



**INTELLECTUAL PROPERTY MODELS TO
ACCELERATE SUSTAINABILITY
TRANSITIONS
(IPACST)**

Sustainable Business Model Knowledge Brief

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Sustainable business models 'need-to-know' for researching sustainability transitions

Context

Global challenges such as poverty, resource scarcity, and climate change put pressure on business, government, and civil society actors to ensure peace and prosperity for a better world. The UN Sustainable Development Goals (SDGs) were established to call for global action on such pressing challenges (Griggs et al., 2013). Many argue that organizations play an important role in addressing the SDGs by the way they do business. The business model is a way to holistically look at the way business is done. In order to address global societal and environmental challenges, as captured in the UN SDGs, organizations need to include sustainability concerns in their business models, which differ from more 'conventional' business models within industries, focused on profit and shareholder value maximisation.

What does sustainable business model mean?

Business models include a value proposition (product/service offering); value creation and delivery (how this value is provided) and value capture (how money is made and other forms of value are generated) mechanisms (Bocken & Short, 2016 based on Richardson, 2008). To address pressing societal and environmental challenges, organizations need to innovate their business models for sustainability. Sustainable Business Models (SBMs) enable transitions to sustainability, by addressing social, environmental and economic concerns, coupled with a strong customer offering (Boons & Lüdeke-Freund, 2013).

Box 1: Definition of SBMs

SBMs draw on economic, environmental and social aspects of sustainability in defining an organization's purpose; use a triple bottom line (people, profit, planet) approach in measuring performance; consider the needs of all stakeholders rather than giving priority to shareholder expectations; treat 'nature' as a stakeholder and promote environmental stewardship; and encompass a system, as well as a firm-level perspective (building on Stubbs & Cocklin, 2008).

The research stream of SBMs is relatively new and popular among scholars and practitioners, as SBMs provide a holistic view of how organizations are able to do business to address pressing global challenges. However, more research is needed to deepen understanding about SBMs to ensure their suitability for business and investigate how they might create sustainable impact within industries.

Types of sustainable business models

Different types of SBMs have emerged within diverse industries and organizations. The adoption and implementation of different SBMs depend on contextual and internal factors of organizations as well as opportunities to propose, create, deliver, and capture value. Table 1 describes some SBM types based on literature. However, to date the adoption in large businesses is still relatively low for certain types such as 'deliver functionality rather than ownership' and 'encourage sufficiency' (Ritala et al., 2018).

Table 1. Classification of sustainable business models (based on Bocken et al., 2014; Lüdeke-Freund et al., 2016; Ritala et al., 2018)

High level category	SBM type	Short description	Possible positive impacts
<i>Environmental</i>	<i>Maximize energy and material efficiency</i>	Solutions to do more with fewer resources; generate less waste, emissions, and pollution, e.g. through a lean approach	<ul style="list-style-type: none"> Enhance efficiency and improve resource use Save costs
	<i>Closing resource loops</i>	Solutions to do reuse materials and products and turn waste into feedstocks for other products/ processes.	<ul style="list-style-type: none"> Reduce waste Turn waste into value/new business lines. Generate new revenue streams
	<i>Substitute with renewables and natural processes</i>	Use of non-finite materials and renewable energy sources – moving away from fossil fuels	<ul style="list-style-type: none"> Reduces use of finite resources, waste, and pollution Supports long- term energy supply. Contributes to “green economy”
<i>Social</i>	<i>Deliver functionality rather than ownership</i>	Provide services that satisfy users’ needs without them having to own physical products	<ul style="list-style-type: none"> Can encourage the right behaviours with manufacturers and users. Can reduce the need for physical goods
	<i>Adopt a stewardship role</i>	Solutions to proactively engage with all stakeholders to ensure their long- term health and well-being	<ul style="list-style-type: none"> Ensure long- term well-being of planet (e.g. forests) and society (e.g. health). Ensure long-term viability of the value network
	<i>Encourage sufficiency</i>	Solutions that actively seek to reduce end-user consumption as part of a viable business proposition	<ul style="list-style-type: none"> Actively reduce consumption Encourage community sufficiency, sustainable living Build long-term customer loyalty, and new repair and service markets
<i>Economic</i>	<i>Re-purpose the business for society/environment</i>	Solutions that seek to create positive value for all stakeholders, in particular society and environment	<ul style="list-style-type: none"> Deliver positive societal (e.g. community development) value. Deliver positive environmental (e.g. afforestation) value. Prepare for a resource capacity for long-term business sustainability.
	<i>Inclusive value creation</i>	Sharing resources, knowledge, ownership, and wealth creation. Inclusive value generation, involving a wider range of stakeholders in the value chain and as customers.	<ul style="list-style-type: none"> Share resources, skills, and knowledge, and distribute wealth. Leverage resources and talents. Create new business opportunities.
	<i>Develop scale-up solutions</i>	Delivering sustainable solutions at a large scale to maximise societal and environmental benefits	<ul style="list-style-type: none"> Achieve scale from small sustainability pilot or start-up to large-scale project or business. Create industry- wide change for sustainability Create breakthrough innovation

