

Value Creation Process for Digital Business and Entrepreneurship: New Challenges for Human Intellectual Capital in the digital World

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Abstract

Purpose of the article To find tools and methods to research how value creation can be done using smart data and what kind of business models shall be used for implementation these new models into digital business.

Methodology/methods We propose an approach to analyse the current situation with using intellectual capital in digital innovation companies.

Scientific aim This methodology puts in evidence several examples of successful profiting from using of intellectual capital in the frame of current digital economics. The business models of predigital companies, based on promoting products, have also evolved. Their offer has gradually shifted towards services, to such an extent that what they are selling is not so much the product as the functions it serves.

Findings Value creation in digital innovation companies can be viewed as a system of three interacting components. First, the domain choice, selecting where to compete. Second, the resource base in terms of individual and collective knowledge. These two components provide input in terms of the demand of customers and the capabilities in the resource base of the company, to the third component: the product or service delivery process (PSDP). The content of the PSDPs can vary according to the needs of the customer.

Conclusions The outcomes of the application can be used in business environment for the new innovative companies working in digital business (IT-technologies, Big Data applications etc.).

Keywords: data, value proposition design, business model design, value creation, intellectual capital

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Introduction

Digital entrepreneurship as a relevant socio-economic and technological phenomenon, which can be considered as the joining of traditional entrepreneurship with an emphasis on leveraging new digital technologies in novel ways, such as social, mobile, analytics, cloud and cyber-solutions, all in order to shift the traditional way of creating and doing business in the digital era.

Digital Entrepreneurship can be defined as embracing “new ventures and the transformation of existing business by creating and using novel digital technologies. Digital Enterprises are characterised by a high intensity of utilisation of new digital technologies (particularly social, mobile, analytics and cloud solutions) to improve business operations, invent new (digital) business models, sharpen business intelligence, and engage with customers and stakeholders through new (digital) channels”. However, it is important to stress that there is a difference between ‘digital entrepreneurship’ and ‘digital business’ in general and ‘digital start-ups’ and ‘digital scale-ups’, which we believe provides an additional perspective.

Moreover, the ‘digital’ component relates to what Parker et al. (2016) refer to as ‘digital platforms’ that “consummate matches among producers and consumers and facilitate the exchange of goods, services or social currency, enabling value creation for all through the digital landscape”. Hence, digital start-ups and scale-ups are ventures that incorporate novel digital technology as a vital component of their business model and which could not feasibly operate without the internet-enabled platforms. This would therefore include businesses working on the ‘Internet of Things (IoT)’, and online retailers such as Amazon, but exclude retailers who have a physical presence on the high street.

2 Assessment of Knowledge Capital and Intellectual Assets

The worth of knowledge assets, taking the difference between market and book values as a proxy, is hidden by current accounting and reporting practices. However, as evident from current valuations of many Net-based enterprises, one observes a significant widening gap between the values of enterprises stated in corporate balance sheets and investors’ assessment of those values. The increasing proportion of intangible vis-à-vis tangible assets for most industrial sectors has been affirmed by various other observations (Edvinsson and Malone, 1997; Hope and Hope, 1997; Stewart, 1995). In case of major corporations, often such high market valuations are attributed to brands. Recent business history has shown that huge investments in human capital and information technology are the key tools of value creation that often do not show up on company balance sheets as positive values themselves.

Measurement of institutional or organizational value in the current business environment using traditional accounting methods is increasingly inadequate and often irrelevant to real value in today’s economy. For instance, while traditional accounting practices often treat brand as depreciable entity over time, in today’s economy, intangible assets like brands and trademarks often increase in value over time, often longer than the time periods accounted for their depreciation. Even, specific kinds of valuations of intellectual capital, such as patents, copyrights and trademarks are not valued according to their potential value in use, but recorded at registration cost. Similarly, the distinction between assets and expenses is made arbitrarily on many balance sheets: an advertising campaign could be recorded in either column as evident from a case such as that of AOL. The traditional balance sheet, a legacy of last five centuries of accounting practices, provides a picture of historic costs, assuming that the cost of purchase reflects the actual value of the asset. However, it does not account for the hidden value inherent in people’s skill, expertise and learning capabilities, the value in the network of relation-ships among individuals and organizations or the structural aspects relevant to servicing the customers. These hidden values or intangible assets assume increasingly important role in an economy that is characterized by a transition from ‘programmed’ best practices to ‘paradigm shifts’ that characterize the new business world of ‘re-everything’ (Malhotra, 2000). Such factors are assuming greater importance in assessment of the potential for future growth of an enterprise or a national economy.

This issue is compounded by an apparent paradox: the more a company invests in its future, the lesser is its book value [although the recent astronomical caps for various Net-related stocks suggest increasing realization about intangible assets]. Extrapolating the case of such companies to the organizations within a national economy, one may understand the implications for accounting for intangible assets that do not show up in accounting reports, but may underpin their future success or failure.

