Business Models and Business Modelling: State of the Art

Padmakshi Rana, Samuel W. Short, Steve Evans and Maria Holgado Granados

1 Introduction

Sustainability is increasingly recognised as a pressing problem facing the modern world. Climate change, resource depletion, social responsibilities of companies—working conditions and practices, community relations, increasing inequality, and persistent poverty and health issues in many parts of the developing world and other growing environmental and social problems illustrate the unsustainable nature of production and consumption across the world. These challenges that shape the mainstream thinking on sustainability require strategic and operational changes to businesses. Authors, such as Krantz (2010), Munasinghe (2010) and Evans et al. (2012), suggest 'sustainability as an innovation platform' for a fundamental shift towards a sustainable economy with significant changes in people's lifestyle and mindset/behaviour, redesigning business models and value networks 'to embrace a transformational sustainability that moves beyond incrementalism and ecoefficiencies'. Hence, the transition towards sustainable manufacturing networks will require a significant shift in the way businesses are conceived and operated through collaboration among stakeholders in the value network to generate sustainable value (environmental, social and economic).

The majority of business model literature, although comprehensive, is largely focused on the economic view of the company for financial profit and growth, while guiding thinking in economic directions. They do not explicitly embed sustainability

P. Rana (✉) · S.W. Short · S. Evans
Centre for Industrial Sustainability, Institute for Manufacturing, University of Cambridge, 17 Charles Babbage Road, Cambridge CB3 0FS, United Kingdom
e-mail: padmakshi.rana@cantab.net

M.H. Granados
EPSRC Centre for Industrial Sustainability, University of Cambridge, Cambridge, United Kingdom

J.P. Liyanage and T. Uusitalo (eds.), *Value Networks in Manufacturing*, Springer Series in Advanced Manufacturing,
DOI 10.1007/978-3-319-27799-8_6

value and objectives in business model innovation and are limited in the inclusion of a broader range of stakeholders in the value network. However, they do provide frameworks for analysis of existing business models and innovation, and offer good insights into the development of more comprehensive tools to guide creation of business models for sustainability. The following sections will elaborate on the business model and value literature, in particular business model innovation, business modelling frameworks, stakeholders and value network followed by a discussion.

2 Business Models

The business model concept provides a basis for creation of tools and frameworks to assist business managers and researchers in investigating business models. These tools serve a number of potential functions (Osterwalder and Pigneur 2005):

- Capturing, understanding the relevant elements and interactions, and sharing the business model concept,
- Undertaking analysis to measure performance, observe and compare with others,
- Management—the business model concept assists in the design, planning and management of change of the value creation logic of the company,
- Innovation of business models—assist in prospecting for new business models through structured design and simulation.
- Patenting of models

Business model in simple terms depicts 'how a firm does business' (Magretta 2002). All companies have some form of business model, even though they might not explicitly have considered or defined their model (Teece 2010). Business models have received substantial attention in the literature and industry, with a particular focus on e-businesses, whose growth has consequently been one of the drivers in the drawing attention to the area (Richardson 2008; Teece 2010). The term first appeared in the academic literature in the 1950s, but discussion of business models really gained prominence during the dot-com era of the late 1990s (Zott et al. 2011). Prior to this, the majority of business models were arguably fairly self-evident. However, the 1990s saw companies experimenting with novel models for creating, delivering and capturing value from the Internet-based knowledge economy. This interest has continued to grow, and the business model is now increasingly recognised as a new unit of analysis in the literature used for both explaining existing company performance and exploring new configurations (Zott et al. 2011). E-business has been the most prominent focus of business model research. Interest has also been driven by demand for bottom-of-the-pyramid solutions for emerging markets and companies in post-industrial technologies (Zott et al. 2011). Research into business models for sustainable solutions based on renewable energy, eco-innovation and social entrepreneurship is gaining prominence.

Despite the widespread use of the term 'business model' in academic and non-academic literature, there is a lack of clarity around the definition and a lack of conceptual consistency (Magretta 2002; Chesbrough and Rosenbloom 2002; Zott et al. 2011). Below are some key definitions from the business model literature:

- The model depicts the content, structure and governance of transactions designed so as to create value through the exploitation of business opportunities (Amit and Zott 2001)
- A business model fulfils the function of value proposition, market segment, value chain, revenue mechanisms, cost structure and profit potential, and position of a firm in the value network and formulates competitive advantage (Chesbrough and Rosenbloom 2002)
- The design or architecture of the value creation, delivery and capture mechanism of a firm—how the firm delivers value, how it attracts customers and how it converts this to profit (Teece 2010)

The confusion in part is because the term is used interchangeably to mean different things. It is used to describe:

- Representations of firms operating models (e.g. 'razor-and-blades' model).
- Elements of a business model (e.g. revenue model, value proposition, key resources, channels).
- Operating business model (complete firm-specific representations of all elements of the core logic of the firm's value creation system).

The academic debate over business model definition arises in part because of the various frameworks (see Sect. 4 below) that have been conceived to address specific industries or orientations, rather than due to fundamental difference of opinions. Business models guide and underlie business strategies and innovation (Machiba et al. 2012). However, they are economically driven, focusing primarily on 'competition and market expansion'. Nonetheless, the innovation in business model in order to integrate sustainability could be rethinking the value proposition to include environmental and social goals. Furthermore, business model definitions in the literature generally exclude governance, performance metrics, and management processes, and investment structures—all of which are potentially highly relevant to achieving sustainability. The following sections will present the discourse on variations between business model, business strategy and business architecture.

