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ABSTRACT

One of the key steps to develop an e-business solution is the definition of a Business Model (BM), which requires the expertise from different areas such as finance, technology, marketing, and project management. It is known that Small and Medium Enterprises (SMEs) count with limited resources to undertake this type of e-business initiatives, and thus prompt to failure. This paper tells the story of the process of selection of a BM (and related documents) needed for the design and implementation of an undergoing dot-com initiative leaded by an SME in Mexico. The results of such study are summarized in a series of recommendations that SME may found useful when embarking in similar projects. Some key findings from these recommendations are: partnership with academic/research institutions, the key role of project management, communication, and identification of links between strategy and technology.

Keywords

e-Business Models, Business Model Implementation, dot-com Models, Action Research, SME, Developing Countries.

INTRODUCTION

Broadly speaking Business Models (BM) are used for a broad range of informal and formal descriptions to represent core aspects of a business including purpose, offerings, strategies, infrastructure, organizational structures, trading practices, and operational processes and policies. The application of such models in practice, however, is not an easy task and requires of expertise in the different areas the model touches upon. SMEs are known to lack of resources, human or financial, to develop robust solutions and thus face several challenges when trying to choose and implement a business model. The first challenge that any organization faces is the selection of the BM itself. The variety of models found in the literature makes difficult to identify which model is the most adequate for the organization regardless of the resources they have. This is more evident for SMEs. In addition to this challenge, SMEs count with limited resources to lead and understand the significance of the selection and implementation of the BM and the impact that it may have on the desired results. For instance, e-business models (eBM) found in the literature are mainly based on the assumption the organization has a well defined strategy, which is not the case for many SMEs nor for the case of new dot-com initiatives that are not directly linked to the business activities. Another challenge SMEs face is the variety of concepts and documents linked to the BM. For instance, a Business Case (BC) and Business Plan (BP) are related to the BM but are not necessarily the same. This creates even more confusion to the inexperienced SME entrepreneurs when trying to find direction to this kind of projects.

Based on an Action Research (AR) approach, this paper tells the story of an ongoing project for the development of a dot-com initiative leaded by a SME in Mexico. The paper aims to describe the challenges the SME faced during the selection and implementation of the Business Model and related documents. Although this is an ongoing project, we expect the series of recommendation to add value to the SME entrepreneur as well to add to the body of knowledge in the area of eBM definition and implementation.

BUSINESS MODEL: DEFINITIONS, USE AND CHALLENGES

Definitions

Literature shows different definitions of a Business Model (BM). For example, Laudon and Traver (2001) defined the BM as "a set of planned activities designed to result in a profit in a marketplace". Timmers (1998) describes the BM as an architecture for the product, service and information flows, including a description of various business actors and their roles; potential benefits for the various business actors; and sources of revenues. Linder and Cantrell (2000) describe the BM as a tool that enlightens how business organizations generate revenues. Furthermore, Osterwalder and Pigneur (2002) understand the BM "as the conceptual and architectural implementation of a business strategy and as the foundation for the implementation of business processes". In an attempt to put some order to this chaos, Al-Debei and Avison (2010) presented a comprehensive analysis of the literature around BM and define it as " an abstract representation of an organization, be it conceptual, textual, and/or graphical, of all core interrelated architectural, co-operational, and financial arrangements designed and developed by an organization presently and in the future, as well as all core products and/or services the organization offers, or will offer, based on these arrangements that are needed to achieve its strategic goals and objectives". This research will use this definition because it covers all types of electronic BM or "Business models in the digital world", which seems to be aligned to the context of this research.

