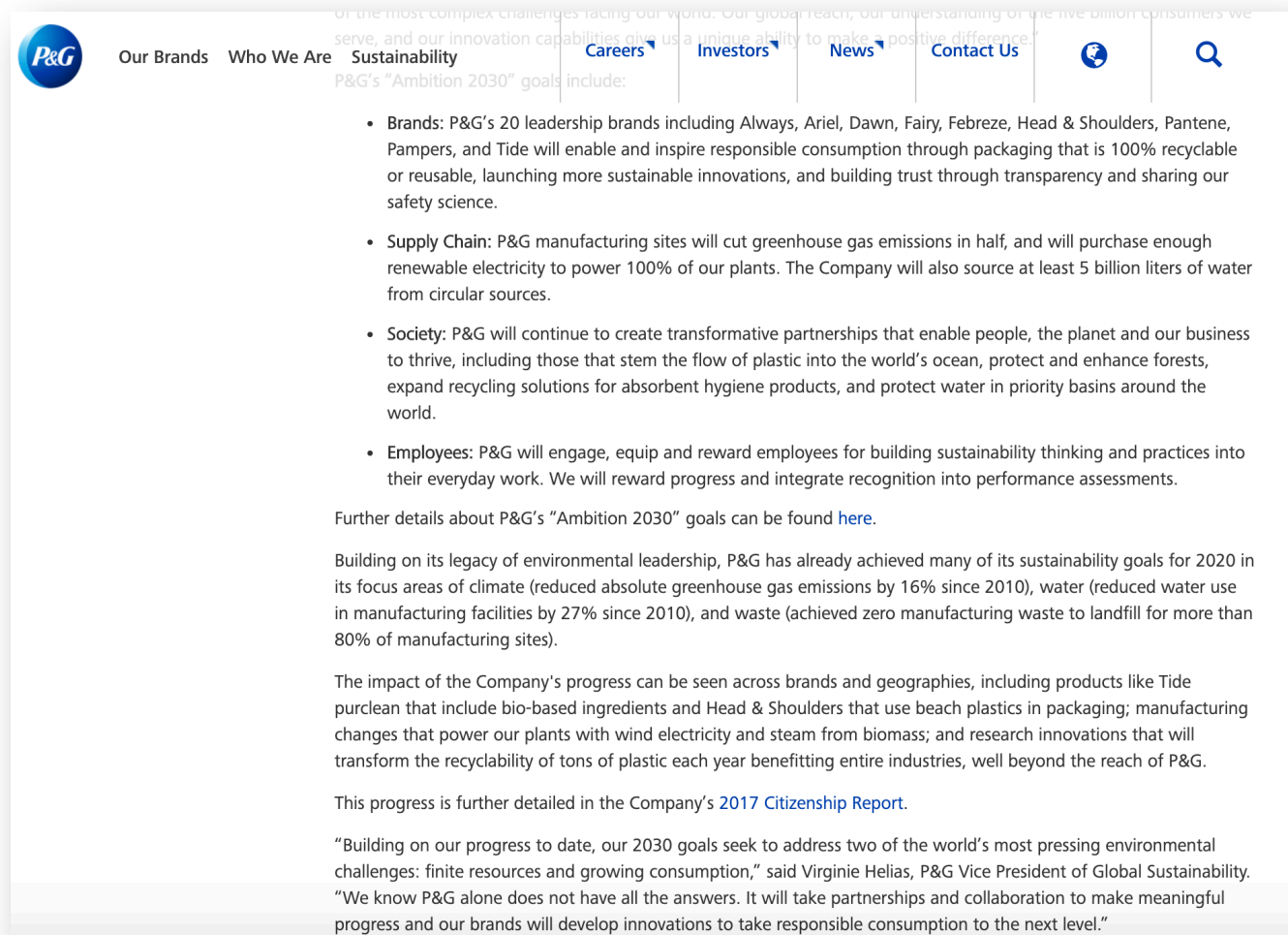
Flash in our city is really going well with scaling up. Everything's going well.» So that's maybe not as a brand as a whole that its improved, but it's really showing to the different cities. That what we are doing on the long term is really paying off.

[Interview audio stopped at 48minutes – the rest of the information given during the interview will be presented as bullet points based on written notes taken during the interview]

- The competitive advantage benefit from Responsible Innovation is mainly linked to developing a stable and sustainable relationship with the cities and thus to increase the competitive advantage compared to the chaotic relationship between Lime or Bird and the cities.
- Concerning the disadvantages, KVL already mentioned the fact that doing RI costs more and is more time consuming (longer). Concerning the difficulties linked to the stakeholder management, it is not easy since city councils are sometimes slow in their decision-making process, but it is really important for Flash to take as much time as necessary to reach a deal with the cities that makes everyone happy. It is the whole idea of having Partnership Managers.
- Regarding the difficulty to predict the potential consequences of innovations, Flash developed a continuous review system (also with reports coming from the users) allowing them to react as fast as possible when a problem arises and to solve the problem.
- Concerning the transparency issues, it was not something that was mentioned as a challenge.
- Regarding adapting the company strategy and organizational structure, since the responsibility was really in Flash's DNA from the start, it was not a Key Success Factor they identified.
- Concerning the awareness of the market expectation, Flash mentioned it was a key success factor especially in terms of knowing and helping to create the legislation with the cities.
- Concerning the efficient stakeholder mechanisms, Flash can count on Partnership Manager whose job will be to be the contact point in order to develop relationships of trust with the cities. This is one of the most important things to be responsible and succeed in the long term.

- Concerning the efficient feedback and measurement tools, Flash is a data-driven company, meaning they have access to a lot of information helping them to prevent the misuse of their e-scooters. In that way they can react in less than a day if there is a responsibility problem (in terms of safety, ecology or with the cities). With the data collection and the feedback tools linked to that, Flash is able to define hotspots where the e-scooters are being the most used and thus makes a particular e-scooter greener since it is really «shared». Flash is then also able to limit the number of e-scooters which is responsible – so thanks to the measurement and feedback tools they are able to become more and more responsible and green.
- Since Flash is a start-up, the management style is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to have a real impact on the product (to change it if there is a problem) really fast, not like in big companies where there are a lot of processes and a strong hierarchical structure.
- Concerning the promotion of the importance of RI, it is not something Flash does. Especially with the change of name, Flash never promoted their e-scooters as way more responsible than the Limes or Birds (at least not directly for the users). But it is something they might do in the future in order to differentiate.
- SS didn't identify any big risks expected for the increased cost of being more responsible and being slower in the innovation processes leading to potential competition issues.

Appendix 23 - P&G official commitments on website



of the most complex challenges facing our world. Our global reach, our understanding of the five billion consumers we serve, and our innovation capabilities give us a unique ability to make a positive difference.

P&G's "Ambition 2030" goals include:

- **Brands:** P&G's 20 leadership brands including Always, Ariel, Dawn, Fairy, Febreze, Head & Shoulders, Pantene, Pampers, and Tide will enable and inspire responsible consumption through packaging that is 100% recyclable or reusable, launching more sustainable innovations, and building trust through transparency and sharing our safety science.
- **Supply Chain:** P&G manufacturing sites will cut greenhouse gas emissions in half, and will purchase enough renewable electricity to power 100% of our plants. The Company will also source at least 5 billion liters of water from circular sources.
- **Society:** P&G will continue to create transformative partnerships that enable people, the planet and our business to thrive, including those that stem the flow of plastic into the world's ocean, protect and enhance forests, expand recycling solutions for absorbent hygiene products, and protect water in priority basins around the world.
- **Employees:** P&G will engage, equip and reward employees for building sustainability thinking and practices into their everyday work. We will reward progress and integrate recognition into performance assessments.

Further details about P&G's "Ambition 2030" goals can be found [here](#).

Building on its legacy of environmental leadership, P&G has already achieved many of its sustainability goals for 2020 in its focus areas of climate (reduced absolute greenhouse gas emissions by 16% since 2010), water (reduced water use in manufacturing facilities by 27% since 2010), and waste (achieved zero manufacturing waste to landfill for more than 80% of manufacturing sites).

The impact of the Company's progress can be seen across brands and geographies, including products like Tide purclean that include bio-based ingredients and Head & Shoulders that use beach plastics in packaging; manufacturing changes that power our plants with wind electricity and steam from biomass; and research innovations that will transform the recyclability of tons of plastic each year benefitting entire industries, well beyond the reach of P&G.

This progress is further detailed in the Company's [2017 Citizenship Report](#).

"Building on our progress to date, our 2030 goals seek to address two of the world's most pressing environmental challenges: finite resources and growing consumption," said Virginie Helias, P&G Vice President of Global Sustainability. "We know P&G alone does not have all the answers. It will take partnerships and collaboration to make meaningful progress and our brands will develop innovations to take responsible consumption to the next level."

Source: Procter & Gamble, 2019

Appendix 24 – Procter & Gamble interview transcript confirmation



Thomas Peeters
 Beznik.f@pg.com; Chloé De Maesschalck
 mercredi 10 juillet 2019 à 15:11
[Afficher les détails](#)



retranscription P&G....
 75,9 Ko

 [Télécharger tout](#)
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Bonjour Frantz,

Je me permet de te renvoyer un mail concernant ta validation de la retranscription de notre interview. Nous en aurions besoin pour utiliser les informations que nous avons apprises au cours de l'interview, dans notre mémoire.

Est-ce qu'elle reflète bien la contenu notre conversation et es tu d'accord avec celle-ci?

Encore merci pour ta participation,

Bien à toi,
 Thomas Peeters & Chloé De Maesschalck



Beznik, Frantz <beznik.f@pg.com>
 Thomas Peeters; Chloé De Maesschalck
 lundi 15 juillet 2019 à 09:42
[Afficher les détails](#)



retranscription PG.d...
 96,1 Ko

 [Télécharger tout](#)
 [Prévisualiser tout](#)

Voila les corrections. Je ne pesnais pas q vous alliez juste retranscrire l'interview tel quel... c'était bp de charabia franco-angalis....

Bref – j'y ai passé vraimmnet trop de temps mais bon.....

Quand etes vs en mesure de partgaer votre mémoire ?

Y joindrez vous la retranscription ?

Bon courage pour lâchevement de votre mémoire

Appendix 25 – Procter & Gamble interview transcript

CDM:	Chloé De Maesschalck
TP:	Thomas Peeters
FB:	Frantz Beznik (Head of R&D - Sustainable Innovation) beznik.f@pg.com

----- Recording started after asking the interviewee's consent -----

CDM : Alors on va commencer de manière très très classico-classique afin de mieux comprendre et même pouvoir placer tout ça dans un contexte. Est-ce que, déjà, premièrement, tu pourrais nous rappeler ton parcours professionnel ?

FB : Je suis Head of Sustainability pour la Recherche & Développement chez Procter & Gamble. C'est un job complètement global. J'ai 25 ans de boîte, divisé en 7 assignments complètement décousus les uns des autres. En fait, je ne suis pas arrivé à Procter & Gamble en me disant : « je vais être head of sustainability de Procter ». Jamais, je n'aurais même jamais imaginé que je le serais, il y a même 5 ans. En fait, ce job-là, sans refaire l'entièreté de ma carrière mais pour donner un petit peu les signaux faibles, c'était, il y a 10 ans, où je travaillais sur des technologies vraiment upstream pour inventer un lavage à froid aussi efficace qu'à haute température. C'est une prouesse technologique énorme parce qu'on a besoin de chaleur pour enlever les taches. Dès qu'on essaie d'enlever la chaleur, on enlève une source d'énergie énorme qu'il faut compenser avec la chimie, et/ou avec l'agitation mécanique de la machine à laver. C'est très bien pour l'environnement mais c'est un casse-tête. Le deuxième gros programme d'innovation, c'était dans la même veine. Il s'appelait « single-rinse » et il s'agissait d'inventer des technologies qui rincent instantanément après le lavage du linge, pour des pays plus en mode de développement. Ok, là, ils utilisent des détergents qui moussent beaucoup...et se débarrasser de la mousse, c'est une galère. Donc, ces deux technologies, c'était ma responsabilité, et ça c'était déjà les signaux faibles. Ce n'était pas sous la bannière Sustainability. C'est très bien, ça serait vraiment sous la bannière d'un besoin de consommateur qui doit être résolu. En revanche, ça m'a déjà donné un peu un peu un indice sur l'intérêt de travailler en économisant des ressources, que ça soit l'eau ou l'énergie. Le job d'après, c'était un job où j'étais le boss de tout Fabric Care pour la région India, Middle-East, Africa, avec les marques de lavage

de linge, Ariel ou Tide, typiquement. Donc là, j'étais en plein dans le problème de l'eau. Évidemment tout ce que j'avais fait sur single-rinse prenait une ampleur importante. Plus tout le reste que je voyais parce qu'au quotidien, on a des consommateurs qui n'ont pas d'eau. Ça m'a vraiment mis le pied à l'étrier. Enfin, suite à ça, on m'a demandé de créer et de prendre tout le leadership sur notre premier Sustainability Board pour la compagnie, pour le business Fabric Care global. Je ne savais pas ce que ça voulait dire mais je me suis dit pourquoi pas et, à la suite de ce job-là, j'ai dit : « Voilà, je vais faire ce job-là pour l'ensemble des marques de Procter » sur toutes nos catégories... la lessive, le shampooing, le savon, les couches-culottes, ...Voilà donc ça donne un peu le cheminement.

CDM : Et donc pour le job de maintenant, c'est quoi exactement ?

FB : Le job de maintenant... En fait, le job de maintenant, toute l'idée c'est de développer des innovations durables, c'est à dire que l'ensemble de la gamme de produits de Procter, que ça soit Ariel, Pampers, que ça soit Pantene, Head & Shoulders, Always, permettent un monde, un lifestyle complètement durable, « one planet living ». Ça c'est l'ambition, et on la formule derrière deux mots en fait, et donc c'est vraiment en lien avec votre thème. On a décidé que Procter devait avoir un rôle, on a relancé toutes nos ambitions en environnemental et social l'année dernière, il y a tout juste un an. On a déclaré que Procter inventerait la consommation responsable, « responsible consumption ». C'est une invention et ça se fera grâce à l'innovation. C'est une invention parce que personne ne sait le faire. On sait faire de la consommation sur terre aujourd'hui, mais pas de la consommation responsable. Dès qu'on fait de la consommation, c'est irresponsable et quand ce doit être responsable, on ne devrait plus consommer.... « Responsable » et « Consommation », c'est une contradiction. Ça n'existe pas, donc c'est une invention qui a besoin d'innovations. De vraies innovations commercialisables. Voilà, ça c'est mon job : inventer, créer un mode de consommation responsable.

CDM : Comment est-ce que vous décririez l'intensité de la compétition, l'environnement compétitif ?

FB : L'environnement compétitif sur la consommation est excessivement large, sur la consommation responsable peut-être un peu moins. Par contre, pour nous, c'est vraiment un territoire que j'appelle whitespace. Non pas whitespace dans le sens où personne ne veut faire de consommation responsable, mais c'est nous Procter qui l'avons déclaré avec autant de clarté,

de sens du commitment, et de commitment public ; c'est-à-dire que ce n'est pas quelque chose qu'on a fait dans notre coin sur un cahier et puis on se le partage en interne.

Mais il y a évidemment une tendance énormissime ; ces enjeux-là, tout le monde s'y met. Nous on a juste vraiment décidé de le déclarer. On veut que la culture de la compagnie soit responsable. Parce qu'on pense qu'il y a et qu'il doit y avoir une congruence totale entre le processus d'innovation et l'output. Sans ça, ça n'a aucun sens, ça ne marche pas, c'est du greenwashing. Donc pour nous, ça doit démarrer là, démarrer avec un sens très fort, interne du commitment. Parce qu'avant qu'on aille à l'extérieur pour dire on va faire de la consommation responsable, en interne, on a fait une ligne de campagne, on a fait des sessions, des workshops. Ce n'est pas quelque chose qu'on balance comme ça : « allez, let's try it, it's gonna be fun ». On a tout le leadership de Procter, et on mobilise l'ensemble des employés.

CDM : Et du coup, qu'est-ce que ça veut dire pour vous « innover de façon responsable, consommer de façon responsable » ?

FB : Ça veut dire très concrètement qu'on va le faire au travers de nos marques qui touchent 5 milliards de consommateurs au travers du monde. Chaque marque détermine son ambition très claire sur ce qu'elle veut faire d'ici 2030, à vocation environnementale et/ou sociale. Par exemple, notre marque Ariel a déclaré « « Better Results @ 1/2 Resources by 2030 ». Ce sont des gros commitments pour des marques qui sont aussi gigantesques. Sur les 60 marques que la compagnie a au travers du monde, on en a 20 ou 25 qui sont des leadership brands, c'est à dire qu'elles ont un business de plus d'un milliard de dollars. Ce sont ces baleines qui doivent avoir la responsabilité de porter ce genre d'ambition. Chaque marque va porter une ambition. Je travaille avec ces marques pour les aider à définir leur ambition. J'ai parlé d'Ariel, on a fait pour Herbal Essence le même travail (le shampoing). L'ambition est de « protéger la biodiversité ». Voilà, ça c'est le type de commitment qu'on fait, chaque brand. Chaque marque déclare un commitment. Et ensuite on définit des mesures de succès qui vont me permettre de traquer le programme, comme ce n'est pas juste du greenwashing, on a un beau commitment sympa, c'est cool, non ? Il va y avoir des KPI, des mesures of success et on va traquer. Donc il y a trois éléments vraiment importants. Premièrement, définir son ambition. Deuxièmement, la déclarer en public. Troisièmement, définir les KPI's, les mesures de succès pour concrètement suivre les progrès. Ce n'est pas juste « let's be nice and looking good ».

CDM : C'est principalement sur réduire les impacts négatifs ?

FB : Il y a les deux. Ariel, c'est un bon exemple de « réduire ». Herbal Essence, c'est protéger la biodiversité. On est plus dans la réduction de l'impact, on est dans « positive impact on biodiversity ». Et puis, on a des marques qui font des engagements plus sociaux. Il y a une très belle, une très belle campagne qu'on a lancé sur Gillette : « the best that a man can ever be » et c'est vraiment en réaction contre les « balance ton porc », les « me too » etc qui d'ailleurs nous a valu, à nouveau, des lancers de flèches de groupuscules. Mais voilà, c'est ça aussi de s'engager pour de vraies causes derrière de vraies ambitions.

CDM : Du coup, ça c'est plus responsable. C'est quoi une caractéristique d'un innovateur responsable ou d'une innovation responsable ?

FB : Une fois que la marque a déclaré une ambition responsable, il faut délivrer les innovations derrière. Typiquement, quand on travaille sur Ariel puisque je les aide, alors là, une innovation responsable c'est travailler sur la réduction de 50% des ressources. Je parlais un peu avant sur le lavage à froid mais il faut continuer sur des lavages à froid, des lavages plus courts, des nouvelles chimies plus vertes. Il y a tout un processus de développement pour arriver à utiliser 50% en moins des ressources. Et l'emballage aussi. Quand on parle de ressources, c'est à la fois l'eau, l'électricité et l'emballage, les produits chimiques et le faire sur chacun de ces produits, c'est une réinvention totale du produit en 10 ans quasiment.

TP : Du coup, j'imagine que quand on parle de fixer des objectifs, les KPI's, c'est le début du processus d'innovation. Comment, typiquement, une fois que tout ça a été fixé, l'innovation d'un produit se lance, quelles sont les étapes qu'il pourrait encore y avoir dans un processus ?

FB : Une fois l'ambition définie, on a un workshop process, un processus d'idéation. On va traduire cette ambition en un glide path de trois innovations sur 10 ans, car en gros, pour faire des innovations relativement impactful, il faut trois ans. Certains seront plus rapides que d'autres parce qu'on a déjà beaucoup avancé sur le packaging donc je suis assez confiant. On a dit que, d'ici 2025, on aurait déjà 50% de ressources en moins dans le packaging. En fait, pour l'ensemble de ces goals, on va définitivement dire : « ok il y a du boulot, le packaging, on est pas mal, on peut déjà avoir un premier état quand on aura fait 20% du produit et on aura

déjà atteint 80% de nos goals en packaging via deux innovations ». Et pour 2025, il va falloir accélérer sur les produits. Si on veut vraiment faire du 50% de réduction en eau et en énergie, alors là il faut des technologies nouvelles. Ensuite, on se munit de partenaires, parce qu'on fait ça ensemble. Voilà comment ça se passe typiquement. Après, tout devient complètement organique, rien n'est linéaire, ça serait trop beau. Il va y avoir des technologies qu'on aurait mises pour l'étape numéro 2 qui vont se montrer juteuses pour l'étape numéro 1. Certaines technologies sur lesquelles on comptait pour après-demain, elles vont poser un problème majeur sur la compatibilité avec les machines dans nos usines... Le plus important, c'est de mettre les équipes d'innovation sur le rail de l'ambition. Ça aide ?

CDM : Du coup, j'ai l'impression que le processus que vous décrivez, c'est plus la responsabilité pour l'outcome dans le sens où on a fixé ce qu'on voulait pour l'outcome et on adapte le processus. On a aussi identifié dans notre mémoire que on pouvait être plus responsable de par le processus, notamment dans tout ce qui est la gestion et la prévention des potentielles conséquences qui sont difficiles à prévoir en innovation. Comment est-ce qu'on peut rendre le processus d'innovation plus responsable, avant le lancement sur le marché et si on considère que le produit ne soit jamais lancé, on peut dire qu'on est responsable dans notre processus, est-ce que c'est quelque chose que vous développez ? Par exemple demander l'avis de plus d'experts sur les conséquences négatives, impliquer des stakeholders ?

FB : Je vois très bien la question. J'ai envie de dire, ça commence par la culture, vraiment. C'est-à-dire que si je suis un chef de marque chez Procter mais que je ne crois pas en l'ambition, je peux te dire que l'ambition ne sera jamais délivrée. La même chose pour les chefs d'innovation. Je peux avoir les meilleurs experts extérieurs et les meilleurs influenceurs de la planète, il ne se passera rien. Vraiment la culture, c'est absolument fondamental. C'est endémique. Si elle y est, elle marchera, si elle n'y est pas, tu peux mettre tous les systèmes en place, les meilleurs experts et les processus les plus aboutis, ça ne marchera pas.

CDM : Il faut être responsable dans sa culture ?

