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SME view on project marketing - case study in the context of institutional space business

SME Business Management

Master's thesis

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Abstract

Project business is one of the dominant modes in international business and it has increasing significance. The work is typically organised as projects, for example, in construction, shipbuilding, aerospace, and defence industries. However, the existing project marketing literature has concentrated almost exclusively on large firms. Thus, the specific characteristics of Small and Medium-sized Enterprises (SMEs) and the influence of these characteristics on the project marketing practices of SMEs have not received much attention. The identified research gap is the project marketing from SME and entrepreneurial perspective. The aim of this study is to provide new insight into this research gap. The objective is to identify and describe the marketing practices that SMEs apply to survive and succeed in project business.

Based on the existing literature on project marketing and entrepreneurial marketing, a conceptual framework has been developed and applied to guide the empirical part of the study. The framework combines the three-stage model of project marketing process (including 'independent of any project', 'pre-tender', and 'tender preparation' stages) with the core underlying dimensions of entrepreneurial marketing ('opportunity orientation', 'market driving', 'customer intensity', 'resource leveraging', 'risk management', and 'innovativeness').

The conducted study is a qualitative, multiple case study including five SMEs from four different European countries. The selected context is institutional space business, but the focus has been further narrowed down to the space business generated by the European Space Agency (ESA).

According to the results of this study, SMEs apply marketing practices that are in general agreement with the developed conceptual framework. However, this study extends the current understanding of the phenomenon beyond the existing literature and gives a more fine-grained view of it. Also, this study indicates that the existing literature on project marketing is not fully applicable to SMEs. Furthermore, the existing literature on entrepreneurial marketing is not entirely applicable to project business, at least not in the studied context. The main empirical findings that extend the existing project marketing and entrepreneurial marketing literature are associated with resource leveraging, risk management, evaluation of project opportunity, and the political dimension.

Keywords Entrepreneurial marketing, project marketing, project marketing process, Small and Medium-sized Enterprise, SME, space business, European Space Agency, ESA

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1.1 Background

Projects are and have been for millennia a significant part of both professional and personal human activity. This is evidenced by, e.g., the outcome of numerous construction projects in modern and historic times, the oldest examples dating back even to pre-historic times (e.g., Newgrange, Maeshove, Stonehenge). Also, major developments in science and technology (e.g., Manhattan project for the development of atomic bomb, International Space Station) have been organised as projects.

The business perspective of projects started to emerge already in the 16th century. Today, internal and/or external projects are an integral part of any firm's business and one of the dominant modes in international business in general. (Hadjikhani 1996, Skaates, Tikkanen 2003, Artto, Kujala 2008). Moreover, the significance of project business is increasing in the society and business (Artto, Kujala 2008). For example, the work is typically organised as projects in the construction, shipbuilding, aerospace, and defence industries (Cova, Mazet et al. 1994, Bonaccorsi, Pammolli et al. 1996, Ahola 2009). The construction business alone generated 655 B€[1] or 6.0% of the gross domestic product in the European Union in 2010 (Eurostat European Commission 2011) and the turnover of the European aerospace and defence industries was 186 B€ in 2011 (ASD Communication and Information Team 2012). Well known Finnish project supplier firms are, e.g., Pöyry (in engineering), Outotech (in technology solutions), Patria (in defence systems), YIT (in construction), and STX Finland (in shipbuilding).

Despite the fact that project business is a significant element in the global economy, and that selling projects is an essential part of this business, project marketing as a research field is fairly small. In fact, there are only a handful of researchers in this field. (Tikkanen, Aspara 2008). In addition, the existing project marketing literature has concentrated almost exclusively on large firms (see, e.g., Cova, Ghauri et al. 2002, Jalkala, Cova et al. 2010). There are only very few exceptions, including (Alajoutsijärvi, Mannermaa et al. 2000, Cova, Salle et al. 2000). Hence, the research on project marketing from entrepreneurial and SME perspective is important, since small firms usually act differently than large firms when they encounter the same conditions (Raymond, Bergeron et al. 1998).

Similarly, marketing is critically important for entrepreneurial success (Hills, Hultman et al. 2008). So far, however, marketing research has mostly focused on large corporations with large resources, while small, entrepreneurial organisations have received much less attention. Yet, there are significant differences in the marketing between these two different kinds of firms (Hills, Hultman et al. 2008).

Applying marketing models that have been developed for large firms (so-called 'textbook models') to SMEs (Small and Medium-sized Enterprises) has been criticized, since SMEs have unique characteristics compared to large corporations, such as limited resources, lack of specialist expertise, and limited impact in the marketplace (Gilmore,

[1] The U.S. definition of billion is applied here, i.e., 1 B€ = 10^9 €

Carson et al. 2001). These unique characteristics influence or even determine the marketing practises of SMEs: marketing of SMEs is likely to be haphazard, informal, loose, unstructured, spontaneous, reactive, built upon and conforming to industry norms, and following effectual (non-predictive) logic (Carson, Gilmore et al. 1998, Gilmore, Carson et al. 2001, Read, Dew et al. 2009).

1.2 Research Objective and Motivation

Based on the above discussion, marketing literature in general has concentrated mostly on large firms. Especially, the perspective of large firms has been dominant in project marketing literature. Furthermore, in the few existing project marketing studies that have considered an SME or SMEs (see, e.g., Cova, Salle et al. 2000, Alajoutsijärvi, Mannermaa et al. 2000), the SME-specific characteristics of the firm(s) have not been dealt with. The identified research gap is thus the project marketing from SME and entrepreneurial perspective. The aim of this study is to provide new insight into this research gap. The associated research problem is:

> *How do project supplier SMEs implement marketing to survive and succeed in project business?*

This research problem has been studied here in the context of institutional space business and it is further divided into two sub-problems:

1. *What are the marketing practices that SMEs apply in project business to compensate for their resource scarcity and other deficiencies?*
2. *When and how do SMEs apply these marketing practices?*

The motivation to study the current research problem is the following. First, Jalkala et al. (2010) suggest more research for a wide spectrum of project business firms and the different types of project marketing situations (Jalkala, Cova et al. 2010). And as discussed earlier, the project marketing studies on SMEs are very scarce. Second, Hills et al. (2008) call for further research on entrepreneurial marketing (EM) and on the use and impact of EM on firms in all contexts (Hills, Hultman et al. 2008). So far, the research on EM in project business contexts has been missing. In addition to this urge for more research by the project marketing and entrepreneurial marketing scholars, entrepreneurs and SMEs are important in the renewal of economy and creation of new jobs (Schumpeter 1987, Morris, Sexton 1996, Gilmore 2011). Third, project marketing has a high economic impact. As discussed earlier, project business is one of the dominant modes in international business (Hadjikhani 1996, Skaates, Tikkanen 2003, Artto, Kujala 2008) and the turnover of individual industry domains can range up to several hundred billion euro at European level. In order to be successful in this business, an edge in project marketing can provide project supplier firms a hard-to-imitate source of competitive advantage, when combined with organisational and technological edge (Tikkanen, Aspara 2008). In addition, the selected context (institutional space business) represents a sizable business volume, even

though it is a niche area within the overall aerospace and military business. In 2011, the institutional space business of the European space industry was approximately 3.8 B€ and the sales to the European Space Agency alone was approximately 2.2 B€. The employment of the industry was approx. 37,000. (ASD-Eurospace 2012). Therefore, improving the understanding of the selected research problem is valuable for scholars, entrepreneurs and managers of SMEs, as well as policy makers.

Finally, the personal motivation of the author to study project marketing from SME perspective can be described as follows. The author has worked professionally in the field of technology-oriented project business since 1995 in organisations of various sizes and since 2007 as an entrepreneur in a small technology firm that is active in space business. It has become apparent that the SMEs face different challenges in project marketing than larger firms do, and therefore, their project marketing practices are also different. However, this area has not been very well researched so far, which has triggered author's motivation to contribute into this field.

1.3 Definition of Central Concepts

The central concepts applied in the current study have been defined in the following. Note that in different literature sources, there are variations in the definition of certain concepts.

1.3.1 Project

In general terms, project is "a unique set of processes consisting of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective" (International Organization for Standardization 2012). In the project marketing context, however, projects always include buying and selling organisation, thus excluding the projects within one firm (internal projects). As a consequence, the general definition of a project in the project marketing context has been narrowed down to: "project is a complex transaction covering a discrete package of products, services and other actions designed specifically to create capital assets that produce benefits for the buyer over an extended period of time" (Cova, Holstius 1993, Skaates, Tikkanen 2003). This definition is adopted in the current study, because it is widely accepted in project marketing community. The central characteristics of a project are uniqueness, complexity, and discontinuity (Cova, Hoskins 1997, Mandják, Veres 1998, Skaates, Tikkanen 2003). Also, a project is an ensemble of interconnected tasks and it is time-limited, cost-limited, and scope-limited (Artto, Martinsuo et al. 2006).

1.3.2 Project Business

Project business is defined as "the part of business that relates directly or indirectly to projects, with a purpose to achieve objectives of a firm or several firms" (Artto, Wikström 2005).

1.3.3 Project Supplier Firm

Project supplier firm is here defined as a firm (or other organisation) that delivers external customer projects as its main business. It means the same as 'project-to-order supplier

firm', as it is called in (Cova, Mazet et al. 1994, Cova, Ghauri et al. 2002). The definition of project supplier firm is narrower than that of project-based firm, which is defined as a firm for which a project is "the primary unit for production organisation, innovation, and competition" (Hobday 2000). The definition of the project-based firm includes internal project-based activities, such as own R&D, marketing campaigns, etc., which are excluded in the definition of the project-supplier firm.

1.3.4 European Space Agency

European Space Agency (ESA) is an intergovernmental organisation, established in 1975 for the purpose "to provide for and to promote, for exclusively peaceful purposes, cooperation among European States in space research and technology and their space applications" (European Space Agency 2003). In 2013, ESA has 20 member states: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and the United Kingdom. In addition, Canada participates in some projects under a cooperation agreement, while Hungary, Estonia, and Slovenia are participating in the Plan for European Cooperating States (PECS). (European Space Agency 2013).

1.3.5 Geo-Return System of ESA

The procurement rules of the ESA have the objective to support the national space programmes of each member state in correlation to member states' financial contribution to ESA. This principle is referred to as geo-return and its status is continuously monitored. (von der Dunk, F. G. 2011). In practise, both ESA and the system integrator firms of satellite missions have to pay special attention that sufficient contracts are assigned also to organisations residing in countries that have under-average competitiveness and/or to countries that have a small space sector compared to their financial ESA contribution.

1.3.6 Invitation to Tender

Invitation to tender (ITT) is an official request of the customer for potential supplier firms (or to other supplier organisations) to submit a tender for the implementation of a particular project. Parallel terms are *call for tender* (Cova, Mazet et al. 1996), *request for proposal*, *call for bidding* (Cova, Ghauri et al. 2002) or *request for quotation*. There are several ITT types variable in their flexibility (Cova, Ghauri et al. 2002).

1.4 Structure of the Research

This thesis consists of six chapters. Introduction into the study is given in Chapter 1. Chapter 2 presents the theoretical foundation, relying on the literatures on project as well as entrepreneurial marketing, and develops conceptual framework based on the literature review. Chapter 3 presents the methodology of the study and the results are presented in Chapter 4. Chapter 5 summarises the results and finally, Chapter 6 discusses the results and evaluates the theoretical contribution and managerial implications of the results.

2 Theoretical Foundations

The aim of this chapter is to describe the theoretical foundations of this study. First, project marketing is introduced, its key elements and characteristics are discussed, and the relevant literature is reviewed. Then, entrepreneurial marketing is introduced, its core dimensions defined and described, and relevant literature reviewed. Finally, these two theoretical constructs are combined into a single conceptual framework, which is described.

2.1 Project Marketing

Traditional project management literature discusses the overall management of a project from the point onwards when the decision for planning and implementation has been made (Artto, Martinsuo et al. 2006). Project marketing, in turn, is a wider concept. The essence of project marketing are the customer relationships and the systematic management of customer and other business network relationships before, during, and after the delivery process (implementation) of a particular project (Skaates, Tikkanen 2003, Tikkanen, Aspara 2008). Project marketing is also a wider concept than selling a particular project or the concept of project selling in general. Project marketing should be a strategic activity that is reflected in the whole business organisation of the supplier. (Artto, Martinsuo et al. 2006, Tikkanen, Aspara 2008). So far, project marketing literature has concentrated on large firms and large projects (see, e.g., Cova, Mazet et al. 1994, Cova, Ghauri et al. 2002). However, this restriction of project size is not done in the present study.

In the following, the special characteristics of project business are summarised and the key elements of project marketing are reviewed.

2.1.1 Special Characteristics of Project Business

Compared to non-project (or 'traditional') business, project business has three characteristic features (Cova, Hoskins 1997, Mandják, Veres 1998, Skaates, Tikkanen 2003):

- Uniqueness,
- Complexity,
- Discontinuity.

The *uniqueness* signifies that every project is different and specific and that the project outcome changes from project to project – no two projects are alike although similarities may exist. The differences can stretch along various dimensions, e.g., technical content; project size; customer and the type of customer (e.g., public or private); project supplier consortium and organisation; division of responsibilities between supplier consortium members; financing; delivery; schedule; and participation of other stakeholdes, such as governmental bodies or politicians. (Cova, Ghauri et al. 2002). Despite the uniqueness, the reference value of a project is important or even vital in successful marketing of new project(s) (Cova, Ghauri et al. 2002, Salminen, Möller 2006, Tikkanen, Aspara 2008). In addition, it is beneficial to re-use methods and solutions that have been developed in

earlier, similar projects, incorporating also the organizational and managerial dimension, i.e., the way of working and managing the delivery process (Hellström 2005).

The *complexity* means that most projects are complex along technical, financial, political, and societal dimensions. This reflects in several ways in the marketing of a project: the tenders may be very complex, the number of participants may be high in terms of involved organisations and individuals, and the influence of political actors and society may be significant. (Cova, Ghauri et al. 2002). In addition, the complexity may lead to situation that the customer may not be able to articulate all his interests (Skaates, Tikkanen 2003).

The *discontinuity* signifies that there is not a steady flow of projects sold to a single customer, but between projects there is a discontinuity of demand, i.e., a break in the economic relationship and resource exchange between the supplier and the customer (Hadjikhani 1996, Skaates, Tikkanen 2003). This may affect negatively to the bonding between the supplier and the customer as well as in the long-term mutual dependence, and to the mutual orientation beyond the single project (Skaates, Tikkanen 2003). In addition, discontinuities increase the volatility of supplier's business and cash flows, thus increasing risks (Tikkanen, Aspara 2008). The feature of discontinuity of project activities has been deemed to be central in the reflection of project marketing (Cova, Salle 2007).

In addition, the high financial commitment has been emphasized in (Cova, Ghauri et al. 2002) as the fourth characteristic feature. Since there are also projects with moderate economic value, however, this fourth dimension is excluded in the current study.

All in all, the above special characteristics of project business have several consequences for project marketing. First, there is a high degree of uncertainty for the supplier, e.g., who is the customer, what are the requirements, what is the timing of the invitation to tender, and what is the procurement method (Cova, Hoskins 1997). Second, the buying process has a high degree of formalization and it is long and negotiated, including up to sixteen different phases (Cova, Holstius 1993, Cova, Ghauri et al. 2002). Third, the customers have a specific buying procedure and the types of invitation to tender vary between projects. Fourth, the buying centres (i.e., the group of individuals in the buying organisation that make the purchasing decision) are fragmented and can include high number of actors. (Cova, Holstius 1993, Cova, Ghauri et al. 2002).

2.1.2 Project Marketing Process

Nowadays, successful project supplier firms do not just behave reactively to open invitations to tenders or to a specific project opportunity. On the contrary, their project marketing process starts earlier and can be divided into two temporally distinct phases: (1) a general anticipatory phase at technical and cognitive levels that is independent of any specific project opportunity and (2) a project specific phase to adapt to a certain project opportunity (Cova, Mazet et al. 1994).

Different models have been developed to describe and manage the project marketing process, e.g., the project marketing cycle model (Holstius 1987), the interactive project cycle model (Cova, Holstius 1993), the strategic anticipatory approach (Cova, Mazet et al. 1993), the six-step tender preparation model (Steward, Steward 1992), and the general

marketing configuration model (Cova, Mazet et al. 1994). The general marketing configuration model (Cova, Mazet et al. 1994) is widely used and cited in the field, see, e.g., (Skaates, Tikkanen et al. 2002, Skaates, Tikkanen 2003, Tikkanen, Aspara 2008). Due to its comprehensive nature, it is also applied in this study in a slightly modified form, where the project specific phase has been further divided into two separate stages, as suggested in (Cova, Hoskins 1997, Cova, Ghauri et al. 2002). Thus, the applied model consist of the following three consecutive stages; 'independent of any project', 'pre-tender', and 'tender preparation' (*ibid.*), and it is named here as the 'three-stage model of project marketing process.' These three stages of the project marketing process should be aligned with and support the defined strategy and business objectives of the project supplier firm, although that is not always easy task in practise (*ibid.*).

The three-stage model of the project marketing process is presented in Figure 1. The 'independent of any project' stage considers the time when the specific project does not exist yet. During the 'pre-tender' stage, the supplier detects the project opportunity and decides if it invests effort and resources in the tender development. The 'tender preparation' stage starts when the customer publishes the invitation to tender. (Cova, Hoskins 1997, Cova, Ghauri et al. 2002). These three stages are elaborated more detailed in the following.

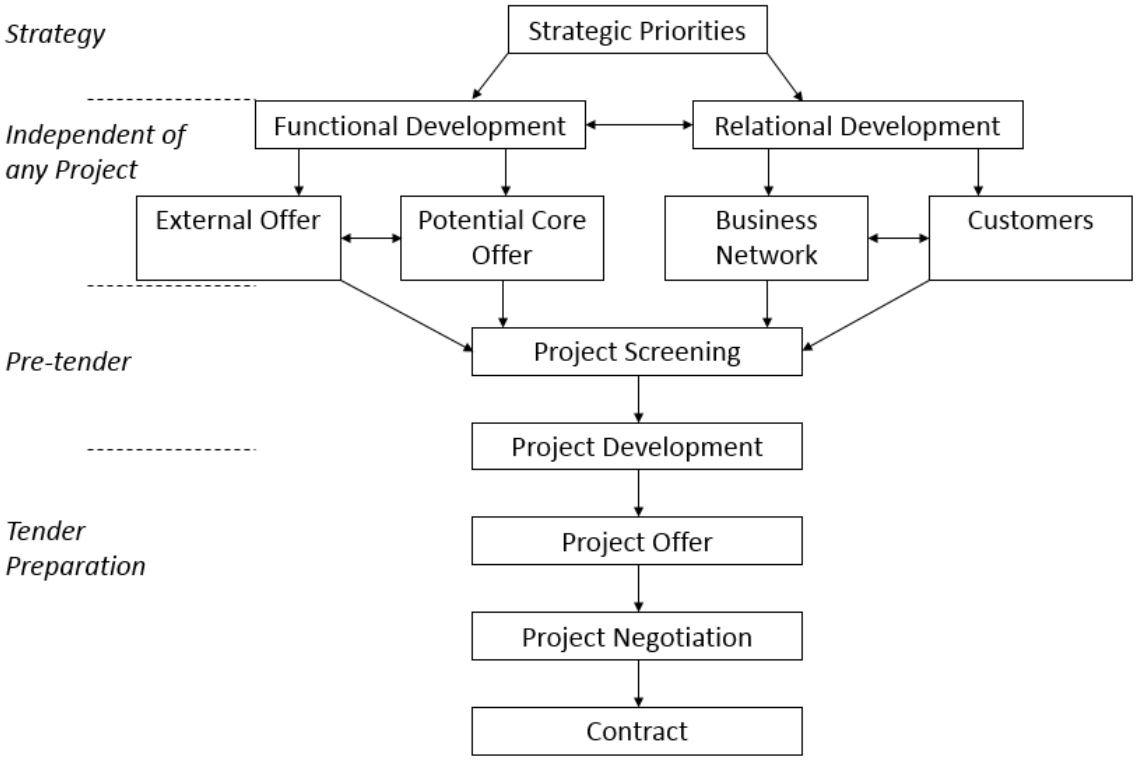

Figure 1. The project marketing process adapted from (Cova, Ghauri et al. 2002).

2.1.2.1 Independent of Any Project Stage

The independent of any project stage occurs before a specific project has been identified. Definition of strategic priorities of the firm (target market segmentation and/or key

customers, own core offering, etc.) is the prerequisite for the project marketing process. Based on these strategic priorities, a firm can take anticipatory actions for functional and relational development. These actions are influenced also by the intelligence that the supplier can gather on future project opportunities. (Cova, Mazet et al. 1994, Cova, Ghauri et al. 2002).

The aim of the *functional* development is to develop own core offering for the firm to be in a position to create differentiated and competitive tenders for the target market. In order to win the competition and acquire a project, a firm must have a strong functional position, and this position must be built in advance. The functional development can be done, for example, by screening of potential partners and sub-suppliers to enable access to external resources and competencies. Also, own technologies, project modules, solutions, and other competencies and capabilities, such as facilities, human resources, and processes can be developed, potentially in cooperation with other actors. In addition, legal and financial offering, including the price of the offering and legal and financial arrangements can be developed. (Cova, Mazet et al. 1994, Cova, Ghauri et al. 2002, Artto, Martinsuo et al. 2006, Tikkanen, Kujala et al. 2007).

