

## Design of Strategic Business Model for Electronic Enterprise in Digital Society

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### Abstract

*In this paper we describe the business model and its place in the firm as the blueprint of how a company does electronic business. It is the translation of strategic issues, such as strategic positioning and strategic objectives and perspectives into a conceptual model that explicitly states how the business functions. The business model serves as a building plan that allows designing and realizing the e-business structure and online systems that constitute the company's operational and physical form. Earlier efforts of literature shows that the topic of e-business models is often discussed superficially and frequently without any understanding of its roots, its role and its potential. Thus this paper aims to shed some light on the origins, the present, and the future of the e-business model concept, particularly to digital society.*

### 1. Introduction

As we enter the 21<sup>st</sup> century, there is an increasing demand for a strategic level assessment of e-business capabilities that can be assembled and analyzed rapidly without significant intrusion into the subject enterprises. The strategic assessment is aimed at helping business managers in adapting and evolving their businesses using technology. The leaders need to ensure the creation of strategies, systems and methods for achieving excellence, stimulating innovation and building knowledge capabilities. The strategies and values should help and guide all the activities and decision of the company [42]. E-business, with its dynamic, rapidly growing and highly competitive characteristics has a potential to create the new wealth. So established firms are creating new online businesses, while new ventures are exploiting the opportunities for its provision through the Internet. E-business offers promise to apply web and other electronic channel technologies to enable fully integration of end-to-end processes. It is also transforming the rules of competition for establishing businesses in unprecedented ways. So it is attracted the attention of scholars in the field of entrepreneurship and strategic management. Academic research in the field of e-business is currently sparse. The literature to date did not develop up to date addressing the contemporary issues related to this new phenomenon nor has it developed theory that captures the unique features of virtual markets [3]. Though several attempts were made earlier to design business models emerging

over and over with the coming of the new economy in order to understand how e-companies are making or not making money, surprisingly, little attention has been given to business models by researchers with much of the published work focusing on Internet-based models. No generally accepted business model definition has emerged as of now. Diversified available definitions pose substantive challenge for exposing the nature and components of the model. The e-business model approach that we propose in this paper shall help a firm to reengineer its organisation in a way to become more efficient, more flexible and responsive to customer demand, to forecast the possible future scenarios and to stay competitive in the Internet era. Definitions at the strategic level usually emphasize overall direction to the firm and interactions across organisational boundaries considering competitive advantage and sustainability [28]. Decision elements usually include stakeholder identification (people), value creation knowledge flow across network alliances and program management activities needed to be performed to provide the visibility across the Enterprise [28]. E-business modeling has similar goals to enterprise modeling in general [25]. Modeling helps firms develop business visions and strategies, redesigns and align business operations, share knowledge about the business and its vision and ensure the acceptance of business decisions through committing stake holders to the decision made [34]. Whenever a business enterprise is established, it either explicitly or implicitly demands a particular business model that describes the design or architecture of value creation and its delivery through action generation. The essence of a business model design lies in delivering value to customers; attract and retain customers to pay for value and converting those payments to profit by the business enterprise [41].

It is known to most of the traditional business oriented enterprises that Norton and Kaplan's Balanced Score Card translates an organisation's mission into a comprehensive set of performance measures that provide the framework for a strategic measurement and management system. Though it is appreciated for its well-known acceptability for evaluating and measuring the organisational performance, its adoptability to the electronic enterprise can be questionable as the model explicitly lacks the internal and external views of the

organisation, which is suggested by the basic principles of Management Information System theories; in the definition of e-Business [43] Model and strategic process in e-business [10]. As measures, financial (current performance measure) and non-financial (future performance measure) should predict long term economic performance, there is a need to combine the non-financial measure effectively [26]. In generic sense the expression must consider both tangibility and intangibility in the process of organisational performance evaluation.

Further in view of justifying the design of business model and its understanding considerations, Osterwalder, Pigneur and Tucci [33] conducted a survey on the definition of business model. 55% of the respondents mentioned that the business model definition should consider value/customer-oriented approach and 45% of the respondents mentioned that it should consider activity/role-related approach as a part of process of establishing an enterprise model. In fact our model considers both.

Thus our effort in this regard is to evolve and propose an innovative theoretical framework that can address this issue of depicting internal and external views of the business model for electronic enterprise in the 21<sup>st</sup> century knowledge based economy and digital society.