FB : Il faut avoir déclaré vraiment. On travaille vraiment sur la transformation de personnes. On doit avoir cette transformation de culture. Donc on fait des immersions. Je vais prendre des équipes à Amsterdam. Amsterdam est très riche dans le processus d'innovation circulaire. On

trempe les gens deux jours dans la ville d'Amsterdam pour voir des startups, des compagnies, pour comprendre qu'il y a une autre manière de faire de l'innovation, une autre manière de penser et que cette manière de penser, elle est top cool et que c'est ultra désirable. Et donc, on travaille à la fois à stimuler la transformation de personnel et en même temps, on prend une équipe de marque et on la plonge dans ce type d'écosystème, et ça stimule une transformation de personnel et qui est un osmotic avec la transformation qu'ils doivent procurer à leur marque ou innovation. On ne sera jamais capable de dire à un chef de marque : « he bien, tu sais quoi, maintenant on a déclaré qu'on allait faire de l'innovation responsable. Donc tu me trouves une ambition et on en parle dans deux semaines ». Ça ne se passe pas comme ça, ça serait trop facile. Le chef de marque à qui je dis ça, il va se demander de quoi je lui parle : « on s'en fout, moi il faut que je fasse du business. J'ai prévu 10% de croissance sur les 5 prochaines années donc laisse-moi bosser, on en reparlera ». Si je lui dis : « t'inquiète, je prépare un truc super, je vais t'emmener en immersion », il va me dire, « non mais là vraiment tu me fais perdre mon temps ». Donc il faut vraiment qu'on soit dans un processus culturel qui soit fort. Ça commence par le top, ça commence vraiment par cette mission que la compagnie reconnaît qui est supportée par le top. Il faut qu'il voie que chacun des CEO, CFO, CTO etc., qu'ils disent qu'ils la soutiennent complètement – et qu'ils font partie du processus de transformation. Et ensuite on les emmène dans ces immersions, on ne fait pas que des immersions, on fait une cocréation. C'est un business output. Moi, tout mon job, c'est d'être capable de réunir les trois aspects : l'aspect culturel personnel, culturel pour la marque et le business. C'est-à-dire qu'il n'y a rien qui se fait en dehors du business. C'est ultra clé sinon j'ai aucun chef de marque dans ce truc. Toute l'idée, c'est de dire que c'est bon pour la planète, c'est bon pour le business. Ça c'est vraiment pour moi la clé endémique. Quant au niveau culturel, tu as des gens qui sont prêts à amorcer leur transformation personnelle et la traduire sur leur marque de façon authentique, alors tout découlera sur le business. Alors là, ils peuvent travailler avec des outils qui leur permettent de dire « ok je peux avoir un business tout en faisant du bien ». En fait, à Procter, tu peux le noter, on est très fier. On dit : « We are force for good, force for growth ». C'est vraiment la réconciliation du growth et du good, le business et le bien. Ensuite, effectivement, tout à fait raison, on doit avoir des systèmes de support pour aider tout ça. Typiquement, on travaille énormément avec le World Economic Forum. Moi, je suis allé à Davos deux fois, on travaille aussi avec le World Business Council of Business Development qui sont des gisements de ressources, de capacités sur les sujets responsables et qui sont aussi des institutions qui proposent des partenaires qui vont pouvoir faire des innovations avec nous.

On a absolument besoin de puiser dans ces ressources externes et ensuite aussi de faire de la capacité pure et dure en social ou en durable, par exemple, on crée des trainings, on fait venir des trainings. On a lancé la semaine dernière un partnership avec Solar Impulse, vous connaissez ? Vous publierez cet article quand ?

CDM : Ça sera publié en août.

FB : Ça sera fait d'ici là mais voilà on est invité par Bertrand Picard, qui est ce fameux pilote qui a fait le tour du monde en avion solaire et qui étend tous ses domaines de recherche sur tous les domaines qui nous intéressent ; et là on a un gisement de techniques et d'experts techniques dont on fait partie aussi pour trouver les nouvelles solutions durables de demain. Donc voilà, ça c'est des exemples, mais effectivement, la culture d'abord et puis des support systèmes externes et internes avec des trainings ; et évidemment on a tout un département d'environnementalistes qui font typiquement du footprint analysis, qui crachent du footprint analysis à l'heure, pour être sûrs qu'effectivement, quand on fait une innovation, c'est une innovation qui est durable et que ce n'est pas du greenwashing. On a un département totalement en interne qui fait ça pour l'ensemble des innovations. Ils travaillent avec des consultants externes pour effectivement aider à faire ces études de footprint.

CDM : Justement, par rapport à ces études qui analysent les footprints, dans le mot *responsabilité*, il y a aussi le mot *répondre*. Quand vous lancez quelque chose, vous avez ces processus d'analyse de footprint. Est-ce que ça vous arrive de lancer une innovation puis de vous rendre compte qu'au fait, l'utilisation qui en est faite n'est pas optimale et qu'au final, le produit que vous pensiez éco-positif, en fait se retrouve ne pas l'être. Est-ce que du coup, vous vous adaptez ?

TP : Ça peut aussi être un impact non prévu.

FB : Ça serait vraiment très présomptueux de dire que je ne pourrais pas imaginer qu'il n'y ait pas des utilisations qui ne soient pas celles prévues.

CDM : Est-ce que c'est prévu dans votre processus ?

FB : Ah ouais, on a un très gros processus de tests directement chez les consommateurs. En fait moi, 30% de mon boulot, c'est d'être justement chez le consommateur au travers du monde

pour essayer de comprendre comment ils utilisent nos produits, à la fois aujourd'hui et demain. C'est-à-dire, quand on fait des innovations, comment est-ce qu'ils vont les utiliser. Je ne dis pas qu'on est dans un degré zéro de risque, absolument pas. Il y a toujours des degrés de risque, des *misuses* de produits, etc. Généralement, on a peu de surprises et puis on check très vite en fait. Généralement, quand on lance une innovation, on a tout un tableau de bord pour lire l'innovation et savoir un peu ce qu'elle fait. En l'occurrence, on le fait sous forme de pilotes. Là, en ce moment, on a deux pilotes qui sont en place et actifs. Un à Amsterdam pour du recyclage de couches-culottes. Donc là, on est dans une innovation majeure, on recycle des couches-culottes, qu'on upcycle en fait. C'est un processus qu'on a craqué en Italie et maintenant on est parti en test market en Italie et en Hollande. Donc là, avant de faire un lancement national, on pilote. Ça veut dire quoi ? Ça veut dire qu'on prend une partie d'Amsterdam où on va mettre en place le process, les streams de déchets qui s'appellent les couches-culottes usagées et toutes la supply chain avec le consommateur car il faut les récupérer ces couches-culottes. On a des points de collection, avec des containers qui ont été totalement créés pour collecter les couches-culottes, s'assurer qu'il n'y a pas de problèmes de mauvaises odeurs, d'hygiène etc... Les containers sont aussi digitalisés pour pas qu'on ne puisse y jeter des papiers ou des bouteilles, mais seulement des couches-culottes. On a aussi prévu un incentive avec une application pour inciter le consommateur à jeter les couches dans ces containers. Voilà, on met en place tout un système, un pilote et pendant 6 mois, on va mettre en place le truc et on va voir comment vont les ventes du produit, est-ce qu'il y a des *misuses*, quel est le bon prix, quel est l'impact positif, est-ce qu'il est bien en ligne avec ce qu'on a ; est-ce que les gens déposent tout ce qu'on pensait qu'ils déposeraient. Peut-être que non et il va falloir trouver une autre incentive etc....

Le deuxième pilote qu'on fait, il s'appelle « Loop ». On fait des packagings qui sont en fait réutilisables, donc au lieu d'avoir une bouteille de shampoing que j'achète et que je jette un mois plus tard et bien en fait, ce sont des bouteilles qui sont durables, un peu comme les gourdes, qu'on boit et qu'on recharge. Elle est livrée chez toi, tu utilises ton produit, tu le remets en e-commerce quand la personne revient devant ta porte, c'est récupéré, c'est rerepli. On est donc dans une consommation totalement circulaire sur 11 marques du groupe.

TP : c'est déjà en pilote ça ?

FB : c'est déjà en pilote à Paris et New-York. Donc pareil, même topo, on sait que cette innovation elle est dingue, les gens l'adorent mais on ne sait pas s'il va pas y avoir de misuse, s'ils vont pas casser leur bouteille trop vite et la mettre à la poubelle, ça ne servirait plus à rien, ça ne serait plus durable. A nouveau, ça serait très présomptueux de ma part de prétendre que cette innovation n'aura pas de problème. Ça peut arriver. Ça nous arrivera, et c'est ça qu'on essaie d'éviter en faisant des pilotes et en apprenant...Hollande et Italie pour les couches-culottes...New-York et Paris pour LOOP et les *refillable bottles*.

TP : Je ne sais pas si tu veux encore dire quelque chose par rapport aux mécanismes ?

CDM : Par rapport aux processus, c'est vrai que ça ressemble pas mal à ce qu'on avait trouvé dans la littérature de l'innovation responsable. Pour te donner une idée, c'est globalement d'avoir un processus de risk assessment, surtout quand c'est des innovations radicales et on pense que ça va être bien, je pense notamment à l'exemple des wind turbines en mer du Nord et qui, au final, détruisent l'écosystème. C'était une super bonne idée mais il y a eu des conséquences imprévues. Les innovateurs responsables sont des personnes qui réfléchissent, vont un peu plus loin que ce qui est demandé par la loi.

FB : Les innovations disruptives généralement changent la loi, c'est ce que va te dire ton fabricant de trottinettes probablement. Tesla, ils font pareil, ils bousculent les lois, les réglementations. Nous d'ailleurs, on est en train de le faire, les couches-culottes. Le problème du recyclage des couches-culottes aujourd'hui, c'est les produits intermédiaires que l'on produit. Pour expliquer, la partie centrale des couches sales, elle est upcyclée en fertiliseur, la partie papier est récupérée en cellulose, et la partie plastique des composants des couches est recyclée en ustensiles en plastique. Tous ces produits intermédiaires ne sont pas considérés comme de vraies matières premières commercialisables comme les autres. Ce sont pourtant de vraies matières à valeur ajoutée mais elles ne sont pas reconnues comme telles, et du coup – a priori - ne « valent rien ». Mais s'ils ne valent rien, ça ne te sert à rien de les recycler. Donc on est vraiment pour le moment dans une espèce de vide juridique au niveau de la valorisation de matières intermédiaires issues du recyclage... Et si on ne règle pas ce problème, alors on ne peut pas faire le recyclage. On peut mettre la clé sous la porte, c'est impayable. On travaille dessus.

TP : J'imagine qu'au niveau international, ça doit aussi être un peu complexe ?

FB : Ah oui bien sûr. C'est très important comme débat. Si on doit un peu dépasser la loi, on doit se prémunir. Il ne faut pas venir la bouche en cœur en disant qu'on ne savait pas, du coup on doit travailler avec la loi. Autre chose, peut-être un truc important à dire... On a parlé des supports externes mais on a aussi mis en place ce qu'on appelle un external advisory board pour P&G global. Et donc là on prend les meilleurs experts et gourous de la planète, qui sont vraiment dans l'advisory board externe. C'est-à-dire que deux fois dans l'année, ils vont vouloir voir le programme durable de Procter and « we like it, we love it or we crap it » et by the way, quand on a retravaillé nos ambitions pour 2030, ils ont été une partie intégrante du processus. On a été ultra challengé par eux et aujourd'hui pareil, ils disent ok, c'est bien, on a déclaré des choses cools mais qu'est-ce qu'il s'est passé depuis un an ? Ha c'est tout ? Ils sont ultra punchy. Ce sont des gens qui attendent qu'on délivre des résultats très tangibles pour la planète. Voilà, ça c'est peut-être autre chose à rajouter. Un external advisory board pour vraiment pousser le bouchon.

CDM : Et du coup, dans le process, il y a une dernière chose que je vérifie. C'est la question de remettre en question les raisons pour lesquelles on innove. Un innovateur responsable, c'est quelqu'un qui n'innove pas pour innover mais qui remet en cause les questions du pourquoi et pour qui j'innove, est-ce que c'est vraiment pour la planète, est-ce que c'est pour les coûts, est-ce qu'ils sont en ligne avec ces objectifs ? Et que si c'est des objectifs financiers, très bien mais qu'ils soient en accord avec ça. Est-ce que c'est quelque chose que vous mettez en place ?

FB : Ben oui, c'est ce qu'on appelle à Procter "Force for Good, Force for Growth", à nouveau. C'est à dire qu'on ne peut pas être une compagnie qui cherche juste la croissance, le business. On doit avoir un rôle sociétal fondamental. Beaucoup de choses dans le monde vont pouvoir faire avancer la planète, évidemment mais les compagnies qui touchent, comme nous, 5 milliards de consommateurs doivent avoir ce rôle-là. Et donc, ce qu'on dit, c'est que le business et le bien de la Planète doivent être totalement congruents, et on doit non seulement le déclarer mais aussi faire toutes les transformations internes de la compagnie. Les gens se rendent bien compte que ça n'a pas de sens sinon. Très franchement, les nouvelles générations n'ont aucun souci avec ça. Au contraire, elles ne nous rejoignent que si on est « Force for Good, Force for Growth ». C'est le sens du business.

TP : Qu'est-ce que vous identifieriez comme les avantages et les inconvénients de faire de l'innovation responsable comme vous le faites ? Est ce qu'il y a aussi des inconvénients ?

FB: Le vrai challenge, c'est "is there a business model for it?" C'est pour ça que je parle d'invention quand je parle de consommation responsable. C'est ça la grosse question. Quand Procter dit qu'on va faire de l'innovation responsable, Wall Street a les yeux sur nous – et on ne doit pas décevoir.

CDM : Il y a une grosse pression ?

FB : Ah oui c'est évident. C'est notre CEO qui a annoncé notre engagement pour la consommation responsable dans un communiqué très officiel, et l'action est restée sur son cours et là on marche très bien et les investisseurs notent une belle congruence entre le business et l'engagement. Mais c'est le challenge. Soutenir une croissance vraiment responsable, ça signifie développer d'autres modèles économiques aussi – et prendre des risques.

CDM : Est-ce qu'il y a d'autres désavantages ou difficultés à innover de manière plus responsable, par rapport au processus par exemple ?

FB : La difficulté, c'est que c'est pas du tout intuitif. Enfin, je veux dire qu'il y a des boîtes comme *Patagonia* qui ont toujours été dans cette culture-là, il n'y a jamais eu un choix ; c'est dans leur culture dès le début. Pour une compagnie comme Procter & Gamble, c'est une transformation. Ce n'est pas intuitif, le monde de Wall Street n'est pas baigné dans l'innovation responsable. Et donc voilà, on a des boîtes qui sont vraiment dans de l'activisme responsable, qui ne sont pas forcément à Wall Street. Et nous, on doit rallier les deux, Wall Street et le durable. La difficulté, c'est qu'il n'y a pas un textbook pour ça. A nouveau, c'est une invention à l'échelle d'une boîte comme la nôtre, 5 milliards de consommateurs... Ça ne veut pas dire qu'il n'y a pas des innovateurs responsables mais des innovateurs responsables qui font tourner le business de 5 milliards de consommateurs avec des attentes de Wall Street, ça n'existe pas encore. On est en train d'écrire beaucoup de chapitres du textbook.

CDM : On peut donner quelques exemples qu'on a trouvé dans la littérature.

FB : Je vais pouvoir lire votre mémoire, j'aurais d'autres sources d'inspiration !

CDM : On a pu voir que les innovations responsables, ça a un prix.

FB : On a sorti un Line-up de Ariel qui s'appelle « Ariel Pure » qui est principalement fait à partir de bio-based ingrédients, ce qui coûtent plus chers parce que les ingrédients coûtent plus chers. Donc aujourd'hui, on est effectivement dans une dynamique où ça coûte un peu plus cher mais pour moi c'est un peu comme l'organique, à partir du moment où tu démocratises et que tu apportes l'économie d'échelle, alors, ça va baisser. C'est la première partie de la réponse. La deuxième partie de la réponse, c'est mon mindset d'innovation, il faut que je vous le dise, c'est mon *motto* pour l'innovation en Développement Durable : « Make Sustainable Irresistible® ». Pourquoi ça répond à la question ? Parce qu'à partir du moment où c'est irrésistible, le prix fait partie du mix mais l'idée c'est d'apporter des nouveaux bénéfices qui rendent l'offre irrésistible. Si je dois faire payer plus cher alors il faut que ça vienne avec des bénéfices qui sont significatifs. Je ne peux pas viser juste le même résultat qu'aujourd'hui en durable, en plus cher. Je veux repenser le système de valeur, et surtout par des nouveaux bénéfices pour le consommateur. La troisième partie de la réponse, c'est l'économie d'échelle qui va se développer. Mais d'abord et avant tout : « Make Sustainable Irresistible® » : c'est mon copyright.

TP : Vu que tout à l'heure vous disiez que la compétition était assez élevée, est-ce que le fait de faire des processus plus longs et plus complexes, est-ce que ça ne pose pas un problème de compétitivité ?

FB : Ils sont certainement plus complexes, mais ils ne sont pas plus longs, ça ce n'est pas possible. Pas le choix.

CDM : Donc plus complexes, mais pas forcément plus longs ?

FB : Ha non. Ça c'est inacceptable. Il faut inventer ça aussi. C'est pour ça qu'on s'équipe énormément de systèmes externes et qu'on développe des partenariats, car on n'est pas capable de faire des innovations durables tout seul. Et ça ne peut pas être plus long. Ça veut dire qu'il faut se réinventer. Quand je dis qu'on doit écrire le textbook, on doit vraiment le faire. Tout est à inventer. Un très bon exemple, le shampoing Herbal Essence veut protéger la biodiversité donc on est dans un domaine d'innovation qu'on n'a jamais touché avant, qu'est-ce qu'on fait ? Nous ne sommes pas des pros de la biodiversité. Donc, on s'allie avec des experts externes,

notamment le Royal Botanic Garden qui est le gardien du temple de la biodiversité dans le monde avec ses laboratoires. C'est un écosystème en lui-même. Voilà, c'est un exemple très concret, on déclare ça, on n'y connaît rien et on s'allie avec eux. Premier Challenge, la durée des tests pour savoir si un produit protège la biodiversité, c'est deux fois plus long. Du coup-là, on va devoir inventer un processus qui permet de faire ça en deux fois moins de temps. Il va falloir réinventer les processus.

CDM : Ce n'est pas quelque chose qui freine ?

FB : C'est un nouveau job, c'est une innovation dans le processus d'innovation.

CDM : On a aussi trouvé d'autres difficultés. Une entreprise qui se dit responsable, elle ne peut quand-même pas garantir un risque 0 et du coup il y a parfois cette difficulté pour les entreprises de prévoir au maximum et de ne pas y arriver. Est-ce qu'il n'y a jamais ce blocage, par exemple « de toute façon, on n'y arrivera pas » ?

FB : Tout à fait. Alors, nous, comment on fait ça ? Chez Procter, on est très « left brain » donc quand on dit quelque chose, on le délivre ; et on ne préfère rien dire si on ne peut pas le délivrer. Ça veut dire quoi ? On gère ça notamment en travaillant sur des ambitions qui sont bien bossées, c'est-à-dire qu'on essaie vraiment d'avoir des experts, on le disait tout à l'heure, on travaille avec eux, on a des supports pour vraiment travailler sur cette ambition, qu'elle soit véritable et que ça ne soit pas juste un truc en l'air. Et puis, on a aussi des « moonshots », des grands rêves. Par exemple, on a déclaré : « By 2030, there will be no P&G plastic in the ocean ». Là, tu te demandes : « wow, on va vraiment le faire ? ». En fait, c'est un moonshot et ça vaut le coup et on va déclencher tout un tas de nouvelles innovations auxquelles on n'aurait jamais pensé. Et Bingo, quand une compagnie comme la nôtre déclare ce genre de moonshot, il y a plein de partenaires inspirés qui apparaissent, qui viennent aider. C'est super excitant ! Du coup, je pense qu'on le délivrera même avant l'heure. Ce type de moonshot permet de vraiment dépasser cette contrainte d'objectif qui asphyxie le process. Elle déclenche des aspirations et des inspirations – et tout le monde s'y met.

TP : On avait un dernier petit désavantage qu'on avait pu identifier. C'était par rapport à la transparence. Vu que vous êtes en contact avec beaucoup de parties prenantes, est-ce qu'il y a un risque qu'il y ait des *leakages* de savoir, qui iraient à droite, à gauche ?

FB : Oui c'est vrai. C'est vrai qu'à partir du moment où on travaille avec plus de partenaires, on s'expose un peu plus à l'extérieur, on a des risques d'avoir des fuites. Maintenant, on doit dépasser ça. De plus en plus, aujourd'hui, la véritable force d'innovation, c'est sa rapidité. Si on bosse dessus avant les autres, on sera les premiers. Même avec quelques fuites possibles...

CDM : Ah oui, typiquement quand vous implémentez des pilotes, ça c'est assez open.

FB : Ah oui, on est totalement open. Et puis, quand on va à Davos par exemple, je lance un programme. La maison à 50 litres, on va réduire de 10 fois la consommation d'eau dans les maisons. On doit être open parce qu'on a besoin de partenaires.

CDM : Et du coup, pour les avantages de faire de l'innovation responsable ?

FB : Pour moi, on est vraiment dans la réconciliation du Good et du Growth. Pour les générations d'aujourd'hui, c'est évident. C'est donner un vrai sens au business. C'est vraiment un point d'entrée pour les jeunes talents qu'on veut recruter. Et puis, c'est un grand vecteur de motivation pour nos équipes en interne. C'est tellement inspirant de faire du business en faisant du bien.

CDM : Du coup, nous, pour les autres avantages qu'on avait identifiés, qui sont des avantages/moteurs, l'un consiste à une performance accrue de l'entreprise.

FB : Pour moi, c'est le big bet.

CDM : Oui ? Parce que l'argument principal et vous me direz ce que vous en pensez, c'est que le fait de réduire la consommation des matières premières, on est dans un système de « on ne peut pas gaspiller et on optimise tout ».

FB : Dans le département Supply chain, il y a une corrélation directe. Quand je suis en Supply chain, j'ai des systèmes de production efficaces ; moins j'utilise d'eau, au mieux c'est, moins je dois recycler mes packagings, au mieux c'est. Le mec qui est directeur supply de Procter, il y a une corrélation directe entre son business et le développement durable. C'est beaucoup moins vrai cette corrélation quand tu développes une couche-culotte pour un consommateur. Le mec qui développe la couche-culotte, il n'est déjà pas dans l'usine, il ne sait pas comment ça marche. Il a un laboratoire, il en fait 3 par mois, donc ce n'est pas lui qui va polluer la planète.

Ce qui est vraiment visible, c'est l'impact qu'il a sur les 5 milliards de consommateurs – mais qu'il ne voit pas directement. C'est ça qu'il faut arriver à craquer. Et si on arrive à craquer ça, on arrivera à passer sous la barre des 2° degrés. Il faut aider le consommateur. C'est à nouveau cette fameuse mission de consommation responsable.

CDM : On a aussi pas mal parlé du fait que quand les entreprises se lancent des challenges, ça les pousse à développer de nouvelles innovations, ça développe les activités de l'entreprise.

FB : C'est vrai, c'est ce que je disais des ambitions. Tout d'abord, tous tes employés sont très motivés mais il y a tout un écosystème externe qui s'élève devant toi et qui vient t'aider et ça c'est incroyable, c'est une émulation dingue. Donc, mon programme, c'est 50 litres home, et c'est vraiment comment on fait dans des maisons, où on utilise parfois jusqu'à 500 litres par jour, par personne d'eau, et je veux réduire ça à 50, dans le monde entier – c'est-à-dire jusque 10 fois moins d'eau par personne et par jour ! Les gens qui travaillent avec moi sur l'innovation, ils sont excités comme des fous. Quand tu as des ambitions, ça crée toujours un engouement pour l'innovation qui est démultiplié.