The aim of the *relational* development is to build up a favourable position (i.e., location of power) of the supplier within the business network that is relevant for the target market (see also Section 2.1.3). This is important in order (1) to anticipate and detect potential projects in advance, (2) to build relationships with business and non-business actors relevant to the coming project, and (3) to influence relevant other actors, e.g., in order to determine the 'rules of the game.' (Thorelli 1986, Cova, Hoskins 1997, Cova, Ghauri et al. 2002). To keep the investments into relational development at reasonable level, it is especially important to have ties to the central actors of the business network. Within a certain sphere of business, these central actors may act as 'poles of continuity' between the supplier and all potential customers. These poles of continuity can be, e.g., governmental agencies or local authorities. (Cova, Hoskins 1997). A prerequisite for the positional development is the understanding of the business network (Cova, Mazet et al. 1994, Cova, Ghauri et al. 2002).

Another important aspect in relational development is to create and maintain credibility, e.g., through reference projects. The aim is to be considered seriously by the important other network actors, such as customers, sub-contractors, competitors, and civil, community, government, and state actors. (Skaates, Tikkanen 2003). The role of the first reference project in a certain market segment is so vital that it should be primarily seen as marketing investments instead of source of profit (Tikkanen, Aspara 2008). This importance of references and referencing are increasing in business marketing (Salminen, Möller 2006). On the other hand, social and cultural capital within the network also creates credibility (Tikkanen, Aspara 2008).

A strong corporate brand is also a valuable asset in generating credibility, since it reduces the perceived uncertainty and risk by the customer. Compared to other businesses, the value of corporate brand is even emphasized in project marketing due to the complexity of projects. (Tikkanen, Aspara 2008). As a consequence, project supply firms seem to increasingly adopt branding strategies (Jalkala, Cova et al. 2010). The corporate

brand and references are intertwined, since customer references have an important role in building a brand (Jalkala, Salminen 2010).

Both functional and relational developments are interacting with supplier's environmental scanning systems. These systems scan the technological and socio-economic environments to detect technological and commercial opportunities in advance. The socio-economic scanning activities, if successful, can help to anticipate demand and thus enable the supplier firm to generate better solution for a customer. Or these activities can even influence the demand so that it is more favourable to the supplier. In practise, the relationships that firm's management and personnel (or even their friends and families), i.e., 'extended network' have created and developed over the years have crucial importance in this socio-economic scanning. (Dubini, Aldrich 1991, Cova, Mazet et al. 1994).

Following the so-called constructivist approach (elaborated in more detail in Section 2.1.4.1), the aim in this stage is to create demand and to construct a project. Here, the supplier firm recognises a project idea that would solve a problem of a customer or that might be useful for a yet unknown customer. Furthermore, the supplier develops the concept and finds and/or creates the customer. Opposed to traditional logic, here the supplier carries out the feasibility study on its own risk, gathers together the financial package, and assembles a team to execute the project. This approach is also called 'creative tender.' All this can take a long time and involve significant amount of cost and risk for the supplier firm but it can also generate greater influence, higher margins, and more favourable contractual terms. (Cova, Hoskins 1997).

2.1.2.2 Pre-Tender Stage

In the pre-tender stage, the supplier applies its intelligence systems (1) to identify project opportunities and (2) to gather relevant information on the project network of the identified project, supporting efforts to anticipate or create the rules of the game (Cova, Hoskins 1997). In these intelligence systems, relational investments and the personal networks of firm's personnel and indirect ties are crucial (Dubini, Aldrich 1991, Cova, Hoskins 1997, Gilmore, Carson 1999).

The project network analysis is very similar to the sector level analysis, i.e., the analysis of the relevant business network (see Section 2.1.3), with the exception that the focus is now in a particular customer and project. The aim is to determine: (1) who are the actors involved in the project network, what are their characteristics and ties to each other; (2) what is the relative position, role, and power of the actors in the project network, and what possibilities do they offer to the supplier firm; and (3) what are supplier's own bonds in the project network and its relational position in it. (Cova, Ghauri et al. 2002).

Similarly to producers of off-the-shelf products (Paranka 1971), project supplier firms have to conduct pre-tender screening to evaluate the potential value of the opportunity once they have identified it. In other words, they have to evaluate whether the opportunity is worth pursuing or not (Cova, Hoskins 1997). In assessing and prioritizing project opportunities, the attractiveness of the opportunity and the relational and competitive strengths (compared to competition) are considered. The attractiveness of the project

opportunity include, for example, the following variables (Paranka 1971, Cova, Mazet et al. 1994, Cova, Hoskins 1997, Cova, Salle et al. 2000, Artto, Martinsuo et al. 2006, Salminen, Möller 2006, Tikkanen, Aspara 2008, Artto, Kujala 2008):

- Supplier's business objectives and priorities and the alignment of the prospect with strategy,
- Risk,
- Profit and/or cash flow expectations,
- Reference value,
- Availability of resources and capabilities,
- Possibility for follow-up project(s),
- Competition,
- Opportunity cost,
- Influence on customer relationship,
- Possibilities for the development of partner network and technology.

The relational and competitive strengths of the supplier include, for example, the following variables (Paranka 1971, Cova, Mazet et al. 1994, Cova, Hoskins 1997, Cova, Salle et al. 2000, Artto, Martinsuo et al. 2006, Salminen, Möller 2006, Tikkanen, Aspara 2008, Artto, Kujala 2008, Jalkala, Salminen 2010):

- Credibility (e.g., applicable references, corporate brand image, social and cultural capital),
- Past experience,
- Level of influence among key project stakeholders,
- Ability to satisfy the business objectives of the customer,
- Ability to generate innovative solutions,
- Availability of own expertise and resources,
- Strong partners.

In addition to the above, the outcome of potential informal meetings with the customer may also influence the decision (Cova, Ghauri et al. 2002).

Besides evaluating the project opportunity, another aim of the pre-tender screening process is to determine the optimum entry mode (in case the opportunity is pursued): whether to tender as a sole prime contractor, as a prime contractor in joint venture with sub-contractors, as a subcontractor with somebody else as prime, etc. (Cova, Hoskins 1997). Especially in large and/or international projects, it is typical that the project is jointly carried out by more than one firm, and that every firm is concentrating on its core value-creating activities and processes (Ahola 2009). In that case, the selection of partners, their tasks, and their roles (prime contractor or sub-contractor) within the consortium has to be made (Cova, Mazet et al. 1994). In low volume production of high cost capital goods

(also called Complex Products and Systems – CoPS), a large firm with system integration as distinctive strategic capability often takes the role of a system integrator (Bonaccorsi, Pammolli et al. 1996).

Following the pre-tender screening process and positive decision to pursue the project opportunity, the supplier mobilises and adapts its internal and external resources, developed during the independent of any project stage (see Section 2.1.2.1). The aim is to either (1) participate in defining the rules of the game by co-creating or co-developing the project with the customer (so-called constructive approach) or (2) comply with the established rules of the game (so-called deterministic approach) (Cova, Hoskins 1997, Cova, Ghauri et al. 2002, Crespin-Mazet, Ghauri 2007).

2.1.2.3 Tender Preparation Stage

Once the customer has published the Invitation to Tender (ITT), all the tendering conditions become known and the tender preparation stage of project marketing starts. Now, the supplier has to make the go/no-go decision, i.e., the decision whether it will prepare and submit a tender or not. The go/no-go decision is extremely important for a supplier, since preparing a tender is often a significant investment and the work required to prepare a tender would be lacking elsewhere (i.e., there is also an opportunity cost to pay) (Cova, Salle et al. 2000). Furthermore, after submitting the tender it is impossible or at least difficult to withdraw from the project (or make considerable changes in the resource allocation) due to the contractual obligations or at least, without loss in trustworthiness (Artto, Martinsuo et al. 2006, Tikkanen, Kujala et al. 2007). The go/no-go evaluation is based on the principal criteria of: (1) estimated cost of preparing the tender, (2) availability of the necessary resources, (3) the attractiveness of the opportunity, and (4) supplier's relative competitive strengths (Cova, Hoskins 1997). The attractiveness of the opportunity and supplier's relative competitive strengths are the same as discussed in Section 2.1.2.2. Different firms apply different go/no-go evaluation methods, representing various levels of sophistication (Cova, Ghauri et al. 2002). One example of evaluation tools is screening matrix, where different project opportunities of supplier's project portfolio are compared along the dimensions of project attractiveness and supplier's strengths (Cova, Salle et al. 2000).

If the supplier firm decides to proceed with tender preparation, it coordinates the key external partners that have been mobilised in the pre-tender stage. The aim is to prepare a differentiated tender that is different than the competing tenders and that will be recognised by the customer for being the most suitable for them. (Cova, Hoskins 1997, Cova, Ghauri et al. 2002). Binding price tenders or at least budget price tenders are needed from the key sub-contractors to reduce supplier's own risks (Artto, Martinsuo et al. 2006, Murtoaro, Kujala 2007). It is also relatively common that before publishing the actual ITT, the customer releases a Request for Information (RFI). As an answer to an RFI, a supplier submits a so-called budget proposal. Budget proposal is not a binding tender, but customer's purpose is to collect information on the price level, potential suppliers, and technical realisation options. (Artto, Martinsuo et al. 2006).

In constructing the tender, the supplier has two main approaches. The first alternative is the 'bidding approach', i.e., to prepare a tender that complies with the requirements of the ITT as well as possible and accepting the decision criteria of the customer. To successfully differentiate the tender from the competition, careful analysis of the relative competitive position of the supplier firm is needed to; counter competitors' strengths, exploit competitors' weaknesses, and neutralise competitors' aggressive actions. (Cova, Hoskins 1997, Cova, Salle et al. 2000).

If the supplier firm is in an unfavourable situation and the winning chances with bidding approach are regarded low, the supplier may try the more risky 'solution approach.' The aim is to de- or reconstruct the project in order to rewrite the rules of the game by modifying the specifications and decision criteria of the customer. This approach is based on the notion that all organisational buying decisions involve risk taking by the involved organisations and individuals. Therefore, industrial buying behaviour and the resulting specifications are driven by the perceptions of these risk by the members of the buying centre. For the supplier, it may be possible to identify these risk perceptions, e.g., through contacts with the members of the buying centre. In case these risk perceptions differ from the actual risks assessed by the supplier firm, it is possible to exploit this difference, given that the supplier has sufficient expert credibility. This may open an avenue to participate in the definition of the rules of the game with the customer. (Cova, Salle et al. 2000). However, especially in the public sector tenders the interaction between the supplier and the customer may be limited during the tender preparation (Cova, Hoskins 1997). This may limit the practical usability of the solution approach in such tenders.

In a project tender, two dimensions are traditionally present: technical and financial. However, political and societal dimensions can also be important in certain contexts (Cova, Hoskins 1997, Hadjikhani, Ghauri 2001, Cova, Ghauri et al. 2002). In project marketing, the suppliers use these four dimensions to create a differentiated tender for the project in question. The technical tender includes the products and/or services offered and the scope of the work. The financial tender includes the financial terms (e.g., price and price type), contract conditions, project financing proposal, if applicable, and project organisation structures. (Cova, Hoskins 1997). The political tender includes all the investments of the supplier within customer's network to improve the political position of the supplier firm. Finally, the societal tender includes all the investments of the supplier that improve its position with civilian groups that have an interest in the project or against it. (Cova, Hoskins 1997, Cova, Ghauri et al. 2002).

Customer's evaluation criteria of the received tenders typically include price (or: price-benefit relationship), credibility of the supplier, proposed technical solution, and delivery issues (Artto, Martinsuo et al. 2006). After customer's evaluation, the amount of dialogue between the customer and the supplier(s) varies depending on the type of customer's buying procedure, selected tendering process, and the priorities and willingness of the customer. Accordingly, the supplier has variable amount of possibilities to adapt its tender and to change the rules of the game. (Cova, Hoskins 1997). The customer can invite for contract negotiation only the supplier it has evaluated to be the most suitable or it can invite more than one supplier. Negotiations can take place also after budget proposal, and

the proposal is then discussed back-and-forth before the supplier makes the actual tender. (Cova, Ghauri et al. 2002). In general, the contract negotiations between the supplier and the customer may be very complex and difficult, due to the high number of issues and interests. Also, there are several potential negotiation behaviours and tactics to choose from. However, negotiation analysis approach is one framework that can be used to improve the negotiation outcomes (Murtoaro, Kujala 2007).

It is in the interest of both parties to prepare well for the contract negotiation – to prepare and agree the negotiation strategy and division of work within own negotiation team (Artto, Martinsuo et al. 2006). Contract negotiations may also be influenced by cultural factors, e.g., the different meaning and importance of time, differences in communication patterns, and emphasis on personal relations in different organisations and countries (Cova, Ghauri et al. 2002). After the negotiated agreement has been reached between the customer and the supplier on technical, financial, and other aspects, the contract will be written and signed by both parties.

It is important to note that although the stage model that has been discussed and adopted above is useful, the actual project marketing processes are unique, and do not necessarily fully follow any pre-determined models (Tikkanen, Aspara 2008). In addition, the loops of retroactions can be numerous and the 'contract' step at the end of the process leads to relational and functional development: implementation of one project contributes to the relational and functional development of other projects within the independent of any project stage (Cova, Salle 2007). Furthermore, the importance of this kind of marketing function during the delivery process seems to be increasing (Jalkala, Cova et al. 2010).

The above discussed framework was originally developed for individual projects. However, the strategic alignment of projects and the management of business relationships is not restricted to a level of (separate) individual projects, since firms make decisions considering the whole portfolio of projects (Archer, Ghasemzadeh 1999). In addition, marketing is a social process, and developing and managing relationships are also important and therefore accounted for in the decision making of a supplier (Grönroos 1994). In fact, the identification and management of the interdependencies between the portfolio of projects and the portfolio of relationships (customers, network relationships) has been considered as the main managerial challenge for creating and implementing the marketing strategy of a project supplier firm. It requires on-going decision-making, prioritization, resource allocation, review, and realignment of relationships and projects. (Tikkanen, Kujala et al. 2007).

2.1.3 Business Network

Project supplier firms carry out actions, analysis, and decisions at three different levels: (1) project, (2) customer, and (3) a network of business and non-business actors (Cova, Ghauri et al. 2002), named 'milieu' by Cova, Mazet et al. (1996) but here referred to as 'business network.' These three levels are also incorporated into the four portfolio model for the marketing strategy of a project supplier firm (Tikkanen, Kujala et al. 2007), extended with the development of supplier's offering (i.e., functional development) as the fourth

portfolio. The customer and project levels are relatively self-explanatory, and are not discussed here in detail. In general, however, it seems that many project supplier firms have shifted their perspective from individual project level more to customer level (Jalkala, Cova et al. 2010).

Business networks have been studied extensively in business literature from various perspectives. The developed constructs that are relevant for new firms and SMEs include, for example, social network theory, see, e.g., (Dubini, Aldrich 1991, O'Donnell, Gilmore et al. 2001) and industrial network approach, see, e.g., (Yli-Renko, Autio 1998), although several other perspectives on networks can also be identified (Partanen 2008).

Strategically, the marketing of a project supplier firm concentrates on the development of network positioning and the management of the multiple relationships of the firm within the business network. This requires to activate the network capabilities of the whole organisation, not only the sales and marketing department. (Cova, Hoskins 1997, Tikkanen, Kujala et al. 2007).

Once the supplier selects its target markets by segmentation according to one or more dimensions, it gets engaged with a business network (Cova, Ghauri et al. 2002). Within this business network, the actors consist of business and non-business actors. The business actors are the actors that are involved in the economic transactions, such as customers and their clients, competitors, financiers, service providers, sub-contractors, intermediaries, etc. The non-business actors include government and state-owned actors, such as authorities, governmental organisations, politicians, universities, and research units as well as civil and community actors, such as professional groups, labour unions, and non-governmental not-for-profit organisations that can influence marketing operations. (Hadjikhani, Håkansson 1996, Hadjikhani, Ghauri 2001, Cova, Ghauri et al. 2002, Skaates, Tikkanen 2003, Artto, Kujala 2008). The business network of actors can be further divided between two sub-networks: (1) demand network group of actors, who can directly or indirectly influence the project demand and (2) offer network group of actors, who can assist supplier's tender by providing complementary, substitutive resources, capabilities, and competencies and who can be mobilized on a particular project (Cova, Mazet et al. 1994, Tikkanen, Kujala et al. 2007). Note that the concept of network of business and non-business actors was originally defined as geographically bound (local) (Cova, Mazet et al. 1994). However, these business networks are becoming increasingly global (Jalkala, Cova et al. 2010).

As discussed in Section 2.1.2.1, a firm can take relational development actions to improve its position within the business network. Before these actions can be taken, however, the firm must understand the network, i.e., orientate in the network: (1) who are the involved actors, what are their characteristics, and what kind of relationships and dependencies do they have to each other; (2) what is the relative position, role, and power of each actor, what possibilities do the potential partners offer to the supplier and what are the limitations of the network (3) what are the supplier's existing links with the actors in the project network, the usefulness of these links, and the possibilities to mobilise these links. (Axelsson, Johansson 1992, Cova, Ghauri et al. 2002). This orientation in a network can be difficult, however, since the relationships, roles, and scopes of actors within a

business network are complex, discontinuous, and dynamic. In other words, the set of actors may vary from project to project. This means that, for example, an actor's partner in one project can be a competitor in the next or a customer in one project may be a supplier in the next. (Tikkanen, Kujala et al. 2007, Artto, Kujala 2008). In practise, entering the network and experimental action in relation to other actors are prerequisites for orientation (Axelsson, Johansson 1992). In addition, the personal networks of the employees and the entrepreneur are often important in determining and developing the relational position of the firm in the network (Dubini, Aldrich 1991, Cova, Ghauri et al. 2002).

The methods for the improvement of understanding and analysing the network include sociograms and portfolios. Sociograms are graphical representations of the business and non-business actors and their ties in the network. (Cova, Ghauri et al. 2002). An example of a sociogram is presented in Figure 2 presenting the network in construction business in the Loiret region in France (Cova, Mazet et al. 1996).

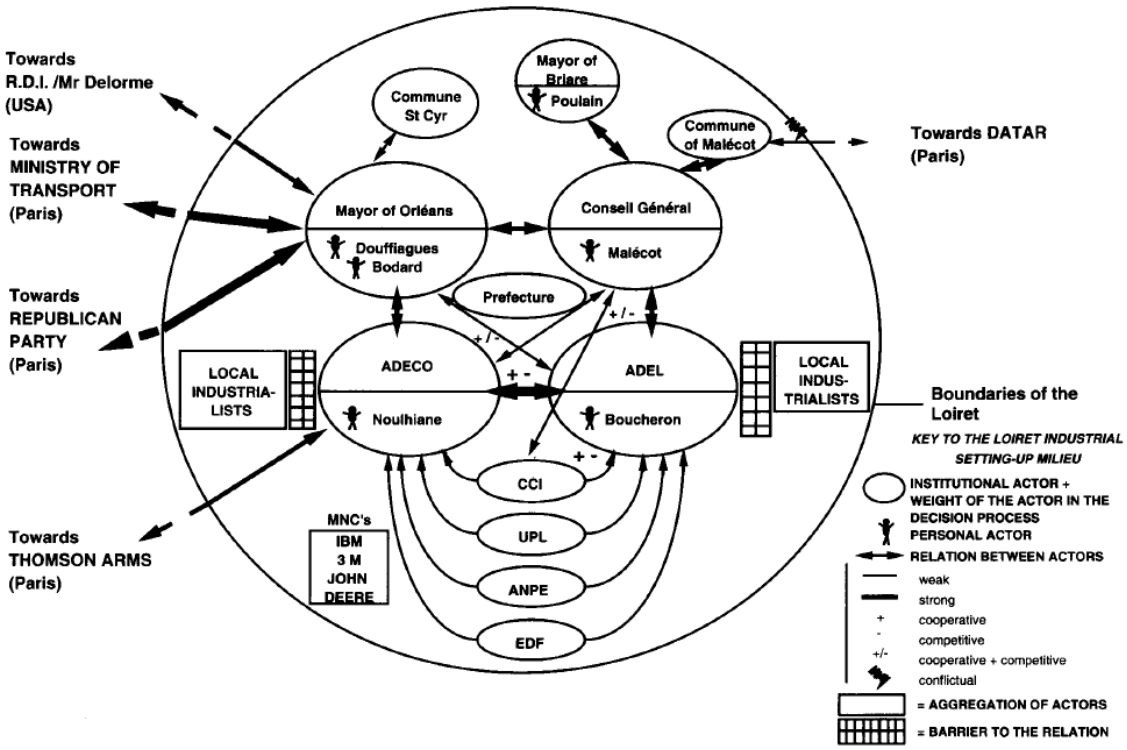

Figure 2. An example of a sociogram: the network in construction business in the Loiret region in France (Cova, Mazet et al. 1996).

2.1.4 Project Marketing Logic, Strategies, and Methods

As discussed in Section 2.1.1, project business is characterised by uniqueness, complexity, and discontinuity. This influences the specific logic and practices that are applied in the project marketing compared to the marketing in non-project (or 'traditional') business. These specifics are discussed in the following.

2.1.4.1 Twin-Track Strategy

Due to the discontinued nature of project business, it is necessary for a supplier firm to submit frequent competitive tenders to obtain new orders. However, the outcome of a competitive tender process is uncertain (Slatter 1990). The so-called twin-track strategy (Cova, Hoskins 1997) aims to improve the continuity and predictability of a tender process. Twin-track strategy combines the so-called *deterministic* and *constructivist* approaches (note that the constructivist approach has nothing to do with *constructionism* that can be used to describe the ontology of a research). The aim of both approaches is to react to project opportunities well in advance of the publication of the ITT, i.e., during independent of any project and pre-tender stages. This is opposed to the supplier firm responding to an already published ITT, which the supplier has not been able to anticipate or influence. (Cova, Hoskins 1997).

