

Value Creation in Business Models is Based on Intellectual Capital – and Only Intellectual Capital!

Henrik Dane-Nielsen¹ and Christian Nielsen²

Abstract

This chapter applies the lens of emergentism and emergent properties to the understanding of value propositions, value creation, value delivery and value realization. It argues that none of the building blocks typically asserted with business models are of any value without the underlying intellectual capital to apply them and furthers this understanding through a series of case examples. This chapter enhances our understanding of the role of intellectual capital in the value creation of business models and argues that intellectual capital is the foundation of business models.

Keywords: Business models, intellectual capital, levels of organisation, emergent properties, theory building

Please cite this paper as: Dane-Nielsen, H., & Nielsen, C. (2019), Value Creation in Business Models is Based on Intellectual Capital – and Only Intellectual Capital!, Vol. 7, No. 2, pp. 1-12

1-2 Aalborg University, Denmark

Acknowledgements: Published as: Dane-Nielsen, H., & Nielsen, C. (2017). Value creation in business models is based on intellectual capital – and only intellectual capital! In J. Guthrie, J. Dumay, F. Ricceri, & C. Nielsen (red.), The Routledge Companion to Intellectual Capital Routledge.

Introduction

This chapter offers a novel perspective on how intellectual capital can be applied to the notions of business models. Our understanding of business models is that intellectual capital, present in different forms at all levels of organisation as described by Nielsen and Dane-Nielsen (2010) and are the only real value drivers of any type of business model. A business model is thereby a description of how intellectual capital is used in the organisation to create value.

Nielsen (2011, p. 26) asserts that “A business model driven by intellectual capital may in some ways differ from business models driven primarily by other factors, such as financial capital or natural resources. When intellectual capital drives the business model of a company then competitive advantage may be particularly high, margins high and corporate flexibility good”. Knowledge and intellectual capital are important for the creation of value in the knowledge-based. However, in this chapter we argue that any type of technological development through the ages has had intellectual capital at its core, right from the invention of the plow, gunpowder, steam engines and through to computers. In fact, any type of business or service is driven by the knowledge of how to do things. This is essentially because economic activities are driven by intellectual capital, and thereby we disagree with the arguments posed by Nielsen (2011) above.

One of the reasons for this is that business models are concerned with delivering a value proposition to users and/or customers, but the value proposition and the resources to back it up never stand alone because they need to be supported by other activities. The problem with contemporary frameworks for visualizing companies' business models is that they often take the form of generic organisation diagrams illustrating the process of transforming inputs to outputs in a chain-like fashion. A good example of this is found in the Integrated Reporting framework (IIRC, 2013) as well as in more management-oriented models such as the Business Model Canvas (Osterwalder and Pigneur, 2010). The core of the business model description should be focused on the connections between the different activities being performed in the company, in a reporting context often found as separated elements in the companies' reports. Companies often report a lot of non-financial information (e.g. customer relations, distribution channels,

employee competencies, knowledge sharing, innovation and risks) but this information may seem unimportant if the company fails to show how the various elements of the value creation collaborate and changes.

This is where the intellectual capital perspective becomes imperative. Current perceptions of relationships and linkages often reflect only tangible transactions (i.e. the flow of products, services or money). However, in analyzing the value transactions inside organisations (intra-organisational) and between an organisation and its partners (inter-organisational), there is a tendency to forget the often-parallel intangible transactions and interrelations that are appended (cf. Montemari and Nielsen, 2013). Our hypothesis is therefore, that no organisation, regardless of the type of business model being leveraged, can function without the appropriate intellectual capital to make use of machinery, increase financial capital, conduct processes, management actions, etc. An organisation's value drivers are always their intellectual capital.

The remainder of this chapter is structured as follows: In section 2 we introduce the field of business models and the role of value drivers. For this purpose, we focus on the level of business model configurations as explained by Taran *et al.* (2016) and Nielsen *et al.* (2017). Next we discuss intellectual capital and the relationship to value drivers by discussing how intellectual capital differs across varying levels of organisation using the framework developed by Nielsen and Dane-Nielsen (2010). In the section 4, the notions of intellectual capital value drivers in business model configurations are illustrated using five examples. Finally, the chapter is concluded and future research paths are provided. It is argued that the inherent difficulties of understanding the interdependencies of business models across companies as well as different levels of organisation can be traced to a lack of understanding of the differences between synergetic effects, causal relationships and emergent properties.

Business Models and Configuring Value

The concept of the *Business Model* offers a novel perspective from which to understand how companies become profitable, efficient, competitive and sustainable: the

latter being interpreted as the ability to survive in the long-term. Much current focus in the field of business models concerns definitions, delimitations and constructing frameworks for analysing business models (Wirtz *et al.*, 2016a) or innovating them (Wirtz *et al.*, 2016b; Foss and Saebi, 2016). Despite lacking unified theoretical groundings, at least according to Zott *et al.* (2011), many of these frameworks, ontologies or models, have proven to be successful in business and entrepreneurship practices. The most notable example of this is the Business Model Canvas published in Osterwalder and Pigneur's 2010 book, *Business Model Generation*, which has sold over 1.200.000 copies to date and been translated into over 30 languages. In its wake, there are several other tools and frameworks that perform additional and complementary analyses to that of the Business Model Canvas, like for example the Value Proposition Canvas (Osterwalder *et al.*, 2014) and the Kickass Company concept (Brøndum *et al.*, 2015; Nielsen *et al.*, 2016).

For a given company, it is important to be aware of the business model being applied for two reasons: 1) First, the business model is the platform for executing corporate strategy. Therefore, if the business model is poorly configured or implemented, then the company will have difficulties in carrying through the strategy and ultimately then also meeting the non-financial and financial targets. 2) Second, the business model affects the managerial processes of the organisation because it directs the focus of how the firm does business. If the business model of a given firm relies on close ties with customers and the continuous involvement of strategic partners, then the managerial focus is expected to differ drastically from a situation where all customer interaction is web-based and all functions are in-house. In a similar manner, Mintzberg and van der Heyden (1999) argued that different forms of organisation, or value configurations, carry different managerial foci, because the basis of value creation is different.

