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## Moving Business Models Forward for Positive (Social, Environmental and Economic) Outcomes: Managing Externalities (and Internalities) to Build Sustainable Ecosystems

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### Abstract

**Purpose:** In the business model literature, the ecosystem is convoked as a matrix for value creation for stakeholders and value capture for a focal company. In this article, we contend that ecosystems are also the place where externalities of the focal business model operate, eventually destroying value for some stakeholders. We suggest that a sustainable business model can only be designed and implemented with a complete account of externalities, and we propose that the business model is the key determinant between externalities and internalities.

**Design/Methodology/Approach:** We build on the research about business models and externalities to theorise at the crossroads of this literature. We then draw consequences from our theoretical development and advance business model recommendations for managers, consultants and researchers.

**Findings:** We propose to complete the concept of externalities with the symmetrical concept of “internalities” to analyse and design business models. We also offer eight policies to manage (or not) negative externalities and identify potential consequences of these policies for the business model of the focal organisation and its ecosystem. We conclude that business model thinking allows organisations to decide on what the externalities and internalities of their business model will be and thus induce management responsibilities.

**Originality/Value:** Instead of focusing on business models as an internal configuration, we contend that organisations must make decisions on externalities and internalities generated by their business model. We make propositions to design and preserve sustainable business models. Business models’ future should focus on the management of externalities at the ecosystem level.

**Keywords** Business Model, Externalities, Internalities, Sustainability, Ecosystem, Impact

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# 1. Introduction: the need to go further on business models and sustainability

The role of business in sustainability and the responsibility of organizations for the improvement of society and environment are now largely discussed. Calls to take into account sustainability have emerged more than 30 years ago (see Brundtland 1987; Turner, 1987) and empirical evidence has progressively led companies to implement various kinds of initiatives associated with marketing and communication to fit with stakeholders' expectations. However, when social and environmental issues take center stage, it becomes important to go further and to progressively integrate these concerns in the core of the business model (BM hereafter) managers and entrepreneurs design and implement.

BM literature has for a while proposed concepts and frameworks to position sustainability in the processes associated to BM, from purpose definition, to BM design and BM implementation (see for instance Bocken et al., 2014; Schaltegger et al., 2016a; Schneider and Clauß 2020; Schaltegger et al., 2016b; Attanasio et al. 2022).

Nowadays, literature refers to business models designed to ensure sustainability as “sustainable business model” (see Bocken et al., 2014; Bocken et al., 2019), “business model for Sustainability” (see Schaltegger et al., 2016a) or “circular business model” (see Boldrini and Antheaume, 2021; Fehrer and Wieland 2021), among others. While these terms acknowledge differences in points of view, they have in common to go beyond economic logic (Laasch, 2018). For instance, Schaltegger et al. (2016a) contend that a BM for sustainability should create and capture value while “*maintaining or regenerating natural, social and economic capital beyond its organizational boundaries*” (p.6).

However, the conditions to ensure this sustainability remain rarely detailed. Indeed, as discussed by Schneider and Clauß (2020: 385), as far as sustainability is concerned “*we have very limited insight into the interactions of these value creation processes and related choices and consequences*” (p.385). As a consequence, we are convinced that the processes associated to the integration of sustainability into BMs need more research. Natural resources depletion, climate change, social and economic precarity or pollution associated with some BMs can't be left aside anymore and this induces that entrepreneurs and managers consider the potential negative impacts of their activities for stakeholders (Juntunen et al., 2019; Attanasio et al., 2022). While externalities have been seldom discussed in the BM literature (exceptions include Walkiewicz et al., 2021 and El Baz et al., 2022), it's time to take them into account when thinking about value creation and value capture processes.

In this paper, we adopt a new point of view, focusing on externalities but also on the new status they should have in the cognitive repertoires of entrepreneurs and managers when they are designing and implementing a BM.

The next section describes how BMs are most of time described as operating at an original level, i.e the extended enterprise. This should induce the way loops of causes and consequences are considered in the BM literature and in practice. Second, we argue that externalities should be included in the analysis and design of BMs and we convoke the notion of “internalities” to shed a new light on the role of BMs in the sustainability of organizations and their ecosystems. Third, we convoke the RCOV framework to illustrate externalities and internalities of BM. Finally, the paper introduces several types of actions that could be undertaken by an organization to manage externalities.

## 2. Business model as an “extended enterprise” level

### 2.1 The “extended enterprise” (not so extended after all...)

We may wonder why the concept of “externalities” is rarely integrated in the literature and practice of BM? We contend that the main reason is related to misconceptions concerning the level of analysis associated with BM.