The starting point of the deterministic approach is that the project is defined by the customer and its partners. Therefore, the supplier firm concentrates to anticipate and understand the competitive situation, project requirements, and the rules of the tender process and tries to prepare for the process as well as possible. The aim is to *control* the rules of the game or at least to *adapt to* these rules as well as possible (Cova, Hoskins 1997). In this approach, it is very important to gather intelligence, because "a company stands little chance of securing a contract if it only becomes aware of the opportunity at the time when invitations to tender are issued", as stated by the former Marketing Director of Alsthom, Mr Roland Berthélémé (Cova, Hoskins 1997). Gathering useful intelligence, however, relies upon a good position within the business network, i.e., useful relationships with the customer organisation or other useful stakeholders that are connected to the customer or who might influence or have an interest on future projects. (Cova, Hoskins 1997). In other words, deterministic approach is looking for either (1) social continuity with key actors of the business network or (2) continuity in social and economic exchanges with the customer (Cova, Hoskins 1997, Cova, Ghauri et al. 2002).

The constructivist approach, in turn, includes active participation of the supplier in *shaping* the competitive situation and the rules of the game. It assumes that the supplier participates as one of the key players in initiating and constructing the project for the customer or with the customer, in other words, to influence the project before the ITT has been published. This approach includes also the improvement of the relational position within the business network, as necessary, to be in a position to shape the rules of the game. (Cova, Hoskins 1997, Crespin-Mazet, Ghauri 2007).

As was the case in the deterministic approach, gathering intelligence on relevant project information (decision makers, influencers, customer business objectives, etc.) is also very important in the constructivist approach (Cova, Hoskins 1997). The logic in the constructivist approach is that when co-creating market and demand, the supplier gains control and power in the activity and the supplier positions itself structurally in a situation of information asymmetry, dependence, and submission, to build the rules of the game (Cova, Ghauri et al. 2002). The constructivist approach is closely related to the concepts of consultative selling (Tyler 1990, Liu, Leach 2001) and customer intimacy (Treacy, Wiersema 1993).

In constructivist approach, an alternative aim of the supplier might be to get the customer to re-evaluate the suitability of an already chosen solution (that has been provided by a competing supplier firm). The motivation of the supplier firm is to get the customer to revise its decision (Cova, Salle et al. 2000).

In addition to these two approaches included in the twin-track strategy, *control approach* can be regarded as the third approach (Bonaccorsi, Pammolli et al. 1996, Skaates, Tikkanen 2003). However, this approach is not relevant for small firms due to their resource scarcity and is therefore not further discussed here.

The twin-track strategy foresees that both deterministic and constructivist approaches can be used and the approach can be changed as required in a particular situation and stage of the project development cycle. However, besides supplier's own strategic preferences, also external variables, such as customer's approach, norms of behaviour in the project, and supplier's level of influence have to be considered when selecting between deterministic and constructivist approaches. (Cova, Hoskins 1997). Based on recent findings, however, it seems that project supplier firms are increasingly moving away from the deterministic approach towards constructivist approaches (Jalkala, Cova et al. 2010).

2.1.4.2 Limiting the Discontinuities

As discussed in Section 2.1.1, project business is characterised by discontinuities of economic relationship between the supplier firm and a customer. This decreases the interdependency between the supplier and a particular customer and therefore, increases the mobility of that customer and makes the acquiring of new project orders more difficult for the supplier (Hadjikhani 1996). Also, the volatility of supplier's business and cash flows increases due to discontinuities (Skaates, Tikkanen 2003, Tikkanen, Aspara 2008). For a supplier firm, it is therefore beneficial to aim to reduce these discontinuities. For this, there are three principal methods.

The first method is to focus on customer(s) that is (are) capable of launching several different projects over a certain time period, rather than to focus on individual projects independently. In other words, preference is set to customer focus instead of project focus. This enables contacts to several buying centres within customer's organisation and maintaining contact with the key decision makers. (Cova, Ghauri et al. 2002).

The second methods is to provide integrated solutions instead of project deliveries. Integrated solutions combine products (tangible goods) with service elements (intangible goods) that are delivered throughout the whole life-cycle of the products (Cova, Salle 2007, Jalkala, Cova et al. 2010). In other words, there is a change from goods dominant logic into service dominant logic (Vargo, Lusch 2004).

The third method concentrates on the time between projects (discontinuities). During a discontinuity, there is a sleeping relationship between the parties (as opposed to active relationship during the implementation phase of a project). The discontinuities can be very long, even several years. The degree of interdependence or trust in a sleeping relationship depends upon the strength of the ties between the parties, derived from the history of earlier project(s). However, these ties erode over time, which weakens the sleeping relationship and leads to increased mobility of the customer. Yet, directed marketing

actions can be used as investments in a sleeping relationship to increase the interdependence and trust (i.e., to strengthen the sleeping relationship). This can reduce the customer mobility and facilitate the gain of new contracts. (Hadjikhani 1996). These marketing actions include various after-sales and pre-sales services, such as training, maintenance, guarantees, follow-up visits, and spare parts, use of intermediaries, and nurturing and building up social relationships and friendships through rituals (Hadjikhani 1996, Björkman, Kock 1995, Cova, Salle 2000, Michailova, Worm 2003). Besides nurturing the relationship to the customer during a sleeping period, services can also improve the competitiveness and profitability of the supplier. Or they can even become a prerequisite for business relationship in the first place (Björkman, Kock 1995, Artto, Wikström et al. 2008). Rituals are social interactions, such as courtesy visits to customer, lunches in conferences or fairs, celebrations for selected clientele, etc. that do not necessarily have a specific objective (Cova, Salle 2000). Thus, beyond the management of active relationships and networks during the implementation phase of a (single) project, there is another level of relationship management that is broader in time-scale and extent (Tikkanen, Kujala et al. 2007).

2.1.4.3 Combining External and Internal Resources

As discussed earlier, projects are characterized by uniqueness and complexity. Excluding small projects with limited scope, the delivery of any larger project thus requires a large variety of knowledge, capabilities, and resources. Furthermore, the customer demand and competitive forces are increasing the demand for more extensive supplier offerings and integrated solutions (Möller 2006, Windahl, Lakemond 2006). On the other hand, competitive pressures are forcing firms to specialize in a narrowing set of core competencies (Prahalad, Hamel 1990, Möller 2006). Therefore, multiple heterogeneous organisations from the same business network often team up to combine their complementary resources, capabilities, and knowledge to form a consortium to jointly carry out the project (Miller, Hobday et al. 1995, Möller 2006, Davies 2004, Ahola 2009).

To avoid a situation when the building of a consortium has to take place in a short notice, partners should be sought within the business network already before the ITT has been published, i.e., during independent of any project and pre-tender stages (Welch, Welch et al. 1996, Cova, Ghauri et al. 2002, Ahola 2009). The formed project organisations are temporary structures, which are disbanded after the completion of a specific project (Lundin, Söderholm 1995, Hellgren, Stjernberg 1995, Ahola 2009). The temporary project organisation shapes the inter-organisational relationships between the actors within the business networks: shared history of involved actors (‘shadow of the past’) and actors’ expectations of collaboration after the project at hand (‘shadow of the future’) can influence, respectively, the selection of the actors and functioning of the new project organisation (Hellgren, Stjernberg 1995, Hadjikhani 1996, Windeler, Sydow 2001, Ahola 2009). Therefore, it is typical that the project organisations for subsequent projects are partially reconstructed, i.e., several actors that participate in a given project participate also in the subsequent project organisations (Hellgren, Stjernberg 1995, Ahola 2009). However, the goals of the members of a project organisation may be more or less

conflicting, and the actors may have different time orientations, varying between short term goals (perspective of a single project) and long term goals (business network perspective). Also, there may be a mixture of competition and collaboration between actors, changing over time. (Hellgren, Stjernberg 1995). The conflicting goals between project organisation members can lead to non-optimal results in the project implementation (Ruuska, Artto et al. 2009).

2.2 Entrepreneurial Marketing

As defined by the American Marketing Association in 2007, marketing is "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large" (American Marketing Association 2007). This definition is applicable also to entrepreneurial marketing (Hills, Hultman et al. 2008).

In entrepreneurial success, the role of marketing is central (Hills, Hultman et al. 2008, Crane 2010). Since it is more difficult for entrepreneurial SMEs to do conventional marketing, however, their marketing tends to be different than that of established firms, and is often based on networking (Gilmore, Carson 1999). In fact, the best practices of highly successful entrepreneurs often ignore traditional marketing concepts, and many forms of marketing are unique to small firms (Hills, Hultman et al. 2008, O'Dwyer, Gilmore et al. 2009).

The term *entrepreneurial marketing* (EM) is often connected with marketing activities of small and resource-limited firms using creative marketing practices that rely heavily on the extensive exploitation of personal networks (Morris, Schindehutte et al. 2002). Morris, Schindehutte et al. (2002) have defined EM as "proactive identification, evaluation, and exploitation of opportunities for acquiring and retaining profitable customers through innovative approaches to risk management, resource leveraging and value creations." In addition, EM is typically highly intuitive with only limited formal planning (Hills, Hultman et al. 2008). In contrast, *traditional marketing* (TM) is more responsive, risk avoidant, and control-oriented. Note, however, that there is a continuum between EM and TM, not a dichotomy, and a spectrum of marketing approaches exists depending on the degree and frequency that EM and its individual dimensions are applied in a firm. Within this marketing spectrum, the position of a firm is context-specific, reflecting the specific circumstances and environment of the industry and the firm at that point in time. The position of a firm within the marketing spectrum may be time-dependent; typically, entrepreneurial actions are more relevant in high-velocity markets than in stable environment. (Morris, Schindehutte et al. 2002). In other words, the norms for EM have to be interpreted relative to the industry in question and in a certain point in time. Finally, the concept of EM is not limited to novel or small ventures, but entrepreneurial marketing behaviour and processes can also be applied by large firms (Miles, Darroch 2006, Morrish, Miles et al. 2010).

From theoretical point of view, EM resonates well with theoretical discussions on, e.g., resource-based view, (Barney 1991, Penrose 1995), dynamic capabilities (Teece, Pisano et al. 1997, Eisenhardt, Martin 2000), and dynamic marketing capabilities (Bruni, Verona

2009). However, as pointed out by Morris, Schindehutte et al. (2002), EM seems to be especially consistent with the resource-advantage theory of competition, a related theory to resource-based view that challenges the neoclassical theory of perfect competition (Hunt, Morgan 1995, Hunt, Morgan 1996).

Following the above definition of EM, and based on the theoretical foundation of resource-advantage theory of competition (Hunt, Morgan 1995, Hunt, Morgan 1996), the core dimensions of EM are here defined as (Morris, Schindehutte et al. 2002):

1) Opportunity orientation,
2) Market driving,
3) Customer intensity,
4) Resource leveraging,
5) Risk management,
6) Innovativeness,
7) Value creation.

Not all of the above dimensions have to be operating simultaneously to make marketing entrepreneurial. As discussed above, there is a spectrum between EM and TM: depending on the degree that these dimensions are applied in a certain point in time, the marketing of a firm can be more or less entrepreneurial (Morris, Schindehutte et al. 2002). This is analogical to the concept of entrepreneurial intensity (EI), where the amount of EI is determined by the frequency and intensity of entrepreneurial actions (Morris, Sexton 1996). In the following, these dimensions of EM are elaborated and discussed more in detail.

2.2.1 Opportunity Orientation

Having novel and useful ideas and pursuing opportunities are fundamental to entrepreneurship and entrepreneurial behaviour, and together they form a core dimension of EM (Morris, Schindehutte et al. 2002, Hills, Hultman et al. 2008, Crane 2010). Opportunities can be recognised, discovered, or created, and they are basically market positions that have been unnoticed by others and which can be exploited for profit generation. The availability of opportunities tends to correlate with the rates of environmental change: the more the business environment is changing, the more new opportunities open. (Morris, Schindehutte et al. 2002, Crane 2010). Compared to established firms, entrepreneurial firms tend to adapt their strategy to the new set of recognised opportunities (Hills, Hultman et al. 2008). The size of the opportunities varies. Niche opportunities have limited size and they are therefore often overlooked by larger corporations to invest in. However, they may still provide a lucrative opportunity for SMEs. (Crane, Sohl 2004). In addition, one core dimension of EM is to follow an opportunity regardless of resources that are currently controlled. This is in contrast to TM approach that emphasises the efficient utilization of existing resources. (Morris, Schindehutte et al. 2002).

In identifying opportunities, environmental scanning activities are fundamental for EM. Environmental scanning is the process for acquiring information on external market environment, for staying connected with customers and monitoring competition, and for identifying and interpreting trends and developments that could lead to entrepreneurial business opportunities overlooked by others. (Morris, Schindehutte et al. 2002, Crane, Sohl 2004, Crane 2010). To have access to useful opportunity information, the diversity of entrepreneur's personal and extended networks and indirect ties is crucial. Therefore, the role of weak network ties is often emphasised in the literature (Dubini, Aldrich 1991, Ibarra 1993), although there is also evidence for the importance of strong ties (Elfring, Hulsink 2003). Once identified and evaluated, the most attractive entrepreneurial opportunities can be followed. This requires that the environmental scanning activities must are combined with evaluation, marketing action, and effective exploitation (Crane 2010). In this process, the in-depth evaluation of the opportunities is seminal, since only the right opportunities lead to success when exploited. In fact, having the right idea/opportunity has been cited by entrepreneurs as the most important single factor for venture success (Crane, Sohl 2004).

The evaluation of an opportunity should be made along several dimensions. In most opportunities, however, the customer feedback and validation should be the most important evaluation criteria, and should also be used in refining the business idea. (Crane, Sohl 2004, Crane 2010, Blank, Dorf 2012). However, *formalised* market research activities occur seldom among entrepreneurs (Hills, Hultman et al. 2008), although entrepreneurs are adept in putting together disparate pieces of information to obtain a complete picture of environment (Dickson, Giglierano 1986). The aim of formalised market research is to predict the future. Related to market driving dimension of EM (see Section 2.2.2), however, expert entrepreneurs often aim to create the future and not to predict it (Read, Dew et al. 2009). For example, market research can be substituted with selling experimentation on the basis of affordable loss thinking (*ibid.*). In addition, market research activities are seldom useful in generating radical business ideas. On the contrary, the inspiration often comes from a visionary entrepreneur, who detects some latent or emerging need of the customer or an opportunity to offer an unprecedented level of customer value (Kumar, Scheer et al. 2000).

2.2.2 Market Driving

In general, proactiveness is associated with positive firm performance and success and especially, proactiveness is deemed effective in dynamic environments (Lumpkin, Dess 2001). However, the role of the marketing function in traditional marketing (TM) is to adapt firm's marketing mix to be competitive in the existing (or anticipated) business environment (Morris, Schindehutte et al. 2002). In this case, the behaviour of the firm can be (but not necessarily is) market driven (market-oriented), which is based on understanding and reacting to the preferences and behaviours of the actors, such as customers and competitors, within a given market structure (Day 1994, Jaworski, Kohli et al. 2000). In other words, the focus in market driven behaviour is on the customer, and the products and/or services are improved through incremental innovation. Yet, the intention

is not to change the current market structures (rules of the game) (Jaworski, Kohli et al. 2000, Kumar, Scheer et al. 2000). In project marketing terminology, this TM dimension thus corresponds with the deterministic approach (Cova, Hoskins 1997) (see Section 2.1.4.1), given that it is proactive and not just reactive.

In contrast to TM, entrepreneurial marketing (EM) does not consider the external environment as given but tries to influence the external conditions, the structure of the market, and the behaviour of the actors in a direction that benefits own competitive position. Thus, the aim is to drive markets through a radical innovation that provides a discontinuous leap in customer value (Jaworski, Kohli et al. 2000, Kumar, Scheer et al. 2000, Morris, Schindehutte et al. 2002). Established firms have several potential obstacles in pursuing market driving ideas: the radical idea contradicts own existing industry wisdom; the involved risks are high; the technical solution is unconsolidated; target market and market size are uncertain; and the new idea would cannibalize the existing own market. Therefore, market driving firms are usually new entrants to the industry. (Kumar, Scheer et al. 2000).

EM tries to influence and change the rules of the game by creating a new market for new product or service concepts (Crane 2010). Due to this co-creation of the future (with other stakeholders), there is no need to predict it (Read, Dew et al. 2009). In EM, the focus is not on the customer but in all industry participants (business network, see Section 2.1.3) and on the external forces (social, economic, technological, competitive, and regulatory forces) and on the changes along these dimensions (Schindehutte, Morris et al. 2008, Crane 2010). In project marketing terminology, the market driving dimension of EM thus corresponds well with the constructivist approach (Cova, Hoskins 1997) (see Section 2.1.4.1). However, once the radical innovation and market driving phase of a firm is over, the firm typically enters into traditional marketing and market driven phase to incrementally improve its existing offering. It is very seldom that a firm is capable of introducing successful radical innovations and market driving ideas one after another. (Kumar, Scheer et al. 2000).

2.2.3 Customer Intensity

In general, customer satisfaction is a critical factor for venture success (Crane, Sohl 2004, O'Dwyer, Gilmore et al. 2009). On the other hand, the flexibility and adaptability of entrepreneurial firms to satisfy the preferences of the customer enables high customer satisfaction (Hills, Hultman et al. 2008).

The conventional perspectives of marketing include (1) market orientation and (2) customer centricity (Sheth, Sisodia et al. 2000). While adopting these perspective, the customer intensity dimension of EM emphases, in addition, (3) customer equity (4) visceral relationships; and (5) an emotional dimension to firm’s marketing efforts (Morris, Schindehutte et al. 2002).

The customer equity perspective of EM incorporates the innovative approaches to acquire and keep customers and to nurture customer relationships, the focus being in the generation of new customer relationships or in the use of existing relationships to create new markets (Morris, Schindehutte et al. 2002).

The visceral relationships perspective includes the dyadic connection and mutual identification between the firm and the customer at fundamental level (Morris, Schindehutte et al. 2002). Since the building of these relationships is vital for the success of a firm, the owners/managers of SMEs invest significant time and effort to maintain good relationships with regular customers (Gilmore, Carson et al. 2001). In case of radically innovative products or services, the customers are committed and enthusiastic and also report others on their good experience (Kumar, Scheer et al. 2000).

Entrepreneurial branding can be used to strengthen the visceral relationship with the customer in order to improve the differentiation from the competition, reduce the perceived risks by the customer, improve customer loyalty, and increase profitability (Morrison, Crane 2007, Crane 2010).

EM marketing includes emotional dimension of the marketer; conviction, passion, belief, and creativity. As such, it often involves intuition and serendipity, in contrast TM, which emphasises rational decision-making. (Morris, Schindehutte et al. 2002).

The customer intensity concept is also incorporated in the framework of relationship marketing (Webster Jr 1992, Grönroos 1999) and as such, these two frameworks are related.

2.2.4 Resource Leveraging

In the search of superior financial performance, an advantage in resources and in their combinations over competition is important, since it can be translated to competitive advantage in the marketplace (Hunt, Morgan 1995, Hunt, Morgan 1996). On the other hand, entrepreneurial SMEs suffer from the liability of smallness, i.e., from resource scarcity (Morris 2001). However, entrepreneurial marketers do not let the existing (and limited) resources that they currently control limit their actions, they aim to ‘do more with less’ (Dubini, Aldrich 1991, Stevenson 1994, Morris, Schindehutte et al. 2002). This is in contrast to traditional marketing, which aims for efficient use of existing resources (Morris, Schindehutte et al. 2002).

Entrepreneurial SMEs have various ways to leverage their scarce resources, examples including: (1) using the resources in ways than enable to operate better or with less cost than others; (2) getting use of resources that others are unable to use; (3) using external resources for own purpose; (4) combine different resources in a unique way to create new sources of customer value; and (5) using certain resources to acquire other resources (Morris 2001, Morris, Schindehutte et al. 2002). Probably the most important form of resource leveraging is the use of external resources for own purpose. Examples include renting, borrowing, leasing, sharing, bartering, recycling, contracting, outsourcing, and acquiring through social transactions. (Morris, Schindehutte et al. 2002, Elfring, Hulsink 2003).

For entrepreneurial SMEs, the use of external networks, both personal networks and inter-organisational networks is a useful and cost-efficient method to get access to external resources and in that way to compensate for the liability of smallness. The use of these networks is often vital for firm’s survival and growth. (Dubini, Aldrich 1991, Bruderl, Preisendorfer 1998, Morris 2001, Lechner, Dowling 2003, Elfring, Hulsink 2003). The

networks and alliances are considered to be particularly important for science and technology-based firms (Elfring, Hulsink 2003, Neergaard 2005, Rickne 2006, Partanen, Chetty et al. 2011) and their importance is elevated when the firm is small relative to competitors and to the requirements of the market (Gomes-Casseres 1997).

The liability of smallness can refer to any category of tangible or intangible resources: financial, physical, legal, human, organizational, informational, and relational (Hunt, Morgan 1995, Hunt, Morgan 1996). Reputation and credibility can also be regarded as intangible resources that small and new firms are often lacking (Partanen, Chetty et al. 2011). This liability of newness can form a growth barrier, but it can be alleviated with relational networks, i.e., teaming up with partners that are larger and/or more reputable. (Stuart 2000, Lechner, Dowling 2003). In addition, customer references can be used beneficially (1) to gain status-transfer effects from customers with good reputation, (2) to give a signal for own strong market position, and (3) to provide indirect evidence of experience and delivered customer value (Jalkala, Salminen 2010). The references can include specific deliveries but also the names of existing customers (Salminen, Möller 2006).