CDM : On avait aussi parlé du fait qu'il faut aller au-delà de ce qui est obligatoire. Aller au-delà des requirements de profit et des requirements que la loi nous impose. Ça serait un avantage. Déjà d'un, si une loi plus restrictive apparaît, on est déjà plus loin.

FB : Toute l'idée, c'est d'être une compagnie dans le leadership. Une fois qu'on a dit : « We, P&G, are inventing responsible consumption ». On est dans le leadership. Ça ne veut pas dire que tu ne vas pas être surpris par des lois ou par des nouvelles régulations qui seraient un peu restrictives. Quand tu mets la barre aussi haut, on est dans les débats où on est généralement soit en cocréation de lois, et on travaille avec les lois, les régulations. Le monde avance ensemble. Ce n'est pas nous qui fixons les règles, mais on peut aider à les faire évoluer.

CDM : Il y avait évidemment le fait qu'il y a une image de marque améliorée. Comment est-ce que vous le ressentez ?

FB : Head & Shoulders, quand on a fait cette grande campagne sur notre bouteille recyclable faites avec des déchets de plastiques de plages, ça a eu un effet démultiplicateur sur les ventes de la marque.

CDM : Et au-delà des ventes, en termes de fidélisation des clients ?

FB : Il y a vraiment une influence claire, oui.

CDM : Et du coup, le dernier avantage qu'on avait identifié, c'était l'avantage compétitif. Les innovations responsables permettent de se différencier.

FB : Pour moi oui, ça va être une source d'avantage compétitif. On veut que Pampers soit reconnu comme le leader dans le recyclage des couches-culottes mais évidemment, on veut que le bon récupère toutes les couches-culottes, toute couche est égale. Donc il y a de l'IP dedans mais l'accessibilité des containers de recyclage doit être pour toutes les couches, sinon c'est débile. Il faut vraiment que l'usage soit totalement démocratique pour toutes les couches, mais à nouveau, oui on veut que Pampers soit reconnu comme l'inventeur. Le durable est vraiment un levier d'avantage compétitif.

CDM : Notre dernier point, c'était par rapport aux Key Success Factors. Comment faire en sorte qu'une politique d'innovation responsable soit successful ? Il y avait le fait de rendre irrésistible. On a aussi parlé dans notre mémoire de « promouvoir l'importance de l'innovation responsable ». On a trouvé pas mal d'études où lorsqu'on demande à des personnes si acheter responsable est important, 50% va dire oui alors que, dans les faits, c'est 2%. Et du coup il y a cette question de le rendre irrésistible.

FB : C'est ça. C'est pour ça que je dis : « Make Sustainable Irresistible® ». Les innovations durables doivent être irrésistibles pour que les gens achètent vraiment et soient comblés avec.

CDM : Est-ce qu'il y en a d'autres ?

FB : Oui, il y en a plein. On a des gros success factors qui sont publiés sous les ambitions 2030 de P&G. Ariel va avoir un set de criteria différent de Herbal Essence qui fait de la biodiversité. On a une liste de KPI's qu'on fixe par marque.

CDM : Il y en a un autre que vous avez mentionné, c'est changer la culture. Il y avait également l'importance d'adapter la stratégie globale de l'entreprise.

FB : C'est toute la culture de « Force for Good, Force for Growth ». C'est la base. J'en ai beaucoup parlé déjà plus tôt.

CDM : Et du coup, est-ce qu'il y a des risques, des facteurs de risque ?

FB : Par l'innovation responsable ?

CDM : Oui, en innovation de manière plus responsable, est-ce qu'il y a un gros risque ?

TP : Les différents bets que vous avez mentionnés ?

FB : Pour moi, ce n'est pas un risque, c'est un gros gros challenge. Et on va le craquer.

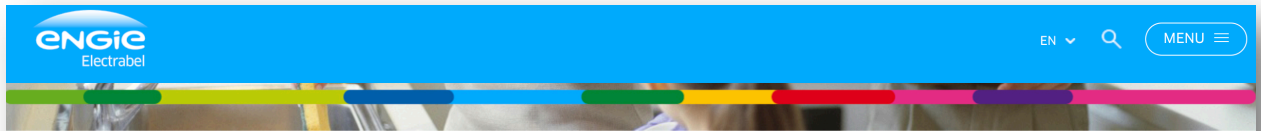
CDM : En fait, on a mis ça dans *attention points*. Par exemple, des entreprises qui considèrent que pour être responsable, il faut demander l'avis à la société dans laquelle ils sont implantés. Et ça, ça pourrait être un gros risque car, à partir du moment où on demande l'avis au gens, les gens ont des attentes.

FB : Alors je pense que le risque, c'est celui de s'engager dans un combat environnemental et finalement d'être décrié et du coup de perdre en réputation. Quand on a de grandes ambitions, on veut les délivrer. C'est toujours un risque d'avoir de grandes ambitions parce qu'on peut échouer... Mais on va y arriver, parce que quand on a de grandes ambitions, beaucoup de partenaires se joignent et viennent aider. On réussira ensemble – et c'est très excitant.

CDM : Merci beaucoup, super !

TP : Merci beaucoup !

Appendix 26 - Engie official commitments on website



Safely generate and supply the energy of tomorrow under the best conditions

We generate **local and diversified electricity** which we sell, in addition to natural gas and a range of energy services, to residential customers, professionals, SMEs, major corporations and public institutions. Our activities are supported and optimised by **energy management and trading** operations of the ENGIE Group on the European and international energy markets.

We focus on being a partner for our **2.71 million customers who** inspire us every day. We listen to them and, because we are invested in ensuring that they have the energy they need to live comfortably, we develop **innovative and sustainable solutions**. Our competitive offers satisfy the expectations of our customers looking to better manage the challenges posed by the **energy transition**.

To achieve this aim, we can rely on the expertise of the **ENGIE Group**, a global energy player and an **expert in three fields: electricity, natural gas and energy services**.

Innovation et transition énergétique



Bâtir une société plus sobre en énergie et moins dépendante du nucléaire et des énergies fossiles, tels sont les objectifs ambitieux de la transition énergétique. ENGIE déploie toute sa capacité de recherche et d'innovation pour relever ces défis et offrir des services toujours plus performants et plus respectueux de l'environnement à ses clients.



Production décentralisée d'énergie

ENGIE repense notre rapport à l'énergie avec des modes de production décentralisés, générant une énergie renouvelable et locale. Pour assurer leur viabilité, le Groupe met parallèlement au point des solutions innovantes de stockage et de redistribution d'énergie dans le réseau.

[> En savoir plus](#)



Pilotage digital de l'efficacité énergétique

ENGIE développe des solutions digitales pour accroître la performance énergétique de ses clients industriels et particuliers. Objets connectés, réseaux intelligents, intelligence artificielle, les possibilités sont multiples et les perspectives prometteuses.

[> En savoir plus](#)



ENGIE au salon VivaTech

Laboratoire international des technologies numériques et de l'innovation, le salon Viva Technology ouvre ses portes à Paris pour la troisième année consécutive, du 24 au 26 mai.

[>> En savoir plus](#)

Source: Engie, 2019

Appendix 27 - Engie's code of responsibility of innovations


DECISION ENGIE

Date : 23 novembre 2017

Référence : ENGIE 2017-010

Émetteur : Direction RSE

Interlocuteur : Anne CHASSAGNETTE **Mail :** anne.chassagnette@engie.com **Tél. :** +33 (0)1 44 22 67 59

Politique de Responsabilité Sociétale d'Entreprise

Les choix de notre entreprise impactent ses résultats économiques, les communautés où elle exerce ses activités, l'environnement et de manière plus générale, la société dans son ensemble. Aussi prendre en compte et associer dans nos politiques, nos décisions et nos actions, l'ensemble des parties prenantes avec lesquelles le Groupe interagit, comme les clients, les communautés, les salariés, les actionnaires, les fournisseurs, les pouvoirs publics et les organisations non gouvernementales, doit être une préoccupation de tous.

Notre démarche doit être ambitieuse et s'inscrire dans une volonté d'innovations et de progrès continus. La profonde transformation du Groupe exige une Responsabilité Sociétale d'Entreprise (RSE) forte et adaptée aux nouveaux enjeux de société. La présente politique établit les priorités et les engagements du Groupe en matière de RSE pour rassembler les compétences de tous, créer de la valeur partagée et contribuer à l'atteinte des Objectifs du Développement Durable définis par l'ONU.

Le Groupe s'engage à sensibiliser ses managers aux bénéfices que le dialogue avec les parties prenantes apporte à ses activités ; à former ses collaborateurs à la concertation adaptée au contexte, aux besoins et contraintes du terrain et à élaborer des plans d'actions et de dialogue avec ses parties prenantes, notamment dans le cadre du lancement de nouvelles offres ou de nouveaux projets.

Source: Engie internal document

Appendix 28 – Engie interview transcript confirmation

 **Chloé De Maesschalck**
 jacques.spelkens@engie.com; Thomas Peeters
 jeudi 27 juin 2019 à 12:35
[Afficher les détails](#)

 **ENGIE interview tra...**
 51,7 Ko

 [Télécharger tout](#)  [Prévisualiser tout](#)

Bonjour,

Merci pour ces informations, et encore un grand merci pour l'interview d'hier.

Je profite de ce mail afin de vous soumettre la retranscription *verbatim* de notre interview d'hier, afin que vous puissiez confirmer que celle-ci reflète bien le contenu de notre discussion.

De plus, pourriez-vous me transférer la fameuse charte de responsabilité dans l'innovation dont vous nous avez parlé hier ?

Merci beaucoup.

Bien à vous,

Chloé De Maesschalck

 **jacques.spelkens@engie.com <jacques.spelkens@engie.com>**
 Chloé De Maesschalck; Thomas Peeters
 jeudi 27 juin 2019 à 16:34
[Afficher les détails](#)

 **2017 11 13 - ENGIE...**
 1,1 Mo

 [Télécharger tout](#)  [Prévisualiser tout](#)

Bonjour,

Je vous remercie pour l'envoi de la transcription fidèle de notre entretien. Bel effort d'avoir réalisé cela aussi rapidement. A très bientôt.

Jacques SPELKENS
 Head of CSR Benelux

Appendix 29 – Engie interview transcript

CDM:	Chloé De Maesschalck
TP:	Thomas Peeters
JS:	Jacques Spelkens (Head of CSR Benelux)
	jacques.spelkens@engie.com

----- Recording started after asking the interviewee's consent -----

CDM : ... concernant l'enregistrement...

JS : En anglais ?

CDM : Comme vous préférez, en français, c'est très bien. On va vous envoyer une retranscription pour que vous vérifiez que tout est ok pour vous.

JS : Que on n'a pas raconté n'importe quoi.

CDM : On peut enlever ce que vous ne voulez pas qui se retrouve dans le mémoire si jamais.

JS : Normalement je contrôle ce que je dis, voilà, ça devrait aller.

CDM : Pour commencer, ça tombe bien, on s'est présenté. Est-ce que vous pourriez vous présenter ?

JS : Je ne vais pas tout raconter, parce que, vu mon âge, ça remonte relativement loin. Donc je m'appelle Jacques Spelkens. Je suis en charge de la responsabilité sociétale d'entreprise pour ENGIE au niveau du Benelux. C'est la description officielle de la fonction. Ça reprend toutes les thématiques qui sont liées à l'environnement, au développement social, durable ou relations partenariales avec les stakeholders extérieurs. Ça comprend aussi une partie de lobbying avec les pouvoirs publics au niveau national, au niveau Benelux et au niveau européen. Et cela comprend aussi une partie qui est liée justement à l'innovation sociale, par rapport à des projets qui accompagnent, en fait, les projets de développement du business de l'entreprise. Au niveau de mon background professionnel, pour faire simple, j'ai une formation de philosophie,

personne n'est parfait. Ça change un peu par rapport à des ingénieurs qu'il y a ici partout dans la boîte. Je suis rentré dans l'entreprise ici en 2003, ce qui est relativement récent. Je me suis toujours occupé de développement social et de responsabilité sociétale d'entreprise. Avant ça, j'ai travaillé à la Commission européenne, comme assistant d'un commissaire européen hongrois. Un peu compliqué au niveau voilà - et avant ça, j'étais prof d'université, ce que je suis encore aujourd'hui. J'enseigne encore toujours, à l'époque j'ai enseigné à l'ULB - qui était ma maison mère. Et maintenant, j'enseigne à l'ICHEC et à HEC Liège, je donne des cours *business ethics*, éthique des affaires et les rapports entre la philosophie et l'économie. Ça, c'est au niveau du background, je suis aussi en charge de tout, d'un certain nombre de réseaux qui sont liés à la responsabilité sociétale d'entreprise au niveau européen. Et parfois je dors.

CDM : D'accord, en quelques mots, si vous deviez expliquer ce que ENGIE fait, de la manière la plus simple possible ?

JS : Alors au niveau mondial, nous sommes cent cinquante-six mille personnes, présentes dans septante deux pays. Donc on est essentiellement actifs dans le domaine de la production d'énergie, essentiellement électricité et gaz tant *offshore que onshore*. Et le deuxième pôle d'activité est vraiment c'est tout ce qui concerne la maintenance qu'on appelle les Utility. Maintenance des grosses structures industrielles, les centrales électriques, des centrales thermiques etc. Et il y a un troisième pôle qui se développe maintenant vraiment et on touche déjà à l'innovation c'est tout l'aspect qui est lié à la transformation énergétique. Et donc le passage des moyens de production avec des carburants fossiles vers le renouvelable. Et donc il y a tout un département de développement qui est basé là-dessus, sur comment justement développer un concept d'innovation qui soit durable à 100 ans à 200 ans par rapport à des modes de consommation et des modes de production d'apport d'énergie. Donc, en Belgique, nous sommes vingt-deux mille personnes. Au Benelux nous sommes 22.000 personnes, donc les marques les plus connues c'est celle qui est derrière vous là : Electrabel. Tout le monde connaît, j'imagine. Parce que vos parents payent leurs factures. Il y a aussi Tractebel Engineering, par exemple, qui sont des boîtes plutôt, sont de bureaux d'ingénieurs.

TP : Comment est-ce que vous pourriez décrire la compétition par rapport à tous ces domaines. Est-ce qu'elle est plutôt forte, intense ? Qu'est-ce que vous en pensez ?

JS : Tout dépend un peu du contexte dans lequel vous vous placez.

CDM : Benelux.

JS : Au niveau Benelux, nous sommes, et restons, nous avons la plus grosse part de marché encore toujours, depuis la libéralisation du marché, où on avait 100%, on est tombé à 46% je crois. Mais ça reste malgré tout l'acteur principal. Donc concurrence, il y en a certainement. Mais d'un autre côté, c'est une concurrence un peu biaisée, dans le sens où les petits, on va les appeler les plus petits acteurs dans ce domaine-là, doivent encore se fournir en électricité chez nous. Alors, la concurrence est un peu faussée, dans le sens où ils ne vont pas pratiquer à très long terme des tarifs inférieurs aux nôtres, puisqu'ils s'approvisionnent chez nous. Inévitablement, ils se tireraient une balle dans le pied de ce côté-là. Par contre, dans le domaine de tous les services, les Utilities, là, il y a quand même pas mal de concurrence de firmes non belges. Pour ne citer que Véolia par exemple ou SPIE dans des grosses boîtes, l'une française et l'autre allemande. Et où les lois de la concurrence jouent vraiment beaucoup. Et ce sont des domaines dans lesquels la technologie et la technicité changent aussi très vite. Donc ça nécessite beaucoup d'investissements et beaucoup d'innovations encore une fois au niveau technique et au niveau du coût de la recherche de bonnes compétences, là où on en a besoin.

CDM : Au-delà de cette pression compétitive, qu'est-ce qui vous pousse aujourd'hui à innover ?

JS : La survie. Je crois que c'est la première et la première des raisons et les attentes de nos parties prenantes externes. Je pense qu'il suffit de regarder les jeunes et les marches climatiques belges. On voit bien qu'il y a des attentes en termes de transition énergétique, en termes de consommation, en termes de production. Donc, les grosses boîtes ne peuvent pas laisser rester indifférent par rapport à ça. Les jeunes ont interpellé les politiques mais ce n'est pas uniquement les politiques qui vont changer quelque chose. C'est d'abord nous qui allons devoir, enfin pas devoir car on était dans cette logique là depuis bien longtemps, mais, on va en tout cas de devoir s'aligner sur les exigences des consommateurs ou des futurs consommateurs. Il y a la pression régulatrice qui joue quand même pas mal aussi. De plus en plus de contraintes en termes de Commission Européenne et même en termes des 17 SDG's des Nations unies, bon ce n'est pas un texte pour rien non plus. Donc, si on prend ça comme référence, on doit s'aligner sur eux. Donc, tout ça ce sont des pressions indirectes qui vont probablement devenir des obligations par la suite. Donc, autant s'y préparer, en tant que, en tant qu'entreprise. Et puis je pense que l'innovation en elle-même ça fait partie aussi de l'esprit d'entrepreneuriat des grosses

boites. Si on n'innove pas, on meurt. Ce n'est pas compliqué, c'est celui qui ne fait pas un pas en avant, même s'il se trompe. En tout cas, faire en sorte que l'on consomme moins, qu'on consomme mieux, qu'on utilise mieux les compétences des gens en interne dans l'entreprise, et des choses pareilles. Les grosses raisons de l'innovation, et pour nous innovation ce n'est pas uniquement de l'innovation technologique, c'est presque essentiellement ça, mais ça commence par des innovations sociétales et sociales. Bon, vous allez voir ça lorsque vous allez travailler l'an prochain ou l'année d'après, le monde de l'entreprise est un monde en évolution permanente. Les gens veulent plus travailler comme avant, il y a des horaires flexibles, ici, vous ne vous en apercevez pas mais il y a 4500 personnes dans l'immeuble, mais ils ne sont pas là. Ils sont théoriquement là, mais ils sont soit en train de travailler chez eux, soit en train de travailler dans un avion, soit ceci ou cela. Donc, ça implique une innovation aussi en termes de ressources humaines, en termes de gestion du personnel, en termes de gestion des loisirs, en termes de l'utilisation des compétences des employés ou des salariés ou des cadres comme bénévoles dans des associations et des choses pareilles. L'innovation, ça va au-delà de la simple technologie, qui est presque indispensable pour une boîte comme ici. Mais tout ça en plus qui ne fait pas partie normalement de l'ADN d'une entreprise, mais elle est obligée de le faire, sinon les gens ne vont pas venir travailler chez nous.

TP : Du coup quand est-ce que vous pensez que l'importance de l'innovation responsable est apparue dans l'entreprise ? Vous êtes arrivé en 2003, est-ce que c'était déjà un sujet très important pour l'entreprise ?

JS : Je crois que l'innovation a toujours été là, on n'appelait pas innovation à l'époque parce que c'est un peu un terme à la mode. On l'appelait créativité ou laboratoire, peu importe. Mais je pense que ça a toujours été là, sinon la technologie n'aurait pas progressé.

CDM : Et le côté responsable ?

JS : Et le côté responsable, celui-là est apparu disons grosso modo aux environs de la crise 2008-2009, lorsque l'on a bien compris que le modèle économique existant ne fonctionnerait plus très longtemps. Et qu'en fait, il fallait introduire des notions nouvelles, comme les préoccupations environnementales, des préoccupations humaines, les préoccupations sociales. Le fait de le faire, de permettre à ses employés de faire du bénévolat, du volontariat, tout ça, ce sont des choses qui sont apparues par la suite. Et aussi, dans notre manière de faire des

investissements. Donc, nos investissements sont beaucoup plus responsables qu'avant aussi, on essaye en tout cas. Je dois quand même faire une nuance entre nos pays occidentaux et la manière d'agir dans certaines républiques bananières d'Amérique du Sud ou en Asie, où ce n'est peut-être pas tout à fait la même chose. Même si on, nous ici, on manipule les mêmes, les mêmes principes, les mêmes, les mêmes concepts, l'application sur place est parfois un peu différente.

CDM : On va rester focaliser sur le Benelux je pense, c'est plus simple.

JS : Oui, c'est plus simple.

CDM : Qu'est-ce que ça voudrait dire pour vous d'être un innovateur responsable ?

JS : Un innovateur responsable, c'est d'abord quelqu'un qui connaît son milieu, donc son environnement dans lequel il agit. Pour cela, il faut nouer des partenariats avec la société civile, avec les ONG, avec les pouvoirs politiques, avec les syndicats, avec le mouvement associatif. Donc, vraiment connaître la manière, la culture dans laquelle on est établi. Un, c'est connaître et deux, c'est travailler ensemble de manière collaborative, un peu comme vous deux pour votre mémoire. C'est savoir : « Comment puis-je construire quelque chose avec ses partenaires extérieurs là, pour une amélioration, et mon business et de la société avec un grand S, en dehors ». Donc l'innovation elle ne vient pas uniquement de nous, et j'ai oublié dans les stakeholders très important, c'est le milieu académique, mais bon je l'oublie toujours puisque j'en fais partie. C'est construire ensemble quelque chose qui tient la route, et qui est explicable aux utilisateurs finaux, et qui est explicable pour nos employés ici. Parce qu'eux sont habitués à travailler d'une certaine manière depuis 10 - 15 ou 20 ans. Si on a un bouleversement qui s'opère parce que la société est en train de changer, il faut aussi expliquer ça en interne et leur dire vous devez changer. Il faut accompagner ça de toute une série de programmes de « *Change Agility* ». Donc, c'est la capacité à être flexible par rapport à un changement. En fait, c'est une manière de faire du risk management, puisque à partir du moment où vous formez bien votre personnel, vos salariés et/ou les futurs salariés qui vont venir chez vous. Ils sont beaucoup plus à même à absorber le changement et à agir de manière proactive par rapport à lui. Donc, c'est ça pour moi la responsabilité dans l'innovation.

CDM : Dans le cadre de notre mémoire, on a identifié différentes caractéristiques et nous avons proposé la définition de l'innovation responsable comme étant un : « processus adaptatif et volontaire, qui permet de réfléchir de manière critique aux motivations d'innover, en identifiant les potentiels risques liés à ces innovations tout en intégrant les dimensions sociales, environnementales et économiques via une implication des stakeholders ».

JS : Je pense que j'ai dit la même chose.

CDM : Vous êtes plutôt d'accord sur tous les points ?

JS : La seule chose, c'est le mot volontaire. C'est volontaire, mais de manière indirecte si on veut. Dans le sens où, à partir du moment où vous êtes poussé par votre environnement, ou poussé par le politique, ou poussé par les syndicats à faire des choses ce n'est plus tout à fait volontaire. Vous le faites parce que c'est dans la logique des choses, mais ce n'est pas vous qui preniez l'initiative toujours. Il y a parfois des domaines dans lesquels nous prenons l'initiative, mais bien souvent c'est fait en coordination avec les autres stakeholders qu'il y a autour de nous.

TP : Ce qu'on voulait dire aussi par volontaire, c'est que, des fois, il y a certaines réglementations qui seront mises en place, mais l'entreprise pourrait décider de se mettre une contrainte supplémentaire...

CDM : Comme vous disiez « on anticipe », on va plus loin que ce qu'on est légalement tenu de faire aujourd'hui.

