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Chapter 8

Responsible innovation

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The relationships between science, technology, and society have been analyzed for centuries, in particular by philosophers and sociologists. Stilgoe *et al.* (2013) mention the favorable role that Francis Bacon attributed to science, whereas Habermas (1973) or Jacques Ellul (1990), for example, criticized the power of technology over society. For some, science and technology go hand in hand with progress, while according to others they represent threats for society. Other authors, such as Callon *et al.* (2001) or Feenberg and Dibon (2004) remark that science, technology, and society cannot be regarded as independent spheres since, on the contrary, they evolve together and in close interaction. The sociology of science and technology, closely related with philosophy, attempts to analyze and represent these links (Vinck, 2005). Now, the development of new controversial technologies, such as biotechnologies, nanotechnologies and even ICT, together with the advent of responsible development and the societal responsibility of companies, has led to new questions on these connections, which include an environmental dimension that has been absent up to this point, whereas the social or rather societal dimension has been considered for a long time. The European Commission has significantly incentivized these works since the 2000s, giving rise to the concept of responsible development and even responsible research and innovation (RRI), which are bound to frame the research and innovation programs funded by the European Commission's Directorate-General for Research and Innovation, emphasizing more the societal aspect in scientific approaches. Simultaneously, and more specifically in relation to the companies' societal responsibility, which is gradually becoming institutionalized in the economic landscape, the concept of responsible innovation in organizations is

being formalized by some studies, especially those carried out by Ingham (2011) and Pavie (2012). After describing the origins of this concept, we will develop its content, first in relation to the research and innovation programs funded by the European Commission and then in companies, where it takes different shapes. However, this is an emerging concept that has not been definitively determined yet either in the European programs or in companies, even if attempts at operationalization are already being made.

The foundations

Most works on responsible research and innovation mention two broad movements behind the topic: responsibility – more specifically the researchers and engineers' responsibility – and technology assessment. New concerns related to responsible development, as well as technological progress itself, generate now new questions, whereas in firms the notion of the companies' societal responsibility, whose origin is rather religious, and non-technological forms of innovation have given new meanings to the concept of responsible innovation.

- Responsibility in science and technology

The debate about the alleged positive or negative effects of science and technology on different aspects of society, whether cultural, or political, etc., has been particularly lively since the twentieth century, even if the nineteenth century, with the introduction of mechanization, was already quite controversial. According to Durbin (1992), it was after the use of the atomic bomb at the end of World War Two that the issue concerning the responsibility of scientists became significant enough to be considered. This led to the creation in 1976 of a "Committee on Scientific Freedom and Responsibility" part of the American Association for the Advancement of Science (AAAS), whose members published several articles in their official journal, *Science*. Chalk (1998) published the most significant literature on the topic in the journal between 1949 and 1988. These publications deal, for example, with the social responsibility and freedom of scientists, but also with different ethical aspects in science, from the behaviors of scientists carrying out research to fraud issues, also including the risks of technologies compared to their potential benefits. Thus, this is not a new debate, and the existence of the researchers' social responsibility was officially recognized by the AAAS in 1975. A few years later, engineers were also acknowledged to have this responsibility, which is still at the center of several discussions about ethical research and the ethics of researchers and engineers. With his work *The Imperative of Responsibility: In Search of Ethics for the Technological Age*, Hans Jonas (1979, 1990), a German philosopher, substantially contributed to a richer debate. Among other things, he remarks that ethics and the difference between good and bad had for a long time only concerned

immediate actions, without entailing a discussion and knowledge about the subsequent consequences of this action. According to Jonas, modern technology has a much more significant impact, especially on nature, and creates irreversible effects through cumulative phenomena. Thus, the notion of responsibility must be extended to include the **future consequences** of our actions: “it is the indefinite future, rather than the contemporary context of the action, that constitutes the relevant horizon of responsibility” (Jonas, 1990, p. 28). This is a type of “ethics of the future”. It must take into account the interests of other actors and consider the worst-case scenario among the potential consequences conceived.