## 2. Model Development

A business model is more generic than a business strategy. Coupling strategy and business model analysis is needed to protect competitive advantage resulting from new business model design. Model development and representation implies conceptualization, which can be described as the objects, concepts and other entities that are assumed to exist in some area of interest and their inter-relationship [33]. It is expected that the model concept must go in the following direction: A strategic business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm, in our case for an electronic enterprise. Therefore one must consider which concepts and relationships allow a simplified descriptions and representation of what value is provided to customers, how this is done and with which financial activity consequences.

Several frameworks and taxonomies have been suggested to classify and describe e-business scenarios such as e-value methodology [17] and e-business model ontology describing logic of e-business value generation [30]. These frameworks and taxonomies can improve the understanding of the business rationale and application scenarios for e-business [40].

Osterwalder et al. [33] mentioned that the business model development should follow a

business model concept hierarchy. The hierarchy is represented in three levels viz. i. Meta-model or Driving model level ii. Taxonomy of type such as Electronic Enterprise and iii. The instance view such as Strategic Business Model View of Electronic Enterprise. The essence of business models is proposing two aspects: (i) design elements i.e. the architecture of the system and (ii) design themes i.e. the actual description related to value creation and action generation [45]. We followed the three level representation business model hierarchy as mentioned above.

## 3. Level 1 Representation- The Meta-Model or the Driving Model

The driving model is an ontological representation in defining a company's offering that brings manager's mental models into a common form of characteristics with which a business model can be constructed [31]. The strategy of business model includes capturing value and generating action.

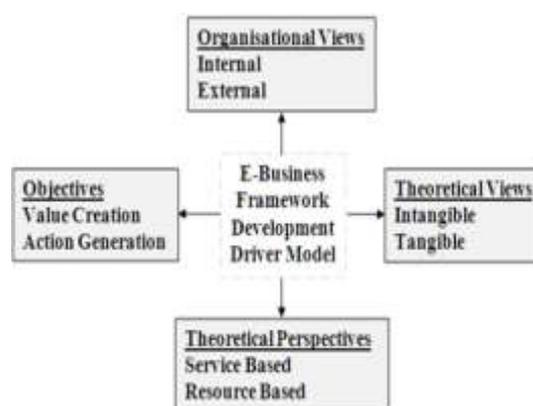


Figure 1. Model Development Driver or Meta-Model Diagram [ 2 ]

The four components of the driving model are: (1) Objectives of the framework: (i) Value Creation and (ii) Action Generation. (2) Organisational Views of the framework: (i) Internal view and (ii) External view. (3) Theoretical Views of the framework: (i) Intangible Perspective and (ii) Tangible Perspective. (4) Theoretical Perspectives of the framework: (i) Service Based View Theory and (ii) Resource Based View Theory.

### 3.1. Objectives of the Framework

**3.1.1. Value Creation.** The ultimate goal of any strategic decision is to create value. Earlier study on building the theory for value creation potential embedded in virtual markets has reviewed specifically the 'value chain framework', the resource-based view of the firm, Strategic network

theory and transaction cost economics [2]. We observed that value creation in e-enterprise goes beyond the e-business value that can be realized through the configuration of the value chain [3], the formation of strategic networks among firms or the exploitation of the firm specific core competencies [46] by focusing also on the 'action generation' component simultaneously [2]. E-enterprise firms are often innovative through novel exchange mechanism; and transaction structures are generally do not present in the form of traditional firms [3]. So a discussion on value drivers and action drivers of e-enterprise in terms of interrelationship among the four drivers of proposed framework is made in this paper. Our observation suggests that no single strategic management or economic theory can fully explain the value creation and action generation potential of e-business. Each theory should offer an important insight into these aspects of value creation and action generation in e-enterprise [3].

**3.1.2. Action Generation.** E-business strategy formulation mechanisms support reasoning of the effect of strategic change activities. The activity-based view analyzes firm-level competitive advantage using activities as the unit of analysis. Porter (1985) [36] argues that the potential sources of competitive advantage can be identified only by breaking the firm into activities. Competitive advantage can be considered as firm's potential value and can be achieved by configuring activities with different efficiencies in different ways. To help managers achieve a competitive advantage, Porter (1985) [36] outlines the value chain as a generic activity template that can be used to decompose the firm into the individual activities to create and improve enterprise value.

### 3.2. Organisational View of the Framework

With the globalization of economy, industries are facing increasingly greater challenges. Business Integration undoubtedly is an important topic, both internally and externally. However how does an enterprise create its own value will be the key to an enterprise's success in the future. Enterprise value (EV) or Firm Value (FV) is an economic measure reflecting the market value of the whole business. Enterprise value is one of the fundamental metrics used in business valuation, modeling and portfolio analysis. There are two fundamental characteristics of strategic management: (1) strategic fit (i.e. the interrelationships between external and internal domains) and (2) functional integration (i.e. integration between business and functional domains) [18]. Thus our business model considered *Organisational Views of the framework*: (1) Internal view and (2) External view.

