Transforming sustainable business as usual: A tool encouraging businesses to go further

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Abstract: Through our systems of production and consumption, we have already surpassed several planetary boundaries. Therefore, far-reaching transformations are required to ensure that human activity returns into the limits of planetary carrying capacity. For business, these transformations imply moving beyond the status quo and reorienting business activities by fully integrating environmental and social concerns. Business (model) tools can drive business innovation towards such integrated sustainability. While tools for sustainable value creation and circularity exist, they do not yet stimulate companies to look beyond and are missing a vision towards which businesses should be working. Therefore, we developed a prototype for The Road Ahead, a business tool in the form of a board game that aims to encourage advanced sustainability actions. Based on a diagram showing the hierarchy of Sustainable Business Models, the game takes players through to the next steps, moving from business action on efficiency, over net zero, circularity and sufficiency, towards regeneration and flourishing. The interactive quiz nature of the board game is intended to provide information at the same time as questioning players' assumptions by showing what more can be done. The tool is developed to be of short duration and combinable with existing tools, to provide a goal post in business innovation sessions to measure current and future sustainability ambitions. In the next steps, will be reviewed and tested to ensure that it meets this objective.

Introduction

Humanity is living in the age of the Anthropocene (Crutzen & Stoermer, 2000), where patterns of production and consumption directly impact planetary systems. Through current lifestyles, we have surpassed six of the nine planetary boundaries into a zone of uncertainty, including climate change, biodiversity and land system change (Persson et al., 2022; Steffen et al., 2015; Wang-Erlandsson et al., 2022), with implications that we cannot yet ascertain. Far-reaching transformations are required to limit resource extraction and mitigate climate change. While many businesses are working towards more sustainable operations, most focus on efficiency improvements or 'low-hanging fruits', such as supporting the lower levels of the waste hierarchy (Kirchherr et al., 2017). The far-reaching transformations that are required, however, mean that businesses need to move beyond the status quo towards a circular economy that integrates sufficiency, regeneration and flourishing (Bocken et al., 2022). While indispensable for future

sustainability, the circular economy is not yet implemented in a way that guarantees sustainability (Velenturf & Purnell, 2021) and concepts going beyond circularity still hold a niche character in the business community.

Business innovation towards sustainability can be promoted by business model (BM) innovation tools. These can take different forms and are supporting materials to help ideate and change business practices. Perhaps the best known tool, the Business Model Canvas (BMC) (Osterwalder & Pigneur, 2010), has been adapted by researchers to include sustainability considerations (Bocken et al., 2013; Jones & Upward, 2014; Joyce & Paquin, 2016). Other tools for sustainable business model development have taken the form of archetypes (Bocken et al., 2014) or typologies (Luedeke-Freund et al., 2019), and tools have been developed to support experimenting with and implementing circular business models (Konietzko et al., 2020). Yet, while these tools provide concrete support for BM innovation, they do not yet provide a vision for business to go beyond circularity and do not explicitly

integrate fundamental concepts, such as sufficiency and regeneration (Bocken et al., 2022). Existing tools largely encourage incorporating sustainable value in a business model, but the larger vision of what far-reaching transformations are needed, is missing. Therefore, we asked the question: *How can advanced business sustainability transformations be encouraged with the help of tools?*

Realizing that there is a need not just for more radical tools (e.g., on sufficiency or regenerative business), but also for an overall vision of what lies ahead, we developed an introductory tool that can be combined with others. 'The Road Ahead' is a short-duration tool offering an introductory, low effort way for participants to think beyond their existing understanding of sustainability. Building on the work around serious games, 'The Road Ahead' was realized in the form of a board game, enabling play that transmits serious content in a playful and engaging manner, supporting learning and challenging existing sustainability ambitions. Ultimately, the tool's aim is to create a vision of business sustainability and to showcase to businesses that they can (and should) aim higher on the ladder of sustainability. It is based on the Hierarchy of SBM archetypes visual from Bocken and Short (2021) that identifies flourishing as the intended sustainability outcome, in line with work by Ehrenfeld and Hoffman (2013). Designed as a modular add-on or introduction to a session, it can be easily combined with existing tools and used as an introductory exercise or in-between sessions to review sustainability ambitions.