JS : Mais, en fait, ça, c'est un peu la définition que nous donnons ici de la responsabilité sociétale d'entreprise aussi. C'est aussi quelque chose qui se fait sur base volontaire. Par exemple, je prends un cas tout simple. En France, vous avez des quotas pour le nombre de personnes handicapées que vous devez recruter dans votre entreprise, c'est 6% je pense. Mais évidemment, il n'y a pas forcément 6% de personnes handicapées compétentes pour travailler dans une entreprise, donc, si ça ne marche pas, l'État français vous oblige à payer 5000 euros par personne que vous ne recrutez pas. Les résultats en France sont très mauvais, ces entreprises préfèrent payer 5000 euros que de recruter une personne avec un handicap. Par contre, en Belgique, il n'y a pas ça, au Benelux, ça n'existe pas cette notion de quota pour les entreprises

privées, bien pour les entreprises publiques. On constate qu'il y a beaucoup plus de personnes avec un handicap qui travaillent chez nous, sur base volontaire, nos entreprises développent des programmes d'intégration de personnes porteuses de handicap.

CDM : Du coup, dans notre mémoire, par rapport à cette définition qu'on a proposé, ces différentes caractéristiques, on identifie clairement deux innovations responsables différentes, une innovation responsable liée au processus vraiment, comment on responsabilise le processus. Et une partie liée à la finalité, est-ce qu'au final on est responsable ? Premièrement, est-ce vous vous pensez que la responsabilité de l'innovation arrive dans un premier temps par le processus, processus, vous aviez parlé d'impliquer les stakeholders, donc ça ce n'est pas forcément le produit final qui...

JS : Non, non. Je pense plutôt que le processus, les processus existants se transforment pour devenir innovants. On n'invente pas ex-nihilo des nouveaux processus parce que c'est très compliqué à faire, ça demande un changement de mindset complet. Par contre, ce qui se passe, c'est que les processus existants sont mis à l'épreuve de leur efficacité dans la vie de tous les jours. On constate, ou on nous fait constater par des stakeholders extérieurs, que ça ne marche pas super bien. Et donc, on applique, à ce moment-là, on la met dans un *Fab lab* ou dans une section d'innovation et on réfléchit à ça. Donc, on a par exemple, à l'intérieur de l'entreprise, chaque année, on organise des Trophées de l'innovation. On demande aux 150 000 employés, de proposer des solutions qui améliorent les processus existants. Donc, c'est de l'innovation finalement, basée uniquement sur des gens qui ont de la pratique, qui sont peut-être coincés parce que leur chef dit de faire comme ça et comme ça, et leur hiérarchie leur dit de faire ça. Alors qu'ils proposent de très bonnes idées, qu'ils ont appris par leurs enfants, qui sont à l'université, qu'ils ont appris sur Internet, qu'ils ont appris etc. etc. Donc, les meilleures innovations sont récompensées à la fin de l'année, et l'objectif est de les mettre en place dans l'année qui suit. Donc, ça, chaque année, grosso modo, je crois qu'on reçoit deux à trois mille dossiers, projets d'amélioration sur les processus, dont on en met en place 10% l'année d'après. Ceux qui sont jugés compatibles avec l'organisation actuelle de l'entreprise. Donc, en fait, c'est le processus qui s'adapte, qui s'innove par l'énergie intérieur de l'entreprise. Par contre, la deuxième partie, c'est l'innovation vers le client final, on ne le fait pas forcément pour lui. Mais on le fait un peu grâce à lui, parce que si on constate que le consommateur moyen a des habitudes qui changent au niveau de sa consommation de gaz, électricité etc. etc. Ou qu'il veut

plus utiliser des carburants fossiles, ça nous amène nous à innover sur notre business model et sur notre manière de produire de l'électricité. Donc, comme en Belgique, il y a une très forte réticence à l'égard du nucléaire, par exemple, il ne faut pas faire un dessin. Ce que nous on a constaté, c'est que ce qui marche, ce sont de petites entités qui produisent de l'électricité, soit dans un petit village, dans le fond de votre jardin, soit des panneaux photovoltaïques, soit une éolienne. Donc, on insiste très fort là-dessus, puisque notre public demande ça. En fait, ça nous a demandé, à nous, d'innover notre business model en partant de vieilles centrales, qui portent bien leur nom, qui sont centralisées, avec 2-3 pôles de production d'électricité. S'il y en a une qui tombe en panne, c'est la moitié du pays qui est par terre. C'est ce qui s'est passé en Argentine ou en Uruguay, il y a deux semaines, pendant trois jours, tout le pays était à plat car une unité ne fonctionnait pas. Si vous décentralisez le tout, ça responsabilise chaque petit producteur d'électricité et donc, il va avoir aussi conscience que s'il arrête ses panneaux photovoltaïques sur son toit, alors son voisin n'aura pas d'électricité non plus. Donc cela crée de la solidarité.

CDM : C'était intéressant, mais le point était plutôt de voir si innover de de manière plus responsable, ça passe par responsabiliser votre processus, c'est-à-dire, par exemple, il se pourrait que vous développiez une nouvelle forme d'électricité pas forcément plus verte ou responsable qu'une autre, mais pendant le processus vous avez tout fait pour que le processus d'innovation soit responsable, tout ce qui est risk assesement, implication des stakeholders pour avoir une meilleure idée des potentielles conséquences négatives – donc c'était vraiment par rapport au processus. Donc l'innovation responsable, est-ce que ça passe aussi par la responsabilisation du processus ?

JS : Ça passe d'abord par responsabiliser les gens. Responsabiliser les êtres humains qui sont derrière les processus. Car un processus, en lui-même, c'est un truc un peu abstrait. Donc, vous pouvez le faire que par l'intermédiaire de personnes qui sont tout à fait consciente des enjeux environnementaux, sociaux, sociétaux et éthiques de bonne gouvernance de l'entreprise en elle-même. Si vous n'avez pas de moteur comme ça, ça va être très difficile à faire et ça ne sert à rien.

CDM : Comment est-ce que vous vous les encourager les employées à réfléchir de manière responsable dans les processus d'innovation ?

JS : La seule manière de le faire c'est de leur montrer que s'ils ne le font pas, leur business, ils en auront plus. Donc, vous mettez le nez dans leurs affaires vous dites : « Voilà, si vous ne modifiez pas, si vous n'innovez pas dans votre processus, les clients ne vont plus venir chez vous ». Vous avez tout intérêt si vous ne voulez pas perdre votre propre boulot, le boulot de votre équipe de vous responsabiliser autour de ça. Un exemple tout à fait clair et relativement récent, il y a un an, je pense, une de nos filiales à Anvers avait décroché un contrat avec une boîte norvégienne pour 42 millions d'euros. Cette boîte norvégienne est venue faire un audit dans notre petite filiale à Anvers pour demander à quel point nous étions responsables dans le processus au niveau environnemental et fédéral. Les gens à Anvers ne savaient pas quoi répondre. Du coup, ils ont perdu le contrat. Sauf qu'ils ont eu l'intelligence de téléphoner ici disant : « vous n'avez pas une politique liée à ça ? ». J'ai dit : "bah si", donc mon équipe est allée les former sur place, le manager a expliqué ce que c'était que le développement durable, la responsabilité sociale etc. etc. et ils ont dit : « on fait tout ça en fait ». Mais ce n'est pas formalisé, et si ce n'est pas formalisé ils ne savent pas non plus l'amener comme un atout commercial à l'égard de ses clients. Dorénavant, ils ont réintroduit le dossier, finalement ils ont eu le contrat. C'est une belle histoire au final, donc c'est sensibiliser les gens, leur montrer que c'est utile, c'est leur montrer que ça a un lien avec leur business et que en étant responsable dans les processus et dans la manière d'aborder le client, la manière d'aborder les sous-traitants ou voilà. Que ça leur rapporte du business. C'est une démarche un peu utilitariste, j'ai fait ma thèse de doctorat là-dessus, j'essaie d'appliquer ici et ça marche très bien. A partir du moment où vous vous intéressez les salariés ou le manager lambda au business de l'entreprise en disant voilà : « ta responsabilité c'est de faire ça et ça » alors il va le faire.

TP : Vous parlez pas mal de l'implication des différents stakeholders, mais est-ce qu'il y a différentes choses qui sont impliquées dans le processus responsable est-ce qu'il y a d'autres choses que vous feriez ?

CDM : Vous avez parlé du risk assesement, notamment, comment cela se passe pour garantir la responsabilité de l'innovation ?

JS : On procède par des benchmarks avec nos concurrents immédiats, voire un peu si eux sont plus loin, moins loin. Donc, si on constate que 90% de nos concurrents ne font pas l'innovation en termes de responsabilité environnementale, par exemple, mais on va ajouter cet atout-là dans les conventions contractuelles qu'on a avec nos parties prenantes. Ça veut dire que

c'est encore une fois utilitariste, c'est à dire qu'on fait du benchmark on dit : « qu'est-ce qui se passerait, si on ne faisait pas ça, nous ? ». Imaginez que Luminus, notre concurrent, en fasse quelque chose d'extraordinaire pour la promotion des éoliennes en Wallonie, qu'on n'a pas pigé que c'était vraiment utile de le faire. Mais on va dire qu'on a tout intérêt à intégrer ce concept-là dans notre mode de fonctionnement. Mais en y ajoutant une petite touche Engie supplémentaire qui fait notre force à nous à ce moment-là que le prix, soit la capacité des ingénieurs à développer des projets très rapidement.

CDM : Quand vous parlez de risk assessment, c'est plus par rapport aux risques si on ne le fait pas ?

JS : Voilà.

CDM : Est tout ce qui est avec on développe une nouvelle innovation, dans ce cas-ci technologies, comment vous gérez tout ce qui est : « il faut être rapide, mais d'un autre côté pas trop rapide pour lancer n'importe quoi, qui pourrait avoir des conséquences néfastes à long terme » ?

JS : Si on prend ça par exemple sur l'innovation technologique. On a trois centres de R&D répartis dans le monde et qui sont vraiment très en avance sur pas mal pas mal de domaines. Mais on ne lancera jamais, ni un nouveau produit, ni un nouveau service avant de voir passé cinq ans à le tester en laboratoire, ou en milieu hyper protégé. C'est aussi une manière finalement de ne pas sortir du bois trop vite, avec des solutions qui sur papier ont l'air magique, mais qui ne fonctionnent pas. On a par exemple créé un concept : les hydroliennes, c'est donc des éoliennes sous-marines. On ne les voit pas, ça ne fait pas de bruit, c'est pas mal, ce n'est pas polluant et ça fonctionne avec les courants sous-marins. Mais en fait on s'est aperçu que l'installation c'était un peu compliqué parce que les tremblements de terre sous la mer sous-marine aussi, il y a la rouille, si votre machine tombe en panne vous devez descendre à mille mètres de profondeur donc ça va pas du tout. En fait c'est une très belle idée sur papier, mais si on veut la réaliser dans la pratique il y a plein de contingences et de contraintes qui font en sorte que ça ne va pas. Comme ça c'est un peu je ne sais pas si on appelle ça du risk management mais c'est en tout cas de l'anticipation.

CDM : Et donc c'est quelque chose qui aide à la responsabilisation des innovations ?

JS : Bien entendu et surtout à développer des solutions qui sont réalistes et pas surréalistes à la Belge.

CDM : Plus par rapport à la finalité des innovations, on sort complètement du processus, c'est la responsabilité du produit final. Est-ce que vous pensez que, vous êtes des innovateurs responsables, notamment par la responsabilité des produits finaux que vous proposez et pourquoi ?

JS : Je pense qu'on est responsable, pas encore suffisamment dans le sens où on peut prendre l'exemple de l'énergie verte. C'est vrai que c'est une responsabilité que de dire que 85% de l'énergie produite par Electrabel est de l'énergie verte. On sait très bien que ce n'est pas vrai, parce que les circuits, les réseaux sont interconnectés en Europe. Donc, en fait, de l'électricité qui arrive chez vous peut-être qu'il y a effectivement de l'énergie verte d'Electrabel, mais il y a probablement de l'énergie produite par du charbon en Allemagne qui dans le même réseau, où il y a de l'énergie produite par de la biomasse ou du gaz hollandais qui se trouve dans le même réseau aussi. Donc là il y a une responsabilisation qui peut être mise en doute à un moment donné ou un autre de ne pas affirmer tout et n'importe quoi pour des questions de marketing. Donc pour le produit final, il faut être très prudent. Donc je pense que l'innovation - je dis toujours qu'on n'est pas dans une révolution industrielle mais une évolution industrielle dans le sens où pour les clients finaux ou pour nos autres stakeholders dire du jour au lendemain on passe une énergie avec des produits fossiles vers une énergie 100% verte, personne ne va nous croire. Parce que ce n'est pas réalisable, par contre si on dit ou vous dites que vous êtes dans une phase de transition énergétique, vous faites un mix énergétique avec un peu de nucléaire, un peu de gaz, un peu de ceci, un peu de ça, ça a l'air beaucoup plus plausible. Et c'est défendable, à ce moment-là, donc la nôtre responsabilité de plus en plus et j'ai vu ça dans les 10 dernières années c'est d'être transparent, d'être descriptif dans la manière dont vous mettez des produits ou des services sur le marché et de vous faire contrôler. Donc il faut qu'il y ait des instances extérieures neutres qui ne dépendent pas de l'entreprise ici qui viennent vérifier si vous ne racontez pas n'importe quoi. Des agences comme par exemple l'Agence de l'énergie nucléaire, il y a plein d'autres agences qui sont neutres et qui vérifient l'exactitude de ce que vous mettez sur le marché. Donc l'innovation responsable c'est aussi être responsable des limites de votre innovation.

CDM : Avoir un regard critique sur...

JS : Avoir un regard critique aidé par des regards objectifs venant de l'extérieur.

TP : Si on sépare toujours processus et outcome, j'ai l'impression que ce que vous venez de mentionner ça restait un petit peu dans le processus, tout ce qui est avoir un objectif, impliquer différentes personnes pour éviter que ce que l'on sort est irresponsable. Mais du coup comment vous définiriez un outcome qui est responsable ? Comme un produit final responsable ?

CDM : Comment est-ce que vous, vous le définissez ? Est-ce que c'est plutôt sur base d'objectif fixé par des organismes comme les nations unies ou plutôt des objectifs internes disant : « si on réduit la pollution de 10%, c'est une innovation responsable » ?

JS : En interne, on a une série de KPI non financiers, donc on a introduit depuis maintenant cinq ans et qui concerne aussi bien la pollution, les émissions de CO2, que le nombre de formations subies, le nombre de femmes au travail, il y en a 17 au total. Je crois que c'est un bon système qui permet de mesurer la responsabilité de l'entreprise dans les produits qu'elle sort. Et ces KPI's sont publics, ce qui veut dire que le consommateur final peut aussi vérifier si on raconte n'importe quoi ou pas du tout. Ça c'est un gage de sérieux, pour montrer que le produit ou le service fini est au service avec de l'innovation responsable. Faire en sorte que les consommateurs finaux puissent le comparer, avec des produits ou des services plus ou moins identiques offerts par des concurrents ou des entreprises plutôt, des partenaires, ou d'autres entreprises dans le même secteur. Ce à quoi nous œuvrons au sein d'une association qui s'appelle CSR Europe, je ne sais pas si cela vous dit quelque chose. C'est à partager les mêmes KPI avec toutes entreprises, comme ça on peut faire vraiment annuellement une espèce de *ranking* en fonction de critères identiques, en utilisant des unités de mesure identiques aussi entre entreprises du même secteur. Je crois que c'est un truc, qui bien expliqué et didactique au niveau du public général, ils vont comprendre ça.

CDM : Et quand vous mentionnez qu'il y a des organismes extérieurs qui vérifient de temps en temps si vous racontez n'importe ?

JS : Pas de de temps en temps, c'est systématique.

CDM : Et comment cela se passe ?

JS : C'est à dire qu'il y a de deux types d'organismes. Il y a des organismes qui le font à échéance fixe. Donc, on sait très bien qu'on doit délivrer les chiffres à telle date et ils sont vérifiés. Mais vous avez aussi certains organismes comme la Flandres par exemple, qui fonctionnent de manière ponctuelle, à l'improviste, et sans prévenir. Donc, il faut pouvoir attester que vos centrales fonctionnent avec le respect de toutes les règles de sécurité, de production etc. Ils viennent vérifier par exemple, si vous avez une politique de diversité dans l'entreprise. Combien de personnes effectivement, combien de femmes travaillent dans l'entreprise, si vous déclarez que vous avez une politique d'égalité salariale, alors ils peuvent venir vérifier par exemple, si c'est vrai au départ et à l'arrivée. Bien souvent une jeune fille ou un jeune homme quand ils sont engagés, ils ont le même salaire. Mais 20 ans plus tard, on voit que c'est plus vrai, pour des raisons X ou Y la femme gagne moins parce qu'elle est partie pour des accouchements etc. Ça, je que c'est vraiment utile d'avoir ça, parce que ça permet, ça nous permet à nous de savoir où on se situe dans une marge de manœuvre, de 0-10.

CDM : Qu'est-ce que vous faites de ces informations, si à un moment on vous dit : « attention vous pensiez que votre innovation ici elle était responsable, plus écologique, alors qu'en fait elle l'est beaucoup moins en pratique », qu'est-ce qu'il se passe ?

JS : Alors là, ça se passe au comité exécutif de l'entreprise. Le comité exécutif décide alors de la politique à suivre pour rectifier le tir. Ça descend d'1-2-3 étages vers les équipes responsables de cette production, soit de la distribution, soit de la mise sur le marché de certains types de produits.

CDM : Plus tôt vous avez mentionné que afin de pouvoir développer des innovations responsables, il est intéressant d'aller voir les personnes qui créent ces innovations, et de leurs dire : « la responsabilité c'est important », au-delà ce changement de culture d'entreprise, est-ce qu'il y a d'autres que vous avez changé pour vraiment arriver à être plus responsable dans les produits que vous lancez ?

JS : D'abord on a créé un département d'innovation, donc ce n'est pas la recherche et le développement, c'est vraiment une espèce de département séparé. Dans lequel on a mis, non seulement des gens responsables de la technologie, des juristes, des ingénieurs, on a mis des gens de la responsabilité sociétale des entreprises, on a mis des gens issus de Start up que nous avons racheté dans les trois dernières années, pour réfléchir justement qu'est-ce que c'est que

d'être responsable sur le marché d'aujourd'hui. Eux ont développé une espèce de charte de responsabilité en termes d'innovation, qui est alors diffusé dans l'ensemble du groupe et une remise à jour très régulièrement, car c'est un domaine qui change très vite, il faut innover l'innovation. Sinon ce n'est plus de l'innovation, c'est de la novation. Ce système là, ça permet même de manière déclarative de faire en sorte que tout le monde parle le même langage, utiliser le même vocabulaire tout le monde sait ce que ça veut dire innover. Tout le monde sait quelles sont les limites de l'innovation, et ce que l'on attend de chaque individu de l'entreprise en termes d'innovation. Parce que pour une société, innover, je voudrais dire souligner le titre en rouge au lieu d'en vert. Par contre, pour un top manager, innover ça veut peut-être dire recruter des gens dans des milieux dans lesquels normalement vous ne recrutez jamais personne, ça demande un peu de courage de sortir. C'est, non seulement, pour utiliser un truc un peu banal *think out of the box* mais c'est aussi *walk the talk*, ce n'est pas parce que vous dites : « je suis une entreprise axée sur la diversité que du jour au lendemain vous allez voir arriver 258 maghrébines dans l'entreprise pour travailler ». Ce n'est pas ça, faut aller chercher les vraies compétences là où elles sont. Que ce soit maghrébin, un handicapé, un jaune ou un vert. C'est ça l'innovation responsable, c'est de vérifier que vous ayez au sein de l'entreprise les ressources, les compétences et les financements par rapport à un projet d'entreprise global que vous voulez réaliser un peu partout dans le monde.

CDM : Est-ce que ce serait possible d'avoir accès à cette charte ?

JS : Oui, faut m'envoyer un petit mail, parce que j'aurai oublié demain matin, mais il n'y a pas de secrets, elle n'est pas sur notre site mais on en est fier.

CDM : Est-ce que vous pensez que c'est possible d'avoir les produits responsables, sans le processus responsable que vous faites ?

JS : Ah non, impossible. Parce que vous ne pouvez pas produire une nouvelle voiture sur des machines qui ont été construites par Henry Ford en 1908. Ça ne va pas, parce qu'il va vous manquer des éléments ou alors vous leurrez votre clientèle. Vous leurs dites que c'est un nouveau produit alors que c'était en fait un remake d'un produit d'avant.

CDM : Vous pensez que malgré un processus qui est très responsable, on peut quand même développer une innovation que ne l'est pas ?

JS : Sans doute, si elle est mal communiquée. Si le marketing est mal fait, ça ne paraîtra pas comme étant innovant ou nouveau. Les gens ne vont pas l'acheter, si vous fabriquez des pilules de Viagra de manière artisanale alors que des laboratoires le font de manière tout à fait scientifique. Sur le marché elles auront l'air identiques, probablement pas le processus, le fruit d'un processus d'innovation mais mal fichu puisque vous utilisez les mauvais ingrédients, un mauvais dosage et votre publicité sera mal faite parce que qu'elle sera mensongère.

TP : On a parlé de comment ça marchait, comment vous appliquez ça dans l'entreprise. Est-ce que vous avez identifié des avantages au fait de faire des innovations plus responsables, pour l'entreprise ou pour la société en général ?

JS : Pour l'entreprise en tout cas, je vois deux avantages essentiels, c'est que ça nous a permis à nous de développer des projets beaucoup plus axés sur la collaboration, entre différentes ressources plutôt que de travailler en silo. L'innovation responsable force à travailler en réseau. Ce qui veut dire que c'est rassembler les compétences et les ressources de plusieurs départements différents et de le mettre autour d'un projet nouveau. Je ne suis pas tellement pour le mot collaboratif, je trouve que c'est déjà du passé. Nous on a appelé ça ici qu'au co-élaboratif, c'est à dire que si vous collaborez ça veut dire que le projet existe déjà et que vous mettez ensemble pour le faire avancer. Si vous Co-élaborez, ça veut dire que vous élaborez le projet ensemble et puis vous le faites fonctionner par la suite. Et c'est ça l'innovation responsable, c'est de trouver en interne et souvent aussi en externe, des compétences qui permettent de développer des nouveautés. Le deuxième avantage que je voyais c'est ça. C'était le premier et le deuxième avantage en interne par rapport à l'innovation responsable c'est que c'était en lien avec la nouvelle image que l'on veut donner de l'entreprise. Donc, une image beaucoup plus moderne, beaucoup plus alignée sur l'évolution globale de la société, c'est aligné sur l'économie circulaire. Par rapport à la société au sens large, l'innovation responsable, je crois que ça contribue à une plus grande harmonie sociale et une plus grande solidarité. Parce que vous mettez sur le marché des produits et des services qui sont plus calqués sur les besoins de la population et pas l'inverse. Avant, on mettait sur le marché des produits dont on voudrait bien que les gens les achètent. Ce qui était ridicule parce qu'alors on achetait des trucs inutiles, et faisait de la pollution. Alors qu'ici la démarche est inversée, vous ne mettez sur le marché que des produits ou de services dont les gens ont vraiment besoin. Je reprends l'exemple de l'énergie décentralisée, les gens ils ont besoin de quoi ? Quand ils allument leur lampe que

l'électricité soit là. C'est plus facile à contrôler si c'est une production locale dans leur quartier ou dans le fond de leur jardin.

