

**Occasional Working Paper — No. 6, August 2012**

**Recognising Commitment to Sustainability through the  
Business Model**

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Published by the Centre for Accounting, Governance and Sustainability, School of Commerce, University of South Australia, GPO Box 2471, Adelaide, South Australia, 500, Director: Professor Roger Burritt

**Designer:** Amanda Carter

**ISSN No:** 1838-0409 (print) 1838-0468 (online)

**Submissions to** Research Administrator, Centre for Accounting, Governance and Sustainability, via email [cags@unisa.edu.au](mailto:cags@unisa.edu.au)

### Citation

The following Occasional Working Paper should be cited as:

Lambert, S.C., Carter, A.J., and Burritt, R.L. (2012), *Recognising commitment to sustainability through the business model*, Centre for Accounting, Governance and Sustainability Occasional Working Papers, No. 6, August, University of South Australia, Adelaide.

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# **Recognising commitment to sustainability through the business model**

## **Abstract**

This paper considers the use of a business model framework as a novel tool for sustainability. Underpinned by systems theory, the business model framework differs from other tools in that it approaches sustainability from a whole-of-organisation perspective but possesses flexible and adaptive properties which aid analysis at a granular level.

**Keywords:** business model, sustainability, strategic decision making

## **1. Introduction**

Sustainability has become the dominant imperative for human society and businesses in the 21<sup>st</sup> century (Stoner and Wankel 2010). This perspective has resulted in a vast body of literature which focusses on, amongst other things, external reporting, impact on a firm's economic, environmental, and social performance, and critical evaluation of the current market-based paradigm.

Traditionally, sustainability is structured around three pillars first developed by Elkington (1998) – economic, environmental and social. Increasingly attention is being paid to its implementation through governance mechanisms (O'Connor 2006) and implementation of sustainability is perhaps the most important governance issue for modern corporations as business cases for pursuing sustainability become more refined (Salzmann, Ionescu-Somers and Steger 2005; Revell and Blackburn 2007; Schaltegger, Lüdeke-Freund and Hansen 2012). The board of directors, as the principal governance mechanism in corporations, must now take a leading role in adapting corporations to the challenges presented by sustainability and the growing expectations of society (Dyllick and Hockerts 2002).

Research has shown that Board chairs and/or chief executive officers have played a pivotal role in organisations which are leaders in adopting a sustainability focus (Waldman, Siegel and Javidan 2006). Increasingly research is adding explorations of the role of boards, directors and senior executives in disclosures (Prado-Lorenzo and Garcia-Sanchez 2010), reporting on social and environmental issues (Deegan, Cooper and Shelly 2006; Dey 2007), as well as the role of board composition and independence in corporate sustainability

(Ricart, Rodríguez and Sanchez 2005; Morsing and Oswald 2009; Walls and Hoffman 2012). The bulk of this literature explores external reporting and stakeholder relationships, or institutional influences on explicit adoption of sustainability policies. This narrow, externally- and stakeholder-orientated perspective ignores internal accountability issues. One of the core questions in the external accountability literature is how to assess the accuracy and completeness of corporate disclosures (Bebbington and Gray 1993; Adams 2004; Deegan, Cooper and Shelly 2006). The primary conclusion drawn from this literature is that corporations are failing in accountability in terms of completeness (see for example Bebbington and Gray 1993; Deegan, Cooper and Shelly 2006; Yongvanich and Guthrie 2006). This reporting is a core governance issue and the current literature assumes that corporations have successfully implemented the policies created at Board level and that strategy has been effectively operationalised. Thus assumption is challenged here by asking **how can directors know whether their sustainability policies have been implemented (as intended)?**

Implementation of policy may not result in the expected processes or performance for a variety of reasons (Stead and Stead 1995; Dovers 2005; Carter and Pisaniello 2012). Directors have the responsibility to assure themselves and others that the substance of the sustainability policies developed are translated into appropriate and effective processes and activities, that is, translating the sustainability strategies into action. A number of tools are available to assess the operationalisation of sustainability policies within corporations and other organisations and are the subject of the next section.