Background

While many businesses are working towards sustainability, efforts are often limited to efficiency and productivity improvements, installing renewable energy sources or clean production technologies (Kirchherr et al., 2017). While these can be sustainable business model and are represented in the SBM archetypes (Bocken et al., 2014), these archetypes were intended as complementary and were presented by Bocken and Short (2021) in a hierarchy of archetypes moving towards stronger sustainability: from efficiency over net zero, circularity, sufficiency, net positive towards flourishing. The authors suggest that business and policymakers should "set ambitions to ultimately target solutions at the

top of the diagram" (Bocken & Short, 2021, p. 11).

One means of helping businesses innovate and change towards sustainability are business model tools. Tools are used to "support understanding, assessment, creativity and/or change on particular practices" (Velter et al., 2021, p. 3) and have been designed to support the business transformation to circular and sustainable business models. Tools to incorporate sustainability in business models have attempted to include the environment and society as stakeholders or focus on value creation beyond financial profit (e.g., Bocken et al., 2013; Jones & Upward, 2014; Joyce & Paquin, 2016). As discussed, these tools support the ideation and implementation of sustainable business models but do not provide a more advanced understanding of the road ahead towards transformative change. Recently, the Doughnut Design for Business tool was developed, which helps companies review their main structures and identify levers towards a regenerative and distributive economy (Sahan et al., 2022). While this tool provides an overarching vision of business within 'the Doughnut' of planetary boundaries and social well-being (Raworth, 2017), it does not easily work with business model innovation, as it revises business governance, purpose, networks, finance and ownership in a 4-5 hour workshop. Thus, despite encouraging businesses to look at the underlying factors and transform towards strong sustainability, it might be less appealing to business, being time-consuming, less intuitive and not easily combined with BM innovation. Furthermore, it does not yet stimulate companies to question overconsumption and reconsider the need for high resource throughput and does not present concrete business model action towards strong sustainability. Therefore, we decided to develop a games-based tool to combine with what is already there and fill this gap.

Game-based approaches can be useful for collaborative ideation, for instance by "reframing problems from multiple perspectives" and "offer[ing] frameworks for visualizing problems and solutions" (Peters et al., 2020, p. 2). Serious games are stand-alone activities to educate and raise information. They have also been used by organizations in building sustainable operations and can support sustainable product or business model

innovation (Whalen & Kijne, 2019). Examples include the Risk&RACE tool (Whalen, 2017; Manshoven & Gillabel, 2021) to support circular economy business model innovation or the Play it forward game to implement sustainability in the design process (Dewulf, 2010). As pointed out by Ouariachi et al. (2018): "The use of serious games […] has proven to have potential as a way of inspiring awareness, acquiring understanding, and obtaining high participation rates in a broad audience who might, otherwise, not be motivated to care about climate change or carbon reduction, energy efficiency, and sustainability" (p. 4). We therefore hoped that relaying serious content and questioning assumptions through a game format might more easily reach a potentially less interested audience.

Methods

As recommended by research on business tool development, the initial tool was developed based on knowledge from research and practice (Bocken et al., 2019). A tool prototype was developed in the form of a board game. The board game was developed to be played in-person to encourage group activities but there is also potential to create an online version of it. It is specifically meant to be combined with other tools and used as an introductory exercise to an ideation session or in-between sessions to review ambitions. It is designed to be used by businesses but should also prove useful for groups of students (particularly in business-related disciplines), for policy makers and academics. The low barrier, short duration character of the game (intended at around 30 minutes) should facilitate use in diverse settings. While a debrief after the game with a facilitator is intended, the game is self-guided and requires only a short instruction manual. The debrief would include discussing where the participants saw their own and their company's action before playing the game and then discussing where they think they should aim on the board. Some requirements that led the development process for the game are detailed in Table 1 with the resulting design decisions.

The tool should	Design decision
… provide a vision of business sustainability that goes beyond the common strategies, to more sustainable actions.	The Hierarchy of SBM archetypes framework from Bocken & Short (2021) was adapted for the board to symbolize the 'ladder' structure of progress towards flourishing and the need to move beyond simple actions.
… be combinable with other tools.	The game is of short duration and broadly applicable, with a high-level vision and varied business examples to inspire across sectors.
… provide information on different levels of business sustainability and challenge existing assumptions.	Each level has an 'entry card'. The first player/team to cross into the level is asked to read the 'entry card' aloud, introducing the terms (e.g., circularity, sufficiency). Question cards contain multiple-choice questions related to the level, with a brief explanation for the correct answer.
… be based on sound information.	All questions and statements in the game are based on research and real-life cases. Every card has a disclaimer with sources so players can look up more information.
… inspire.	Cards include real-life business cases with sustainable business models and cases of bad business sustainability performance (e.g., greenwashing). Each real-life case is named and a source is provided.
… be fun.	The game is of short duration and involves a race character, so might increase competitiveness, but can also be played in teams and promote collaboration. 'Risk' cards are added to increase the unpredictability of the game, while providing information. There is a choice in the final level to take a shorter path with more 'Risk' fields, thereby offering variety.

