

The capability to rapidly and successfully develop new business models is an important source of sustainable competitive advantage and a key leverage to improve the sustainability performance of organisations. In this poster, we provide an overview of the nascent field of sustainable business model innovation, based on a compilation from our papers, Geissdoerfer et al., 2016; 2017; 2018. We discuss the (1) definition, (2) unit of analysis, (3) types, (4) process, (5) strategies, and (6) tools of sustainable business model innovation.

1. Definition

Sustainable business model innovation is the *conceptualisation and implementation of sustainable business models. This can comprise the development of entirely new business models, the diversification into additional business models, the acquisition of new business models, or the transformation from one business model to another.* (Geissdoerfer et al. 2018)

Source	Definition
Boons and Lüdeke-Freund, 2013	Sustainable business model innovation is understood as the adaption of the business model to overcome barriers within the company and its environment to market sustainable process, product, or service innovations." (p. 13)
Loorbach and Wijsman, 2013	Sustainable business model innovation describes businesses' "searching for ways to deal with unpredictable [...] wider societal changes and sustainability issues." (p. 20)
Bocken et al., 2014	"Business model innovations for sustainability are defined as: Innovations that create significant positive and/or significantly reduced negative impacts for the environment and/or society, through changes in the way the organisation and its value-network create, deliver value and capture value (i.e. create economic value) or change their value propositions." (p. 44)
Geissdoerfer et al., 2016	"Sustainable business innovation processes specifically aim at incorporating sustainable value and a pro-active management of a broad range of stakeholders into the business model." (p.1220)
Roome and Louche, 2016	Sustainable business model innovation describes the "processes through which [...] new business models are developed by businesses and their managers [...] how companies revise and transform their business model in order to contribute to sustainable development." (p. 12)
Schaltegger et al., 2016	Sustainable business model innovation describes the creation of "modified and completely new business models [that] can help develop integrative and competitive solutions by either radically reducing negative and/or creating positive external effects for the natural environment and society" (p. 3)
Yang et al., 2016	"Sustainable business model innovation can be more easily achieved by identifying the value uncaptured in current business models, and then turning this new understanding of the current business into value opportunities that can lead to new business models with higher sustainable value." (p. 2)

Table 1: Selected definitions (Geissdoerfer et al. 2018)

4. Archetypes

The most cited article on sustainable business model innovation is by Bocken et al. (2014). The authors propose generic strategies that can be combined to form a sustainable business model. Despite being intended as a classification for sustainable business models, these archetypes are hardly ever employed in this way. Instead subcategories like circular business models, social enterprises and product-service systems are used, which combine different archetypes. Both classification systems provide valuable templates for sustainable business model innovation and are illustrated in Table 2:

	Examples	Description
Sustainable business model types	1) Circular business models	Business models that are closing, slowing, intensifying, dematerialising, or narrowing resource loops
	2) Social enterprises	Business models that aim at social impact by generating profits from economic activity or reinvesting them entirely
	3) Bottom of the pyramid solutions	Business models that aim at customers at the bottom of the income pyramid
	4) Product-service systems	Business models that integrate products and services into customer offerings that provide a product, a functionality, or a result
Sustainable business model strategies	1) Maximise material and energy efficiency	Aims at less material and energy input through more efficient processes
	2) Closing resource loops	Aims at closing resource loops through reuse, remanufacturing, and recycling
	3) Substitute with renewables and natural processes	Aims at replacing non-renewable resources with renewable ones and artificial processes with ones that mimic or use processes in nature
	4) Deliver functionality rather than ownership	Aims at providing the user with the functionality she requires without her owning the product that delivers the service
	5) Adopt a stewardship role	Aims at protecting natural systems by introducing a gatekeeper that controls access or incentivises certain behaviours
	6) Encourage sufficiency	Aims at providing information and incentives that encourage less consumption
	7) Repurpose for society or the environment	Aims at utilising organisational resources and capabilities to create societal or environmental benefits
	8) Inclusive value creation	Aims at delivering value to formerly unattended stakeholders or including them into the value creation process
	9) Develop sustainable scale up solutions	Aims at scaling sustainable solutions and technologies

