

**Ambiguous Nature of Project Business -
How the Project Business Companies Try to Deal with Project Business
Characteristics**

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Introduction

Research under the topics of ‘project marketing’ as well as ‘project business’ is rather young. The first publications built around these titles are from the early 1990s (see e.g. Bansard, Cova & Salle 1993; Cova, Mazet & Salle, 1993; Cova & Holstius, 1993; Hadjikhani, 1996) with some exceptions (e.g. Mattson, 1973). Although there is, until now, a considerable amount of academic literature cumulated on project marketing and project management, there is still a clear need for a comprehensive analysis of the project business characteristics in relation to companies’ patterns of action.

As a starting point for our study it is important to make a distinction between management of project business (multi-project firms) and project management (single projects) as well as projects as management tools (management by projects). The first one concerns industries built around selling and delivering more or less extensive projects. Project management, in turn, concerns the management of individual projects while project as a management tool concerns situations in the “normal” business where projects are used as vehicles of internal development. The focus of this paper is on the management of project business. In other words, we are moving from the project-centric perspective towards the analysis of multi-project organizations (cf. Söderlund, 2002, 2004).

The previous literature of project marketing and management (see the review in e.g. Skaates & Cova, 2005; Tikkanen et al., 2006, Cova & Salle, 2006) concentrates very much on the special characteristics of project business. The main characteristics of the project business are usually described by the so called D-U-C model (e.g. Cova & Hoskins, 1997). Discontinuity refers to single projects as time restricted mutual tasks for the seller and the buyer and to sleeping periods in the business relationships. Uniqueness describes the fact that projects are tailor-made, individual, and created through negotiations and interactions between the parties. Complexity is created by the know-how demands for a customer company and a seller company, as well as the variety and number of actors involved. In addition to these three most often named characteristics, several studies bring up additional features complicating project business, such as the need for extensive financial commitments, managing the processual project delivery, adaptation of internal structure to external environment and project portfolio management.

We argue that the project marketing research tends to repeat and take these characteristics as granted without in-depth investigation. Furthermore, the characteristics of project business in the core literature are narrow from the theoretical point of view and, on the other hand, too general from the managerial perspective. We also argue that these business characteristics, interesting for researchers, are in fact challenging and troublesome for the project business firms. The key question for project business firms is how to alleviate or how to strengthen these characteristics.

We aim to open up the argued business characteristics of the project marketing and management literature by setting them into the context of organization theory concerning adhocracies (Mintzberg, 1980, 1983) and project-based organizational structures (Eccles,

1981; Powell, 1996, 2001; Payne, 1995; Payne and Turner, 1999; Whitley 2006). Actually, organization literature has a longer tradition than project marketing literature in examining the same phenomena, but the first mentioned stream goes deeper into the interwoven nature of organizational structures and the characteristics of business environment. Because the organization literature is very extent, we have in the present study focused on limited number of the most well-known sources. However, it is interesting to note that project marketing literature refers to the previous literature on organizational structures so far only seldom. Our research questions are as follows:

- What are the key characteristics of project business based on project marketing literature?
- What are the key characteristics of project business firms based on organization design literature?
- What are the core differentiating dimensions for project business firm's organization design?
- What types of project business firms can be identified on the basis of these differentiating dimensions?
- How do project business firms alleviate or strengthen the characteristics of their business in their organizational forms?

Based on the review of recent project marketing literature (e.g. Skaates & Cova, 2005, Tikkanen et al., 2006; Cova & Salle, 2006), we identify the most asserted characteristics of project business. In the same way, through using the organization theory on project based firms and temporary organizations we present the key characteristics of project based firms. These are employed in identifying the core differentiating dimensions through which a typology of project business firms is formed. The typology developed can be more described as taxonomy of holistic patterns of multiple variables rather than clearly distinguishable variables and their relations. Similar approach to classifying organizational dimensions of KAM has been taken by e.g. Homburg, Workman and Jensen (2002). This perspective can be described as configurational approach to organizational analysis (Meyer, Tsui & Hinings, 1993). According the this approach to organizational design, there is a limited range of organizational forms and that an understanding of the parts within an organization can be gained only by looking at the overall patterning rather than narrow set of organizational properties.