What are the main components of every sustainable business model?

The business model canvas (Osterwalder & Pigneur, 2010) is a conceptual template that helps build conventional business models through the analysis of its nine components. An adapted template for SBMs, e.g. including profit, people, and planet, and involving a broader set of stakeholders, is shown in Figure 1.

The SBM canvas includes different value mechanisms with different components: 1) *value proposition* (for profit, people, and planet); 2) *value creation* and *delivery* (key stakeholders, key activities, key resources and capabilities, customer relationships, channels, and customer segments); and 3) *value capture* (cost structure, revenue stream).

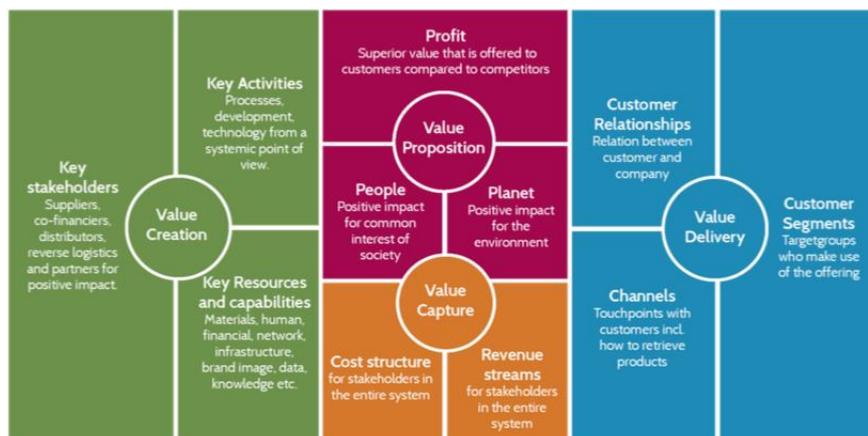


Figure 1. Components of the sustainable business model canvas (Bocken et al., 2018 adapted from Osterwlder & Pigneur, 2010)

Organizations can innovate SBMs by adjusting some components or redesigning the entire model to consequently implement sustainable practices to tackle sustainability challenges.

Multiple perspectives of sustainable business model innovation for sustainable transitions

Business model innovation is essential for organizations as they innovate the way to do business in order to contribute toward sustainable transitions. Multiple perspectives need to be considered for business model innovation, as a business model cannot be viewed in isolation (Boons & Bocken, 2018; Sarasini & Linder, 2018). These perspectives broadly include the micro level (company and customer), meso level (eco-industrial parks and value chains), and macro level (cities, regions, and nations) (building on Evans et al., 2017; Geels, 2002; Saidani et al., 2019).