The paper proceeds as follows. Section 2 introduces tools that address sustainability including the Sustainability Balanced Scorecard and the Environmental Management Accounting Framework. Section 3 outlines the theoretical framework – systems theory. Section 4 introduces a new tool for sustainability. Section 5 outlines the business model framework and its main components. Finally, section 6 provides a conclusion.

## **2. Current tools to address sustainability**

At least 40 sustainability measurement and/or assessment tools exist including the variations of the Balanced Scorecard which focusses on corporate “greenness” (Lämsiluoto and Järvenpää 2008) and the Extended Performance Reporting Framework (Yongvanich and Guthrie 2006). The latter incorporates multiple performance elements into an integrated framework divided into three main categories: external capital, internal processes, and human capital (Yongvanich and Guthrie 2006: 315). The main strength of the Extended Performance Reporting Framework is its use of existing reporting structures (the Global Reporting Initiative or GRI) with intellectual capital thereby building into the framework a strong, pre-existing corporate governance structures. However, the overriding purpose of the Extended Performance Reporting Framework is to aid external reporting processes and

the empowerment of stakeholders and not the internal accountability considered here. The Extended Performance Reporting Framework has since been superseded by Integrated Reporting, a tool which combines social, environmental and economic performance reporting into a single framework (Frias-Aceituno, Rodriguez-Ariza and Garcia-Sanchez 2012; Lodhia 2012).

The Sustainability Balanced Scorecard and the Environmental Management Accounting Framework provide a means by which sustainability factors can be measured and compared to benchmarks for external reporting. The Sustainability Balanced Scorecard (Dias-Sardinha, Reijnders and Antunes 2002; Figge et al. 2002; Möller and Schaltegger 2005) adapts the original Balanced Scorecard of Kaplan and Norton (1992) for the purpose of identifying “the major strategically relevant issues of a business and to describe and depict the causal contribution of those issues that contribute to a successful achievement of a firm’s strategy” (Figge et al. 2002: 270). The underlying purpose of the adaptation is to integrate sustainability and its non-market perspective effectively into the management systems of a business. It provides a hierarchical system of strategic *objectives* in line with the perspectives included in the scorecard: financial, customer, internal processes and learning and growth (as represented in the original balanced scorecard) and non-market (which captures the sustainability perspective) (Figge et al. 2002). What the Sustainability Balanced Scorecard does is take a broad approach to sustainability by integrating it into the *management* of a business; however, it largely operates as an assessment and evaluation tool – identifying key issues and their management. The core limitation of the Sustainability Balanced Scorecard is that it must be developed on a business unit basis (Figge et al. 2002) and its specific strategic objectives rather than consider the business in a holistic manner

The Environmental Management Accounting Framework (Burritt, Hahn and Schaltegger 2002) is a tool which classifies information needs according to specific circumstances. The Environmental Management Accounting Framework identifies four dimensions to information needs – monetary versus physical, short-term versus long-term, past-orientated versus future-orientated, and ad hoc versus routinely generated – to determine the type of information required to inform decision-making at a given point in time (Burritt, Hahn and Schaltegger 2002). The limitation of the Environmental Management Accounting Framework is its restriction to specific decision settings for a given point in time and relates only to the information needs of decision-makers and the type of information required.

The tools examined here are but a few of a large number of tools aimed at assisting businesses with the implementation of sustainability policies at all levels of the business. However, each has specific limitations – an external or reporting focus, a business-unit view of the firm, or a focus on information needs. Whilst these may be of assistance in determining the effective operationalisation of sustainability policy with an organisation, there is still a need for a tool which provides a common language and structure to

understand sustainability within a business context. It is proposed that a business model approach would be able to provide this.

### **3. Theoretical framework: systems theory**

A business model simplifies business complexity, creating an architectural blue print which allows it to be seen in its entirety. These blue prints can be used to anticipate potential impacts on the business in relation to strategic decision-making, whether as a response to transformed marketplaces (Lambert 2012c) or avoiding entropic states. It does so by using “unambiguous terminology” and an ability to rely on “real world observables” (Chambers 1991: 147). In this regard, business models have a systems theory foundation consistent with the more general accounting approaches to sustainability (Gray, Bebbington and Walters 1993: 17) and captures the benefits of visual communication through the blue print-style schema. The business model is also a relatively new unit of analysis with boundaries which extend beyond the firm itself and explains both value creation and capture (Zott, Amit and Massa 2011: 1020).