The developed typology is illustrated though an empirical research. In the empirical part of the present paper we discuss how four the selected case companies cope with these challenging business characteristics, i.e. the managerial actions for smoothing troublesome consequences of industry characteristics or strengthening these characteristic for the company's competitive advantage. We reflect these characteristics in four project business companies operating in different industrial fields: provider of capital goods in the metal industry, manufacturer of heavy equipments for logistics operators, a solution provider in filtration and manufacturer of automatic roll wrapping systems. Although operating in different industries, the case companies seem to share several common characteristics in their business logics. However, their patterns of action in coping with the common characteristics vary from each other. One of the most interesting findings was the general mode of management towards "escaping" or "amplifying" these features of their industries.

Characterizing project business: literature review on project marketing

Our literature review on project business characteristics focuses on research in the 1990s and this decade with two exceptions. We start with Mattsson (1973) and Jansson (1989) which are early examples characterizing project type of business. These articles conceptualize project business in quite a similar way than the literature of 1990s that labeled its approach as project marketing (see e.g. Cova, Ghauri and Salle, 2002). This approach emphasizes that it is question of managing both individual projects and several projects in networks of relationships in project business.

As mentioned above, one of the earliest publications in the area is Mattsson's (1973) article "Systems selling as a strategy on industrial markets". In his study economic consequences of systems or projects selling for industrial firms are analyzed. It is argued that using systems selling increases other companies' barriers to entry into the market, thus increasing the systems selling firms profit opportunities. Furthermore, Mattsson emphasizes the fact that systems selling firms almost always operate internationally, because the customers have similar kinds of system needs in several countries. Customers often want to standardize processes and outputs from project sellers among operations in different countries.

Opposite to general understanding of project business nature as transactional deliveries, Jansson's (1989) main finding was the typicality of long-term business relationships in project business. An additional characteristic that he emphasizes is the selling ideas, since projects exist only on paper during a large part of the time of marketing the project. The product linkage therefore comes in quite a late stage in the process. Consequently, crucial parts of project business are the personal contact nets.

Cova and Holstius (1993; see also Cova, 1998) studied project marketing both from the seller's and buyer's point of view. According to them the key characteristic of project business is so called project marketing cycle that presents the phases of project management both in the customer and the seller company. As the features of successful project business organizations they suggest entrepreneurial qualities of personnel and entrepreneurial culture of the firm as an innovative, adaptive, risk management skilled and internationally oriented organization with exploitation of financial resources.

Cova et al (1996) emphasize the milieu concept that is especially important in highlighting the complex nature of the environment of project marketing. A milieu is characterized by four elements; territory, networks of heterogeneous actors, representation constructed by these actors, as well as set of rules and norms regulating the interactions between these actors. Within the milieu, project business firms have to generate or maintain credibility and to be a part of informational and social networks. Individuals in firms do this mainly through their personal networks. Some actors in the milieu may best be influenced directly by project business firms, while others may be influenced by indirect relationships or reputation effects e.g. references (see Salminen and Möller, 2006).

Hadjikhani (1996; see also Skaates and Tikkanen, 2003) concentrated on discontinuous nature of project business and customer relationships. He argues that one of the key challenges in project business is how to manage business relationships after project completion. The study presents the concept of a sleeping relationship which interrelates the buyer and the seller in the period of discontinuity. In Hadjikhani (1996), project business is studied from the political perspective, focusing on understanding of the relationships between the project-selling firms

and non-business actors. The political aspects of project business are studied in the framework of sleeping relationships. Hellström and Wikström (2005) in turn suggest modular supply as an action increasing flexibility towards discontinuity and fluctuation. Simultaneously, however, modular supply means giving up some influence and transferring more responsibility to sub-suppliers. This means a decrease in stability on the operative level.

Cova and Hoskins (1997) add two additional key characteristics to the discontinuous nature of project business: complexity and uniqueness. These three features have been later called as the DUC-model. Complexity is created by the need to integrate separate products and services to deliver a facility or an enhanced organizational capability. To the complexity adds the need to negotiate and interact with several, often international, external stakeholders involved in the definition and implementation of the project. Projects are conceived with the intension of disrupting the status quo within the customer organization with the aim of delivering beneficial, one-off transformational changes which cannot be achieved through improvements in the efficiency of existing operations. Uniqueness of each project is the result of these contextual differences. In addition to the DUC-characteristics Cova and Hoskins (1997) suggest networking action based deterministic and constructivist approaches for project business companies to maximize chances of success in project business. Through these approaches companies anticipate the competitive arena and the rules of the game, or even actively shape these through interaction with the network of business and non-business actors.