Organizations are crafting and implementing BMs to be able to operate. BM is often considered as a configuration of elements interacting to create and capture value. As a consequence, BMs are essentially conceived from the point of view of a focal organization while integrating various actors, including suppliers, distributors or customers. Thus, BM has been described as an original level of analysis per se, the “extended enterprise” (Zott and Amit, 2013). However, we may observe that the literature does not fully take into account this original level of analysis as BM are most of time considered as internal configurations. BM is finally treated as operating at firm-level (Boldrini and Antheaume, 2021) more than at the “extended enterprise” level. The ecosystem, encompassing actors with whom the organization is interdependent, is not really included in the analysis or is considered as another level of analysis than the BM. This may cause problems as processes related to BM may not considered external actors.

### 2.2 The BM and the loops of cause and consequences

As noted by Boldrini and Antheaume (2021), frameworks and reasoning to design and analyze BMs focus above all on linear material flows and lack a systemic perspective. As put forward by Casadesus and Ricart (2010) or Demil and Lecocq (2010) adopting circular reasoning is essential to understand the performance mechanisms of BMs, eventually including actors from the environment. This line of reasoning conceive a BM as composed of loops of causes and consequences. These loops are at the origin of virtuous circles or vicious circles and largely explain the performance of a given BM. For instance, scale economies, learning effects or recycling are virtuous circles within a BM.

These loops of causes and consequences (whether positive or negative) are not only internal to the focal organization but include also external actors to create interorganizational processes (Casadesus and Ricart, 2010). As a consequence, BMs are intertwined and co-evolve within an ecosystem. A loop generated within a BM may have consequences on another organization and initiate another loop (with positive and/or negative consequences) within this organization.

Indeed, the BM of a focal organization generate internal loops of causes and consequences within this organization but also external effects on other actors who become *de facto* included in the ecosystem. Indeed, as noted by Demil et al. (2018), it is the BM itself that is enacting the ecosystem through the external effects this BM is generating. Understanding these external effects is crucial to study and design BM.

### 3. Considering externalities (and internalities) of business models

#### 3.1 Externalities and their naturalization

Externality “*is an ambiguous concept*” (Demsetz, 1967, p.348). In 1946, Arthur Pigou, founder of welfare economics, describe a number of non-optimal situations (i.e. situations in which the well-being of one individual can be improved without worsening that of another), highlighting the decisive role of externalities. Externalities arise when one agent's act has an impact on another agent's situation, without this relationship being subject to monetary compensation. Externalities include both external costs and external benefits, i.e. costs or benefits for external actors. Positive externalities occur when an agent renders a service to other agents without being rewarded while negative externalities occur when an agent disadvantages other agents without compensating for the damage. There can be pecuniary or nonpecuniary externalities, but in every case one or several individuals or organizations enjoy or suffer from externalities. As noted by Ayres and Kneese (1969), externalities can be associated with production and/or with consumption. From a BM point of view, positive externalities are creating value for stakeholders while negative externalities are destructing value for stakeholders.

What all externalities have in common is that they are not taken into account by the market. In the presence of externalities, if everyone pursues their own interests, the result will be a sub-optimal situation at the collective level. Indeed, the main effect of externalities is that the private cost differs from the collective cost or cost for society (Demsetz, 1967). For example, when a company pollutes, its private cost is lower than the cost for society since it does not include the pollution it generates in its costs. Reasoning solely on the basis of the private cost, a company will produce more than if it took into account the total cost (which includes the cost of waste treatment). The negative externality will therefore lead to overproduction.

As a consequence, we contend that there are externalities when the price of a product or service does not include the full costs and/or benefits associated with its production and consumption. Thus, externalities are transfers of value without monetary compensation that depend on the choices of other agents. Most of time, there are no transactions between the agents whose activities are producing externalities and the agents impacted by these externalities. When an economic agent produces or consumes, there may be potential costs and benefits incurred by third parties who were not involved in the transaction.

Externalities are a complex phenomenon and a real challenge for humankind. However, we can observe that there are several flaws in the use of this concept in the context of management.

First, externalities are often naturalized. Entrepreneurs, managers, and analysts may tend to consider that externalities are naturally external to the responsibilities and/or to the realm of action of the organization itself. Indeed, many individuals assume that what is considered outside of the scope of the organization is not their responsibility but a consequence of the mere characteristics of their sector. On the contrary, following Demil et al. (2018), we contend that it is the BM itself that is defining the type and strength of externalities that will occur for stakeholders.

Second, some externalities are only considered on their positive side. It is the case for instance of externalities based on network effects (so-called ‘network externalities’). Indeed, it is often assumed that a network effect is the phenomenon whereby the use of a product or

service by new users increases the value of that same good or service for other agents. An example is a communication network or a social network, where each agent benefits directly from the use of the network by a new agent. Network externalities are considered to provide a direct or indirect benefit to the user of the good or service: this benefit depends positively on the number of people who have purchased the same or a compatible good or service. However, we have to keep in mind that traffic jams are also a negative consequence of network effects.