CDM : Pour terminer les avantages, est ce que vous en voyez d'autres que vous avez mentionné, sinon peut-être qu'on peut...

JS : Vers l'externe ? Les avantages pour la société ?

CDM : Oui il y en avait d'autres que vous avez identifiés, parce que sinon ce qu'on veut faire c'est vous en présenter qu'on a identifié, et vous demander votre avis dessus ?

JS : Non allez-y.

CDM : On a identifié le fait que développer des innovations responsables, permet à l'entreprise d'accroître ses performances et notamment d'augmenter les performances de ses employés, via la motivation.

JS : Certains types d'employés je pense, pas tous. Vous avez toujours une marge de 10 -15% qui sont des réfractaires à toute forme de changement et à toute forme d'innovation, donc ceux-là on ne les compte pas dans le lot. Ils s'éliminent automatiquement, s'ils ne participent pas à une atmosphère globale d'innovation, mais ils vont se retrouver à côté de la plaque.

CDM : Et par rapport aux performances de la firme ?

JS : C'est vrai. Je pense que c'est à partir du moment où vous introduisez des KPI d'innovation dans votre analyse globale de la performance de l'entreprise. C'est clair que c'est y contribue aussi.

CDM : D'accord, on avait un gros avantage qui était le fait d'être à l'avant des nouvelles réglementations, des nouvelles lois et du coup dans une telle manière ne pas être pris en dernière minute et d'avoir plus d'avantages par rapport aux concurrents d'aller plus loin que ce qui est attendu de nous. Est-ce que c'est une chose que vous vous ressentez chez Engie ou pas forcément ?

JS : C'est un peu compliqué, parce que dans le domaine purement de notre activité industrielle, le régulateur en général est beaucoup plus rapide que nous. Donc, vous ne modifiez

pas un processus de production d'électricité aussi rapidement que ça, ça prend 15 ans. Donc, le régulateur parfois nous impose des choses beaucoup plus strictes et beaucoup plus rapidement que les changements ne peuvent se manifester dans la réalité. Il faut peut-être nuancer, ça peut être un avantage dans le domaine plus lié au social ou à l'environnemental, mais au niveau de l'innovation purement industrielle, du business de l'entreprise ça j'ai plutôt des doutes quant à la réglementation, de la régulation.

CDM : Et le dernier c'était le fait d'innover et de se focaliser sur des innovations responsables permettent de développer un avantage compétitif par rapport aux concurrents.

JS : Ça oui, tout en disant qu'on ne parle plus de concurrents mais de partenaires, partenaires complémentaires. On est tous dans le domaine de l'électricité en tout cas. On a besoin de chacun des producteurs pour garantir l'approvisionnement en électricité de l'ensemble du pays. C'est plutôt, c'est du vocabulaire. Mais c'est plus ou moins la même chose. Je trouve qu'il y a un autre avantage compétitif à l'innovation responsable, c'est que ça développe - j'en ai parlé tout à l'heure - ça développer l'image marketing importante pour l'entreprise aussi. Savoir qu'elle n'est pas considérée comme rétrograde, ou du siècle passé mais au contraire qu'elle comprend ce qui vit dans la population, quelles sont les exigences des jeunes et des moins jeunes.

TP : Maintenant qu'on a abordé les avantages, est ce qu'à contrario, il y a des désavantages selon vous à essayer d'être plus responsable dans son processus ou dans les innovations ?

JS : Des désavantages, je n'utiliserais peut-être pas ce mot là mais des challenges, oui. Ça a un coût, donc innover ça veut dire modifier grosso modo la structure de l'entreprise, acheter de nouvelles machines etc. etc. Malgré tout, le coût est relativement important à court terme. Par contre, à long terme, ça peut générer des bénéfices plantureux. Pour être plus nuancé entre le court terme et le long terme. Le deuxième désavantage que je citerai c'est que, comme je l'ai dit, tout individu n'est pas capable de faire preuve de ce *change agility*, de cette créativité et d'inventivité. Donc, vous risquez de perdre des talents pour les ressources en entreprises qui ne s'y retrouve peut-être plus dans la nouvelle manière de travailler. Donc, ils iront peut-être voire ailleurs là où ça correspond mieux à leur mode de fonctionnement. Troisième désavantage, c'est qu'une entreprise qui est vraiment basée sur l'innovation à fond peut courir des risques, parce

que si elle se trompe dans ces nouvelles technologies, ces nouveaux modes de production ou des choses comme ça peut être fatal. C'est du risk management à l'envers, à partir du moment où vous lancer trop fort dans l'innovation, regardez certaines Start up qui sont vraiment trop à la pointe de l'innovation, elles durent longtemps. Si elles ne sont pas aidées par leurs structures structurées. Un autre inconvénient se trouve aussi de l'innovation dite responsable c'est qu'il faut constamment redéfinir et re-sensibiliser les gens autour de ce que c'est que d'être responsable. Adopter une attitude de responsabilité sociale, sociétale et environnementale parce qu'il y a de nouvelles générations de gens qui arrivent dans l'entreprise, qui ont certes eu des cours sur la RSE ou l'innovation dans le contexte académique mais qui ne savent pas ce que ça implique dans la vie de tous les jours de l'entreprise. Il y a peut-être un risque aussi de perte de temps du fait de l'innovation, si on ne prend pas le temps tout au début d'expliquer ce que c'est le bon et ce qu'on attend.

TP : De la même manière que pour les avantages, est ce que je peux vous citer quelques-uns qu'on aurait pu identifier ?

JS : Oui, oui.

TP : Par rapport à la gestion des stakeholders, il y a plus de stakeholders qu'on essaye d'identifier j'imagine, du fait qu'on essaie d'être responsable. Est-ce que ce n'est pas aussi une difficulté que vous pouvez rencontrer, d'impliquer les milieux académiques, les clients, les différents partenaires ?

JS : En fait, on le faisait déjà, dans le sens où on a fait la cartographie de nos parties prenantes, on fait du stakeholders management depuis une quinzaine d'années. Donc, on est vraiment habitué, c'est rentré dans les mœurs de l'entreprise de traiter avec pas mal de parties prenantes différentes. Je trouve que c'est plutôt un avantage, à partir du moment où vous avez une bonne gestion des parties prenantes, et que vous ne faites pas appel à eux de manière un peu plic ploc, de manière aléatoire.

CDM : Ça marche plutôt bien ça ?

JS : Ça marche super.

TP : Du coup, un autre point, c'est que le processus d'innovation peut être un peu plus long si on insiste plus sur le risk assessment, est-ce que c'est quelque chose que vous constatez ? Ou justement c'est une chose que vous ne pouvez pas vous permettre ?

CDM : Par exemple vous parliez des 5 ans, est-ce que le fait d'être plus responsable, vous sentez que vous êtes plus lent que certains partenaires ou de petites structures qui disent : « on lance une nouvelle énergie... »

JS : C'est clair que vu la taille de l'entreprise c'est plus compliqué, quand vous implémentez une innovation, il faut dire que 30% moins rapide que si vous prenez une PME ou si vous prenez une entreprise plus axée sur la recherche et développement. Mais, en même temps, dès que vous avez abouti le processus de création d'une nouvelle unité de production. Par exemple, la mise en pratique est plus rapide aussi. Parce que vous avez plus de moyens donc vous y mettez plus de sous et plus d'énergie et plus de ressources qu'une PME, qui va peut-être mettre un peu plus de temps parce qu'ils n'ont pas trouvé de financement, ils doivent retrouver les bonnes compétences, blablabla l'un dans l'autre ça s'équilibre. Les plus petites structures sont plus rapides au démarrage, mais elles s'essoufflent parce qu'elles n'ont pas les moyens. Tandis que chez nous on est plus lent au démarrage mais on est plus axé sur un fonctionnement sur la durée, parce qu'il y a des moyens d'accompagnement de l'innovation.

TP : Et on a aussi vu qu'il y avait des difficultés peut être éventuellement, vu qu'on essaye d'être responsable, de limiter les impacts négatifs d'une innovation. Mais, malgré tout, c'est assez difficile de donner un risque 0. Du coup, est-ce que ce n'est pas un challenge d'essayer de toujours essayer de prédire les conséquences négatives, mais sans jamais pouvoir vraiment affirmer que c'est tout à fait responsable ?

JS : C'est à dire que dans le domaine industriel, vous n'avez jamais de certitude à 100%. Il y a toujours le facteur risque qui joue. La seule chose que chose à faire c'est de minimiser le risque en lui-même, de prendre suffisamment de précautions. Faire suffisamment d'études préalables, suffisamment de certitudes au niveau financier, au niveau de vos ressources pour que vous vous lancez dans un processus d'innovation. Vous soyez sûr que vous avez tous les atouts en main. Encore une fois n'est pas le cas, par exemple, pour une PME, parce qu'eux doivent partir à la recherche, les start-up c'est pareil. Alors que nous on a plus de certitudes par rapport à ça.

TP : Et alors dernier point, on a mentionné les problèmes de la transparence, vu qu'il y a beaucoup de personnes impliquées. Est-ce que des fois il n'y a pas des leakages, des trous, des connaissances qui arrivent dans les oreilles de personnes qui ne devrait pas les avoirs. Est-ce que vous ressentez comme un risque réel, un challenge ?

JS : On a certainement été confronté à ça, ce n'est pas à cause de l'innovation responsable, elle n'a rien ajouté par rapport à ça. Par contre, je pense que si vous êtes dans une équipe projet qui est vraiment basée sur des innovations technologiques, ou des innovations sociales et que vous avez réussi à développer un climat de bonne entente entre les différents participants, il ne doit pas y avoir de fuite. Parce que ces gens-là tiennent à leur projet comme si c'était leur propre enfant. Par contre, si vous êtes dans une structure hiérarchique, où celui qui est tout en haut ne sait pas contrôler celui qui est tout en bas. Là il y a des risques, dans une structure ou c'est un écosystème avec différents réseaux, ce risque n'existe quasiment plus. Il y a des phénomènes d'auto contrôle qui se font à ce moment-là. Parce que si on est dans une équipe à 3, c'est très facile pour moi de savoir : « tiens lundi elle n'a rien fichu, ce n'est pas normal ».

CDM : Dernier point en ce qui un des facteurs clés de succès lié l'implémentation d'une responsabilisation de l'innovation. Quels sont les facteurs clés du succès que vous vous identifiez, pour dire : « Non on a réussi à mettre développer des innovations responsables parce qu'on a fait ça, on a mis ça en place » ?

JS : On en a déjà parlé au début. C'est le fait de bien comprendre dans quel jeu on joue, connaître les parties prenantes, connaître les enjeux de la société ou de l'environnement dans lequel vous êtes, connaître votre entreprise et quelles sont, où se trouvent les compétences. C'est ce qu'on appelle la GPEC (gestion prévisionnelle des emplois et des compétences). Parce que, bien souvent, vous dites on ne va pas oser faire tel changement parce que'on n'a personne sous la main pour le faire mais en fait l'entreprise est tellement grande, qu'il faut vraiment mettre en place un système informatisé qui permet, par l'intermédiaire de mots clés, de repérer la personne X qui est spécialiste dans les hydroliennes. C'est la première chose comme facteur de succès. Deuxième facteur de succès, c'est qu'il faut que ce soit un processus qui soit évalué très fréquemment. Donc, il y a la régularité dans l'évaluation, dans le suivi pour pouvoir corriger le tir, pour pouvoir rebooster un peu les batteries de ceux qui travaillent dedans. C'est important aussi. Le troisième facteur de succès, c'est d'être sûr des objectifs que vous vouliez atteindre et les moyens dont vous disposez ou dont vous devriez disposer pour atteindre ces objectifs, savoir

vers où on va. Et l'innovation responsable aussi c'est être sûr que la manière dont vous allez communiquer autour de votre innovation soit fait de manière transparente, compréhensible, des objectifs clairs et adressés à des publics cibles bien spécifiques.

CDM : Super, ça reprend déjà trois des groupes qu'on avait identifiés. Il en reste, du coup, trois autres. C'est le fait que pour réussir dans les innovations responsables il faut vraiment adapter la stratégie globale de l'entreprise. Maintenant est dans une transition énergétique, j'ai l'impression que là ça fit quand même bien avec la stratégie globale.

JS : Oui, oui.

CDM : Mais également la structure organisationnelle. Vous l'avez peut-être un peu mentionné au-dessus, cette espèce de confiance entre les équipes.

JS : Oui ça c'est l'histoire de la co-élaboration.

CDM : Un KSF que vous avez mentionné c'était le fait d'avoir des mécanismes d'implication des stakeholders puissants et efficaces.

JS : Oui.

CDM : Et le dernier c'était d'avoir un style de management « de proximité » qui permet, une...

JS : En même temps de proximité mais aussi une vision sur la stratégie globale de l'entreprise. Parce que la proximité c'est très bien ça vous permettra de pour réagir par rapport au day-to-day. Mais il a des projets qui prennent cinq ans ou des projets de 10 ans pour construire une centrale nucléaire, c'est au moins 40 ans d'exploitation, donc il faut une vision à long terme.

CDM : Du coup, le dernier point, vous avez mentionné un risque, vous en avez parlé des désavantages, qui était le risque de complètement se tromper dans les nouvelles innovations qu'on développe. Est-ce qu'il a d'autres gros risques, que vous identifiés qui pourraient arriver avec une responsabilisation des innovations, une tentative de responsabiliser les innovations ?

JS : Le risque est d'être de travailler en vase clos dans l'entreprise. Ça arrive encore quand même de temps en temps et donc, de ne pas voir qu'il y a d'autres acteurs sur le marché qui sont plus loin que vous. C'est se faire dépasser alors que vous avez investi de l'argent, des ressources, du temps, et du lobbying avec des pouvoirs locaux et alors qu'à côté de vous, il y a un acteur peut-être plus petit qui a fait un truc mieux vendu, mieux vendable que vous et ça c'est un gros risque. Donc pour ça il faut vraiment instaurer un service de veille, il y a un service de 20 personnes ici, qui regardent vraiment tous les jours à toute heure ce que les entreprises du même secteur font. Voir ce qu'ils sortent comme projet, ce n'est pas de l'espionnage industriel mais c'est vraiment une formule pour ne pas être dépassée sur son propre terrain. Il n'y a rien de pire pour une entreprise de ne perdre le contrôle sur ce qui fait sa spécificité. Si on prend ici le marché, le marché belge, ou le marché du Benelux. Si du jour au lendemain on n'a pas vu arriver un nouvel acteur, même aussi petit soit-il, mais qui arrive avec une formule révolutionnaire de tarification ou avec un mix énergétique complètement green et qui peut garantir qu'il est complètement green, nous on va se faire dépasser et on ne l'aura pas vu arriver, donc ça peut arriver très vite ça.

CDM : Eh bien, écoutez on ne pas retenir pus longtemps, c'est très intéressant, merci beaucoup.

JS : Mais avec plaisir, vous m'enverrez juste votre mémoire, pour que je puisse lire les résultats de votre investigation.

Appendix 30 - Proximus official commitments on website

Enabling a better digital life

We enable a better digital life by building a **future-proof infrastructure with high-quality networks and digital platforms**, as well as through **innovative solutions and services** that address societal challenges. We believe in open innovation and co-create in **digital ecosystems** with the academic world, start-ups and scale-ups.

We pay particular attention to developing a **safer digital society**. We provide cybersecurity solutions and services to our residential, enterprise and public customers and build trust in digital through **data protection/privacy** and awareness initiatives. We are also a proud founding partner of the Cybersecurity Coalition.

Contributing to society while creating value for our stakeholders



Living and working in an ever fast changing society

As a provider of digital services, we keep a finger on the pulse of societal trends, opportunities and challenges. Digital innovations not only delight customers, they also bring new ways to tackle societal, economic and environmental challenges.



Source: Proximus, 2019

Appendix 31 – Proximus Transcript demand to be left out



Thomas Peeters

SONCK Jan (SGI/MST); Chloé De Maesschalck

lundi 1 juillet 2019 à 23:02

[Afficher les détails](#)



Restranscription Pro...

56 Ko

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Hello Jan,

Thanks again for your participation in our thesis.
 Here is the transcript of our conversation from last week.
 You can have a look and make modifications if we misunderstood something or if you want to add anything.
 Feel free to reach out to us if you have any question.

Kind regards,
 Thomas Peeters



RE: Transcript of the interview



SONCK Jan (SGI/MST) <jan.sonck@proximus.com>

Thomas Peeters; Chloé De Maesschalck

mardi 2 juillet 2019 à 07:45

[Afficher les détails](#)

Hello Chloé and Thomas,

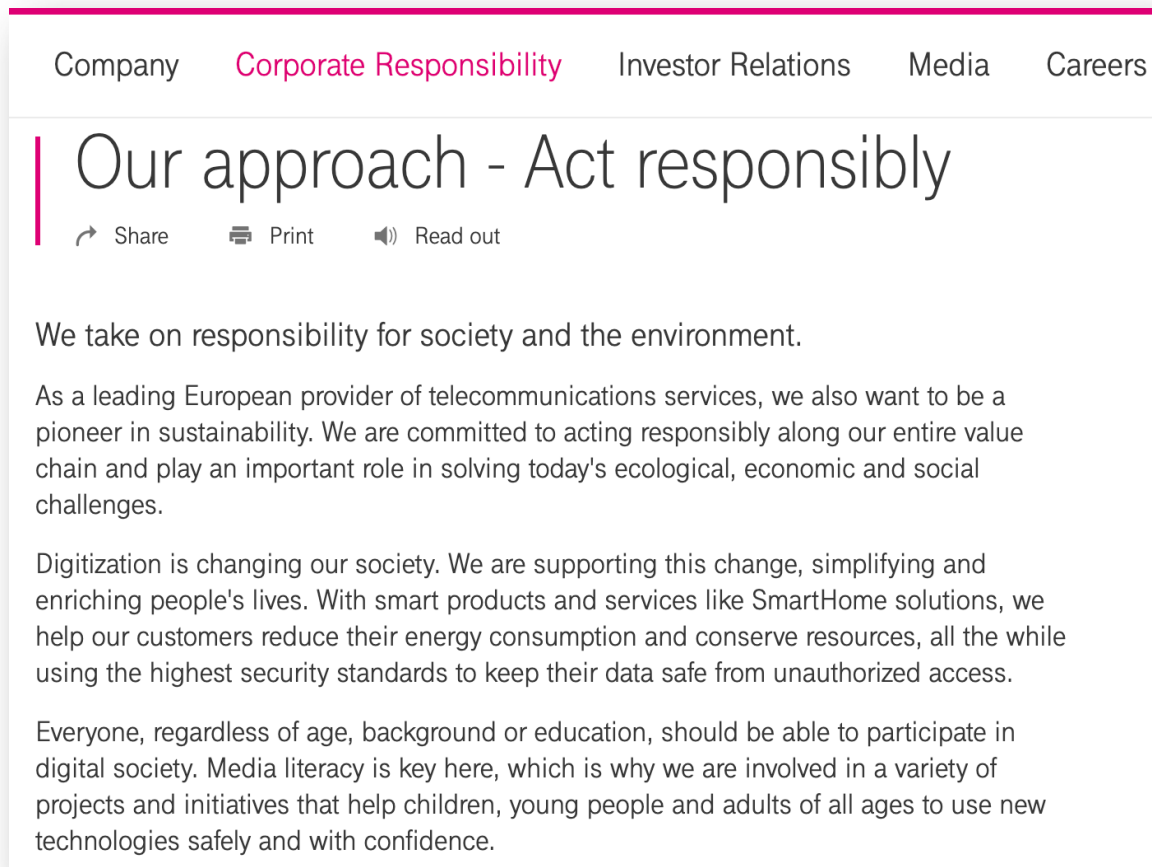
I started reading the document, but really can't free the time right now to check every line.
 I count on you to make sure my input is only used to bring reverent input to your thesis.
 Therefore, if info is not key to stuff your paper, I propose you leave it out.
 Kind regards, and success.

Jan

Appendix 32 – Proximus interview summary

Characteristics of RI for Proximus	- Reconcile social and environmental objectives and economic objectives of the company. - o Work ethically - o Do good - Involvement of stakeholders through the process - o Different partners, customers or NGO's to gather opinions and knowledge - Be agile and adaptative - o Be able to react quickly in case of negative outcomes - o Be able to take into account inputs of stakeholders through the innovation process. - Perform risk assessments through the innovation process. - o Allow to better determine the potential negative outcomes that could arise. - Go further than what the law requires
Managerial implications identified by Proximus	- Attention points - o Work with different departments - o Work ethically - o Develop partnerships (with universities, start-ups) - o Include responsible innovation in the global strategy of the company - o "Use technology, not abuse it" - o Include stakeholders and partners in the innovation process. - o Go beyond law - Advantages - o Boost creativity, allowing to develop new innovations - o Improved competitive advantage - o Boost internal motivation to work on new products. - o Improved brand image. - Disadvantages - o Managing the numerous stakeholders and committees and their expectations is difficult. - o More complex and longer innovation process. - o Avoid launching products on the market of important clients - o Risk of content leakage. However, this should not stop the company from being responsible.

Appendix 33 - Deutsche Telekom official commitments on website

A screenshot of the Deutsche Telekom website's Corporate Responsibility section. The page has a pink header bar with navigation links: 'Company', 'Corporate Responsibility' (highlighted in pink), 'Investor Relations', 'Media', and 'Careers'. Below the header, the main heading is 'Our approach - Act responsibly', preceded by a vertical pink bar. Under the heading are three icons with labels: a share icon for 'Share', a printer icon for 'Print', and a speaker icon for 'Read out'. The content area contains three paragraphs of text. The first paragraph states their commitment to society and the environment. The second paragraph discusses their role in sustainability as a leading European telecommunications provider. The third paragraph talks about supporting digitization and digital society through smart products like SmartHome solutions.

Company **Corporate Responsibility** Investor Relations Media Careers

Our approach - Act responsibly

 Share  Print  Read out

We take on responsibility for society and the environment.

As a leading European provider of telecommunications services, we also want to be a pioneer in sustainability. We are committed to acting responsibly along our entire value chain and play an important role in solving today's ecological, economic and social challenges.

Digitization is changing our society. We are supporting this change, simplifying and enriching people's lives. With smart products and services like SmartHome solutions, we help our customers reduce their energy consumption and conserve resources, all the while using the highest security standards to keep their data safe from unauthorized access.

Everyone, regardless of age, background or education, should be able to participate in digital society. Media literacy is key here, which is why we are involved in a variety of projects and initiatives that help children, young people and adults of all ages to use new technologies safely and with confidence.

Source: Deutsche Telekom, 2019

Appendix 34 – Deutsche Telekom interview summary confirmation

TP **Thomas Peeters <th_peeters@hotmail.com>**
 Birgit.Klesper@telekom.de; Chloé De Maesschalck
 jeudi 27 juin 2019 à 12:23
[Afficher les détails](#)

 Summary Telekom.d...
 21,1 Ko

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Dear Mrs. Klesper,

We took some notes during our interview about responsible innovation, and we would like to share with you what we learned from it.

