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Analysis of the growth of the e-learning industry through sustainable business model archetypes: A case study

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ABSTRACT

Information and communication technologies applied to education through e-learning innovative solutions emerge as a relevant driver of change in the publishing industry, involving not only the supply of new educational resources, but also a reduction of paper consumption used in the traditional book edition. The dual goal of this paper is, firstly, to identify sustainable business model archetypes that illustrate the behavior and potential growth of firms in the e-learning industry and, secondly, to provide evidence of the existence of these archetypes through the study of strategic actions and managerial perceptions in a case study of rapid internationalization in this industry. The analysis follows a two-stage method. First, the main behaviors of e-learning firms are identified and grouped in sustainable business archetypes and the research proposals defined. Then these proposals are applied to a case study of the e-learning industry. This analysis furnishes evidence to conclude that the alliance of software firms with publishers becomes a driver that allows e-learning firms to overcome some of the limits of their growth model and maintain sustainable business models.

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1. Introduction

Sustainable systems involve multiple relations between environmental protection, economic performance and societal welfare (Glavič and Lukman, 2007), often guided by innovations. In this sense, the application of information and telecommunications technologies (ICTs) to education involves social and organizational innovations known as e-learning systems that affect not only the way individuals learn but also the competitive configuration of the educational contents industry and its impact on the environment. In this regard, firms demand new strategic approaches adjusted to the requirements of these innovations. Based on a recent review of theories of the firm and their contributions to corporate sustainability, Lozano et al. (2015) propose a 'Sustainability-Oriented Theory of the Firm' and Tamayo-Orbegozo et al. (2017) define a strategic eco-innovation model to identify and understand how and why eco-innovations are developed.

One of the direct environmental impacts of the application of ICTs to the publishing industry is the abandonment of the production of paper-based books, reducing wood pulp consumption in this industry. The world's forest area was reduced by 14% between 2005 and 2010. Together, just five countries (Brazil, Russia, Canada, United States and China) provide more than half of the world's entire forest cover (FAO, 2004). Over the last five years, the USA became the leader in world pulp consumption, and was responsible for around 17% of wood use in the EU. The paper book production process is the main consumer of wood in the EU (17% from 2005 to 2010) because this material is being used for printing graphic papers, composed of newsprint, printing, and writing paper (Eurostat, 2011). Other costs such as energy consumption and the use of industrial machinery during the paper production process are also included in the total environmental impact cost assumed by the publishing industry. However, these costs are also relevant in the e-learning industry, although it is not yet possible to compare the different impact of these costs in both industries.

From a strategic perspective, e-learning systems based on the use of ICTs have changed the configuration of the publishing industry over recent years. ICTs applied to educational aims are able not only to ensure that society has more access to education, but also, through e-learning applications, to reduce paper consumption utilized in traditional book publishing, which involves a dual economic-environmental impact. In this sense, ICTs applied to

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advanced learning also contribute to sustainable behavior in the private sector (Lozano et al., 2013). From an economic perspective, North America has become the first e-learning market, with 85% of total deal value, followed by Europe, which held 10.2% of total deal value in 2012 (IBIS Capital, 2013). However, there are differences in the behaviors of the main participants in this industry. Software firms with a strategic niche focus are becoming relevant providers of technical solutions for e-learning contents, and they seek rapid internationalization, while at the same time publishing companies are delaying their participation in e-learning business models because of the high investment they previously shouldered in paper-based business models.

Because of the economic relevance of this issue and its social implications, it is important to answer the research question: Can the growth pattern of e-learning companies be modeled through SBMAs (Sustainable Business Model Archetypes)? From the analysis of SBMAs defined by Bocken et al. (2014), this paper identifies the archetypes most linked to the value proposal and the main behaviors in the e-learning industry from 2000 to 2015. Application of this conceptual framework to a case study of rapid internationalization in the e-learning industry enables us to study strategic actions and managerial perceptions in the internationalization decision-making process and to provide a new conceptual framework for future research.