Third, in the case of negative externalities, it is often considered that it is the responsibility of the State to primarily manage those externalities. Indeed, public authorities may intervene through taxes and subsidies, as they may tax activities generating negative externalities and subsidize those generating positive externalities. We contend that the responsibility for managing those externalities can also be considered as being within the perimeter of the organization. Indeed, we propose to include the concept of “internalities” as a symmetry for “externalities”. Externalities are a consequence of the choice of a BM and the entrepreneur or the manager could have decided to internalize a given consequence or a set of consequences of its organization’s activities.

### 3.2 Externalities: the good, the bad, the undetermined

In a pragmatic approach, it may be difficult to qualify clearly externalities as being positive or negative. We may also observe that a BM may generate in the meantime both positive externalities and negative externalities. It seems that stakeholders may accept the coexistence of the two kinds of externalities. However, they may not accept if negative externalities are perceived as largely exceeding positive effects of the activity. For instance, in the case of Airbnb, positive externalities associated to the development of tourism in a given area also comes with drawbacks such as increasing price of real estate for residents, depopulation of neighborhood, and noise in collective housing (Carrasco-Farré et al., 2022). Things are becoming even more complex when we consider distinctively each actor in the ecosystem. Some consequences of a BM may appear as negatives for some stakeholders and positive for others, depending on their own BM.

Moreover, in a dynamic perspective, the distinction between the good, the bad and the undetermined consequences is complex as these consequences may eventually evolves. For instance, social networks may generate positive network externalities in a first stage, and then attract many adopters and among them haters and fake news producers. The success of such networks may lead at the end to negative consequences on individuals (bullying...) and on the whole community. Thus, positive consequences may become negative ones, or conversely.

### 3.3 Managing externalities and internalities through the BM

As a consequence of the naturalization of externalities generally observed, those externalities are most of time considered as the responsibility of the State or any other public or collective actor. In such a context, stake of managers become more “how to externalize negative consequences for my organization?” than “how to manage my externalities?”. Organizations often seek to internalize positive consequences of their activities and to externalize negative consequences. Thus, performance of many organizations is simply coming from the ability to let non-voluntary stakeholders to cope with the negative consequences of their activities.

However, it is positive to see that externalities can be managed by the organization itself, and not only by public authority. As noted by Ayres and Kneese back in 1969 concerning production of goods, “*residuals do not necessarily have to be discharged to the environment.*”

*In many instances, it is possible to recycle them back into the productive system” (p.286). Thus, externalities can become internalities and be managed.*

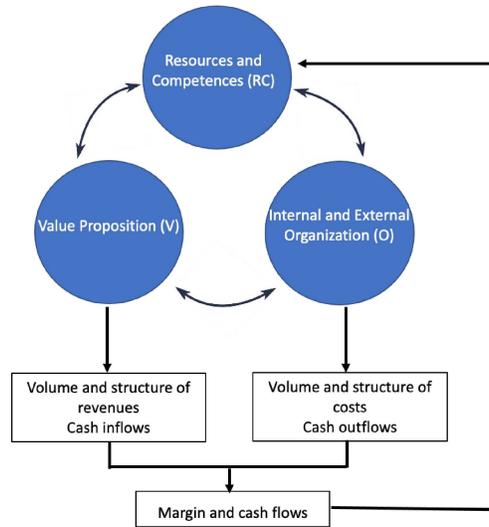
We define an “internality” as a consequence of a BM that the organization is managing internally. We propose that it is the BM of an organization that enacts if and how a consequence is an externality or an internality. Indeed, when an entrepreneur or a manager is designing the BM of her company, she can decide if each of the consequences will be kept internally or externalized. This arbitrage between internality and externality is defined by choices made to design the BM. However, it is also important to keep in mind that each time an entrepreneur or a manager is choosing to internalize a consequence of its activities, it implies to change various elements of the BM of its organization, creating new loops of causes and consequences.

## 4. The RCOV framework and deciding between externalities and internalities

Analyzing or designing a BM considering loops of causes and consequences and deciding between externalities or internalities for the consequences require a suitable framework.