### 3.3. Organisational Perspectives of the Framework

Mastering value creation in the knowledge economy requires appreciating the pivotal value of intangibles in the business model and a thorough understanding of network dynamics. It is targeted to propose a way to model organisations and business relationships as networks of tangible and intangible value exchanges. It provides a way to link business activities allowing people to more fully understand the impact of their decisions and actions in both tangible and intangible forms to enterprise value [1].

### 3.4. Theoretical View of the Framework

The *Resource Based View (RBV)* is in many ways a half-way house. However it has revitalized the perspective of economics with firm heterogeneity, innovation and dynamics making it as essentially a competitive equilibrium model with heterogeneous firms [13]. The RBV is often presented as a 'theory of the firm'. It is a firm-level theory of competitive advantage that makes ample use of price theory [14]. Resource-based view helps academicians and practitioners in understanding the competition and helps in developing recommendations on how firms should define their competitive and corporate strategy [9]. A firm is said to have competitive advantage only if it is implementing a value creating and action generation strategy not simultaneously being implemented by potential competitors [4].

For the other half-way, strategic service orientation with service dominant logic is considered as it encapsulates the collaborative nature and system-based view of value creation and service generation from a theoretical perspective [21]. We termed it as *Service Based View (SBV) Theory*. Web Service-based virtual enterprise is a virtual enterprise built on supporting technologies based on web services. In case of facing market opportunity, an enterprise has many choices such as enhancing its core capacity by learning to integrate its resources to independently realize the market opportunity or to offer merger and acquisitions to achieve the goal [2].

## 4. Level 2 Representation: The Taxonomy Type Model or the Electronic Enterprise Model

The notion of business model to many scholars appears to be same as the strategy or the logic of the firm [8]. But in this paper, we present a conceptual framework to separate the related business model and strategy. A business model can be understood as an abstract representation of some aspect of a firm's strategy. Actual business model can be understood as an architecture of a firm and its network of partners

for creating, marketing and delivering value and activity and relationship capital to one and several segments of customer in order to generate profitable and sustained revenue streams [33] in a knowledge based economy. It can be understood as the implementation of the strategy into a conceptual blueprint of the company's logic of earning money [32]. As there is no single comprehensive taxonomy for classifying e-business models [19], it should project the common characteristics of Electronic Enterprise Type [35] and as a reflection of the firm's realized strategy [8].

Electronic enterprise refers to setting in which social and economic transactions are conducted via open networks based on the fixed and wireless Internet infrastructure. Thus electronic enterprise is characterized by high connectivity that focuses on conducting transactions that engage reach ability and richness of information; an electronic enterprise is a network runs with open standards based on the Internet connectivity for supporting the emergence of virtual communities and commercial actions. It can disregard traditional boundaries between firms along the value chain [3].

In this paper the following four components are proposed as the common characteristics of Electronic Enterprise Type Business Model. Our proposed theoretical framework is given in Figure 2.

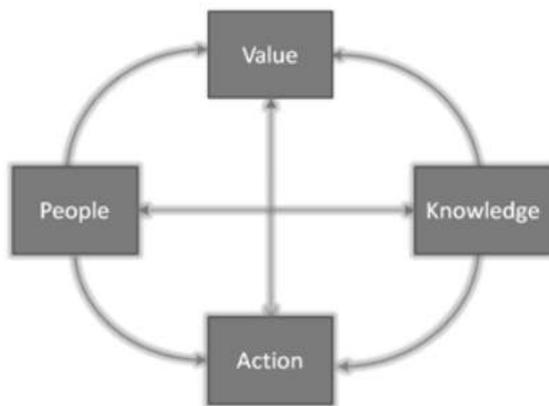


Figure 2. E-Enterprise Model [2]

#### 4.1. Value Component

Enterprise value (EV) or Firm Value (FV) is an economic measure reflecting the market value of the whole business. Enterprise value is one of the fundamental metrics used in business valuation, modeling and portfolio analysis (Wiki-Enterprise Value) [44].

Value can be expressed as the expected income deducted by expected transaction cost during a certain period.

$$V(t) = E_r(t) - E_c(t) \dots\dots\dots (1)$$

Where  $V(t)$  means a value during a certain period;  $E_r(t)$  means expected return during a certain period;  $E_c(t)$  means expected transaction cost during a certain period.