- Technology Assessment

Another pillar is represented by the works on **Technology Assessment** (TA) and its variants. Grunwald underlined back in 1999 that the assessment of the effects and consequences of technology had been a concern since the 1960s, due to dire problems or incidents linked to technologies. Technology assessment has led to two distinct approaches that developed independently of each other: the ethics of technology and the assessment of technology (Grunwald, 1999). The latter emerged in the 1970s in the United States, due to these negative effects but also because of the warnings given by the Club of Rome (Grunwald, 2014). At the time, the issue concerned, especially for the newly established American Office of Technology Assessment, identifying potential risks in order to be prepared rather than orienting research and technology in a more favorable and less dangerous direction. Technology was thought to have its own dynamic (Grunwald, 2011). However, this approach evolved in the 1980s, when it was acknowledged that science and technology were socially constructed. Gradually, especially after Habermas’s works, which denounced the power of experts on technological progress and the lack of technological democracy, the absence of legitimacy in some decisions about technologies, such as nuclear power, and the conflicts that this entailed, the idea of technologies developed more in keeping with societal values became more widespread. A book written by Ulrich Beck, a German sociologist, and called *The Risk Society* (1986, 2008) also seems to have played a part. Beck underlines the increase in technological risks and their wider scope, which includes all of society, as the fruit of science and technology. In these circumstances, starting in the 1990s, the hegemony of experts, ethics boards, and public institutions in technological decisions has been challenged, as these roles do not reflect well enough the values of society as a whole (Pellé and Reber, 2013). Society must be involved in the critical assessment of technoscientific products and in the establishment of goals. This development constituted one of the sources of responsible innovation.

These two pillars, therefore, lead us to consider, on one hand, **society's expectations and values** in relation to the orientation of technologies and, on the other hand, the need to **predict the consequences** entailed by implementing these technologies before the related processes, due to the researchers and innovators' responsibility.

The development of new technologies such as biotechnologies, nanotechnologies, or digital technologies, together with the growing awareness of environmental problems and the issue of sustainable development, has raised new issues. The notion of sustainable development, which became widespread thanks to the Brundtland report (1987), has officially ratified the idea – which had already been supported for several years – that economic development could not be pursued while ignoring the ecologic environment. The 1992 United Nations Conference on Environment and Development, or Rio Earth Summit, made it possible to put forward the main points of a policy for the twenty-first century, Agenda 21, and to complete the definition of sustainable development with three cornerstones, i.e. social, environmental, and economic. It is based on these foundations and their junction that sustainable development actions should be implemented. In the face of these new challenges, Hellstrom (2003), for example, illustrates that the technology and risk assessment of complex technological systems and systemic innovations call for new solutions.

Responsible research and innovation in European policies

The acknowledgment of innovation as a source of growth and competitiveness in Europe was ratified in 1996 in the “Green Paper on Innovation” (COM(95)688), and highlighted the necessity of structuring more appropriately research and innovation. In 2008, the priorities of the framework program were organized around Europe's “serious societal challenges”, such as climate change, energy, food, transport, healthcare, and aging. Therefore, innovation seems more and more the solution to Europe's economic and social problems, and the Horizon2020 program is becoming the instrument used to implement it.

At the same time, the topic concerning the citizens' involvement in the governance of a society based on knowledge was introduced in the European research program in 2001, and it has significantly developed ever since, in order to promote the legitimacy of the public decisions taken in scientific matters (De Saille, 2015). A “Science and Society” policy was established in 2001. In 2007, as part of the seventh research framework program (FP7), it became the cross-disciplinary program “Science in Society” (SiS), targeted at encouraging civic involvement and dialog between science and civil society. The social issues raised by different technologies, especially nanotechnologies, have led to questions about possible

avenues for a “responsible” development of these technologies, as part of a deliberative process, and led to the expression “Responsible Research and Development”. The SiS workplan includes a definition that De Saille (2015) attributes to Von Schomberg: “a transparent, interactive process in which societal actors and innovators become mutually responsible to each other with a view on the ethical acceptability, sustainability and societal desirability of the innovation process and its marketable products” (European Commission, 2011). In the 2013 framework program (European Commission, 2012), this definition became: “societal actors (researchers, citizens, policy makers, businesses, civil society...) work together during the whole research and innovation process in order to better align the process and the results with the expectations of society”.