Starting in 2004, we developed an analytical framework to analyze the current BM or design and implement the future BM of an organization (Lecocq et al., 2006; Demil and Lecocq, 2010). This framework, labelled RCOV (for Resources & Competences, Organization, Value propositions), combines parsimony with the capacity to account for the dynamics of relationships between components in the BM (Casadesus-Masanell and Ricart, 2010; Demil and Lecocq, 2010). Figure 1 displays the RCOV framework, which is circular in nature, allowing to analyze and create the various loops for performance and sustainability. It differentiates from other frameworks for BM innovation thanks to its ability to deal with platform business models (Cusumano et al., 2020) through the inclusion of network externalities mechanisms but also through its ability to analyze and define circular business models (Boldrini and Antheaume, 2021). RCOV integrates for instance the potential successive cycles of resources deployment, the potential reinforcing mechanisms of scales economies, learning or technology diffusion, and more generally the loop effects within the value creation and value capture processes.

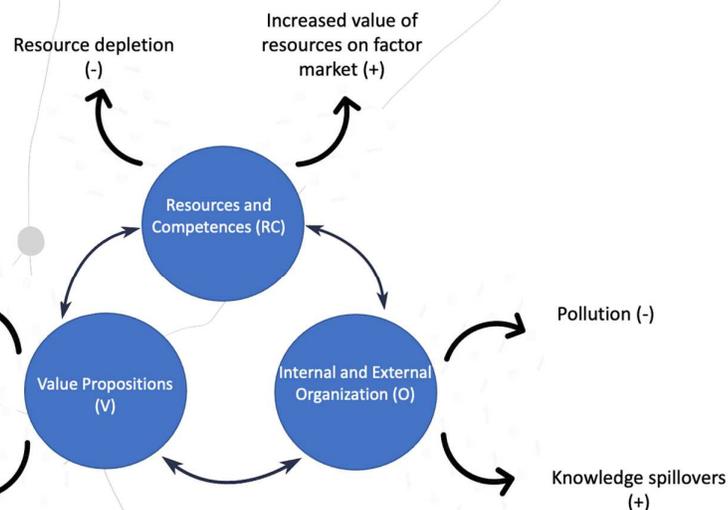
As mentioned by Spender (2010), rigorous frameworks are those based on theories. The RCOV framework derives from Edith Penrose's theory of growth of the firm (Penrose, 1959). In this theory, the growth of an organization involves, in particular, interaction between resources (which can be insufficiently exploited) and managers included in organizational systems. Indeed, interactions between resources and the organization lead to the development of new products and services. However, the RCOV framework also allows the inclusion of other types of loops between resources, organization and value propositions than those evoked in Penrose's theory. For example, the value propositions themselves can yield resources capable of generating new value propositions supported by the company's internal and external organization. This is the case for Google, whose search engine (value proposition) offered to general public is used to collect data (resource) and to generate new offers for companies based on advertising or data (value propositions).



**Figure 1: The RCOV framework (Lecocq et al., 2006; Demil and Lecocq, 2010)**

The RCOV framework is composed of only three main components (Resources and Competences, Organization, Value Propositions) interacting together. As a consequence, it suits well for complex connections between components of the BM (Boldrini and Antheaume, 2021) and it is often mentioned as suitable to capture the dynamics of the BM (Casadesus-Masanell and Ricart, 2010; Plé et al., 2010; Gerasymenko et al., 2015; Ziaee Bigdeli and Shi, 2016; Boldrini and Antheaume, 2021) compared to frameworks based on a linear approach. Indeed, value creation and value capture processes can rarely be considered as linear processes.

The RCOV framework allows to take into account positive and negative externalities arising from a BM. Figure 2 illustrates externalities emerging from loops of causes and consequences when operating a given BM. These externalities may include for instance natural resources depletion, pollution, or network effects.



**Figure 2: Examples of externalities of a business model (RCOV framework)**

Beyond the identification of externalities, managers may decide to change their BM in order to internalize some externalities, generating positive social or environmental impact. More generally, we contend that the identification and management of externalities should be central activities for managers and entrepreneurs.

## 5. Taking responsibilities in the process of business model design: On consequences, externalities and internalities

Our preceding arguments lead to consider that the fundamental dimension when designing and implementing a BM is the scope of responsibility it defines. This responsibility supposes the possibility of a free will and the ability to do otherwise (Stanford Philosophical Encyclopedia, 2019<sup>1</sup>). Consequently, defining the scope of responsibility depends on the purpose of the entrepreneur or on his values.

Milton Friedman (1970) defined this scope very narrowly several decades ago. He denied the interest of the concept of social responsibility with the exception of an individual proprietor who may act to reduce the returns of his enterprise “in order to exercise his ‘social responsibility’”. Friedman considered that “*there is one and only one social responsibility of business — to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud.*” (p.17). In his reasoning, Friedman excluded externalities, letting the government use taxes and regulations to fix social and ecological issues.

