DEVELOPING A BUSINESS MODEL FOR CROSS-BORDER E-SERVICES: THE LD-CAST PROJECT

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Abstract

The term “Business Model” started to gain momentum in the early rise of new economy and is today used both in business practice and in scientific research. Under a general point of view BMs are considered as a contact point among technology, organization and strategy in order to describe how an organization get value from a technology and use it as a source of enduring competitive advantage. Anyhow, notwithstanding the amount of research available, this area is still fragmented. Trying to overcome problems linked to different perceptions of the concept in this area of interest, some contributions summarize existing literature defining frameworks, classifications, typologies and taxonomies of BMs. A methodology adopted in recent works uses ontologies to define a shareable conceptualization of BM. Ontologies adoption is common when semantic problems affect requirements definition or participatory design processes. The use of an ontology as a mean to share and represent knowledge on a specific topic could be also worthwhile in innovative and collaborative environment where different partners meet each other to achieve a common goal or need to define shared business tasks involving information and communication technologies.

The aim of this study is to investigate the possibility to use an ontology based approach as a conceptual tool to define the business model in a context characterized by the deployment of e-services in a cross border environment. Our assumption is that this approach can provide useful insights when new IT based services are deployed among subjects who need to cooperate among each other on the base of their different needs, legal constraints and cultural background. The

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empirical part of this study, which is out of the scope of this paper, is based on a participative action research project carried out from January 2006 in the context of an EU project (LD-CAST) aiming at enabling the cooperation among Chambers of Commerce from different countries to provide traditional and new services, based on semantic technologies and service oriented architectures. Through an extensive literature review on BMs we motivate the selection of the conceptual tool used in the LD-CAST project for the definition of a common exploitation plan and for the design of a new BM.

1. Introduction

In business practice and scientific research business models seem to have caught much attention. Searches in Google and in databases of scholarly peer reviewed journal have been used in literature to estimate the size of this phenomenon [21, 26]. In spite of the interest on this topic, there seems to be not so much shared understanding of the BM concept. BMs have been studied with diverse interests and objectives in mind facilitating overlaps and conflicts [22]. Authors usually show the tendency to start from scratch instead of supporting established researches: this is partially due to the large amount of disciplines which study and describe this phenomenon [27]. Porter cite this aspect as the cause beyond the wrong approach to competition by dot-coms [23]. Attempts to summarize all the contribution in this research field produced frameworks, categories, taxonomies and ontologies of BMs [3, 15, 21, 22, 27]. In general, researcher perceive BMs as connected to value and information technology in an organizational context. Adopting an interdisciplinary point of view we analyse and explore this phenomenon by reviewing the relevant literature in the field, on the base of a previous work of ours [5]. The aim of this study is to investigate the concept of BM in order to use an ontology based approach as a conceptual tool to define a BM in a context characterized by the deployment of e-services in a cross border environment. Our assumption is that this approach can provide useful insights when new IT based services are deployed among subjects who need to cooperate among each other on the base of their different needs, legal constraints and cultural background.

This research has been carried out in the context of the LD-CAST (Local Development Cooperation Action Enabled by Semantic Technology) project (FP6-2004-IST) – http://www.ldcastproject.com We acknowledge all the partners of the Consortium for their cooperation.
2. Research methodology

BM research field is occupied by many disciplines and areas of interest. To trace the most prominent contribution we used the Business Source Premiere database of peer reviewed journals for our literature review. We used the terms “Business Model(s)” as search key in title and keywords of papers published from 1990 till now. The search produced two sets of 210 (title) and 108 (keywords) papers, with a certain amount of overlap, joined to avoid redundancy, forming a final set of 261 papers. Given the objectives of our research we were interested only in papers dealing mainly with BMs which we define as research on BM. We read abstracts to reject every contribution not directly linked to our research interest, reducing the number to 79. We took only the most relevant, including some others remarkable for us: the total number of selected papers was 42.

We classified each paper in a thematic area given the orientation of the journal where it was published and traced the BM definition and the position of the author(s) in the research field by distinguish between integrationist and isolationist approaches [6]. Papers grouped in thematic areas were then analysed using the Burrell and Morgan’s framework [6]. Discussions about the validity and legitimacy of this framework are out of the scope of this paper and can be found in the literature [10].

3. Literature review

Results of the literature review are shown in table 1. The columns indicate: the thematic area (Area), the number of papers in it (Num), the position of the contribution in the research field (Isolationist and Integrationist) and the characteristic of the given BM definition (Macro: without components, Micro: with components, None: no definition at all).

<table>
<thead>
<tr>
<th>Area</th>
<th>Num</th>
<th>Isolationist</th>
<th>Integrationist</th>
<th>Macro</th>
<th>Micro</th>
<th>None</th>
</tr>
</thead>
</table>


First of all our literature review shows fields interested in BMs research are many. Isolationist approaches are predominant: there seems not to be unambiguous tendencies in this research field. This consideration is also supported by the definitions of the term BM, where macro definitions are prevalent and the absence of definitions is relevant.