Positioning the business model

Baden-Fuller and Morgan (2010) argue that business models are distinct ways of doing business that can be distinguished from alternative modes of doing business and furthermore can be classified by the nature of how they are configured. In so speaking, Baden-Fuller and Morgan (2010) argue that a business model may be described as a model of how the firm does business.

Sometimes the naming of the specific business model is done through the example of a well-known company. Five good examples of this are the eBay business model, the Dell business model, the Ryanair business model, the Gillette business model and the Skype business model. However, as Baden-Fuller and Morgan (2010, p. 157) note, behind most specific business model examples, the role models, there are scale models that "offer representations or short-hand descriptions of things that are in the world, while role models offer ideal cases to be admired". The above examples would be the *E-auction* business model configuration (eBay), the *Disintermediation* business model configuration (Dell), the *No-Frills* business model configuration (Ryanair), the Razors and blades business model configuration (Gillette) and the Freemium business model configuration (Skype). A commonly applied business model definition that captures these notions of configuring a business is Osterwalder and Pigneur's: "A business model describes the rationale of how an organisation creates, delivers, and captures value" (2010). In section 4 below, we apply these five cases to illustrate that intellectual capital is the key value driver of the value creation of a business model.

Notions of value

The notion of value is important, because *value creation* is at the heart of understanding business models and this concept seems to introduce a new level of analysis, different from, but related to strategy, organisation and management. Akin to tribalism, there are many opposing views on what the term "value" signifies. In accounting the debate between cash-based and accruals-based accounting exists and in strategy there is the debate between Porter's (1985) market-based view and Barney's (1986) resource-based view. Another problem is that *value* is used as a catch-all term focused on value for the consumer and wealth for the organisation, which might be problematic. Typically, *value* is treated as an outcome of business activity (Conner, 1991) and furthermore, Sirmon *et al.* (2007) argue that there is minimal theory explaining 'how' managers/firms transform resources to create value. Hence value is not only poorly defined but also poorly theorized.

A way of resolving this confusion is to distinguish between "*use value*" and "*exchange value*". *Use value* is the benefit received from resources and capabilities

and *exchange value* is the money that changes hands when resources, products, or services are traded (Bowman & Ambrosini, 2000). Figure 1 below conceptualizes the relationships between concepts of value according to whether they are related to strategy, activities or the stakeholders affected by the organisation. Central to the business model literature is the term *value proposition*, which expresses the characteristics of the offering which the customer favours; hence it has close resemblance to the term *use value* applied in resource-based theory. The value proposition is an expression of uniqueness and differentiation of a product or service.

Another important value concept in the field of business models, is that of “*value creation*”. From a business model perspective, value creation expresses the business activities being performed and is closely related to and understanding of value-added (i.e. what extra value does the product/service have when it appears from the production process). An alternative way of understanding value creation is as cash flows, which are the ultimate liquidity (cash-based) effects of activities performed. Cash flows may differ despite identical activities due to the company’s position and strength in the value chain. However, it can be argued that higher cash flows are a proxy of the strength and resilience of the business model. Beyond value creation comes the actual physical interaction between the company and its customers in the form of the delivery of value. Here the packaging of the product is the subject of analysis. This relates not only to the delivery channel, but also to the combination of product, service, knowledge and financing included in the delivery.

The notion of “value realization” refers to the effects of physical and monetary transactions between the company and its customers. Through transactions, the company’s activities are transformed into cash and from

this converted into profits or losses depending on the company’s ability to manage its activities and finances. From the business model perspective value realization is merely an element of the mode of competition. As such value realization leads to value outputs, which are the effects on the total value of the company, in terms of the balance sheet and market value. There is an important distinction between shareholder value and value to the customer. The IIRC (2013) introduced the idea of “value outcomes” to represent a broader notion of corporate effects e.g. on the total set of stakeholders and also the way the company affects users, customers, partners and networks and vice versa. From this categorisation of value, we can distinguish between different types of value drivers and thereby also gain a better understanding of different types of value drivers in relation to the business model.

The value drivers of business models

An important question to ask is: How do companies create value? In this chapter, we argue in both for-profit and not for-profit organisations, it is only intellectual capital, for example in the form of knowledge of how to use resources that drive value creation. The resources themselves create nothing. The notion of value drivers has been applied in a series of related fields to that of intellectual capital (e.g. Marr *et al.*, 2004; Cuganesan, 2005; Carlucci and Schiuma, 2007), such as R&D (Pike *et al.* 2005), and customer relationship management (Richards and Jones, 2008). A business model is a description of an organisation’s value drivers as a whole.

Here, a *value driver* refers to any factor that enhances the total value created by an organisation (Montemari and Nielsen, 2013), which is, in turn, the value that can be delivered to the actors involved in the business model (Amit and Zott, 2001). Value has different

STRATEGY	Value Proposition (The Business Model)			
STREAM	Value Creation (Business activities)	Value Delivery (The packaging)	Value Realization (The transaction)	Value Outputs (Economic effects)
STAKEHOLDERS	Value Outcomes (Relationships with society and capital providers)			

Figure 1: Conceptualizations of value

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Ease of use Quality Accessibility	Knowledge of competitors' products (HC and CC) Knowledge of customer needs (HC) Logistics planning and distribution network (SC)
Value Segment	Packaging Distribution Communication Customer loyalty Lock-in	Knowledge of market behaviour, consumer needs and wants (CC) Knowledge of sales-triggers and buyer behaviour (HC and CC)
Value Configuration	Material assets Immaterial assets Branding Processes IT-systems	Human Resources / recruiting staff (HC) Purchasing / the quality of raw materials (HC) Manufacturing / building design, machinery, equipment, instruments (SC) Logistics / the economy of storage (SC) Technical solutions / technology (SC)
Value Network	Partnerships Contracts	Stakeholders / surrounding society (SC)
Value Capture	Financial capital Revenue models	Finance / shareholders (SC)

Table 1: Value dimensions, value drivers and intellectual capital

characteristics and can be split into several sub-dimensions (Amit and Zott, 2001; Ulaga, 2003; Cuganesan, 2005). One way of categorizing different perceptions of value and linking this to value drivers is provided by Nielsen *et al.* (2017). Their study identifies 251 different value drivers and categorizes them according to Taran *et al.*'s (2016) five-dimensional framework: Value Proposition, Value Segment, Value Configuration, Value Network, and Value Capture.