1.1. Rapid internationalization and SBMAs

The literature on rapid internationalization has identified the pace, scale, and pattern of internationalization as relevant dimensions to explain this growth model in different industries (Aspelund and Moen, 2001; Shrader et al., 2000; Bell et al., 2003). Regarding social and environmental impacts of firms growth, some researchers have also proposed SBMAs that group business model innovations according to innovation focus (either technological, social, or organizational) (Boons and Lüdeke-Freund, 2013). These archetypes let us understand the way some business models support sustainability (Yip and Bocken, 2018). In this sense, identification of SBMAs in the growing industry of e-learning can involve a higher contribution to superior customer value and the sustainable development of companies and society (Lüdeke-Freund, 2010).

Following the classification by Bocken et al. (2014), SBMAs are grouped into innovations with a (1) Technological, (2) Social or (3) Organizational orientation. The technical grouping includes business model archetypes that use technology to maximize materials and energy efficiency, to create value from waste, and to substitute traditional processes with renewables and natural processes. The social grouping includes business model archetypes with a dominant social innovation component, because they deliver functionality rather than ownership, adopt a stewardship role, or encourage sufficiency as key business value. Further, business model archetypes in the organizational grouping have a dominant organizational innovation-change component, because they change the firm's social responsibility perspective towards society and the environment and develop scale-up solutions. In this sense, researchers have applied SBMAs to understand the business models that support sustainability overall in manufacturing industries (Bohnsack et al., 2014), but there are also applications in different industries like banking (Yip and Bocken, 2018) and new approaches to the canvas tool that evaluates the sustainability potential of specific business models (Joyce and Paquin, 2016). Similarly, the strategic eco-innovation model (Tamayo-Orbegozo et al., 2017) enables an understanding of the way in which internal and external factors interact in the eco-innovation process, and the main relationships between the agents involved in this process at the level of the generic (macro level), specific (meso level) and internal environment (micro level).

SBMAs allow us to identify and group sustainable behaviors in line with innovation focus, considering at the same time the impact on civil society and the natural environment. In recent years, researchers have studied business models including environmental and social requirements (Joyce and Paquin, 2016). In this sense, there are new insights that state the existence of business models more capable than others of supporting value creation (Bocken et al., 2014) and innovation for the whole industry (Carayannis and Campbell, 2009, 2010).

Nevertheless, despite previous research there is still a lack of studies that analyze the growth rate of these business models in a specific industry.

1.2. Research gaps and objectives

This analysis is focused on the emerging e-learning industry. In this environment, application of the latest ICT advances to the education sector is changing the strategic configuration of publishing companies, educational institutions, and training departments in many companies (IBIS Capital, 2013; Docebo, 2014; Crossknowledge, 2011). Technological improvement and the design of high-capacity networks for sharing data have made it possible to solve some of the limitations of traditional learning methodology, facilitating both access to information and the adaptation of programs to individual needs (IBIS Capital, 2013), although it is important to nuance that the mere application of ICTs to educational contents is not a recipe for increasing learning, and produces quite the opposite effect (Ettinger et al., 2006). Meanwhile, none has defined any SBMAs for the e-learning industry, and there are no explicit models that predict the growth pattern of born-global firms in this industry.

The dual goal of this paper is, firstly, to identify the archetypes that illustrate the behavior and potential growth of firms in the e-learning industry and, secondly, to proffer evidence of the existence of these archetypes through the study of strategic actions and managerial perceptions in a case study of rapid internationalization in this industry.

1.3. Overview of the e-learning industry

The e-learning industry has maintained and even increased its growth since 2000 (IBIS Capital, 2013). The data also shows market acceptance of e-learning solutions in companies, especially in primary and secondary schools (Docebo, 2014). Within academic institutions, though, there is still a gap between those that believe e-learning solutions are of critical importance, and those who actually go ahead and include the development of these solutions in their strategic plan (IBIS Capital, 2013).

Earlier applications of e-learning showed that such technological tools do not automatically guarantee high levels of learning (Snyder, 2000; Ettinger et al., 2006; Fernández Díez de Lastra R, 2001). Ettinger et al. (2006) demonstrated that the mere act of uploading paper materials e to a software platform may reduce motivation and, thereby, some learning outcomes. Discussion of these problems generated a second wave of development of new e-learning models (Servage, 2005). Because of the different approach to learning fostered by the new model, it was argued that the e-learning system needed a different pedagogical system (Roy, 2006). In consequence, various firms focusing on the management of educational contents for e-learning have sprung up over the last decade. These firms offer teams of experts in pedagogy, script-writing, and technical knowledge who all work to create personalized educational paths and take advantage of all the possibilities

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