You can modify the document if you feel that certain information is incorrect or if you prefer that certain information remain confidential.

Thank you again for your help.

Kind regards,
 Thomas Peeters

B **Birgit.Klesper@telekom.de <Birgit.Klesper@telekom.de>**
 th_peeters@hotmail.com; Chloé De Maesschalck
 jeudi 27 juin 2019 à 14:48
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 Summary Telekom.d...
 23,9 Ko

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Dear Thomas,

please find enclosed some few chages. Due to a business trip I could only take a quick look at it.

A lot of success for your thesis

kind regards
 Birgit Klesper

Appendix 35 – Deutsche Telekom interview summary

CDM:	Chloé De Maesschalck
TP:	Thomas Peeters
BK:	Birgit Klesper (Senior Vice President Group Corporate Responsibility) birgit.klesper@telekom.de

--- Mrs. Kepler not allowing us to record the interview, we present the information collected during the interview in the form of bullets points ---

About the company

- The company is working in the infrastructure and telecommunication business
- They have a lot of fixed line and mobile customers, and also work in the B2B business
- They work in over 30 markets, mainly in Europe and Germany but also in the US.
- The revenue is over 75 Billion.
- More than 216 000 people are working worldwide
- Pioneer in cloud computing, offering solutions for all kind of companies and looking to be pioneer and leader for the new technologies to come, like the 5G for example.
- ICT is a very competitive market, innovation cycles are very short, especially for technical components. There is a lot of innovations that DT is not developing itself but buying from suppliers, but DT as well develops new products very often in cooperation with partners or start-ups.
- It is very important for the company to integrate responsible innovation through the whole innovation process in order to achieve a responsible outcome. It is not possible otherwise.
- For Deutsche Telekom, responsible is about having positive impacts on the environment (Less CO2 emissions, dematerialization) or on the society (health of the population).
- The company tried to be responsible in innovation for 15 years at least. However, it was not already like it is today, there is an evolution. Innovations need to be received by the customers, so the change has to be progressive.

Mechanisms

- The company needs to find the adequate products filling the needs of the market because even if some responsible ideas are very nice, if they cannot be marketed, it will not work. The company needs to do business. This is a barrier.
- They are working on their own or with partners. They share knowledge with other actors, like start-ups working in responsible innovation to know more on how to market things and how to have successful outcomes.
- Working very agile by prototyping and testing regularly in order to have the perception of the different stakeholders. This allows to have a better idea of the potential negative impacts that could arise and allows to work on their mitigation.
- Involving NGO's and institutions to evaluate if innovations are responsible. They are working with the SDG's to measure what they are doing and to determine goals.
- They do a post launch feedback to find what are the results compared to the expectations, if the innovation improved the situation.

Advantages

- The company often reduce resources needed and increase resources efficiency.
- Increase of the internal motivation to work on products
- Increase of reputation.
- It allows to be ahead of new regulations
- It can increase the competitive advantage, but it is not all about competitive advantage, it is a must have (*and might soon be mandatory*).
- Boost the creativity and allows to develop new innovations.
- Attract people to work in the company.

Inconveniences and challenges

- It can be more costly
- The company needs to be sure that there is no greenwashing happening. It is very important for the company to stay honest and credible.
- Not every innovation is a responsible innovation, thus our portfolio comprises responsible innovation and «classical ways» of innovations. a.
- It can be a challenge to gather all the point of view and expectations of all stakeholders involved.

- The challenge of limiting the potential negative impacts of responsible innovations is mitigated by multiple risk assessments through the innovation process. The potential challenge that we identified in the literature does not really apply to the company.
- The inconvenience linked to leakage of information is not a problem the company faced.

Key success factors

- Awareness of the consumer will for responsible innovation. Will they pay for these innovations?
- Responsibility and Sustainability is of course implemented in the strategy. The business strategy is not to do **only** responsible innovation but if this should be a business model than it should be anchored as well in the strategy
- Creating measurement and feedback tools is important
- Importance of the culture. The mindsets are changing. The company wants to give more responsibility the employees but also to convince them to act responsibly.
- Promoting responsibility to consumers through multiple channels.

Appendix 36 - Cofinimmo innovation sustainability report 2018

| 42 | 2018 Sustainability Report |

Innovation

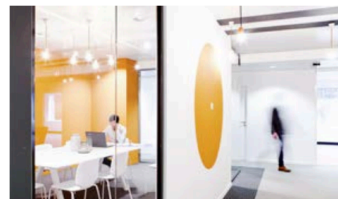
As a major property owner in Europe, Cofinimmo endeavours to be a visionary and to stimulate the debate on future real estate needs. It does its utmost to integrate major societal trends into its strategy to avoid the accelerated obsolescence of buildings and to preserve economic sustainability. Innovative solutions are therefore a must to create new growth opportunities and ensure the sustainability of the current portfolio.

| Innovation | 2018 Sustainability Report | 43 |

Achievements in 2018

Cofinimmo periodically sets up working groups of around a dozen internal employees. The aim here is to consider how to integrate new societal trends identified beforehand. These groups develop their research through meetings with visionaries in fields of activity that may influence the real estate sector of tomorrow (mobility, urban agriculture, smart cities and buildings, the digital revolution, big data, etc.). Taking into account new construction techniques and more sustainable technologies, these groups submit various proposals in line with the needs of clients and tenants. The objectives: to reduce the amount of vacant premises in the portfolio, to extend the life cycle of buildings and to facilitate their operation.

However, innovation is not exclusive to these specific working groups, and it also emanates from Cofinimmo's various departments. In this respect, tools are made available to all employees. With a view to searching for solutions, a digital platform for exchange enables all employees to share their ideas or present the challenges they face.



● **Flex Corner® - Souverain/Vorst 36 office building- Brussels Decentralised (BE)**

Source: Cofinimmo, 2019

Appendix 37 - Cofinimmo interview transcript confirmation



Thomas Peeters
jvanbuggenhout@cofinimmo.be; Chloé De Maesschalck
mercredi 10 juillet 2019 à 15:15
[Afficher les détails](#)



retranscription Cofin...
55,9 Ko

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Bonjour Jean,

Je me permet de te renvoyer un mail concernant ta validation de la retranscription de notre interview. Nous en aurions besoin pour utiliser les informations que nous avons apprises au cours de l'interview, dans notre mémoire. Il s'avère que j'ai oublié de mettre un objet à mon précédent message, il est donc probable que mon mail soit arrivé dans tes spams.

Est-ce que la retranscription reflète bien le contenu notre conversation et es tu d'accord avec celle-ci?

Encore merci pour ta participation,

Bien à toi,
Thomas Peeters & Chloé De Maesschalck



Jean Van Buggenhout <jvanbuggenhout@cofinimmo.be>
Thomas Peeters; Chloé De Maesschalck
jeudi 11 juillet 2019 à 22:26
[Afficher les détails](#)



retranscription Cofin...
51,4 Ko

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Bonsoir,

Comme convenu, voici le texte de l'interview revu et corrigé.

Bien à vous

Jean

JEAN VAN BUGGENHOUT
Head of Property Services & CSR
T +32 (0)2 373 60 64

Appendix 38 – Cofinimmo interview transcript

CDM:	Chloé De Maesschalck
TP:	Thomas Peeters
JVB:	Jean Van Buggenhout (Head of Property Services & CSR & Innovation Process) jvanbuggenhout@cofinimmo.be

----- Recording started after asking the interviewee's consent -----

JVB : Et donc le contexte, c'est votre mémoire ?

CDM : Oui, c'est notre mémoire. On est tous les deux en dernière année d'ingénieur de gestion à l'UCL, tous les deux avec l'option innovation. Et donc, notre mémoire, c'est sur le concept d'innovation responsable. Comment intégrer la responsabilité dans l'innovation ? L'idée, c'est de clarifier un concept utilisé un petit peu à tout va et qui est mélangé avec plein d'autres choses, la RSE. On a fait tout une revue de littérature sur les concepts de la responsabilité en général dans l'entreprise comme la RSE, le principe de précaution, gestion des risques et on a essayé de voir les caractéristiques de quelqu'un qui est responsable dans son entreprise. Comment ça s'applique au cas particulier de l'innovation, qui est par définition incertaine, on ne connaît pas toujours les conséquences. On a trouvé ça de manière théorique, on a trouvé les caractéristiques de ce que ça représente et des implications concrètes, des avantages, des inconvénients, des risques et maintenant, on aimerait comparer par rapport à la pratique, ce que les entreprises comprennent de l'innovation responsable. Quels sont les caractéristiques, pour les avantages c'est ça, les inconvénients, c'est ça, les challenges, c'est ça.

TP : On en a déjà interviewé 4, vous êtes le 5^{ème}.

JVB : Et dans des domaines fort différents ?

CDM : On a été voir Procter & Gamble, Carrefour, Flash et Deutsche Telekom.

JVB : Donc c'est des tailles d'entreprises qui sont ...

TP : Assez variables.

CDM : Si vous voulez, on peut commencer. Vous pouvez peut-être vous présenter, quelle est votre parcours académique, comment ça se fait que vous vous retrouviez ici.

JVB : Donc mon prénom, vous le connaissez. J'ai 50 ans cette année. Je suis marié, deux enfants. Mon parcours académique : j'ai un diplôme d'Ingénieur Industriel en Electromécanique de l'ECAM en 1991. Je suis ensuite passé par l'IAG où j'ai décroché un Diplôme en Administration des Entreprises (1992). Mon 1^{er} emploi était dans le domaine des centrales nucléaires. Je m'occupais en alternance, une fois du rechargement des centrales proprement dit, un autre fois de son contrôle qualité. Ça ne me plaisait pas trop. Dès lors, je suis parti assez vite pour aller travailler dans le groupe Schröder, groupe familial et international. Il s'agit d'une société qui conçoit, produit et vend des appareils d'éclairage publics. J'y ait presté comme ingénieur d'étude. J'y suis resté deux ans et demi. De là, j'ai débuté dans le secteur immobilier, chez Sogesmaint, société du groupe CFE, comme Property Manager. J'y suis resté environ 3 ans. En 1998, j'ai postulé chez Cofinimmo comme Property Manager et puis assez rapidement, j'ai été chargé de la négociation et du suivi des contrats d'entretien des immeubles (maintenance technique, ascenseurs, nettoyage, etc). C'est une responsabilité que j'assume encore aujourd'hui. À côté de cela est venu se greffer d'autres tâches : l'informatique et la gestion des bases de données, responsabilités qui m'ont été retirées lors de l'implémentation de SAP, le Développement Durable, l'Innovation et l'Audit Interne. Je suis encore en charge aujourd'hui du Développement Durable et de l'Innovation. Au niveau du Développement Durable, je ne suis pas seul. En effet, nous avons créé d'abord un « Green Committee » rebaptisé ensuite « Sustainability Committee » composé d'une dizaine de personnes des départements supports et opérationnels. Quand l'informatique m'a été retirée, le Président du Conseil d'Administration m'a demandé de créer la fonction d'Auditeur Interne de l'entreprise. La fonction n'existait pas et il était important pour Conseil d'Administration de l'époque qu'une société cotée comme Cofinimmo ait un auditeur interne. C'était une réponse aux premières recommandations faites aux sociétés cotées en matière de Corporate Governance au travers du code Lippens, non contraignant à l'époque. J'ai rempli la fonction pendant 10 ans en parallèle avec les autres fonctions que j'occupais déjà. Ensuite, j'ai demandé d'en être

déchargé car j'avais l'ambition de mettre en place une structure de gestion de l'innovation, et l'Audit Interne me semblait incompatible avec les impératifs d'une fonction liée à l'innovation. Pendant mon parcours professionnel, mon parcours académique a continué à évoluer. À côté des deux premiers diplômes obtenus avant de commencer à travailler, s'est ajouté le diplôme en Executive Immobilier de Solvay Business School, et ce dès son année de lancement en 2003. Et puis, quand j'ai fait de l'audit interne, j'ai continué à me former à la fois pour être armé face aux sujets à auditer et respecter les règles de formation continue imposées aux auditeurs internes. Dès lors, j'ai suivi deux diplômes spéciaux, à l'ICHEC, l'un en Gestion Financière et l'autre en Gestion des Risques. Chaque formation était étalée sur 6 mois, à raison de 2 jours et demi par mois. J'ai voulu ensuite relever un nouveau défi en suivant une formation aux Etats-Unis dans un environnement pluriculturel. Le Comité de Direction a accepté et j'ai pu partir en 2013 à l'Harvard Business School pour suivre la formation « General Management Program ». En rentrant d'Harvard, j'avais l'idée de mettre en place quelque chose autour de l'innovation. Le Management de l'époque m'a suivi et un premier groupe de travail a été lancé. Ce n'était pas forcément de l'innovation responsable mais de l'innovation de manière générale. En 2016, la dernière formation que j'ai suivie a eu pour objectif de me créer un réseau plus local lié à l'innovation. C'est ce que j'ai trouvé à Louvain-la-Neuve, dans la formation en Gestion de l'Innovation.

CDM : C'est peut-être la même que nous du coup.

JVB : C'est possible.

CDM : Est-ce que ça n'était pas avec Benoit Gailly et Françoise de Viron ?

JVB : Oui exact.

CDM : He bien, c'est notre promoteur.

JVB : Et donc, j'ai suivi leur formation. C'était sympa, j'ai pu y voir, d'une part, ce qu'il se passe, en termes d'innovation dans des entreprises plus industrielles et plus grandes que Cofinimmo tout en restant très pragmatique sur le sujet et d'autre part, me créer un réseau belge dans ce domaine. Ma formation aux Etats-Unis m'a permis de me créer un réseau international

qui m'est moins utile dans ce cas de figure. Étant en Belgique, il était important de dialoguer avec des gens plus proches géographiquement, dans son pays ou tout au moins, en Europe. L'objectif du coup est atteint.

TP : Est-ce que vous pourriez alors décrire ce que fait l'entreprise ?

JVB : Cofinimmo est un propriétaire immobilier ayant le statut de société immobilière réglementée. Cofinimmo est actif dans 4 pays différents et se compose de deux segments d'activités principaux. Le premier, c'est l'immobilier de santé. L'immobilier de santé représentera bientôt 60% du portefeuille global. Nous avons des biens en France, en Belgique, aux Pays-Bas et en Allemagne, un peu plus de 170 immeubles.

CDM : Qu'est-ce que vous appelez « immobilier de santé » ?

JVB : L'immobilier de santé, c'est principalement des maisons de repos mais il y a d'autres choses. Nous essayons de nous diversifier dans ce segment pour équilibrer les risques. À côté des maisons de repos, il y a les centres de révalidation pour les personnes, des cliniques psychiatriques, etc. Aux Pays-Bas, Cofinimmo possède également des Medical Office Buildings gérés comme des immeubles de bureaux mais qui accueillent des médecins et des acteurs du domaine paramédical. Dans ce segment, on retrouve aussi les centres de sport et de bien-être tels que quatre centres gérés par la société Aspria : deux centres en Allemagne et deux en Belgique. De manière plus générale, nous y englobons l'immobilier qui touche au « cure and care ». Mais la plus grande proportion reste des maisons de repos. L'autre segment important, ce sont les bureaux. C'est notre segment historique. Cofinimmo est pour ce segment uniquement en Belgique, principalement à Bruxelles et Anvers. À Bruxelles, nous essayons d'être surtout dans le centre, le CBD (Centrum Business District). Cofinimmo possède une centaine d'immeubles avec, à peu près, 400 locataires, aussi bien des grosses que des plus petites entreprises. Par exemple, sont locataires de Cofinimmo, IBM, la Commission Européenne mais à côté de cela nous avons des locataires qui louent des plus petites surfaces à partir de 200 m².

À côté de ces deux segments, il y a deux segments qui sont plus opportunistes. Les Réseaux Immobiliers de Distribution qui regroupent un patrimoine de cafés. Cofinimmo possède 1000 cafés : 800 en Belgique et 200 aux Pays-Bas. AB Inbev est notre locataire principal et sous-

loue à des gérants de café. Les cafés sont répartis à travers la Belgique et les Pays-Bas. Il y a quelques cafés prestigieux comme le café Leffe au Sablon, le Falstaff à la Bourse, des cafés sur la Grand-Place de Bruges, etc.

CDM : Du coup, vous faites principalement du B2B ou du B2C ?

JVB : On ne fait que du B2B

CDM : Les maisons de repos, vous ne les louez pas directement

JVB : Non. Les maisons de repos sont louées à des grands opérateurs. Il y a des opérateurs professionnels qui sont de grosses sociétés qui se développent en Europe. Par exemple, le groupe Korian, est un de nos locataires, coté en bourse et actif sur la France, l'Allemagne mais aussi les Pays-Bas, la Belgique et l'Italie. Ces opérateurs sont en partie, propriétaires, en partie locataires. Ce sont des sociétés que nous essayons d'accompagner dans leur croissance.

CDM : Comment est-ce que vous décrieriez la compétition et la force des compétiteurs ?

JVB : Le secteur de l'immobilier est un secteur qui bouge beaucoup où les marges ne sont pas énormes. On parle de quelques pourcents. L'immobilier est vu progressivement comme une commodité. Il faut donc arriver à se différencier sur d'autres aspects. Le temps où Cofinimmo louait un bâtiment (une coque vide) que le locataire aménageait lui-même suivant ses besoins, et gérât directement tend à disparaître. Les clients-locataires actuels recherchent de plus en plus de propositions de solutions intégrées en réponse à leurs besoins. Certains locataires demandent en plus de l'aménagement de leurs surfaces de disposer de salles de réunions partagées, de services de conciergerie, de catering, d'espaces de détente et l'organisation d'animations pour leur personnel. C'est une des raisons pour lesquelles les espaces de co-working sont en pleine croissance ces dernières années car ils répondent à ces besoins. Il faut néanmoins faire la différence entre l'immobilier de bureaux et l'immobilier de santé. La tendance décrite ci-dessus est valable pour l'immobilier de bureaux.

CDM : Est-ce que c'est quelque chose vers quoi vous essayer de vous diriger ?

JVB : C'est quelque chose que nous testons. Dans le cadre des groupes d'innovation, nous avons en 2014-2015, créé le concept de « The Lounge by Cofinimmo ». Nous avons dans deux immeubles lancés des projets pilotes d'espaces multifonctionnels : espaces partagés connectés au WIFI où les gens peuvent travailler ou se détendre (un babyfoot et/ou un billard sont à leur disposition), utilisation de salles de réunion partagées à la demande, du catering, etc. L'accès aux lounges et aux salles de réunion est dématérialisé, sous la forme d'un QR code, qui est envoyé au locataire une fois la réservation faite via un site internet dédié. Nous avons également mis un autre produit sur le marché que nous avons baptisé « Flex Corner » qui sont des espaces, plutôt des petites surfaces, qui sont louées par de petites entreprises, des startups ou des équipes de projets d'entreprises plus grandes qui partagent un certain nombre d'espaces privatifs communs : kitchenette, salles de réunion, salon. La formule de location est du type loyer + charges forfaitaires. Nous y appliquons également une nouvelle forme de contrat de location que nous avons appelé le « Custom Your Lease ». L'idée était de sortir des durées classiques des baux qui sont de 3, 6 ou 9 ans et de proposer un contrat totalement flexible qui tienne compte du cycle économique du client. On espère avec cette flexibilité de capter de nouveaux clients qui auront besoin de grandir et peut-être de passer vers un contrat de location plus classique pour sécuriser leurs surfaces. Aujourd'hui, ce concept a été réalisé à petite échelle mais on peut imaginer que des grandes entreprises seraient intéressées d'avoir cette flexibilité pour des espaces plus grands mais probablement pas sur l'ensemble de leurs contrats. Car il existe une contrepartie à la flexibilité, c'est le paiement du loyer dès le 1^{er} jour d'occupation et la possibilité pour le propriétaire de résilier le bail plus facilement. Voici encore un exemple d'innovation émanant d'une réflexion d'un groupe d'innovation.

CDM : Et du coup, est ce que vous considérez que votre entreprise est innovante ?

JVB : L'innovation, ce n'est pas spécialement l'invention. C'est, à un moment donné, reprendre un concept qu'on parvient à mettre en place avec plus de succès qu'un autre. Je pense qu'en effet, nous pouvons nous considérer dans une certaine mesure comme innovants. Nous remettons en question, nous faisons des essais de nouveaux concepts, des tests. Par exemple, nous nous sommes interrogés si le vide locatif ne pouvait pas temporairement servir à autre chose. Nous avons dès lors utilisé temporairement du vide locatif comme du logement. Un immeuble de nos immeubles de bureaux à Bruxelles en attente de permis a accueilli un certain nombre de résidents : des étudiants en recherche de kot, des personnes en recherche d'un

logement alternatif, voire des pensionnés. Cette solution a également été mise en œuvre dans certains cafés en attente d'un nouvel exploitant principalement aux Pays Bas où il existe depuis quelques années une réglementation sur le sujet. On teste, on voit ce qui fonctionne et si ça fonctionne, on essaie de le mettre en place à plus grande échelle.

CDM : Vous avez mentionné que, dans l'immobilier, les marges ne sont pas énormes. Est-ce que l'innovation est un moyen de palier à ça ? Quelle est la motivation première pour innover ?

JVB : les bienfaits d'une démarche d'innovation peuvent être multiples. On innove pour être plus performant que ses concurrents, pour dégager une marge supplémentaire, louer plus rapidement ses immeubles, pour trouver une solution à une nouvelle contrainte, à une nouvelle réglementation ou pour limiter l'effet d'un changement, d'un risque potentiel qui a été identifié. L'innovation permet également de répondre aux obligations sociétales de l'entreprise. Par exemple, la mise à disposition temporaire des cafés en logement nous permet à la fois de répondre à un besoin sociétal de logement à faible coût et d'un autre côté de limiter les risques de dégradation des immeubles par le vandalisme et permettre de conserver un sentiment de sécurité par une présence humaine.

TP : Et donc, vous avez parlé d'innovation responsable, quelle en est la définition pour vous ?

JVB : Je pense qu'une innovation réussie est une innovation qui apporte du bien-être aux gens qui répond à un besoin des gens. Une innovation responsable doit tenir en compte les ressources naturelles à notre disposition et se faire dans le respect de l'être humain. Les SDG pourraient représenter le cadre de référence qui définirait que l'innovation est dite responsable. La difficulté des SDG, c'est que le respect de l'ensemble des SDG peut donner des résultats contradictoires. Ce qui est bon pour une chose, ne l'est pas toujours pour une autre. Dans l'établissement de notre politique de Développement Durable, nous avons déterminé les sujets qui étaient les plus matériels pour nous au vu de nos activités et sur quels SDG nous avons une influence. Ceci a été traduit dans notre matrice de matérialité. Nous en tenons compte dans notre démarche d'innovation. Par exemple, l'immobilier est considéré comme étant un émetteur important de CO2. Le secteur immobilier est dès lors fortement réglementé dans ce domaine.