Benefits and use

Osterwalder and Pigneur (2002) highlight the importance of understanding and use of the eBM. The authors, underline the main reasons for use an eBM as follows:

- The BM Facilitate managers and CEOs to communicate and share their understanding of the business with stakeholders. (Fensel, 2001)
- Mapping and using eBM can smooth the progress of change in organizations, as the BM designers can easily identified and modified certain elements of the BM (Petrovic, Kittl and Teksten, 2001)
- The eBM can help to identify the relevant measures, to recognize the success of the eBM, "similar to the balanced scorecard approach" (Norton and Kaplan,1992)
- An eBM will serve as the first step for the analysis of the requirements for e-business information systems and business processes also the eBM can help to analyze the mechanisms that are important in e-business, such as revenue streams, value objects, customer ownership, price setting, alternative actors and partnership issues. (Gordjin, Akkermans and Vliet, 2001).
- A well defined eBM can help organizations to implement the business strategies and also smooth the implementation of the processes, furthermore, allow organizations to measure, change and simulate the business (Osterwalder, Pigneur and Tucci, 2005)

Osterwalder and Pigneur (2002) described the logic of a business system for creating value, drawing attention to the importance of the "Business logic triangle". The Business logic triangle can be explained as the relationships between the strategy, the BM and the Business processes (see Figure 1). The Business Logic triangle defines three levels, which ideally any organization has to follow from top to bottom to succeed in the elaboration of a company or project. The first level (planning level) involves the elaboration of the strategy as a main step to develop an organization or project, the second level (architectural) implies the creation of the BM, which it will help to implement, provide shape and find gaps or inconsistencies on the strategy, also is the main platform to understand and develop the business processes. The final level (Business Process) it refers to the implementation of the BM, in other words, how the company will operate and how the processes are linked to the BM, and therefore to the strategy. Osterwalder and Pigneur (2002) have defined on their research the BM as "the conceptual and architectural implementation of a business strategy and as the foundation for the implementation of business processes".
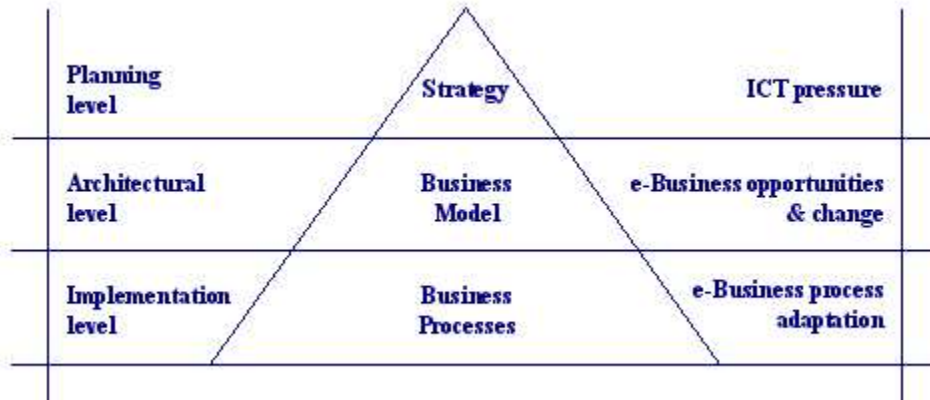
Figure 1: Business Logic Triangle, From Osterwalder and Pigneur (2002)

Challenges when selecting an e-Business Model

General challenges

The concept of the BM has been used widely in the domain of eCommerce. Description, definitions, classifications, taxonomies and implementation approaches into business models have been considered and studied in the literature, specifically for internet commerce (Afuah and Tucci, 2003; Alt and Zimmermann, 2001; Gordijn and Akkermanns, 2001 Pateli and Giaglis, 2004; Gordijn, Osterwalder and Pigneur, 2005). Despite these efforts, there is still no universal identification of the eBM main components that need to be considered when implementing eBM. For example, Mahadevan (2000) proposes three general facets: value stream, logistical stream, and revenue stream as the main aspects required to be addresses when developing eBM. Alt and Zimmermann (2001) argues that mission, structure, processes, revenues, legal issues and technology are the main constituents of eBusiness models. However, their definition of the components is not clear, as the components of the BM contains elements of the strategy and the business process, since they include processes and mission as components (Al-Debei and Avison, 2010). Afuah and Tucci (2003) on the other hand suggest nine elements: customer value; scope; pricing; revenue sources; connected activities: value configuration; implementation; capabilities; and sustainability. Similarly, Osterwalder et al. (2005) argue that examining the following four components including their elements and links are appropriate to develop effective business models: Product: value proposition; Customer interface: target customer, distribution channel, and relationship; Infrastructure management: value configuration, core competency, and partner network; and Financial aspects: cost structure, and revenue model. This challenge suggests that the identification of the BM suitable for a specific case strongly depends on the knowledge that the stakeholders have on this area.