Table 2: Sustainable business model types and strategies (Geissdoerfer et al. 2018)

References: Bocken, N. M. P. et al. (2014) ‘A literature and practice review to develop sustainable business model archetypes’, Journal of Cleaner Production, 65(0), pp. 42–56.
Geissdoerfer, M., Bocken, N. M. P. and Hultink, E. J. (2016) ‘Design thinking to enhance the sustainable business modelling process’, Journal of Cleaner Production, 135, pp. 1218–1232.
Geissdoerfer, M., Savaget, P. and Evans, S. (2017) ‘The Cambridge Business Model Innovation Process’, Procedia Manufacturing, 8, pp. 262–269.
Geissdoerfer, M., Vladimirova, D. and Evans, S. (2018) ‘Sustainable Business Model Innovation: A Review’, Journal of Cleaner Production, 198.
Osterwalder, A. and Pigneur, Y. (2010) Business model generation. Hoboken: John Wiley & Sons.
Plattner, H., Meinel, L., Leifer, L. (Ed.) (2011) Design Thinking: Understand–Improve–Apply. Berlin: Springer
Ries, E. (2011) The Lean Startup. London: Penguin.

2. Unit of analysis

Sustainable sustainable business models are:
(1) business models: *simplified representations of the value proposition, value creation and delivery, and value capture elements and the interactions between these elements within an organisational unit;*
(2) that *incorporate pro-active multi-stakeholder management, the creation of monetary and non-monetary value for a broad range of stakeholders, and hold a long-term perspective.* (Geissdoerfer et al. 2018, illustrated in Figure 1)