C'est tout naturellement que nos efforts en terme d'innovation se concentrent également sur une diminution des émissions CO2 de nos immeubles, par une réduction des consommations énergétiques, l'utilisation de matériaux plus durables, l'étude du cycle de vie de nos immeubles. Il s'agit là d'une démarche d'innovation responsable.

TP : Et du coup, comment avez-vous mis en place ces objectifs ?

JVB : Nous sommes partis d'une réflexion en interne et puis, en 2014, nous avons décidé d'établir notre matrice de matérialité. Nos objectifs ont été challengés par nos parties prenantes externes lors de plusieurs tables rondes. Annuellement, nous retestons la pertinence de nos objectifs en approchant de manière plus ciblée certaines de nos parties prenantes. Le changement récent du Management de l'entreprise, il y a un peu plus d'un an, a été l'occasion de remettre à plat ces objectifs. Ce processus est encore en cours et devrait générer un nouvel élan à notre politique de développement durable et d'innovation. Il faut dire que notre portefeuille était principalement un portefeuille de bureaux, nous sommes passés progressivement à un portefeuille majoritairement d'immobilier de santé. Ceci donne fatalement une orientation différente sur notre démarche d'innovation. Pourquoi ? Dans l'immobilier de bureaux, nous intervenons dans la gestion quotidienne de la plupart des immeubles. Nos Property Managers et Project Managers interviennent dans le développement, l'aménagement et la conduite des immeubles. Ils ont une influence plus marquée sur le niveau d'énergie qui sera consommée (et donc les émissions de CO2). Au niveau de l'immobilier de santé, Ce sont les opérateurs qui gèrent au quotidien les immeubles. Nous n'intervenons pas. Notre influence est beaucoup plus limitée. Nous intervenons à d'autres moments du cycle de vie de l'immeuble, plutôt lors de son redéveloppement, de son « recyclage ». Mais les soins de santé sont occupés d'évoluer dans l'ensemble des pays où nous sommes présents et, nous nous interrogeons sur le rôle que nous pourrions jouer dans cette évolution, la valeur que nous pourrions créer.

CDM : L'innovation, pour vous, c'est plus au niveau du service qu'au niveau d'un produit ?

JVB : L'innovation concerne aussi bien le produit que les services. La manière dont on construit des immeubles à évoluer. Lors d'un projet de nouvelle construction, on analyse de

plus dans plus le cycle de vie de l'immeuble afin de construire de manière plus durable. L'objectif est de limiter l'impact sur la vie complète de l'immeuble, depuis le choix des matériaux jusqu'à leur recyclage en fin de vie. On regarde les cycles de vie.

CDM : Est-ce que vous innovez dans les matériaux ?

JVB : Nous regardons les nouveaux matériaux qui existent sur le marché. Ce sont les fabricants de matériaux qui innovent. Nos Project Managers sont attentifs à l'évolution des produits et étudient la façon dont ils peuvent être utilisés lors de nouveaux développements ou rénovations. Par exemple, un élément fort regardé actuellement, est la façon dont on peut améliorer la qualité d'air dans les immeubles.

CDM : Au travers de notre mémoire, on avait identifié d'autres caractéristiques et on aimerait bien avoir votre avis dessus pour savoir si vous pensez que ce sont des caractéristiques intrinsèques de l'innovation responsable ou qu'elles ne sont pas forcément nécessaires. On a parlé que le processus d'innovation responsable devait être adaptatif et flexible, dans le sens où il devait pouvoir s'adapter, en continu, surtout quand de nouveaux risques apparaissent.

JVB : Toute innovation, qu'elle soit responsable ou non, doit pouvoir s'adapter. On parle beaucoup des processus d'agilité et, en effet, dès qu'un prototype est prêt, il est testé auprès des clients. Les allers-retours, les feedback des utilisateurs permettent ensuite de l'améliorer afin de répondre au mieux aux besoins de ces mêmes utilisateurs. Je ne pense pas que ça soit spécifique à un processus d'innovation responsable. Je pense que c'est une généralité au niveau d'un processus d'innovation. Le timing au niveau du lancement d'un nouveau produit et/ou service est important d'autant plus dans un secteur comme l'immobilier qui est capital intensive. En effet, des travaux au niveau immobilier prennent un certain temps et souvent demandent un certain niveau d'investissement. Selon les cas de figures, les adaptations ne sont pas toujours faciles à réaliser. Le temps de réflexion avant mise en œuvre peut parfois prendre du temps. De nouveaux services sont généralement plus faciles à mettre en œuvre car on touche plus rarement à la structure de l'immeuble.

CDM : On avait également identifié que l'innovation responsable, par définition, c'est aller au-delà de ce qu'on est légalement tenu de faire, il y a une sorte de dimension volontaire. Sinon, on fait juste de l'innovation et on se conforme à la loi. On va alors plus loin que ce que la loi et la réglementation demande.

JVB : C'est à la fois vrai et faux. Tout dépend à quel rythme évolue la législation. Dans le secteur immobilier, les lois liées au réchauffement climatique évoluent en permanence et sont de plus en plus ambitieuses. À nouveau, le rythme de transformation des immeubles est lent de par la nature même du produit. Par exemple, nous terminons de mettre en œuvre les effets de la Directive Européenne 20/20/20 qu'une nouvelle Directive, encore plus ambitieuse, avec comme échéance 2030, vient d'être votée. Il s'agit d'une étape intermédiaire de plus pour arriver en 2050 à un secteur immobilier zéro carbone. Le cas de Bruxelles est intéressant, car le Gouvernement de la Région de Bruxelles Capitale, ne pouvant agir ni sur les émissions provenant des industries, ni sur celles de la mobilité car elles dépendent surtout des navetteurs, a pris comme cible l'immobilier sur son territoire pour respecter ses obligations de réduction des émissions CO2. Depuis 2015, tout nouvel immeuble ou grosse rénovation doit respecter le standard de Nearly Zero Emission buildings, ce qui est quasi passif. Ce choix place Bruxelles en avance de 5 ans sur la plupart des régions en Europe. Cofinimmo a donc dû s'y adapter mais en même temps a pu déjà se faire une certaine expérience dans la construction d'immeubles quasi passifs. Une autre réglementation s'est ajoutée à la précédente et vise cette fois-ci la diminution des consommations des immeubles existants toujours à Bruxelles. Cofinimmo doit s'engager pour certains immeubles sur les consommations de ses locataires. Il va falloir innover pour y arriver...

CDM : Ça reste une innovation responsable même si on se conforme à la loi.

JVB : Il faut être créatif. L'innovation c'est aussi recevoir une contrainte et de devoir l'appliquer et se demander comment faire. Et si je peux aller au-delà de la réglementation, ça peut être un plus par rapport à mes concurrents. Où la manière dont je vais la mettre en œuvre va faire que j'aurai peut-être des coûts qui seront moins importants que le concurrent. La contrainte, même si elle est réglementaire, peut pousser à l'innovation, responsable ou pas.

CDM : On avait également identifié qu'un innovateur responsable mène une réflexion critique sur les motivations qui le poussent à innover et qu'on n'est pas dans une innovation pour une innovation. On se pose la question : « est-ce que c'est une bonne idée ? ».

JVB : Je pense, de manière générale, qu'on n'innove pas pour innover. On innove pour répondre, à un moment donné à un besoin qu'on a identifié, qui n'est peut-être pas encore connu par le public cible. Il faut que l'innovation serve à quelque chose. L'innovation est responsable à partir du moment où son impact est positif par rapport aux SDG. Les SDG représentent un assez bon cadre parce que ça couvre énormément de choses. Mais comme déjà évoqué précédemment une innovation peut être positive pour un des SDG et s'avérer mauvaise pour un autre.

CDM : Il faut aussi développement des mesures de risk assessment. Il faut également que l'innovation responsable prenne en compte les aspects sociétaux, environnementaux tout en restant compétitif sur le plan économique.

JVB : C'est la première condition. C'est assez amusant car quand nous avons interrogés nos stakeholders lors de l'établissement de notre matrice de matérialité, nous avons l'impression que de parler de profit dans le contexte du développement durable et donc que l'innovation responsable pouvait être tabou. Et en fait, les gens comprennent très bien, encore plus quand il s'agit d'une entreprise cotée, qu'il faut d'abord dégager de l'argent pour pouvoir investir derrière. Ça, ça semble évident.

CDM : C'est qu'il y avait une notion de social, environnemental mais également de rester profitable.

JVB : Ce n'est pas toujours les trois critères en même temps, ça peut être l'un ou l'autre. Si nous agissons sur l'aspect environnemental, on peut imaginer que cela puisse avoir un impact sur le confort des occupants. Cela ne plaira pas toujours, pourrait rendre le travail plus pénible mais d'un autre côté, nous répondons aux impératifs environnementaux. De manière très claire, il faut changer nos habitudes de vie si on veut diminuer les émissions CO2 de la planète mais ceci pourrait avoir des conséquences plus défavorables sur d'autres aspects.

CDM : Le dernier point, c'est l'importance d'impliquer les stakeholders dans le débat, dans la discussion. Est-ce que c'est nécessaire pour vous, pour être responsable ?

JVB : Je pense que, de manière générale, l'avis des stakeholders est de plus en plus important. Ce qui est plus compliqué, c'est d'identifier les bons groupes de stakeholders à interroger car les idées d'un et des autres peuvent être divergentes. De manière générale, nous essayons d'offrir des produits qui soient le plus flexible possible afin de pouvoir répondre au plus grand nombre.

CDM : Super, merci beaucoup !

TP : Est-ce que vous pensez que pour avoir un produit innovant et responsable, il est nécessaire d'avoir un processus d'innovation qui soit lui-même responsable ? Est-ce que pour avoir un output responsable, il faut passer par un processus responsable ?

JVB : Quelle est la définition d'un processus responsable ?

CDM : C'est un processus où on implique les stakeholders, on réfléchit sur les conséquences, est-ce que c'est nécessaire pour avoir un produit qui, au final, sera positif pour la société.

JVB : Que le processus soit responsable ou non, il faut interroger ses clients, ses stakeholders. Par contre, ce que je pense que probablement, un processus responsable impliquera plus de stakeholders différents (par exemple, certaines ONG), du coup le nombre de personnes interrogées sera plus grand. Le processus responsable est identique qu'un processus classique d'innovation. Je pense que c'est en cours de parcours qu'un certain nombre d'éléments sont ajoutés dans l'analyse des risques, des impacts environnementaux, etc. L'analyse du cycle de vie, qui ne se faisait pas avant, permet de mesurer l'impact de nouveaux produits et services.

CDM : Du coup, vous regardez le cycle de vie, est ce qu'il y a d'autres choses que vous faites pour être plus responsables ? Vous avez déjà parlé d'impliquer les stakeholders, analyse du cycle de vie, est ce qu'il y a d'autres choses ?

JVB : Non je ne pense pas. Pour être tout à fait transparent, les stakeholders, ce n'est pas systématique non plus. Ça dépend du type de produit qu'on essaie de tester.

CDM : Et du coup, comment ça se passe votre processus ? Le life cycle assessment ? Vous disiez que le début du processus devait être large et que ces questions arrivaient un peu plus tard.

JVB : Le life cycle assessment se fait surtout pour de nouveaux développements majeurs. Il faut resituer Cofinimmo dans son contexte. Cofinimmo compte environ 135 personnes. Notre processus d'innovation n'est pas comparable à P&G, qui dispose probablement d'une « armée » de personnes dédiées aux activités de R&D et d'innovation. Chez Cofinimmo, il n'y a pas d'exclusivité sur les bonnes idées. L'innovation peut venir de n'importe quel département dans l'entreprise. Ce n'est pas probablement pas aussi structuré, formalisé que chez P&G. C'est d'ailleurs un point de réflexion au niveau de notre stratégie, c'est la manière d'améliorer ce processus. Jusqu'à présent, il y a eu deux groupes d'innovation. J'organise, avec le responsable de l'informatique, une activité de veille, chacun dans ses domaines de prédilection. Nous rencontrons régulièrement des startups, participons à des conférences et faisons remonter les informations qui nous semblent pertinentes vers le Management. C'est moins institutionnalisé que dans une entreprise plus importante comme chez de Beukelaer qui travaille sur une multitude de pistes d'innovation à partir d'un seul produit de base qui est le speculoos. Chez Cofinimmo, nous n'avons pas des centaines d'idées, mais quelques-unes, que l'on décide de tester.

CDM : Comment est-ce que vous les testez ? Comme le life cycle assessment par exemple.

JVB : Le choix de faire un life cycle assessment, dépend de l'importance du projet de développement de l'immeuble. Ceci se décide dès la phase de conception de l'immeuble. Ceci a été réalisé, par exemple pour notre projet de redéveloppement de l'immeuble Quartz avenue des Arts 19H à Bruxelles. Pour ce projet, nous avons également décidé d'utiliser pour la 1^{ère} fois un modèle numérique (BIM pour Building Information Modelling) qui permet de visualiser tous les détails de l'immeuble qui sera construit dans un modèle numérique.

CDM : Et puis, vous impliquer des stakeholders ou pas forcément ?

JVB : Dans ce processus-là, non. Nous avons impliqué les entreprises qui allaient participer à la construction de l'immeuble. L'occupant n'étant pas encore connu, il n'était pas possible de l'intégrer à la réflexion.

CDM : Vous parliez de créer de nouveau service, plus flexible, avec des startups. Est-ce que c'est un test ?

JVB : Ça, on a testé à un moment donné. On a d'abord été voir les occupants sur le site où l'on voulait faire ça. On leur a demandé ce qu'ils en pensaient, est ce que c'est un service qu'ils veulent utiliser ou non. Certains ont dit qu'ils aimeraient ça, d'autres ont parlé d'un service de conciergerie où je peux déposer mon nettoyage à sec, acheter des fruits, etc. C'est ce genre de choses-là qu'on a testé et qui existent et là on interroge en amont les clients.

CDM : En quoi est ce qu'innover de manière plus responsable change le processus d'innovation ?

JVB : La différence se trouve au niveau de l'impact qu'elle peut avoir.

CDM : C'est plus par rapport à la finalité ?

JVB : Oui

CDM : Ce qu'on a identifié, c'est que la responsabilité, elle passe soit par un processus. Certaines entreprises disent : « notre produit n'est pas très responsable mais notre processus est très responsable, on fait tout ce qu'on peut, on informe les gens, on propose des alternatives. Et certaines entreprises disent que le processus, ce n'est pas ce qui compte, ce qui compte, c'est la finalité.

JVB : En effet, je trouve cela une façon diplomate de se dédouaner d'un produit ou service qui n'est pas responsable.

CDM : Comment est-ce que vous, vous définissez si un outcome est responsable ? Vous avez déjà mentionné les SDG.

JVB : Je dirais que quasi tout est repris dans les SDG. Ce que nous regardons principalement au niveau de l'immobilier, ce sont les émissions CO2, la consommation d'énergie. Par contre, quand on parle d'immobilier de santé, d'autres aspects rentrent en ligne de compte comme l'inclusivité. C'est probablement un critère plus compliqué à évaluer. Nous avons récemment acheté une maison de repos aux Pays-Bas qui intègre cette notion d'inclusivité. L'immeuble a été conçu avec la volonté de créer des espaces de rencontre entre les différentes générations : autour de la maison, des espaces de jeux ont été dessinés afin de répondre aux besoins des enfants qui viendront visiter leurs (arrières) grands-parents. Un centre de consultation de jour va être aménagé dans l'enceinte de la maison de repos ouvert aux externes. Un restaurant sera également à tous les publics. Ainsi, les résidents resteront intégrés dans le tissu social de la communauté locale. De plus, d'un point de vue environnemental, l'immeuble vise un très haut niveau de certification. De manière générale, nous croyons beaucoup à la mixité des quartiers, à la suppression des ghettos afin de créer plus de vie. Éviter que des quartiers de bureaux se vident le soir en recherchant la mixité avec du résidentiel et des commerces.

TP : Du coup, ici, ce n'est plus lié au SDG mais vous vous fixez de nouvelles volontés de mettre plus d'inclusivité, de mixité.

JVB : On essaie en tout cas. Il y a toujours le critère de rentabilité qui est là mais oui, en effet, il y a des immeubles de bureaux qui sont transformés en appartements, en maison de repos. Nous essayons d'avoir des immeubles les plus flexibles possibles pour avoir cette possibilité de changer l'affectation.

CDM : Quand vous changez la fonction d'un immeuble, comment est-ce que vous mesurez la responsabilité dans le temps ? Si vous vous dites qu'un immeuble est inclusif et que dans 5 ans, vous réalisez que ça marche pas du tout. Est-ce que vous avez des mesures post-lancement pour vous adapter ?

JVB : Il y a des produits où on regarde de manière très claire. Quand c'est un produit commercial comme la location de salle, on le voit. Quand c'est une maison de repos, c'est plus compliqué.

TP : Car vous n'êtes pas maitres de ce qui s'y passe.

JVB : Nous n'en sommes pas maitres et cela reste quand même le métier des opérateurs de voir si les gens sont heureux dans les maisons de repos. En fait, ce qu'on devrait pouvoir faire, c'est interroger les résidents. Ce qui est intéressant quand on a fait le premier groupe d'innovation, c'était d'identifier qui sont nos vrais clients. Finalement, nos vrais clients, sont ceux qui utilisent nos immeubles. Ce sont les employés des sociétés, et les résidents des maisons de repos, etc. Mais nous n'avons pas tous les leviers pour influencer sur ces partis-là.

CDM : Par rapport au service, vous parlez du fait que vous permettez à des étudiants d'aller dans des immeubles qui sont inoccupés. Tout ça sont des choses que vous faites pour être plus responsable ?

JVB : Ce sont des expériences tests réalisées dans le cadre d'une démarche d'innovation dont l'objectif était double : à la fois une démarche responsable mais également une démarche économique (diminution des taxes) et de limitation des risques liés à la présence d'un immeuble vide (vandalisme, squat, etc.).

CDM : Est-ce que vous avez des moyens de vérifier ?

JVB : Le bâtiment de bureaux que nous avons mis à disposition entre autres des étudiants était beaucoup trop grand et donc il y a eu peu de locataires. Nous nous sommes dès lors concentré sur les cafés. Les immeubles sont de plus petite taille et se remplissent plus facilement. Le principe est d'ailleurs toujours d'application aujourd'hui. La mesure a été les efforts à la fois financiers et humains pour mettre l'immeuble à disposition par rapport aux gains, qui peuvent parfois être plus intangibles (diminution d'un risque comme le vandalisme). Mais les indicateurs de performance varient d'un projet à l'autre, il faut définir dès le départ les indicateurs de succès...

TP : Qu'est-ce que vous pensez que l'innovation responsable permet en termes d'avantages. Quels sont les avantages d'être responsable dans son innovation.

JVB : Les bénéfices de l'innovation responsable sont multiples :

- Augmenter la motivation des collaborateurs en apportant plus de sens à leur travail, par le côté positif de la démarche ;
- Créer de la valeur en lançant de nouveaux services, produits. Cette valeur se traduit soit par des gains financiers, soit par des éléments plus intangibles.
- Améliorer l'image de la société par rapport

TP : Donc, il peut y avoir une plus-value à être plus responsable ?

JVB : Oui. Mais il n'est pas évident de montrer qu'une entreprise, dite responsable, performe mieux que d'autres. Certaines études montrent qu'au niveau financier cela marche. En tout cas, si ça ne permet pas d'améliorer les performances de la société, ça ne les dégrade pas. Je pense qu'une entreprise responsable est surtout plus résiliente. Dans l'immobilier, il y a une telle concurrence sur les immeubles de bureaux, que ne rien faire n'est pas la solution. C'est un must pour au minimum maintenir la valeur des immeubles ;

CDM : Et par rapport aux outcomes ? Les avantages d'être plus inclusif, de proposer des bâtiments vides à des étudiants ? Les avantages pour vous, en tant qu'entreprise, et pour la société en général ?

JVB : Nous participons à apporter, à notre niveau, des réponses à certains défis de la société actuelle.

CDM : On peut peut-être maintenant vous dire ce que nous avons identifiés. On avait identifié une augmentation de la performance de l'entreprise et notamment par la performance des employés, qui sont plus motivés.

JVB : Je pense, en effet, que cela crée de la motivation au niveau des employés. Il faut que la société soit porteuse de sens. Mais je ne suis pas convaincu que, dans tous les cas de figures, on a une entreprise qui soit plus performante. Cela dépend entre autres de la perception de

l'entreprise auprès des investisseurs. Ce n'est peut-être pas immédiat en tout cas. Et je pense que la difficulté dans certains cas de figure, c'est qu'investir ou faire de l'innovation responsable, le temps de retour peut-être parfois très long, ça dépend du produit. Quand Delhaize met des frigos avec des portes fermées, le bénéfice est immédiat et rapporte à Delhaize. Quand on a des immeubles moins énergivores, nous avons investi dans les installations techniques et l'isolation mais ce sont les locataires qui bénéficient d'une facture d'énergie moins élevée malgré un loyer marché.

CDM : On avait également identifié que les entreprises qui développent des innovations responsables peuvent développer leurs activités de par le fait qu'elles se challengent à être plus responsables et du coup elles ont de nouvelles idées qu'elles n'auraient pas trouvées si elles s'étaient dit : « je continue à faire ce que je fais bien », j'augmente les marges et je fais des économies d'échelle, est ce que c'est quelque chose que vous ressentez ?

JVB : Je pense que oui mais c'est ce qu'on disait plus tôt. La contrainte fait qu'à un moment, elle pousse à être créatif.

CDM : Le dernier point qui n'a pas été mentionné, c'est le fait que faire de l'innovation responsable, c'est aller plus loin que la loi et on est préparé à ce qu'il va y avoir ensuite.

JVB : En fait, c'est une bonne remarque. Ce qu'on a essayé de faire au niveau des immeubles, c'est d'être toujours en avance par rapport à la réglementation. Le fait d'être en avance par rapport à la réglementation, permet que quand elle arrive, nous sommes déjà prêts à y répondre. Par exemple, de nouveaux défis viendront probablement dans le futur tels que les immeubles positifs, qui génèrent plus d'énergie qu'ils n'en consomment ou le maintien d'une qualité d'air décente. Ces points sont et seront de plus en plus légiférés.

CDM : Les deux derniers avantages, ce sont une amélioration de l'image de l'entreprise et pouvoir se différencier de ses concurrents.

JVB : Parler d'image est toujours un sujet compliqué à cause du greenwashing pratiqué par certaines entreprises. Quand j'interroge mes collègues, certains pensent qu'on ne va pas suffisamment loin et puis d'autres trouvent qu'on fait déjà beaucoup mieux. Tout est une

question de perception. Le greenwashing est une pratique qui amène tôt ou tard à prendre une position claire et à agir. Il en va de la réputation des entreprises qui le pratiquent.

TP : Maintenant qu'on a identifié les avantages, on peut regarder les différents inconvénients ?

JVB : Il y a de l'innovation responsable qui ne rapporte rien. Qui ne rapporte rien économiquement à l'entreprise.

TP : Est-ce que vous en identifieriez un autre ?