The research and innovation program H2020 was launched in 2014. “Science In Society” became one of its section called “Science with and for Society” (SwfS or SwafS). This section relied on the responsible research and innovation (RRI) conceived by Europe. It was defined as “an inclusive approach to research and innovation (R&I), to ensure that societal actors work together during the whole research and innovation process. It aims to better align both the process and outcomes of R&I, with the values, needs and expectations of European society”.¹ Thus, this is the same definition given in the previous program, but it is supplemented by the idea that this approach involves predicting and assessing potential consequences and social expectations in terms of research and innovation. De Sailles (2015), however, points out that there is a recurring tension between the goal set by the notion of RRI, which aims to get the public more involved in a shift towards technologies with the potential to provide social advantages, and the speeding up of the innovation pace as a means of restoring economic growth.

In terms of content, the term “responsibility” derives from the Latin verb “responderere”, which means “to answer for one’s actions”. When it is connected with innovation, it may take on different meanings (Pellé, Reber, 2013). Thus, moral philosophy has been developing moral responsibility for several decades. It may have a negative connotation in relation to the idea that a mistake must be punished and rectified. This is the original sense of the term “responsibility”. The term “accountability” is linked to the possibility or even the moral obligation of accounting for one’s actions. It involves “answering for them”. “Responsiveness” refers to the ability to adapt one’s behavior to a situation or some ethical norms, for

¹ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/science-and-society>, viewed on 18/11/2017.

example to avoid the negative effects of innovation. “Liability” refers to the legal responsibility for one’s own actions, and therefore to the necessity of paying the negative consequences.

According to Pellé and Reber (2013), the current RRI approach relies on five elements: anticipation, transparency, responsiveness, reflexivity, and finally interactivity.

Anticipation fundamentally concerns the risks involved in technology. We may wonder whether this is compatible with the intrinsically uncertain nature of the innovation process. However, this should not prevent us from thinking about the possible risks, as far as we know, and the ways in which we can limit or avoid them.

The second aspect of the responsible research and innovation process is **transparency**. The whole body of knowledge on technology, its consequences, the predicted applications, the results of the assessment, etc., must be accessible and communicated to those involved at every step of the process. This allows the parties involved to form their own opinion and contribute different ways of thinking, which are taken into consideration. Yet, this may contradict the imperative secrecy that still surrounds some innovations for economic reasons, such as the necessity of being the first on the market to benefit from the first-mover advantage. Stilgoe *et al.* (2013) do not mention this characteristic in relation the analytical framework they put forward to understand and favor the implementation of responsible innovation.

The third dimension is **reflexivity**. Researchers and innovators must be able to identify the ethical, social, and political consequences entailed by the technologies they help develop, while also assuming responsibility for this development. They must question not only their own actions and their agreement with the value system in place but also more indirectly the value system that orients and governs research and innovation (Stilgoe *et al.*, 2013).

The fourth element of responsible research and innovation is **responsiveness**, i.e. the ability to change and adapt the research and innovation path depending on societal values. Socially and ethically desirable values, as well as the knowledge produced during the process, must help orient the development and applications of technology and research for the whole life cycle of a technology from its very inception. Responsiveness may rely on inclusion.

Finally, the fifth aspect, namely **inclusion**, has to do with the interactive nature of the process, which entails the necessity of including early on during the process the different parties involved that can be affected by an innovation at any given time, namely the final users, researchers, including those working in social sciences, civil society, NGOs, industry, policies, etc.

Overall, according to Pellé and Reber (2013), conceiving responsible research and innovation involves a co-construction process. The responsive and reflexive features entail an adaptive process that can no longer rely on the ethical norms imposed by a legal framework, an *a priori* definition, or the fear of punishment. In this case, deliberation and participation present several advantages. They can relate the norms that frame scientific practices and innovation processes to their context, as they are co-constructed and therefore take into account more precisely the individuals' motives, desires, and interests. Therefore, they should make it possible to find out goals rather than undesired outcomes: which aims and objectives are attributed to science and technology? Which values do they convey and how can norms be co-constructed based on these values? This co-construction should make it possible to guide the process and the results of research and innovation.

