Reversing Materiality:
From a reactive matrix to a proactive SDG agenda[1]

Rob van Tulder[2] and Laura Lucht[3]
RSM Erasmus University Rotterdam, Partnerships Resource Centre

1. Introduction: overcoming the incumbent's curse

Leading (big) companies that apply sustainability-oriented innovation strategies could have a major – arguably decisive – impact on shaping a 'better world'. There are basically two approaches that these companies can adopt: [I] innovation as an extension of existing business models that are based on present markets and needs, or [II] innovation as an anticipation of new business models based on future markets and needs. The first approach relates to more gradual processes of – often incremental - innovation, whereas the latter approach has the potential of more radical – even disruptive – forms of innovation. The first approach is based on an extrapolation of trends, the second tries to 'back-cast' on the basis of desired future outcomes. The first seems the least risky strategy of the two, but is also considered to lead to stagnation in those areas of sustainability where 'transformational change' is required.

The literature in this respect talks about the *'incumbent's curse'*: big companies have a vested interest in the 'old way' of doing things, will consequently have great difficulties in changing and are therefore more inclined to bar change towards higher levels of sustainability – even if their leadership would be convinced that this is needed (Chandy & Tellis, 2000). Incumbents fail to adapt in particular because of their inability to master new competencies and routines, due to their embeddedness within an established industry network that does not initially value the new technologies and societal ambitions. This poses a particular challenge to the leaders of these companies. Research on the incumbents curse has shown, that this has been an important factor why so many seemingly 'big and powerful' companies in the end might even disappear for lack of adaptation to new realities (ibid). In short: they over-extended their use of approach I.

However, incumbents sometimes succeed in facing radical transitions – even creating them –by investing in internal capabilities and particular assets, by developing a pro-active vision on where to go to and by redeploying and leveraging their innovative capabilities in the new technological and market domains that can be linked to particular sustainability issues (Hengelaar, 2017). In short: by successfully adopting approach II they were able to 'reinvent' themselves through a particular business model innovation strategy.

The integration of sustainability in the innovation strategies of companies is determined by the degree to which sustainability issues can be made 'material'. An issue is material if 'it could substantively affect the organization's ability to create value in the short, medium or long term" (IIRC, 2013: 33). Corporations,

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[2] Professor in international business RSM Erasmus University Rotterdam, Academic Director Partnerships Resource Centre

[3] Research associate Partnerships Resource Centre

however, are confronted with a large number of sustainability issues which create sizable dilemmas in determining what to address and what not (Van Tulder with Van der Zwart, 2006). In the sustainability discourse, companies use so-called materiality assessments to determine the threshold at which specific sustainability issues are deemed so important by relevant stakeholders that they should address these in their strategy. Typically, materiality starts from the perspective of the company and prioritizes sustainability issues in direct response to stakeholder pressure.

In this chapter we will explain (section 2) the theory and principles behind this important technique as well as the type of strategies existing materiality approaches tend to favor (section 3). We will analyze why existing materiality techniques tend to prioritize incremental over radical forms of innovation.We observe that companies often stimulate reactive practices of issue management and consider international sustainability challenges as tactical and risk-related challenges, rather than opportunities for growth and innovation. This reinforces the incumbent's curse.

However, we also notice a new take on the materiality challenge (section 4), under the influence of the formulation of the 17 Sustainable Development Goals (SDGs). In September 2015, all 193 UN governments agreed upon a joint ambition for the year 2030 that ranges from poverty alleviation to effectively addressing climate change and health problems (UN, 2015). The achievement of most of these goals requires transformational change. Many incumbents have contributed to the formulation of these goals. International organizations (Global Compact, WBCSD) argue that the 17 SDGspotentially have a very important impact on the purpose of enterprises all over the world. A study of Globescan[i] (2015) shows that companies are considered to be extremely necessary for progress. Other studies (PwC, 2015; E&Y, 2016) reveal that more than two-thirds of (big) companies around the world are looking favorably at aligning with the SDGs. Furthermore, 87 % of a representative sample of CEOs worldwide indicate that the SDGs provide an opportunity to rethink approaches to sustainable value creation (Accenture, 2016). These companies share the potential to become 'radical incumbents' (B&SDC, 2017), but, this potential will only materialize in case companies are able to integrate the SDGs in their strategies.

