Towards an Ontological Analysis of Value Propositions

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Abstract. Developing and analyzing business strategies is a very important and complex task, for which many theories have been developed. A core component within these strategies is the value proposition, a concept whose meaning has little agreement, despite of its increasingly wide adoption. This semantic issue leads to multiple interpretations and misuse by practitioners. In this paper, we move towards addressing this issue through an (initial) ontological analysis of the value proposition concept. We briefly discuss the existing definitions found in the literature and try to harmonize them within a single theory.

Keywords: Value Proposition, Ontological Analysis, Business Strategy

1   Introduction

In competitive markets, companies need well-designed business strategies if they seek to grow and obtain sustainable competitive advantage. Crafting a business strategy, however, is a complex and laborious activity, since one must consider various internal and external inputs and make important decisions that will define how the company competes in its market. This strategic process includes understanding what customers need, designing the value to be offered, choosing revenue models and amongst other decisions.

There are various theories and frameworks for supporting strategic and business modelling activities. These include simple strategic tools, such as SWOT, models of generic business strategies, e.g. value disciplines [18], approaches for crafting value propositions, as the Jobs-to-be-done theory [6], and the popular Business Model Canvas, a methodology that emerged from the Business Model Ontology (BMO) [13].

Most of these approaches, however, put forth concepts without precise definitions or formalisms, leading to multiple possible interpretations and potential contradictions. Furthermore, they lack computational support for representing and reasoning with strategic information, a valuable aid in such a complex endeavor.

To address these challenges, researchers have been investigating the application of ontologies and conceptual modelling for strategic and business analysis. There has

been efforts on clarifying and formalizing fundamental concepts [2, 8], analyzing strategic tools [5], and developing modelling languages and algorithms [10, 19].

We argue that the approach for developing computational tools to support the design and evaluation of business strategies should start with the design of well-founded ontologies. These ontologies then can be used to design expressive and precise modelling languages, which latter can serve as input for a wide range of algorithms.

In this paper, we discuss an on-going work on the ontological analysis of a crucial component of a successful business strategy, the value proposition (VP). We focus on the nature of value proposition because, despite of its importance and its increasing adoption in practice [7], there is no agreement on what a VP means and what are its essential components [1, 3, 11]. Nonetheless, it is already recognized that a carefully developed VP leads to superior business performance [17]. It also helps companies position themselves in the market and identify relevant competition. This analysis is an initial work aimed at developing computational tools for designing and evaluating business strategies.

The remainder of this paper is organized as follows. In Section 2, we discuss relevant definitions for value proposition found in the literature. Section 3 presents an initial ontological analysis, followed by conclusions and future works on Section 4.

2 On the concept of Value Proposition

The term value proposition was first defined by Lanning and Michaels [12] as a promise companies make to a group of customers to deliver some value, understood as a set of benefits and costs. The authors used this notion to explain why some companies were more successful than others – leading companies have superior value propositions than its competitors for a given market segment.

Kambil et al. [11] revisits the original concept of value proposition, arguing that it "*defines the relationship between the performance attributes of a product or service, the fulfillment of needs across multiple customer roles, and the total cost*". This argument implies that a VP should not only account for what is delivered but how it is delivered. It also accounts for the different customer roles (e.g. the buyer, the user) and how the perceived value is different in each context. The authors also detail the types of cost a customer assess, namely price, risk and effort, as well as the types of product attributes related to the benefits, namely basic, expected, desired and unanticipated. This VP definition was later incorporated in the BMO [13].

The refinement of benefits in a VP is also present in [15], in which the authors distinguish between four types of benefits. The first, *economic*, regards price as the most important aspect of a proposition. The *functional* benefit is sought by customers who value utility of the offering the most. *Emotional* value is present when the experience of buying and using the products is highlighted. Lastly, the *symbolic* benefit arises when the value is perceived by self-expression.

The Jobs-to-be-done theory [6] sheds a light on a particular aspect of value propositions – the motivation. By focusing on the goals customers have in their lives, the context in which they arise, and the considerations made when deciding to take on an

offer, the theory provides guidance for crafting value propositions. The theory was incorporated by Osterwalder et al. in their methodology for designing VPs [14].