According to a relational principle,  $V(t)$  decides enterprise action. If  $V(t)$  gets larger, the enterprise is more likely to select it, on the contrary, if  $V(t) \leq 0$ , the enterprise will not select. When  $E_r(t)$  is constant  $E_c(t)$  will become the key factor to affect  $V(t)$ . In such case, enterprise selection should be in accordance to minimum  $E_c(t)$  principle [20] [2].

#### 4.2. People Component

Profit is made if the amount of exchange value realized on sale is superior to the sum of the prices of the inputted resources (including wage costs). This profit can only be attributed to the actions of the organisation members as their labor is the only input into the production process that has the capacity to create new use values, which are the source of the realized exchange value. In cinch labour performed by organisational members is the source of the firm's profit. Thus *people* of the enterprise considered as one of the *strategic factors* of the framework [6] [2].

#### 4.3. Knowledge Component

The Strategy has been basically defined as the match, an organisation makes between its internal resources and skills... and the opportunities and risks created by its external environment [15]. The new world of e-business imposes the need for variety and complexity of interpretations of information output i.e. knowledge generated by computer systems. Market based assets are largely intangible and can be accumulated by developing knowledge, skills and resource that are unique and difficult to imitate [27]. More over knowledge resides in the user/stakeholder (people) can take the central role to perform exchanges of strategic information, policy development, technical know-how, business process knowledge and the user's subjective context of action [1]. Thus *Knowledge* has been considered as one of the four *strategic factors* of our proposed framework [2].

#### 4.4. Action Component

According to Kogut [23], a country's effectiveness in international competition reflects the accumulation of broad range of organizing principles within that nation. Organizing principles that underlie different cultures can guide the actions of firms. Organising principles provide a source of competitive advantage that cannot be easily imitated. Such organising principles serve as general action-generating structures for firms [24]. Integrating Internet initiatives enhances company's ability to

develop unique products, proprietary content, distinctive processes and strong personal service, which promote the creation of true value [37]. Companies gain competitive advantage by integrating tangible and intangible activities [11] to compensate for the Internet’s performance limits. The strategic positioning of the company that offer unique value involves the configuration of a tailored value chain-the series of activities required to produce and deliver a product or service [38]. Activities such as scenario-planning, experimentation and e-business forecasting increase the knowledge base of firms allowing them to become more flexible in setting and updating their strategy on a regular basis to remain competitive in tumultuous environments [5]. Hence actions are made one of the four strategic perspectives of our proposed framework [2].

### 5. Mapping the Objectives to Aspects, Views and Theoretical Perspectives

Theories of the firm are conceptualizations and models of business enterprises which explain and predict their structures or behaviours. Every theory in the firm is an abstraction of the real-world business enterprise which is designed to address a particular set of its characteristics and behaviours. As a result there are many theories of the firm which are both complete and complement in explaining different phenomenon [16]. Some of the economic theories of the firm are concerned primarily with predicting the behavior of firms in external markets [16]. But the applicability of these traditional theories in the knowledge based economy requires a different kind of treatment by providing service-based view and resource based view in the contemporary knowledge based economy [2].

According to Osterwalder et al. (2005) [33] it is mentioned (p. 3) that from the perspective of a company the value/customer-oriented approach provides an outward looking or external view and the activity/role-based approach provides an inward looking or internal view. Further he argues that modelling and mapping value propositions helps in better understanding the value of the company that wants to offer its customers and makes it communicable between various stakeholders.

Correspondingly the mappings are done as follows. The validation for the appropriateness is done in terms of finding and describing correlations between strategic dimension, internal/external view factor and the corresponding supporting theory [2].

Sl. No.	Objectives	Organisational Views	Theoretical Views	Theoretical Perspectives
1.	Value Creation	Internal	Intangible	Service Based View Theory
2.	Action Generation	External	Tangible	Resource Based View Theory

Figure 3. Mapping Table 1 for E-Enterprise [2]

Dimension No.	Strategic Dimension	Internal View Factor	Supporting Theory
1.	Value	Satisfaction	Utility Theory
2.	People	Relationship	HSM Theory
3.	Knowledge	Awareness	Knowledge based Theory
4.	Action	Adaptation	Service Management Theory

Figure 4. Service Based View for Creating Value of an E-Enterprise [2]

Dimension No.	Strategic Dimension	External View Factor	Supporting Theory
1.	Value	Monetary Value	Utility Theory
2.	People	Leadership	HSM Theory
3.	Knowledge	Skills	Knowledge based Theory
4.	Action	Visual Realization	Service Management Theory

Figure 5. Resource Based View for Generating Action of an E-Enterprise [2]

### 6. Level 3 Representation – The Instance Level Business Model Concept-Strategic View of the Business Model for the Electronic Enterprise

Two concepts such as meta-business model and dynamic capabilities have been undeniably brought to the forefront of the business research. The significance of these two is increasingly acknowledged due to the importance of business models in formation and growth of the firms and critical role of the dynamic capabilities in competitiveness of today’s enterprises [29].

