



Customer value propositions as interorganizational management accounting to support customer collaboration



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ABSTRACT

New technology-based firms aim to create commercially successful products and services based on new technology. For example a startup company may be founded to commercialize a particular technology developed by a university. One of the key challenges is to identify which products and services are valuable for customers. However, the relevant knowledge is typically dispersed across the technology firm and potential customers. This study explores how, in this context, interorganizational management accounting may support companies to collaborate and integrate knowledge. First, drawing on business marketing literature, a customer value proposition is conceptualized as a form of interorganizational management accounting. Second, several case studies demonstrate how calculations of customer value were made by new technology-based firms, and they show that these firms had implemented particular offering changes that were informed by specific insights obtained from their calculations of customer value. Third, the study offers a theoretical lens for understanding the potential role of customer value propositions as integrating devices for managing knowledge across boundaries.

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1. Introduction

The topic of this paper is collaboration between companies in the context of technology commercialization, and we focus on a specific way in which interorganizational management accounting might support it. Technology commercialization concerns the application of new technology to improved or new products and services, which are successfully sold in customer markets (Davila, 2000; Wood & Brown, 1998).² Technology commercialization is important, because there is much unused technological potential (DeSimone & Mitchell, 2010; Hayter, 2010; Swamidass, 2012), and effective transitions from the “the lab” to “the market” are important for our economic growth (Adams, 1990; Eurostat, 2008; Spann, Adams, & Souder, 1995). Technology commercialization happens in many different ways, such as within large and established companies, but this paper focusses on new

technology-based firms. Although there is no universal definition, these firms have the following characteristics: a clear focus on exploiting a technologically innovative idea, a small group of experts at the core of the company, and independence from established companies (Bollinger, Hope, & Utterback, 1983). Sometimes, the technology that the firm intends to bring to the market is in a very early stage of development (Maine & Garnsey, 2006), but this paper focusses on the situation when the basic technology has been developed and can be demonstrated, for example in a laboratory test or with early prototypes, and there are general ideas for various possible applications, requiring further development.

We focus on one particular issue of technology commercialization in this context: collaboration and knowledge integration involving different companies. Why? A key success factor for new technology concerns the benefits it will deliver to users, especially compared to existing solutions (Balachandra & Friar, 1997; Galbraith, Ehrlich, & DeNoble, 2006; Henard & Szymanski, 2001; Heslop, McGregor, & Griffith, 2001). In other words, technology commercialization requires the connection of technology to applications for improved or new products and services that are valuable for customers (Maine & Garnsey, 2006). However, the required knowledge for making those connections is typically dispersed: across different departments in the organization (Dougherty, 1992), and across different organizations (Anderson & Wouters, 2013), such as the new technology-based firm, potential customers, customers of those customers (Wagner, 2010), development partners of the new technology-based firm (Hedaa & Ritter, 2005) and others who may know about competing technologies, regulation, and societal

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² Throughout this paper, we mostly simply talk about “products and services.” This refers to the firm’s “market offering” as the combination of products and services that the firm offers to customers, so the whole package it intends to sell. For example, a piece of equipment may be the core product, and the firm may offer additional services for installation, training, and maintenance. We use the term “services” quite broadly to also include information, programs, and systems. Gronroos (2011) offers a literature review on market offerings that combine products and services.

challenges. Every party only partially understands the context of other parties (Anderson & Wouters, 2013).

Hence, collaboration is often interactive (Aarikka-Stenroos & Jaakkola, 2012; Bonner, 2010; Terho, Haas, Eggert, & Ulaga, 2012). It needs to go beyond listening *to* or learning *from* customers—in the context of new technology-based firms it involves learning *with* customers. Interactive collaboration in this context is not “just” a matter of combining readily identifiable and available knowledge, but it also includes “understanding what it is that you don’t understand.” This involves an interactive cycle whereby one party provides information and answers questions, which sparks new questions and ideas with the other party that leads to further exchange of information, and so on. Collaboration in this context is about jointly developing an understanding about good matches between technology and markets. Some studies in business marketing and in management have investigated such interaction between a new technology-based firm and potential customers in detail and over time (Corner & Wu, 2011; Coviello & Joseph, 2012; Druilhe & Garnsey, 2004; Maine & Garnsey, 2006; Rasmussen, Mosey, & Wright, 2011; Vohora, Wright, & Lockett, 2004), although this view is rarely found in the literature, as the review by Mustar et al. (2006) demonstrates.

In the management accounting literature, the role of management accounting in innovation and new product development has been researched (e.g., Davila, Foster, & Oyon, 2009; Jørgensen & Messner, 2009) and also in interorganizational settings (e.g., Caglio & Dittillo, 2008, 2012; Håkansson & Lind, 2006). Few studies, however, have addressed how interorganizational management accounting may support the collaboration between a new technology-based firm and potential customers. This is important for at least two reasons.