The networks of an entrepreneurial SME evolve with time. For example, the importance of existing social networks of the entrepreneur is emphasised during the start-up phase, since they serve as an 'entrance ticket' to the inter-firm networks. Also, the establishment of reputational networks is important. However, the importance of both social and reputational networks seem to decrease with time. (Lechner, Dowling 2003). But despite this evolvement in the importance of certain networks, entrepreneur's dependence on networks is not limited to the start-up phase (Hoang, Antoncic 2003).

The liability of smallness can include the shortage of resources, e.g., funds that would be needed to make traditional promotion. Promotion is the communication of a firm towards the target customers to influence their attitudes and behaviours and it is an important part of entrepreneurial marketing mix (Crane 2010). The purpose is to (1) create brand awareness, (2) build favourable brand attitudes, and (3) encourage brand action, i.e., get the customer to buy. (Crane 2010). Because of the limited resources of entrepreneurial SMEs, the aim is typically to achieve the promotional objectives with restricted budgetary resources, e.g., using word-of-mouth, public relations (PR), relationships, extensive service, free samples/free product, direct mail, flyers, and establishing a fan club. These are often referred to as guerrilla-marketing activities. (Gruber 2003, Levinson 2007). In order to maximize the impact of promotion, the marketing actions should be coordinated to provide a consistent message across all audiences. This is called integrated marketing communications. (Crane 2010).

2.2.5 Risk Management

Established firms have many obligations and much to lose. Therefore, they often tend to concentrate on incremental innovation, traditional marketing research, and other market driven activities to improve their existing business. (Kumar, Scheer et al. 2000). Entrepreneurship, on the other hand, is associated with propensity and willingness to take risks and the ability for calculated risk-taking (Dickson, Giglierano 1986, Palich, Ray

Bagby 1995, Stewart Jr., Roth 2001). In other words, an entrepreneur is, while trying to identify, mitigate, and share the risk factors, willing to commit significant resources to opportunities that have a reasonable chance of costly failure (Morris, Sexton 1996, Morris, Schindehutte et al. 2002). On the other hand, entrepreneurial marketing thinking does not consider the predicted value of the opportunity (or: risk-reward ratio) but the affordable loss, i.e., whether the firm can or cannot survive in case of total failure (Read, Dew et al. 2009).

In order to reduce the risk, EM redefines elements of the external environment in ways that: (1) reduce environmental uncertainty; (2) reduce firm's dependency and vulnerability; (3) and/or modify the task environment where the firm operates. Also, resources are managed in such ways that they can be quickly allocated to or withdrawn from new projects. This improves flexibility. Examples of activities to achieve the above goals are collaboration, partnering and outsourcing; joint development projects; working with lead customers; outsourcing of marketing activities; and frequent low-risk market experimentation, potentially in a collaboration network. (Hamel, Prahalad 1991, Morris, Schindehutte et al. 2002).

2.2.6 Innovativeness

Search for creative, novel, or unusual solutions to problems and needs, i.e., development of new products, services, and/or processes is referred to as innovativeness (Morris, Sexton 1996, Morris, Schindehutte et al. 2002, O'Dwyer, Gilmore et al. 2009). According to resource advantage theory of competition, competitive advantage in a marketplace is obtained through comparative advantage in resources, which in turn are obtained through innovation (Hunt, Morgan 1995, Hunt, Morgan 1996, Morris, Schindehutte et al. 2002). In EM, marketing plays an integral part in firm's sustained innovation capacity, which is firm's potential to maintain a flow of ideas that can be turned into new products, services, processes, technology applications, and/or market-motivated innovations (Morris, Schindehutte et al. 2002, Runser-Spanjol 2001). EM is especially associated with radical innovations (in contrast to incremental innovations) that shape the market and rewrite the rules of the game (Schindehutte, Morris et al. 2008). The innovation dimension of EM is not limited to products, services and processes, but it includes also the marketing function itself, the primary components being uniqueness, newness, and unconventionality (O'Dwyer, Gilmore et al. 2009).

Entrepreneurial SMEs cannot compete using the economies of scale. Their innovation ability is the source of their competitive advantage and the most significant factor to compensate the liability of smallness. Thus, innovation orientation is their normal state of affairs and a firm is committed to it unless there is evidence that supports the selection of other orientation. (Miller, Friesen 1982, O'Dwyer, Gilmore et al. 2009). The role of EM includes opportunity identification, concept generation, technical support, and creative augmentation of the firm's resource base in the support of innovation (Morris, Schindehutte et al. 2002).

2.2.7 Value Creation

In marketing, the creation of customer value is a central concept and the delivery of superior customer value is one of the key sources of competitive advantage (Woodruff 1997, Smith, Colgate 2007). Exceptional value creation is also the focal point of EM. This is in contrast to TM, which focuses on transaction or relationship, while EM assumes that the value creation is the prerequisite for both transaction and relationship. The task of entrepreneurial marketer is to discover new, currently unexploited sources of customer value and to create new combinations of resources to produce value for the customer. (Morris, Schindehutte et al. 2002). This requires that the entrepreneurial marketer sees both the customer and the product differently than others do (*ibid.*). In order the new value proposition to become sustainable, i.e., more difficult to copy by the competition, however, the new value proposition should be combined with a unique business system. This would enable to drive the market. (Kumar, Scheer et al. 2000). One method to provide exceptional customer value is to provide additional services to the core product (Grönroos 1997). In this study, the value creation dimension of EM is embedded in the other dimensions of EM, since an 'opportunity' is here understood as an 'opportunity to produce customer value.'

2.3 Framework

The framework applied in this study combines the key elements of project marketing with the core dimensions of entrepreneurial marketing, as described in existing literature. The purpose of this framework is to describe the marketing practices that entrepreneurial SMEs apply in project business. Based on the findings in literature, the connections between the stages of project marketing process and the underlying core dimensions of entrepreneurial marketing are discussed below. These literature findings are also summarized in Table 1. There is a spectrum of marketing approaches between EM and TM. The degree of EM thus depends on the intensity and frequency that the core EM dimensions are present in a particular project marketing process. Also, the individual dimensions of EM are interrelated within a particular stage of project marketing process.

As discussed in Section 2.2.7, the *value creation* dimension of EM is embedded in the other dimensions of EM since in the current context, an 'opportunity' is understood as an 'opportunity to create customer value.' Therefore, this dimension is not included separately in this framework.

2.3.1 Independent of Any Project Stage

During the 'independent of any project' stage, the project supplier firm applies its environmental scanning systems along the *opportunity orientation* dimension of EM to gather intelligence. In this environmental scanning, the external networks of the entrepreneur/manager and personnel are crucial. Based on this intelligence, business network analysis is performed to detect and recognise commercial and technological opportunities in advance and anticipate demand.

Based on the gathered intelligence and business network analysis, functional and relational development within the business network are performed. If constructivist

approach is followed, it is done along the *market driving* dimension of EM. The aim is to create demand and construct a project. The *market driving* dimension aims also to change the rules of the game through functional and relational development. Relational development includes also the *customer intensity* dimension of EM to limit the discontinuities between projects. This is accomplished by actions to improve customer equity and to strengthen visceral relationships with customers, e.g., through credibility creation and corporate branding. Reference projects is one method to build up and maintain both credibility and corporate brand. Thus, the implementation phase of one project may belong to the independent of any project stage of other, future projects. In addition, the relational development through credibility and brand creation incorporate also the *resource leveraging* dimension of EM, since these attributes can be regarded as resources, and consequently, the lack of these attributes as lack of resources. In view of *resource leveraging* dimension, partnering is one method to improve credibility and corporate brand. Through environmental scanning and gathered intelligence, and supported by relational development and the *opportunity orientation* dimension of EM, the *resource leveraging* dimension enables also the functional development of the supplier. In other words, access to complementary external resources can be acquired. Also, this *resource leveraging* dimension includes the relational development through guerrilla marketing.

The *risk management* dimension of EM is applied to identify, mitigate, and share risk factors, since an entrepreneurial SME is willing to follow also opportunities that may cause costly failures. Besides intelligence gathering, discussed above, market experimentation can be done to support business network analysis. Relational and functional developments are performed to redefine external elements so that environmental uncertainty, dependency, and vulnerability of the firm are reduced. In addition, twin-track strategy to use either constructivist or deterministic approaches as needed can be followed to reduce uncertainty. Also, in conjunction with the *resource leveraging* dimension of EM, access to external resources is secured to improve flexibility and reduce/share risk in future project opportunities.

The *innovativeness* dimension of EM is penetrating through and is embedded in several other dimensions of EM. First, it is embedded in the *opportunity orientation* dimension in detecting commercial and technological opportunities. Also, it is contained in functional and relational development activities, e.g., in the development of new technologies, acquiring access to external resources to enable the creation of new combinations of internal and external resources, limiting discontinuities, and launching promotional campaigns.

2.3.2 Pre-Tender Stage

During the ‘pre-tender’ stage of project marketing, intelligence systems are applied to detect project opportunities and to gather relevant project information. Project network analysis is performed along the *opportunity orientation* dimension of EM. Along the *opportunity orientation* and *risk management* dimensions of EM, pre-tender screening is conducted to evaluate the potential value and risks of the detected opportunity and to

determine the optimum entry mode. If constructivist approach is followed in a particular project opportunity, it is done along the *market driving* dimension of EM; relational developments (based on project network analysis) are conducted to co-develop the project with the customer (i.e., define the rules of the game). This interaction with the customer along the *customer intensity* dimension of EM links also to the independent of any project stage of potential other projects, since it contributes to relational development. When pursuing for a project opportunity, internal and external resources are combined, mobilized and adapted along the *resource leveraging*, *risk management*, and *innovativeness* dimensions of the EM.

2.3.3 Tender Preparation Stage

During the 'tender preparation' stage and along the *opportunity orientation* and *risk management* dimensions of EM, the project opportunity that has been identified and followed during the pre-tender stage is evaluated and go/no-go decision is made. In case the opportunity is followed ('go' decision) and constructivist approach is adopted, it is done along the *market driving* dimension of the EM. The aim is to de- or reconstruct the project to rewrite the rules of the game by modifying the specifications and the decision criteria of the customer (so-called 'solution approach'). This often requires interaction with the customer. This interaction with the customer along the *customer intensity* dimension belongs also to independent of any project stage of potential other projects, since it contributes to relational development.

In tender preparation, internal and external resources are coordinated to prepare a differentiated tender, along with the *resource leveraging*, *risk management* and *innovativeness* dimensions of EM. The four dimensions of the tender (technical, financial, political, and social) are considered.

2.4 Summary, Theoretical Foundations

In this chapter, the theoretical foundations of the study have been presented. Two theoretical constructs, project marketing and entrepreneurial marketing have been introduced, their key characteristics have been described and discussed, and the relevant literature has been reviewed. Then, these theoretical constructs have been combined into a literature-based conceptual framework, which has been described. This framework guides the empirical work of the study.

Table 1. The literature-based conceptual framework of marketing practices of project supplier SMEs.

EM Dimensions	Independent of any project stage	Pre-tender stage	Tender preparation stage
Opportunity orientation	Application of environmental scanning systems (external networks) to gather intelligence Business network analysis Detection of commercial and technological opportunities	Application of environmental scanning systems (external networks) to detect project opportunities and gather intelligence Project network analysis Pre-tender screening to evaluate opportunity value	Evaluation of opportunity value and go/no-go decision
Market driving	Relational and functional development to change the rules of the game Creation of demand and construction of a project	Relational development to co-develop a project with customer	De- or Reconstruction of the project
Customer intensity	Relational development towards customer to limit discontinuities Relational development through credibility and brand creation (strengthening visceral relationship)		
Resource leveraging	Relational development through credibility and brand creation (to compensate for liability of smallness) Relational development through guerrilla marketing Functional development to gain access to external resources	Mobilization and adaptation of internal and external resource combinations to compensate for resource scarcity	Coordination of internal and external resource combinations in order to compensate for resource scarcity
Risk management	Application of environmental scanning systems (external networks) to gather intelligence Business network analysis Experimentation Functional and relational development to reduce risks Twin-track strategy	Pre-tender screening to evaluate the risks of the opportunity Mobilization and adaptation of internal and external resource combinations to improve flexibility and reduce/share risk	Evaluation of opportunity risks and go/no-go decision Coordination of internal and external resource combinations to improve flexibility and to reduce/share risk
Innovativeness	Detection of commercial and technological opportunities Functional and relational development	Mobilization and adaptation of innovative combinations of internal and external resources	Coordination of innovative combinations of internal and external resources

3 Methodology

The aim of this chapter is to present, discuss, and justify the methodological choices that have been made in this study. First, the adopted research strategy is described and justified. This is followed by a description of the industrial context where the empirical data has been collected. Then, the case selection, data collection, and data analysis are illuminated. Finally, the quality of the conducted empirical research is discussed and evaluated.

3.1 Research Strategy

This research is a qualitative, extensive multiple case study (Eisenhardt 1989, Yin 2003). The philosophical position is critical realism. These choices and their justification are discussed in the following.

The subject of the current study is rather complex and not well researched. As a consequence, there is only limited understanding of the phenomenon. Therefore, qualitative research methodology is warranted, since qualitative research aims to improve the understanding of the phenomenon and to explain it, not to measure things, or make predictions (Gilmore, Carson et al. 2001, Eriksson, Kovalainen 2008). Qualitative research methodology has been deemed particularly relevant when "prior insights about a phenomenon under scrutiny are modest, implying that qualitative research tends to be exploratory and flexible because of 'unstructured' problems (due to modest insights)" (Ghauri, Grønhaug 2005). Finally, different qualitative research methods have proven very insightful for marketing studies that consider SMEs, see for example (Gilmore, Carson et al. 2001, Jack 2005, Jalkala, Salminen 2010).

Within qualitative research methodology, case study is a viable research method in business studies in general (Eisenhardt 1989). In particular, case study research is suitable to study complex marketing phenomena and associated decision making in entrepreneurial SMEs (Borch, Arthur 1995, Carson, Gilmore et al. 1998, Gilmore, Carson 1999, Gilmore, Carson et al. 2001, Schindehutte, Morris et al. 2008, Partanen, Chetty et al. 2011) and to study issues in project marketing (Cova, Salle et al. 2000, McDonald, Madhavaram 2007). A case study is especially applicable strategy when the aim is to answer 'how' or 'why', when the researcher has little control over events, and when the focus of the research is on a contemporary phenomenon within a real-life context (Yin 2003). In addition, Ghauri and Grønhaug (2005) point out that case study strategy is well suited when studying complex organizational, managerial, and other business issues.

Multiple case study approach is preferred over single case studies by many researchers for various reasons (Yin 2003). Here, multiple case approach has been selected, because it enables to get a more fine-grained and extensive view on the phenomena under study than a single case approach would do. Since the aim of this study is to improve the understanding of the phenomenon at large, multiple case approach is thus justified.

Intensive case studies aim to find out as much as possible on a single or few cases (Stoecker 1991). In other words, intensive case studies concentrate on the case itself, while

extensive case studies see often the cases as “instruments that can be used in exploring specific business related phenomena, and in developing theoretical prepositions that could be tested and generalised to other business contexts or to theory” (Eriksson, Kovalainen 2008). Therefore, extensive case study research design has been selected for this study.

The selected philosophical position (or paradigm) is critical realism, which has been suggested to be a suitable approach in marketing studies (Easton 2002). According to critical realism, there is an observable world independent of human consciousness, but the knowledge of the world is socially constructed. In other words, the reality is objective (‘real’) but human perceptions and understanding of the reality are imperfect. (Eriksson, Kovalainen 2008). Paradigm is here understood as the basic belief system or world view that guides the investigator (Guba, Lincoln 1994, Ghauri, Grønhaug 2005). The selected extensive case study research design using multiple cases fits well with the selected paradigm: the object of the study is not the cases themselves but the underlying processes, which are believed to be ‘real.’ Furthermore, it can be argued that using multiple cases (instead of only one) should reduce the “noise”, i.e., the imperfect human perceptions and understanding of the reality, in search of the objective reality.

3.2 Empirical Context: Institutional Space Business

The empirical data for this study was collected in the context of the institutional space business. The word ‘institutional’ means here that the final customer is a governmental or intergovernmental organisation. The limitation to institutional space business was done, because it dominates most areas of space activities (Moranta, Lionnet 2012). The focus of this study was further narrowed down to institutional space business in Europe, generated by the European Space Agency (ESA). This restriction was done because ESA generates almost a half of all space related turnover of SMEs that are active in European space business (Bryant, Lloria et al. 2013).

Despite some specific features, discussed below, the institutional space business has the same basic rules that apply for business-to-business (B2B) and business-to-governmental (B2G) business in general: In order to do business with business and governmental customers, a firm must deliver added value and meet (or exceed) the following specific business buying criteria (Crane 2010):

- Price,
- Ability to meet quality specifications,
- Reliability of delivery,
- Technical capability,
- Warranties and guarantees,
- Past performance on previous contracts,
- After-sale service.

Compared to many other areas, the development of space technology requires sophisticated and very specific knowledge in technology, project management, and quality procedures, see, e.g., (European Cooperation for Space Standardization (ECSS)

Secretariat, ESA-ESTEC, Requirements & Standards Division 2008). Thus a wide range of highly specialized personnel competences are needed in technical, quality management, project management, and sales domains. Also, space business is typically capital intensive, since expensive equipment, software, and specialized design and manufacturing facilities and processes are often required.

Because of the high capital and competence demands in space business, it can be argued that small and/or new firms suffer significantly from the liability of smallness and the liability of newness compared to large, established firms. Indeed, large industrial groups dominate the European space market: in 2011, the six largest industrial groups employed 76% of the total employment in the industry (ASD-Eurospace 2012). The evaluation of the significance of SMEs in the European space business is difficult due to lack of reliable statistics, but the available data indicate that SMEs constitute most probably less than 10% of the industrial volume in the European space business (ASD-Eurospace 2012, Bryant, Lloria et al. 2013). However, SMEs play a more important role in the space ecosystem than their bare turnover share indicates. They are important integrative parts of the supply chains of large firms and they generate innovation and scientific development through spin-offs and spin-ins (Bryant, Lloria et al. 2013). And in general, radical innovations in an industry are very often introduced by new entrants (Teece, Pisano et al. 1997), which are typically small firms.

Currently, approximately 1440 SMEs have been registered in ESA's EMITS (E-Mail Invitation to Tender System) database[2], which is mandatory if an organisation wishes to make business with ESA. Of these 1440 firms, 60% are involved in technological domains and 40% in services (Bléger June 4, 2013). In addition, 440 SMEs have listed themselves in ESA SME database[3] for additional visibility and promotion. In fact, ESA tries to actively encourage SMEs to become involved in its space programmes with a specific SME policy (European Space Agency 2013).

The purpose of the ESA is to promote space research and technology for scientific purposes and for operational space applications systems (European Space Agency 2003). The development of spacecrafts and the supporting research and development work is organised in projects that are typically funded by ESA. While study and technology development projects can be small in size (starting from approximately 50-100 k€), satellite development projects can have very large budgets, up to 1 B€ and even beyond. Respectively, the complexity of industrial consortia can vary significantly. Large satellite development projects can involve dozens of organisations, and the role of the prime contractor is that of a system integrator, similarly than in many other industries (e.g., military systems, telecommunication, aviation, construction, automotive) that are characterized by low volume production of technologically highly complex systems (Hobday 2000, Davies 2004, Hobday, Davies et al. 2005). System integrators are typically larger firms that take the responsibility of the design of the system architecture, management of the overall development, and integration of subsystems and instruments,

[2] http://emits.esa.int
[3] http://smed.esa.int

developed by other parties, in such a way that it can deliver a system (e.g., a satellite) that fulfils the customer requirements (Hobday, Davies et al. 2005).

Compared to typical project marketing, institutional space project marketing is somewhat different. In general, project marketing is characterized by a long and negotiated process (Cova, Ghauri et al. 2002). In the project business of ESA, however, the evaluation is made on the basis of closed, fixed-price tenders which are evaluated and graded. The evaluation is based on pre-determined and standard evaluation criteria that represent technical, economic, and legal aspects (European Space Agency, Industrial Policy Committee 2012). However, there are also direct negotiation or restricted competition projects. In a direct negotiation project, tender is allowed from one organisation or consortium only. In a restricted competition project, the tender can only be submitted by predetermined organisations or by organisations from a certain country or countries (European Space Agency, Industrial Policy Committee 2012). Once the customer has tentatively selected the favoured supplier, the negotiation process corresponds very much the closed, fixed-price competitive tendering described by (Slatter 1990).

All in all, institutional space business is project-based and SMEs are present in that context. Also, institutional space business has similarities with the low volume production of technologically highly complex systems in other industries, e.g., military systems, telecommunication, aviation, construction, and automotive. Therefore, it is suitable to study the phenomenon through project marketing and entrepreneurial marketing lenses in the selected context. In addition, studies in the selected context should be useful for project marketing context in general, since the liability of smallness and the liability of newness of an SME are emphasised in space business compared to many other industry domains. In other words, the challenges of SMEs to alleviate these liabilities are amplified in space business and the associated marketing practices of the SMEs are potentially more easily detectable.