The biggest challenge, therefore, remains to move from rhetoric to practice. This means to embed SDGs in strategic activities, and not only use them for philanthropic activities. Companies that try to succeed in making the SDGs part of their strategic planning, including their innovation strategy, have to make the SDGs "material" or real. In practice this implies that the SDG agenda is successfully integrated in the materiality assessment of companies and that companies start 'walking the talk''. The materiality logic is reversed. By selecting a universal agenda that will be relevant for at least 15 years, companies can channel not only their strategies, but also reap opportunities to rethink sustainable value creation and structure their sustainability efforts. Section 4 will illustrate the efforts of a number of frontrunner companies that have been adopting this practice by using the SDG framework to design new business models and new strategic ambitions. Can they qualify as 'radical incumbents'? It's too early to assess the ultimate success of these approaches, but we can nevertheless define guiding principles for reversing materiality (section 5).

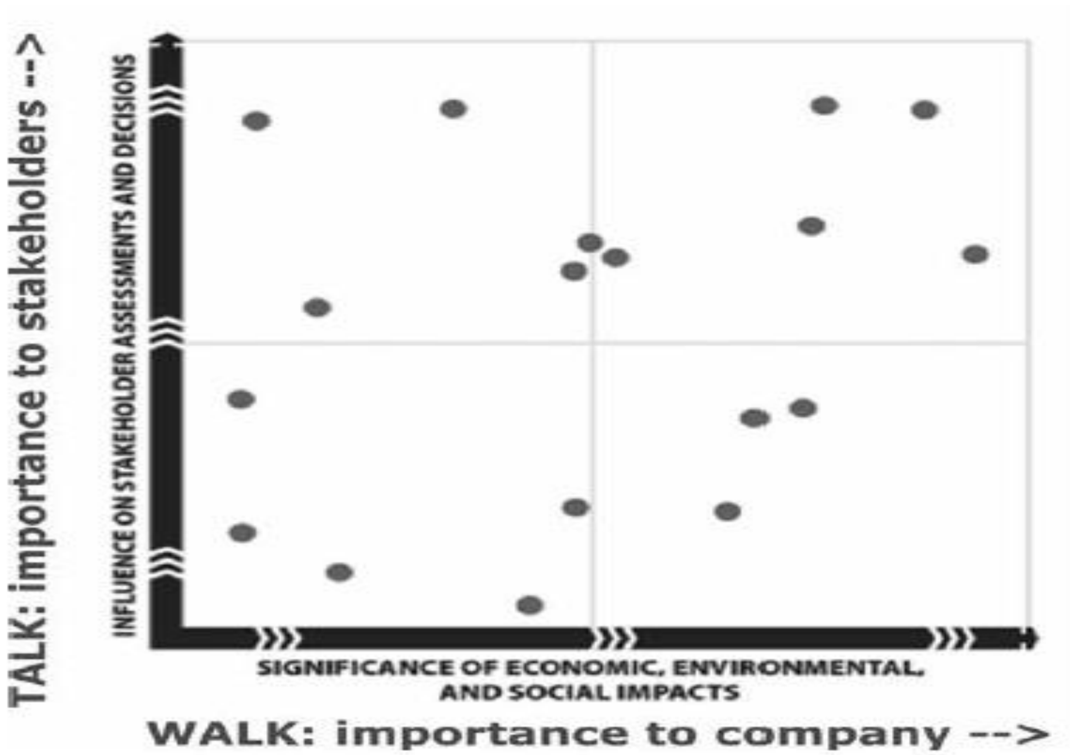
2. Materiality as Principle

Different stakeholders have diverse and non-aligned informational needs to make effective decisions. Materiality has become a reporting principle that is intended to provide stakeholders with 'complete' and 'coherent' information to assess a company's performance (Calabrese et al, 2016; Edgley et al, 2015). Materiality is an interdisciplinary and multifaceted concept that operates as an information threshold in favor of the users of the information (Edgley, 2014). It originated as an accounting and auditing concept in financial reporting. Its objective was to reduce risk to an acceptable level where its key determinant was whether the omission or misstatement would influence investor-decisions (Eccles et al, 2012). The materiality principle was introduced in the area of sustainability reporting by the Global Reporting Initiative (GRI) as part of its 2006 G3 reporting guidelines and updated in its 2011 3.1 and 2013 G4 guidelines. Materiality in this set-up is basically concerned with identifying those environmental, social and economic issues that matter most to a company and its stakeholders. It supposes that shareholders increasingly want to include the ethical perspective when taking decisions. Moreover, it acknowledges that shareholders are no longer the only stakeholders to focus on. Views of a wider group of stakeholders, such as customers, employees and communities are taken into account. This implies a wider focus and different approach regarding what is important for business. In addition, it is intended to provide inputs for managing for the future – including a longer term focus on issues that could affect a business strategy - and not about repeating what worked in the past (Murninghan & Grant, 2013).