JVB : Le problème de l'innovation responsable, c'est qu'on a tous notre système de valeur et c'est quoi être responsable finalement ? Les actions que je vais prendre et considérer comme responsables à mon niveau, ne seront peut-être pas perçues comme responsables pour quelqu'un d'autre et donc ça doit être bien cadré au niveau de l'entreprise, du top management pour déterminer ce qu'on considère comme responsable. Il faut fixer un cadre accepté en interne et reconnu par les parties prenantes.

CDM : Comme les SDG ?

JVB : Les SDG ou les règles d'investissement responsable prônées par les Nations Unies, le TCFD présidé par Bloomberg qui demande aux entreprises un reporting extrafinancier précis sur les actions prises par les entreprises face aux risques liés aux changements climatiques.

TP : Comme pour les avantages, je peux vous dire ce qu'on a identifié et vous pourrez réagir en fonction. Une des difficultés qu'on a pu identifier, c'était le fait que quand on essaie d'impliquer beaucoup de stakeholders, il peut être difficile de concilier tout ça, il peut y en avoir beaucoup, il faut les identifier.

JVB : Ils n'ont pas toujours des vues qui sont similaires. Ce qui est négatif pour l'un peut être négatif pour l'autre.

CDM : Du coup, c'est quelque chose que vous réglez comment ?

JVB : En cas de vue discordante, nous allons plutôt trancher à l'avantage de l'entreprise. Quand on construit un nouvel immeuble, il y a une concertation entre les parties concernées. L'exemple d'un projet de logements : il faut accorder le souhait des riverains de ne pas construire des immeubles trop imposants, le souhait de la Région de créer plus de logements, celui des défenseurs de la nature de ne pas perturber les espaces naturels (comme les zones de vol des chauves-souris par exemple), etc. La concertation sert à essayer de trouver le meilleur compromis.

CDM : Et du coup, vous avez des médiateurs externes ?

JVB : La médiation, se fait en accord avec les autorités publiques.

TP : Vous avez mentionné cette histoire de chauves-souris, j'imagine que ça doit rallonger le processus pour la construction d'un bâtiment. Du coup, est ce que le fait de vouloir agir de manière responsable ne prolonge pas les processus ?

JVB : Si, un autre exemple qu'on a eu et qui était fort intéressant, on a rénové un immeuble d'appartement qu'on transformait en bureaux du côté du quartier Léopold. C'était un immeuble ancien mais dont les châssis de fenêtres contenaient de l'amiante et donc on a été confronté avec les « monuments et sites » qui disaient : « votre immeuble, il a une certaine valeur historique donc il faut conserver les châssis. Et les châssis étaient des châssis simple vitrage, avec de l'amiante. On a essayé de trouver des solutions pour faire faire sur mesure des châssis spécifiques, double vitrage mais dont l'aspect esthétique était identique mais les « monuments et sites » sont restés sur leur position. Alors que ce bâtiment n'aurait pas répondu aux critères d'efficacité énergétique qu'on nous impose. Finalement, ça s'est réglé au tribunal, et on a pu mettre nos châssis double vitrage qui respecte l'esthétique originale mais sans répondre totalement aux exigences de départ des « monuments et sites ».

TP : Une autre difficulté qu'on a pu identifier, c'est la difficulté de prédire les impacts sachant que les retours peuvent être parfois long.

JVB : Ça c'est pour toute innovation de manière générale. Parfois le retour peut être très rapide et d'autres peuvent être plus longs. Cela dépend si les hypothèses de départ ont été bien formulées.

TP : Le dernier point qu'on a identifié, je ne sais pas si vous êtes confronté à ça. C'est sur les problèmes au niveau de la transparence, vu que vous avez beaucoup de contacts avec pas mal de stakeholders, est ce qu'à un moment, on ne s'ouvre pas un peu trop et des informations fuient et se retrouvent dans les mains d'une mauvaise personne.

JVB : Je ne pense pas. Il faut savoir que nous avons une obligation de transparence en tant qu'une société cotée etc. Ça prend beaucoup de temps et d'énergie pour fournir à l'ensemble des actionnaires une information suffisante. Maintenant, dans le processus d'innovation, ça reste quand même assez bien cadré. Maintenant, pour innover, on a de plus en plus besoin de collaborer et de ne pas le faire seul car les compétences sont externes. L'idée, c'est de déterminer les domaines dans lesquels on veut innover et après regarder des startups qui sont sur le marché et qui peuvent nous aider à innover. Est-ce qu'on est capable d'innover de manière aussi agile qu'une startup ou une plus petite structure ? On connaît des sociétés d'immobilier qui ont créé un département d'innovation mais ce qu'on voit de plus en plus, c'est que les grosses entités, dans notre domaine, vont plutôt voir à l'extérieur, les startups qui peuvent les aider. Ils définissent d'abord le domaine dans lequel ils veulent innover puis ils vont voir à l'extérieur les personnes qui peuvent les aider.

CDM : Je pense que c'est tout pour les inconvénients. Donc, le dernier point qu'on voudrait aborder avec vous, c'est les facteurs clés de succès que vous pourriez identifier pour dire : « pour être un innovateur responsable, il faut mettre ceci et ceci en place ». Est-ce qu'il y aurait des choses qui vous viendraient en tête ?

JVB : Je pense que pour chaque projet d'innovation, les indicateurs peuvent être différents. Tout dépend de l'objectif recherché. Il y a toujours un indicateur de rentabilité mais pour l'innovation responsable, on y ajoutera des indicateurs plus sociétaux mesurant l'impact social, environnemental ou de gouvernance.

CDM : C'est effectivement quelque chose qu'on avait identifié. L'importance de mesurer.

JVB : Ça, ça fait partie du processus, il faut définir les KPI qui permettent de déterminer si mon innovation est successful ou pas.

CDM : Est-ce qu'il y a d'autres choses que vous identifiez ?

JVB : Je ne pense pas

CDM : Pour rebondir, comme avant. On avait identifié qu'avoir une structure agile ou en tout cas l'adapter permet de mieux réussir dans les innovations responsables.

JVB : Oui, je pense qu'on est tous convaincu qu'il faut être agile et tester dès qu'on peut. Maintenant, ce qu'il faut absolument arriver à faire aussi dans une structure d'entreprise agile, c'est d'identifier si deux personnes ne sont pas en train de faire des choses fort similaires et si, à un moment donné, les ressources ne peuvent pas être reconcentrées. Ce qu'on a identifié aussi dans notre processus qui est parfois compliqué, c'est qu'avoir des idées, tout le monde en a, les faire remonter, ça marche très bien, l'exécution, c'est toujours plus compliqué. Mais en effet, je pense qu'être agile est une chose importante. D'ailleurs, dans le « être agile », parfois il ne faut pas aller trop vite dans le roll out d'une idée ou d'un projet. On est mieux de commencer petit et de voir si ça fonctionne et de tester dans tous les sens.

TP : Quelque chose d'autre qu'on a identifié, c'est d'être conscient du contexte, c'est quelque chose d'assez large mais il faut connaître ses différents stakeholders, les différentes régulations qui sont en place, la concurrence, les attentes du marché.

JVB : Ça je pense qu'on n'interroge probablement jamais assez mais ça prend du temps aussi et parfois ça fait peur d'aller poser des questions à ses clients

CDM : Le dernier qu'on voyait comme un facteur clé de succès, c'est de promouvoir l'importance de l'innovation responsable. Les gens sont conscients qu'il faut consommer plus durable, qu'il faut changer ses habitudes mais parfois, dans les faits, les gens ne le font pas forcément. Il faut donc dégager les vrais avantages d'être responsable. Il faut que

les gens le voient comme un vrai avantage. Parfois, ça passe par le rappel de l'importance de parfois acheter des biens un peu plus chers mais qui sont mieux isolés, mieux construits.

JVB : C'est un sujet qui est compliqué. Est-ce que tout le monde y trouve des avantages. J'ai parfois l'impression qu'il y a des gens qui sont très responsables quand ils sont chez eux, dans un contexte familial mais quand ils arrivent dans un bureau et que l'air conditionné ne fonctionne pas, ils trouvent ça scandaleux. On n'a pas toujours des comportements qui sont cohérents en fonction des situations dans laquelle on se trouve. Maintenant, l'idéal, c'est l'innovation qui maintient un certain nombre de critères. Je pense à la mobilité par exemple. Abandonner sa voiture et prendre les transports en commun. L'idéal, c'est d'arriver à ce que l'innovation responsable améliore d'une manière ou d'une autre, pas seulement un critère mais suffisamment de critères pour qu'il soit adopté.

CDM : Si on considère qu'il y a plusieurs critères et qu'on décide que le confort, il va falloir forcément le diminuer, est-ce qu'on n'augmenterait pas la valeur de l'écologie et diminuerait l'importance de ce que les gens accordent au confort. Essayer de promouvoir un changement.

JVB : Je pense qu'il faut d'abord un changement culturel. Dans les entreprises où il y a de l'innovation responsable, je pense que ça ne peut fonctionner que si la culture d'entreprise est là. En fait, on peut avoir la plus belle des stratégies dans ce domaine-là, si la culture n'y est pas, ça ne fonctionnera pas. C'est d'abord la culture, puis la stratégie.

CDM : Le dernier point, est ce qu'il y aurait des risques que vous verriez émaner d'une stratégie comme celle-là ?

JVB : Qu'est-ce qu'on pourrait avoir comme risques... s'être complètement trompé. De nouveau, c'est quoi la définition d'une innovation responsable, on part sur des principes ou sur un cadre que l'on pense être correct. Par exemple, les voitures électriques, est ce que c'est bien ou non. Est-ce que le mieux, ce n'est pas moins de voitures. Si demain toutes les voitures sont électriques mais qu'il y a toujours autant de trafic, est ce qu'on a vraiment réussi ? Dans l'immobilier, dans notre approche de l'immobilier responsable, il faut que les bâtiments soient beaux, esthétiques car si on veut qu'un immeuble soit très performant au niveau énergétique,

ce n'est pas très compliqué, je fais une boîte, avec de petites fenêtres, j'isole bien, ça ne sera pas spécialement beau. On veut qu'il soit sympa, qu'on soit fier d'y travailler ou d'y aller, c'est comme chez soi, on veut de beaux espaces. Il faut donner une valeur sentimentale en plus.

CDM : Je pense qu'on a fait le tour, merci beaucoup pour le temps que vous nous avez accordé.

TP : Merci beaucoup !

JVB : Avec plaisir !

Appendix 39 – Companies opinions about the characteristics of RI

	Theoretical analysis Literature review	Interviews				
		Cardiford Belgium	Flamh (Cris)	Procter & Gamble	Characteristics of RI	Engie
Stakeholder involvement	(+)	(?)	"We want a solution - it's really a solution that we can implement with the authorities in the city"	"This we really try to have consistently the prime, and because we work with them, we have support to really work on these objectives for RI, that it is real and that it is not just a thing, that it is not just a mission, etc. Usually, we have five or six projects and then we do check very quickly. Generally when you launch an innovation, you have a whole dashboard for review the innovation in the first three months, and then we do check this case, it is done in the form of a trip."	"forging partnerships with civil society, NGOs, political authorities, trade unions, the business sector, etc. It means working together in a collaborative manner"	"working on their own or with partners, they share knowledge with other actors, like start-ups, etc. It means working together in a collaborative manner"
Global risk assessment	(+)	"It is better understanding the consequences because there are things I don't understand or know. Everything like AI, all that I am interested in, but not a expert. So I think it is better to understand something like I think it"	(?)	"There are many projects, and then we do check very quickly. Generally when you launch an innovation, you have a whole dashboard for review the innovation in the first three months, and then we do check this case, it is done in the form of a trip."	"We have three R&D units, and we have a world that are really for ahead of quite a few areas, but we will never launch a new product (technological innovation) or service until we have spent five years testing it in a laboratory, and then we do check this case, it is done in the form of a trip."	"I think that it is during the (innovation) process, that a number of elements are added, before, makes it possible to make sure the impact of new products and services"
Voluntary basis	(+)	(?)	"First the city looked at having it at 12 km/h and then the other zone it's actually 18 km/h. So you can only have a speed zone of five kilometers an hour. And then we just implement that going beyond what is expected from us"	"we're ahead of the law. It's not so much about responsible innovation, it's about leadership, but when you decide to do responsible, you can get ahead of the game"	"From the moment you are pushed by your environment (...) to do things, it is no longer the logic of things, but it is not you who always took the initiative (...) very often it is done in coordination with the other stakeholders"	"It's both true and false. It all depends on the context. In the real estate sector, laws related to global warming are constantly evolving and are increasingly ambitious"
Flexible and adaptive decision-making process	(+)	"That's what (referring to the innovation) is great in Belgium. We are given this flexibility (...) we have to be agile, we have to go fast and for me to go fast we need a small team"	(?)	(?)	"a whole series of 'Change Agency' programmes must be supported (RI). So it's the ability to be flexible about change"	"We make an iterative plan and say, where we are, where we want to go, and then we'll be there. There are fewer and fewer companies doing this, because the market makes you have to adapt all the time. We say: Last year we made this decision because that's what we thought was the best solution, but this year we are going to do something else."
Reflection on innovation motivations	(+)	"All our efforts are in innovative solutions (...) I think we are making a view to saying: here, we are doing good"	(?)	"each brand that will have a very clear ambition on what it wants to do by 2030, with an environmental and a social vocation"	"(developing innovations) that make sense (...) people responsible for technology, (...) people responsible for the business, (...) people responsible for the market. It is like to be responsible in today's market, they have developed a kind of responsibility charter in terms of innovation"	"I think, in general, that we do not innovate in a point in time, to a need that we have identified, which may not yet be known by the target audience. Innovation must be used for the benefit of society, and it is not just about the impact is positive in relation to the SDGs. The SDGs are a pretty good framework because they cover a lot of things"
Take the society into account	(+)	(?)	Its quality of life, it means (...) as we make pollution, (...) green zones playing fields, (...) not spending time in the car but rather spend time with their families, it is also good for society.	"our responsible commitments (over a spectrum from social to environment)"	"improve my business and in the same time improve the society with a big"	"For me, the ideal is to respond to a challenge and of people (...). We participate in providing answers at our level to some of the challenges of today's society"
Take the environment into account	(+)	"For the moment, the little next I master (in the innovations) is the last mile. During the last mile I know I'm not going to pollute"	"If it's any of those, it becomes greener. Then for me it's a responsible innovation"	"responsible innovation is working on reducing resources by 50% (for a product)"	"adopt an attitude of social, societal and environmental responsibility"	"For example, about smart cities projects, there are two ways in Belgium, two types of centers (social and environmental)"
Take the economy into account	(+)	"Cardiford lives on money and so we have to keep doing business"	(?)	"responsible innovation, which is not necessarily something from 'Wall Street'. So there's really a dichotomy and we're trying to get both of them together"	"when it has been understood that the existing economic model will not work, but that there's really a dichotomy and we're trying to get both of them together"	"Of course, we have to be realistic. It's always the same, that outside because someone has a vision, but it's not always this or that, but we have to generate the numbers."

Appendix 40 – Companies opinions about the advantages of RI

[illegible]

Appendix 41 – Companies opinions about the disadvantages of RI

	Disadvantages							
Difficulties linked to the stakeholder management	(?)	(?)	(?)	(?)	(?)	(?)	(?)	
Increased cost of innovation	(?)	(?)	"There is one (company) who has a great idea (...) but how does he get to come and talk to me about it or to talk about it in marketing? That's what I don't like about it."	"It doesn't have to be more expensive, actually because there will be economies of scale."	"(Giggle) must constantly redefine and re-structure your position, and it is like to be responsible."	"It can be more costly."	"What is more complicated is to identify the right groups of stakeholders to interview because the ideas of stakeholders and the other can be divergent. In general, we try to offer products that are as flexible as possible in order to meet the needs of as many people as possible"	
Slowed down innovation process	(?)	"Yes totally this being very careful about what you launch, by involving risk analysts with scientists, more technical people, more business people, and then the innovation process"	"The biggest difference is a responsible innovation process is more (...) more time consuming by definition"	"They are certainly more complex, but they are not longer (...) that is unacceptable. You have to make that up too. That's why we equip ourselves with a lot of external systems, we do a lot of external work, we do a lot of work, but it can't be longer, it can just be more complex and responsible. It means reinventing yourself"	"It is clear that the innovation process can take a little longer because of the more complex responses that give you the size of the implementation in innovation. It must be said that it does not do a 5-year laboratory test) or if you take a company more focused on research and development, but at the same time as soon as you have completed the process, creating a new product, it is also faster. Because you have more means, so you put more money and more energy and more resources into it than a company that has less means, because they have to find the right skills, one in the other it balances out. Smaller structures are faster at startups but they are running out of steam and they are slower to start but we are more focused on long-term operation, because there are ways to sustain innovation"	(?)	"Yes, (wanting to act responsibly) prolongs the process"	"The fact that it is sometimes necessary to consult a privacy committee slows things down. We do a little old-fashioned, we could do it differently, but it's not about being old-fashioned, it's about being old-fashioned and explain why"
Difficulties to predict the consequences of innovation	(?)	"Tasks developed a continuous review system (also with reports coming from the users) showing human react as fast as possible when a problem arises or to solve the problem"	"I think we need to be more flexible about it, we don't have to be too rigid, we have to have a little bit of flexibility, even in our standards and in our blocks. And so, that's a good tactic in our"	"Absolutely for company that claim to be responsible, can't guarantee a risk 0, so, how do we do that? So for us, it's a challenge at Procter. At Procter, we are very left hand to do it. If we have removed 99.9% (negative effect) and that's fine, it's good enough. I think we need to be more flexible about it, we don't have to be too rigid, we have to have a little bit of flexibility, even in our standards and in our blocks. And so, that's a good tactic in our"	"The challenge of funding the potential negative impacts of responsible innovation is mitigated by multiple risk assessments through the innovation process"	"This is for any innovation in general. Sometimes the feedback can be very fast and others can be longer. This depends on whether the initial assumptions were well formulated or not"	"There are already things we've launched where we have there was a risk, but we'll have you have to live with it"	
Transparency issues	(?)	"Transparency issues, it was not something that was mentioned as a challenge"	"We need to lean forward, let's just go, let's try, let's experiment and if we see that we have a leakage problem, then let's retract back"	"We certainly had to deal with that, it's not anything to that. On the other hand, I think that if you are in a project team that is really based on technological innovations, or really innovation and you have succeeded in doing something, then you have to deal with the different participants, there should be no leakage"	"The innovation linked to leakage of information is not a problem for the company face"	"I don't think so that there are problems with stakeholders. It should be noted that we have an obligation of transparency as a listed company etc. It takes a lot of time and energy to provide all the information that is required. Now, in the innovation process, it is still quite well framed"	"Yes, of course, competition in our R&D can be a problem. Of course, there are things we prefer to keep to ourselves. The "Bleu in Data Alliance" was recently launched. Proctium took the initiative and the day it was launched, it was a big event. There's been a leak. We must know who, but that's the way it is"	
Difficulty to implement a technology risk assessment	(?)	"In our factory there is a very strict quality assurance process and the reality is whatever the production line. And the first time you put it through the production line it will never result in a product without flaws. And we have to be able to deal with that. It's not about putting it over the production line three times the first week you came up with a new model. And obviously after a couple of days or weeks, it gives some"	(?)	"Doing enough or eliminating my studies (Bleu) has enough resources to do it once again is not the case for example for an SME, because they have to go in for a month of resources, the SMEs have to				

Appendix 42 – Companies opinions about the attention points of RI

		Attention points				
Adapt the company strategy and organisational structure	(+)	"It was there from day one and it was the natural evolution of the company because they were upset with the American way of doing business also in Europe. Where we had a lot of dump centers on the street in a quantitative way without counting the environmental impact. They started to work in a qualitative way with the public transportation companies. Without taking into account the needs of European citizens who were not used to the American way of doing business. They started to adapt to the local legislation. All of that was the foundation for our five centers in each block."	"the force for good, force for growth was released for Iberia at the same time as the ambition for the Iberian"	"bringing together the skills and resources of different departments and to put it into a new project"	"Responsibility and Sustainability is of course implemented in the strategy. The responsible innovation but if this should be a business model that it should be anchored as well in the strategy."	(?) "We've had a new CEO for five years. Dominique said she didn't want to play on certain things anymore (she implemented the new CSR strategy with innovation as a key point). But she also said she didn't want to set up a lot of training on growth related, etc. This way the values evolve."
	(+)	"It's about making sustainable irresistible, so it becomes the solution that people want irrationally. Just because it's so much greater than anything that exists today. They will drop whatever they are today. And I don't know if it's irresistible or not. I just know that I never told them, it does not matter. If it is irresistible, I don't need to tell them"	"It's about making sustainable irresistible, so it becomes the solution that people want irrationally. Just because it's so much greater than anything that exists today. They will drop whatever they are today. And I don't know if it's irresistible or not. I just know that I never told them, it does not matter. If it is irresistible, I don't need to tell them"	"understanding what game we play, knowing the society or environment in which you are, knowing your company (...) where the skills are located"	"... awareness of the consumer will for responsible innovations. Will they pay for these innovations?"	(?) "That I think we probably never ask enough questions, but it also takes time and sometimes it's scary to ask questions to your customers"
Develop measurement and feedback tools	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "I think that for each innovation project, the indicators can be different. It all depends on the objective. There is always a probability that an innovation will be successful. But it will add more societal indicators measuring the social, environmental or governance impact (...). It is necessary to define the KPIs that make it possible to determine if my innovation is successful or not"
	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "I think we need a cultural change first. In companies where there is responsible innovations, I think I can only work if the company has a culture where it's not just about the best strategy in this field. If culture is not there, it will not work. It is first culture, then strategy"
Increase the importance of RI	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"
	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "I don't think we have anything specifically in place (to successfully develop responsible innovations) It's the culture. It's to be kindhearted"
Find a suitable business model	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"
	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"
Avoid "greenwashing" (work ethically)	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"
	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"
Shape the law (reflect your innovations)	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"
	(+)	"Flash is a data-driven company meaning they have access to a lot of information from their customers. They are not just big centers. In that way they can react in less than a day. If there is a responsibility (safety, ecological, problem with the cities) problem, they can react in less than a day. They have tools linked to that. Flash is able to define hispots where the e-scoters are being the most used and thus make a particular e-scoter more green. Since it's a shared e-scoter with a responsibility – so thanks to the measurement and feedback tools they are able to become more and more responsible and more adapted to the cities. Flash is particularly adapted for developing responsible innovations. Everyone is really involved, and employees have the liberty to make decisions. They are not afraid. If there is a problem really fast no like in big companies where there are a lot of processes and a strong hierarchical structure"	"we define success measures that will allow us to track the program commitments" as it's not just greenwashing."	"responsibility code of ethics for the group (measurement and feedback mechanism for) correct the trajectory of the innovation and make it more profitable. We are working on them"	"Involving NGO's and institutions to evaluate if innovations are responsible. They are doing and to determine goals (...) They do a post launch feedback to find what are the results compared to the expectations. If the innovations improved the situation"	(?) "It's a complicated subject. Does everyone find advantages (...). We do not always have the situations in which we find ourselves. Sometimes we find ourselves in a situation where a certain number of criteria (...) The idea is to achieve that responsible innovation improves in one way or another, not just one criterion but enough criteria for it to be adopted"

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