Mandjak and Veres (1998; see also Cova, Ghauri and Salle, 2002) take the DUC-model as their starting point as the key features of project marketing and analyze these three characteristics in further depth. They claim that the elements of DUC-model behave differently in pre-realization, realization and post-realization stages of project marketing. Discontinuity consists of dimensions of unknown buyer, lack of all kinds of relationships with a known buyer and a sleeping relationship. Uniqueness of project business comes from concrete mobilization of the contractor's own resources and network, as well as non-recurring changes in the buying organization because of the project. Complexity of the project business arises from the more or less same features as complexity of industrial business relationships, e.g. multiorganizational buying centre structure, multiple actors and high risks involved (cf. Håkansson and Snehota, 1995). On the basis of an empirical analysis they add further dimensions to each of the characteristics of the DUC-model. Discontinuity gets dimensions of applied technology and cultural elements. Uniqueness is strengthened through the technology offered, local specifications and tailored design. Complexity gets project size and various tangible and intangible project inputs as further dimensions.

Tikkanen (1998; see also Skaates, Tikkanen and Linblom, 2002) reviews the project marketing literature until the late 1990s. With respect to the project business characteristics, and in addition to the DUC-model, he emphasizes the existence of two nested levels of management in the project business (originally Alajoutsijärvi, 1996). The first level is that of managing networks and relationships related to individual projects. As far as the supply of individual projects is concerned, the two major characteristics are the buyer-seller interaction during each stage of the project supply process, and the overlapping of all corporate functions in the marketing process. The second level is that of relationship between the project buyer and seller, because the buyer tends to make repeat purchases from a seller considered as reliable. Tikkanen (1998) stresses the need for long-term orientation in project business as a whole, not only in single project delivery relationships.

Cova and Salle (2000; see also Blomqvist and Wilson, 2006) take a ritual approach for the management of the discontinuing phase of business relationships. Four different types of rituals; initiation, calendar, cyclical and occasional rituals are identified, and these are examined at the three levels of socialization; dyads, tribes and circles. Dyads refer to the relationship level, while tribes mean a group of intimate actors of the buyer and of the supplier, and circles refer to a bit larger group of actors such as e.g. an industry event might be. Through the participation to certain rituals at different levels of socialization, project business firms build and develop the identity of their organizations and limit the relationship discontinuity.

Tikkanen, Kujala and Artto (2006) want to emphasize that project business involves simultaneous management of multiple relationships and multiple projects. The key question they want to highlight is: how the interdependencies between portfolios of relationships and portfolios of projects can be managed? As a result of their theoretical discussion they present a conceptual definition of the scope of the marketing strategy of a project-based firm.

To conclude, we have identified the most referred characteristics of project business found from the previous project marketing and management literature in Table 1.

Table 1. Characteristics of project business identified from the project marketing literature

Characteristics identified from the literature	Literature
International nature of business	Mattsson, 1973; Cova, Ghauri & Salle, 2002
Long term nature of business relationships	Jansson, 1989; Skaates et al. 2002; Cova, Ghauri & Salle, 2002; Tikkanen, Kujala & Artto, 2006
Processual nature of project cycles	Cova & Holstius, 1993; Cova, 1998; Cova, Ghauri & Salle, 2002
Discontinuous nature of business	Hadjikhani, 1996, 1998; Cova & Hoskins, 1997; Mandjak & Veres, 1998; Cova, Ghauri & Salle, 2002
Unique nature of projects	Cova & Hoskins, 1997; Mandjak & Veres, 1998; Cova, Ghauri & Salle, 2002
Complexity of business	Cova & Hoskins, 1997; Mandjak & Veres; 1998; Cova, Ghauri & Salle, 2002
Dynamic nature of business	Cova, Ghauri & Salle, 2002; Tikkanen, Kujala & Artto, 2006

Characterizing project firms: insights from organization design literature

The organization theorists have a long tradition discussing the relationship between organizational structures and environmental characteristics. Therefore, we will in the following discuss the characteristics of project based organizations.