In the opposite position, some managers or academics have adopted a corporate responsibility view in which decisions in the business sector have to go beyond the company’s direct economic interests. This responsibility supposes managerial discretion and is driven above all by top managers who act for positive (e.g. attention to others) or negative motivations (e.g. threat of regulation or social control) (Swanson, 2008). Indeed, whatever their motivation, top managers define the ethical climate of the organization.

These debates paved the way for the adoption of various positions concerning the scope of responsibility assumed by an organization. In this article, we propose that this scope is reflected in how a BM manages the consequences of activities through externalities and internalities. This allows to avoid the slippery debates on moral convictions or ethical positions of managers, and to focus on corporate responsiveness (Ackerman and Bauer, 1976). As Swanson (2008) points out, “*corporate social responsiveness refers to how business organizations and their agents actively interact with and manage their environments, [whereas] corporate social responsibility accentuates the moral obligations that business has to society*”.

Sure, it is not always easy to evaluate the responsibility of an organization in observed negative consequences, as these ones may be produced by the intertwined BMs of various actors in an ecosystem and not only by the action of a single actor. Moreover, an organization doesn't always have the capabilities to correct these externalities. As aptly defended by Friedman in his tribune, after all, managers or entrepreneurs are not experts in all the social problems of society.

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<sup>1</sup> ‘Moral Responsibility’, Oct 16, 2019, <https://plato.stanford.edu/entries/moral-responsibility/>

Adopting the view that the scope of responsibility can be apprehended by how the BM is dealing (or not) with externalities, we identify eight policies that could be adopted to manage (or not) negative consequences of a BM (See Table 1). These policies reveal the scope of responsibility that an entrepreneur or an organization accept (or not) to take in charge. These policies display very differentiated levels of engagement from the organization and some are totally unethical from our point of view (the darker ones). Most organizations will use simultaneously various policies, depending on the type of externalities. Sure, we encourage organizations to focus on the most positive policies for sustainability (the lighter ones in Table 1).

Policies of the focal organization to manage the externalities of its business model	Typical actions undertaken by the focal organization	Illustrative consequences for the business model of the focal organization	Illustrative consequences for the economic and social ecosystems	Impact of the policy for natural ecosystems
<b>Hiding negative externalities</b>	Organization tries to dissimulate negative externalities to stakeholders	Delays social pressure, taxation, regulation or prohibition of the sector	Stakeholders lack of information and do not evaluate properly externalities of the focal organization	Negative
<b>Letting the ecosystem manage negative externalities</b>	De facto transfer of the management of negative externalities to some stakeholders	Reduces costs	Some stakeholders have to cope with or manage the externalities of the focal organization	Negative
<b>Transferring the responsibility of negative externalities</b>	Explicit transfer of the negative externalities to some stakeholders with their agreement	Limits risks, Reduces social pressure by assuming that the externalities are managed	Some (potentially new) stakeholders voluntarily manage some externalities of the focal organization	Rather Negative
<b>Compensating negative externalities</b>	Inclusion of costs to compensate negative externalities	Increases costs, Eventually adds new activities to the focal organization	New stakeholders enter in the ecosystem as they benefit from and/or operate compensation schemes	Neutral
<b>Reducing negative externalities</b>	Operate at smaller scale or slightly differently to reduce negative externalities	May limit the growth of the focal organization	Value creation increases for some stakeholders and decreases for others	Rather Positive
<b>Avoiding negative externalities</b>	Change importantly the BM to avoid a type of externalities	Time needed to operate effectively the new BM	Value creation increases for some stakeholders Change of the ecosystem with eventually new (positive and negative) externalities appearing	Overall Positive
<b>Transforming negative externalities into positive ones</b>	Convert by-products into value propositions for other stakeholders	May reduce costs, May create new sources of revenues, Increases legitimacy	Value creation increases for some stakeholders, Reconfigures the ecosystem through inter-organizational arrangements and coordination, Eventually new (positive and negative) externalities appearing	Overall Positive
<b>Internalizing externalities</b>	Innovate BM to develop new activities and manage internally some externalities	Increases costs on the short term, May reduce costs and/or create new sources of revenues on the long term, Increases legitimacy	Value creation increases for some stakeholders and eventually decreases for others	Overall Positive

**Table 1: A typology of policies to manage (or not) externalities and their consequences on economic, social and natural ecosystems**

- **Hiding negative externalities:** In this situation, the BM of an organization produces negative externalities and the organization tries to hide them to avoid taxation or prohibition. The archetypal example is the tobacco industry when it made deliberate

choices during decades, trying to create addicted customers but also to foster public ignorance and to cast doubt on scientific knowledge (Proctor, 2012). The industry invested a large amount of money to produce scientific studies to discard any oppositions and to lobby regulators.

