Three Dimensional Elements for Sustainable e-Business Modelling

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Abstract: e-business modelling is a prevalent term now days as it converts technology into economic value. The sustainability of the business is another global contemporary issue. Although e-business modelling and sustainability are the two major global trends now but still there is no common understanding about the elements that need to be used for a sustainable e-business model. Surprisingly, none of the e-business modelling approaches even consider sustainability as a major element. In this paper, therefore, after extensive literature review on e-business modelling and sustainability of the business we carefully identify and determine the required elements for a sustainable e-business model. The elements are three dimensional and selected from customer value area, business value area, and process value area so that the modelling elements safeguard the interests of all stakeholders (customer, business, society, and environment) while maintaining the sustainability.

1 INTRODUCTION

The term e-business modelling is widespread but it is considered that only some views of e-business have been investigated. Now days, to be competitive it has become very important that all businesses carefully validate their business objectives, requirements, and strategies through a careful process of formal business modelling with the current global e-business and e-commerce initiatives. But a very few business models talks about the sustainability of the businesses. Although sustainability issues are considered in some modelling approaches, they are mainly in strategic level and not in operational level. To develop a better understanding about sustainable business and to enhance the confidence in the feasibility of these ideas such a modelling framework needs to be developed that can be easily implemented by the stakeholders successfully and that will truly contribute to the innovative e-business modelling ideas. For the long run sustainability business modelling approaches only with strategic directions are not sufficient, instead, a complete sustainable e-business model with operational directions is essential.

Blended value or shared value is introduced by the scholars lately. According to the literature (Emerson, 2006) blended value is the integration of economic value, social value, and environmental value. Blended value which is also referred as "shared value can be defined 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" (Porter, 2011). But these blended value definitions in the literature do not directly include the business value or the process value. Business value is vital in the sense that it safeguards the interest of the organisation and helps to keep in track for achieving goals. Similarly, process value is another vital element as it supports to produce both customer value and business value. Therefore, we define blended value as the integration of economic value, social value, and environmental value for both customer and business. It is different from CSR (Corporate Social Responsibility) value in the sense that CSR value is separate from profit maximization and agenda is determined by external reporting, whereas blended value is integral to profit maximization and agenda is company specific and internally generated. In such a theoretical lacuna regarding blended value and e-business modelling the aim of this paper is to identify the required elements necessary to develop a sustainable e-business model that will encapsulate economic, environmental and social aspects in the strategic and operational settings of organizations.

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We termed them as 'blended value elements'. We, in this paper: (i) explore and determine the important elements in developing e-business model; and (ii) investigate how the sustainability dimensions can be integrated with the value dimensions in developing sustainable e-business model. The following section of the article covers extensive literature review on business modelling, e-business modelling and sustainability of the business. Section 3 explicate the importance of the three dimensional elements in e-business modelling. The identification of three dimensional elements and their comprehensive explanation is covered in Section 4. Section 5 is consists of discussion on findings and further research direction; and finally, Section 6 concludes the article.

2 LITERATURE REVIEW

2.1 Business Modelling

The modelling approaches by Petrovic, Kittl, and Teksten (2001) and Auer and Follack (2002) are very similar, who view a business model as a model that "describes the logic of a 'business system' for creating value that lies behind the actual processes". Tapscott, Ticoll and Lowy (2000) provide a typology of business models that they call b-webs. In the methodology proposed by Afuah and Tucci (2001), one can find a list of business model components. Osterwalder and Pigneur (2002) conceive the business model as the description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners. There are some more researchers who have worked on business modelling. Among them the research works of Zott, Amit, and Massa (2010), Hawkins (2001), Stabell and Fjeldstad (1998), Linder and Cantrell (2001), Applegate (2001), Hamel (2000), Papakiriakopoulos, Poulymenakou, and Doukidis (2001) are worth mentioning.