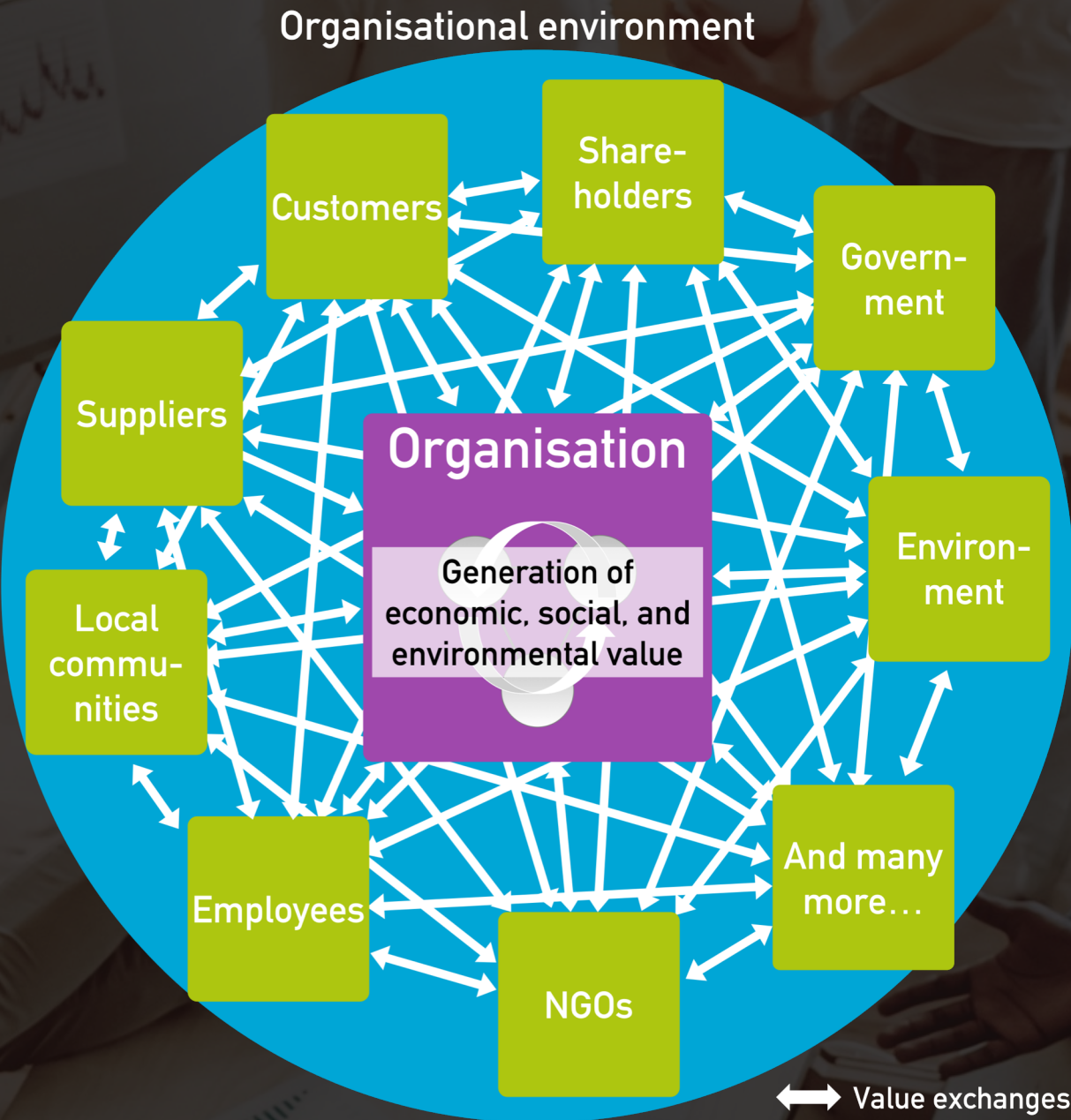


Figure 1: Sustainable business model (Geissdoerfer et al. 2016)

5. Process

Sustainable business model innovation consists of eight iterative phases. As illustrated in Figure 3, an organisation undergoing this process can go back and forth in the process, repeating and omitting stages and might repeat the process to react to new opportunities and threats in its ecosystem.