Table 1 illustrates how intellectual capital can be related to the different types of value drivers of business models according to Taran *et al.*'s (2016) five-dimensional framework. According to Nielsen *et al.* (2017), business models are representations of internal value drivers, the intellectual capital in the organisation, and external value drivers, including relations to external partners. These are often interlinked, take for example the handling of external relationships, which is an important internal activity for many companies. Intellectual capital can be in the form of relevant knowledge held by individuals employed in the organisation or knowledge acquired from outside the organisation for a specific functional purpose. Take for example the value dimension "Value Proposition" above, where "Accessibility"

is a value driver. Behind the value driver "Accessibility" is knowledge about the customer's preferred mechanisms of buying and receiving the company's products, as well as logistics planning. But in addition to this, also externally acquired knowledge relating to setting up the distribution platform. In many cases, companies have strategic partners running their distribution networks, and hence intellectual capital relating coordination with distribution partners also becomes relevant.

Intellectual Capital and Value Creation Measures

The typical break-down of intellectual capital follows Edvinsson and Malone's (1997) IC-tree that divide intellectual capital into human capital, structural capital and relational capital. Together with Edvinsson's (1997) Skandia Navigator this proposed disaggregation of intellectual capital can be perceived as standard method of categorizing intellectual capital (cf. Sveiby, 1997; Stewart, 1997; Meritum 2002). Human capital is viewed as everything the company cannot own, and structural capital is defined as: "...everything left at the office when the employees go home ...Unlike human

capital, structural capital can be owned and thereby traded” (Edvinsson and Malone 1997, p. 11). Ultimately the creation of value comes from activities being performed by the company. All activities in an organisation and all activities outside the organisation involving inputs and outputs to and from the organisation can be characterised as being economic activities and all of these activities are controlled by structural intellectual capital in one form or another. Lastly, is the category of relational capital which concerns the value imbedded in supplier relations, customer relations and strategic partnerships. Figure 2 below illustrates the three subclasses of intellectual capital most commonly applied.

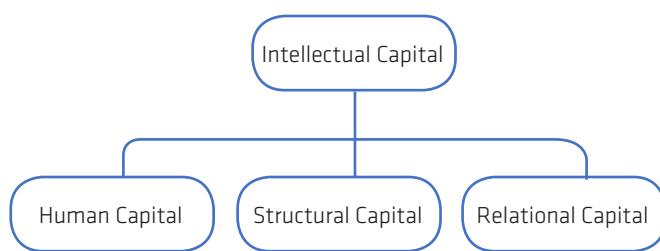


Figure 2: The three generic classes of intellectual capital (adapted from Edvinsson and Malone, 1997)

Nielsen and Dane-Nielsen (2010) critique this type of disaggregation, arguing that the summing up between subclasses in an accounting-like fashion completely ignores the fact that intellectual capital has different characteristics according to the levels of organisation at which they are present. In similar fashion, Mouritsen and Larsen (2005) argue that it is the entanglement of the depicted subclasses of IC that create value and not the subclasses by themselves. The mechanism by which intellectual capital is enacted is through the organisation of activities, in a business model, in which the knowledge of the individual is utilized. This leads to propose that the value drivers in an organisation always are intellectual capital, and nothing else, because all economic activities are controlled by people who, ideally, have the necessary knowledge in order to manage or perform the activities.

Intellectual capital properties at different levels of organisation

We use the notion of emergentism (Emmeche *et al.*, 1999) in the description of intellectual capital at the different levels of organisation. Leaning on this, intellectual capital is represented throughout the

organisation by *emergent entities* as *emergent properties* (Nielsen and Dane-Nielsen, 2010) at different levels in the organisation. Here, emergent entities are the carriers of the properties that create value and the properties of intellectual capital differ across levels of organisation (Nielsen and Dane-Nielsen, 2010), both when a property has relations to a higher or a lower level of organisation. In moving between different levels organisation, completely different sets of properties emerge; in turn also affecting the units these are measured in (Wilson, 2010).

All activities relevant for the organisation are performed in *functions* with relations to other activities organised by the specific organisational structure, with emergent levels (Seibt, 2009). The propensity to form an emergent structure is, metaphorically speaking, the DNA of organisation. Within the notion of Mereology, which is concerned with the study of parts and wholes, we find the notion of *emergentism* (Stephan, 2010) which originates from sociology (Sawyer, 2010) and biology (Potochnik, 2010; Kim, 1999), where scholars describe how natural phenomena in nature and social communities among people and animals result from a dominating hierarchical structure in nature (Rueger and McGivern, 2010).

It is important to emphasize that new emergent phenomena result in new entities (Emmeche *et al.*, 1999) which are carriers of new emergent properties on a different form. For example, knowledge of the individual employees in different functional departments can work together to form structural capital in the form of processes and technologies containing data about products, customers or markets. This notion of intellectual capital having different properties at different levels of organisation (Nielsen and Dane-Nielsen, 2010) is equivalent to the relationship between the role of organ systems in an organism, as described within the field of medicine (Potochnik, 2010). Hence, emergentism brings order to a field of random disorder (Rueger and McGivern, 2010), because disconnected components are ordered in a hierarchical system with functional levels.