This policy may delay social pressure and regulations for a while, but in the end proves morally questionable when information spreads.

- **Expecting the ecosystem to manage externalities:** Some organizations may be aware of their externalities but transfer the consequences of their BM (at zero price) to other actors in the ecosystem. For example, the soft drink industry received harsh criticism for contributing to the obesity epidemic and “*The cost of obesity alone, in treatment and lost productivity, runs to hundreds of billions of dollars annually*” (Nestle, 2015 cited in Gertner and Rifkin, 2018, p. 164). Health costs are largely supported by public or private health insurance. This led Coca-Cola to communicate on the integration of wellness and on fight against obesity as part of their core mission (Gertner and Rifkin, 2018).

This policy implies among other things that other stakeholders “accept” to bear the costs of externalities of the focal organization. It also implies that it is not concerned by its own negative externalities.

- **Transferring the responsibility of externalities:** An organization may be aware of the externalities that its BM produces but may decide to externalize or transfer some activities to other actors of its ecosystem with their agreement. These actors become responsible of the management of these externalities (or a part of these externalities). For example, cascading subcontracting may be viewed as an inter-organizational practice to avoid the full liability of work-related accidents or occupational illness. As the European Trade Union Confederation argues “*This development [to circumvent national legislation and workers’ rights] is even more visible in the field of subcontracting, which has become THE business model in certain sectors. Businesses have perfected their techniques to externalise risks and responsibilities while maximising power and profit*” (Securing workers’ rights in subcontracting chains, July 2021)<sup>2</sup>. The Confederation mentions some sectors in particular, such as food and agriculture, garment industry, road transport and construction.

This policy supposes that other actors in the ecosystem formally accept the transfer of responsibility from the focal organization. This focal organization limits its own risks and reduces social pressure by giving the impression of managing its externalities.

- **Compensating negative externalities:** The focal BM includes costs to compensate totally or partially externalities. This compensation may consist in money or actions once externalities have been observed. Referring to the “polluter pays principle” set out in the 1992 Rio Declaration, Grasso and Heede (2023) estimate the negative impact of fossil fuel producers to climate between 1988 and 2022. Their study concludes that the cumulative cost of climate damages attributed to the main producers for the period 2025-2050 was about \$70 trillion. The authors consider that these companies should pay consequently around \$200 billion each year until 2050 to compensate the climate damages and to help fight against global warming. While attractive, this policy raises questions such as: Are the compensation schemes equivalent to the costs borne by other public or private actors? How to distribute compensations? Can money compensate some irremediable damages? The

<sup>2</sup> [https://www.etuc.org/sites/default/files/2022-01/Securing%20workers%20rights%20brochure\\_EN.pdf](https://www.etuc.org/sites/default/files/2022-01/Securing%20workers%20rights%20brochure_EN.pdf)



compensation policy is generating costs for the organization. It may also induce new activities within the organization. Compensation may also necessitate to include new actors in the ecosystem of the organization. Indeed, these actors may operate compensation for the focal organization (for instance a company who want to plant trees is often operating with a subcontractor) or beneficiate from this compensation (for instance, a NGO receiving compensation from the focal organization).

- **Reducing negative externalities:** While most of human activities may present negative consequences, a BM may be designed to try limiting its externalities. For example, ecotourism promotes reconciliation between the conservation of nature and local cultures while providing a unique experience for visitors. Its goal is to “generate money in an ecologically and socially friendly way than other forms of land exploitation” (Koens et al., 2009: 1226) and to limit the impact of tourism. However, ecotourism still has its drawbacks and negative consequences at the social, economic and ecological levels.

This policy may limit the growth of a company deciding to reduce its externalities with its current BM. It may also reduce the growth of suppliers, client organizations or organizations proposing complementary products or services. Other actors may observe an increase in value creation due to the reduction of negative externalities impacting their life or activities.

- **Avoiding negative externalities:** Organizations may try to avoid partially or completely the generation of negative consequences of their BM. To do so, they have to innovate and change their BM. For instance, it is the case when car manufacturers try to reduce the pollution generated by the consumption of oil engines, by producing electric cars or hybrid electric cars (Helmers and Marx, 2012).

This policy requires most of the time to design a new BM that is radically different from the previous one. It implies to spot and analyse existing externalities to propose alternative solutions. However, value creation tends to increase for the actors that used to suffer from these externalities. Other externalities may appear due to the implementation of a new BM. For instance, while electric vehicles decrease the carbon footprint associated to the use of car, the production and lifecycle of batteries to power electric cars has generated new environmental consequences (Lave et al., 1995). Indeed, electric cars' batteries make them more carbon-intensive to manufacture than gas cars.