What is found from the literature is that there are number of terms used in business modelling. Business model has been referred to as a statement (Stewart and Zhao, 2000), a description (Applegate, 2000; Weil and Vitale, 2001), a representation (Morris et al., 2005; Shafer et al., 2005), an architecture (Dubosson-Torbay et al., 2002; Timmers, 1998), a conceptual tool or model (Osterwalder, 2004; Osterwalder et al., 2005; Teece, 2010), a structural template (Amit and Zott, 2001), a method (Afuah and Tucci, 2001), a framework (Afuah, 2004), a pattern (Brousseau and Penard, 2006), and as a set (Seelos and Mair, 2007) found by Zott et al. (2011). There are even different aspects that are used by the scholars for business modelling, such as, product/revenue aspects, business actor/network aspects, and marketing specific aspects, etc. Although a number of researchers tried to include value aspect in their modelling but none of them precisely point out the contents of the value that will be able to make a business sustainable.

2.2 e-Business Modelling

It has been found by a study of Zott et al. (2011) that in a total of 49 conceptual studies in which the business model is clearly defined, almost one fourth of the studies are related to e-business. That means, the majority of research into business models in the information systems field has been concerned with e-business and e-commerce; and there have been some attempts to develop convenient classification schemas (Al-Debei and Avison, 2010). Table 1 shows the elements that are used for business and e-business modelling by different researchers. For example, definitions, components, and classifications into e-business models have been suggested (Alt and Zimmerman, 2001, Afua and Tucci, 2001). Timmers (1998) was the first who defined e-business model in terms of the elements and their interrelationships. Applegate (2001) introduces the following six e-business models: focused distributors, portals, producers, infrastructure distributors, infrastructure portals, and infrastructure producers. Weill and Vitale (2002) suggest a subdivision into so called atomic e-business models, which are analyzed according to a number of basic components. Rappa (1999) provides taxonomy of e-business models based on the value offerings and mode of generating revenues. Dubosson-Torbay et al. (2001) identify the following principal dimensions for classifying business models: user's role, interaction pattern, nature of the offering, pricing system, level of customization, and economic control.

2.3 e-Business and Sustainability

A sustainable business maintains a balance among economic development, environmental stewardship, and social equity (Sikdar, 2003). In other words, sustainable business means a business with dynamic balance among three mutually inter dependent elements: (i) protection of ecosystems and natural resources; (ii) economic efficiency; and (iii)

Table 1: Business modelling elements (adapted from Al-Debei and Avison, 2010).

Authors	Element indicators
Timmers (1998, p. 4)	Architecture, Value Proposition, Business actors and roles, Revenue sources.
Venkatraman and Henderson (1998, pp. 33–34)	Architecture, Organization strategy, Customers, Asset configuration, Knowledge leverage.
Linder and Cantrell (2000, pp. 1–2)	Business logic, Value Capture, Revenue sources.
Gordijn et al. (2000, p. 41)	Value proposition /exchange, Stakeholder network.
Petrovic et al. (2001, p. 2)	Business logic, Value proposition, Intermediate theoretical layer.
Amit and Zott (2001, p. 4)	Value proposition, Structure, Governance.
Torbay et al. (2001, p. 3)	Value proposition, Architecture, Network of partners, Relationship capital.
Stahler (2002, Online, p. 6)	Abstract, Simplification of current and future business reality.
Chesbrough and Rosenbloom (2002, p. 532)	Coherent framework, Mediating construct, Technology, Economic Value.
Magretta (2002, p. 4)	Value proposition, Customers, Revenue sources.
Bouwman (2002, p. 3)	Roles and relationships: company, customer, partners, Value proposition.
Hedman and Kalling (2003, pp. 49, 52–53)	Key business components, Resources, Customers, Value proposition, Network, Architecture, Structure, Dynamic.
Campanovo and Pigneur (2003, p. 4)	Conceptual, Intermediate theoretical layer.
Leem et al. (2004, p. 78)	Strategy, Revenue, Alliances.
Shafer et al. (2005, p. 202)	Business logic, Strategy, Value proposition, Value network.
Osterwalder et al. (2005, pp. 17–18)	Conceptual tool, Business logic, Value proposition, Customer segments, Architecture, Network of partners, Revenue.
Haaker et al. (2006, p. 646)	Blueprint, Network of firms, Customers, Value proposition.
Andersson et al. (2006, pp. 1–2)	Business actors and relations, Value exchange.
Kallio et al. (2006, pp. 282–283)	Value proposition: information/goods/services, Industry participants: customers/partners/ competitors/government.
Rajala and Westerlund (2007, p. 118)	Value proposition, Set of actors, Revenue.
Janssen et al. (2008, p. 204)	Business logic, Value proposition, Customers; Current or future business.
Rappa (2008, Online)	Revenue sources, Position in the value chain.