Valuation from the perspective of intellectual capital and knowledge assets takes into consideration not only financial factors, but also human and structural factors (Stewart, 1997). Stewart defines intellectual capital as the

intellectual material that has been formalized, captured, and leveraged to create wealth by producing a higher-valued asset. Intellectual capital is defined as encompassing: i) human capital; ii) structural capital; and iii) relational capital. These aspects of intellectual capital include such factors as strong business relationships within networked partnerships, enduring customer loyalty, and employee knowledge and competencies. The compelling reasons for valuation and measurement of intellectual capital and knowledge assets include understanding where value lies in the company and the sectors of the national economy and for developing metrics for assessing success and growth of companies and economies.

3 Measuring Knowledge Assets and Intellectual Capital

Managers of enterprises and national economies are trying to find reliable ways for measuring knowledge assets to understand how they relate to future performance. The expectation from finding reliable measures of knowledge assets is that such measures can help managers to better manage the intangible resources that increasingly determine the success of the enterprises and economies.

The terms knowledge capital and intellectual capital are used synonymously in this article. Within the scope of subsequent discussion, such terms refer to “the potentiality of value as it exists in various components or flows of overall “capital” in a firm; the relationships and synergistic modulations that can augment the value of that capital; and the application of its potential to real business tasks... [it] includes an organization’s unrefined knowledge assets as well as wealth generating assets whose main component is knowledge” (Society of Management Accountants of Canada 1999, p. 17).

One may observe that it is the application of intellectual capital to practical situations that contributes, primarily, to the translation of its potential value to financial assets. Or as observed by Stewart (1997, p. 67): “Intelligence becomes an asset when some useful order is created out of free-floating brainpower – that is, when it is given coherent form (a mailing list, a database, an agenda for a meeting, a description of a process); when it is captured in a way that allows it to be described, shared, and exploited; and when it can be deployed to do some-thing that could not be done if it remained scattered around like so many coins in a gutter.” Unless effectively utilized and applied, knowledge assets may not necessarily yield any returns in terms of financial performance measures. In other words, “knowledge assets, like money or equipment, exist and are worth cultivating only in the context of strategy... you cannot define and manage intellectual assets unless you know what you are trying to do with them” (Stewart 1997).

The subsequent discussion reviews the case of an Asian nation state that utilized one of the more popular methods for assessment of its national intellectual capital. Concluding discussion will highlight the existing caveats in the adopted methodology and underscore the important issues that need to be addressed in future research and practice.

4 The Innovation Capability Model

As was stated (Lerro, Linzalone and Schiuma, 2009) that Innovation Capability Model assumes that company’s performance is based on the results of the innovation which, in turn, is primarily dependent of the innovation sources. Innovation capability itself, then, is not a separately identifiable construct. A holistic model of innovation capability will thus attract debate about categorization of pillars and elements, but it is a necessary step in order to facilitate analysis and construction of an innovation framework. The pillars and elements have been built up from the literature on innovation management as well as best practice and specific studies of innovative firms.

The following pillars are proposed to exist within innovative companies. They are strategy, innovation sources, innovation capacity, and innovation process and innovation results. The innovation capability will lead to continuous products, process and system innovation. The stronger innovation capability possessed by a company, the more effective will be its performance and value creation. The core pillars of innovation capability, as well as their major elements. Are discussed in detail in the next sections:

4.1 Strategy

The link between strategy and innovation is important to effective innovation management. This is a critical step in institutionalizing innovation, creating a vision, a target which if achieved will create products that outperform and provide a distinct market position. The success of companies breaking the rules of their industries through innovation and become a dominant player has been well-documented (Hamel, 1998; Kim and Mauborgne, 1999; Markides, 19997).

4.2 Innovation sources

Competitive pressure and rapid growth of ICT have forced companies to review the sources of their innovation performance and value creation dynamics. The concept of knowledge has emerged a strategically significant resource for the firm (Grant, 1996; Mintzberg et al., 1976) and has been asserted to play a significant role in innovation process (Song and Montoya-Weiss, 1998).

4.3 Innovation capacity

In this model, innovation resources nurture innovation capability. The innovation capability enables integration and transformation of resources to develop potential innovation that can be transferred into companies' processes through the leverage of their knowledge base (Cohen and Levinthal, 1990). The cross-functional integration and co-operation of organizational capabilities are at basis of "innovation capacity". In fact, in line with Lawson and Samson (2001) statements, the "innovation capacity" can be interpreted as the organizational ability to mould, integrate and manage multiple resources and capabilities of the firm to successfully stimulate in-novation.