- **Transforming negative externalities into positive ones:** An organization can design the relationships with actors of its ecosystem to transform negative externalities into positive ones. For instance, the approach of industrial ecology or circular economy promotes specifically connections between companies located in the same area to recycle by-products of an industrial or an agricultural process in the process of another company (Jambou et al., 2022). In this case, the negative externalities (pollution or waste) become positive externalities, as by-products of an organization are used as inputs by another one.

This policy improves the management of material and energy flows by encouraging cooperation between different actors such as companies or households, and potentially reduces costs of a BM. It may decrease the social or ecological footprint of a BM and may decrease the costs borne by some actors in the ecosystem. Nevertheless, it requires the alignment of different actors' BMs in the ecosystem with formal or informal arrangements to implement virtuous interorganizational loops.

- **Internalizing externalities:** Organizations may explicitly internalize what used to be their own externalities or those of other stakeholders in their ecosystem. Internalizing externalities can be the function of some actors in the ecosystem such as companies specialized in recycling or re-use of products. But a company may also choose to internalize the negative consequences of its BM, which would have become externalities if not taken seriously into account. For example, the 'extended producer responsibility' principle tries to solve the piles of clothes that end up in local landfill sites or are shipped in bulk to countries in the South. Fashion companies may fund textile recycling programs by setting up their own recycling programs (Fortune.com, 5/31/2023)<sup>3</sup>.

Such a policy of internalization increases costs (to internalize the management of the BM consequences) but may also decrease other costs or create new sources of revenues on the long term by generating new virtuous loops within the BM of the company. For instance, internalization of externalities in fashion industry mentioned above create new costs as clothes need recycling, but it also increases cost of overproduction for producers, and thus incites companies to better evaluate production quantities and to move towards high-end products as they are concerned by recycling products in surplus.

The policy of internalization requires to acquire new assets and to develop new competences. It may also be necessary to establish new relationships with actors in the existing ecosystem or to extend the current ecosystem to find innovative solutions. Internalizing externalities renders potentially the activity of some actors in the ecosystem useless.

## 6. Conclusion

The BM approach (Lecocq et al., 2010) brings an extended view of organizations by considering that a BM defines the ecosystem in which an organization evolves and with which it interacts (Demil et al., 2018). This ecosystem is traditionally considered from the standpoint of value creation for stakeholders and value capture for the focal company. In this article, we adopt a different perspective by considering that the ecosystem is also the place where the externalities of a focal BM operate, eventually generating value destruction for stakeholders. While we may consider that managers are not always able to evaluate *ex ante* the full consequences of their BM (whether on the production side or on the consumption side), the perspective introduced here gives a central role to their responsibility. Indeed, an organization may take several stances concerning its externalities and may decide ultimately to internalize some negative effects of its activities. This perspective enables consequently to participate in the debate on the environmental and social responsibility from a BM perspective, giving a very pragmatic account on corporate responsibility.

To conclude, we can draw several implications from our developments.

From a normative point of view, designing a business model should not only be motivated by a potential increase in revenues or profit but also by sustainability for its ecosystem (and not only for the company itself). For managers or entrepreneurs, this implies to review regularly the externalities produced by the BM of their company, and to adopt a responsible stance considering that the management of these externalities is a central issue within their perimeter. Moreover, we suggest that some externalities may only appear in the long term

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<sup>3</sup> <https://fortune.com/2023/05/30/fashion-waste-recycling-programs-epr-proposed-laws/>



and that some unanticipated negative externalities may occur over time. This implies that both managers and researchers should adopt a dynamic view of these phenomena.

From a theoretical point of view, we argue that externalities should not be reified and depend above all on the BM design. The design of a BM reveals choices made to assume (or not) responsibilities, first deciding between externalities and internalities, and second deciding how to manage the externalities, once they are generated. This enables to adopt a pragmatic approach of responsibility that is not only based on the ethical principles supported by managers, nor on the discourses of these managers, but on the analysis of the externalities generated by their BM and on the choices made to manage these externalities. Conceptually, it is important to realize that negative externalities that are properly managed may ended up (in the case of the most virtuous policies to manage externalities such as 'Avoiding negative externalities', 'Transforming negative externalities into positive ones' and 'Internalize externalities') by being not anymore negative externalities (and eventually not externalities).

From a pragmatic point of view, the responsibility of managers or entrepreneurs is engaged when they decide to accept or not some consequences of their BM and then to manage these consequences internally or externally. In this article, we provide a typology of policies to manage (or not) externalities and discuss their consequences on the business model of the focal organization and on its ecosystem. These policies are more or less virtuous (some of them being totally immoral and very negative for environment and society). Our typology allows identifying type of actions that organizations may undertake and allows managers and stakeholders to work together to implement virtuous practices, creating progressively better business models.