3.3 Selection of Cases

In a case study, the number of cases should be limited to the point where the added value of additional cases approaches zero, i.e., when theoretical saturation has been reached (Eisenhardt 1989). This is difficult in practice and the number of case firms in the current study was limited to five. This is in agreement with (Eisenhardt 1989), which argues that four cases is the minimum number.

In the current study, the aim is not to test a hypothesis. Therefore, random selection of the cases was not necessary or even advisable. On the contrary, theoretical sampling was followed, i.e., the cases were chosen on theoretical and not on statistical basis, following the guidelines presented by Eisenhardt (1989). The aim of the theoretical sampling is to select the case firms so that they would be likely to replicate or extend the emergent theory.

In the current study, theoretical sampling means that the selected case firms had to fulfil the main criteria that are relevant for the phenomenon under study; (1) with respect to size,

the case firms had to fit into the SME classification[4], (2) the firms had to be technology-based project supplier firms, (3) the firms had to participate as supplier in ESA-projects, either as prime contractor (i.e., supplying ESA directly) or as a sub-contractor (supplying system integrators or other firms while the end-customer is ESA), or both. The firms that are active only in national institutional space business were excluded. Although such requirement was not set, almost all of the selected case firms turned out to be strongly science oriented.

The aim of the firm selection was to acquire in-depth understanding for (1) the marketing practices of SMEs in project business in general and (2) the marketing practices of SMEs in European institutional space project business in particular. All the selected case firms had the same defining characteristics, i.e., they fulfilled the main criteria relevant for the phenomenon under study, discussed above. However, the case firms were selected, within the limits of accessibility, to have variability over a few, additional dimensions: size, age, home country, and technical domain. This enabled to study the phenomenon in wider range and to obtain a more fine-grained view while still keeping the primary parameters (main criteria) satisfied. The case firms were identified through personal contacts. The size of the firms varied from few to more than thirty in terms of personnel and from less than half a million to four million euro in terms of annual turnover. The case firms represented four different home countries, including both big and small countries and countries from Northern, Central, and Southern Europe. Also, the case firms represented four different technical domains. Most of the case firms are focusing on one or two niche domains or technologies, with only one firm having several focus areas. The share of the space business varied between 40% and 100% of the total turnover, being the highest in the smallest case firms.

The informants were the managing directors of the case firms, because they were deemed to possess the most central role in the marketing practices of their firm. All informants were partners in their firm and some of them were the sole/majority shareholders (entrepreneurs). In order to motivate the informants to participate in the study, the aims and motivations of the research were elaborated first over phone and then more in detail in an email. For the same purpose, and due to the fact that the collected data is commercially very sensitive, it was agreed that the case firms and the informants remain anonymous. Therefore, no detailed case descriptions are presented here. Despite these efforts to mitigate the doubts for participation, not all candidate informants and firms agreed to participate in the research.

The key parameters of the case firms and the informants have been tabulated in Table 2. In project business, the turnover fluctuates from year to year. Here, an average of the last five published annual financial statements have been used, as (and if) available in Orbis database[5]. Only the category of the annual turnover, under or over 1 M€, is shown for the preservation of anonymity. The additional information presented in Table 2 was provided by the informants. For the preservation of anonymity, the firm size in terms of

[4] According to the classification of European Union, an SME has less than 250 employees and the turnover is not more than 50 M€ or the balance sheet total is not more than 43 M€ (European Commission 2003).
[5] http://www.bvdinfo.com/en-gb/products/company-information/international/orbis/

personnel count is shown in three categories: less than ten, between ten and twenty, and more than twenty. Firm age and the experience of the informant in space business is shown in three categories: less than ten, between ten and twenty, and more than twenty years. And the experience of the informant in the current role as managing director is presented in three categories: less than five, between five and ten, and more than ten years.

Due to the nature of the research question, the research design was cross-sectional (in contrast to longitudinal).

Table 2. The key characteristics of the case firms and the informants.

Firm	**Firm 'A'**	**Firm 'B'**	**Firm 'C'**	**Firm 'D'**	**Firm 'E'**
Size in turnover (M€)	N/A	< 1 M€	> 1 M€	> 1 M€	< 1 M€
Size in personnel (person years)	<10	<10	>20	>20	10…20
Age	<10	10…20	>20	>20	10…20
Amount of space business of total volume	100%	90%	40%	75%	100%
Key asset	Experience	Experience, expertise	Expertise, reliability	Innovation, cost efficiency	Flexibility, quality of work
Informant	**Informant 'A'**	**Informant 'B'**	**Informant 'C'**	**Informant 'D'**	**Informant 'E'**
Experience in space business (years)	>20	10…20	<10	<10	>20
Role in the case firm	Managing Director, Entrepreneur	Managing Director, Partner	Managing Director, Partner	Managing Director, Partner	Managing Director, Entrepreneur
Experience in the current role (years)	5…10	<5	<5	5…10	>10

3.4 Data Collection

The primary source of information of the case firms was the interviews of the managing directors of the firms (informants). Each case firm was represented by a single informant and each informant was interviewed once. The interviews were conducted by the author over a period of one month in September-October 2013. Because some of the informant candidates asked for the list of interview themes in advance, the list was provided to all candidates in advance. Also, a diagram of the three-stage project marketing process was provided in advance, because the interview was structured according to that process model. Formal, semi-structured interviews were applied, meaning that the author had a list of themes in the areas to be covered (schema) but the wording and order of the questions was varied. Semi-structured interviews were selected because they have been deemed suitable to answer both 'what' and 'how' questions (Eriksson, Kovalainen 2008). The questions were mostly open ended but they were complemented with some closed

questions as required. When needed, interview probes were used to get more details or for clarification. The interview schema, presented in Appendix A, was divided into stages according to the three-stage project marketing model. The schema was designed to identify the marketing practises that project supplier SMEs apply to survive and succeed in project business in the context of the European institutional space business.

The interviews were conducted face-to-face or over telephone, depending on the geographical distance. To improve the reliability of the data, the interviews were recorded with informants' prior consent and transcribed afterwards. The transcribed records were sent to the informants for review and comments. In case the interview was conducted in another language than in English, the quotations presented in Chapter 4 have been translated by the author. In order to motivate the informants to participate in the research, the duration of the interviews was restricted to one hour at maximum and this was also communicated in advance. This was done because firm managers are typically very busy, and it is challenging to convince them to participate in long-lasting research collaboration (Partanen 2008). In practise, the duration of the conducted interviews varied between 22 and 55 minutes and the length of the produced transcripts varied between 5 and 10 pages[6].

In addition to interviews, secondary information available in public domain, such as firms' web pages and accessible financial and other official information was used.

3.5 Data Analysis

The obtained empirical data was analysed by categorizing each transcribed interview into three parts, according to the three-stage project marketing model. Coding of the data was performed according to guidelines presented in (Miles, Huberman 1994) along the underlying core dimensions of the entrepreneurial marketing. Also, the background data on the informant and the case firm was analysed separately, but no coding was necessary due to the nature of the data.

The aim of the study was not to study the case firms as such but to search for potential general patters, or set of applied patterns along the dimensions of the framework: the three stage model on one hand and the underlying entrepreneurial marketing dimensions on the other hand. Therefore, a cross-case synthesis was performed following variable-oriented strategy, as discussed in (Miles, Huberman 1994). In other words, no within-case analyses was performed.

3.6 Quality

The criteria for the good quality of a case study research are internal validity, construct validity, external validity, and reliability (Eisenhardt 1989, Yin 2003). But since the purpose of this study is not to find causal relationships, the internal validity criterion is not applicable here (Yin 2003).

Construct validity means that correct operational measures have to be identified for the concepts that are being measured (Yin 2003). For this purpose, the following tactics have been followed in this study as suggested by (Gibbert, Ruigrok et al. 2008). First, multiple sources of evidence (data triangulation) have been applied (multiple case interviews,

[6] Font Verdana, font size 10 pt

secondary data). As an additional means of triangulation, personal experience has been combined with experimental data, as discussed in (Yin 2003) in the following way: The obtained empirical data was reflected against author's own practical experience in the subject, i.e., whether the evidence "makes sense" or not. No evidence failed in this test. As the second tactic, chain of evidence has been established for the whole chain and presented in this work. The chain start with the research question, extends through schema of the interviews and results (including citations from the case study database), and ends with the summary and discussion.

External validity concerns the generalizability of the findings beyond the case study at hand (Yin 2003). One of the common critics against case studies in general is that case studies provide only little basis for scientific generalisation (Hillebrand, Kok et al. 2001, Yin 2003). But although statistical conclusions and *statistical generalization* are not possible in a case study (Yin 2003, Gibbert, Ruigrok et al. 2008), the selection of a multiple-case study approach in this study is coherent with the aim of generalizability and *analytical generalization* is feasible (Eisenhardt 1989, Yin 2003). In order to improve the generalizability, the case firms were selected to vary along several secondary parameters (size, age, home country, technical domain) while fulfilling the primary selection criteria. The requirement for generalizability is structural similarity between cases and the larger population (Gibbert, Ruigrok et al. 2008). In other words, the obtained results should be generalizable to contexts that have structural similarity with the context used in this study.

Reliability refers to the absence of random error, i.e., the results are not dependent on the researcher but another author(s) would end up with the same conclusions in the same case study (Yin 2003, Gibbert, Ruigrok et al. 2008). For this end, the suggestions by (Yin 2003) have been followed in this study to enhance transparency and replication. A case study protocol has been produced and followed and a case study database has been constructed. As an essential part of the protocol, the conceptual framework has been presented in Section 2.3 and the schema of the interviews in Appendix A. The constructed database includes the audio records of interviews, interview transcripts, and coded interview data.

As discussed in Section 1.2, the author of this study is an entrepreneur himself and active in the studied business context. Although this has been beneficial in achieving the goals of the study, there is also a risk of a bias. To mitigate the risk of author bias, the conceptual framework has been constructed using only existing literature without using any anecdotal information by the author. This literature-based framework has then guided the empirical research.

3.7 Summary, Methodology

In this chapter, the methodological choices that have defined the research strategy and the collection and analysis of the empirical data have been presented, discussed, and justified. Also, a description of the industrial context has been provided and the quality of the research has been evaluated. The empirical results that have been obtained under these methodological choices and in the selected context are presented in the next chapter.

4 Results

The aim of this chapter is to present the empirical results of the study and to retrieve the marketing practices that SMEs apply in project marketing within the studied context. The results have been organised along two dimensions according to the developed conceptual framework. First, the results have been divided into three groups that correspond the three stages of the project marketing process model: 'independent of any project stage', 'pre-tender stage', and 'tender preparation stage.' Within each of these three stages, the results have been presented separately for each underlying dimension of the entrepreneurial marketing: 'opportunity orientation', 'market driving', 'customer intensity', 'resource leveraging', 'risk management', and 'innovativeness.' The results are summarised in the next chapter, Chapter 5.

4.1 Independent of any Project Stage

4.1.1 Opportunity Orientation

All the case firms report to use their intelligence systems to gather intelligence on future project opportunities. In addition, some case firms report that they also follow the developments in relevant new technologies. Intelligence gathering is important for opportunity recognition and business network analysis, as discussed both in project marketing and entrepreneurial marketing literature (Cova, Hoskins 1997, Morris, Schindehutte et al. 2002, Crane, Sohl 2004, Crane 2010). This was highlighted by Informant C as follows:

> *…it is such a flow [of data] that consists of multiple data sources, so that the ears have to be open [to detect] who is now active there and what [he is doing]; it [the contract] has potentially been won and lost already before the whole ITT has been published.* (Informant C).

However, the methods and intensity of this intelligence gathering vary significantly between the case firms. Many of the case firms are deeply networked within the scientific community of their respective fields. Since new satellite mission concepts are created in the scientific community, this network as well as conferences and workshops are therefore important sources of advance intelligence on potential future missions and associated technology requirements. However, the most active case firms follow also the ESA roadmaps on future satellite missions and technology development projects and try to anticipate by themselves the corresponding future project opportunities. Also, they conduct regular dialogue with the representatives of the ESA and satellite integrators that are important for them with the motivation to get information on upcoming opportunities. These ESA contacts can also point out the future opportunities, which are already in the ESA roadmap and which could be suitable projects opportunities for the firm to tender once the ITT has been published. However, not all case firms are very active in this dialogue with ESA. The national ESA delegate, who is the representative of the national ESA funding body in ESA was also mentioned as a source of information on new project

opportunities. Also, participation in networking events on planned satellite missions was mentioned as a method to gather intelligence. The nature and motivation of this activity is highlighted by a statement by Informant C:

> *And we visit these networking events and we look for those acquaintances and contacts and we try to stay alert on what is going to happen. So that when it happens we are not already fallen by the wayside, somehow.* (Informant C).

To summarize, application of environmental scanning systems to gather intelligence was reported by all case firms. Also, business network analysis and detection of commercial and technological opportunities in advance were applied.

4.1.2 Market Driving

Market driving behaviour is associated with changing the rules of the game. Although articulated only by few case firms, the sentiment among the firms was that they are too small players to change the general rules of the game, since there are factors in this particular industry that prevent free competition. Therefore, market driving behaviour is not very strong in their agenda. However, all case firms show some market driving behaviour at project level, i.e., they have at least some experience in the creation of demand and constructing a project. Two different strategies for market driving behaviour were reported and they are discussed in the following.

When determining satellites for science and remote sensing missions, ESA is in dialogue with scientific community. For example, ESA organises 'announcements of opportunity' type of competitions for mission or instrument proposals. And because the measurement data provided by these missions would be applied by scientific community, the performance requirements are also driven by scientist (that are typically working outside ESA in universities and in research institutes). The set performance requirements have a direct impact on the concept and technology needs of those missions. Since many of the case firms are science oriented and strongly networked within the scientific community of their respective fields, there are thus possibilities to participate in project creation, as quoted:

> *…in a way by working with the scientists we're creating those project opportunities. For them to be able to submit scientific mission proposals [to ESA][…] It's about facilitating the scientists.* (Informant A).

Some case firms reported also project construction efforts in smaller scale, outside the 'announcements of opportunity' type of competitions. In practise, it is about convincing ESA that the idea proposed by the firm is worth including into ESA's technology development roadmaps. But ESA is found to be very rigid and slow organisation, and it can last up to five years to have even a relatively small project proposal to turn into an ITT. It was argued that "no firm can count a business on this kind of activity [construction of projects]." On the other hand, ESA has a financing instrument called 'Innovation

Triangle Initiative', mentioned by one of the case firms. This financing instrument provides an opportunity to acquire seed money up to 150 k€ for new technology innovations.

In addition, depending on ESA programme (financing instrument), support from own national ESA funding body may be a prerequisite for the firm to be allowed to submit a tender in the first place. This applies for the so-called voluntary programmes of ESA, which the member states participate voluntarily with budgets that they can define. Thus, in constructing a project it may be necessary to "sell" the idea two times even before the actual competitive tender process: to national funding body to get support for the idea and to ESA in creating the project. One of the case firms reported on a project that they managed to influence in round-table discussions with ESA but later they failed to convince their national funding body to support their tender.

To summarize, actions for relational and functional development to change the rules of the game were reported by all case firms with the motivation to create demand and construct a project. However, due to the smallness of the firms and the specifics of the context, market driving behaviour is not very high in the agenda of the case firms.

4.1.3 Customer Intensity

Among the case firms, two firms identified themselves as purely project oriented and two firms more customer oriented than project oriented in their marketing actions. One of the firms (Firm C) has done both in the past but is now project oriented because it has directed its marketing resources to non-space business. However, the firm considered customer orientation very important as such:

> *I would say that it is very important phase, just exactly this, the very first stage* [independent of any project stage] *in this framework of yours. So that [stage] is the one where relationships and trust are created, and the groundwork. So if one is not involved in that stage, it is then more difficult to get somehow involved during the later stages.* (Informant C).

In general, the case firms do not invest much in promotion, but firm web pages, brochures, and social media were mentioned as promotional means. More specifically, none of the firms is investing notably into the customer relationship during the sleeping period, not even relatively low-cost marketing promotion actions such as newsletters or telephone calls. The reasons for this vary. One firm considered the duration of the sleeping period long and therefore, the uncertainty in the return of such investment was a concern. Also, one of the firms considered the whole concept of customer orientation to be ineffective, since large space firms (customers) would not be interested in relationship with them without a concrete project prospect on the horizon. And although some relational development actions towards customers during sleeping period was reported by one firm, it was limited to *ad hoc* meetings with customers when opportunities open during the daily business. In other words, it was not a conscious or planned marketing process. The only exception in this respect was Firm C, which had invested considerably

in the customer orientation in the past to meet potential customers in advance and to limit discontinuities between projects:

> *And what we do* [or as clarified later: did] *in practise is that we maintain good relationship to ESA with such persons that are important for us, we visit ESA regularly, even if we do not have any reason, we visit anyway. We make up some reason and we wheel and deal issues with them, just to keep up dialogue. And similarly with the customers, these satellite integrators, we regularly visit and spar [them], [and try to find out] what is happening there and how we could be involved and so on.* (Informant C).

In strengthening visceral customer relationship to limit discontinuities, the investment into an active project was considered important by Firm B. Especially, this would be important in view of the potential continuation projects of an on-going (pre-development) project. Also, this investment was considered useful for functional development:

> *But, in a way, some projects are such that they are clearly pre-phases for something, and we try to do those as well as possible so that we can, in a way, be involved in the competition in the later phases, then. So in that sense we invest… in this brand creation and that… so we can maybe do a little extra [work] in one project phase so that we can advance the issue and we learn also ourselves more than what the customer would directly demand.* (Informant B).

In addition to limiting discontinuities (between projects), building up visceral relationship and trust with a potential customer (prime contractor) was considered important also in advance of the first project opportunity to facilitate future cooperation in the preparation of a joint tender:

> *So when you have met, or had a lunch, or visited, travelled to meet a person in a firm and discussed with him, then when he after three years, for example, contacts you "hey, shall we offer together", then it is a wholly different situation to start that cooperation. Else than when he would just be some Mister Somebody from somewhere. In which case [his] email would probably end up in the recycle bin.* (Informant C).

In building up and strengthening visceral relationships, reference projects and corporate branding were considered very important. However, the findings on these aspects are included in resource leveraging dimensions (Section 4.1.4).

To summarize, the case firms have a very varied attitude to relational development towards customers to limit discontinuities. One firm considered it important and another rather unimportant. Currently, none of the firms is doing it very actively, not even using low cost promotional activities. Investing into on-going activities with the motivation to

strengthen the visceral relationship with the customer through credibility and brand creation is applied.

4.1.4 Resource Leveraging

Considering the results along the resource leveraging dimensions of EM, relational development by acquiring project references and customer references was emphasized by the case firms. This was found to be very important in order to be competitive in future project opportunities:

> *Yes, we do [try to get project and customer references]. Of course. To qualify for a project, it's that what the customers are interested in. They want to know reference project that we have, they want to know about our heritage. And for this sake, reference projects and reference customers are crucial.* (Informant D).

Related to these project and customer references, the demonstrated innovation capability was considered important. In some cases, acquiring a certain customer or project reference (and/or the technology to be developed within the project) has been considered so important that the firm has been willing to deliver the project with very small profit or take even considerable risks in entering the project.

> *Yes, if you mean that you can take on a reference project for a very small margin, we have done that. Yes, we have. It's sort of partially funded development. Partially customer-funded development.* (Informant D).

> *It [to prepare a risky tender] is a way to get competence, to get credibility […]* (Informant E).

> *It has happened in the past. I was not yet in the firm even, but we have made a couple of very big and challenging projects, and a little bit in such a way, what I have heard, knowingly, knowing that those [projects] will generate losses, but "let's anyway make these because then we'll get this reference."* (Informant C).

In was also noted that because of the extremely long development time of space missions, it is not only the firm references that count, but the personal references of the key personnel are likewise important:

> *[…] It takes 10, 15 years for a mission to come to, to be developed. So at that, 10 to 15 year, if not sometimes 20-year period, so, overall development, that, you have to take those into account. In other words, that experience is frequently likely to proceed in a particular… May well proceed at, the start of a very particular company.* (Informant A).

In view of non-space business, participation is space business improves the credibility and brand of a firm in general. This is because deliverables for space missions have very high quality requirements or technology needs, which are potentially relevant for this other business. This is of course relevant only if the firm is active in non-space sector, but all the case firms with space business share less than 100% reported that they have applied reference projects in space business to penetrate into other, non-space business areas. This is highlighted by Informant C as follows:

> *[…] Since we anyway operate in this world of reliability requiring systems and in the world of such critical systems, so it [space activity] surely gives us credibility very much. Because such safety critical design and the conceptualization of that somehow originates in space activities, from NASA or so. So it [space activity] is the mother of all mission critical activities, and if we say that we have been there more than 20 years and done this and that with success and we have references which function, satellites that fly with our X* [technology] *and so, that surely gives [us] credibility. So that the customers believe that we can make also their system reliably.* (Informant C).

The presence and giving presentations in scientific and technical conferences and workshops has been adopted by all the case firms. The aim is to build up credibility. This can be considered as a form of guerrilla marketing to leverage resources, because wide exposure in the specific target audience can be achieved with relatively modest budgetary means. For Firm D, this is even in the very centre of their promotional strategy:

> *We participate, […] X* [founding partner of the firm] *participates and some other guys from us, participates often in scientific conferences. Presenting the status of our technical developments. That is the most important promotional activities that we perform. Not very much just visiting [potential customers]. For no reason. That's not very common.* (Informant D).