consideration of social wellbeing such as jobs, housing, education, medical care and cultural opportunities (Bell and Morse, 2009). It has been evident that there is a positive correlation between environmental and social sustainability and economic return (Carter and Rogers, 2008). Even though many scholars enlightened their study on sustainability incorporating economic, social, and environmental perspective but still "most companies remain stuck in social responsibility mind-set in which societal issues are at the periphery, not the core. The solution lies in the principle of shared (blended) value, which involves creating economic value in a way that also creates value for society by addressing its needs and challenges" (Porter, 2011). Moreover, most of the scholars provide with hypothetical ideas for maintaining sustainability. A comprehensive business model for sustainability with operational directions is still not present.

E-business is the point where economic value creation and information technology/ICT come together (Akkermans, 2001). ICT can have both positive and negative impact on the society and the environment. But ccorporations have the knowledge, resources, and power to bring about enormous positive changes in the earth's ecosystems (Shrivastava, 1995). In consistent with the definition of environmental sustainability of IT (Elliot, 2011), sustainability of e-business can be defined as the activities within the e-business domain to minimize the negative impacts and maximize the positive impacts on the society and the environment through the design, production, application, operation, and disposal of information technology and information technology-enabled products and services throughout their life cycle.

3 WHY THREE DIMENSIONAL ELEMENTS IN SUSTAINABLE E-BUSINESS MODELLING?

In the past, businesses limited their view of business profitability as they were only aware of economic gain and were focused on sound financial systems to

maintain that gain. Similarly, businesses were only concerned about economic value even when delivering value to the customers. Then slowly the trend for socially conscious businesses started and now a day to compete in the market businesses need to deliver not only the economic value but the blended value. Customers now want to know what total value they are receiving from the businesses. Therefore, to deliver a total or complete value to the customers businesses need to include economic, social, and environmental value in their value propositions.

As there are multiple stakeholders involved in e-business modelling this research approach sincerely considered the stakeholder theory while identifying the elements of sustainable e-business modelling. Stakeholder theory holds the idea that businesses shall take decision considering the interest and impact of all stakeholders. If a balance cannot be ensured among the stakeholders, organizational sustainability will be questioned (Freeman, 1984). A sustainable organization try to maximize economic, social, and environmental performance for a sustainable and value based stakeholder relation (Perrini and Tencati, 2006). To provide adequate value to stakeholders and to manage relation with them organizations need to develop specific processes at different levels of organization (Freeman, 1984). Such type of process development shall be based on considering the economic, social, and environmental interests of the stakeholders. Hence, it can be summed up that stakeholder theory indicates the development of a business model that recognizes the value requirements of multiple stakeholders to sustain the business.