Systems theory, in its broadest, is a transdisciplinary approach to studying phenomena such as businesses, with a holistic view of “the world as a complex system” (Sterman 1994: 291). Emerging from mathematics and other sciences, systems theory has developed with modelling as a core tool for the exploration and understanding of complex phenomena. Systems dynamics specialises in such modelling, but does so using equations, quantification and high levels of abstraction (Hjorth and Bagheri 2006). This is complemented by systems thinking, which has less reliance of mathematical modelling. However, the modelling associated with systems theory has several benefits in enabling learning: (i) it may change mental models and improve business, (ii) create learning and intuition, (iii) allow risk-free experimentation, (iv) express ideas in an explicit and logical way, (v) reveal systemic complexity (Lane 1992: 72).

Traditional thinking tends to be linear and mechanistic however, systems theory and systems thinking is based on a non-linear, organic world view (Sterman 1994; Kelly 1998; Hjorth and Bagheri 2006). This world view serves sustainability as it defines it not as an end-state or goal, but rather an “unending process” (Hjorth and Bagheri 2006: 74). (Un-)sustainability is thus a contextually dependent concept, the meaning and shape of which may only be determined by the idiosyncratic economic, social, environmental, and politico-legal context in which a business finds itself.

### **4. A new tool for sustainability**

Both management and information systems literature signal increasing recognition of the business model concept as a useful tool for researchers and practitioners (Al-Debei and Avison 2010; Zott, Amit and Massa 2011) even though there is no universal agreement on a

definition or on its precise components. Although this is acknowledged as an inhibiting factor in the research fields (Zott, Amit and Massa 2011) there appears to be increasing interest in its use in practice, in particular as a form of and enabler of innovation (Johnson and Suskewickz 2009; Gambardella and McGahan 2010; Bucherer, Eisert and Gassmann 2012). Two definitions that capture the essence of the business model and are pertinent to the purpose of this paper are provided by Baden-Fuller et al. (cited by Casadesus-Masanell and Ricart 2010: 197) ‘the logic of the firm, the way it operates and how it creates value for its stakeholders’ and as ‘a reflection of firm’s strategy’ (Casadesus-Masanell and Ricart 2010: 195).

According to Al-Debei and Avison (2010), the functions of the business model fall into three categories. Firstly, the business model acts as a ‘conceptual tool of alignment’ (Al-Debei and Avison 2010: 371) of corporate strategy and business processes. Secondly the business model can function as an ‘interceding framework’ (Al-Debei and Avison 2010: 371) for capturing value from technological innovations and ultimately achieving strategic objectives. Thirdly, the business model creates organizational knowledge capital (Al-Debei and Avison 2010) by making explicit and accessible otherwise tacit knowledge about how the business creates and captures value. In relation to the third function, the business model can be thought of as performing the role of a scale model in that it provides a representation or shorthand description of things that are in the real world (Baden-Fuller and Morgan 2010), in this case a representation of a business. A business model provides a simplified view of a business by hiding unnecessary complexity just as a scale model of a building is devoid of the complexity so as to provide a holistic view of the building. Complexity can then be added as required by the specific user.

All three business model functions revolve around strategy and its implementation a subset of which is sustainability, therefore the business model is potentially useful in developing and managing corporate sustainability: as an ‘interceding framework’ that marries sustainability related technologies and corporate strategies; in its role as a ‘conceptual tool of alignment’ (Al-Debei and Avison 2010: 371), the business model can be used to anticipate potential impacts on the business of strategic sustainability decisions, whether as a response to transformed marketplaces (Lambert 2012c) or to avoid entropic states and as a means of capturing; and articulating sustainability related organizational knowledge capital.

It does so by using ‘unambiguous terminology’ and an ability to rely on ‘real world observables’ (Chambers 1991: 147). In this regard, business models have a systems theory foundation consistent with the more general accounting approaches to sustainability (Gray, Bebbington and Walters 1993: 17) and captures the benefits of visual communication through the blue print-style schema. The business model is also a relatively new unit of analysis with boundaries which extend beyond the firm itself and explains both value creation and capture (Zott, Amit and Massa 2011: 1020).