2.1 Business Model, Business Strategy and Business Architecture

A review of the literature (Al-Debei and Avison 2010; Magretta 2002; Chesbrough and Rosenbloom 2002) illustrates how the term 'business model' is often used

interchangeably with 'business strategy', or alternately conceived as an element of strategy, or sometimes even as an overarching construct that embodies the strategy. This is perhaps due to the theoretical underpinnings of business models, where articulated, build on central themes in business strategy—value chain concept, resource-based theory of firms, strategic network theory, cooperative strategies, Schumpeterian innovation and transaction cost economics (Amit and Zott 2001; Morris et al. 2005).

Magretta (2002) suggests that the confusion in part reflects the lack of consensus around the concept of strategy itself. The author attempts to differentiate the two by delimiting the concept of strategy to competitive considerations and the business model to collaboration and value creation, but concedes that the business model may sometimes act much like a strategy. Chesbrough and Rosenbloom (2002) similarly conceptualise the business model around value creation and delivery, and strategy around value capture and competitive positioning. Casadesus-Masanell and Ricart (2010) observes that the business model and strategies are often direct reflections of each other and hence difficult to separate conceptually. Furthermore, the conceptualisation of a business model must by necessity involve strategic considerations if it is to be successful in a competitive environment; hence, the two cannot be considered independently (Teece 2010).

A company's business strategy could therefore be represented by numerous business models, and equally an abstracted business model could be applied to multiple firms; strategy on the other hand is highly specific to the individual firm and its environmental context. Rather than attempting to delineate elements as either strategy or model, the business model could perhaps be viewed as a conceptual tool that serves as the link between business strategy and implementation.

Osterwalder (2004) argues that the business model and the business strategy talk about the same issues but in different business layers and at different organisational levels. Hence, Fig. 1 illustrates the link between business model and business strategy through the organisational layer lens, which makes an attempt to illustrate the variation.

A further area of confusion around the use of the term 'business model' is in relation to the terms 'business architecture' and 'enterprise model'. The terminology and majority of the literature in this area come from the ICT sector. Osterwalder and Pigneur suggest that the business model and enterprise model are conceptually very close. The main difference between the two is that the enterprise model is mainly concerned with processes and activities, whereas the business model focuses on value creation and delivery to customers (Osterwalder and Pigneur 2005). The business architecture as conceptualised by Versteeg and Bouwan (2006) is 'to structure the responsibility over business activities prior to any further effort to structure individual aspects (processes, data, functions, organization, etc.)'. They specifically differentiate between business architecture and enterprise architecture by emphasising the fact that the latter is specifically about the processes and systems within an individual enterprise/firm.

Overall, the subject of architecture seems less well developed than that of business models. The business architecture forms the link between business model

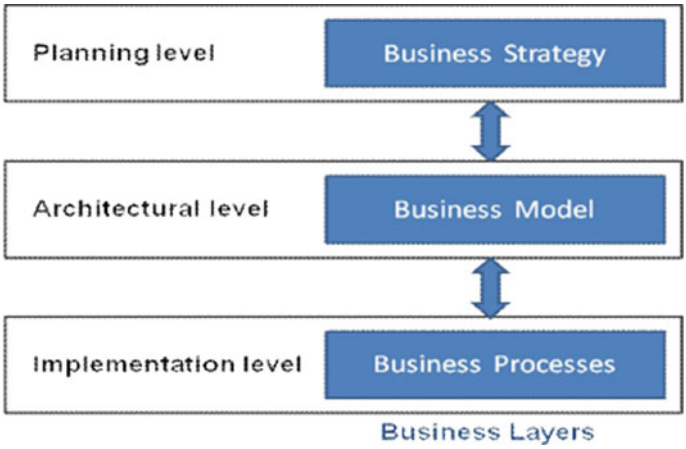

Fig. 1 Different layers within a business and their associated levels (adapted from Osterwalder 2004; Bask et al. 2010)

and strategy, that is, the business model acts like the blueprint for a strategy that is implemented through organisational structures, processes and systems, which is the business architecture. Focus at the architecture level enables additional issues to be considered to support business models in delivering sustainability. Specifically, corporate culture as defined by norms and values, recruitment and training, performance management systems and governance structures—all seem likely to be relevant in developing successful sustainable businesses. This might potentially prove to be an important addition to the modelling process supported by business model innovation. The next section will provide a brief overview on the need for business model innovation.

3 Business Model Innovation

The literature (Chesbrough 2010; Zott and Amit 2010) suggests that business model innovation is a key to business success. 'Business model innovation is a multistage process whereby organizations transform new ideas into improved business models in order to advance, compete and differentiate themselves successfully in their marketplace' (Eppler and Hoffman 2011). Some scholars argue that technology and process innovation alone are no longer enough to create sustained competitive advantage, and the business model itself is key to unlocking the latent value potential of new technologies (Chesbrough and Rosenbloom 2002; Teece 2010). Empirical studies seem to give some support to this, suggesting that firms that are financial outperformers put considerably more explicit focus on business model innovation (Zott et al. 2011).