Now if we look at the previous research in this area what we see is that most of the business models research in information systems field has been concerned with e-business and e-commerce (Al-Debei and Avison, 2010). A number of ideas exist about e-business models of which most of them provide only conceptual overview and concentrate only on economic aspects of the business. None of them exclusively considers the sustainability aspects. Similarly, there is a growing number of literature available about the sustainability of businesses (i.e. (Bell and Morse, 2009, Stead and Stead, 2000, Epstein and Wisner, 2001, Tanzil and Beloff, 2006), etc.) which do not focus on e-business. But the intersection of these two global trends, e-business and sustainability, need to be addressed. Although recently a very few researchers talks about green IT/ICT concept (i.e. (Elliot, 2011, Elliot and Binney, 2008, Hilty and Hercheui, 2010, Melville, 2010, Houghton, 2010, Erek, 2011), etc.) but none of them clearly explains how that concept will fit in an e-business model to make it sustainable and at the same time, to protect the interests of the customers.

It is said that all firms, whether non-profit or for-profit, create blended value—the only issue up for debate is the degree to which they maximize the component elements of value (Emerson, 2003). According to the literature, the sustainable value must include values from three areas: (a) Economic value, (b) Social value, and (c) Environmental value. Importantly, businesses must also realise that to be competitive in the market this value need to be measured from three dimensions:

Dimension 1: What Value is demanded by the Customers?

This means, the requirements that need to be fulfilled to minimize gap of what value the customers are receiving and what value they are expecting. Businesses need to see whether the customers are receiving the total value that they are expecting, or not. If not, the businesses must identify all the existing discrepancies and try to fulfil those discrepancy requirements to deliver the total value to the customers effectively.

Dimension 2: What Value is required by the Businesses based on their Strategy to reach their Goals?

Traditionally, customer requirements were the only concern for the businesses to compete successfully in the market and still now there is no doubt about the importance of customer requirements in business. But now only fulfilment of customer requirements does not guarantee the long term competency and profitability for the businesses. To compete successfully every business must have their own clear goal defined in their strategy that they want to achieve in time. This dimension includes with all the business requirements necessary to reach the organisation goals.

Dimension 3: What Value is required by the Businesses to have efficient Value Processes?

Just producing and delivering the value is not enough to be competitive now a day. Rather, value need to be produced effectively by the businesses to compete and to ensure profitability for the long run. To produce value effectively, efficient process is a must. All the inefficiencies of the value processes must be identified and corrected to produce the value effectively. The requirements that are necessary to make all the processes of a business to be efficient are included in this dimension of

measurement.

4 THE THREE DIMENSIONAL ELEMENTS

Now, based on the discussion in Section 3 if the sustainable value is measured from the above three dimensions value requirements of a business can be categorised into 9 (nine) groups as follows:

a) Customer value requirements (CVR): VOC based
   1. Economic requirements (EcVR1)
   2. Social requirements (SoVR1)
   3. Environmental requirements (EnVR1)
b) Business value requirements (BVR): Strategy based
   4. Economic requirements (EcVR2)
   5. Social requirements (SoVR2)
   6. Environmental requirements (EnVR2)
c) Process value requirements (PVR): Process based
   7. Economic requirements (EcVR3)
   8. Social requirements (SoVR3)
   9. Environmental requirements (EnVR3)

4.1 Dimension 1: Customer Value Requirements for Sustainability (CVR)

Generally, customer requirements indicate voices of the customers (VOCs). Since rich literature is available about VOCs, we are not explaining it further. In a number of research approaches VOCs are translated as customer requirements through evaluation and validation (Wang and Hong, 2007, Chan and Wu, 2005), (Han et al., 2001, Hwarng and Teo, 2001, Chien and Su, 2003). But we, more specifically, by customer requirements, mean the total value (economic, social, and environmental) that is demanded by the customer. This requirement can be any or any combination of the economic, social and environmental value.

Customers can be of different types, such as, internal customers (shareholders, managers, employees), intermediate customers (wholesale people), ultimate customers (recipient of service, purchasers, institutional purchasers), etc. (Chan and Wu, 2005). When identifying customer requirements, every organisation should ask itself few general questions (Mazur, 2003):

– Which customer will help them the most in achieving their business goals?
– Are all customer equally important to them, or some are more valuable to them than others?