The fundamental function of materiality is filtering topics and prioritizing stakeholders. It therefore necessarily involves selection, inclusion and exclusion of information. This should result in reports that are centered on issues that are deemed the most critical to inform selected stakeholders of an organization (Jones et al, 2016; Eccles, 2016). Consequently, it should help stakeholders to understand how sustainability issues can be a catalyst for innovation and growth and how these could be integrated in specific business activities (Bowers, 2010). Defining materiality is therefore also seen and used as a legitimating tool to change stakeholders' expectations (Manetti, 2011).

The outcome of the materiality determination process is a materiality matrix. This matrix, in theory, enables a company to identify those (sustainability) issues that affect their long-term success. A materiality matrix shows all topics that are (perceived) of high, medium and low interest for the company as well as its stakeholders at this moment. It should be based on 'what matters' which is identified through a thorough internal analysis and stakeholder engagement. The materiality matrix as introduced by GRI builds on a longer standing practice of companies in the area of "issues management" in which they drew issue-priority matrices in order to position issues in terms of importance and 'likelihood' of occurrence (cf. Van Tulder &Van der Zwart, 2006). It was largely used internally as a risk management strategy. Later, some companies included issue priority matrices in their sustainability reporting. The archetypical materiality matrix confronts the importance of issues for stakeholders at the Y-axis (which identifies those topics that the company is supposed to 'talk' about) with the importance of these issues to the company on the X-axis (which identifies how important it is to 'walk') (Figure 1). The materiality matrix then consist of at least four quadrants that presents combinations of relative importance. The top right quadrant of a materiality matrix chart contains issues that are not only significant to the reporting company, but are also issues that the reporting company's stakeholders care deeply about. GRI advices companies to spend the bulk of their report (talk) about how they are addressing these issues.

Figure 1 exemplary GRI G4[ii] Materiality Matrix



3. Materiality in Practice

Determining materiality means being engaged in a lengthy and repetitive process that often consists of the following steps: identification of material topics, prioritization, validation and review (GRI, G4). Seeking management support and stakeholder feedback are essential conditions. Different frameworks (e.g. SASB, IR, GRI) can be used as guidance, but there's no generally accepted standard. Neither is there a universally accepted definition of materiality in the sustainability context.

In theory, the output of the materiality determination process is the disclosure of truthful and accurate information about a company's performance and impact. In practice this proves to be quite difficult since this information needs to be tailored to different stakeholder groups. Companies are then confronted with the question which stakeholders to select and what expectations to manage. Aligning corporate behavior with stakeholder expectations has become a business priority (Dawkins, 2005). Firms have to manage conflicting interests and objectives and articulate this in a credible way in order to drive learning and innovation (AccountAbility, 2006). Sustainability reporting is considered an effective channel of communicating sustainability efforts, but a major risk is that companies only publish what management deems relevant or how they interpret and frame stakeholders' concerns. A study of AccountAbility (2015) shows that most companies are using stakeholder engagement and materiality as risk-based tools to manage reputation rather than opportunity-based tools.

Although stakeholders increasingly demand transparency in order to know the actual impact of organizations' operations, transparency is an often-cited problem when talking about the materiality process. Frequently companies don't disclose how they determine the material issues (Mio, 2010). In addition, the jury of the Dutch Transparency Benchmark, an annual research on the content and quality of sustainability reports of Dutch companies, indicated that "only a few companies are transparent and honest regarding their own weaknesses vis-a-vis peers. The same applies for addressing and communicating on dilemmas: every company is faced with dilemmas, but not every company is transparent on these aspects" (MoEA, 2016:17). IIRC (2013) concludes that sustainability communications are often a PR exercise, telling feel-good stories about irrelevant issues, rather than a meaningful story about value creation.