Along with Management, E-Commerce is the most frequent area in our sample. Papers classified here mainly consider the impact of ICTs on the traditional way of doing business. Contributions in the E-Commerce field are mainly integrationist but at the same time fail to refer to the same concept as they do not share the same definition with a wide abundance of macro definitions which are, by nature, less precise. Understanding of BMs remains unspecific and implicit [1]. Four out of seven papers refer directly to BMs [8, 15, 16, 28] and deal with new flows of value derived by the introduction of ICTs in business. The rest is more focused on the research on BMs [1, 3, 22].

Awareness of BM concept is less perceived in Management area. Apart from the only integrationist approach which gives a detailed definition and traces the evolution of the concept in the relevant literature [25], others do not describe the term or provide only a general macro definition. In Management field, BM is often referred to as a synonymous of strategy [2, 29, 30].

The Business field is mainly focused on BMs research. There are attempts to define relationships between strategy and BMs [17], review past literature, clarify the concept and identify its components [11, 27].

Technology, Computer Science and Finance areas are the most representative candidates for isolationism in BMs research because usually the term is not defined and considered as given.

<table>
<thead>
<tr>
<th>Field</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Total</th>
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Table 1. Literature review results
Authors who define it use a macro definition based on a description of activities to be done to obtain value from a technology [24]. Some of these papers refer BMs not to a single organization but to an industry [13, 18]. Similar considerations are still valid for the isolationist Economics field. Anyhow here a BM is more referred to an economic system [12].

Positioning Organization was quite an issue, given the small number of papers in the sample and the equal presence of micro and macro definitions as well as its total absence. In this area a BM is usually described using case studies or examples taken from empirical cases [9].

In the Information Systems field the need to have a foundation for the research on BMs is clear. In spite of the paucity of research contributions in this area, there are attempts to define and clarify relationships between BMs and strategy [26] and to have a more rigorous definition of the term with the development of an ontology [21].

Finally in the Strategy group, approaches are mainly isolationists and all the papers here classified refer to different definitions and concepts of BM but are centred on the core of value creation and destruction [4].

4. Discussion

Given the number of disciplines involved and the totally different approaches adopted, in order to understand research trends on this topic we try to depict the conceptual basis and the underpinning philosophical assumptions using the Burrell and Morgan’s framework as an intellectual map to analyse socio-philosophical concerns in selected contributions. The diagram below shows the results of the analysis. To increase readability some areas have been grouped forming the following categories: E-commerce and Finance, Business and Management, ICT (formed by Computer Science and Technology). Shape and dimension of areas reflects the total amount of papers classified and their individual position.
The matrix shows the prevalence of the interpretative paradigm in BMs research: the contributions share a common ontological and epistemological approach. With these premises research on BMs seems to follow a common path. Interpretive paradigm predominance is common in new and not well understood field: this seems to fit perfectly with BMs research.

Anyhow following the consideration in the previous paragraph and looking at the diagram we argue that an objective understanding of BMs is still lacking. BMs research contributions led to different directions, due to different interpretations. We are far from a mutual understanding and a common theoretic background for BMs. Relevant literature shows the foundations of BM are rooted on technology and the way to gather value from it. Another import aspect is the relationship between strategy and BMs. We may sum up that finding how to gather value from a technology and defining steps to practically achieve this goal it is what BMs research is all about.

Interpretative paradigm predominance could be the reason for isolationism prevalence. If contributions on BMs are mainly based on interpretations it could be hard to find a common path because interpretations could easily diverge.

On the other end, objective perception of reality is scarce in this research field. Objective perception derives rational explanations from observation and measurement and defines general valid laws in order to predict or evaluate [19]. But if BMs are not clearly defined how can they be measured and described? The identification of a set of candidate variables or phenomena to be measured or observed could be helpful in this context. Recent contributions adopt ontological approaches to summarize all the positions and derive a shareable concept of BMs [15, 21]. An effort to compare and integrate the two approaches could be useful to achieve the goal of a unique concept [14].
These ontologies could be used as a base for data gathering with the objective of defining new taxonomies and moving towards a theory of BMs. Anyhow these are still defined over interpretive contributions. As an interpretive approach in part creates the reality studied through constructs used to view the world [19], research must be aware that variables to be measured could be outside the ontology. At this point it is worthwhile to mention a relevant critic in BMs research which, entering the radical humanist paradigm considers BMs as a dangerous and human created superstructure [23].

5. Conclusion and further research

In this paper we looked at BM literature gaining a deep insight on this field of research. Our analysis suggests that the adoption of a BM ontology can have several practical implications when used during the design phase of a BM in a cross-border e-services environment.

With these premises the LD-CAST Consortium has decided to apply the Business Model Ontology to this project on which the cross-border cooperation among chambers of commerce should be reached through the use of web services. The ontology has been proposed to help in the definition of the BM for the new service provider organization. The use and adoption of the ontology will be studied and analysed in the context of an action research project. In our opinion this case seems to be particularly relevant as it may be used to test the ontology as a communicative and design tool as well as a guide to identify relevant variables when the objective is to identify suitable organizational configurations for e-services based scenarios.

References