Usually, there are too many customer requirements to be manageable and that is why of classification of customer requirements is beneficial(Han et al., 2001) and necessary to limit the budget of investments. According to our approach, customer requirements can be of 3 (three) types:

4.1.1 Economic Value Requirements for 'Customer Requirements' (EcVR1)

Economic value of a product or service has number of different definition and explanation in the past literature. Therefore, we are not going to define it further; rather we focus on economic value requirements for customer requirements. In our approach, this customer requirement means any of the customer's value requirements which is somehow economically related directly or indirectly to the product or service that is to be delivered to the customer. These economic requirements are not the factors from business's point of view which are mentioned by Porter in his classical work on Competitive Strategy (1980) and Competitive Advantage (1985), instead these economic requirements are the demands from the customer's point of view. In other words, these requirements mean all types of economic benefits that the customers are looking for. For example, price of the product or service is directly related to the product or service economically. Even quality, after-sales-service, availability or ease of access, delivery, etc. also appear under this category.

Generally, economic value requirements are considered as the top prior requirement from the customers' point of view within all of the value requirements except some product and services whose value dimensions are different. From the previous research it has been found that majority of the customers look for economic value requirements of the product or service before any other requirements. For example, Schechter (1984) and Bishop (1984) identified customers that equate value with price. Zeithaml (1988) identified from a study that customer's equated value of the product or service with low price. According to Porter (2011), value for the customer is defined as benefits relative to costs. In another study by Hoffman (1984) reveals the salience of price in the value equations of customers. Zeithaml (1988) also found that number of customers consider value as price first and quality second.

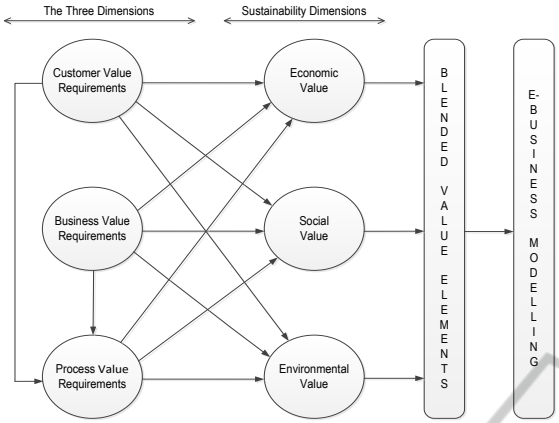

Figure 1: Proposed elements of e-business modelling.

4.1.2 Social Value Requirements for 'Customer Requirements' (SoVR1)

Social value requirement for the customer means any value for the customer's society. Almost all of the products or services produce some sort of value impact to the society. It will be very difficult to identify many products or services which do not have any social value impact, direct or indirect. Also, there will be very few business activities which are totally detached from producing some kind of social value. If it is true that most of the businesses produce some kind of social value, positive or negative, then the social value requirements also must be encountered at the core of the business model. Today's customers are interested to see the contribution or impact of the product or service or operations of the business organisations to the society they are living. These social value requirements are not the social responsibilities that the business organisations are thinking to perform; rather these are the requirements that the customers are demanding or expecting from the products or services or from the supplier of the products or services when they consume that product or service.

Social value requirements can be of different dimensions. Such as, it can be directly related to the product or service of the business, such as, knowledge of the customers' society, customers' safety of the product, customers' health (fresh food, harmful packaging or ingredients in the food, life-saving medicines), etc.; or it can be indirectly related to the business, such as, generating local employment, supporting education, health and welfare, loans and assistance to the charities, etc. Social value requirements may also include employment policies of the organisation that ensure diversity, including gender, race and religion, proper work environment for all the staff that meets social necessities, encouraging or allowing organisation's staff to get involved in fundraising and volunteer activities for the disadvantaged within the society, offering business education, community training programs, etc. Porter (2011) identifies three ways to create economic value for the customer by creating social value- by re-conceiving products and markets, by re-defining productivity in the value chain, and by building supportive industry clusters at the company's locations.