We identify four levels of organisation in order to discuss the value of intellectual capital. The first level is the individual level, where individual knowledge is expressed. The second level, namely the group level,

also known as functional departments, individuals are employed to perform tasks and here knowledge is a part of the functions and activities performed. The third level is the organisational level which consists of a number of functional departments. The output from the organisation is products or services. Intellectual capital at the organisational level is embedded in the products and services. The fourth level, is the market level and there are two markets. There is the market for products and services and then there is the market for companies, e.g. the share market (the share value of the organisation include the value of Intellectual Capital within the company).

Activities create value for the organisation and activities at all different levels in the organisation are driven by the knowledge of how to do things. It is not the stock of raw materials that create value. It is not the machinery, which create value in the organisation. It is the knowledge of how to use the machinery and sophisticated equipment and how to make use of the raw materials that is creating value. The stock of raw materials has no value in the warehouse as long it just sits there. Only when used in the production of items, raw materials or components, does the stock of materials become a means for value creation. Same goes for buildings, financing, machinery, equipment, and prepared marketing materials etc. These capitals are worth nothing without the knowledge of how to utilize them. Intellectual capital used in activities is the driving force behind value creation and knowledge of the organisation's products and service is necessary for this value creation.

Customers do not create organisational value *per se*. Rather, it is the knowledge of the customers, their wishes

and requirements and the knowledge of how to sell, which ultimately creates value. Long-term contracts with customers also carry value. However, behind the contracts lies knowledge of the market, knowledge of laws and regulations etc. Thus, intellectual capital creates value when applied in activities in the organisation itself and in the transactions with other organisations. In this sense, value drivers can be seen as effects of the application of intellectual capital in concrete activities. These activities can take place on different levels of organisation in accordance with the specific relevant functional departments and they will result in emergent effects.

Next step performance measures

Mouritsen *et al.* (2003b) propose a model to analyze the interrelations of intellectual capital across two dimensions. The first is the type of intellectual capital and the second is whether the intellectual capital concerns resources, activities or effects. Together with an understanding of the organisation's strategy and the key management challenges facing the executive management, this model makes it possible to mobilize a series of questions to identify the key intellectual capital indicators. Evaluating the effects of intellectual capital can therefore be done in a series of steps.

First step is evaluating the identified indicators in a scorecard-like fashion in relation to a set of expected targets for each indicator. In a second step, the indicators can be evaluated in the analysis model (Mouritsen *et al.* 2003b) presented below in Figure 3 by asking which indicators affect each other. Third, the analysis can be completed by asking whether some of the 12 boxes have missing indicators. Finally, with the indicators at hand, management should ask themselves how

Evaluation criteria Knowledge resources	Effects	Activities	Resources
	What happens	What is done	What is created
Employees	• • •	• • •	• • •
Customers	• • •	• • •	• • •
Processes	• • •	• • •	• • •
Technologies	• • •	• • •	• • •

Figure 3: The analytical model (Mouritsen *et al.*, 2003b)

they fit into the story of what the company does and how it is unique. In this manner, management is gradually moving closer to understanding the effects of intellectual capital on the value creation of the organisation. In order to assess if the composition, structure and use of the company resources are appropriate, it is necessary to consider the development of the indicators over time, and finally the company may pursue relative and absolute measures for benchmarking across time and across competitors.

Unlike an accounting system, the analysis model is *not* an input/output-model. There is no perception that any causal links between actions exist to develop employees and the effect in that area (e.g. increased employee satisfaction). The effect of such an action may appear as a customer effect. The employee becomes more qualified and capable of serving the customers better. The task of the analysis is thus to explain these 'many-to-many relations' in the model. The classification itself does not explain the relations, just as increased expenses for R&D alone do not lead to increased turnover in the financial accounting system.

It is essential to support a company's business model story with performance measures. While it may be acceptable for some companies merely to state that one's business model is based on mobilizing customer feedback in the innovation process, excellence would be achieved by explaining by what means this will be done, and even more demanding is proving the effort by indicating: 1) how many resources the company devotes to this effort; 2) how active the company is in this matter, and whether it stays as focused on the matter as initially announced; and 3) whether the effort has had any effect, e.g. on customer satisfaction, innovation output etc. According to Bray, (2010, p. 6), "relevant KPIs measure progress towards the desired strategic outcomes and the performance of the business model. They comprise a balance of financial and non-financial measures across the whole business model. Accordingly, business reporting integrates strategic, financial and non-financial information, is future-performance focused, delivered in real time, and is fit for purpose".

From an accounting perspective, the question of how to capture value creation and value transactions when value creation to a large extent goes on in a network

of organisations and not inside an organisation, as traditionally perceived, is problematic. Also, from a management perspective, the question of how to produce decision-relevant information is seriously challenged by business model innovations and the advance of new types of business ecosystems, for example based on crowd funding, social communities, virtual collaboration networks and a competitive landscape based on business model "innovation-ability".

Empirical Examples of Business Models and Intellectual Capital

In this section, we introduce five examples that illustrate how intellectual capital becomes the value driver of different types of business models. We use Table 1 as a frame to illustrate how each business model has varying value drivers across the five dimensions introduced by Taran *et al.* (2016). Furthermore precisely which intellectual capital that lies behind those value drivers. In the articulation of the underlying intellectual capital behind the value drivers of each of the five dimensions, we have made note of the sub-class of intellectual capital according to Edvinsson and Malone's classification scheme (1997).

Example 1: E-Bay

E-Bay applies a business model configuration called "The Mall", or "e-Mall" configuration. It was initially coined by Timmers (1998) as a collection of shops or e-shops, usually enhanced by a common umbrella. The e-Mall is similar to a physical mall; in that it consists of a collection of several shops - in this case web-shops. A closely related examples to this way of doing business are the merchant model (Rappa, 2001), one-stop low price shopping (Linder and Cantrell, 2000), and the shop in shop (Gassmann *et al.*, 2014). Revenues are generated from membership fees to the platform, transaction fees, and advertising. The typical value proposition of this business model configuration is that the web-shops benefit from professional hosting facilities and thereby are able to lower their costs and the complexity of being on the Internet. Furthermore, suppliers and buyers enjoy benefits of efficiency/time-savings, no need for physical transport until the deal has been established, and global sourcing.