Treacy and Wierisma [18] propose a generic approach for designing value propositions. They argue that there are ultimately only three types of value propositions, and if a company seeks competitive advantage, it should focus on excelling in one dimension whilst keeping an average level on the others. The types of value propositions (called by them value disciplines) are: (i) *operational excellence*, which means offering lower prices and a high convenience; (ii) *customer intimacy,* which means carefully segmenting the market and designing very specific propositions; and (iii) *product leadership,* which means focusing on the quality of the product, even though it will imply in an increase in price.

In [1] the authors also extract patterns from value propositions, but differently from [18], they focus on the structure of a VP instead of its content. The authors describe three ways in which a VP can be framed: (i) *benefits only*, when companies describe only the benefits they believe customers receive from their offerings; (ii) *favorable points of difference*, when the VP contains all the favorable points in comparison to the competitors' offerings; and (iii) *resonating focus*, when only the most relevant favorable points are presented, accompanied by points of parity with alternative VPs.

Although most of the focus on VPs in oriented towards customers, the concept is more general than that. In fact, some authors have applied this notion for different target audiences. In particular, Ballantyne et al. [3] discuss the design of VPs for other audiences, such as current and potential employees of the firm, suppliers and partners, influencers, and shareholders.

A more recent development on VPs has been the study of reciprocal value propositions [4]. From this perspective, a VP should not only contain the benefits and costs for the target audience, but also for the supplier. This view is particularly useful when considering value propositions for audiences other than customers. For instance, a VP for a business partner would not only state how a partner benefits from engaging with the company, but also what the company gets in return.

3   An initial ontological analysis

We start with a fundamental intuition of **value propositions**, that it regards an offering composed by a set if commitments and claims, which include the exchange of some values between parties. Usually VP definitions distinguish between two roles, the **supplier**, who creates the VP, and the **target audience,** who receives the VP. It has been argued [3] however, that assuming only one party as the creator of a VP (as proposed by Lanning and Michaels [12]) is too restrictive, as it excludes the possibility of co-creating or negotiating VPs. Nonetheless, if we assume a less restrictive notion of suppliers as the initiators of a VP, we can account for these situations.

If a VP is directed towards a target audience (or market segment), a value proposition ontology must provide means to define such a target audience and why the VP is made towards them. Within the theories discussed in the previous section, the Jobs-to-be-done [6] provides the best concepts for that. The VP should be connected to the

goals (the "jobs") people have, i.e., the situations they want to bring about. It could be, for instance, the goal of going to work, for which people can hire an Uber, ride their bicycles, or use the public transportation services. A carefully designed VP should also account for the **situations** (or contexts) in which these goals arise. For example, how often people need to go to work? At what hour? Are they alone? What happens if they are late?

Given the understanding of what the company should deliver to its intended customers, a VP should describe the different **value dimensions** of the proposition, which includes both **benefit** and **cost dimensions**. Since it is useful to describe the value on both directions, we should distinguish between the benefits and costs for the receiver, as well as for the supplier. At this point, we refrain from choosing between the existing classifications of benefits and costs, for there is no clear evidence of which is better. For benefits, we could use Rintämaki et al. [15] classification of economic, functional, emotional and symbolic benefits or Holbrook et al. [16] taxonomy, which is composed by efficiency, quality, social, play, aesthetics and altruistic values The same reasoning applies for cost dimensions.

A value proposition is materialized through a set of **products** and **services**, embodied in an **offering**. Take Uber for example, it offers the transportation service, which is requested through an app that includes payment by credit card. It is important to emphasize that the offerings are enabled by a set of **capabilities** that the supplier has. Capabilities, in this sense, can be understood as the ability and capacity of a company to deliver a particular service at a given quality level.

It is commonly found in the literature that VPs should be unique and superior, thus we distinguish between the value proposition made by the focal supplier and those made by its **competitors**. Such comparison can be made through the notions of **points of parity** and **advantage** put forth in [1].