Participation in conferences, giving presentations, and preparing proceeding papers seems to be such a natural part of the case firms' marketing orientation that not all of the firms even mentioned it when asked about their promotional tactics. But the presence in scientific fora became evident after publication search in internet databases. However, it is not always easy to find the time for this scientific presence:

> *That's actually more difficult than it sounds, because you have to balance the, any particular, debates of any particular content, you have to balance with any deliverables that might be due at the same time. So, it's, I actually find that, can be quite a dilemma […] I realize that as a, what I call a micro organization, I feel disadvantaged compared to the larger organizations.* (Informant A).

Beside presence in the scientific fora, another guerrilla marketing tactic has been newspaper articles that have been written on some of the case firms. However, none of the firms was pursuing for this kind of public relations actively but used the opportunity when it opened. And since these articles have been published only in domestic newspapers, it has had little relevance in space business, since the customers are typically residing in another country. However, the usability of this kind of public relations was acknowledged in view of domestic non-space business and in relational development towards national ESA delegate (funding body).

One of the case firms (Firm D) uses external partners to leverage their resources in own research and development (functional development). And although all of the case firms have external sub-contractors to leverage their resources during the tender preparation stage of a particular project opportunity, the firms reported only a little activity in searching and identifying those partners in advance during the independent of any project stage. It seems that they already have a functioning cooperation network that they are satisfied with, and they have deemed that starting of the scanning activities for partners at later stages is sufficient for them.

To summarize, acquiring project references and customer references was deemed very important for relational development, to improve credibility. This has been done even with increased risk and decreased profit levels. Also, guerrilla marketing by disseminating the results of own projects in conferences is done by the case firms. Another guerrilla marketing method, public relations via newspaper articles was also mentioned, but deemed not to be very effective. Functional development by gaining access to external resources was applied by one firm and for the purpose of own R&D, but the search and networking activities with potential future sub-contractors, although occasionally mentioned, was not stressed by any firm.

4.1.5 Risk Management

As discussed in Section 4.1.4, some of the case firms reported that in order to acquire references they have pursued for project opportunities that had a chance of costly failure. The risk management strategies of such risky tenders are discussed in the associated risk management sections of the later project marketing stages (pre-tender and tender preparation stages). However, no direct results were obtained considering the risk management activities of the case firms during the independent of any project stage. Although not articulated by the informants, however, it is possible that this dimension of EM is incorporated in firms' environmental scanning activities and the resulting processing of the gathered information, in the business network analysis, and in the functional and relational development as part of their normal business. Also, all the case firms reported some sort of project constructing activities along the market driving dimension of EM, i.e., they have applied some constructivist project marketing approaches. Combined with the dominant determinist project marketing approach of the firms, these two approaches form in fact a twin-track strategy (see Section 2.1.4.1). However, risk management did not come up in the interviews as motivation to engage in these market driving activities.

4.1.6 Innovativeness

Most case firms considered innovation capability important for their space business. In most cases at least, this innovation capacity considers technology development. However, there is a significant variation in this aspect among the case firms, depending on the technology field they are operating. For some firms the innovation is the core of their business and *raison d'être* for their existence, since space business is the driver of technology development in their technical domain. This is elaborated by Informant D as follows:

> *It [innovation capacity] is everything. To us it is everything. Because, […] it's, you don't get into this market if you are 10 percent better than X* [large space firm]. *You need to be twice as good or three times as good as them. To get the contract. You need to, so, because of that reason you need to be very innovative. And you also need to be very cost-efficient.* (Informant D).

As discussed earlier in Section 4.1.4, Firm D is investing also in own R&D, based on the detected market needs.

For some other firms the essence in their space business is the tailoring of known methods and technologies for space application or quality control and reliability, not inventing something completely new. In addition, many of the projects in their field are so tightly specified by the customer that there is not much room for innovation.

None of the informants considered that radical innovations, which would change market structures and rules of the game would be possible in their field in space business. The innovations are mostly incremental although sometimes disruptive technologies are invented. However, even the disruptive technologies would not change the market structures, i.e., they would not be radical innovations in business sense. The reason is partially on the political dimension of the space business, which prevents the free competition, as explained by Informant A:

> *Well I think, there is that we're not talking about a free market […] And because it's not, we're not in a free market, there is prejudice against new technologies. Or, trying to, either nationalities try to protect the old ways or different organizations or nationalities implementing different versions of the new technology.* (Informant A).

In practise, this means that sometimes new technologies are adopted only very slowly if there are conflicting national interests, or different nations are supporting, in parallel, the same developments that they consider nationally important. Thus, the rules of free competition are not functioning in these cases.

With the exception of Firm D, which is dependent on its innovation and technology, none of the firms was performing self-financed research and development for functional development in view of future project opportunities. However, the customer contracts were generally seen as an important means for own functional development:

All our projects are, more or less, connected with each other and in a way those earlier projects support those follow-up projects and other things, in a way these projects form some sort of a chain. (Informant B).

To summarize, the innovation through functional development, either by own R&D or in customer financed projects, is highlighted by firms that consider innovation capacity important. As indicated at least by one firm, this is directed by the detected (commercial and technological) opportunities, 'market demand.' No indication came up on innovations or innovative activities regarding relational development.

4.1.7 Summary, Independent of any Project Stage

Above, the empirical results were presented on the marketing practices that the case firms apply to survive and succeed in institutional space project business. The findings along the core dimensions of entrepreneurial marketing are summarised in Table 3. The listed marketing practices describe the holistic view of the empirical findings of all case firms and they do not necessarily describe the actions of any single firm. The refinements with respect to conceptual framework, presented in Section 2.3, have been indicated as sub-bullet points.

Table 3. The marketing practices of the case firms along the core dimensions of entrepreneurial marketing during the independent of any project stage of project marketing.

EM DIMENSIONS	INDEPENDENT OF ANY PROJECT STAGE
Opportunity orientation	▪ Application of environmental scanning systems (external networks) to gather intelligence, via - Participation in conferences and workshops - Regular dialogue with customer representatives - National ESA delegate - Participation in networking events ▪ Business network analysis using obtained intelligence ▪ Detection of commercial and technological opportunities using obtained intelligence
Market driving	▪ Relational and functional development to change the rules of the game ▪ Creation of demand and construction of a project via - Formal ESA financing instruments for new project ideas ('Announcement of opportunity' competitions, Innovation Triangle Initiative, …) - Project creation through scientific community - Convincing ESA to include own idea in the technology development roadmap - Convincing national ESA funding body to support own project idea
Customer intensity	▪ Relational development towards customer to limit discontinuities[1] via - Ad hoc and/or planned meetings with old and potential customers ▪ Relational development through credibility and brand creation (strengthening visceral relationship) via - Additional investment into an on-going project for the customer - Promotion
Resource leveraging	▪ Relational development through credibility and brand creation (to compensate for liability of smallness) via - Project references, customer references - Demonstrated innovation capability - Presence and presentations in conferences and workshops - Personal project references of key personnel - Use of space domain references for non-space business ▪ Relational development through guerrilla marketing via - Presentations in conferences and workshops - Public Relations (newspaper articles) ▪ Functional development to gain access to external resources via - Own R&D, also with partners - Networking with potential subcontractors
Risk management	▪ Application of environmental scanning systems (external networks) to gather intelligence? ▪ Business network analysis? ▪ Functional and relational development to reduce risks? ▪ Twin-track strategy
Innovativeness	▪ Detection of commercial and technological opportunities ▪ Functional development via - Own R&D - Preceding customer projects

[1] Large discrepancies exists in orientation between case firms

4.2 Pre-Tender Stage

4.2.1 Opportunity Orientation

Once the firms have detected and become aware of a particular project opportunity, they use their environmental scanning systems to gather intelligence on that opportunity to understand it better. Often the projects are related to each other, and intelligence can be gathered through the existing project networks of ongoing projects. Also, in ESA technology development projects, the contact persons in ESA are an important source of information, as described by Informant B:

> *Yes, we also ask these ESA contact persons what is the status and when it [the ITT] is possibly going to come out and we then discuss and ponder these [project opportunities] also with [our] cooperation partners.* (Informant B).

If a contact can be established in these technology development projects with the correct persons of ESA, it is often possible to improve the understanding of customer expectations with respect to the future ITT. This considers the viewpoints, applied technologies, and what issues should be stressed in the tender. All this information is not necessarily included in the ITT, once it is published, and is therefore valuable.

In the pre-tender screening, the firms evaluate whether the opportunity is worth pursuing or not. In this screening, two evaluation parameters seem to be dominant among the case firms. First, some of the firms make the decision to follow an opportunity (or not) based on the technology fit of the opportunity with their competences and interests. Some of the firms, on the other hand, emphasise the threats, i.e., how strong is the competition and what are own winning chances. This also requires very good understanding of the project network with respect to competition:

> *I would evaluate the threats that, or the competition, in terms to, evaluate whether it's worth pursuing […]. So that requires a good knowledge of what they, what other teams may be evolving or may already be considering, putting in a competitive bid.* (Informant A).

Some of the firms emphasise both, own competences and own competitive position compared to others, as elaborated by the Informant D and Informant E:

> *I think we evaluate the feasibility. For us to make a good job. That is, how competitive we are. Given the portfolio of development that we have. If we learn about a coming instrument or activity, we try to see if there is a match, with what we can offer and what is needed. And also the level of competition. Can we win?* (Informant D).

> *Well, we see if the opportunity is related with what we are doing, if we have the competence, and if we need to get competence from another partner, this is the main*

points that we use to evaluate if it is worth pursuing. And also if there is strong competition, because if the competition is very strong then it's not worth [following]. (Informant E).

Besides analysing the competition, project network analysis is also important in identifying potential partners to provide complementing competences and to form a competitive team to prepare a tender. And one additional aspect of the project network analysis is the political dimension, e.g., is own country participating in that particular space mission or technology development programme of the ESA or would own national ESA funding body support the tender (if support is required). Or would a partner from a particular country be evaluated positively by the customer. It seems, however, that during the pre-tender stage the activities to form tendering consortia and preparatory actions for tender preparation are in general not very systematic among the case firms.

To summarize, environmental scanning systems are used to gather intelligence on the identified project opportunity and to facilitate project network analysis. Also, pre-tender screening is performed to evaluate the opportunity value: technological fit of the project with own interests and competences on one hand and own competitive position against competition on the other hand are the main evaluation parameters.

4.2.2 Market Driving

With the exception of official ESA methods to gather supplier input, so-called round table discussions, none of the case firms reported market driving behaviour, e.g., influence a project opportunity or co-create a project with the customer. However, one of the case firms mentioned that when conducting a pre-study for a customer, the output documentation was used as reference documentation for further development phases. Thus, the implementation phase of the pre-study could be considered as pre-tender stage of the follow-up contract. Thus some form of project co-creation with the customer takes place. Possibly related to this kind of development, some of the informants claimed to know that other firms sometimes influence project opportunities. This materialises in the tender preparation stage, when the ITT seems to favour a particular organisation:

[…] Because often if we are on the same level as our competitors we deem that we can win but, sometimes it's, you can learn, you can read between the lines and see that it's going to be [...]. When you read from the statement of work that it's, this activity is aimed for someone special. That it's biased by one competitor [...]. (Informant D).

[…] If we detect that an ITT looks very much like it had been prepared according to a solution, you know, of a competitor, so in that case we do not necessarily… If it is crystal clear that somebody else is going to win [the contract] then we do not even prepare a tender. (Informant C).

4.2.3 Customer Intensity

Similarly than in the independent of any project stage, building up visceral relationship with the customer during on-going projects was considered important in view of identified future project opportunities, related to the on-going project.

To facilitate networking and exchange of information between the customer and the potential suppliers, the ESA and the system integrators often arrange an industry day for a particular space mission for the actors to meet. In addition to self-arranged meetings with the potential customers and partners, these industry days can be useful also in building up visceral relationships. However, building up these relationship can take very long time, as elaborated by Informant C:

> *I: Do you perform any preparatory actions after you have detected a project opportunity but before the ITT has been published?*
>
> *R: […] In some cases yes, if there is a big enough catch swimming there, then we surely spread nets well in advance so that we go to meet potential future customers and we sit together, or at least we try to, to meet [potential subcontractors] […] or at least we contact them. And an example is one such project, there was such an industry day for it, such a purchasing day was organised, was it X* [number] *years ago. And then there [we] saw those opportunities, we met potential customers and other things, it is such a long process that we met all potential parties at least twenty times, then the ITT was opened and then we won it. But all this takes [several] years.* (Informant C).

4.2.4 Resource Leveraging

The lack of a certain resource is not prohibiting for the case firms to pursue a project opportunity. None the firms has abandoned a project opportunity due to a lacking resource *per se*, if the opportunity had been interesting otherwise. Extending own resources is especially frequent for lacking competences. One of the case firms was emphasising own functional development, e.g., targeted hiring of personnel with the right competence as means to extend current competences, if there is sufficient time left before the publications of the ITT. In general, however, partnering is the dominant method to extend own resources, as illustrated in the following:

> *I: Have you had actions to extend own resources, quantitatively or qualitatively, for example?*
>
> *R: Yes, [with] partners or through networking, by taking partners into that project, and [partners] from areas that are needed in that project, [from areas that] maybe we don't have the know-how, so we have tried to find such partners.* (Informant B).

R: If you don't at that point [that you have detected a future project opportunity] have all the resources within your company, has this been a reason to abandon a project opportunity?

I: It is if you cannot find them [missing resources] in another partner. But, normally we try to find a partner, if we don't, then we, yes, we don't go ahead. (Informant E).

In general, partnering and networking are very natural for this business, as stated by Informant A:

[…] Networking is almost a natural part of day to day business, whether you're tendering or not. (Informant A).

But obviously, nearly all the time these opportunities are team structured anyway […] Informant A.

Furthermore, the structure of the tendering team consortium is an important competitive factor:

So, for, so, you can make that [tender] more attractive, and you can manipulate the team accordingly, to make that [tender] more attractive. (Informant A).

In addition to form a tendering consortium that is competitive in terms of competence, there may be also political reasons that are considered when selecting partner organisations for the consortium:

If there is a corner that we think somebody else would do better than we [could do], and there is still something interesting there for us, then we rather think of partnering with someone so that we would prepare a tender together. This is one reason to submit a tender together. The other [reason] is that if the geo-return has to be distributed somewhere, so that it would be an interesting consortium [for the customer] in that way. (Informant C).

In fact, for the firms that reside in ESA member states that are either small or have relatively low competitiveness in space sector, the issue of geo-return may be much more important resource leveraging factor than was apparent in preparing for the interviews of this study. A hint of the importance was received in the introductory questions of one of the interviews (due to the political sensitivity of this issue, the informant has not been identified here):

I: Do these political aspects, such as geo-return and others, do they influence in any way this [competitive position], for example, do they improve or decrease your chances then in these [tenders]?

R: Of course it improves […] it is the positive side in a way so that if you think, space business, it has its pros and cons, well it [space business] surely helps to get large projects from large customers. That they [large customers] in a way are enforced to buy from here [this country]. I don't believe that… Maybe some [customers] would buy something [without geo-return system] but X [technology] *projects would not come to X* [this country] *in this scale if it would not be compulsory, in a way. This does not mean that it is somehow unpleasant for the customers that they have to buy from here, but it is surely the consequence of that [geo-return] system, if I tell it like it is.*

In addition to geo-return as leveraging factor, ESA often applies special clauses in its technology development projects that favour SMEs. Although these special procurement policies favour also the case firms in such projects (compared to larger, non-SME firms), and thus function as leveraging factors to compensate for the liability of smallness, this issue did not come up in the interviews.

According to project marketing literature, one of the methods to increase the credibility of the tender is to include a more credible or larger firm in the consortium. However, it does not seem to be an important factor for the case firms, in general, when they build up a tendering consortium. Only one of the case firms has applied this method.

The mobilization and adaptation of the internal and external network in advance (i.e., before ITT publication) varies between firms. Most of the firms start preliminary discussions on the foreseen project opportunity with their established partners that they are regularly dealing with, as exemplified below:

So, when something like this does come along, I guess, yes I do warn the relevant people [in partner organisations]. And, so we are forewarned and forearmed because of our experience and, then we'll take it from there. (Informant A).

Of course [we do] this networking [as preparatory action] and as we run around in that same business field […] through that somehow we try then, together with cooperation partners, we try to ponder together the future project. (Informant B).

Although preliminary discussions are often initiated in advance with strategic cooperation partners in advance, the preparatory actions do not typically advance further. Thus most of the teaming actions are done only during the tender preparation stage (see Section 4.3.4).

In the applied conceptual framework, one of the characteristic of entrepreneurial resource leveraging is the use of cost effective and innovative methods. This is not dominant among the case firms in general, although few examples of this kind of behaviour were detected. First, Firm A applies the flexibility of the entrepreneur to acquire additional resources for tender preparation:

And I do it myself, is that, when it comes to proposal opportunities, that, a good part of the day, of the normal working day you work with your, working on, already one project. And then the pre-tender or proposal work is actually, is the unpaid work done in the evenings. And, that is where we can be more flexible, and, this is the advantage over a large company. And we're subsidizing our time, or diluting our, diluting, in effect, the total income, if you compare to how a large company works. But that's the flexibility. (Informant A).

In addition, Firm B performs very close cooperation with a neighbouring university. This enables the firm to have highly qualified external personnel resources in a flexible and cost efficient manner, as described by Informant B:

Yes this is probably our, in a way important in our operation. We have good connections to the university where we can then, skilled personnel can come to us to work on hourly basis, or then we can also get… students to do some areas in a project. In that way we can get new knowledge and the latest know-how and also in a cost efficient manner, always corresponding to the actual need. (Informant B).

To summarize, all the case firms follow a project opportunity regardless of their potential own resource limitations, if they deem the opportunity interesting otherwise and they are able to extend their resources. Partnering is the dominant method to extend the lacking resources, although functional development of own resources is also used. It was discovered that in this specific context, the country of origin of a firm (either of the case firm or of the sub-contractor) is also a potentially important resource due to the geo-return system of the ESA. However, improving own credibility through partnering with a more reputable or bigger firm is not a common tactic. Some preliminary actions were reported with respect to mobilization and adaptation of internal and external resources. Only some firms apply cost effective and/or innovative methods for resource leveraging.

4.2.5 Risk Management

As discussed in Section 4.2.4, the case firms use partnering to leverage resources and to compensate for their resource scarcity. In addition, partnering can also be used to manage own risk, since a partner would take the responsibility for its part of the work in a joint project. This was also acknowledged by one of the case firms, which considered that risk is shared in a project consortium. However, the other case firms did not see risk sharing as a motivation for partnering during pre-tender stage. On the contrary, Informant D considered partnering to even increase the risk, not to reduce it:

You can never reduce the risk by teaming up with someone. That's only additional risk. Compared to when you have control of things by yourselves. (Informant D).

As discussed in Section 4.2.1 (Pre-Tender Stage, Opportunity Orientation), pre-tender screening is applied by the case firms to evaluate opportunity value. One of the main

parameter to evaluate is the competitive threat, i.e., how strong the competition is and what are own chances to win the project contract. This considers the risk of losing the opportunity cost, i.e., the risk of following an opportunity that will eventually not materialise into a contract. This has been discussed more in detail in Section 4.2.1 and not repeated here. The evaluation of actual project risks (i.e., risks during the implementation of a project) did not come up in the interviews.

4.2.6 Innovativeness

The innovativeness dimension of EM during the pre-tender stage was discussed in conjunction with resource leveraging dimension in Section 4.2.4 (Pre-Tender Stage, Resource Leveraging), as one of the case firms was using external resources in a creative way to achieve flexibility of personnel resources in a cost efficient manner. Otherwise, the innovativeness of a firm at this stage is project and technology bound, and no general schema or process for innovativeness could be identified in the empirical data. However, one method to produce innovations that are targeted for a certain project opportunity is to invest into R&D, i.e., functional and relational development, to prepare for the future project opportunity, as explained by Informant D:

> *We do what we can to direct our development activities. And to spread knowledge of our on-going activities [to customer(s)]. So we can be competitive… It's of course a matter of how much time it is between you learn from an activity, learn that something is going to happen and the ITT is out. If there is only a couple of months, you cannot do much. But if it's like in X* [a satellite mission] *case, it's a couple of years then of course you can do a lot of preparatory activities, before the ITT [will be published]*. (Informant D).

As discussed earlier, Firm D is the only case firm that seems to make significant own investments to prepare for future opportunities. The other case firms are dependent on customer-financed developments, which have limited flexibility from case firm's perspective, especially if the time is short. No other aspects related to innovativeness dimension during this project marketing stage came up in the interviews.

4.2.7 Summary, Pre-Tender Stage

Above, the empirical results were presented on the marketing practices that the case firms apply during the pre-tender stage of project marketing to survive and succeed in institutional space project business. The findings along the core dimensions of entrepreneurial marketing are summarised in Table 4. The listed marketing practices describe the holistic view of the empirical findings of all case firms and they do not necessarily describe the actions of any single firm.

Table 4. The marketing practices of the case firms along the core dimensions of entrepreneurial marketing during the pre-tender stage of project marketing.