Table 2 illustrates that this business model configuration requires intellectual capital across a broad array

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	One-stop convenient shopping Broad selection for consumers Larger potential customer base A platform for marketing	Market knowledge (HC) Marketing activities and databases (SC and CC)
Value Segment	Automated Internet-based platform Customer/consumer segment Vendors	Technical Knowledge (HC and SC) Customer Behaviour intelligence (CC) Retail function (SC) Relationships to vendors (CC and SC)
Value Configuration	Platform maintenance Web-platform	Technical knowledge (HC) Web Supplier relations (CC) Processes structures and ICT (SC)
Value Network	Supplier to platform activities Link with courier services	Customer behaviour intelligence (CC) Competitor intelligence (HC)
Value Capture	Commission on vendor sales	International contract law (HC)

Table 2: Analysis of the e-Mall business model configuration

of the sub-dimensions. The success of eBay is in part driven by its ability to create critical mass and global presence. Therefore, the human capital relating to international contract law and the value proposition of convenience offered through the customer capital perspective might be the prime intellectual capital of this business model configuration.

Example 2: Dell

The business model configuration used by Dell is called Disintermediation. It cuts out the middlemen by delivering the offering directly to the customer through own retail outlets, sales force or Internet-based sales rather than through intermediary channels, such as distributors, wholesalers, retailers, agents or brokers. Related ways of doing business are the direct manufacturing model (Rappa, 2001), direct to consumer model (Weill and Vitale, 2001), and direct selling (Gassmann *et al.*, 2014). Dell had success by delivering directly to the customer a product or a service that had traditionally gone through an intermediary. They succeeded in modularizing their product, so that the customers could choose varying configurations of the computers they ordered, thus creating a feeling of custom-made despite the prices generally beating the market. This was possible because of the cost savings from the traditional intermediaries and because customers were prepared to buy at the website and wait for delivery instead of taking the computer home straight away from the shop.

Table 3 illustrates that the success of this business model configuration revolves around minimizing the challenges created by the lack of physical store. Therefore, the intellectual capital behind the customer service, CRM, and the logistics becomes of vital importance. While the ability to minimise the challenges is based on customer capital, logistics and modular manufacturing are related mainly to structural capital.

4.3 Example 3: Ryanair

A typical low-cost airline, the Irish aviation company Ryanair applies the No-frills business model configuration (Gassmann *et al.*, 2014; Taran *et al.*, 2016). In this way of doing business, organisations offer a low-price, low service/product version of a traditionally high-end offering; in this case commercial aviation; and this is in line with Christensen and Overdorf's (2000) characterisation of disruption (see also Markides, 2006). Similar labels for this way of doing business have been termed Low touch (Johnson, 2010), Add-on (Gassmann *et al.*, 2014); Low-price reliable commodity (Linder and Cantrell, 2000); Standardization (Johnson, 2010). The key value driver, low prices for low service is the value proposition put forth by Ryanair. Hence, customers buy the basic offering cheap, and pay for add-ons in the product/service offering. Like for example, choice of seats, priority boarding and baggage. A more in-depth account of Ryanairs business model and partnering with hotels, car rental services, airport transportation and bargaining power towards the, typically smaller, airports is offered

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Same product at lower prices Customized products Superior customer service Fast delivery	Modular design and manufacturing (HC and SC) Technical Knowledge (HC) IC for Service Departments and CRM solutions (CC) Consumer behaviour and needs (CC)
Value Segment	Online channels Segmented market Mass market reach	Customer intelligence (CC) Marketing activities (SC)
Value Configuration	Modularization Supply chain management Logistics Infrastructure management	Business economics and planning (SC)
Value Network	Companies further back in the value chain	Market knowledge (CC) Supplier relationships (CC)
Value Capture	Not specified, but creating customer loyalty and next purchase	Marketing Activities (SC)

Table 3: Analysis of the disintermediation business model configuration

by Casadesus-Masanell and Ricart (2010). In reality we might question who Ryanair’s most important customers are: the consumers or the airports? Ryanair achieves low costs at the smaller airports because they bring in high customer volumes and use this to bargain with.

Table 4 illustrates the intellectual capital of the No-Frills business model applied by Ryanair. For Ryanair, efficiency is important wherefore structural capital related to operating procedures become prime intellectual capital behind the value drivers. However, in

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Traditional high-end offering at low price	Knowledge about competitors (SC) Market knowledge (CC)
Value Segment	Self service Automated service Web platform Low and large base of the customer period Customers with low purchasing power	Customer Behaviour (CC)
Value Configuration	HR Low-cost infrastructure Standardized operating procedures (e.g. fast turnaround on the ground) Marketing Cost-control	Recruiting staff (SC)
Value Network	Cost-effective supplier network Suppliers of related services that gain from access to large customer base	Bargaining power (HC)
Value Capture	Low cost of suppliers from scale of operations Revenues based on add-on products and services	Supplier relations (CC) Customer needs (CC)

Table 4: Analysis of the No-Frills business model configuration

addition to this, the human capital related to negotiating with airports and other types of strategic partners which ensures the conversion of critical mass in terms of customer numbers to lower costs is imperative to the survival of this particular company.