The definition now adopted by the RRI is the following: “« Responsible research and innovation is an approach that anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation”.² The aforementioned characteristics, which Pellé and Reber (2013) regard as normative principles for guiding responsible research and innovation, are translated by the Research DG into five suggestions:

- Every social actor should be involved in the research and innovation activities
- Through scientific education, we should form a society that is scientifically responsible and creative
- There should be gender equality in science and innovation
- The results of research financed by public funds should be available to everyone
- An ethical dimension should be present since the origin of the products

It is also recommended to implement a suitable way of managing research that can make it easier to put these suggestions into practice.

² <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>, viewed on 16/12/2017.

Stilgoe *et al.* (2013) develop different approaches and techniques that favor the implementation of the aforementioned elements of responsible innovation, with the exception of transparency, identifying for each of them a certain number of factors that can affect this implementation.

Responsible innovation and companies

In relation to companies, according to Pavie (2012), the origins of innovation can be found in the work of the philosopher Hans Jonas (1979), as is the case for RRI, but also in the concept of corporate social responsibility (CSR). According to Jonas, in the face of developing technologies whose effects are more and more widespread and can turn out to be irreversible, it is necessary to consider early on the potential consequences of their development in order to limit the negative effects. CSR has a religious, and specifically a Protestant, origin. It appeared at the end of the nineteenth century, supported mostly by directors, and it concerned at first their philanthropic activities. According to Protestants, property is not an absolute and unconditional right, and it can only be acknowledged to the extent that it serves the interests of the whole community and can increase its wellbeing. According to Pavie (2012), several important CEOs or management theoreticians, like Chester Barnard, Henri Ford, Alfred Sloan or Thomas Edison, followed these theories, as companies were becoming very large. Catholics were more interested in the relationships between employees and bosses as well as in the social responsibility of the latter towards the former. Later, in the 1990s, the Catholic church would also tackle the issue involving natural resources.

CSR was only theorized in the academic world in 1953 by Howard Bowen, who thought that businessmen must willingly act to meet the objectives and values that society regards as desirable. Thus, it is the willing alignment of the companies' behavior and the values of society as a whole, in order to legitimize the existence of these large companies, that constitute the foundations of Corporate Social Responsibility, which must make it possible to orient a company's activities so that they can meet the goals and objectives of civil society.

From the 1970s onwards, a report of the Club of Rome called "The Limits to Growth", which led to the Brundtland report (1987), laid the foundations for the notion of sustainable development. In the definition itself – "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" – we can see that the consequences of our actions must be taken into account. Furthermore, it emerges that we should become aware that natural resources are limited. According to Pavie (2012), sustainable development relies on three principles:

- Equity (sharing wealth more fairly, taking into consideration Southern countries, intergenerational equity)
- Prevention: predicting the environmental consequences of our actions
- Participation: namely a collective responsibility that requires everyone's active involvement and collaboration.

Sustainable development relies on three keystones – society, environment, economy – generally represented by partially overlapping spheres, with the “sustainable” dimension situated at their intersection.

John Elkington, a British advisor, made this notion popular in companies by defining the “Triple Bottom Line” and reestablishing corporate social responsibility based on the three pillars of sustainable development.

- Economic profitability
- Respect for the environment
- Social equity

A company must be successful in all three fields. These pillars still constitute the foundations of CSR, even if other dimensions, especially governance, are now being mentioned. According to the European Commission (Commission of the European Communities, 2002), social responsibility is a “a business contribution to sustainable development in the business world”.

Corporate responsibility raises a certain number of issues (Pavie, 2012), first of all in relation to the responsibility of managers.

First, there is a difference between private and public spheres, or between managers and citizens. Thus, the issue concerns the responsibility of individuals in a company, and specifically the responsibility of managers-innovators. In terms of innovation, this may affect the choices made: should we privilege citizens or managers when we take decisions? On the other hand, the etymology of the term “responsibility”, as we have previously pointed out, comes from the Latin “respondere”, which means “to answer for one's actions”. This means that an individual must account for his actions and consequences, but that he has also the moral obligation to make amends when he causes damage. The notion of “accountability”, to account for one's actions, is related. The notion of responsibility is also often considered from an ethical and moral perspective. These two terms,

whose etymology – which is Greek for the former and Latin for the latter – is identical and means “customs”, refer to normative behavioral codes. Morality distinguishes between what is “good” and what is “bad” in relation to the values stipulated by a group, based on which rules of conduct can be established. Ethics is more the art of guiding one’s own behavior based on what is thought to be “good” or “bad” (Mercier, 2004).

