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## Roadmap for business models definition in manufacturing companies

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### Abstract

With the globalization and the volatility of the markets there is a huge pressure for manufacturing companies to be more innovative and competitive in delivering value to their customers. The evaluation of overall value chain, designed and implemented to supply a specific product or service, should support changes in the existing business model or in the definition of new business models that ensures higher levels of customer satisfaction. The business model is at the core of the competitive response of any company to the market, defining the value proposition, the required activities, resources and partners, and knowledge of customers, costs or profits related with its overall operation. The relevance that integrated product and services is assuming nowadays, allowing manufacturing companies to achieve a longer and more stable relationship with their customers, determines new approaches to product service development and methodologies or tools to support the review and definition of appropriate business models. In this paper we propose a roadmap to support the development of new business models, their implementation and evaluation. For the roadmap a set of tools are proposed to support each stage from business model design to its evaluation. The roadmap validation is made through a case study.

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### 1. Introduction

The market is continuously challenging companies to improve their competitiveness and to adapt or transform their businesses [1-2]. Business opportunities are globally considered and companies look locally for resources and competencies, and search for partners to establish an efficient and effective customer-centered supply chain [3]. Therefore, companies are strengthening the use the adequate tools and methods that support the delivery of competitive product and services with higher added value, at the right time and price, in a consistent and sustainable way.

To compete in terms of added value, manufacturing companies must be able to design and sustain their business based on a network of complementary capabilities to respond to market opportunities. The ability to design products or services and competitively deliver them into the market requires the definition,

implementation and management of new business models.

Business models are often framed in response to particular competitive circumstances and it outlines how a company generates revenues with reference to the structure of its value chain and its interaction with their supplier, customers and other partners with complementary competencies.

Visible changes in business models over recent years have included a transition from products to services, the reduction of vertical integration in large businesses, an increase in the importance of networks of smaller businesses working in open collaboration to form a value system [4].

In this paper is proposed a *roadmap* to support the definition, implementation and management of business models. The proposed roadmap consists in four phases: *analysis*, *design*, *implementation* and *evaluation*. Each phase is divided into a set of activities and suggests different methods and tools to drive top managers in the new business models definition and management.

This work has been supported by a study case that addresses the implementation of new business models and allows to validate the effectiveness of the proposed Roadmap.

With the research developed we contribute for a better understanding about the relevance of manufacturing companies to adopt innovative business models and we supply an important background for developing application for a full use of business models concept inside the manufacturing organizations.

## 2. The relevance of Business Models in manufacturing companies

The global and sustainable competitiveness of manufacturing companies has a major importance due to its impact in supporting economic growth and employment creation, through delivery added value products and or services. Therefore, manufacturing companies are each time more challenged to compete in terms of added value to achieve dominance in markets, since purely cost-based competition is not compatible with the goal of maintaining social and sustainability values [4]. The added value is related with company's ability to delivery customer-focused solutions [5], adding for example services or integrating services in their core products. This trend, the servitization of manufacturing, is getting more importance in our global economy and to support this trend, companies need methodologies to drive them in a paradigm shift that is to go from considering independently products and services and start to consider them integrated.

The understanding of Product-Service System (PSS) concept allows companies to shift their business focused in designing and delivering products to deliver a system of products and services [6]. It requires the development of new relationships with stakeholders [6]. The companies become responsible to maintain the product along its life cycle. A whole life-cycle's business model is required and imperative [4]. According to [7], with PSS customers have more customized offers, higher quality and products-services with new functionalities. On the other hand, companies have new market opportunities, gain a new competitive advantage and improve the total value delivered for the customer.

The definition and implementation of new business models will enable the growth of new businesses and allow existing industries to sustain their global competitiveness [4]. Business models need to be evaluated and managed by the manufacturing companies, adapting its characteristics to take advantage of the market conditions. Thus, the evaluation and redesign of business models will allow manufacturing companies to maintain their sustainability, promoting a more long term relation with their customers, innovating

and supplying additional add value related with their products. Through a constant monitoring and evaluation of the business model, industries can be in the forefront of their business market.

The business model concept is being increasingly used across all the fields of research and there are several descriptions to define the business model concept. However there is no consensus about it. We enumerate some definitions: i) "refers to the logic of the firm, the way it operates and how it creates value for its stakeholders" [8]; ii) "defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and convert those payments to profit" [3]; iii) articulates the value proposition, identifies a market segment, defines the structure of the value chain, details how the firm will be paid, describes the position of the firm within the value network and formulates de competitive strategy" [9]; iv) "is the method followed by a company to generate value. Including the combination of products, services, image and distribution" [10] and v) "outlines how a company generates revenues with reference to the structure of its value chain and its interaction with the industry value chain" [11]. In general, we can say that a business models describes some key components that meets the four principal areas of a business: customers, offers, infrastructures and financial feasibility. Furthermore, it pretends to answer a set of questions: [12] what product/service will be offer?, who will pay for it?, how will it generate profits?, how will it be provided and how will it keep the competitive advantage? Thus, a business model starts by creating value for the customer. The financial issue is left out of the business model, once is assumed that the model is financed by the internal corporate resources [13].

The best approach to clarify the process is to map the business model, which allows companies to experiment different alternatives. [14] has done it through dividing the business model into nine components: (1) customer segmentation, (2) value propositions, (3) customer relationships, (4) channels, (5) key resources, (6) key partners, (7) key activities, (8) cost structure and (9) revenue streams. See figure 1.

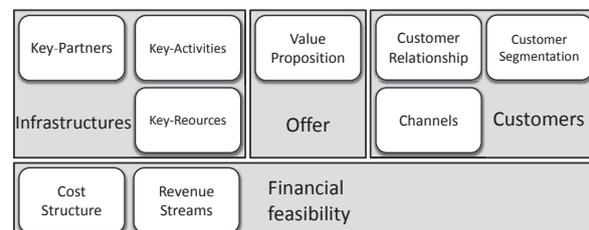


Fig. 1. Business Model components (adapted from [14]).

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