Example 4: Gillette

Gillette is renowned for its use of the “Bait and hook” business model configuration (Osterwalder & Pigneur, 2010). In this configuration companies seek to provide customers with an attractive, inexpensive or free initial offer that encourages continuing future purchases of related products or services. Besides Gillette, this is a much-used tactic in the printer business, take for example HP inkjet. This business model configuration is also known as Razors and Blades (Linder and Cantrell, 2000; Johnson, 2010; Gassmann *et al.*, 2014) or Lock-in (Gassmann *et al.*, 2014). The key of this configuration is the close link between the inexpensive or free initial offer and the follow-up items on which the company earns a high margin as well as related product/service accessories. The key value driver is the achievement of lock-in and thereby also continued revenue streams. Table 5 illustrates that this particular way of doing business relies heavily on customer capital and structural capital. The key to success for Gillette is the global presence of consistent and high-quality products and

the ability of protecting the brand and the intellectual property. Procter & Gamble, who own the Gillette series, are able to accomplish this because of their sheer size. The global presence coupled with the lock-in mechanism of the business model ensures that customers can turn their purchase of shaving equipment into a habit, regardless of where they are in the world.

Example 5: Skype

Skype applies a Freemium business model configuration. The term Freemium was first coined by Anderson (2009) and is in essence a business model that utilizes two types of customer segments. One segment is interested in a basic service for free, while the second, premium segment, is willing to pay for a more advanced product partly because the freemium segment provides critical mass to the business model. This way of doing business has similarities with the Inside-out and No-frills business model configurations. The Inside-out business model configuration (Osterwalder & Pigneur, 2010) is used by companies that sell their own developed R&D (i.e. intellectual properties or technologies which are under-used inside the company).

Table 6 shows that the structural capital of Skype is important to the functioning of the platform service and that the human capital that came up with the idea

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Low price or free initial offer Quality System	Market understanding (CC) Marketing a consumer product (SC)
Value Segment	Customers sensitive to initial offer	World Wide Market (CC) The brand (SC)
Value Configuration	Brand Patents Developing follow-up products and accessories	Quality Control (SC)
Value Network	Marketing Production Logistics Retailing	Understanding retailers’ needs for brands (CC)
Value Capture	One-time low-margin sale followed by frequent high-margin sales	Consumer behaviour (CC) Consumer loyalty (CC) Consumer needs (CC)

Table 5: Analysis of the Bait and Hook business model configuration

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Market coverage/market reach of the web-platform (Structural Capital) Free Internet-based call-service Cheap additional services	Market understanding (CC) Find uncovered needs (HC) Go-to-market strategy (HC)
Value Segment	Knowledge about premium user service requirements (Human Capital) Conversion rate of free customers to paying customers (Customer Capital) Degree of self-service for customer enquiries (Customer Capital) Connects friends on a common communication platform	Technical knowledge (SC) Market knowledge (CC) User needs and behaviour (CC)
Value Configuration	Platform management (Structural Capital) Software development Automated services	HR (HC) Technical knowledge (SC and HC)
Value Network	Distribution partners Online payment service partners Phone companies Handset/headset partners	Technical knowledge (SC and HC) Infrastructure (SC)
Value Capture	Subscription fees from premium customers (Customer Capital) Revenues from advertising to free customers (Customer Capital)	Customer behaviour (CC) Marketing activities (SC)

Table 6: Analysis of the Freemium business model configuration

was central. However, it also illustrates that the notion of the double-sided platform of free and premium customer segments in the form of customer capital are vital for the success of Skype. This is because the most important aspect of the success is the ability to create the critical mass that allows the Freemium model to flourish. It was clearly the human capital that formulated the go-to-market strategy that turned Skype into the company it is today. The market traction created by the founders ensured that Skype became synonymous with making phone calls over the Internet, best exemplified by the expression: “Let’s Skype”!

Discussion and Conclusions

This chapter argues that intellectual capital is the platform of any business model and its value creation and that without intellectual capital there is no value creation. The examples applied above illustrate the relationship between each of these distinct business model configurations, their respective value drivers and the intellectual capital elements that drive them.

These examples from five distinct business model configurations also illustrate that the value drivers of business models are intellectual capital entities at different levels of organisation. Individuals have relevant knowledge and work with other staff members in functional departments. An organisation is made up of a number of interacting functional groups and departments, that together form the whole organisation. Organisations, suppliers and buyers, act in a market and the price and volume of products are ultimately determined by the so-called market forces. All of these are results of an emergent process. Through the organisation, right from the individual employee to the market level; novel properties emerge at each level with new dimensions of intellectual capital. Hence, this chapter provides case study evidence to support the arguments of Nielsen and Dane-Nielsen (2010). Interaction and communication among individuals creates the output of the work done in the functional departments. Further, cooperation between the necessary functional departments and groups will create the final output of the organisation that is valued by customers because it does a job for they are willing to pay for (Osterwalder *et al.*, 2014). However, the final monetary

value of the output from an organisation is determined by the market in which the organisation is operating.

This emergentist perspective is research perspective which can be applied to many fields of research. For example, the notion of emergentism is used as a research perspective within biology and medicine (Kim, 1999) and also within philosophy (Potochnik, 2010). Emergentism is a discipline within Mereology the study of parts and wholes. Emergent phenomena within the social space have been studied within sociology since the 1920s (Sawyer, 2010). This perspective argues that people, for example employees, act in collective manners to create new phenomena as collective knowledge and collective action which the individuals do not hold by themselves. This is the foundation for claiming that intellectual capital at higher levels in a hierarchical structure, for example an organisation, is different from the knowledge held by the individual staff members in the organisation. In doing so, this chapter offers a theoretically grounded lens for analysing and understanding business models by combining the perspectives of intellectual capital and emergentism from Nielsen and Dane-Nielsen (2010).

Also our analyses uncovers several of relevant action points for future studies that should be undertaken in order to further our understanding of intellectual capital in action, as well as business models. This raises the question of the relationship between business models and different level of organisation. Certainly, in our examples in section 4 we see that these business model configurations combine intellectual capital on several levels of organisation. But is that always the case? And can we talk of business models as organisational models or business model on an industry level. Furthermore, we find relevant connections between the prevailing understanding of business models based on certain value propositions to customers and the market-level of our emergentist perspective. Here there is a fruitful avenue to follow in combining business models and market perspectives, for example by viewing suppliers and buyers as non-managed organisations and markets as informal institutions.