Most recently, strategy research has begun to emphasize the dynamic capabilities, which builds on the notion of core competencies but focuses on the role of management in building and adapting these competencies to address rapidly changing environments. This development was stimulated by the recognition that many successful or dominant firms fail to sustain their performance as markets and technologies shift. In spite of having resources, these companies failed to adapt to changed circumstances. With dynamic capabilities, sustained competitive advantage comes from the firm’s ability to leverage and reconfigure its competencies and assets in ways that are valuable to the customer but difficult to imitate by the competitors. Dynamic capabilities help a firm sense opportunities and then to seize them by successfully reallocating resources by adjusting the existing competencies or developing new ones with differentiation. Dynamic capabilities are capability-building mechanisms of firm’s processes that use resources – specifically the processes to integrate, reconfigure, gain, and release resources – to match and even create innovative market change [22]. One could logically that the ability to adapt the business model is a dynamic capability. The capacity of an enterprise is to create, adjust and if necessary replace business model becomes foundational to dynamic capabilities [12].

E-business modeling is a concept that has several components such as business roles, business rules and relationships and can be designed based on

different combinations of them to produce unique value of the business objective. For example, each dynamic capability that is adopted and made relevant at a particular point in time reflects as an instance of the business model type. Various objectives of the enterprise model each separately and their combination projects its priority and value at different points in time, form an instance of a strategic view of the business model. Thus dynamic business model innovation is carried out through a purposeful radical re-vision and re-arrangement of inter and intra organisational relationships through dynamic relational capabilities [17]. To explain further, instance view of the business model encapsulate the specific values of who the customers are, what do they value, how that value can be delivered to the customer at appropriate cost and how the business deploys its assets. It includes a description of the key assets both tangible and intangible such as intellectual property, governance structure and management [39]. It consists of a specific pattern of how a company can make profit.

An organisation may possess an excellent business model that works very smoothly but if the organisation's goal is different from what the business model delivers, then alignment to goal fails and the business model is just not appropriate. For example, one of the possible goals of business enterprise could be profit maximization or customer satisfaction. Thus goal alignment gained significance in designing business models. Goal Alignment refers to a business model generating actions must move the organisation towards achieving profit maximization or customer satisfaction as enterprise value that reflects as an instance level business model [7]. E-Business is more about doing business than doing 'e'. The challenge for the managers therefore lies in finding new ways to integrate technologies, human factors and the business. However the Internet is providing business information to a great number of people cost-effectively by eliminating the trade-off between information reach-ability and richness. In order to be a source of competitive advantage, a business model must meet particular needs of the customer as well as must be made commercially viable [41].

## 7. Conclusion

Our business model design has attempted to provide a theoretical insight by involving the following considerations: (i) representing the strategy design in three levels (ii) (customer) value proposition, creation and capture, (iii) aligning people and knowledge to realize the scope of activities (key resources) (iv) activities generation and (v) aligning all these towards creating and enhancing enterprise value (key processes). The business model is thus conceived as a focusing

device that mediates between technological development and economic value creation and corresponding action generation. Adoption of this business model can provide capabilities of its performance at the level of electronic enterprise matching to realize market realities. So helping organisations in developing dynamic capabilities is the fundamental and enduring task of executive leadership. Pursuing this strategy may make a firm successful in achieving ROI in a balanced time period by promoting sustained competitive advantage.

In order to fulfill our purpose, we used only a qualitative research methodology approach. For example our aim of designing an innovative e-business model has led to fruitful attempt of efforts put to clearly validate the definition provided by Osterwalder definition with their co-authors i.e. "a business model is nothing else than a 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 for creating, marketing and delivering this value and relationship capital in order to generate profitable and sustainable revenue streams" as well as the from the fundamental guidelines of designing the model with three level hierarchy. This effort can be considered as one of the internal validity of the research study. Generality of the study has been provided by linking various theoretical findings from various theories presented with casual relationships from literature [2]. However we believe that a higher degree of generality could be obtained if quantitative methods are also employed and conducted. We believe that it is a weakness of our study.

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