Corporate responsibility raises new questions. First of all, the issue is to identify in which respects and on which level a company is responsible:

- In relation to the individuals who are part of this company such as managers, employees, or shareholders?
- In relation to the company as a moral person?
- In its interactions with its partners, providers, subcontractors, or institutions, among others?
- There is also a responsibility towards future generations and, more globally, the “silent” parties involved, including, according to some, the natural environment.

As for innovation, Pavie thinks that the responsible nature of innovation lies in the innovation process. His definition is as follows: “the ability of an individual, association, organism, institution, but essentially of a company to innovate while taking into consideration all the consequences entailed by this innovation” (Pavie, 2012, p. XVIII). According to him, we should not mistake responsible innovation for social innovation, as the latter also includes environmental issues. These notions overlap but not quite completely. Certainly, responsible innovation has in most cases social goals, but it must also ensure that the consequences are considered at every stage of the innovation process and that the parties involved are integrated. Thus, Pavie follows on from the works carried out by the European Commission, even if in this case the issue concerns companies and innovation is not necessarily of a technological nature.

Without denying that responsibility should be taken into account at every step of the innovation process, Marc Ingham (2011) adopts an approach that focuses more on the social and environmental goals of innovation. Ingham clearly sees responsible innovation from the perspective of sustainable development and CSR. He defines responsible innovation as “the voluntary and proactive integration of social and environmental aspects in strategies, behaviors and processes that produce new and enhanced solutions by the development and use of resources which create societal (economic, social and environmental) value” (Ingham, 2011, p. 20). He especially

emphasizes two types of innovations: environmental innovations, also called eco-innovations or “green innovations”, on one hand, and “social” innovations on the other hand. The former can be defined as “the production, assimilation or exploitation of a product, production process, service or management or business method that is **novel to the organisation** (developing or adopting it) and which **results**, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources use (including energy use) **compared to relevant alternatives**” (Kemp and Pearson, 2008). This definition includes different types of innovations (product, process, service, managerial practice) and underlines the positive effect of innovation on the environment by reducing the environmental risks. Social innovation is defined by the European Commission (2013) as: “the development and implementation of new ideas (products, services and models) to meet social needs and create new social relationships or collaborations. It represents new responses to pressing social demands, which affect the process of social interactions. It is aimed at improving human well-being. Social innovations are innovations that are social in both their ends and their means. They are innovations that are not only good for society but also enhance individuals’ capacity to act”. This definition emphasizes simultaneously the goals of innovation (new responses to social needs, the creation of new social interactions, the improvement of human wellbeing), but it also mentions the means required to implement this innovation.

Beyond these two types of responsible innovation, Ingham (2011) puts forwards some kinds of innovation that refer to the classic categories of innovation: radical/incremental innovations, (technological)/organizational process innovations, modular innovations (when innovation only concerns a part or a component of a product), architectural innovations (which have to do with the way of integrating the components). He classes responsible innovations as technological, non-technological, mixed, and systemic (namely those that combine product, process, organizational, and managerial innovations).

We can see that for the two authors mentioned responsible innovation is in line with sustainable perspectives.

Pavie (2012) underlines that the uncertainty specific to innovation and its effects makes it difficult to have total control over innovation. Besides, it is this ability to control innovation at every stage of its life cycle that can qualify an innovation as responsible.

From an operational point of view, according to Pavie implementing a responsible innovation involves three fundamental questions:

- 1) Interrogating how the individuals' needs can be met. Should they always be met? Does systematically meeting these needs entail the risk of having negative consequences for Society?
- 2) Assessing the direct effects of innovations on the beneficiaries. Is it possible to predict the direct consequences of innovations on customers or users? This means that the decisions regarding an innovation should not involve exclusively the search for profitability and the attempt to make a short-term profit.
- 3) Taking into consideration the indirect effects of innovations. Therefore, an innovation may have repercussions on customers but also on non-customers. For example, smoking also affects non-smokers. It is not always possible to predict this type of consequence. However, it is necessary to challenge oneself.

