Analyzing Business Model and Intellectual Capital Components

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Abstract: The article concerns two management concepts, namely: intellectual capital and business models of the company and is of a theoretical nature. The main assumption of the literary review conducted was to discuss these two constructs in the context of their common elements. Can a business model be analyzed in the context of intellectual capital elements? Or is it possible that intellectual capital components constitute those of a business model? This article attempts to provide an answer to these questions by taking advantage of the latest subject literature, one of key importance to this issue.

Keywords: intellectual capital, business model, components

1. Introduction

The issues analyzed here in defining both the business model and intellectual capital of a company are still open for discussion. The multitude and variety of definitions provided for these two constructs make it a real challenge for each researcher in his effort to make the proper choice, which is dependent upon the goal of his or her research. Within the context of intellectual capital, determining its essence and components is becoming relatively easier than providing a definition of a business model. We may dare state that it is possible to observe a certain kind of consensus as far as the essence of intellectual capital and elements is concerned. On the other hand, in business models this difficulty is further aggravated by various points of view concerning its nature and the lack of a uniform classification of business model components or the lack of such components (Zott et al., 2011). One of the reference points in the analysis of business models is, in most cases, the value proposition and its creation for a customer, understood as a kind of legitimacy in the theory of economics and management for creating a separate entity that a business model has become. What is interesting is that the basis of an analysis of a company's intellectual capital is also constituted by its value, its creation and competitive advantage

This theoretical article concentrates mainly on common elements in the make-up of these two concepts rather than on differences between them. It aims at identifying and defining the common elements while emphasizing the fact that generally they do not appear together in the subject literature, apart from a few exceptions, (eg. Beattie and Smith, 2013). A review of literature on this topic in the databases of Web of Science, EBSCO and Science Direct conducted on 26.02.2015 while taking into account the "business model" and "intellectual capital" phrases concluded the following: the EBSCO base has 12 articles including 4 articles containing both phrases in the abstract; while the Science Direct offers 3 articles including 1 directly related to this topic. None of these articles, however, discusses the essence of the business model and intellectual capital in the context of their common roots or similarities.

2. Definitions of a business model and intellectual capital

The concept of value (creation, proposition and capturing value) is at the core of the business model and intellectual capital. Many authors define a business model as content, structure and management of transactions with internal and external stakeholders in order to create, propose and capture value (Saebi and Foss, n.d.; Zott and Amit, 2010; Zott and Amit, 2008). According to Zott and Amitt (2011) a business model is a new unit of analysis, a global perspective allowing us to determine how companies run their business, and which emphasizes the activities themselves and value creation. In particular they stress the dimensions of value, its sources, value for a customer, value proposition and aspects related to the so-called architecture of a network between a company and its external partners. Each of these components may constitute the essence of a business model and intellectual capital and may be the source of their differentiation. Compatibility of these components and their co-existence determines the nature of these two concepts. Hamel (2000) believes, on the other hand, that value creation and capture takes place in the value network covering suppliers, partners, distribution channels or various coalitions which go beyond company resources. Magretta (2002) sees the business model in a similar way, believing it is based on cooperation, partnership and joint value creation. In the concept of intellectual capital, value networks (providers, partners, distribution channels, coalitions) constitute a vital element of the relationship capital of a company.

Spender et al (2013) defines a business model as firm-specific natural language within which the future value of the intangible assets can be estimated. There is certain inaccuracy in determining whether a business model contains intellectual capital or is rather an asset of intellectual capital. According to Roslender and Fincham (2004) the assets of intellectual capital, such as a business model, are difficult to identify and many of them like tacit knowledge are not fully controlled. We may assume that Intellectual capital as well as a business model create value only when there is synergy, which is combined with other resources. Intellectual capital is defined, for example, as intangible resources, skills, knowledge assets related to company competitiveness and results (Martín-de-Castro et al., 2010; Hsu and Wang, 2012; Nahapiet and Ghoshal, 1998). They are also presented as a set of resources which may be analyzed from the micro (value creation) and macro (nations' wealth) perspectives (Alcaniz et al., 2011). It is perceived as value driver, based on causal relationship between resources and value creation, which, in a strategic and managerial perspective, plays a vital role (Edvinsson and Malone, 1997; Edvinsson, 1997; Marr, 2005).