Another problem faced is the confusion of BM with other business terms. The BM is sometimes misused as a business case, to describe financial analysis processes. It has also been used to depict coordination systems and cross-company collaboration (Haaker, Faber and Bouwmanh, 2006). The fact that there may be misconceptions of what a BM is, suggests that the team involved in the implementation of such models should share the same view to avoid communication problems.

Challenges for SMEs

A basic assumption that e-commerce-e-business Interment Technologies (EEIT) offers new opportunities for SMEs to offset competitive disadvantages of size, resources, geographical isolation and market reach (Wymer and Regan, 2005). SMEs, however, experiment unique barriers or inhibitors to adopt such technologies. The main barriers that come across in the literature are security, market, lack of qualified personnel. The most consistent with the literature and the more important barriers to EEIT use adoption are those that deal with cost (financial limitations), resource limitations (Technological and Human resources limitations) and knowledge (limitations of information) (Wymer & Regan, 2005).

Another problem faced by SMEs is the lack of strategy that they normally do not have. The existing BM normally assumed that the companies have already defined the strategy and from that point the BM start to be filled. However, if the strategy is not well defined yet, there is a gap in the process of building a BM which is not addressed in the literature, therefore the business triangle mentioned above is broken, leading to an unsuccessful BM.

RESEARCH APPROACH ADOPTED

Action research (AR), according to Ferrance (2000), is a 'reflective process that allows for inquiry and discussion as components of the research'. AR is often a 'collaborative activity among colleagues searching for solutions to everyday, real problems experienced in schools, or looking for ways to improve instruction and increase achievement…' and 'rather than dealing with the theoretical, AR allows practitioners to address those concerns that are closest to them, ones over which they can exhibit some influence and make change'. Boud and Walker (1990) identified three modes of AR: Technical, Practical, and Emancipatory. In deciding which of the three types of AR was most appropriate for the purposes of this research project, a flexible interpretation of emancipatory AR was adopted that extended across all the three pre-mentioned modes.

According to Baskerville and Wood-Harper (1998). There are four/five phases of inquiry in the AR process:

- The identification of a problem area
- The collection and organization of data
- The interpretation of data, and
- The actions conducted based on data, and reflection.

It is expected that those phases are repeated in iterations. Specifically for this project the first iteration of these phases has been finalized and the second iteration is now undergoing, though it is not reported in this paper.

The Project Participants

To better understand the setting of the AR project, below there is a brief explanation of the different teams/persons involved in the project.

- SME-MX. The organization under study consists mainly of two members: the owner and champion of the project, namely Andy. Andy is an entrepreneur, president & founder of SME-MX, and specializes in looking for innovative business models within consolidated industries. SME-MX has appointed Anthony as project coordinator. Anthony is now the Business Innovation VP of SME-MX leveraging his more of 23 years of executive business career in transnational companies such as GoodYear and 3M.
- Brunel University. Brunel University has allocated an academic/researcher, namely Edwin, as a "solution architect" for the project. Edwin main responsibilities for the project are to lead the development of the BM as well as the design of the e-business solution that will support the business model. Brunel has two more participants which are both junior researchers: Erly and Mutaz. The former researching in the area of e-business initiatives for SME with focus on web 2.0 technologies, and the latter with expertise in the area of BM development with focus on telecommunication industries. Erly and Mutaz will help on the identification and development of the BM covering their particular areas of expertise.
- Consulting Firms. At the final stages of the first iteration SME-MX decided to investigate the incursion of one consulting company, Consulting-X, for the area of e-BM development and project management.

Collection of Data and Length of the Study

The project formally started on June 2009, so as for today has 9 months length with one AR cycle completed. Edwin, from Brunel team, has been involved since its formal conception. Anthony joined the team on October 2009, Mutaz and Erly joined the project on July 2009. From its conception, the collection of data has been in the form of documents, interviews and focus groups. The data collected has been documented in the form of Use Case descriptions and the interviews transcribed to electronic format and analyzed in NVivo. The section entitled "Action Research Cycle 1" describes the data collected in each of the phases of the first AR cycle in detail.