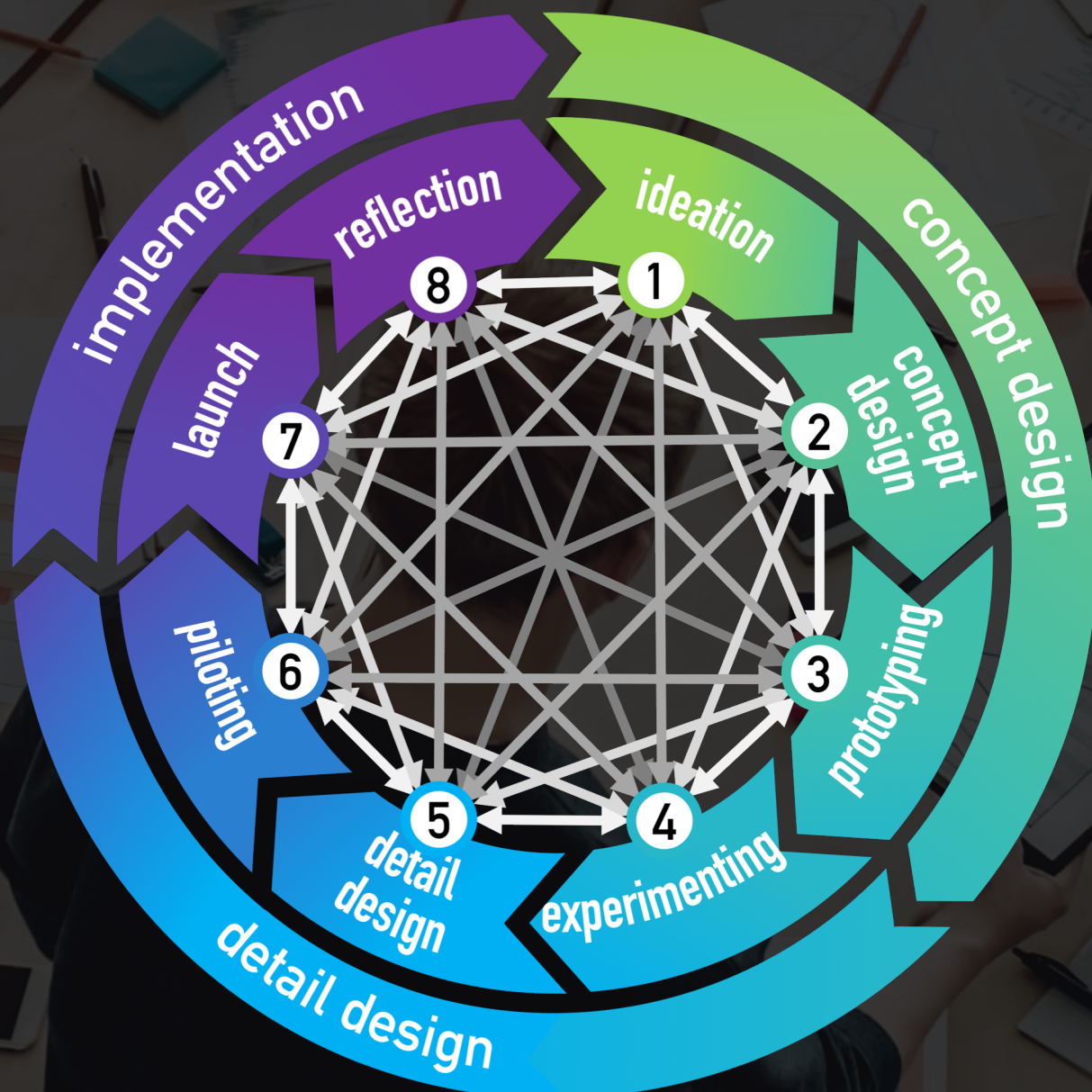


Figure 3: Sustainable business model innovation (Geissdoerfer et al. 2017)

3. Types

As illustrated in Figure 2, there are four types of business model innovation: (1) start-ups, (2) business model transformation, (3) business model diversification, and (4) business model acquisition. (Geissdoerfer et al. 2018)

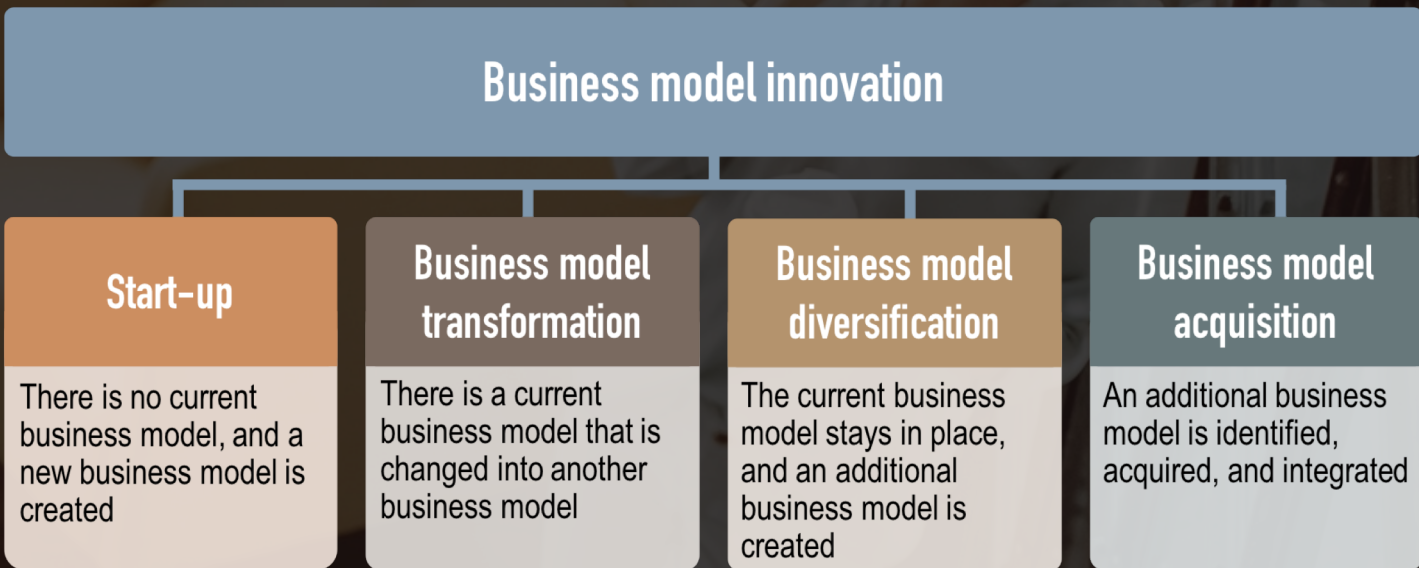


Figure 2: Four types of business model innovation (Geissdoerfer et al. 2018)