4.1.3 Environmental Value Requirements for 'Customer Requirements' (EnVR1)

Customers, suppliers, and public are increasingly demanding that businesses minimize any negative impact of their products and operations on the natural environment (Klassen and Whybark, 1999). Customers now a day do not just look at the economic value of the product or service, they also want to know whether that product or service or the supplier of that product or service cause any impact on the environment. Because they believe 'business have major role to play in helping and enhancing the environment' and thus, every business should develop sound environmental management policies for processes and products (Demirdogen, 2007). It is also believed now by the customers that there are number of ways how businesses can reduce the impact on the environment, for example, sourcing responsibly, such as, using recycled materials and sustainable timber, creating an efficient and fuel-efficient distribution network, creating recyclable products, minimising packaging, working with suppliers and distributors who take steps to minimise their environmental impact, buying locally to save fuel costs, etc. As a whole, the customers want the businesses to act more responsibly by performing an important and positive role in the society through creating additional environmental value for the future generations.

Bovea and Vidal (2004) suggest how more value can be added to the product for the customer by integrating environmental impact, costs and customer evaluation during the product design process. Munoz and Sheng (1995) present a model which they believe can serve as a framework for decision-making in environmentally conscious manufacturing.

4.2 Dimension 2: Business Value Requirements for Sustainability (BVR)

It is proven that better quality of the products or services lead to the fulfilment of customer requirements or higher customer satisfaction. But only fulfilment of customer requirements does not guarantee the future profitability of the businesses as the market changes. Therefore, businesses need to think in advance about how to sustain the profitability in the long run. Strategic managers will be mainly responsible to identify the business requirements by evaluating the current situations and the future directions of the businesses. Managers must clearly define their goals and targets when identifying these requirements. The businesses must consider its future strategy and all the cost drivers relative to its operations when selecting these business requirements. For example, there can be a number of different business goals that businesses may aim to achieve in the long run based on their current circumstances. But whatever the goals are, to achieve them there are always relative business requirements that need to be fulfilled. Porter (1980, 1985) provides with a list of common cost drivers which may guide all the businesses during the business requirements selection to achieve their goals. Business requirements can be of different types depending on what type of business that is. All business requirements can be classified into 3 (three) groups:

4.2.1 Economic Value Requirements for 'Business Requirements' (EcVR2)

Economic value requirements for business requirements are those requirements which add some economic value to the business directly or indirectly if they are fulfilled. These economic value requirements are very similar to the requirements explained in the section EcVR1 except that those economic requirements are demanded by the customers and these economic requirements (EcVR2) are identified by the businesses to be fulfilled to achieve the planned future goals. For example, reducing the cost of production, increase of sales and/or profit, getting cheaper raw materials, minimizing packaging and delivery cost, replacing the employees with more efficient machinery, reducing costs by implementing more efficient supply chain management systems, saving of time and energy, etc. add some sort of economic value to the businesses. Generally, the ultimate goal of adding some economic value to business is to pass the savings to the customers in the competitive market and maximise profit.

4.2.2 Social Value Requirements for 'Business Requirements' (SoVR2)

These social value requirements are to add some value to the society from business's point of view if they are fulfilled. Types of social values are discussed in the section SoVR1. These value requirements (SoVR2) reflect what social value the business is planning and willing to deliver to the customers' society in time regardless of the customers' demand. For building societal value, Nelson (1998) proposes an approach based on three elements: (i) efficient and ethical pursuit of core business activities, such as, creating local jobs, paying taxes and royalties, implementing social human resource policies, etc. (ii) social investment and philanthropy, such as, offering training program to the community, running employee volunteering schemes, business education projects, sponsoring community development trusts, civic improvement, etc. and (iii) contribution to the public policy debate, such as, supporting progress for good governance including anti-corruption initiatives and human rights standards, contribution to the social policies including education, training, local economic development, employment management, etc. Adding social value by the businesses can be a part of different types of business goals depending on the business natures. Part of the goals can be simply for the wellbeing of the society, or can be for the competition in the market. For instance, Lever Bros Ltd. uses few principles to focus on social value, such as, emphasising on employees' personal development, training, health, and safety; improving well-being of the society at large; using world class expertise base human safety to ensure consumer safety; improving living conditions of its employees, etc. (Zairi and Peters, 2002). Through participation in community-based programs such as sponsorships, donations, and employee volunteer programs, global firm Fortis commit to work to fight illness and disease, promote education, aid and protect children, and prevent homelessness and hunger (Snider et al., 2003) to add social value.