DESCRIPTION OF THE ORGANISATION UNDER ANALYSIS

The organization under study will be referred as SME-MX. SME-MX is a Mexican SME established in 1995, and has built a winning strategy in the Mexican mass retail market through an innovative approach to provide professional buyers of the main retail companies, studied marketing programs, products, services and solutions that impact not just customer satisfaction & loyalty but traffic. SME-MX acquired the experience from working in the area of marketing of products, mainly but not limited to electronic products, acting as a marketer or wholesaler of those products. Today SME-MX operates with the Top retailers in Mexico such as Wall-Mart, Costco, Motorola and Sony.

The e-Trade Project: a dot-com Initiative

Andy has worked with bartering industry for over 10 years with the firm intention to activate the most original way of transaction and acquisition "bartering" as an alternative of money. As a consequence of this experience, the e-trade project

emerges. SME-MX is driving the e-trade initiative and will provide the necessary resources for the deployment of this dot-com business initiative. The aim of e-trade is to design and implement an e-business solution for a C2C environment to help its users to exchange products/services without the need to rely on cash or credit. The novelty of this model against its competitors lies in the flexibility of the trading transaction. Current trading models focus on bilateral trade, which is limited to a one-to-one and product-for-product transaction. This is, users can only trade products with one user and for the products they have. E-trade, on the contrary, will allow its users to exchange their products in a one-to-one basis but not necessarily with only one user. The most innovative aspect of e-trade is in the mechanism used to achieve this flexibility, however, must be kept in confidentiality until the project is deployed. Regardless of this restriction, this information is not necessary to understand the main objective of this paper, which is the identification of the challenges faced during this project. The following section describes the implementation of the first AR cycle.

THE E-TRADE PROJECT: ACTION RESEARCH CYCLE 1

This section aims to describe the events and data collection tools/techniques used in each of the phases of the first AR cycle.

Identification of the Problem Area (2 months: June-July 2009)

This period Andy and Edwin spend several meetings to get the understanding of the project. The outcomes of the meetings were summarized in the form of power point presentations. The outcomes included specification of the drivers of the e-business initiative, main goal, the objective of the initiative, basic functionality of the proposed e-business initiative, and implications in terms of value, profit and initial investment.

The Collection and Organization of Data (5 months: July-November 2009)

In august 2009 Edwin travelled to Mexico to for a series of 10 workshops that were aimed to propose a formal solution for the implementation of the e-business initiative. Apart from documenting the findings from previous phase, this phase has as an objective to select an appropriate BM that fits to the objectives specified in previous phase. At this stage, Erly provided the team with a preliminary BM that could aid to capture the needs of SME-MX. The first version of the model was a hybrid of two eBusiness Model. Mutaz was called to complement these findings, and proposed the use of the "V^4 Digital Business Model" (as defined in Al-Debei et al., 2008 and Al-Debei and Avison, 2010) as a second version of the business model, which is also the version used as for today. During this period the basic functionality of the e-business solutions for the project was also developed in the form of Use Case diagrams and corresponding descriptions. Andy, Anthony and Edwin held meetings twice-weekly. The main outcome of these meetings was the implementation of the V^4 business model in the context of this project, and some power point presentations used for the dissemination of the model. Another unfinished milestone derived from these meetings was a preliminary business case.

Although this phase has the length of 5 months, the process was not linear and several iterations were also required so the collection of Data for the research cycle 2 is still undergoing.

Interpretation of Data (2 months: December 2009-January 2010)

In December 2009, the SME-MX team travelled to UK to held 5 days workshop to finalize the model and to get to know the team. The workshops were recorded and transcribed to NVivo. A third version of the BM (V^4) was derived during this period.

The Actions Conducted Based on Data, and Reflection (January-February 2010)

Because this phase involves the critical reflection of the findings from previous phases, it will be further explained within the discussion section.