EM DIMENSIONS	PRE-TENDER STAGE
Opportunity orientation	▪ Application of environmental scanning systems (external networks) to gather intelligence, via - ESA contact persons ▪ Project network analysis ▪ Pre-tender screening to evaluate opportunity value, via - Technology and competence fit - Competitive position - Political considerations - Availability of support from national ESA funding body, if required
Market driving	▪ Co-development of a project in pre-development projects, via - Execution of pre-studies - Round table discussions
Customer intensity	▪ Relational development towards customer to limit discontinuities, via - Formal events for networking and information exchange - Self-arranged meetings
Resource leveraging	▪ Identification, mobilization and adaptation of internal and external resource combinations to compensate for resource scarcity and lacking competences, via - Functional development, incl. targeted hiring of personnel - Preliminary partnering (considering structure of the team and country of origin of team members) - Application of cost effective, flexible and innovative methods to extend resources
Risk management	▪ Pre-tender screening to evaluate the opportunity cost risks of the opportunity, via - Evaluation of competitive threats ▪ Mobilization and adaptation of internal and external resource combinations to improve flexibility and reduce/share risk, via - Risk sharing between consortium members[1]
Innovativeness	▪ Development, mobilization, and adaptation of innovative internal and external resources, potentially in an innovative way, via - Functional development through targeted R&D - Mobilization and adaptation of external resources

[1] Large discrepancies exists in orientation between case firms

4.3 Tender Preparation Stage

4.3.1 Opportunity Orientation

Once the ITT has been published, the case firms evaluate the opportunity value and make the go/no-go decision, i.e., whether they start to prepare a tender or not. In this evaluation and making the go/no-go decision, the evaluation issues reported by the case firms were partially similar, although there are also significant differences between firms. The main evaluation criterion is the technological fit between own competences and the requirements of the project on one hand and the competitive position and chances of beating the competition on the other hand. This was elaborated as follows:

It [the evaluation criterion of the firm] is the same [as in the pre-tender stage]. Can we win? If we have a reasonable chance of winning, then we do it [prepare a tender]. (Informant D).

We read the statement of work and we see if we have the competence and if we need a partner. And then if we think, if we have the technical conditions to prepare the tender, then we begin to prepare the tender. (Informant E).

Another major issue in the evaluation of the opportunity value is the risk. This evaluation parameter is discussed in conjunction with the risk management dimension of EM in Section 4.3.5. Surprisingly, the financial lucrativeness of the project is not a strong evaluation criterion, at least not for all case firms. Some of the case firms considered the ESA projects very limited in their financial lucrativeness in general. Therefore, as long as the opportunity is not evaluated to generate losses, the profit making potential is not considered as a strong discriminating factor. This was explained by Informant C as follows:

[…] It [ITT] is evaluated in a way that, well first if, if by chance some price ceiling has been set, and then looking at the work amount, so are those [two parameters] in any relation, because sometimes they [price vs. work amount] are really ridiculous. So in a way you know when you submit a tender that it will be a loss-generating project, so in that case it is not worth tendering at all. (Informant C).

Well these [space projects] are not lucrative as a starting point, so those are not, there are no super profitable projects coming up. So […] one does not really get rich in such a way as when […] you go to other industry domains where you potentially can charge much more because there is really something, more added value to provide [to the customer]. Not with fixed profits [like in space projects] but it is priced according to the [customer] value. (Informant C).

The limited profit margins is ESA business, and the fact that project profitability is not a driving evaluation criteria became apparent also in the following quotation of Informant D:

I: What about the profitability [as evaluation criterion of a project opportunity]?

R: That's a good one. But, to my knowledge so far, we have made a go decision against better knowledge about profitability. But we have not, that has never stopped us so far. Because, like you know in ESA projects, the budgets are also often very, almost always very constrained. And you cannot survive on ESA projects but, yeah. You need to, hope every time that this will not go so bad. (Informant D).

On the other hand, at least the budget of a project is considered in the evaluation:

> *I: Once the ITT has been published then one makes the final decision whether or not to start the tender preparation. What aspects do you consider in that decision?*
>
> *R: Yes of course these financial [aspects], so how [does it] look like, what is the order of magnitude of the ITT and what would be our share of that and what kind of risks there are for us, there would be potentially for us through that project.* (Informant B).

Additional evaluation criteria that several case firms mentioned was the possibility for continuation projects. In other words, the possibility for functional development and the possibility to participate in the co-development of other project opportunities through the actual project. For this kind of possibility, it is even justified to prepare a tender for a project that is clearly under-priced and would generate losses. The same applies if a certain technology would be developed within the project, a technology that the firm would like to have. In this case, it is justified to make small losses, because the project can be considered as firm's own technology development that is partially financed by the customer. This is elaborated in the following:

> *For example, X* [a space mission] *allocations to the instruments were too small, it was, compared to what ESA themselves judged as adequate funding, for precursor studies, the [financial] allocations for the instruments was ludicrously small. But, given the outcome that it was a program where it as definitely going to go into development, it's worth, it was worth the risk. And even knowing that it'll be several, could be several years before that opportunity occurs, it was still worth the risk. So it [financial lucrativeness of a certain project] is not, that's what I mean by, it's not the be all and end all. It's just a consideration.* (Informant A).
>
> *But, we have done so that if there is a technology that we want, [a technology] that we have some know-how of, then, even if it would be known that the project will be technically very challenging and probably will end up by generating losses, despite that we have prepared [a tender]. But in these cases [it] has been a small project in our scale, though, we do not take any massive risks in that sense.* (Informant C).

As discussed already in Section 4.1.4 (Independent of any Project Stage, Resource leveraging) more in detail, the reference value is also considered in the evaluation.

In addition, the following evaluation criteria were also considered by at least one case firm: availability of personnel resources, new networking opportunities, benefits for other (non-space) business areas, and improvement of own competence (learning).

To summarize, when the firms evaluate the opportunity value and make the go/no-go decision, the main evaluation criteria are technological fit between own competences and the requirements of the project, competitive position, and project risks. Additional

evaluation criteria are; possibilities for continuation projects, reference value of the project, availability of personnel resources, new networking opportunities, benefits for other (non-space) business areas, and improvement of own competence (learning). Financial lucrativeness is not a major evaluation parameter, as far as the project is estimated to be doable within the budget allocation. This is included in the 'project risk' estimation.

4.3.2 Market Driving

As mentioned, the degrees of freedom for market driving behaviour are limited in ESA tenders, and it is very difficult to de- or reconstruct a project. This applies both when preparing a tender directly for ESA or for a prime contractor in a satellite project, since the evaluation principles are the same. The evaluation criteria of the tenders are fixed, and one of the evaluation criterion is compliance to the technical requirements. The difficulties in preparing a creative tender is elaborated in the following:

> *I think that in such an ESA ITT that approach [preparing a creative tender] is quite weak strategy in such a way that it [ITT] anyway has the items what you have to [fulfil], which are graded or evaluated, and on that basis the technical evaluation is generated [by ESA]. So, compliance to the requirements is one point of them [evaluation criteria] and I think that it is really, if you want to get good grades then [in evaluation] you have to make the thing quite accurately according to the rules.* (Informant C).

Despite the fact that a tender has to meet the requirements of the ITT, some of the case firms have shown some market driving behaviour by including additional options, i.e., extending the basic tender.

> *I: Have you ever made a creative proposal, i.e., offered something else that was actually asked for in the ITT?*
>
> *R: Not in that way directly, we have not offered anything else [than asked for in the ITT], but we have included some kind of options, included offers that here is the basic package that you have asked for but we think that these additional things could be connected [to the ITT] and we could do also these [additional things] then separately.* (Informant B).
>
> *R: Yeah, we did occasionally. But not, not instead of writing a compliant proposal, but in addition to a compliant proposal. We made, let's say an optional. That we have done but we have never done it, as itself, instead of writing of [compliant proposal]. But in addition to writing a proposal to compliance.* (Informant D).

4.3.3 Customer Intensity

Once the ITT has been published, it is allowed to contact the customer only via official channel, i.e., by fax. This way, technical questions or clarification requests can be sent, and the answers will be provided to all potential suppliers who have expressed (by fax) their intention to submit a tender. It is forbidden to contact the customer unofficially, and the interviews revealed no deviating behaviour from this rule. Thus, there is not really a customer intensity dimension during the tender preparation stage of the project marketing.

4.3.4 Resource Leveraging

The findings on the innovative methods in resource leveraging during the pre-tender stage apply also here (see Section 4.2.4). Partnering (i.e., extending own resources with external ones) for a particular project opportunity starts, in ideal case, during the pre-tender stage. As discussed in Section 4.2.4 (Pre-Tender Stage, Resource Leveraging), many of the firms indeed start to discuss the identified project opportunities with potential cooperation partners, at least with their strategic partners that they regularly cooperate with. In practise, however, the teaming and consortium building process (i.e., mobilization and adaptation of internal and external resources) has not been completed or even started in some cases when the ITT is published. This was elaborated by Informant C as follows:

> *So in ideal case that [partnering] takes place before [ITT publication], but often in practise it takes place in the last minute when the ITT has already been open for two weeks and then we wake up like "help, here is this [ITT] and should we submit a tender and we need a partner" and then we were in a terrible rush. This is how this goes in real life anyway. And then we put together something in a terrible hurry. But it would be better if we could think of it [partnering] in advance because otherwise there will be such a rush.* (Informant C).

4.3.5 Risk Management

The evaluation of tender value and making the go/no-go decision were discussed in Section 4.3.1. (Opportunity Orientation). As discussed, the main evaluation criteria are the technological fit between own competences and the requirements of the project and own competitive position. In addition to these, another major evaluation criteria is the risk of the opportunity. In this risk evaluation, one of the case firms follows a formalised risk assessment procedure for all larger projects to quantify both technology and schedule risks. If a certain threshold is achieved in this quantification, no tender will be prepared. Another case firm has more intuitive evaluation process of risks and it is based on the commitment and state of will of the tendering consortium, as elaborated in the following:

> *But probably the main point, however, is the functioning of the network and how committed the network is to join, and that is probably it, such a feeling if this is such a team that can pull the project through respectably.* (Informant B).

As discussed in Section 2.2.5 (Entrepreneurial Marketing, Risk Management), entrepreneurship is associated with willingness to take risks (Dickson, Giglierano 1986, Palich, Ray Bagby 1995, Stewart Jr., Roth 2001). Indeed, all the case firms explained that they have been engaged in risky tenders, i.e., in tenders that have a possibility for a costly failure. This has been discussed more in Section 4.1.4 (Independent of any Project Stage, Resource Leveraging). One of the firms even considered all tenders being risky:

> *A possibility of costly failure is there every time. There is always a possibility of a costly failure. I think. We are never safe.* (Informant D).

In order to limit their risks, the case firms apply several different approaches. Sharing the risk with partners is one method applied by some of the case firms, although one of the case firms considered partnering only to increase the risk. Thus it did not apply that method for risk limitation purposes. Careful evaluation of the risks and their impact is another method to limit the risks, as explained in the following:

> *The risks can always materialise. So we have, indeed, prepared risky tenders. But if it looks like… So it depends on what the impact is and what the probability is so that if the probability is high but the impact is low so in that case it is not necessarily a showstopper. But on the other hand if the probability is high and the impact is high then we do not go for that.* (Informant C).

Also, acquiring more information of the project and the ITT is also used as a method to mitigate risks, as described in the following:

> *I: Have you tried to limit your risk or share it, for example, by sharing it with partners or by acquiring additional information through networks on that particular project?*
>
> R: *Yeah, just asking [the customer] by fax, through this formal channel. So in that stage we do not contact the customer through other means because it is not allowed, so we have been quite obedient in this since we have not done that. But if we have any henchmen, which acquire intelligence via any other channels, then we ask them how this is and how this goes in reality, and so on.* (Informant C).

And finally, one method to reduce the financial project risk is to de-scope the tender, as explained by Informant E:

> *[…] So when we do [apply] option is because we are reducing the work they [customer] asked, and then the option is, what they will pay more to get the full work.* (Informant E).

In addition to the actual project risk during the implementation of a project, preparing a tender is also a risk because much work must be invested in the preparation. In other words, there is the risk that the opportunity cost will be lost. The case firms have diversified approaches in engaging into tender preparation. Some of them are very strict that they do not start a tender preparation if they estimate their winning chances low against competition. However, some of the case firms have experience in engaging tender preparations even when their winning chances have been lower than usual. Here, dividing the tender preparation work with partners was indicated as one method to limit own risk, because own preparatory work is reduced. Also, participation in a tender preparation as sub-contractor limits the risk compared to tender preparation as the prime contractor, because the amount of preparatory work is much smaller. In addition, it came up that participation in a tender preparation as part of a consortium can benefit the firm even if the competition is lost, because the participation benefits networking and learning:

> *Well, if there are other cooperation partners, then we have the chance to get to know them, how they do and see things and what is their business and we have the chance to learn those things and if it [customer] is, in a way, from other field than our main business is, then we have a chance, kind of, to see also other businesses at the same time [with the preparation].* (Informant B).

To summarize, evaluation of risks is one of the main factors in the evaluation of opportunity value when making the go/no-go decision. For the risk limitation, partnering (sub-contracting), acquiring more information through external networks, careful risk evaluation, and de-scoping the project through options are applied by the case firms. Besides the actual project risks, also the risk of lost opportunity cost in tender preparation is a risk.

4.3.6 Innovativeness

The aim of the tender preparation stage of project marketing is to prepare a differentiated tender that can beat the competition. For this purpose, innovativeness dimension of EM is important. However, the associated functional and relational developments of the tendering firm have already taken place in earlier project marketing stages, and discussed in appropriate sections of this chapter. In the tender preparation stage, these innovative functional resources, internal and external, are combined, potentially in an innovative way, as discussed in conjunction with resource leveraging dimension in Section 4.2.4 (Pre-Tender Stage, Resource Leveraging).

4.3.7 Summary, Tender Preparation Stage

Above, the empirical results were presented on the marketing practices that the case firms apply during the tender preparation stage of project marketing to survive and succeed in institutional space project business. The findings along the core dimensions of entrepreneurial marketing are summarised in Table 5.

Table 5. The marketing practices of the case firms along the core dimensions of entrepreneurial marketing during the tender preparation stage of project marketing.

EM DIMENSIONS	TENDER PREPARATION STAGE
Opportunity orientation	▪ Evaluation of opportunity value and making go/no-go decision - Technological fit - Competitive position - Project risks - Possibilities for continuation projects - Reference value - Availability of personnel resources - Networking opportunities - Benefit for other business areas - Possibilities for learning
Market driving	▪ Extension of the project via - Offering add-ons
Customer intensity	
Resource leveraging	▪ Identification, mobilization and adaptation of internal and external resource combinations to compensate for resource scarcity - Functional development - Partnering (considering country of origin) ▪ Application of cost effective and innovative methods
Risk management	▪ Evaluation of opportunity risks and making go/no-go decision via - Formalised risk assessment procedure - Assessment of the impact of the risk - Intuitive evaluation of risks - Evaluation of winning changes ▪ Coordination of internal and external resource combinations to improve flexibility and to reduce/share risk via - Sharing project and tender preparation risks with partners [1] - Participation in tender preparation as sub-contractor (instead of prime contractor) ▪ Application of environmental scanning systems (external networks) to gather intelligence ▪ De-scoping of the project
Innovativeness	▪ Coordination of innovative internal and external resources, potentially in an innovative way

[1] Large discrepancies exists in orientation between case firms

5 Summary

The objective of this study is to improve the understanding of project marketing from entrepreneurial and SME perspective. The associated research problem is: *How do project supplier SMEs implement marketing to survive and succeed in project business?* This question has been divided into sub-problems (*what? how? when?*) and studied in the context of institutional space business in Europe.

Based on the conceptual framework that was developed using existing literature, the research problem has been studied along two dimensions: along the temporally and logically separated stages of the project marketing process and within each of these stages, considering the core dimensions of entrepreneurial marketing. The aim of this chapter is to summarise the obtained empirical results, presented in Chapter 4 and discussed in the next chapter. The identified marketing practises that the project supplier SMEs apply to compensate for their resource scarcity and other deficiencies have been tabulated in Table 6. Also, these marketing practises are elaborated more in detail below. These marketing practices describe the holistic view of all case firms and they do not necessarily describe the practices of any single firm.

5.1 Independent of any Project Stage

During the 'independent of any project' stage of project marketing process, the case firms apply their environmental scanning systems to gather intelligence, in order to (1) detect and recognise commercial and technological opportunities, (2) anticipate demand, (3) perform business network analysis. The main methods in this environmental scanning are participation in conferences, symposia, and workshops, dialogue with customer representatives, interaction with own national ESA delegate, and participation in official networking events arranged by the ESA and satellite prime contractors.

The case firms have some relational and functional development efforts to create demand and construct projects (to change the rules of the game), i.e., they follow constructivist approach in project marketing terminology. Various different methods were reported. However, these constructivist actions are only occasional and the mainstream is deterministic approach.

The case firms perform some relational development activities, such as visits and meetings, to build visceral relationships with current and former customers (to limit discontinuities) and with potential customers (to acquire the first project). Typically, however, the case firms do not perform these actions in a systematic way. Participating in the projects and in scientific and technical conferences and symposia with other actors of their specific technical domain are the main methods for this kind of relational development. This despite the fact that the importance of targeted relational development actions is acknowledged by some case firms, especially towards the central actors such as system integrators and the ESA. However, additional investments into on-going projects for the purpose of relational development was reported, in case further project prospects are anticipated from the same customer.

The importance of customer references and project references is widely recognised among the case firms in creating credibility and improving corporate brand, and efforts are

made to obtain these references even with increased level of financial risk. For the same end, the case firms are present in scientific and technical conferences and symposia and practise guerrilla marketing by giving presentations and publishing conference proceedings papers. Project references obtained in the space business are also used to enter other, non-space business areas.

The on-going customer projects are the main source for functional development. Self-financed R&D does exist but is seldom. The differences between firms are large in this respect, as is the importance of innovation capacity in their specific technical domain. Typically, functional development actions to gain access to new external resources through networking are sporadic.

The risk management actions of the firms remain unclear. They are potentially embedded in the application of environmental scanning systems (intelligence gathering) and business network analysis as well as in the functional and relational development as part of opportunity detection and market driving activities, but this was not revealed. And although anticipated in the conceptual framework, there is no evidence of market experimentation. Since some constructivist marketing actions are performed in addition to deterministic marketing actions, which are the mainstream, twin-track strategy for risk reduction exists to some extent. Finally, no data was retrieved considering the innovativeness in relational development of the case firms.

5.2 Pre-Tender Stage

During the 'pre-tender' stage of project marketing process, the case firms apply their environmental scanning systems to identify[7] a project opportunity and to gather intelligence and to perform project network analysis on this opportunity. Based on the intelligence and project network analysis, they perform pre-tender screening and evaluate the opportunity value and define if they will pursue the opportunity or not. The main evaluation parameters are (1) technology fit between the competence and technology of the firm and the requirements of the project opportunity; (2) the competitive position of the firm against competition, i.e., competitive threats and chances to win; and (3) political considerations (eligibility for the project). If required, they try to secure the support of their national ESA funding body.

Considering market driving behaviour to change the rules of the game, co-development of a project seems possible, at least when it is bound to on-going pre-development projects. However, there was no evidence that relational development, which was included in the conceptual framework would be useful in project co-development.

Compared to previous stage (independent of any project), case firms' relational development actions towards system integrators and ESA are more active. The methods include formal, customer-arranged networking events and self-arranged meetings and visits.

Based on the evaluation of the project opportunity, the case firms perform functional development to leverage their scarce resources. Methods include own R&D, hiring new personnel with required skills, and preliminary partnering in view of the identified project

[7] "identify" in a sense to "became aware of."

opportunity. In this partnering, at least one firm is using innovative, cost effective and flexible methods to extend their resources. Some of the firms use partnering also as a method to share and reduce the risk and to improve flexibility. Sometimes, political aspects and constrains are also considered in selecting the cooperation partners.

5.3 Tender Preparation Stage

During the 'tender preparation' stage of project marketing process, the case firms evaluate the opportunity value and make the go/no-go decision, i.e., they decide whether they are going to prepare and submit a tender or not. Sometimes the tender preparations are started but aborted before tender submission. Environmental scanning systems (external networks) are applied to gather intelligence on the project opportunity and on the project network, including competition. The main evaluation parameters are (1) technology fit between the competences and technologies of the firm and the requirements of the project; (2) the competitive position of the firm against competition (chances to win); and (3) the project risks. Other evaluation parameters include the availability of personnel resources and various strategic considerations: (1) possibilities for continuation projects (functional and relational development), (2) reference value (relational development), (3) networking opportunities (relational development), (4) benefit for other business areas (relational and/or functional development), and (5) learning (functional development).

Market driving actions to change the rules of the game by de- or reconstructing a project did not come up in the empirical data, although anticipated in the conceptual framework. However, modest actions to market driving behaviour was reported in the form of project add-ons to extend the basic tender that conforms ITT requirements. Related to this, one firm mitigates their project risk by de-scoping the basic tender, and providing the full extend as an option with additional price.

Partnering, potentially started in earlier stages, is completed during this stage. If not yet done, partners and other external resources and internal resources are identified, adapted, and mobilised for tender preparation. Political aspects and restrictions may also influence the partnering. Partnering is typically associated with functional development, since internal resources are extended with external ones. Also, some firms, although not all, use partnering as a method to share and reduce the risk and to improve flexibility. However, the firms do not, typically, select their partners for the purpose of relational development, e.g., to gain status transfer effects. At least one firm applies innovative methods in extending their resources to increase their flexibility and cost-efficiency.

To manage their risks, some case firms use a formalised risk assessment procedure and assess the likelihood and impact of the risk. Some other firms act more intuitively. Also environmental scanning systems (external networks) are applied to gather intelligence for the purpose of risk management.