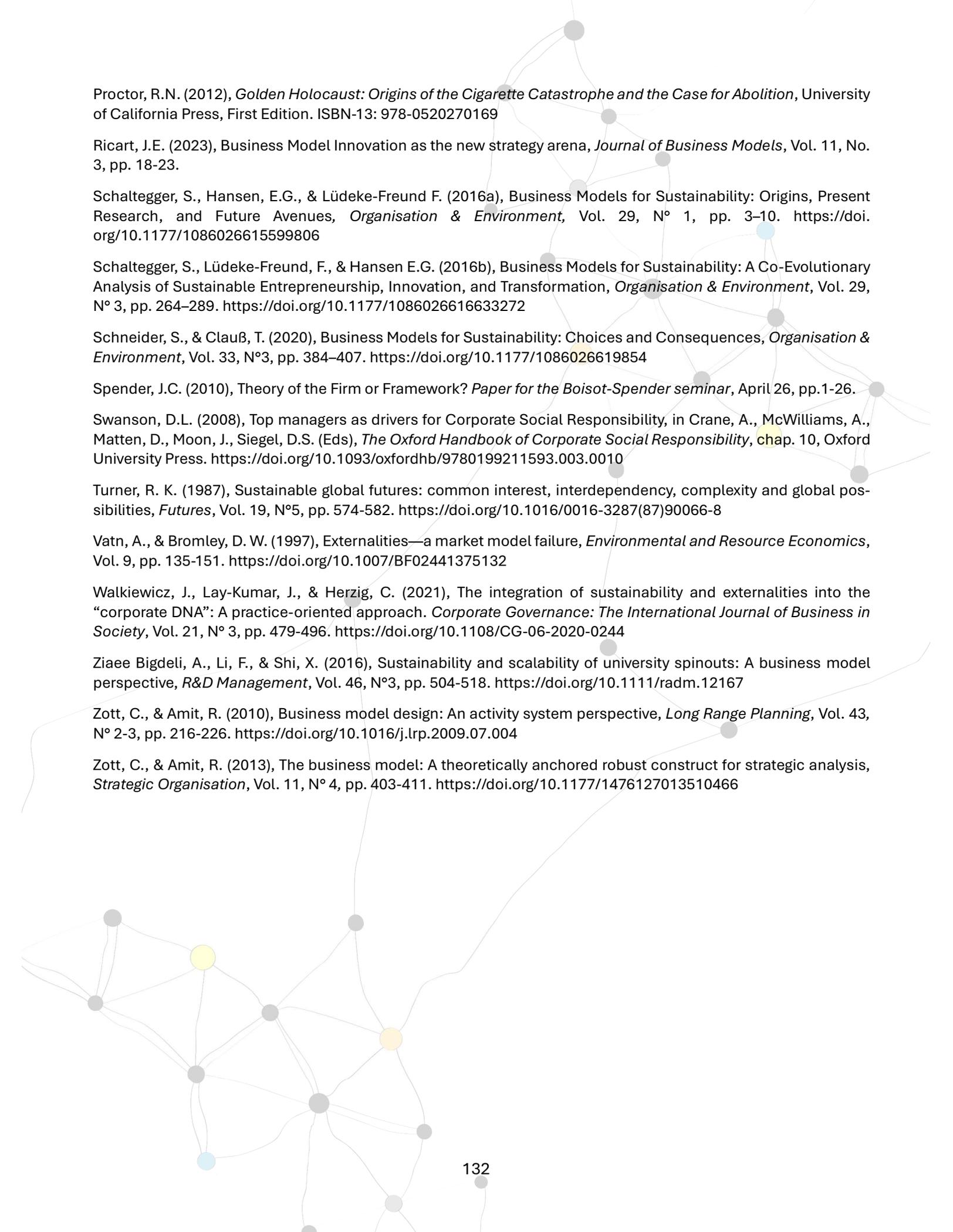
Sure, virtuous practices for the management of externalities are not easy to implement, as they suppose to question regularly the externalities produced by a given BM and to consider the impact of this management on environmental, social and economic outcomes. For instance, internalization may cause a competitive disadvantage (on some dimensions of the business) if one company internalizes some negative effects whereas its competitors do not. To avoid this competitive disadvantage, an organization could try to impulse best practices at the collective level (with competitors), or could incite public actors to regulate some business practices.

Finally, considering externalities in a BM perspective could change the rules of the competitive game. In most sectors, some BMs are competitive vis-a-vis more responsible BMs only because they externalize responsibility for the consequences of their operations. In other words, they are competitive because they do not bear the cost of their externalities. Really taking these externalities into account could give responsible BMs a chance to develop.

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