A practical contribution of this chapter, besides the inspiration for managers of how to relate intellectual

capital to the value drivers of specific business model configurations (Nielsen *et al.*, 2017), is that business models as managerial concepts might serve different purposes. Once the management team of a company has determined which business model configuration they are competing with, this information can be used for multiple purposes. One such purpose is a managerial agenda. It entails managing, leading and controlling the organisation and establishing relationships with key strategic partners. Another purpose is communication. Here a wide array of potential stakeholders comes into play including investors, employees, municipalities, customers and strategic partners, and the notions of business models have proven themselves successful for aligning the views among such stakeholder groups on how the company works. Finally, there is also the business development purpose, also denoted as business model innovation. This perspective has received much attention from entrepreneurs in recent years but has also entered into the established business sector and the academic curriculum.

The responsibility for managing, communicating and innovating firms and their business models ultimately lies with the management team and the board of directors, while the use of the resulting analyses should be applicable to the whole organisation. The application of business models may have implications on multiple time-horizons. On the short-term basis, the notions of business models can help to evaluate the efficiency with which a company engages with customers. In the medium-term business models help companies to decipher whether customers are willing to pay for delivered value and how well the company utilizes strategic partners. On a more long-term basis, business models can help companies in understanding how to improve their overall concept for making money. Finally, it is evident that business models can serve a number of different "managerial agendas". As seen above, business models might be concerned with managing, controlling and making the organisation efficient. However, business models might also serve purposes of managerial sensemaking in an innovation perspective (Michea, 2016), or open up for new entrepreneurial possibilities (Lund and Nielsen, 2014).

References

- Amit, R. and Zott, C. (2001), "Innovation management measurement: A review", *International Journal of Management Reviews*, pp. 21-47.
- Baden-Fuller, C. and Morgan, M. (2010), "Business models as models", *Long Range Planning*, Vol. 43 Nos. 2-3, pp. 156-171.
- Barney, J. B., 1991. Firm resources and sustained competitive advantage. *Journal of Management* 17(1): 99-121.
- Bowman, C. and Ambrosini, V., 2000. Value creation versus value capture: Towards a coherent definition of value in strategy. *British Journal of Management* 11(1): 1-16.
- Bray, M. (2010), *The Journey to Better Business Reporting: Moving beyond financial reporting to improve investment decision making*. KPMG Australia.
- Brøndum, K., C. Nielsen, K. Tange, F. Laursen & J. Oehlenschläger (2015), 'Kickass Companies: Leveraging business models with great leadership', *Journal of Business Models*, Vol. 3, No. 1, pp. 22-28.
- Carlucci, D. and Schiuma, G. (2007), "Knowledge assets value creation map: Assessing knowledge assets value drivers using AHP", *Expert Systems with Applications*, Vol. 7, pp. 814-22.
- Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. *Long range planning*, 43(2), 195-215.
- Christensen, C. M., & Overdorf, M. (2000). Meeting the challenge of disruptive change. *Harvard business review*, 78(2), 66-77.
- Conner, K. R. (1991) 'A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial Organization Economics: Do We Have a New Theory of the Firm?', *Journal of Management*, 17 (1): 121-55.
- Cuganesan, S. (2005), "Intellectual capital-in-action and value creation. A case study of knowledge transformation in an innovation process", *Journal of Intellectual Capital*, Vol. 6 No. 3, pp. 357-73.
- Edvinsson, L. & M.S. Malone. 1997. *Intellectual Capital*. London: Piatkus
- Edvinsson, L. (1997), *Developing Intellectual Capital at Skandia*, *Long Range Planning*, Vol. 30, No. 3, pp. 366-373.
- Emmeche, C., Køppe S., & Stjernfelt F. (1999) *Explaining Emergence*. *Journal for General Philosophy of Science* 28: 83-119
- Foss, N.J. and T. Saebi (2016), *Fifteen Years of Research on Business Model Innovation How Far Have We Come, and Where Should We Go?*, *Journal of Management*.
- Foss, N. J. and Saebi, T. (2014), "Business Models and Business Model Innovation: Bringing Organization into the field", Foss, N.J. and Saebi, T. (Eds.), Chicago.
- Gassmann, H., Frankenberger, K. and Csik, M. (2014), "The business model navigator", Pearson Education Limited, Harlow.