The earliest thinking about organizational structure was dominated by the ‘one best way’ approach; in other words, there was a ‘wrong’ and a ‘right’ way to design an organization. The later theory moved towards an ‘all depends’ approach, known as a contingency theory. Organizational structures should reflect the organization’s situation – for example size, type, the nature of environment. In the present article, we follow the third phase of organizational theory discussion, so called configuration approach which concentrates on the interrelated dynamics of organization structure and business environment change (cf. Mintzberg 1979; 1980; see also Eccles, 1981; Powell, 1996; 2001; Payne, 1995; Payne & Turner, 1999; Whitley 2006).

One of the earliest descriptions and analysis of project based firms was Mintzberg's (1980, 1983) publications on adhocracies. He suggests two types of adhocracies, namely administrative and operating, the latter including typical features of project based firms. The operating adhocracy innovates and solves problems directly on behalf of its customers. It fuses experts from different specialties into smoothly functioning teams. It has an organic structure with little formalization of behaviour, extensive horizontal job specialization based on formal training, a tendency to group the professional specialists in functional units to deploy them in small market-based teams. It relies on the liaison devices to encourage mutual adjustment – the key coordinating mechanism – within and between the teams. The power is delegated unevenly according to expertise and need. Therefore, the structure becomes selectively decentralized both horizontally and vertically. The administrative and operating work tends to blend into a single effort. Strategy is not imposed from above, but emerges from the stream of ad hoc decisions made for all the projects.

Operating adhocracies act in environments that are both dynamic and complex demanding sophisticated innovation. The more dynamic an organization's environment, the more organic is its structure. The more complex an organization's environment, the more decentralized its structure. Consequently, the only organizational structure in this type of hostile environment is a project based organization. On the other hand, project based organizations can, compared to other organizational structures, choose these types of business environments. Furthermore, many of them tend to simultaneously attempt to find business environments allowing more bureaucratic structures and actions.

Adhocracies are typically young, because time encourages an organization to bureaucratize. They tend to combine fashionable features that emphasize expertise, organic and matrix structure, teams and task forces, decentralization without power concentration, sophisticated and automated technical systems, youth and complex, dynamic environments.

Eccles (1981a, 1981b) has made an important contribution for understanding of project based organization, especially in construction industry. Construction projects are typically executed by general contractors who retain the services of specialist trade subcontractors. This form of organization is preferable to vertically these trades, because of the transaction cost implications of construction technology. The general contractor and specialist trade subcontractors can form a stable organizational unit when conditions permit. This organizational form, called here the 'quasifirm', is analogous to the 'inside contracting system' discussed by Williamson (1975). Eccles (1981b) examines especially the characteristics of firms in the construction industry, and argues that subcontracting by general contractors can be explained by complexity, size, and market extent. Extensive subcontracting has implications for the nature of the construction firm and can therefore be called craft administrations.

According to Midler (1995) many industrial firms are implementing fundamental changes in their organizations to increase the efficiency. He focuses on the relations between project management models and the permanent organization and processes of the firm. His case firm effected a transition from the classical functional organization in the 1960s to project coordination in the 1970s, and since 1989 to autonomous and powerful project teams. Such advanced project management has profound and destabilizing effects on the other permanent logics of the firm (task definitions, hierarchic regulations, carrier management, functions and supplier relations). He calls this process as "projectification".

In the Table 2 we have listed the identified characteristics of project business firms. The first two characteristics, the mode of international operations and management of markets customer relationships are derived from the characteristics of project business discussed in the previous section of the paper, the international nature of project business and long term nature of relationships. The rest of the characteristics are derived from the organizational design literature.

Table 2. Characteristics of project firms identified from the organization design literature.