The effective use of materiality matrices in sustainability reports is highly contested. The plotting exercise contains a large number of (often subjective) assessments and selections. Manetti (2010) indicates that stakeholders are often not involved in defining the contents of the report and it's not clear how representatives of the various groups are selected. He argues that sustainability reporting practice shows that corporations only use stakeholder engagement as a legitimization device and to manage stakeholders effectively. Critics indicate that materiality is not supposed to be an exercise in ticking the box or say what the lawyers state. It should be about how the business activities affect business viability and the lives of the company's stakeholders. It should be a catalyst for planning and action[iii]. There are also different incentives that drive the process. It may be mandatory because it is required by law (e.g. France, USA, South Africa), or voluntary as part of a sustainability reporting framework or simply to maximize the efficient use of resources.

Critical studies on the use of materiality- or issue priority matrices found that they are more about intent than about performance: Implementation is rarely guaranteed. Matrices are often supply driven instead of based on (tacit or future) needs, are relatively static, while every year priorities shift due to changing stakeholder engagement, and don't sufficiently take into account diversity between and within stakeholder groups. Materiality matrices are mostly accumulated through consultation with a selected group of (friendly) stakeholders that are not necessarily the most critical or important ones. The impression exists that in many instances most important topics are pre-determined by the company (with some limited input from stakeholders). Moreover, there is often a difference between the public matrix and the one that is being used for internal use. Most matrices are very individualized assessments that do not show the industrial benchmarks used by peers and investors to compare performance nor key sustainability performance indicators within an industry (Bouten& Hoozée, 2015; Murninghan & Grant, 2013; Zhou & Lamberton, 2011). In addition, KPMG (2014) states that senior management is often not involved in the materiality assessment process, businesses are too complex for a meaningful materiality assessment, material topics are too broad or overlap and there are more material issues than the company can (or wants to) manage.

4. Reversing Materiality: applying SDGs

By introducing the SDGs and including major topics as defined by society in general and not only by their own (selected) stakeholders, companies are potentially taking a first step to get out of a reactive approach and to move towards a more active approach. This trend is strongly endorsed by international organizations (OECD, WRI, WBCSD, WEF) which emphasize that feeding the SDGs into a firm's strategic planning process is a major opportunity for a company's long-term success.

The SDGs can inform a company's materiality analysis, serve as a lens in goal-setting and help define the relevant issues for the sector, value chain or country the company is operating in. The common framework of action and language that the SDGs constitute provides a unified sense of priorities and purpose which facilitates communication with stakeholders. The goals reflect stakeholder expectations and future policy direction at the (inter)national and regional level. Hence, advancing the SDGs can help mitigate legal, reputational and other business risks, but more importantly, it can further a better understanding of the sustainability context and enable companies to shape and steer their business activities and capture future opportunities through products and services that address global societal challenges (GRI et al, 2015; WBCSD, 2015). In this way they can engage more deeply as a positive and strong influence on society (Bakker in PwC, 2015).

The engagement of big companies with the SDGs, however, still takes place in a climate of considerable distrust and scepsis as to the real motivations of companies. Are they willing to walk the talk? The 2017 Edelman Trust Barometer[iv] shows that 75 % of general public around the world agree that "a company can take specific actions that both increase profit and improve the economic and social conditions in the community where it operates". Nevertheless, research of Corporate Citizenship[v] (2017) shows that businesses have the tendency to use the SDGs for communications, but they neglect the strategic implications. Moreover, whilst 99% of their respondents said that their company was aware of the SDGs, 20 % indicated that they had 'no plans to do anything about them'.

Sceptics - as well as the optimists - participate in a complicated discourse on the question whether (big) companies are actually willing and able to contribute to sustainable development. Companies have four strategic options (Cf. Figure 1):