DISCUSSION: IMPLEMENTATION OF ACTION RESEARCH CYCLE 1

This section aims to provide a critical reflection of the events in each phase highlighting those aspects that are believed to have an impact on the development of this project and could be valuable lessons for SMEs embarking in similar projects.

Identification of the Problem Area

The fact that Andy has been constantly attending professional development courses at a major institution in Mexico, allowed him to recognize the value that academics could bring to this project and approach them seeking advice. Andy comments "..*initially I approach the universities with the purpose of finding cheap labor hand at a lower level of this project (e.g. programming). I did not have an idea of the value that my project brings to the universities and vice-versa. It was a pleasant surprise to see we both gain from working together*". SME-MX was not aware of the way collaboration between higher education institutions (HEI) and SMEs could be conducted. This poses the question whether SMEs, HEI and government institutions, are doing their best in communicating the opportunities presented in such collaborations.

The collaboration between Brunel and SME-MX, however, has not been straight forward and has faced one main challenge from its conception: communication. Edwin comments "*communication between IS-literate and SMEs owners has proved to be difficult. We want to be structural and objective whereas they are more generic and disperse. It took me some time to understand the main idea of this project and more importantly, the way to communicate with them*". It was found that a considerable amount of time was spent on understanding the most efficient way to communicate the ideas in both directions. To alleviate this problem, Edwin attempted the use of several techniques for communication, for example Use Case diagrams. The lack of knowledge on the area of IS design from part of SME-MX, however, did not help to solve this problem. Edwin comments "*I tried several ways to communicate my interpretation of the problem and the functionality of the system. My first approach was the use of Use Case diagrams. Although this helped somehow, still were some problems of communication. I sooner realized that one of the main problems is that the strategy was not well defined*". Edwin adds "*After several meetings I tried to emphasize the importance of defining a strategy. I noticed that SME-MX, however, was more concerned with the development of the software itself than the definition of the strategy. Because I did not wanted to be the origin of conflict I decided to focus on those aspects of the system that could be defined and leave the strategy for later on. I will realize later on that this was a major mistake*". Finally the decision from the solution architect was not to use the Use Case diagrams but to use screenshots of the proposed functionality and continue working with the team, despite that the strategy was not yet well defined.

The Collection and Organization of Data

The first challenge faced at this stage was the selection of the eBM that better suited SME-MX needs. The business models found in the literature are mainly addressed to established organizations with a well structured strategy looking to incursion into e-Business initiatives by modifying just part or all of their existing BM. The e-trade project, however, does not build upon an existing model but it is a new model itself. E-trade is a new dot-com initiative and thus has not a well defined strategy to follow. This lead to the identification of the main priority of the project: the analysis of the business purpose and the identification of a strategy to follow. After careful analysis by the Brunel team the "V^4 Digital Business Model" (as defined in Al-Debei et al., 2008) was chosen. Two main reasons for this selection: one, it is a summary of current business models for e-business, and two: The expertise of Brunel in the V4 model. Mutaz has helped on the development of this model and thus he could lead the development of this model. It is expected to make modifications to this model as it is developed in the context of the e-trade project.

During this phase the communication problems were partially solved and some advances were made in relation to the specification of the e-business solution (software). However, the more the Brunel team advanced its knowledge about the project the more doubts emerged and thus they were brought during the meetings. This caused confusion to SME-MX team since they believe the development of the model was rather linear. Edwin comments "*Andy gets frustrated when I am asking the same question again and again. They seem to believe that the development of the business model will be linear when it is clear is not*" he adds "*the fact that the strategic objectives are not well defined poses questions to the rest of the business model, and therefore to the system specifications*". The need for a project manager emerged at this point for the first time. It was difficult for both Andy and Edwin to take this responsibility apart from theirs. Andy decided to look for a project coordinator/manager and Anthony was appointed for the project. It was evident for the team that Anthony brought some order to the discussions and helped to alleviate problems of communication. At this point more importance was given a clear specification of the strategy that the project will follow. It was then when SME-MX realized that some decision needed to be made in this direction, however, they (and mostly the owner Andy) still saw this as moving backwards instead of moving forwards. Consequently, Andy decided to seek help from consulting companies. At this point another problem emerged: the different stakeholders' views as to what is a BM and a Business Case (BC). Andy asked to develop of a business case as a requirement from the consulting company. The introduction of the business case term brought even more confusion to the project. It created conflict between IS designers (Edwin, Erly and Mutaz) and the management (Andy and Anthony). Edwin comments "*there was a big conflict at the end of this period. I thought Andy has requested me to help on the elaboration of the business case, when what he wanted was the business model. I worked two weeks on the development of the strategy for the business case when this was not what Andy wanted; when we had a meeting to discuss the outcomes, we both were disappointed of the results*". Thus it was essential at this point to make clear differences between Business Case, Business Model and Business Plan, at least for the purposes of communication within the project.