Characteristics found from the literature	Literature
Mode of international operations	Mintzberg, 1980
Management of markets and customer relationships	Mintzberg, 1980
Dependence of projects	Mintzberg, 1980; Whitley, 2006
Organic structure of firm	Mintzberg, 1980; Eccles, 1981; Midler, 1995; Whitley, 2006
Decentralization of power	Mintzberg, 1980; Eccles, 1981; Midler, 1995
Strategy formulation vs. formation	Mintzberg, 1980
Coordinators and liaison positions	Mintzberg, 1980; Eccles, 1981; Midler, 1995; Whitley, 2006
Job generality	Mintzberg, 1980; Whitley, 2006
Dynamics of work roles	Mintzberg, 1980; Whitley, 2006

Whitley (2006) develops a more detailed typology of operating adhocracies. According to him, project based firms can be divided into so called hollow, craft, organizational and precarious forms. Project base firms vary considerably in the kinds of projects they produce, the level of market and technical uncertainty they have to deal with, and their organizational complexity (cf. Cova, Ghauri and Salle, 2002). Projects can differ in terms of their customization, ambiguity of specification, and the extent to which customers co-produce them. They are also more or less discrete, interchangeable, predictable, and technologically continuous (Tushman & Anderson, 1986; Breschi & Malerba, 1997). Furthermore, the variety, interdependence, and stability of knowledge and skills differ considerably between project firms, as does the uncertainty of their work environments (Whitley, 2006).

The differentiating dimensions by Whitley (2006) concern firstly the extent to which firms focus on developing unusual, sometimes one-off, products and services for varied, and often uncertain, markets and, secondly the extent to which the organization of expertise, tasks, and roles is predictable and stable over projects. Such variations have significant implications for the management of firms.

The first core differentiating dimension of project based firms can be termed the singularity of their goals and outputs, because singularity contrasts those producing a single or small number of quite different kinds of results for different customers or markets from those conducting a series of related projects producing similar kinds of outcomes. The more singular are outputs, the more likely organizations will have to deal with exceptions to their routines and adjust to variations in materials and the work environment (Perrow, 1967; Whitley, 2006). Singularity of goals and outputs in projects converge the concept of uniqueness used very much in project marketing literature (D-U-C model). Therefore, we have chosen the variety of uniqueness as the basic differentiating characteristic of project based firms.

The second core differentiating feature of project based firms proposed by Whitley (2006) concerns the distinctiveness and stability of work roles, professional identities, and skills within project teams and over the course of several projects. Also, the continuity of patterns of work coordination and control across projects is considered. In some craft-dominated sectors, such as the feature film industry (Christopherson, 2002a, 2002b; Davenport, 2005), roles and skills are clearly separated throughout projects, and skill-based identities remain stable over a succession of projects, if not indeed entire working lifetimes. This enables project teams to be quickly assembled and to work effectively together at short notice (Jones, 1996; Whitley, 2006). We have chosen to use ‘the nature of mutual adjustment within projects’ as the second basic differentiating characteristic of project based firms. By using this concept we want incorporate both ad hoc nature of work roles and the level of job specialization of individual experts. The more job specialization exists, the less ad hoc work roles usually are involved, and the more sequential nature of mutual adjustment within projects tend to be. In the Figure 1, we present a typology making sense of the different types of project based firms.

		Uniqueness of projects	
		Low	High
Nature of mutual adjustment	Parallel	<p>Product-like project business</p> <ul style="list-style-type: none"> •Projects are pretty similar, only incrementally changing •No stability of work roles, experts are chosen based on present work load, work roles not very specialized, the tasks relatively simple •High general skill level demanded throughout the expert level. Everyone has to know each others expertise area 	<p>‘Extreme’ project business</p> <ul style="list-style-type: none"> •Projects are always unique •No stability of work roles •The high general skill level is demanded throughout the expert level. Every expert has to know each others expertise area
	Sequential	<p>Standard project business</p> <ul style="list-style-type: none"> •Projects are pretty similar, only incrementally changing •Work roles are stable, everyone has his own distinct role in every project •Everyone’s expertise area is specialized 	<p>Successively operating adhocracy</p> <ul style="list-style-type: none"> •Projects are unique •Work roles are stable, everyone has his own distinct role in every project <p>Everyone’s expertise area is specialized</p>

Figure 1. Typology of project based firms.