Ingham (2011) analyzes first of all the strategic alignment of responsible innovations or, in other words, how the different elements that define a strategy, namely values, forecasting, strategic intention, economic and non-economic goals, organizational structure, and governance guide, integrate, and support responsible innovation. Thus, for example, CSR and/or sustainable development may be in line with a company's mission and the values to which it subscribes. Furthermore, the parties involved, specifically the internal ones, but also the external ones, must be involved in the strategic alignment. This can be done either by taking into account their stakes in the content of responsible innovations or by incorporating them directly in the innovation process.

Ingham also puts forward a series of categories of responsible innovation strategies, based on two aspects: the characteristics of the markets and products. Thus, he distinguishes between four model strategies:

- Conformist: they simply involve complying with the laws and rules in place as well as with the social norms, besides following the evolution of the market standards. Therefore, innovations become fundamentally incremental and involve adapting the existing products to these requirements.
- Classic competitive: they involve adapting Porter's generic strategies (differentiation and cost leadership) by explicitly incorporating into products or processes the social-responsibility or environmental dimension. Innovations may be incremental through the introduction of "greener" elements, for example, into products or processes, depending on the

circumstances, or more radical elements, which have the potential to transform gradually the market standards.

- Disruptive: their goal is to meet primarily the needs of groups of customers or users who are less served or not being served. Thus, disruptive strategies create new market spaces. Kim and Mauborgne's "blue ocean" strategies (1999), while oriented more towards sustainability, are similar to this category. Strategic innovations (Markides, 1997), which involve identifying empty market segments and putting forward new ways of meeting their needs, also constitute disruptive strategies. In developing countries, they generally target "bottom-of-the-pyramid" beneficiaries and often represent a type of innovation that we now qualify as frugal (Radiou and Prabhu, 2015).
- Sustainable: this type of strategy is entirely oriented towards sustainable development so that, unlike the aforementioned strategies, it must find a better balance between economic, social, and environmental performances. Its goal, according to Ingham, is primarily social, and it involves contributing to individual and collective wellbeing.

Subsequently, Ingham develops eco-innovations, and then social innovations.

The last point concerning responsible innovations involves an analysis of their performances. The results are generally contradictory. Thus, Pavie (2012) mentions a study carried out by Lopez-Perez *et al.* (2007) that compared companies on the stock market index Dow Jones Sustainable Index (DJSI), namely those that meet a certain number of responsibility criteria, with others that were merely on the Dow Jones Global Index (DJGI) and therefore not forced to abide by these responsibility criteria. The result was that the integration of responsible approaches leads to improved performances by creating new opportunities. In terms of innovation, it is represented more by incremental innovations, whereas companies that are not involved in CSR produce more disruptive innovations. Furthermore, adopting responsible approaches affects innovation strategies and leads to a better alignment between innovation strategy and CSR. As for agri-food SMBs, we have shown that there is a mutual influence between innovation and CSR. However, the impact of innovation on societal performance seems more marked than it is in that mutual relation. Agri-food SMBs that are more inclined to innovate score better in terms of CSR, all the more so as the economic performance of a company is high. Therefore, it appears that for agri-food SMBs a good economic performance drives the innovative company to become more involved in CSR (Temri *et al.*, 2015). As we can see, the relationship between innovation, CSR, and economic performance is not

yet perfectly clear, as contradictory results are being obtained depending on the studies carried out. However, it is hard to deny that innovations aiming to reduce the consumption of some inputs such as energy, water, or raw matters, and to limit waste, in the environmental field, or to decrease accidents at work, in the social field, affect the reduction of the costs and consequently the economic performance (Gauche and Temri, 2016).

Conclusion

RRI (Responsible Research and Innovation) approaches in research and innovation programs, as well as responsible innovation approaches in companies, present a certain number of characteristics in common:

- The **objective** of innovations, which must be in keeping with a **sustainable development** perspective and take into consideration the environmental and social dimension. However, if we consider RRI, the actual emphasis is more on “social desirability” than on sustainable development, which constitutes only one of the elements.
- **The involvement of the parties involved** as early as possible in the innovation and/or research process.
- **The prediction of the potential effects** of innovation, quite early on and throughout the life cycle of innovation, in order to avoid or limit them when they are negative, even if the uncertainty inherent in innovation makes it difficult to identify all these consequences before the processes.

Besides, we can see that these approaches waver between **moral responsibility** towards society and the responsibility involved in **favoring social acceptance** and economic performance.