The business model approach to sustainability shows management and decision-makers the structural adjustments of a business to core sustainability issues – economic, environmental and social – and does so on a whole-of-business basis. By using a business model, management can see whether sustainability strategies and policies have been implemented and if so where in the enterprise business model these are reflected. It does so by depicting a business using a schematic at a highly abstract level but one which can be fleshed out to a very detailed level – a Hierarchical Business Model Framework (Lambert 2012a). We propose incorporating sustainability factors into business model representations thereby providing a coherent, understandable picture of sustainability in the business and how this relates to the business model of the enterprise. The sustainability characteristics of the business can be articulated using the same structure that would be used to depict operating and profitability focused aspects of the business – its strength therefore being in the use of common structures and language irrespective of circumstances.

At the core of the traditional business model framework is the value proposition that represents ‘the object(s) of value offered to the customer’ (Lambert 2012a: 8). Such objects may include products, services, information, or indeed combinations thereof. By building sustainability into the value proposition, it becomes an integral part of the fabric of the business – the business equivalent of DNA (Bell, Soybel and Turner 2012).

Management can build a single business model representation and use it for multiple purposes simply by collecting data about the characteristics in which they are interested, for example by using Sustainability Balanced Scorecard or Environmental Management Accounting Framework, and then displaying that data at their preferred level of detail and in relation to the sections of the business in which they are interested. Strategic decisions, including sustainability decisions, are reflected in the business model so that by applying a ‘sustainability lens’ to the business model representation, the sustainability factors present in the enterprise become visible. Potential consequences of sustainability decisions can be incorporated into the business model and demonstrate the impact of various scenarios on the overall business model. Thus, using a business model framework means the tool is both diagnostic and useful for evaluation through scenario analysis.

In the next section the hierarchical business model framework is described with an example of potential business model schematics that use sustainability as the conceptual focus.

## **5. Business model framework**

All businesses have at least one business model and many operate more than one. However, not all businesses articulate their business models and those that do can choose from a myriad of business model frameworks and ontologies designed to facilitate the understanding of the business concept(s) that underlie the business. A limitation of most business model frameworks is that they are designed with a particular level of analysis,

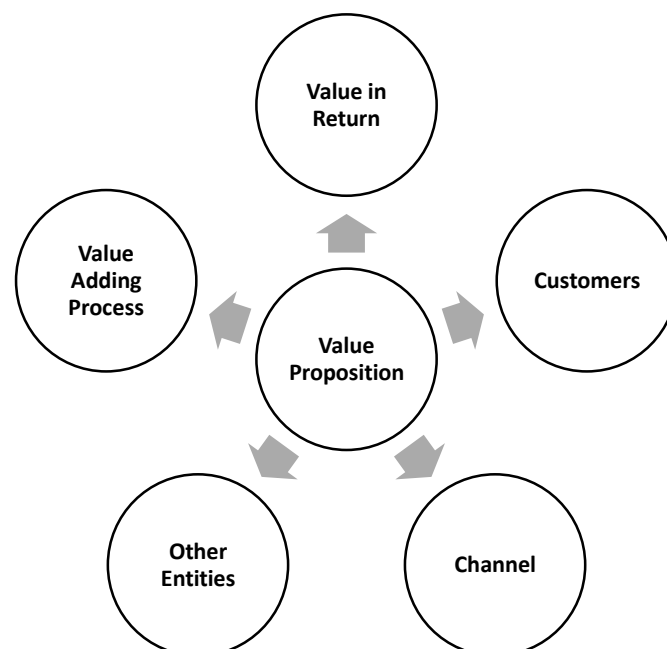


scope of analysis and conceptual focus in mind and although most provide schematic representations that assist communication of the business concept none perform very well in terms of providing multiple levels and units of analysis and conceptual foci (Lambert 2012a).

The Hierarchical Business Model Framework that was developed purposefully to accommodate multiple levels and units of analysis, and multiple conceptual foci can extend traditional business model representations to reflect sustainability factors that are present in the existing business models of an entity. It does so by utilising object-orientated modelling principles which allow complexity to be abstracted and distilled into a form understandable by all (Lambert 2012b). Once it can be established that sustainability factors can be identified and communicated through the Hierarchical Business Model Framework, attention can be directed at using the business model as a management tool.