The typology enables us to identify four ideal types of project business firms. *First*, we call as the ‘standard project business firms’ companies that have pretty similar, only incrementally changing projects. Typically, in these projects work roles are stable; everyone has his own distinct role in every project and everyone’s expertise area is specialized. The *second* type of project business firm is labeled as the ‘product-like project business firm’. In these companies the projects also tend to be pretty similar with only incremental changes. However, there is no stability in work roles, and experts are chosen based on their present work load. Work roles

are not very specialized, since the tasks are relatively simple. Finally, the high general skill level is demanded throughout the expert level. Every expert has to know each others expertise area. *Third*, ‘successively operating adhocracy firm’ has unique projects. In these projects, work roles are relatively stable and everyone has his own distinct role in every project. Everyone’s expertise area is typically specialized. The *fourth* type of project business firm proposed on the basis of the typology is the ‘extreme project business firm’. This type of firm has very unique projects and there is no stability of work roles. The high general skill level is demanded throughout the expert level, and every expert has to know each others expertise area.

Research design and background

The purpose of the empirical part of the present study is to elaborate the characteristics of the project business firms. The methodology used follows abductive research logic (Kovács & Spens, 2005), where both theoretical propositions and empirical material are used as a source of knowledge for further connection of the proposed typology of project business firms and the characteristics of project business. The study represents a qualitative methodology and includes a multiple case study setting.

In selecting the cases, we have used the following criteria. First, we have selected companies of different sizes. The companies vary in terms of their annual turnover as well as the number of personnel. Furthermore, the selected companies represent different types of process technology industry equipment manufacturers. In addition to having variations in the firm and industry types, we have also used criteria derived from the developed typology in Figure 1. Therefore, we have selected four project based firm representing different levels of the two dimensions used in the typology. This means that the selected case companies represent different levels of uniqueness in terms of their projects. Finally, the companies also vary in terms of nature of mutual adjustment, i.e. job generality and stability of work roles.

The research at hand is based on a large research project, which focuses on multiple aspects of project based and customer reference driven business. In that sense the topic of the present study was discovered within that research project. According to Gephart (2004), this kind of qualitative research setting is likely to produce substantial new insights, because large research projects typically enable us to discover new research gaps relevant to both practice and theory. The empirical material used in the present study is composed of interviews of managers of the selected firms, focus group interviews, workshops, archive material company documents and professional articles. The empirical data was transcribed and analyzed on the basis of the identified characteristics of project business and project business firms.

Empirical study

In the following we will first describe four different case companies shortly. The case descriptions is followed by a cross case analysis of the identified characteristics of both project business characteristics that these companies are facing as well as characteristics of the project business firms.

Description of the cases

A provider of capital goods for the mining and metals industry

The company provides process technologies for the mining and metals industries worldwide, with the largest part of sales in 2006 coming from South America, Europe and CIS, and Asia. The technologies offered by the company cover the whole chain of processing ores into pure metals. Three divisions comprise the company, each of which concentrates on a certain part of the process chain. The company has only recently undergone a stock listing, but as a part of its former group its roots trace back to the first half of the previous century. Some 1800 people are employed by the company in 18 countries.

In 2006, the company generated a turnover of some 740 million euros, with each division being roughly equal in terms of sales. In three years, the turnover of the company has doubled, from a level of 366 million in 2003. Market conditions have recently been favorable as demand for metals have risen, creating a demand and supply imbalance. This has in turn resulted in high metal prices and increased capital investments by the company's customer industries.

The duration of the company's projects is typically long, ranging from 10 to 36 months. The nature of projects varies, from technology packages of values between 3 and 70 million euros to large turnkey deliveries worth up to 200 million euros. Equipment deliveries by the company are worth up to 10 million. An essential part of the company's business is its proprietary technology. The customer base of the company, which includes mining and metallurgical companies, is undergoing consolidation, with a few global companies owning the vast majority of customer sites.

The company operates in a highly competitive environment. The competition is fragmented, but consolidating. The company has a number of technologies where it is a clear market leader, and others where it operates as a niche player. As a whole, the company does not have directly comparable competitors, but instead competitors that compete with a part of their portfolio.