High levels of collaboration and coordination among stakeholders are required to develop sustainable solutions, also in popular areas like the Circular Economy. The macro level (societal) may include changes and tensions within industries and contexts, for example, changes in technology, regulations, markets and infrastructure. It is important to consider these multiple perspectives within SBMs to

bring solutions to address societal and environmental challenges.

Barriers and opportunities of sustainable business models

Barriers listed in Table 2 are examples of factors that hinder the adoption of SBMs. On the other hand, opportunities are related to incentives – improvement of productivity, regulatory conditions (subsidies, taxes), focus on consumer demands, resource efficiency, cost savings, new (long-term) business opportunities that are financially attractive, and access to resources (technology) through cooperation – that motivate organizations to adopt SBMs.

In conclusion, SBMs are a relevant topic to investigate, due to the pressures and urgent actions required for organizations to tackle global challenges. While the understanding of societal and environmental challenges is important, it is vital to know how organizations design and implement different SBMs to perform sustainable practices and create positive impacts within industries and contexts.

Table 2. Overview of some barriers and opportunities at different levels (based on Boons & Lüdeke-Freund, 2013; Engelken et al., 2016)

Barriers	Opportunities
Fierce competition to existing technologies & business models	Smart utilization of resources and waste (creative use of resources, including waste and improving production processes)
Cognitive barriers (restrict innovation because of risk averse)	Connecting businesses from industrialized & developing countries (technological change and technical know-how)
Long and uncertain development cycles (e.g. uncertain demand, effects, slow economic development)	Cooperation (in the value chain, e.g. leasing or contracting)
High upfront investments and costs (substantial amount of time, investment, and human resources costs)	Consumer involvement (trends, preferences)
Lack of technical and technological know-how (new sustainable production and consumption technologies and competent professionals to manage tech)	Offerings addressing the bottom of the pyramid (products/services are specially designed for customers at the lower end of the economic pyramid because of market and government failures)
Lack of support from the supply and demand network (suppliers' and customers' engagement in sustainable activities)	Social entrepreneurship (support for disadvantaged groups, job creations, etc.)
Lack of government support/effective legislation (funding opportunities, training, effective taxation policy, laws and regulations, etc.)	Enabling & supporting new business (products/service e.g. renewable energies)

Key take-aways

<u>SBM definition</u>	<u>Types of SBMs (examples)</u>	<u>Value mechanisms (and components) of SBMs</u>	<u>Multiple perspectives of SBMs</u>	<u>Barriers (examples)</u>
SBMs draw on economic, environmental and social aspects of sustainability in defining an organization's purpose; use a triple bottom line (people, profit, planet) approach in measuring performance; consider the needs of all stakeholders rather than giving priority to shareholder expectations; treat 'nature' as a stakeholder and promote environmental stewardship; and encompass a system, as well as a firm-level perspective	<ol style="list-style-type: none"> 1. Maximizing material and energy efficiency. 2. Closing resource loops. 3. Substituting with renewables and natural processes. 4. Delivering functionality rather than ownership. 5. Adopting a stewardship role. 6. Encouraging sufficiency 7. Repurposing the business for society/environment 8. Seeking inclusive value creation 9. Developing sustainable scale-up solutions. 	<ul style="list-style-type: none"> - Value proposition (<i>What value is provided and to whom?</i>) - Value creation and delivery (<i>How is value provided?</i>) - Value capture (<i>How does the company make money and capture other forms of value?</i>) 	<ul style="list-style-type: none"> - Micro level (company and customer) - Meso level (eco-industrial parks and value chains) - Macro level (cities, regions, and nations) 	<ol style="list-style-type: none"> 1. Fierce competition 2. Cognitive barriers 3. Lack of government support <p><u>Opportunities (examples)</u></p> <ol style="list-style-type: none"> 1. Smart utilization of resources and waste 2. Cooperation 3. Consumer involvement

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