1) Don't talk and don't walk (**Inactive**): This is the traditional (neoclassical) view on companies in which they adopt a narrow 'fiduciary duty' – with only direct responsibility to shareholders and owners - and consequently keep to relatively simple goals like profit maximization. This position feeds into low expectations/trust of society on the ability of companies to contribute to sustainability.
2) Talk, but don't walk (**Reactive**): This is the archetypical reason why sceptics refer to 'green-washing' – or in the case of UN initiatives 'blue-washing' - of companies. It happens when companies are not serious about their contribution to sustainability, but nevertheless suggest the opposite. This can also apply to companies that are more serious about sustainability issues, but nevertheless limit their sustainability strategy to marginal activities (and organize this for instance in their philanthropic foundation). Some are already talking about 'SDG washing'[vi].
3) Walk, but don't talk (**Active**): Faced with the societal trust gap, a number of frontrunner organizations are choosing not to talk (too much) on their societal ambition, for fear of not being able to satisfy all critics. For instance, when operating in countries with corrupt regimes, it is not always wise to be too transparent on a number of issues.
4) Talk and Walk (**Pro-active**): This creates alignment of trust in case of well-communicated processes, but because most issues are very complex and take considerable time, there is no guarantee that companies that are willing to really integrate sustainability in their corporate strategy are actually able to do this. The managerial challenge becomes not only which issue to prioritize, but also what to communicate and which stakeholder to engage.

Companies that adopt options 1 and 2 reinforce the idea of an 'incumbents' curse. Options 3 and 4 could be evidence of radical incumbents that aim at disruptive sustainability. The Business & Sustainable Development Commission (2017) sees evidence that radical incumbents arise. They observe that already 30 Global Goal 'unicorns' – as they call them– exist with market valuations of more than US$ 1 billion. They shape the SDGs by deploying five new business models: sharing, circular, lean service, big data and social enterprise. They have made the SDGs material by integrating them into corporate strategy (option 3) as well as engaging others in their strategy to create an enabling environment (option 4). The more companies are able to line up with partners across their own sector as well as with non-market parties, the more they are able to create an enabling environment that can create radical or disruptive innovation (Van Tulder et al, 2014). In the latter case, coalitions of parties create new institutions (new rules of the game) that can speed up the spread of disruptive sustainability tremendously in particular when supported by (big) incumbents. The SDGs facilitate this type of coalitions, because they were also created by a coalition of governments, civil society organisations and knowledge institutes (UN, 2015).

The SDGs, when used to broaden the materiality approach as an input for strategic planning and innovation, require that companies move beyond their previous selection of material issues and don't 'repackage' old priorities to fit the SDG agenda. The challenge is not to pick the easiest, most positive or obvious goals, but to select those that are material to the business (PwC, 2015). Nevertheless, this is no easy task since the SDG ambition level is high. This can result in a short-term focus with relatively quick wins to boost the company's performance instead of transforming core business strategies. Corporations can have a 'selection bias': only those issues receive priority that they would have embraced for defensive reasons. Applying the original definition of materiality becomes additionally challenging with the inclusion of more than a limited number of sustainable development goals: how to find agreement on what actually entails corporate 'performance' (with or without societal impact), or 'complete' and 'coherent' information? By prioritizing the right global goals in their strategy agenda, companies cannot only anticipate the disruption that is likely to appear in the future, but also shape the direction of the disruption to their competitive advantage (B&SDC, 2017).

Making the SDGs ''material" not only necessitates internal change of companies, but also requires external alliances to facilitate change in the right direction. Companies can apply different techniques for this. Since the finalization of the SDGs, many companies have been using the framework to enable a systematic discussion on business model innovation approaches. Take three Dutch frontrunner incumbents as an example: Philips, DSM, Unilever (Table 1).

Table 1 Materiality of the SDGs and organizational alignment

Company	SDG priority (major action)	Alignment with..	Logic as formulated by company
Philips	SDG 3 (health) SDG 12 (responsible consumption and production) SDG 13 (climate action)	Strategy and innovation: Innovation hub strategy (pilots in Africa); Community Life Centres; NGOs in health	We aim to improve the lives of 3 billion people a year by 2025 and have 95% of Philips revenue linked to the SDGs.
Unilever	All SDGs	Sustainable Living Plan; supply chain and marketing: sourcing of raw materials and the use of brands by consumers;	Grow our business, whilst decoupling our environmental footprint from our growth and increasing our positive social impact. “We have an opportunity to unlock trillions of dollars through new markets, investments and innovation. But to do so, we must challenge our current practices and address poverty, inequality and environmental challenges.”
DSM	SDG 2 (zero hunger) SDG 3 (health and well-being) SDG 7 (affordable clean energy) SDG12 (responsible con-sumption and production) SDG 13 (climate action)	Internal R&D aims and value chain; general partnering approach to ‘accelerate contributions to the other 16 SDGs’.	Addressing the challenges of nutrition & health, climate & energy and resource scarcity drive our business and innovation strategies. We believe that our expertise in health, nutrition and materials position DSM well to actively contribute to the Sustainable Development Goals (SDGs)