A manufacturer of heavy material handling equipment for logistics operators

The company provides heavy cranes and other material handling equipment such as lift trucks for ports, harbors, shipyards and the offshore industry. It operates globally and the largest areas in terms of sales are very much dependent on the product in question; the United States for example is very important area for a certain part of the portfolio. The company is part of a group employing some 7500 people in about 40 countries. The history of this group is connected to another organization, which began its harbor crane operations in the 1950's. In 2006, the group's sales figure was close to 1.5 billion euros. The group's sales have doubled during the past two years. Container handling has been increasing and the shipping industry is booming, which has favorably affected the operations of the case company. When selling to a new customer, the sales process from the beginning to delivery can take from somewhat over a year to several years. Delivery times depend a lot on the type of equipment sold. The company's customer base has been undergoing consolidation, with a few global operators controlling a major share of customer sites. There are also smaller municipal and private customer sites. It is noteworthy that besides consolidation, parts of the customer base have been shifting geographically and becoming more international. The company has a few globally operating competitors, and in addition several regional and local competitors. The competitive environment of the company depends heavily on the product and geographical area. In some products the company is a major player, whereas in others it is quite a small player. In the case of certain specific products, the company dominates some market areas.

A filtration solutions provider

This company supplies solid/liquid separation equipment and related services to the mining and metals industry and the chemical process industry. The operations of this company are global. It divides its business into three regions, of which the largest in terms of sales in 2006 was the North, Central and South America region. A recent acquisition made by this company has significantly increased its size, and in 2006 it employed some 450 people in 40 countries. The company was founded in 1977. The turnover of the company in 2006 was around 120 million euros. The development of turnover has been positive in the last years, the latest figure being nearly 30 percent higher than that of 2004. An example of factors that positively impact the demand for the company's products include the current high metal prices and tightening environmental legislation. The sales process of this company can take up to two years from first contact with a customer to securing a deal. Contract values range from 300 000 euros up to 5 million euros. Consolidation has been notable in the customer industries. Competition for this company is fragmented and undergoing consolidation. The company has only a few globally operating closely comparable competitors, and many smaller local or regional ones. Characteristics making the company unique include among others its 100 percent focus on solid/liquid separation and its service concept. The company is a market leader in certain industry segments.

A supplier of paper roll wrapping systems

This company provides paper roll wrapping and handling systems for the paper industry. Most of the company's deliveries are exports, but domestic sales have also been important. The Nordic Countries and Russia are some of the other significant market areas. The company was founded in 1981 and currently has, together with its sister company, some 70 employees. The annual turnover of the company has recently been around 10 million euros. There can be fairly significant differences in sales from year to year due to the small amount of deliveries per year. Factors driving the customer industries at the moment are the moving of production to lower cost countries, and the switch in the product types and qualities in Western countries. The latter creates need for new technologies from the company. The duration of this company's projects is typically around two years, and there are only a handful of projects going on at any one time. The deliveries are of a turnkey or turnkey-plus type. The monetary value of a project usually ranges from one to three million euros. The customer base is consolidating, with larger customer organizations continuing to grow and smaller ones specializing. The competitive situation of the company is characterized by a competition with much larger rivals. This makes competition tough, since the large competitors are able to deliver complete plants to customers. In addition to these large companies, the competition consists also of locally operating competitors.

Cross case analysis

In the following, we will analyze characteristics of the project business and characteristics of the project business firms. The focus of the cross-case analysis lies especially on the characteristics that the proposed typology is based on (see Figure 1). The cross-case analysis itself is presented in Tables 3 and 4.

Table 3. Cross-case analysis of the nature of project business of the case companies