Intellectual capital must be used in combination with tangible resources to make it possible to create value (Beattie and Smith, 2013). Intellectual capital is based on knowledge, therefore its precise definition is directly related to the classification of its elements. It contains such elements as skills, culture, strategy, processes, intellectual property, relationship networks, which all create value or competitive advantage of a company (Hsu and Fang, 2009). Many authors perceive intellectual capital through the prism of relationships between market and book value (for example Sveiby, 1997; Edvinsson and Malone, 1997; Martínez-Torres, 2006). The product market strategy and the business model and their combination also affect the market value of a company (Carayannis et al., 2014).

According to Markides and Sosa (2013) resources and skills are not the same as a business model. They constitute input into the company business model. Nevertheless the same resources may be used in order to develop a completely different business model. Analogically, in the intellectual capital concept, technology itself or company resources do not carry any value until they are effectively and innovatively used. The business model shows how a company transforms resources and skills into economic value (Teece, 2010). Both concepts relate to the transformation of resources (intellectual capital) into value (Ashton, 2005). Similarly to a business model, intellectual capital is related to value creation (Zéghal and Maaloul, 2010; Bozbura, 2004; do Rosario Cabrita and Bontis, 2008; Rastogi, 2003). However, it is very unlikely for companies to have the same intellectual capital due to the dynamic aspect of knowledge, which is determined culturally, cognitively and contextually.

3. Components of a business model and intellectual capital

Components of business models differ. On the basis of Table 1 we may, however, attempt to categorize them into four dominant groups or dimensions: financial, structural, relational and value. What differentiates the business model from intellectual capital is its complex view of the company and inclusion of financial capital (revenues and costs), which obviously are not key aspects in intellectual capital. The area of business model value varies in composition, namely: proposition, capture, networks, chain, creation, architecture, finance, and many others. Value in intellectual capital is a derivative of resources and their use. Within these two concepts the meaning of value is slightly different. Within the business model, the reference point for a customer is value proposition, whereas in the concept of intellectual capital it is its influence on the value of a company as a whole and possible areas of allocation of financial capital by investors. It must be noted that business models which do not create value for clients cannot create value for a comaany. A business model then offers the possibility of analyzing the way in which a set of resources and their configuration are transformed into something that a customer would be willing to pay for. A business model shifts the focus of the analysis of resources possessed by a company into ways and places of their use.

Table 1: Business model components

Author (year)	Business model components
Horowitz (1996)	Price, product, distribution, organizational characteristics, and technology
Viscio and Pasternak (1996)	Global core, governance, business units, services, and linkages
Timmers (1998)	Product/service/information flow architecture, business actors and roles, actor benefits, revenue sources, and marketing strategy
Markides (1999)	Product innovation, customer relationship, infrastructure management, and financial aspects
Donath (1999)	Customer understanding, marketing tactics, corporate governance, and intranet/extranet capabilities