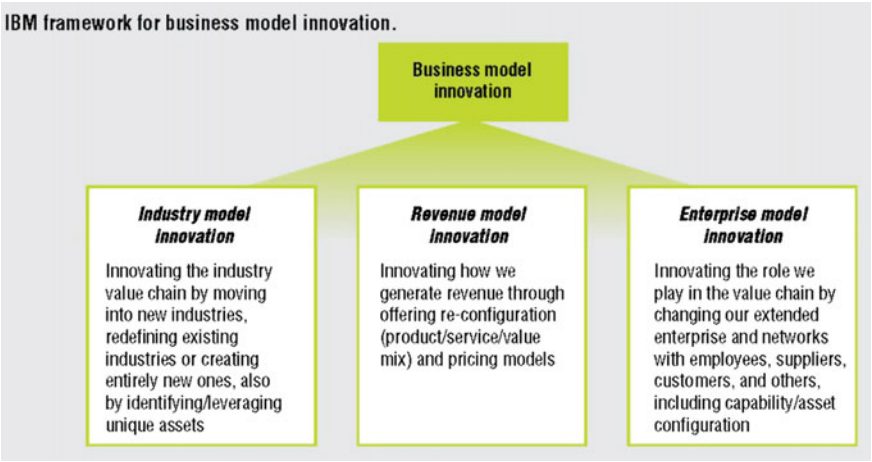

Fig. 2 Business model innovation (Giesen et al. 2007). *Source* IBM Institute for Business Value and IBM Global Business Services

Chesbrough and Rosenbloom (2002) suggest a need for firms to dynamically experiment with innovative business models and to have a willingness to continually reshape models as their business develops over time. This is perhaps particularly relevant to the sustainability agenda as business models may need to continuously evolve to address tightening regulation, contracting resource supplies, climate change effects and shifting social pressures. Giesen et al. (2007) suggest a typology of three types of business model innovation, and their findings suggest that all three types can generate success. They suggest enterprise model innovation, that is innovation in the value network, is particularly effective for mature businesses (Fig. 2).

Johnson and Suskewicz (2009) argue that the key to large-scale systemic change, such as that required for a transition to renewal energies, is to shift the focus from developing individual technologies to creating whole new systems. The business model concept and business model innovation at the industry level are key to this process. Johnson et al. (2008) and Johnson (2010) observe that business model innovation can be driven by market catalysts, larger industry-wide changes and competition:

- The opportunity to address through disruptive innovation the needs of large groups of potential customers who are shut out of a market.
- The opportunity to capitalise on a brand new technology by wrapping a new business model around it (e.g. Apple iPod/iTunes).
- The opportunity to bring a 'job-to-be-done' focus where one does not yet exist.
- The need to fend off low-end disrupters.

- The need to respond to a shifting basis of competition.
- Unpredictable and radical shifts in market demand.
- Discontinuous shift in technology.
- Dramatic shifts in government policy.
- Performance-based competition → product innovation.
- Reliability-based competition → process innovation.
- Convenience-based competition → business model innovation.
- Cost-based competition → business model innovation.

Some scholars have observed that radical innovation may be more likely to come from new start-ups rather than the large established incumbent corporations, citing Google, Amazon and Facebook as examples; Xerox Park and Kodak are cited as examples of large incumbents failing to adopt radical innovation. If true, this phenomenon may be because existing production facilities, business relationships, suppliers and distribution channels and partners act as significant structural barriers preventing established firms from radical innovation (Teece 2010). The dominant logic within large firms may also preclude identification of new business models that differ substantially from the firm's current model (Chesbrough and Rosenbloom 2002). A number of further factors that may prevent large firms from innovating are (Christensen 1997; Christensen et al. 2010) as follows:

- Inability to enter emerging markets because cannot satisfy internal growth demands.
- Markets that do not exist cannot be analysed.
- Technology supply does not always equal market demand.
- Large customers define resource allocation—not the management.
- Use of discounted cash flow and net present value tend to overdiscount the value of new innovation relative to existing business.
- Treatment of fixed assets and sunk costs tend to inhibit innovation.
- Emphasis on short-term earnings per share.

In practice, large companies due to the scope of their operations, and depth and breadth of resources, including financial resources, perhaps have more scope to move into different market spaces. In addition, large companies often attempt to mitigate the above barriers through the creation of smaller business units or independent businesses. Furthermore, innovation in accessing information is useful for communicating about sustainability and its impact on life cycle phases, for example ICT technologies. Figure 3 provides a conceptualisation of industrial sustainability and represents the various pillars, their factors with an emphasis on the role of innovation and globalisation being central to driving change in existing business models. It emphasises the important role of job creation and wealth distribution.