Lastly, as a VP needs to be communicated to the various stakeholders (e.g. customers, employees, partners), we include in the ontology the concept of **value proposition statement**. By doing that we can differentiate between the complexity of a carefully designed value proposition (a social commitment), and the statements (speech acts) made to different audiences, which are usually much simpler and direct.

4   Final remarks

In this paper, we presented an initial ontological analysis of the notion of value proposition and its surrounding concepts. We based this analysis on existing theories and frameworks regarding value proposition, developed in the fields of marketing, business modelling and strategic management.

Our next step is to frame this initial ontological analysis under a stable general ontological theory, namely the Unified Foundational Ontology (UFO) [9]. By doing that we will be able to reuse the existing axiomatization and assess the consequences of our ontological commitments. For example, the implications of defining value propositions as offerings, i.e., social commitments.

This ontology of value proposition will fit in a larger well-founded ontology of business strategy, which will also encompass other domains, such as firm capabilities, strategic plans and market environments. This larger ontology will then be combined with algorithms for reasoning with business strategies and plans.

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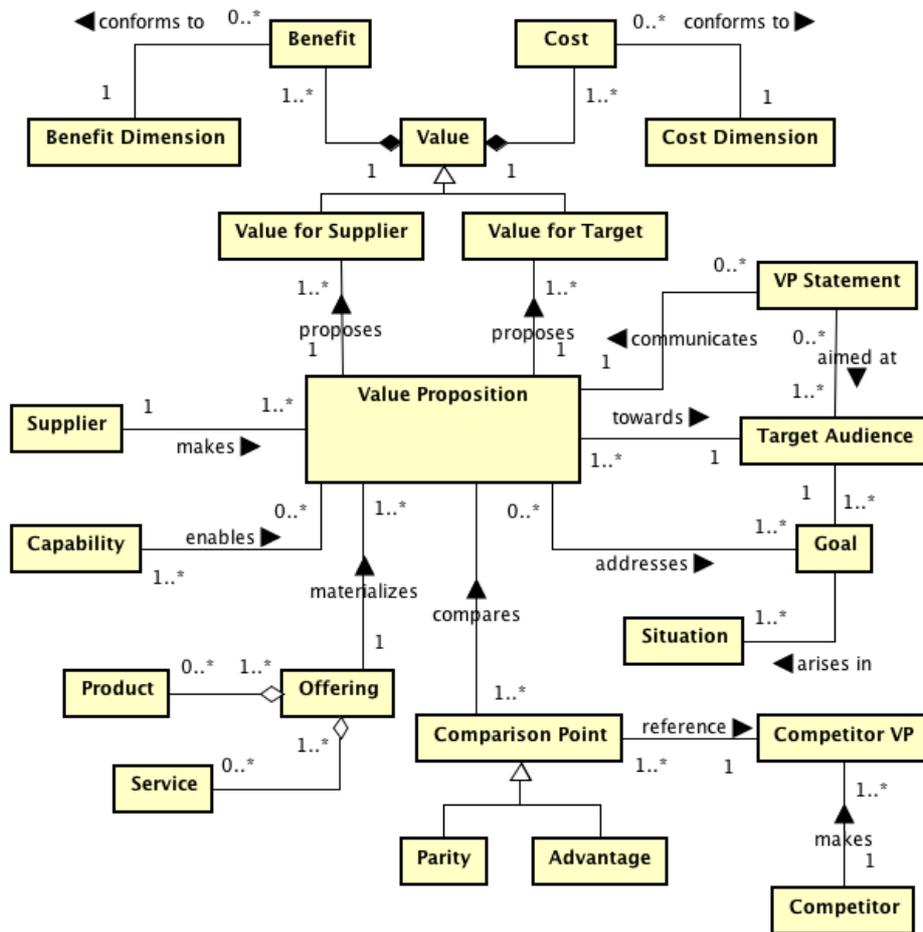
Appendix – Value Proposition Ontology

Figure 1. Value Proposition Ontology using a UML-like notation.