Author (year)	Business model components
Hamel (2000)	Core strategy, strategic resources, value network, and customer interface
Applegate (2000)	Concept, capabilities, and value
Alt and Zimmermann (2001)	Mission, structure, processes, revenues, legal issues, technology
Amit and Zott (2001)	Transaction content, transaction structure, and transaction governance
Gordijn and Akkermans (2001)	Actors, market segments, value offering, value activity, stakeholder network, value interfaces, value ports, and value exchanges
Petrovic et al., (2001)	Value model, resource model, production model, customer relations model, revenue model, capital model, and market model
Afuah and Tucci (2001)	Customer value, scope, price, revenue, connected activities, implementation, capabilities, and sustainability
Weill and Vitale (2001)	Strategic objectives, value proposition, revenue sources, success factors, channels, core competencies, customer segments, and IT infrastructure
Rayport and Jaworski (2001)	Value cluster, market space offering, resource system, and financial model
Betz (2001)	Resources, sales, profits, and capital
Magretta (2002)	Customer definition, value to customer, revenue and economic logic
Dubosson-Torbay et al., (2002)	Products, customer relationship, infrastructure and network of partners, and financial aspects
Chesbrough and Rosenbloom (2002)	Value proposition, market segment, structure of value chain, cost structure and profit potential, position within value network, competitive strategy
Markides and Geroski (2004)	Consumers, relationship with customers, distribution channels, partnerships, resources and protectionism
Shafer et al., (2005)	Strategic choices, create value, capture value, value network
Henrikki Tikkanen et al., (2005)	Material aspects: strategy and structure, network, operations, finance and accounting; belief system: reputational rankings, industry recipe, boundary beliefs, products
Voelpel et al., (2005)	Customer value propositions, value network configuration, sustainable returns for stakeholders
O'Connell and Williams (2005)	Customer characteristics, journey purpose, booking methods, fares, connecting traffic, carrier choice criteria and types of trips undertaken.
Osterwalder et al., (2005)	Value proposition, target customer, distribution channel, relationship, value configuration, core competency, partner network, cost structure, revenue model
Chesbrough and Schwartz (2007)	Value proposition, target market, value chain, revenue mechanism, value network or ecosystem, competitive strategy
Johnson et al., (2008)	Customer value proposition, profit formula, key resources, key processes
Richardson (2008)	Value proposition, value creation, value capture
Casadesus-Masanell and Ricart (2010)	Policy, governance, assets
Al-Debei and Avison (2010)	Value proposition, value architecture, value finance, value network
Mason and Spring (2011)	Technology, market offering and network architecture.
Daft and Albers (2013)	Corporate core logics, value chain and assets
Lohmann and Koo (2013)	Revenue, connectivity, convenience, comfort, aircraft and labor.

In a business model value is incorporated into a model which, as a whole, may affect company results, profitability or market value (in case of companies listed on capital markets). Then, there is the relational dimension, in which we may list markets and customers, including: relationships, segments, partnerships, or networks of partners. However, the most challenging task is to propose a uniform taxonomy for the remaining components of a business model. One attempt may consist of combining them into the framework of structural capital, which constitutes broadly understood organizational and IT structure covering business processes, management processes and intellectual property. In this case components of a business model worth mentioning would be: distribution, technology, strategies and structure, corporate governance, production and service model adopted by a company.

As already stated in the introduction, certain consensus can be observed in the classification of intellectual capital components (Table 2).

Table 2: Intellectual capital components

Author (year)	Intellectual capital components
Brooking et al., (1996)	Human assets, intellectual property assets, infrastructure assets, markets assets
Saint-Onge (1996)	Human capital, structural capital, customer capital
Edvinsson and Malone (1997)	Human capital, structural capital, customer capital
Sveiby (1997)	Competences, internal structure, external structure
Nahapiet and Ghoshal (1998)	Individual explicit and tacit knowledge, social explicit and implicit knowledge
Bontis (1999)	Human capital, structural capital, relational capital
Sullivan (2000)	Human capital, intellectual assets, intellectual property
Dzinkowski (2000)	Human capital, organizational capital, customer capital
Mark W. McElroy (2002)	Human capital, structural capital, innovation capital, process capital, customer capital, social capital, intra-sectorial capital, inter-sectorial capital
Jin Chen et al., (2004)	Human capital, innovation capital, structural capital, customer capital
Joia (2004)	Human capital, internal capital, structural capital, innovation capital, external capital
Ordóñez de Pablos (2004)	Human capital, structural capital, technological capital, organizational capital, relational capital
Subramaniam and Youndt (2005)	Human capital, organizational capital, external and internal social capital
Reed et al., (2006)	Human capital, organizational capital social capital
Martínez-Torres (2006)	Human capital, structural, relational capital
Moon and Kym (2006)	Human capital, structural capital, relational capital
Tovstiga and Tulugurova (2009)	Human capital, structural capital
Andrikopoulos (2010)	Human capital, organizational capital, relational capital
Martín-de-Castro et al., (2010)	Human capital, structural, relational capital
Phusavat et al., (2011)	Human capital, social capital
Hsu and Wang (2012)	Human capital, structural capital, relational capital