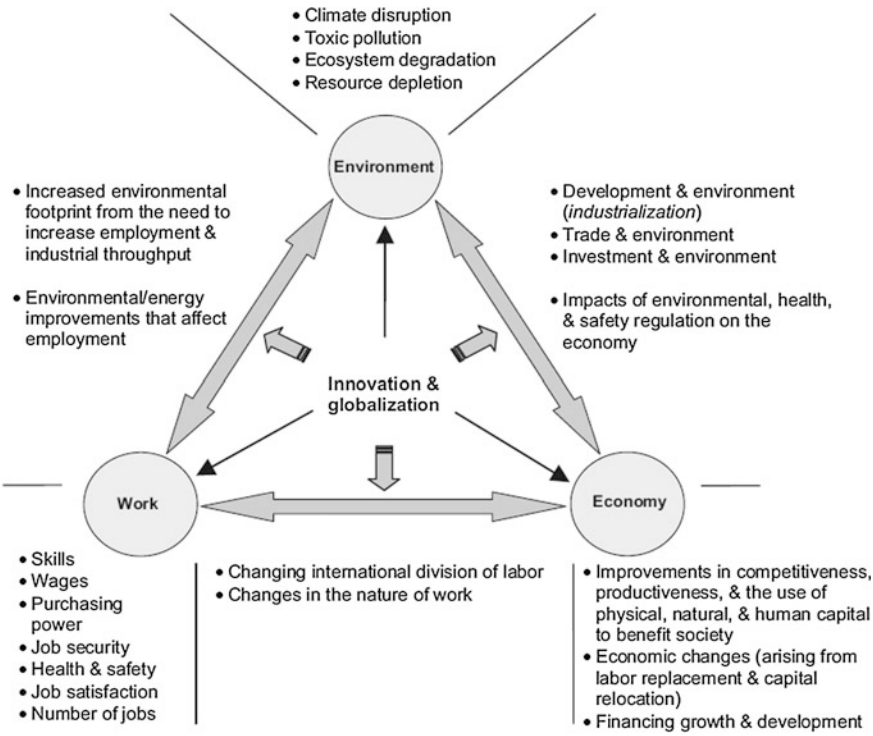

Fig. 3 Innovation and globalisation as drivers of change within and between three operationally important dimensions of sustainability (Ashford et al. 2012)

Business model innovation is key to the development of business models and modelling, in particular for sustainability. It is observed to align with the changing business environment. The next section will provide an overview of the potential business modelling frameworks that will highlight business model elements and potential business modelling designs to develop on for sustainability.

4 Business Modelling

Key authors who have articulated a business modelling process include Teece (2010), Osterwalder and Pigneur (2010), Richardson (2008) and Zott and Amit (2010) have contributed towards defining the elements of business model design (value proposition, creation, delivery and capture). Their focus has not been specifically on delivering sustainability, but they provide an extensive overview of the current state of the art and state of the practice. The Osterwalder and Pignuer (2010) canvas (below) and its elements, in particular, are seen to be a current

dominant framework for practical use by industry. This section will present various existing business modelling frameworks and tools (in some cases) that yield useful insights into business modelling literature.

4.1 Business Model Canvas

Osterwalder and Pigneur's (2010) book 'Business Model Generation' offers a framework with tools such as the 'canvas' for working through business model conceptualisation and innovation. The book builds on their previous academic research, but introduces a highly visual element, emphasising the practical use of the tool by non-academics. The business model canvas (Fig. 4) seeks to develop a more generic framework with broad applicability across all industry sectors, utilising a standardised vocabulary and semantics. Their framework attempts to capture all the dominant components from the existing literature and is made up of nine building blocks. Their more recent iteration of the framework renames value configuration and capabilities to give business ontology of value proposition, customer segments, channels, customer relationships, key resources, key activities, key partnerships, cost structure and revenue streams. The framework places emphasis on defining concrete processes and operational activities, whereas other scholars seem to conceive the business model in rather more generic terms.

The business model canvas is seen to be a current dominant framework for practical use by industry. By combining most of the literature definitions, this

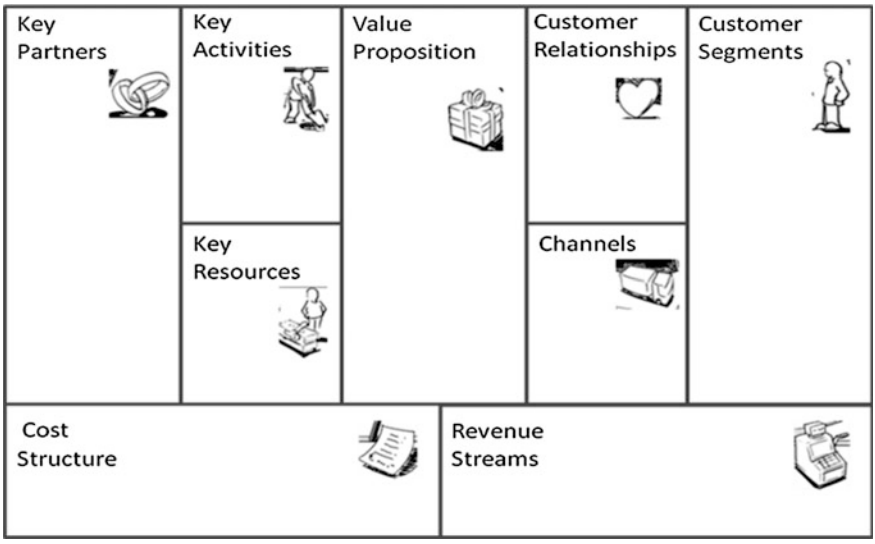

Fig. 4 Business model canvas and elements (Osterwalder and Pigneur 2010)

framework has achieved wide acceptance and is well received by industry. The nine elements of the canvas cover majority of the elements discussed in the business modelling literature. The canvas provides a good starting point for business model innovation to deliver sustainability. In theory, there is nothing to prevent the canvas being used to model a sustainable business model. However, the canvas is focused towards generating economic value and has limited stakeholder inclusion (limited to customers and immediate partners).