### **The Basic Business Model Objects**

The Hierarchical Business Model Framework organises the business concept around the value proposition which is the concept that holds primacy (see Figure 1). For every value proposition there are related objects, namely, customers, value adding processes, delivery channels, some form of value in return and potentially there are other entities that are involved in creating, delivering or paying for the value proposition (Lambert 2012a).



**Figure 1: Basic Business Model Objects**

Lambert (2012b) provides a concise definition for each of these objects. Customer(s) are an entity or entities targeted with the value proposition. This may be a group of consumers (individuals and other businesses or organisations), with multiple groups being recognised according to demand or servicing requirements. Value in Return is what the entity receives in return for delivering the value proposition, usually in the form of cash or cash equivalents but also non-monetary elements of value. Channel refers to how the value exchange take place and multiple channels can be used to effect a transaction. Value Adding Process encapsulates the resources, activities, and capabilities of the entity that create the value proposition and/or the channel through which it is delivered. It may include manufacturing, retailing or service processes. In its most detailed view, the Value Adding Process can be defined with precision with a process model constructed for depiction. Other Entities represents third parties, suppliers, outsourcing firms, regulators, and stakeholders, that (i) assist the enterprise in creating or delivering the value proposition to the customer, (ii) influence how the enterprise creates or provides the value proposition, or (iii) are involved with determining or providing the value in return.

### Conceptual focus

The conceptual focus describes the lens through which the researcher views the business and determines the information that is collected about each business model object. Traditionally the conceptual focus of the business model is monetary value or profitability (Gordijn and Akkermans 2002; Morris, Schindehutte and Allen 2005). However, it could be social and environmental values which would provide a sustainability focus.

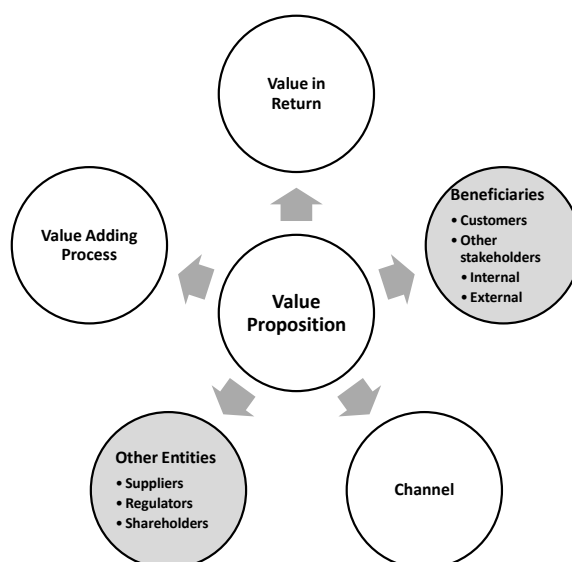
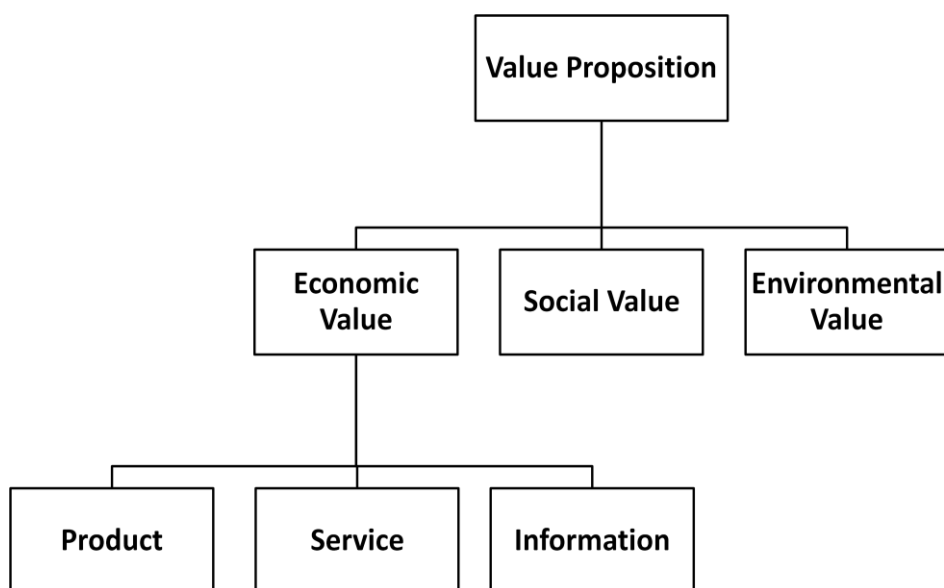