Table 1. Design choices for The Road Ahead tool.

Taking the Hierarchy of SBM archetypes as a starting point, several potential ways of designing the game were considered. Different prototypes were developed and reviewed with colleagues. The current (but not final) version of the game is presented in the results.

Results

The Road Ahead is a board game for up to four players or groups of players. It is self-guided but should ideally include a debrief with a facilitator. Players take up the role of a fictional business and move across the board with six different levels, each representing an SBM archetype from efficiency to flourishing. Players start in the efficiency level and work towards flourishing. Each level (usually) has four steps and to move forward a step, the player or team must answer a question card from that level. Each level also holds one 'risk field' where a risk card is drawn. They hold brief descriptions of good or bad business sustainability performance (e.g., design for repair is good, greenwashing is bad) and the players move back- or forwards accordingly. Every card is read aloud, with another player posing the question and its multiple-choice options and then the correct answer and explanation after the answer attempt. Players can answer one question, then it is the next player's turn to keep up a fast pace and high engagement. If a question is answered correctly, the player moves forward. If the answer is incorrect, the player must stay on their position.

Each time a new level is entered, the first person to enter can turn over and read out lout the 'level entry card', a short introduction to the concept. Figures 1-4 show the game board, exemplary question cards, an exemplary risk card and a 'level entry card' for circularity.

Discussion and Conclusion

In the next step, the tool will be reviewed by subject experts and tested with students, academics and, finally, companies to ensure that it fits company needs and expectations (Bocken et al., 2019). Since many serious games tools lack scientifically accurate assessments (Stanitsas et al., 2019), trial rounds will include data collection on the efficacy of the tool in achieving its learning objectives: understanding and encouraging more advanced sustainability actions. Participants will be asked about their knowledge of the different sustainability levels

in advance and after the game. They furthermore will be asked about how ambitious they think their company is before and after the game. A survey will be developed to that end and short interviews might be integrated for more in-depth qualitative insights.

This research adds to existing work on serious games for business sustainability innovations. It provides a practical tool that complements and advances existing tools by challenging assumptions, setting a vision and demanding transformational action in a playful and engaging manner. We also gained research insights into the process of tool development that will facilitate future tool creation and might help improve existing tools. Future research into the impact of the tool will additionally provide knowledge into the ideal (revised) set-up of this tool and to what extent such a tool can promote learning for advanced sustainability actions in business model innovation.
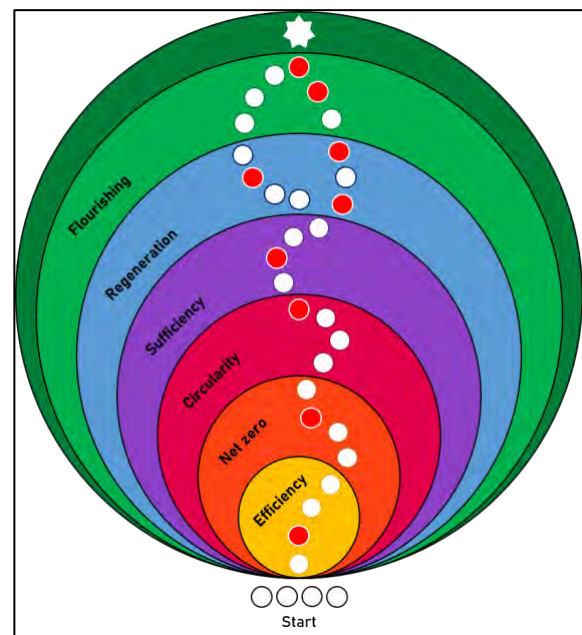

Figure 1. The Road Ahead board.

Figure 2. Example question cards for Efficiency, Net Zero and Circularity levels.

Figure 3. Example Risk card.

Figure 4. Entry card for Circularity.

Acknowledgments

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