4.2 Business Model Framework

Richardson (2008) identifies ten different scholars' definitions, which collectively include 24 different elements. Research silos of interest have emerged in e-business, strategic issues, and innovation and technology management. Within these categories, orientations include transaction, revenue/profitability, product/technology, competition and activities/capabilities-based focuses (Zott et al. 2011). Richardson's framework (Table 1) suggests three main categories for business modelling with an emphasis on value.

4.3 Collaborative Networked Organisations (CNOs)

Romero and Molina's (2011) work on CNOs uses the business model concept to help describe the value proposition and systems for cocreation and delivery of the value proposition within a collaborative network. Their approach builds on Osterwalder and Pigneur's nine-building-block business model ontology, adapted to introduce the value cocreation system. The important characteristics they propose are as follows:

- Multivalue system perspective, encompassing different types of value—economic, social and knowledge,
- Multistakeholder approach, identifying each stakeholder's participation in the value creation process.

Table 1 Components of a business model framework (Richardson 2008)

Component	Description
Value proposition	What the firm will deliver to its customers, why they will be willing to pay for it and the firm's basic approach to competitive advantage
Value creation and delivery	How will the firm create and deliver that value for its customers and the source of competitive advantage
Value capture	How the firm generates revenue and profit

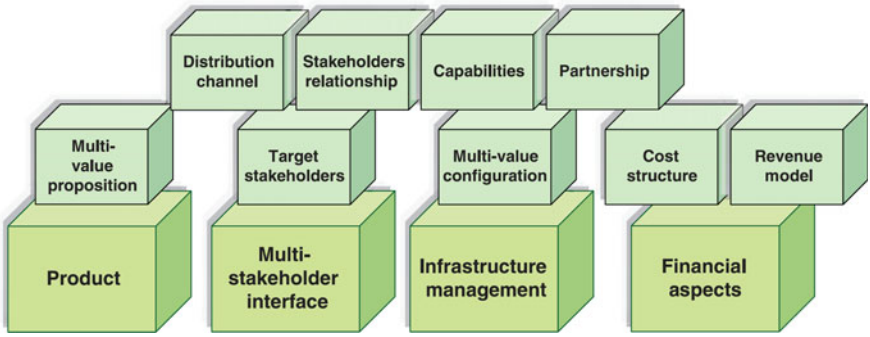

Fig. 5 Guidelines for CNO business model definition (Romero and Molina 2011)

Multistakeholder participation in value creation builds on the concepts of open innovation and open business models. Romero and Molina also discuss the role of the customer in actively engaging in the cocreation process to define the value proposition. Their approach has been developed in the ICT sector and does not explicitly target sustainability. However, the multivalue and multistakeholder perspectives seem directly applicable to the industrial sustainability challenges (Fig. 5).

4.4 Business Model Design

Teece (2010) proposes the following business model innovation process. The design (Fig. 6), however, emphasises on value proposition and mechanisms for value capture with an understanding of the stakeholders in the value chain, and the focus is primarily on customers. For a business modelling framework in order to encompass sustainability, it needs to have a wider group of stakeholders and understand what value is to the stakeholders (value proposition is not limited to customers) which will guide value creation, delivery and capture. The terminology used by Teece for a sustainable business model refers exclusively to long-term economic sustainability, although the process does not necessarily need to be limited in this way.

Chesbrough and Rosenbloom (2002) propose a comprehensive approach to business model conceptualisation that embodies strategy and financial modelling:

- Articulate the value proposition, i.e. the value created for users by the offering based on the technology,
- Identify a market segment, i.e. the users to whom the technology is useful and for what purpose, and specify the revenue generation mechanism(s) for the company,

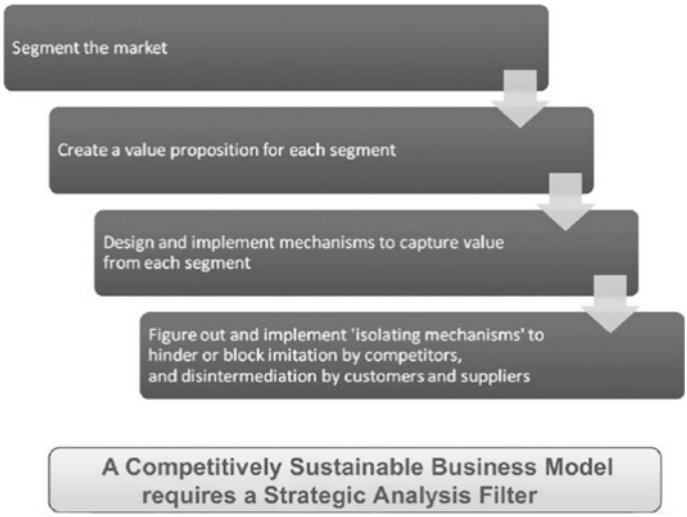

Fig. 6 Steps to achieve a sustainable business model (Teece 2010)

- Define the value chain of the company that is required to create and distribute the offering outlined in the value proposition,
- Determine the complementary assets needed to create the offering and support its position in the value chain,
- Position the firm within the value network context, including identification of potential complementors and competitors,
- Estimate the cost structure and profit potential of producing the offering, associating the business model concept to value creation,
- Formulate the competitive strategy by which the innovating company will gain and hold advantage over rivals and link the business model concept to strategy.