Figure 2: Basic Business Model Objects using a Sustainability Conceptual Focus

In this research we apply a sustainability conceptual focus, identifying the social and environmental sustainability factors present in the business model pertaining to a particular entity. A sustainability conceptual focus requires the basic business model objects to be modified to accommodate sustainability factors. Figure 2 demonstrates this by renaming the Customer object to Beneficiaries (of the value proposition) and recognising two beneficiary groups, direct and indirect. Customers are direct beneficiaries, whereas other stakeholders may be indirect beneficiaries of a value proposition. The Other Entity object is also expanded to include shareholders.

### **Level of analysis**

The Hierarchical Business Model Framework allows the business model to be depicted at a range of details from a high level of abstraction to very detailed information about the business model objects and their associations. The scope that is covered by the particular business model depiction can be broad and include external entities such as suppliers, regulatory bodies and outsourcing partners that make up the value network or it can be quite narrow, zooming in on transactions with customers and other entities, or concentrating on value adding processes and the supply network.



**Figure 3: A Value Proposition and its Elements**

Figure 2 indicated the most basic objects of the business model (effectively a Level 1 depiction). To obtain greater and contextually specific content, the Hierarchical Business Model Framework adds levels of detail. Level 2, for example, considers the specific products, services, and information which comprise a given value proposition (Lambert 2012b) (see Figure 3). Here the original three elements of the Value Proposition, product,

service and information, are grouped to indicate the economic value of the Value Proposition. In addition, social value and environmental value are added as elements of the Value Proposition.

The individual elements of the value proposition, such as a product, can be explored in greater detail to reveal the sub-components of the product or the value adding processes related to that product. Specific information can be seen with regards to activities and resources and in the case of human resources, the specific capabilities required to effectively deliver the value proposition (Lambert 2012b).

## **6. Conclusion**

In summary, the Hierarchical Business Model Framework using a sustainability conceptual focus provides a tool which produces a schematic of the business and effectively codifies knowledge of the business which may have previously been tacit in nature. Tacit knowledge is embedded in the individual and loss of the person necessarily means this knowledge is lost to the organisation (Cowan 2000; Johnson, Lorenz and Lundvall 2002). Therefore, rendered previously tacit knowledge codifiable ensures knowledge of the business model is retained (Zack, McKeen and Singh 2009). This tool therefore becomes a vital element of an organisation's knowledge management system.

The Hierarchical Business Model Framework is proposed as a new tool for sustainability management and research. The tool enables the depiction of a business and its sustainability issues using a common language and structure. The use of a visual communication device, the schematic depiction of the business model, capitalises on the increased memory retention and understanding associated with communicating complex concepts through images (Agrawala, Li and Berthouzoz 2011). It is not designed to make an assessment of a business's performance or categorise and outline the information needs of a business in the way that the Sustainability Balanced Scorecard or Environmental Management Accounting Framework do. However, the modelling capability can work synergistically with other sustainability management tools to increase internal accountability and ensure those charged with corporate governance have a means to assess implementation of sustainability policies in all aspects of the business in a similar manner as Burritt et al. (2011) in exploring carbon accounting in organisations at a granular level. The schematic depiction of the organisation using a sustainability conceptual focus provides an account of sustainability at the organisation level which addresses a key concern raised by Gray (2010: 56-57) regarding the ability to create such an account.

This paper considers sustainability and the means to implement it within businesses using a tool which has the capacity to be flexible, adaptive to context, and offers a degree of detail as desired – enabling directors of companies to understand the implementation of

sustainability policies into the very fabric of a business, as well as the failure of or dysfunction in such implementation efforts.

This paper also represents a necessary first step to building a classification of business models based on a hierarchical structure which supports sustainability. While this is not an attempt to create a set of normative business models which are preferred for creating more sustainable organisations, the ability to classify and assess businesses with a sustainability lens provides the potential for not only more informed research but also indicators of best practice.

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