First, research of management accounting in this context may provide a more balanced understanding of the role of interorganizational management accounting. Caglio and Dittillo (2008) conducted a review of the literature on interorganizational management accounting, and they concluded that buyer–supplier, subcontracting and outsourcing relationships have been intensively studied. However, they also identified that the roles of accounting in other possible interorganizational forms downstream (i.e., towards customers) in the value chain are hardly understood. The current study addresses accounting in innovative customer relationships.

Second, interorganizational management accounting in the context of collaboration between a new technology-based firm and potential customers is an important topic, because management accounting calculations may change what people believe is important for innovation and thereby impact those innovation activities (Mouritsen, Hansen, & Hansen, 2009). In the context of the present paper, interorganizational management accounting models the impact of *technological* challenges and achievements in terms of what those represent *economically* for other organizations in the value chain. This is not a “neutral” representation, but it may influence technology and the products and services that come to the market—perhaps interorganizational management accounting may even support technology commercialization.

The present paper addresses the following research questions. First, we contribute to the literature on interorganizational management accounting. What are customer value propositions in the marketing literature? We build on Anderson, Narus, and van Rossum (2006) and Anderson, Kumar, and Narus (2007), who describe a customer value proposition in business markets as a supplier’s statement of the monetary value its offering provides to a customer. Customer value, we argue, is a relevant interorganizational management accounting topic: it addresses costs and revenues, and from the perspective of another firm. However, it is usually not mentioned as such, in contrast to, for example, target costing, open book accounting, and total cost of ownership (Agndal & Nilsson, 2008; Kajüter & Kulmala, 2005; Wouters, Anderson, & Wynstra, 2005).

What kind of interorganizational management accounting could support collaboration between a new technology-based firm and

potential customers? We discuss several characteristics of customer value propositions and provide theoretical arguments for why these are relevant in the context of technology commercialization and interactive collaboration between a new technology-based firm and potential customers. What are the differences between customer value propositions and other forms of interorganizational management accounting? Existing approaches for interorganizational management accounting provide useful starting points, but we provide arguments why customer value propositions can be developed as a distinct form of management accounting calculations in that context.

Are there examples of such calculations actually being produced by organizations? We provide empirical evidence based on three inductive case studies, which demonstrated calculations of customer value that were being made by new technology-based firms. The case studies also showed that these new technology-based firms had implemented particular offering changes that were informed by specific insights they had obtained from their calculations of customer value.

Second, the paper contributes to the literature on technology commercialization. How can technology commercialization be supported? Collaboration with customers and the creation of new benefits for customers are an important theme in the literature on technology transfer and commercialization, and many studies are based on surveys (e.g., Markman, Gianiodis, & Phan, 2009; Sohn & Moon, 2003; Zahra & Nielsen, 2002). However, few studies identify specific mechanisms for establishing collaboration and finding benefits. Our study looks at customer value propositions as a potential approach for guiding the interorganizational collaboration process between a new technology-based firm and customers. Focusing on the financial impact of the offering may aid the commercialization process if this helps the firm to take the customer’s perspective on their offering.

Third, we contribute to the literature on shared artifacts for knowledge integration. How can shared artifacts support collaboration across knowledge boundaries? Can customer value propositions be used in a similar fashion between a new technology-based firm and potential customers? We analyze how customer value propositions may be an integrating device for managing knowledge across boundaries. This is based on the work of Carlile (2002, 2004). As such, they may enable the new technology-based firm and customers to exchange knowledge, jointly identify products and services that would be valuable for customers, and direct further technology development.

The structure of the remainder of this paper is as follows: Based on several marketing and accounting concepts, Section 2 develops customer value propositions as a form of interorganizational management accounting. Several case studies are introduced in Section 3, and the case study findings are discussed in relation to the propositions developed in the preceding section. The role of customer value propositions is further theorized in Section 4, based on literature on shared artifacts that may support managing knowledge across boundaries. The conclusions follow in Section 5.

2. Customer value propositions as interorganizational management accounting

In this section, we conceptualize customer value propositions as interorganizational management accounting. Existing approaches for interorganizational management accounting provide many useful ideas, but they do not seem to specifically address the context of interactive collaboration between a new technology-based firm and potential customers. We propose six characteristics of customer value propositions that make it a distinct form of interorganizational management accounting. We also compare customer value propositions to other kinds of interorganizational management accounting.³

³ Of course, customer value propositions can also be conceptualized in other ways that are not interorganizational management accounting, such as a method for value-based selling.

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