

# Constructing a market domain model for start-up software technology companies: A case study

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## Abstract

The market for a complex technology product is sometimes called *reference business* because references are emphasized by corporate customers. A first customer reference is especially important for a start-up technology company attempting to enter the business-to-business market with complex products. Topics relating to customer references have received scant attention from scholars although they embed substantial business relevance. This case study concentrates on evaluating concepts that are central to customer references from the viewpoint of the start-up technology companies. Of concepts prevalent in current literature, those concerning the use of the first customer references, in particular, form an inadequate base for research and are often vague. The purpose here is to introduce a domain model that describes the key concepts and the relationships between them concerning the focus of this present article. The domain modeling technique is a well-known and widely used tool for defining concepts for large-scale information systems. Domain modeling increases understanding of the present problem domain by structuring knowledge into classes, attributes, and relations. This case study approaches the identification of concepts via an illustrative example from software business. Previously known concepts, close to the topic of this present article, are then re-evaluated based on our literature review. Redefinitions of the customer reference and related concepts are introduced.

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## 1. Introduction

In the practice of industrial marketing, customer references are often needed for convincing potential customers to purchase products or services from a supplier. The importance of customer

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references can be critical for business success. A customer may appreciate a positive reference more than other aspects, such as new technical features of the product not tested in the market. The first customer reference appears to be especially important for start-up technology companies, which aim at producing large, complex systems, such as large software solutions for enterprise information management uses. Start-up technology companies typically need and often want a customer reference to back their credibility.

*Customer reference* is a well-known concept by the practitioners of marketing, but the area of customer references has nevertheless received only scant attention in academic research (Salminen, 1997; Möller and Salminen, 2006). In general, the commercialization and launch stages are often neglected in the literature on new product development, innovation, and high technology marketing (Beard and Easingwood, 1996). It also seems that technology entrepreneurs' business experience and personality have attracted more attention in the venture capital research than issues associated with product and market (Bank of England, 2001). In the literature, studies by, for instance, Salminen (1997), Ruokolainen and Igel (2004), Ruokolainen (2004), and Ruokolainen et al. (2005) have elaborated on the use of the customer reference. Despite various efforts in the area, the concepts of the problem domain of a first customer reference has received comparatively scarce attention in the area of high technology marketing such as software marketing. This gap in research is what this case study attempts to fill. In this present article, a “map”, which describes the relevant concepts and relationships between them, provides a holistic overview of the present problem domain, and contributes to our understanding of the investigated phenomena.

### 1.1. Research objective

The growth of societies is partly based on the growth of start-up technology companies. Start-up technology companies are often research and development intensive companies that plan to capitalize on their knowledge after a breakthrough in the R&D work. Due to the volatility of the high technology market, achieving a breakthrough can be far from easy. Therefore, the overall research interest of this present article lies in the question of how can start-up technology companies realize the market potential. It is believed that the first customer references might play a role in the process of realizing the market potential in a specific business sector.

To be specific, the object of this research is to elaborate on the question of *how first customer references are built and how they are used to generate further business*. The following sub-objectives are set: (1) identification and definition of concepts that belong to the problem domain; (2) further investigation of the concepts with the help of the literature to increase understanding of the related attributes; and (3) organization of the concepts of the present problem domain into a model that describes the relationships of the concepts.

The authors' pre-understanding of the research subject is based on a literature review and, for the first author, on his previous studies (Ruokolainen and Igel, 2004; Ruokolainen, 2004; Ruokolainen et al., 2005), and on working as head of a team of project managers whose job was to implement the first versions of software products for corporate customers. No separate footnotes are provided in this article when referring to those above-mentioned research studies.

This article is organized as follows. In the second section, we introduce the domain modeling methodology used. In the third section, an example case is applied to elicit the concepts. In the fourth section, the concepts are defined and related attributes identified. New concepts are then introduced. The fifth section introduces the domain model. The final section presents the conclusions.

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