Chesbrough's work on open innovation in business model design is a potentially important addition to this subject area. 'Open business models enable an organization to be more effective in creating as well as capturing value. They help create value by leveraging many more ideas because of their inclusion of a variety of external concepts. They also allow greater value capture by utilizing a firm's key asset, resource or position not only in that organization's own operations but also in other companies' businesses' (Chesbrough and Appleyard 2007).

Zott and Amit (2010) propose an activity system perspective on business model design, combining the company-level focus with a broader understanding of how the company creates value through interactions throughout the value network. According to the authors, activity-based modelling builds on value creation mechanisms across boundaries of the company and industry, rather than adopting a firm-centric view of value creation. It attempts to conceptualise the interdependent activities connected by transactions within the broader networked context. The approach encourages a systems-thinking perspective, that is, a systemic and holistic

Table 2 Activity system design framework (Zott and Amit 2010)

Design elements	The architecture of an activity system
Content	What activities should be performed?
Structure	How should they be linked and sequenced?
Governance	Who should perform them and where?
Design themes	**The sources of the activity system's value creation**
Novelty	Adopt innovative content, structure or governance
Lock-in	Build in elements to retain business model stakeholders, e.g. customers
Complementarities	Bundle activities to generate more value
Efficiency	Reorganise activities to reduce transaction costs

approach to business model and industrial system design and development, rather than partial optimisation. Zott and Amit (2010) suggest two sets of parameters need to be considered—design elements and design themes (Table 2).

Magretta (2002) observes that a business model should answer questions such as—who is the customer? And what does the customer value? How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost? To embed sustainability and the process of rethinking value and company logic in a business model, this thought needs to be extended to include environmental and social values with the inclusion of a broader range of stakeholders (value for each stakeholder) to understand their interactions in the value network.

5 Value

Normann and Ramirez (1993) observe that the understanding of value has changed due to 'global competition, changing markets and new technologies, opening new ways of creating value'. The literature observes two components of value 'perceived use value and exchange value', where perceived use value has a customer focus and is based on their perception of the product or service's use and exchange value is the amount paid for the product by the buyer to the producer (Bowman and Ambrosini 2000). Allee's (2000) value exchange illustrates (Fig. 7) an initial view of the exchanges, which are identified as—goods, services, revenues, knowledge and intangible value.

Sustainability, however, is often perceived from a limited value creation view, with considerably more focus from an economic, compliance, regulation or legislation perspective, hence raising the need for a more holistic view of sustainable value that integrates social and environmental goals. As Porter and Kramer (2011) suggest, 'businesses have rarely approached societal issues from a value perspective but have treated them as peripheral matters. This has obscured the connections between economic and social concerns'. From a network perspective, the scope of value needs to go beyond the two stakeholders primarily emphasised in the business

Fig. 7 Mapping the value exchange (Allee 2000)

model literature—customers, immediate partners and shareholders—and in a much more explicit manner that involves relationships, exchanges and interactions. Hence, value is defined as the set of benefits derived by a stakeholder from an exchange, taking into consideration the need for better/improved understanding of stakeholder value and seek opportunities for alignment and exchanges between stakeholders.

5.1 Sustainable Value

At the core of the business model is the concept of generating value. The literature (Chesbrough and Rosenbloom 2002; Richardson 2008; Zott and Amit 2010) introduces the terminology of the 'value proposition' to describe the product/service offering that the company makes to its customers and other stakeholders for which it receives payment and aims to return a profit. Porter and Kramer (2011) discuss the concept of 'shared value' and define it 'as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates'. The authors suggest emphasis 'on identifying and expanding the connections between societal and economic progress' for value creation. Business models are usually perceived from a value creation perspective that focuses on satisfying the customer needs, economic return, compliance, regulation or legislation requirements. For sustainability, this focus is too narrow and raises the need for a more holistic view of value that integrates social and environmental goals towards addressing the impact of consumption and consumer behaviour, climate change, resource limitations, economic stability and growing public pressure for socially responsible business.

Sustainable value is defined as the well-being, improvement, continuity and preservation of the individual (human life), company, society and environment, in

such a way that it satisfies the needs of the present without compromising intergenerational equity. It is conceived as 'environmental' sustainability which covers sustainable use of natural resources, biodiversity conservation, recycling of waste and pollution, and provision of additional ecological services such as climate regulation, pollination and enhancing soil fertility; 'social' sustainability is concerned with issues such as stakeholder participation, responsibility, labour standards, human rights, community relations, welfare, culture, poverty alleviation and equality; 'economic' is concerned with traditional measures of financial profitability, risk management and long-term economic viability or continuity of the company.

6 Value Network and Stakeholders

'A value network generates economic value through complex dynamic exchanges between one or more enterprises, customers, suppliers, strategic partners and the community. These networks engage in more than just transactions around goods, services, and revenue' (Allee 2000). This view of network could potentially be extended to include environmental and social value, thus underpinning sustainability into a network perspective. Traditionally, the value chain was defined and classified by Porter 'as a collection of activities that are performed to design, produce, market, deliver and support its product' (Porter 1985). The concept of value chain gained prominence through Porter's work (Kaplinsky 2000) and now has gone through modifications. The key difference between value networks and the study of value chains and supply chains is the recognition that value can be both financial and non-financial or intangible. Chapter "Towards Sustainability Governance in Value Networks" discusses a collaborative approach towards manufacturing networks. All business relationships include not only formal contractual activities, but also informal exchanges of information and benefits. Greater visibility of all the value flows within a network potentially provides insights for innovation and improvement.