4.2.3 Environmental Value Requirements for 'Business Requirements' (EnVR2)

To be competitive in the market businesses need to act environmental friendly now a day. According to Denton (1994), adding environmental value can be a

competitive advantage for the businesses since businesses can differentiate themselves by creating products or processes that offer environmental benefits. As mentioned in the section EnVR1 above, there are number of ways how businesses can minimise the impact on the environment. By implementing environmental friendly operations businesses may achieve cost reductions, too. For example, minimum use of environmentally-toxic chemicals, reduced contaminations, recycling of materials, improved waste management and reuse or recycling of waste, using fuel efficient machineries, minimize packaging, using recycled water, etc. reduce the impact on the environment and at same time they may reduce the costs of the businesses. One of the principles of Lever Bros Ltd. is to take great care to minimize the environmental impact of all their operations- from raw material procurement, product design, manufacture and distribution- to use and disposal (Zairi and Peters, 2002). In the section EnVR1, we discussed environmental value requirements that are demanded by the customers but these environmental value requirements are identified by the businesses for their different business goals that they aim to achieve in time.

4.3 Dimension 3: Process Value Requirements for Sustainability (PVR)

Process value requirements are the requirements that need to be fulfilled to have an efficient value creating process within the existing business processes. Even though customer satisfaction can be obtained effectively and efficiently for some time by fulfilling various customer requirements, an organisation still cannot ensure future profitability if it lacks value creating capability (Wang and Hong, 2007). Process value requirements are identified from the gap between what is being achieved and what need to be achieved from the existing value processes. These requirements are not demanded or identified by the customers rather they are identified by the business itself by looking at what amount of value it is currently producing and what amount of value it is supposed to produce to safeguard the interest of customer value and business value. For example, inaccurate or slow manufacturing of a product or service by employee or machinery, untimed delivery, inefficient processes caused by lack of training, social misconducts, unproductive waste management, unplanned pollution (air, water, sound) management, etc. and any other inaccuracies within the existing processes which can be corrected without or with very low efforts and/or investments are identified as value requirements. Common steps for optimizing business processes which are analysing, designing, implementing and evaluating can be followed to have an efficient value creating system within the organisation. The 'Process value requirements' can be any of the following 3 (three) types:

4.3.1 Economic Value Requirements for 'Process Requirements' (EcVR3)

Economic value requirements for value requirements are mainly related to the cost savings within the existing business processes which can be later transferred to the customers. Again, this additional value (cost savings) is not demanded by the customers, instead the managers identify those value creating inefficiencies within the existing processes and try to correct them which result in some sort of economic benefits for the organisations. Then those economic benefits can be passed to the customers as economic value by the organisations. For example, employing skilled workers, keeping up with the up-to-date technologies, providing adequate amount of training, using efficient energies, improved supply chain management systems, etc. can increase the efficiency of the value processes that can certainly add some economic value to the organisation that can be transferred to the customers, if required.