6. Tools

There are a range of tools that can support the sustainable business model innovation process. Besides generic tools like the business model canvas (Osterwalder and Pigneur, 2010), Lean Startup (e.g. Ries (2011)), or Design Thinking (e.g. Plattner et al. (2011)) there are a range of tools designed specifically to improve sustainability performance. Examples include:

Type	Picture	Name	Description	Principle	Location in CBMI	Source
Ideation		(1) Value Mapping Tool	The value mapping tool facilitates the definition of the unit of analysis, purpose, and key stakeholder groups of a unit of analysis (product, business unit, etc.), and enables the users to map the current value created, missed, and destroyed to ideate new value opportunities on that basis. It considers a broad range of strategic objectives and stakeholders.	Guided brainstorming of value opportunities	(1) Ideation	Bocken et al., 2013
		(2) Value Proposition Design Tool	The value proposition design tool facilitates the development of a value proposition by analysing customers' pains and gains to ideate how this can be translated into customer jobs that can be offered by the business model. It is based on the notion of value proposition as customer problems solved and needs satisfied and focused only on customers as stakeholders.	Guided brainstorming of value propositions	(1) Ideation	Osterwalder et al., 2014
		(3) Value Ideation Tool	The value proposition design tool facilitates the development of a sustainable value proposition by analysing how stakeholder problems can be solved and needs satisfied and ideate a value proposition to address these. It integrates Design Thinking techniques to improve the quality of the generated ideas and considers a broad range of strategic objectives and stakeholders.	Guided brainstorming and prototyping of value propositions	(1) Ideation, (2) Concept design, (3) Prototyping. Can be combined with Business Model Canvas for (2)	Geissdoerfer et al., 2016
Strategies		(4) Business Model Canvas	The business model canvas facilitates the ideation of different elements of a business model, like customer segments and revenue mechanisms.	Guided brainstorming of business model elements	(2) Concept design	Osterwalder and Pigneur, 2013
		(5) Business Model Navigator	The Business Model Navigator provides 55 different archetypes of different business models. The idea is that a company that wants to engage in business model innovation can simply choose one of these archetypes or a combination of those.	Selection and adoption of business model templates	(2) Concept design	Gaessmann et al. 2014
		(6) Business Model Archetypes	The Business Model Archetypes provide right different archetypes of different sustainable business model strategies. An organisation that wants to engage in sustainable business model innovation can take these strategies and a combination of them as a starting point for their ideation or to check their ideas against them.	Selection and combination of business model templates	(1) Ideation, (2) Concept design	Bocken et al., 2014
Process		(7) Cambridge Business Model Innovation Process	The Cambridge Business Model Innovation Process provides a comprehensive guiding framework that is both a map that shows what activities and challenges are generally expected during the business model innovation process and what tools are available and a tool to ideate and plan the different phases, identify challenges, and select tools - customised for the specific needs and context of the company.	Guided brainstorming of key activities and challenges	Planning the BMI Process and identify/check for activities, challenges, and tools for each step. Also (8) Adjustment and diversification	Geissdoerfer et al., 2017a
		(8) Lean Startup	The Lean Startup process provides a comprehensive guiding framework based on experimentation. The method is focused around minimum viable products build early on to sell to target costumers to get meaningful market feedback. Based on this feedback the business is pivoting around product improvements and new customer segments to find a financially viable business model.	Process template	Planning the BMI Process	Ries, 2011
		(9) Design Thinking	Design Thinking is an iterative process around several rounds of user interviews and observation, the rapid development of prototypes, and user experiments based on these prototypes. While originally conceptualised for new product development, it can also be applied to business model innovation.	Process Template	Planning the BMI Process	Plattner et al., 2011

Table 3: Selection of sustainable business model tools