The Actions Conducted Based on Data, and Reflection

After a careful analysis of the business model, it was evident that some decisions needed to be made at the strategic level to give direction to the project. Although this is a point evident in the literature (Osterwalder et al., 2002), in practice some resistance from SME-MX to work in this area was still present. Despite the fact Andy is now more aware of this relationship, he still would like to see more tangible results (e.g. software). This problem was asseverated by the fact that Anthony

withdraw from the project at the end of November 2009, and thus problems of communication arose again. Regardless of all these problems, the BM was partially developed (45%), some functionality of the system was captured (50%) and Andy involved again one of the consulting firms to act as project managers.

CONCLUSIONS AND RECOMMENDATIONS

Collaboration between SME and HE/Research Institutions

The lack of expertise in IS/IT found in SME has been constantly reported in the literature and the e-trade project was not the exception. One way to alleviate this problem is to seek collaboration with Higher Education (HE) bodies as it was the case for SME-MX. Collaboration between SME and HE bodies benefit both and needs to be exploited in more depth by all stakeholders. Although in the e-trade project this collaboration alleviated some of the problems of the expertise required in the IS field, the lack of knowledge in IS/IT from the project's owners still presented some barriers to enable proper communication. SME entrepreneurs that seek to invest on dot-com companies need to have a broad understanding of how these technologies operate to communicate with the project stakeholders (e.g. analyst and solution architects).

Project Management

SME are used to work in an ad-hoc basis and thus project management skills are basically not present. The e-trade project identified that one of the positions that need to be defined from the conception of the project is that of the project manager. The lack of a formal PM position for this project created many of the problems of communication described in other sections. Thus, it is strongly advised that for these types of projects, the project manager needs to be appointed from the conception of the project and if possible, s/he should be IT/IS literate.

Communication

Communication is one of the most reported issues in any IS/IT project and in the e-trade project has been a main issue of concern. Communication between the IS team (Edwin, Erly, Mutaz) and the SME-MX team has been a problem. In addition to this challenge, simple terminology (e.g. business model vs. business case) created confusion that had significant impact on the project progression and timescales. During this project it was found that at the time a project manager was appointed for the project, most of the communication issues were resolved. Thus, to avoid communication problems we also advocate the appointment of a PM as early as possible.

Lack of strategy

Inexperienced entrepreneurs in the dot-com market have the wrong impression that a good idea can make money in the internet without having proper strategic planning, as it was the case 15 years ago. Additionally, SMEs tend to have little or no strategic planning at all so they are used to take ad-hoc decisions. Whilst this may work in the brick-and-mortar domain, competition in the web is fierce and a BM can be rapidly replicated, so strategic planning is essential to avoid failure. During the e-trade project it was observed that the lack of strategic planning had significant impact on the progress of this project. We encourage entrepreneurs to focus on this important aspect of the development of the business in the early stages of the project.

LIMITATIONS AND FURTHER RESEARCH

This research is based on an AR approach and as such it may be exposed to bias from the researcher's point of view. Trying to reduce this bias the researcher's team has appointed staff not involved in this project to aid on the interviews and analysis of data. It is expected that the second AR cycle would help to gain more insights about the way the challenges reported now, have been addresses. The incursion of a consulting firm adds more value to the study and will be reported in subsequent papers.

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