4.4 Innovation processes

Traditionally, process research addresses the nature of the innovation process, how and why innovations emerge and grow. In this model, process has come to be conceived as a temporal, path-dependent phenomenon (King, 1992; Koput, 1997; Schroeder et al, 1989) that is a collection of tasks or activities and an integration and exploitation of organizational capabilities which together transform inputs into outputs. Successful innovation requires an optimal overall formal business structure (Burgelman and Maidique, 1988). The nature of the innovation process has been shown to be affected by a range of factors such as organizational structure (Burns and Stalker, 1961; Daft, 1978; Holbek, 1988), environmental factors (Tidd, 2001), technology management. The management of technology is critical for all kinds of organizations. Innovative companies are able to effectively link their core technology strategies with the innovation strategy and business strategy.

4.5 Innovation outputs and company's value creation

Innovation makes to competitive advantage (Tidd, 2001). This output has generally been construed in terms of financial, market or organizational performance. Output performance research focuses intently on the role of novelty or newness as a factor of successes, although results are not completely shared (Avlonitis et al, 2001, Tidd, 2001). According to a value based approach (Neely et al, 2002), superior innovation performance mean major value created for company's key stakeholders.

5 Value Creation in the Digital World

The significant developments in digital network and communication technologies has led to the emergence of digital business (Bharadwaj et al., 2013). Organizations then started to scramble to develop new business strategies that align with their business objectives. But continued advancements in technology have enabled new dynamic organizational capabilities as well as transformed social structures and relationships (Bharadwaj et al., 2013). For this reason, it has been suggested that it is becoming increasingly difficult to separate digital products from IT infrastructure. New forms of organizing emerge due to the confluence between IT and organizational capabilities resulting in new affordances for creating value in organizations (Zammuto et al., 2007). Bharadwaj et al. (2013) argued that this perceived inseparability compels rethinking the traditional business-IT strategy alignment view and instead move towards their fusion in digital business strategies.

They defined digital business strategy as "organizational strategy formulated and executed by leveraging digital resources to create differential value". One of the four pillars of their conceptualization of digital business strategy is the sources of business value creation and capture. In digital business, organizations continue to leverage IT infrastructures to create new sources of value creation and sustainable competitive advantage (Kohli and Grover, 2008; Yoo et al., 2010). Information is one key source for value creation. There is established recognition of increased value from information by using IT (Bharadwaj et al., 2013; Kohli and Grover, 2008). IT has enabled significant transformation in the ways information is created, exchanged, shared, remixed, and redistributed which in turn caused dramatic power shifts in market channels and disruption of traditional sources of economic profits. These transformations, Bharadwaj et al. (2013) argued, have created fundamentally new sources of value. This can be seen in digitization processes through which new combinations of resources result in novel product and service innovations. The encoding of analog information into digital format like in many contemporary newspapers

that are shifting from physical creation and distribution of content into the digital arena is an example of the creation of new innovative digital sources of value. The shift into digitized information at Newsweek magazine, for instance, shows how the magazine started to explore new sources of value creation by balancing between subscription and advertising (Bharadwaj et al., 2013).

Digital mobile platforms like Apple's iOS, Google's Android, and Amazon's Kindle are important examples of how the digitization of products and services has created new ecosystems of value that redefined the entrainment, music, and book publishing industries. In this respect, Yoo et al. (2010) discussed several new digital strategy frameworks to capture new sources of value creation in such marketplaces such as generativity, heterogeneity, creating digital product platforms and meaning-making capabilities. Besides information-based value creation, there is also the integration of IT in physical artifacts. Yoo et al. (2010) discussed another dimension of value creation with IT. They explained that the value of IT lies in its integration with and expansion towards third-party components. They argued that the increasing embedding of digital components into physical products has created novel layered modular architectures.

An example of this was reported by Svahn et al. (2009) where they discussed the integration of service-based modularity into component-based modularity within the car infotainment industry. This kind of integration creates new forms of digital materiality which leads to the "emergence of digital service architecture for previously non-digital products and services" (Yoo et al., p. 14). Clearly, such innovative architectures have the potential to enable novel sources for value creation and competitive advantage for both organizations and developers.

6 Conclusions

In this paper, we synthesized the value creation perspective (Schumpeter, 1934; Moran and Goshal, 1996), and digital platforms literature (Ghazawneh and Henfridsson 2013; Tiwana et al. 2010; West 2003) to study the value creation in digital application marketplaces. Based on an extensive research study of third-party developers (Amit, and Zott, 2001; Bharadwa et al, 2013; Mansour, 2017; Pagani, 2013) we developed an empirically grounded understanding of value creation where we identified six value sources that are combined and ex-changed to create values that can be realized by third-party developers.

Future studies could address several limitations in our work. It would be useful to compare our results with investigations of third-party developers from other countries. Another direction for future work would be to investigate value creation, and also potential value destruction, in digital application marketplaces from the perspective of users and owners of digital platforms.

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