Prominent elements here are: human capital, structural capital and relational capital. In the classic presentation by Brooking (1997) intellectual capital is a combination of market, human and infrastructure assets as well as intellectual property. However, not all authors perceive intellectual property as part of intellectual capital (an example - Bontis, 1999), as it is a component of the "usual" legally protected assets of a company. Nevertheless, it is often classified as part of structural capital. A business model may become part of intellectual property (Rivette and Kline, 2000; Morris et al., 2005) and if this is so, it may become part of intellectual capital. Some authors also mention internal and external structure or form of capital, referring respectively to human and structural capital (internal) or relational capital (external).

In order to understand the nature of intellectual capital it is necessary to look at it from various levels: individual, organizational and inter-organizational. On the individual level (human capital), of key importance is the knowledge possessed by an employee, attitudes, behavior, experience, skills, and competences which are developed during the training period and used in gaining an education. On the organizational level intellectual capital has a more varied form of technological capital (J. Guthrie et al., 2004; Ordóñez de Pablos, 2004) innovation capital (McElroy, 2002; Chen et al., 2004), organizational capital (Dzinkowski, 2000; J. Guthrie et al., 2004), or structural capital (Hormiga et al., 2010; Cabrita and Bontis, 2008) and many other forms. Technological and innovation capital covers the whole research and development activity of a company, its infrastructure (including IT systems, management processes), intellectual property. Organizational capital constitutes business processes, corporate culture and structure. Technological, innovational and organizational capital is often analyzed within structural capital. Its role is to capture (preserve) human capital. The inter-organizational level is related mostly to such intellectual capital forms as: social capital (Reiche et al., 2009), relational capital (Hormiga et al., 2010), customer (Edvinsson and Malone, 1997), or market assets (Brooking et al., 1996). It is external to the company and refers to the value created in relationships with external entities, partners, stakeholders, customers or suppliers.

4. Conclusions and directions of further research

The business model and intellectual capital are two closely related concepts. The basic and common areas of research here are resources (tangible and intangible) and value and their creation under the prominent resource-based view or Penrosian view. In both concepts numerous authors identified various components of a business model and intellectual capital in an attempt to classify them. In terms of a business model, its components are so diverse that it is practically impossible to propose their uniform taxonomy. Even though, we can discern a certain logic in a 4-dimentional analysis of them in terms of: finances, value, structure and relation, to which we may link particular components of a business model. In the case of intellectual capital, these components focus on human, structural and relational capital. Therefore, in order to tie these two concepts and create common cognitive area, it is necessary to define them within their recognizable and empirically verified concepts.

Important elements to have been analyzed in this article include: the components, combination of resources, and value. The combination of resources is a vital source for value creation. In both concepts it is of vital importance. The multitude of potential configurations of useful and new resources is unlimited and offers completely new opportunities for value creation. However, not enough attention is paid to the dynamic approach to the analysis of a business model and intellectual capital, especially as far as the dynamics of their changes in time is concerned. Maps alone do not fully describe the issue. There is the possibility of using the analysis of an organizational network which would allow us to determine which resources of a business model or intellectual capital are the most influential ones in the network, what their position is towards other resources and where particular resources should be allocated.

Potential areas of further research include operationalization of a business model, creating tools and methods of its measurement and assessment. A promising direction here is offered by numerous methods of measuring intellectual capital, which would undoubtedly contribute to the measurement of a business model.

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