As mentioned earlier, a holistic view of the value proposition requires active consideration of all stakeholders in the value network, who are influenced or influence directly and indirectly the activities of the company. The idea of companies having stakeholders became a 'commonplace in the management literature, both academic and professional' (Donaldson and Preston 1995). Freeman defines stakeholder of a company as 'any group or individual who can affect or is affected by the achievement of the organisation's objectives' (Freeman 1984). Freeman's stakeholder definition provides premise to explore stakeholders and their participation. Clarkson's (1995) view integrates the thought that stakeholders are not only shareholders but also a wider group and is not just focused on generating economic value. Clarkson (1995) further observes that 'the economic and social purpose of the corporation is to create and distribute increased wealth and value to all its primary stakeholder groups, without favouring one group at the expense of others'. However, their definition and explanation tend to be limited to stakeholders who are

of primary importance and relevance to the business. For sustainability and in particular sustainable business modelling, this view of stakeholders needs to be expanded to include multiple stakeholders and to better understand opportunities for positive value exchange, while also eliminating negative value exchanges.

The key stakeholders, discussed frequently in relation to sustainability, include suppliers and partners, society, environment, suppliers, customers, investors and shareholders, governments, international organisations, non-government organisations (international and local) and the media. All business relationships include not only formal contractual activities, but also informal exchanges of information and benefits. Greater visibility of all the value flows within a network potentially provides insights for innovation and improvement. Allee (2011) discusses the importance of tangible and intangible value flows in network. Understanding of intangible flows is important in understanding network relationships and identifying opportunities for further collaboration, including environmental and social aspects. Zott and Amit (2010) present the activity system perspective on business model design, combining the firm-level focus with a broader understanding of how the company creates value through interactions throughout the value network. However, there is a limited work in developing the connection between business model and value network. This connection seems critical given the interdependencies between stakeholders in the networks, towards addressing sustainability. From a value network perspective, the scope of value needs to involve relationships, exchanges and interactions between stakeholders in a much more explicit manner to address the sustainable value creation opportunities.

Stakeholder analysis emphasises on those whose participation in the company is imperative for the company to function. This tends to incline towards economic focus. Clarkson observes that 'the measurement of corporate success has traditionally been limited to the satisfaction of and creation of wealth for only one stakeholder, the shareholder. It has been demonstrated that the pursuit of this single measure is self-defeating (Clarkson 1995) as it tends overlooks the other stakeholders' importance and impact on the company. Nonetheless, stakeholders are rarely treated equally. A gap exists in understanding ways to better get companies to align stakeholder interests.

Goodpaster (1991) observes the 'stakeholder paradox' that the company's (and managers) strategic orientation should only be towards generating economic value 'can be avoided by a more thoughtful understanding' between stakeholders and company. Furthermore, it could be helpful to make a distinction between publicly traded companies and others when discussing/addressing stakeholders and shareholders. There is an ongoing debate over the role of the company in society and the company's obligations towards social and environmental justices. One school of thought argues the company should seek to maximise economic profits, which in turn creates jobs and trickles down, and it is the role of government to deliver social programs, take care of the environment and redistribute wealth through taxation and spending. The opposing position, as advocated by civil society groups and labour movements, is that companies in exchange for limited liability and public infrastructure support have an implicit obligation to deliver social and environmental

benefits. This is an important issue that requires a common position as it will dictate the types of business models, governance structures and policy interventions required.

7 Conclusions

The business model literature to date, though cognisant of shared value creation, demonstrates a principally customer-centric view of value. Few scholars discussed in the previous sections seem to probe the opportunities for value flows to a broader range of stakeholders. For sustainability, value-sharing exchanges with society and the natural environment need to become core considerations in business model development (Porter and Kramer 2011). Although the business model literature is conceptually driven, the review of frameworks and concepts in business modelling and value network provides a basis for sustainable business model and modelling development. Below is a summary of observations from this chapter:

- There is a difficulty in embedding sustainability into the business model elements—redefining business model elements with sustainability dimensions. Confusion and ambiguity in the definitions, use and boundary of the terms.
- The Osterwalder and Pigneur's (2010) business model canvas covers all elements discussed in the literature. Hence, it has been taken as a template to build on for a sustainable business model. New categories are to be added and removed.
- There is a minimal view of the full set of stakeholders in the value network and the interaction/link between them. Although the business model canvas covers all elements of a business model, the stakeholders are limited to customers, immediate partners and shareholders. Moreover, there is a limited understanding of how value might be perceived for the broader range of stakeholders and how that external value might be integrated within the business model.
- Tools that will assist in exploring other forms of value and analysing value exchanges will be important to drive and implement sustainability in companies.
  - The innovation literature focuses on how to create financial value from network relationships and does not necessarily consider other forms of value.
- Developing a business case for sustainability:
  - Premise to design business models and frameworks that will integrate and foster linkages between economic, social and environmental values.
- The inclusion of governance, corporate norms and values, and ownership structure to drive sustainability in the business model.