4.3.2 Social Value Requirements for 'Process Requirements' (SoVR3)

Recent expectation from each society is that every business should act honestly and ethically. Value for the society can be of different types: basic value, ethical value, voluntary value, etc. To identify the social value requirements for value requirements managers look at the whole value process of the organisation and see whether there is any scope to add some value to the society they are operating within the existing value process systems. Sometimes the businesses even do not hesitate to spend some extra (investment) or to give some extra effort if there are chances to add some social value. In the sections SoVR1 and SoVR2, we have already explained about what the social value is and their examples. SoVR3 is different from SoVR1 and SoVR2 in the sense that SoVR1 requirements are demanded by the customers, SoVR2 requirements are identified by the managers that they are planning to deliver to the customers in the future, and SoVR3 requirements are identified by the managers but they are identified within the current value process

system so that they can be fulfilled and delivered immediately. For instance, educating disadvantaged children, organising skills training for unemployed people, employing disabled people, establishing schools and colleges, sponsoring social events, organising social gathering, organising awareness programs etc. can add value to the society and most of these requirements can be easily fulfilled by the businesses without or with a little investments or efforts.

4.3.3 Environmental Value Requirements for 'Process Requirements' (EnVR3)

These value requirements need to be fulfilled to minimize the impact of current value processes on the environment. To fulfil these requirements, the businesses try to find and implement all the necessary steps within the existing processes that will stop or reduce the chances of effecting the environment, thus, adding some value to the environment. Similar to SoVR3, these requirements are also identified within the current value process system by the managers so that they can be fulfilled and can start adding more value immediately. EnVR1 requirements are demanded by the customers but EnVR3 and EnVR2 are identified by the businesses themselves to increase the value by increasing the efficiencies in the business processes now and in the future respectively. For example, leakage of water/oil/heat, incompetent waste management, inefficient disposal and recycling of materials, unplanned pollution (air, water, sound) management, uncontrolled ecosystem stress, heating and lighting inefficiency, etc. will result in incompetency in the value processes for the businesses. Thus, by fulfilling these requirements businesses may get rid of these inefficiencies and add value to the value creation processes.

5 DISCUSSION AND FURTHER RESEARCH

It has been found from the above discussion that focusing only on the customers' demand is not enough to be competitive regardless of whether the demand is economic, social, or environmental. As mentioned above, customer satisfaction can be obtained effectively and efficiently for some time by fulfilling various customer requirements but still an organisation cannot ensure future profitability if it lacks value creating capability. Moreover, only fulfilment of customer requirements does not guarantee the future profitability of the businesses as the market changes. To be competitive and to maintain the sustainability an e-business must consider values (economic, social, and environmental) from all three dimensions: customer value requirements, business value requirements, and process value requirements. It is also found that each of the blended value elements (customer value, business value, and process value) need to be related to all of the sustainability elements (economic, social, and environmental). What is also realised that within the blended value elements the customer value and the business value are partially dependant on process value as the process value supports the customer value and the business value.

Based on the three dimensional elements of e-business model our further research will be directed at the development of an e-business model based on blended value which will be sustainable and simultaneously will safeguard the interests of all the stakeholders. Therefore, the main objectives of the further research in this area can be defined as follows:

- To investigate how the concept of blended value dimensions can be used in developing an e-business model.
- To investigate how these three dimensional elements can be used to determine the optimal/appropriate design requirements in developing an e-business model.
- To develop a 'value-sustainability' framework for modelling e-business in conjunction with 'blended value' and 'sustainability' concepts.

6 CONCLUSIONS

There can be found a number of ideas and proposals about business modelling and e-business modelling in the literature and few of them used 'value' as the main element of their modelling. But in their approaches 'value' is measured mainly from the customer's point of view and not from the business point of view or the process point of view. Which means 'business value' and 'process value' is fully ignored in the previous approaches. Recently some scholars are talking about 'sustainable value', 'shared value, or 'blended value'; even them did not consider 'business value' or 'process value'. Moreover, none of them clearly explicated the value elements that will protect the interests of the customer and the business. In this paper, we have shown the important elements that should be used for a sustainable e-business model after extensive

literature review. From the literature we have explored and determined that the three dimensional elements should be used in developing sustainable e-business model. We have also shown why these three dimensional elements should be used for sustainable e-business modelling. Furthermore, we have investigated and shown how the sustainability dimensions can be integrated with the value dimensions in developing sustainable e-business model.

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