- IIRC (2013), "The International <IR> Framework", The International Integrated Reporting Council, London, available at: www.theiirc.org.
- Johnson, M.W. (2010), "Seizing the white space: business model innovation for growth and renewal", Harvard Business Press.
- Kim, J. (1999). Making Sense of Emergence. *Philosophical Studies* 95: 3-36
- Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. *Long range planning*, 43(2), 195-215.
- Linder, J. and Cantrell, S. (2002), "What makes a Good Business Model Anyway? Can Yours Stand the Test of Change?", *Outlook*, available at: www.accenture.com.
- Lund, M. and Nielsen, C. (2014), "The evolution of network-based business models illustrated through the case study of an entrepreneurship project", *The Journal of Business Models*, Vol. 2 No. 1, pp. 105-21.
- Markides, C. (2006). Disruptive innovation: In need of better theory. *Journal of product innovation management*, 23(1), 19-25.
- Marr, B., Schiuma, G. and Neely, A. (2004), "The dynamics of value creation: mapping your intellectual performance drivers", *Journal of Intellectual Capital*, Vol. 5 No. 2, pp. 312-325.
- Meritum. (2002), *Measuring Intangibles to Understand and Improve Innovation Management*, Target Socio-Economic Research, European Commission, Brussels.
- Michea, A. (2016), *Enacting Business Models*. PhD dissertation, Copenhagen Business School
- Mintzberg, H. & L. Van der Heyden. 1999. Organigraphs: Drawing how Companies Really Work, *Harvard Business Review*, September – October, pp. 87-94.
- Montemari, M. and Nielsen, C. (2013), "The role of causal maps in intellectual capital measurement and management", *Journal of Intellectual Capital*, Vol. 14 No. 4, pp. 522-546.
- Mouritsen, J. and Larsen, H. T. (2005), "The 2nd wave of knowledge management: The management control of knowledge resources through intellectual capital information", *Management Accounting Research*, Vol. 16 No. 3, pp. 371-394.
- Mouritsen, J., Bukh, P.N, Johansen, M.R., Larsen, H.T., Nielsen, C., Haisler, J. and Stakemann, B. (2003b), "Analysing Intellectual Capital Statements", Danish Ministry of Science, Technology and Innovation, Copenhagen, available at: www.vtu.dk/icaccounts.
- Nielsen, C., & Dane-Nielsen, H. (2010). The emergent properties of intellectual capital: a conceptual offering. *Journal of Human Resource Costing & Accounting*, 14(1), 6-27.
- Nielsen, C., M. Lund & P. Thomsen (2017), Killing the balanced scorecard to improve internal disclosure, *Journal of Intellectual Capital*, Vol. 18, No. 1, pp. 45-62.
- Nielsen, C., Roslender, R., and Schaper, S. (2016), "Continuities in the use of the intellectual capital statement approach: elements of an institutional theory analysis", *Accounting Forum*, Vol. 40 No. 1, pp. 16-28.

- Nielsen, C. (2011), "When Intellectual Capital Drives The Business Model, Then ..", Lloyd, A. and Reddy, M. (Eds.), *Human Capital Handbook, Hubcap-Digital*, pp. 26–31.
- Osterwalder, A. and Pigneur, Y. (2010), "Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers", John Wiley & Sons.
- Osterwalder, A., Pigneur, Y., Bernarda, G. and Smith, A. (2014), "Value proposition design: how to create products and services customers want", John Wiley & Sons.
- Pike, S., Roos, G. and Marr, B. (2005), "Strategic management of intangible assets and value drivers in R&D organizations", *R&D Management*, Vol. 35 No. 2, pp. 111-24.
- Porter, M.E. 1985. *Competitive Advantage*. New York: The Free Press.
- Potochnik, A. (2010). Levels of Explanation Reconceived. *Philosophy of Science* Vol. 77, No. 1 pp. 59-72
- Rappa, M. (2001), "Managing the digital enterprise - Business models on the web", North Carolina State University, available at: <http://digitalenterprise.org/models/models.html> (accessed September 2015).
- Richards, K.A. and Jones, E. (2008), "Customer relationship management: Finding value drivers", *Industrial Marketing Management*, Vol. 37 No. 2, pp. 120-30.
- Rueger, A. & McGivern, P. (2010). Hierarchies and levels of reality. *Synthese* 176:379-397
- Sawyer, R. K. (2010). Emergence in Sociology: Contemporary Philosophy of Mind and Some Implications for Sociological Theory. *American Journal of Sociology* Volume 107 Number 3 551-85
- Seibt, J. (2009). Forms of Emergent Interaction in General Process Theory. *Synthese*, February 2009, 166:479
- Sirmon, D., Hitt, M., and Ireland, R. D., 2007. Managing firm resources in dynamic environments to create value: Looking Inside the Black Box. *Academy of Management Review* 32(1): 273–292.
- Stephan, A. (1999). Varieties of Emergentism. *Evolution and Cognition* Vol. 5, No. 1
- Stewart, T.A. 1997. *Intellectual Capital*. London: Nicolas Brealey Publishing.
- Sveiby K.E. (1997), "The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets", San Francisco: Berrett-Koehler.
- Taran, Y., Nielsen, C., Thomsen, P., Montemari, M., and Paolone, F. (2016), "Business model configurations: a five-V framework to map out potential innovation routes", *European Journal of Innovation Management*, Vol. 19. No. 4, pp. 492-527.
- Timmers, P. (1998), "Business models for electronic markets", *Journal on Electronic Markets*, Vol. 8 No. 2, pp. 3-8.
- Ulaga, W. (2003), "Capturing value creation in business relationships: A customer perspective", *Industrial Marketing Management*, Vol. 32 No. 8, pp. 677-93.
- Weill, P. and Vitale, M.R. (2001), "Place to space", Harvard Business School Press, Boston.

Wilson, J. (2010). *Metaphysical Emergence: Weak and Strong*. Draft 2010

Wirtz, B.W., V. Göttel and P. Daiser (2016b), *Business Model Innovation: Development, Concept and Future Research Directions*, *Journal of Business Models*, Vol. 4, No. 2, pp. 1-28

Wirtz, B.W., Pistoia, A., Ullrich, S. and Göttel, V. (2016a) "Business Models: Origin, Development and Future Research Perspectives." *Long Range Planning*, Vol. 49, No. 1, pp. 36-54.

Zott, C., Amit, R. and Massa, L. (2011), "The business model: Recent developments and future research", *Journal of Management*, Vol. 37 No. 4, pp. 1019-1042.

About the Authors

Henrik Dane-Nielsen



Christian Nielsen, PhD, is Professor at Aalborg University in Denmark. He is the Head of the Department Business and Management at Aalborg University. Christian has previously worked as an equity strategist and macro economist focusing specially on integrating Intellectual Capital and ESG factors into business model valuations. His PhD dissertation from 2005 won the Emerald/EFMD Annual Outstanding Doctoral Research Award, and in 2011 he received the Emerald Literati Network Outstanding Reviewer Award. Christian Nielsen has a substantial number of international publications to his record and his research interests concern analyzing, evaluating and measuring the performance of business models. Public profile available on <http://www.linkedin.com/in/christianhnielsen> and <http://personprofil.aau.dk/profil/115869#>