References

Al-Debei MM, Avison D (2010) Developing a unified framework of the business model concept. Eur J Inf Syst 19:359–376
Allee V (2000) Reconfiguring the value network. J Bus Strategy 21(4)
Allee V (2011) Value networks and the true nature of collaboration. Value Networks and Verna Allee Associates. www.valuenetworksandcollaboration.com/. Accessed 3 March 2013
Amit R, Zott C (2001) Value creation in E-business. Strateg Manag J 22(6–7):493–520
Ashford N, Hall R, Ashford R (2012) The crisis in employment and consumer demand: Reconciliation with environmental sustainability. Environ Innov Societal Transit 1–22
Bask AH, Tinnilä M, Rajahonka M (2010) Matching service strategies, business models and modular business processes. Bus Process Manage J 16(1):153–180
Bowman C, Ambrosini V (2000) Value creation versus value capture: towards a coherent definition of value in strategy. Br J Manage 11(1):1–15
Casadesus-Masanell R, Ricart JE (2010) From strategy to business models and onto tactics. Long Range Plan 43(2–3):195–215
Chesbrough HW, Rosenbloom RS (2002) The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. Ind Corp Change 11(3):529–555
Chesbrough HW, Appleyard MM (2007) Open innovation and strategy. Calif Manag Rev 50(1):57–76
Chesbrough HW (2010) Business model innovation: opportunities and barriers. Long Range Plan 432(3):354–363
Christensen CM (1997) the innovator's dilemma: when new technologies cause great firms to fail. Harvard Business School Press, Boston
Christensen CM, Kaufman SP, Shih WC (2010) Innovation killers: how financial tools destroy your capacity to do new things. Harvard Business School Press, Boston
Clarkson MBE (1995) A stakeholder framework for analyzing and evaluating corporate social performance. The Academy of Management Review 20(1):92–117
Donaldson T, Preston L (1995) The stakeholder theory of the corporation: concepts, evidence, and implications. Acad Manag Rev 20(1):65–91
Eppler MJ, Hoffman F (2011) Challenges and visual solutions for strategic business model implementation. In: Hülsmann M, Pfeffermann N (eds) Strategies and communications for innovations. Springer, Berlin
Evans D, McMeekin A, Southerton D (2012) Sustainable consumption, behaviour change policies and theories of practice. https://helda.helsinki.fi/handle/10138/34226. Accessed 1 May 2013
Freeman RE (1984) Strategic management: a stakeholder approach. Pitman, Boston
Giesen E, Berman SJ, Bell R, Blitz A (2007) Three ways to successfully innovate your business model. Strategy Leadersh 35:27–33
Goodpaster KE (1991) Business ethics and stakeholder analysis. Bus Ethics Q 1(1):53–73
Johnson MW (2010) Seizing the white space: business model innovation for growth and renewal. Harvard Business School Press, Boston
Johnson MW, Suskewicz J (2009) How to jump-start the clean tech economy. Harvard Bus Rev 52–60, Nov
Johnson MW, Christensen CM, Kagermann H (2008) Reinventing your business model. Harvard Bus Rev 50–60, Dec
Kaplinsky R (2000) Globalisation and unequalisation: what can be learned from value chain analysis? J Dev Stud 37(2):117–146
Krantz R (2010) A New Vision of Sustainable Consumption: The Business Challenge, J Ind Ecol 14:7–9
Machiba T, Doranova A, Joller L, Leon LR, Miedzinski M, van der Veen G (2012) The future of eco-innovation: the role of business models in green transformation. http://www.oecd.org/innovation/inno/49224244.pdf. Accessed 5 June 2015

Magretta J (2002) Why business models matter. Harvard Bus Rev 80(5):86–92
Morris M, Schindehutte M, Allen J (2005) The entrepreneur's business model: toward a unified perspective. J Bus Res 58(6):726–735
Munasinghe M (2010) Can sustainable consumers and producers save the planet? J Ind Ecol 14(1):4–6
Normann R, Ramirez R (1993) From value chain to value constellation: designing interactive strategy. Harvard Bus Rev 57–64, July–August
Osterwalder A (2004) The business model ontology. A proposition in a design science approach. Dissertation Lausanne: Universite de Lausanne
Osterwalder A, Pigneur Y (2005) Clarifying business models: origins, present, and future of the concept. Communications of AIS 15
Osterwalder A, Pigneur Y (2010) Business model generation: a handbook for visionaries, game changers, and challengers. John Wiley and Sons, New Jersey
Porter ME (1985) Competitive advantage: creating and sustaining superior performance. The Free Press, New York
Porter M, Kramer M (2011) Creating Shared Value. Harvard Business Review January 1–17
Richardson J (2008) The business model: an integrative framework for strategy execution. Strat. Change 17:133–144
Romero D, Molina A (2011) Collaborative networked organisations and customer communities: value co-creation and co-innovation in the networking era. Prod Plann Control 1–26
Teece DJ (2010) Business models, business strategy and innovation. Long Range Plann Bus Models 43:172–194
Versteeg G, Bouwman H (2006) Business architecture: a new paradigm to relate business strategy to ICT. Inf Syst Front 8(2):91–102
Zott C, Amit R (2010) Business model design: an activity system perspective. Long Range Plann Bus Models 43:216–226
Zott C, Amit R, Massa L (2011) The business model: recent developments and future research. J Manag 37(4):1019–1042