Source: based on company reports

All three companies initially considered all SDGs in internal discussions involving strategic departments and sometimes also suppliers Most of them linked this directly to their innovation strategy and/or towards their suppliers and the communities. They set concrete (material) global sustainability ambitions: Philips[vii] aims at creating access to health for 3 billion people by 2025; Unilever[viii] aims at helping more than 1 billion people ‘take action to improve their health and well-being’ by 2020; DSM[ix] is less specific, but identified three key areas in which the company can drive sustainable markets: nutrition, climate change and circular economy. All three companies acknowledge that their international scale and innovative capacity – the characteristics of an incumbent firm – are essential qualities to provide solutions to urgent societal challenges. An active support of the SDGs helps corporate leadership to align internal and external stakeholders. Whether they will succeed in this ambition and how fast, is still unknown. But all three companies have reinvented themselves several times over their more than 100 year history, which in any case makes them relevant benchmarks for measuring the success of a reversed materiality approach based on the SDGs.

5. Conclusion: Guiding Principles of Reversed Materiality

The origins of materiality can be traced back to accounting and risk management. It has recently been introduced in the area of sustainability as a leading principle in the management of stakeholders and issues. The concept of materiality helps big (incumbent) companies in theory to provide a credible and accurate view of its ability to create and sustain value. It can inform company strategy and decisionmaking as it shows the areas where it has most substantial impact. We argued that in practice issue prioritization is often a reactive practice where companies choose to report on the relatively 'easy to solve' topics or only on those subjects that have been negatively pointed out by stakeholders. This seriously lowers its ability to be really (materially) integrated in the strategic planning of companies.

The SDGs, by their set-up and framing, provide a unique opportunity for companies to engage more proactively with stakeholders. The major challenge is how to make the SDGs more 'material' than existing stakeholder approaches. We discussed some general expectations and considered some specific examples of the way frontrunner companies are using the SDGs to move away from incremental to more radical (systemic) innovation. Reversing the materiality approach implies that companies move from an inside-out orientation in issue prioritization and strategy building to a more outside-in approach in which societal needs are considered material. Issues can only be selected as low or high priority for the short-term or longer-term after close consideration of the interrelation of these needs with the company's present and future possibilities to create societal value.

To generalize, reversing materiality is a necessary condition for using the SDGs as strong mechanism for guiding strategic planning. Companies not only have to address their own issue priorities – largely as part of a risk management strategy - but also look at future possibilities as part of an opportunity-seeking strategy. Reversed materiality is based on seven guiding principles:

1. **Depart from societal needs and ambitions as defined by the SDGs**; understand how they are related and might affect your business directly or indirectly now and in the future; realize that the legitimacy of your company depends on the value that you create for society now and in the future;
2. **Make a gap analysis**: consider why some of these SDGs were or weren't addressed in your existing materiality matrices; is this an indication of a selection bias in topics and stakeholders? What does this tell you about your leadership as a company and the level of trust that you can expect from various groups of stakeholders?
3. **Assess your present materiality**: then define the level of materiality that you have been able to establish in your internal and external prioritization of issues; check whether you might conclude that you already 'missed' out some 'easy' opportunities on this topic;
4. **Define present and potential spill-over effects**: consider the extent to which each of the SDGs that you are now prioritizing, are connected to other SDGs and the extent to which you are affected indirectly by initiatives in these SDGS (negatively or positively); decide your level of engagement in some of these other areas;
5. **Assess your stakeholder portfolio**: which representatives for which issues are missing?; which partnerships can be constructed for effectively addressing the issue?: coalitions of the willing (probably the present stakeholder constellation that helps in constructing the present materiality matrix) versus coalitions of the needed (possibly more critical stakeholders in actual priorities and future stakeholders in those areas that are not yet a priority, but that are closely linked to core SDGs)
6. **Define a future agenda:** Define those SDGs that you might want to get engaged in for the future (seizing opportunities and striking potential alliances)
7. **Connected leadership challenge:** make the various tipping points (internally and externally) that are necessary to make the transition from a reactive to a proactive approach material (cf. Van Tulder et al, 2014). Effective leadership is defined by mobilizing support to efficiently overcome these tipping points. Define those departments in your organization that are willing and able to support an integrated and strategic approach.

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