5.4 Business Network

Figure 3 presents a sociogram of the business network, based on the results of this study. The most relevant actors for the focal firm are ESA, system integrators (if applicable), project partners, R&D partners for self-financed research and development, national ESA

funding body and national ESA delegate (political actors, if applicable), and competitors (not shown in the sociogram for clarity). The project partners can be firms, universities, research institutes, etc. and depending on a project, they can act as prime contractors or sub-contractors. The R&D partners can be firms, universities, research institutes, etc., and the same entities can also be project partners. Figure 3 depicts the flow of intelligence that the focal firm gathers through its scanning systems (external networks), firm's support request for political actors and their tender support (if applicable to the project), and the market driving practices to influence the ESA. Relational development actions are not illustrated in the figure for clarity.

Table 6. The summary of the findings: entrepreneurial marketing practices along the project marketing process.

EM Dimensions	Independent of any project stage	Pre-tender stage	Tender preparation stage
Opportunity orientation	▪ Application of environmental scanning systems (external networks) to gather intelligence via - Participation in conferences and workshops - Regular dialogue with customer representatives - National ESA delegate - Participation in networking events ▪ Business network analysis using gathered intelligence ▪ Detection of commercial and technological opportunities using gathered intelligence	▪ Application of environmental scanning systems (external networks) to gather intelligence - ESA contact persons ▪ Project network analysis ▪ Pre-tender screening to evaluate opportunity value - Technology and competence fit - Competitive position - Political considerations - Availability of support from the national ESA funding body, if required	▪ Evaluation of opportunity value and making the go/no-go decision - Technological fit - Competitive position - Project risks - Possibilities for continuation projects - Reference value - Availability of personnel resources - Networking opportunities - Benefit for other business areas - Possibilities for learning
Market driving	▪ Relational and functional development to change the rules of the game ▪ Creation of demand and construction of a project via - Formal financing instruments for new ideas - Project creation through scientific community - Convincing customer to include own idea in the technology development roadmap - Convincing political sponsor to support own project idea	▪ Co-development of a project in pre-development projects - Execution of pre-studies - Round table discussions	▪ Extension of the project via - Offering add-ons

EM Dimensions	Independent of any project stage	Pre-tender stage	Tender preparation stage
Customer intensity	▪ Relational development towards customer to limit discontinuities via - Ad hoc and/or planned meetings with former and potential customers ▪ Relational development through credibility and brand creation (strengthening visceral relationship) via - Additional investment into an on-going project for the customer - Promotion	▪ Relational development towards customer to limit discontinuities, via - Formal events for networking and information exchange - Self-arranged meetings	
Resource leveraging	▪ Relational development through credibility and brand creation (to compensate for liability of smallness) via - Project references, customer references - Demonstrated innovation capability - Presence and presentations in conferences and workshops - Personal project references of key personnel - Use of space domain references for non-space business ▪ Relational development through guerrilla marketing via - Presentations in conferences and workshops - Public Relations ▪ Functional development to gain access to new external resources via - Own R&D, also with partners - Networking with potential subcontractors	▪ Identification, mobilization and adaptation of internal and external resource combinations to compensate for resource scarcity and lacking competences, via - Functional development, incl. targeted hiring of personnel - Preliminary partnering (considering structure of the team and country of origin of team members) - Application of cost effective, flexible and innovative methods to extend resources	▪ Identification, mobilization and adaptation of internal and external resource combinations to compensate for resource scarcity - Functional development - Partnering (considering country of origin) ▪ Application of cost effective and innovative methods

EM Dimensions	Independent of any project stage	Pre-tender stage	Tender preparation stage
Risk management	▪ Application of environmental scanning systems (external networks) to gather intelligence? ▪ Business network analysis? ▪ Functional and relational development to reduce risks? ▪ Twin-track strategy	▪ Pre-tender screening to evaluate the opportunity cost risks of the opportunity, via - Evaluation of competitive threats ▪ Mobilization and adaptation of internal and external resource combinations to improve flexibility and reduce/share risk, via - Risk sharing between consortium partners	▪ Evaluation of opportunity risks and making the go/no-go decision - Formalised risk assessment procedure - Assessment of the impact of the risks - Intuitive evaluation of risks - Evaluation of winning changes ▪ Coordination of internal and external resource combinations to improve flexibility and to reduce/share risk - Sharing project and tender preparation risks with partners - Participation in tender preparation as sub-contractor (instead of prime contractor) ▪ Application of environmental scanning systems (external networks) to gather intelligence ▪ De-scoping of the project
Innovativeness	▪ Detection of commercial and technological opportunities ▪ Functional development via - Own R&D - Preceding customer projects	▪ Development, mobilization, and adaptation of innovative internal and external resources, potentially in an innovative way, via - Functional development through targeted R&D - Mobilization and adaptation of external resources	▪ Coordination of innovative internal and external resources, potentially in an innovative way

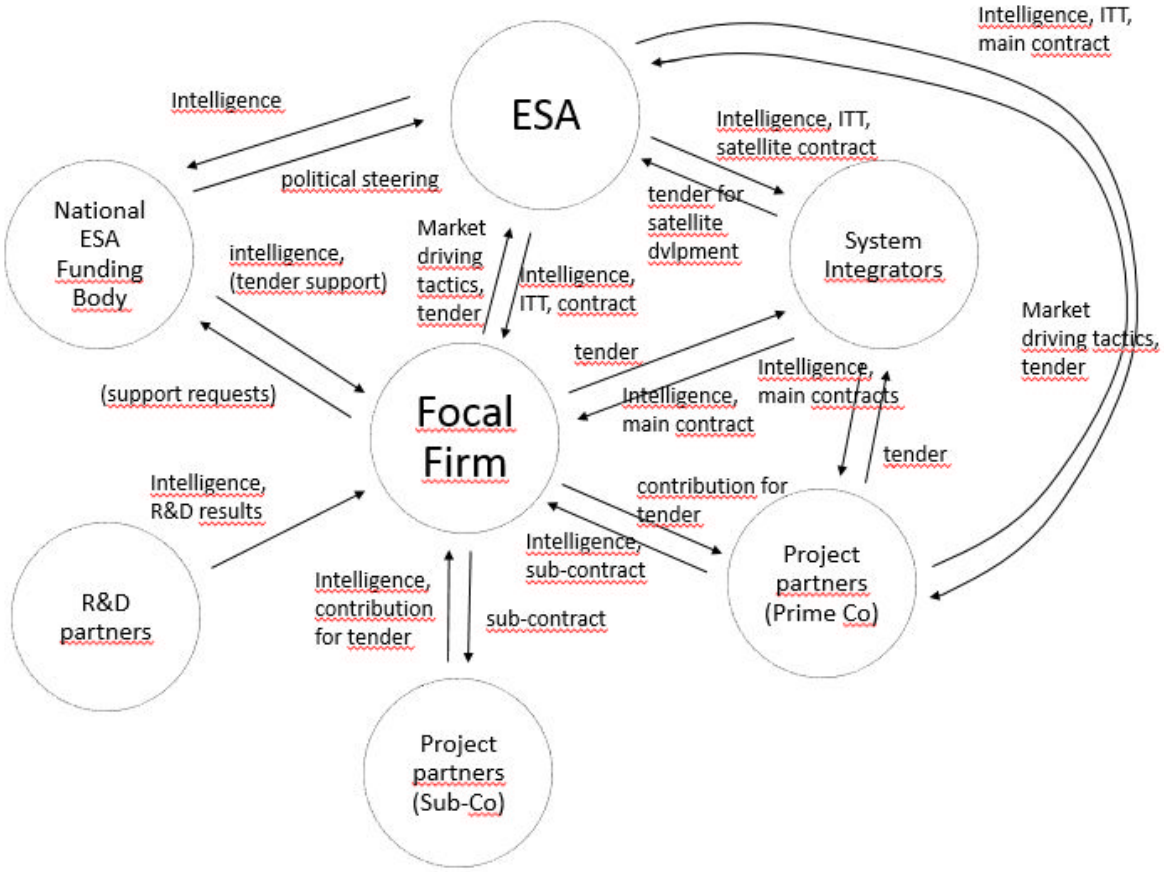

Figure 3. Sociogram of the business network from focal firm's perspective. Competitors and relational development actions are not shown.

6 Discussion and Conclusions

The aim of this study is to improve the understanding of project marketing from SME and entrepreneurial perspective. A case study of five SMEs has been conducted, and new and useful information has been retrieved from both theoretical and managerial point of view. The aim of this chapter is to discuss the main theoretical contributions and managerial implications and to make suggestions for policy makers. Also, the limitations of the study and paths for further studies are discussed.

6.1 Theoretical Contributions

This study contributes to the literature of project marketing in the context of entrepreneurial marketing. In doing so, it responds the suggestion of Jalkala et al. (2010) for more research for a wide spectrum of project business firms and the different types of project marketing situations (Jalkala, Cova et al. 2010). Also, this study responds the call of Hills et al. (2008) for further research on entrepreneurial marketing and on the use and impact of entrepreneurial marketing on firms in all contexts (Hills, Hultman et al. 2008).

According to the results of this study, in order to survive and succeed in project business, the SMEs apply, in general, marketing practices that are in agreement with the developed conceptual framework. The framework is based on existing project marketing and entrepreneurial marketing literature. However, this study extends the current understanding of the phenomenon beyond the existing literature and gives a more fine-grained view of it. Also, this study indicates that the existing literature on project marketing is not fully applicable to SMEs. Furthermore, the existing literature on entrepreneurial marketing is not fully applicable to project business, at least not in the studied context. The main empirical findings that extend the existing project marketing and entrepreneurial marketing literature are associated with resource leveraging, risk management, evaluation of project opportunity, and the political dimension. They are discussed in the following.

In evaluating a project opportunity, entrepreneurial marketers do not let their existing, often restricted own resources limit their actions (Dubini, Aldrich 1991, Stevenson 1994, Morris, Schindehutte et al. 2002). Among different resource leveraging forms, the use of external resources for own purpose has been deemed to be important. This resource leveraging form includes renting, borrowing, leasing, sharing, bartering, recycling, contracting, outsourcing, and acquiring through social transactions. (Morris, Schindehutte et al. 2002, Elfring, Hulsink 2003). According to this study, outsourcing (sub-contracting) is the dominant method in resource leveraging, and no other methods were detected. Thus, the entrepreneurial behaviour seems not to be so versatile in this respect than indicated in entrepreneurial marketing literature. This could be due to the fact that all the case firms, with one exception, are at least ten years old, and they probably already possess the necessary infrastructure, equipment, and software that they need for their core business. Thus there is potentially no need for renting or exchanging social favours, for example. For the same reason, these case firms already have their established key cooperation partners that they use for outsourcing certain parts of projects. Thus cooperation with these key partners has become a natural and essential part of their business. The partnering for a

project opportunity, however, seems to happen later than suggested in the literature (Cova, Mazet et al. 1994), and typically only preliminary partnering actions have been done before the ITT has been published.

Another interesting aspect of the resource leveraging of the firms is the importance of participation and giving presentations in scientific and technical conferences and workshops. This can be regarded as one form of guerrilla marketing (Gruber 2003, Levinson 2007), since the aim is to achieve elevated promotional objectives with limited budgetary resources. However, the importance of conferences and workshops for technology-based project supplier firms has not been considered in the current guerrilla marketing literature.

Some firms use partnering as risk management method to share and reduce risks and to improve flexibility, in agreement with the conceptual framework and existing entrepreneurial marketing literature (Morris, Schindehutte et al. 2002) and general marketing literature (Hamel, Prahalad 1991). However, this study shows a large discrepancy between firms in the orientation to risk management through partnering, since one case firm considers partnering to always increase the risk, never to decrease it. This may be due to the specific characteristics of project business. In project business, the prime contractor firm has the overall responsibility for the whole project. If one of the sub-contractors fails and the schedule is delayed, for example, the customer does typically not pay the prime contractor even if they had completed their tasks in schedule. This is because the payments are connected to certain achievement milestones at overall contract level. Typically, however, the prime contractor cannot reduce its personnel and other costs factors during such delays. Thus, the failure of a sub-contractor poses both a cash flow risk and a profit risk for the prime contractor. This view is supported by the fact that a few firms considered it risk reducing if they would engage in a project as a sub-contractor instead of being the prime contractor. Another reason to consider partnering as a risk may be the transaction cost associated with the negotiation and contract preparation with the sub-contractors. Since no two projects are ever the same (Cova, Hoskins 1997, Mandják, Veres 1998, Skaates, Tikkanen 2003), the above risk constellations also vary from project-to-project and between project consortia and may therefore be perceived differently by different firms, as was the case in this study.

Somewhat counter-intuitively, profit expectation is not an evaluation criteria of project opportunities, as long as the risk (for losses) is considered to be sufficiently low. This was mentioned to be due to the low profit making potential in the studied business context, and the result could thus be argued to be potentially context specific. However, this approach is in line with the effectual (non-predictive) approach of expert entrepreneurs (Read, Dew et al. 2009), which emphasises to pursue satisfactory opportunities with risks that can be absorbed if realised (‘affordable loss’ thinking). This is in contrast with the predictive approach of traditional marketing literature, which emphasises the risk-adjusted expected value of the opportunity (i.e., risk-reward ratio) (*ibid.*).

Also, the alignment of a project opportunity with the business objectives and priorities of the firm and with its strategy seems not to be a strong evaluation parameter of project opportunities. In other words, it seems that in the search for new business opportunities,

the firms can behave in an opportunistic manner and do not necessarily let the existing strategy to limit their actions if they see good chances to obtain and execute a particular project. This contradicts the existing project management literature, which foresees the alignment of all project marketing actions with the set strategic priorities as fundamental (Cova, Mazet et al. 1994, Tikkanen, Aspara 2008). However, this finding resonates with the observations made among practitioners, which indicate that the strategic thinking has limitations in practise (Cova, Mazet et al. 1994). Also, this finding is aligned with the effectual approach of expert entrepreneurs, where the basis for action-taking is the availability of means and not the set goals, as it is in the predictive approach (Read, Dew et al. 2009).

Unlike in many other business and industry domains, the studied business context includes strong national interests and political dimensions, which limit the free competition in the market. The political aspect considers, for example, possibilities to tender, participation in a certain tendering consortium, winning chances, and selection of sub-contractors. This existence of strong national interests and political dimensions is similar to the contexts of military systems and some complex civilian systems (e.g., nuclear power, off-shore oil production, telecommunications, and aviation), which also have such non-market characteristics (Hobday, Davies et al. 2005). Also, the geo-return system applied in the studied context is similar to offset that is sometimes required in large international construction projects and in major military contracts to the benefit of buying country (Ahlström 2000). Furthermore, the presence of system integrators that is typical in satellite projects is similar to many other industries with low volume production of high cost capital goods (Complex Products and Systems – CoPS), such as military systems, telecommunication, aviation, construction, and automotive (Bonaccorsi, Pammolli et al. 1996, Hobday 2000, Davies 2004, Hobday, Davies et al. 2005). Due to the similarities both in political dimension and in project organisation structure, the empirical results obtained in the current study are therefore especially relevant for the business areas and contexts of aerospace as a whole, military systems, and major construction projects.

6.2 Managerial Implications

Based on the findings of this study, the project supplier SMEs follow, consciously or intuitively, the three-stage project marketing process. Since the results of this study are organised according to these three stages, this study enables the managers of project supplier SMEs to compare their existing marketing practices with the obtained results along various dimensions of entrepreneurial marketing. Naturally, not all marketing practices presented here are applicable to all firms, since firms and market positions vary. However, the summary of the results presented in Table 6 provides the managers an easy tool to check the potential marketing practices and adopt or strengthen the practices that are suitable for them. Especially, it seems that for technology-based project supplier firms, active participation in conferences and symposia is important for intelligence gathering, relational development, and improvement of credibility. Also, acquiring project references and customer references seems to be crucial and reference projects should be regarded as

investments rather than source of profit, as suggested also in (Tikkanen, Aspara 2008). In other words, accepting lower profit margin or even losses is justified in reference projects.

6.3 Recommendations to Policy Makers

Based on literature (see, e.g., Skaates and Tikkanen 2003, Salminen, Möller 2006, Tikkanen, Aspara 2008, Jalkala, Cova 2010) and the results of this study, project and customer references are very important in project business in generating the required reputation and credibility. Small and new firms are often lacking reputation and credibility, which can be regarded as intangible resources (Partanen, Chetty et al. 2011). Since the entrepreneurs and SMEs are important in the renewal of economy and creation of new jobs (Schumpeter 1987, Morris, Sexton 1996, Gilmore 2011), the policy makers should therefore reinforce the existing mechanisms and create new ones for SMEs to get access to relevant reference projects. This could be accomplished, e.g., by diverting a certain minimum percentage of public acquisitions to SMEs and new firms.

6.4 Limitation of the Study and Paths for Further Research

Despite the merits of this study, it has limitations. Especially, the empirical part of the study has some limitations that have to be considered when evaluating the obtained results. First, all the empirical evidence has been collected in one particular business context. Therefore, not all results may be applicable to all other project business contexts, although they should be especially relevant for the related business contexts, as discussed above. For example, it was found out that the possibilities for market driving behaviour and project creation have limitations in the studied context, but this limitation may not be applicable universally.

Second, the number of the case firms was limited to five, and no saturation of results was achieved. Additional case firms would probably have extended and complemented the results that were obtained here. The case firms were selected to have variability over age, size, home country, and technical domain. Therefore, the results are believed to be relatively independent on these aspects. However, most of the selected case firms are residing in small countries that have under-average competitiveness in this particular context. Possibly, this has led to bias in the results, emphasising aspects that are potentially not relevant or have less weight for firms that are residing in other kind of countries. In addition, the study has been limited to the member states of European Space Agency and to the business related to ESA projects. Therefore, extending the study to SMEs that are residing in countries with average or over-average competitiveness, potentially outside Europe, would extend the picture of the phenomenon, and would enable to compare the marketing practices of SMEs from different kind of countries.

Third, the author of this study is an entrepreneur himself and active in the studied business context. Although precautions have been taken, as discussed in Section 3.6, this might have caused bias in the composition of interview schema, in the conduct of the interviews, and in the interpretation of the experimental data. On the other hand, it is believed that the familiarity of the author to the context was beneficial in general, since it

has facilitated the access to informants and increased the trust and openness during the interviews.

Interesting additional research direction would be to select the case firms across several, similar contexts (e.g., space, military, aviation, and construction) to have more fine-grained view on aspects that are common to the related contexts. In addition, the financial performance of the case firms was not considered in this study. Therefore, it would be interesting to include that parameter in future studies and compare the results obtained from high and low performing firms. Finally, additional research strategies, such as quantitative study, an intensive single-case study, or ethnographic study would probably reveal additional insights into this phenomenon.

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8 Appendix A: The Schema for Interviews

Background Information, Informant

- How long have you worked in the space business?
- How long have you worked in your current position / as entrepreneur?

Background Information, Case Firm

- How big is your company?
- Who are your customers?
- What is the value that you generate to your customers?
- In what aspect are you better than your competition?
- What is the role of space business in your overall business?
- What is the share of your turnover that you generate in space business?

Independent of Any Project Stage

- Do you perform anticipatory actions to improve your success changes for still undetected project opportunities, i.e., before you have identified those project opportunities? These anticipatory actions could include, e.g., R&D, networking with potential cooperation partners, identification of external resources, relational developments within the network
- Do you try to get information on upcoming space project opportunities in advance? How?
- What is the role of your personal networks when you scout for new opportunities?
- Do you invest into customer relationships between active projects, i.e., during the so-called sleeping period?
- In your marketing actions, do you concentrate on certain customers instead of potential projects?
- Have you tried to improve your credibility and corporate brand image, for example, through reference projects or reference customers, in order to improve your changes for future project opportunities?
- Have you had efforts to enter into new fields of business through reference projects or reference customers?
- What kind of promotional tactics do you use (fairs, face-to-face meetings, newsletters, etc.), if any?
- Have you used innovative, low-cost promotional tactics (so-called guerrilla marketing tactics, such as word-of-mouth, PR, relationships, free samples, etc.)?
- Is innovation capacity important in your business? If yes, is the innovation activity within your company more incremental innovation (improvement of existing products or concepts, which does not change the market structure) or radical innovation (re-shapes the market by re-writing the rules of the game)?

- Instead of responding to a published ITT, have you tried to create your own project for ESA?

Pre-tender Stage

- Once you have identified a project opportunity, how do you evaluate if it is worth pursuing?
- Do you abandon a project opportunity if you do not own all the required resources?
- If not, how did you extend your own resources (borrow, rent, lease, subcontract, through social interactions, etc.)?
- Have you managed to extend your own resources with very cost-efficient network resources, such as friends, etc.?
- If you have identified a project opportunity before the ITT has been published, do you react to that opportunity in advance? How?
- Once you have identified a certain project opportunity, do you team up with project partners in advance, i.e., before the ITT has been published?
- Have you teamed up with other organisations with the motivation to improve your credibility?
- Have you teamed up with other organisations with the motivation to reduce your risks or share the risks?
- Have you tried to influence the definition of a project opportunity before the ITT has been published, i.e., to change the rules of the game?

Tender Preparation Stage

- Once an ITT is out, how do you evaluate if you are going to prepare a tender?
- Have you ever prepared tenders for project opportunities that had the possibility of costly failure (as evaluated already beforehand)?
- If yes, did you use any methods to restrict or share the risk (e.g., acquiring information through networks and otherwise, by networking/partnering)?
- Have you ever engaged in tender preparation for project opportunities where you have evaluated your chances of getting the contract relatively low?
- If yes, did you use any methods to restrict or share the risk (e.g., acquiring information through networks and otherwise, by networking/partnering)?
- Instead of writing a proposal that complies as well as possible with the requirements of an ITT, have you ever made a creative tender, i.e., offering something else that was asked?