NATURE OF PROJECT BUSINESS	Provider of capital goods in the metal industry	Manufacturer of heavy equipments for logistics operators	Solution provider in filtration	Manufacturer of automatic roll wrapping systems
International nature of business	Large and global customers around the world. Asia the most important area.	Municipal and private, global and local customers around the world.	Global customers around the world.	Global customers around the world, the majority in Europe.
Long term nature of business relationships	Customer relationships are long-term in character. The majority of sales come through engineering companies.	The company very intentionally strives for committed long-term customer relationships. Especially customers having suitable long-term supplier orientation and mindset are valued.	Long-terms customer relationships. A remarkable part of sales comes through engineering companies. Service business has an essential role in creating competitive advantage and establishing long-term customer relationships.	The company has a couple of global long-term customers and also many local customers. The players are identifiable in the industry. The role of engineering companies has diminished. The customers can buy after-sales services from other suppliers.
Processual nature of sales process	The sales processes vary along business cycles. The sales process can be very long. Project execution 1-2 years.	Careful pre-phase working essential. The sales process can last even five years, delivery process 1-2 years.	Test use of equipment essential. The sales process results in a deal typically during 1-2 years.	Visit at the site essential at the very beginning. Sales process typically quite long, i.e. several years. Project execution at least 1 year.
Discontinuous nature of business	Not very discontinuous. There are hundreds of customers. Yet, the majority of sales come from a limited number of customers.	Somewhat discontinuous. The majority of sales come from old customers. The majority of business is project business in character and the minority is equipment sales. A large equipment base sold in the world.	Not very discontinuous, due to many product lines, varying customer industries and the smoothing and committing role of significant service business.	Discontinuous. The manufacturing capacity allows a couple of projects yearly. Basically one product on one customer industry, which increases the risk of discontinuity. After sales have a modest role.
Unique nature of projects	The projects/systems are extremely unique and tailor-made.	The products are to only certain extent tailor-made, but projects are unique. Different offerings may be supplied.	Extensive product lines exist and the products are basically as standard-type products as possible.	The projects are themselves unique, but there is a limited amount of technological solutions.
Complexity of business	Very complex. Different types of industries all with moderate complexity. The company has very strong technological capabilities and strong position to develop new solutions in industry.	Quite complex. A couple of industries with limited amount of customers make the markets quite transparent. Varying offerings and supply of them complicate the business.	Not very complex. However, there are different types of customer industries with varying complexities.	The business environment is not very complex for the company, since there is only one customer industry.
Dynamic nature of business	Very dynamic business. The economic cycles affect very much the intensity of investments in customer industries.	Quite dynamic business. The Chinese syndrome has a big role in the boom of customers' investments at the moment.	Quite dynamic business. Customer industry technologies can change rapidly, this brings dynamism.	Not very dynamic. Technologies change slowly, economic cycles influence to some extent.

Table 4. Cross-case analysis of the nature of the project business firms

NATURE OF PROJECT BUSINESS FIRMS	Provider of capital goods in the metal industry	Manufacturer of heavy equipments for logistics operators	Solution provider in filtration	Manufacturer of automatic roll wrapping systems
Mode of international operating	Technology supplier. Sales companies, service centers and agents contact customers in over 60 countries.	Project/equipment sales. Own personnel, agents and partners in more than 40 countries. Very large service network.	Solution provider by equipment sales. Operations in over 70 countries; in 13 countries the company has own selling departments, and 60 active representatives around the world.	System supplier. Own sales people have the major role in selling. License manufacturer in Asia and agents around the world. International supplier partner.
Management of markets and customer relationships	Key customers change to some extent according to project situations. On some business areas not KAM system in use. CRM system is used mainly in one business area.	Official key account system not in use. Instead, all selected customers are treated well. Persons with the best relationships with customers take repetitively take care of them. The role of CRM not important.	Key customer program is in use. Long term relationships are created through account managers and among other things through the after sales services. CRM system is in intensive use.	Only a few key accounts, managed mainly by good personal relationships. A strong reputation as a technologically advanced and reliable company is essential. CRM system not in use.
Dependence of projects	Quite high. Several projects yearly. After sales' part of sales not very high, but its role is important in facilitating growth and reducing cyclicity.	Quite high, but there are tenths of projects yearly. The role of service business is regional and significance not very high.	Not very high, a significant part of the turnover comes from after sales services. Many customer industries/product lines reduce dependence on projects.	High. Equipment business is not very extensive and there are only a few projects yearly. Service business has a very modest role.
Organic structure of firm	Product line based organization.	Product line based organization.	All the salesmen sell all products.	Projects are organized according to project character, situation and skilled staff available.
Decentralization of power	Quite low. Sales operations are managed centrally.	Quite low. Centrally led sales.	Quite low.	High.
Strategy formulation vs. formation	Strategy formulation, Also features of formation at the current business boom.	Strong and clear strategy formulation.	Strong strategy formulation.	Strategy formation.
Coordinators and liaison positions	Local agents serve as technical advisors.	Some special marketing research activities.	High, joint support functions to different business units.	Not many coordinators, because of small number of personnel.
Job generality	Moderate. The staff is able to both sell projects and to execute them. Yet, Everyone has his own role in every project.	Relatively low. Project staff has their special tasks and areas of expertise.	Relatively low, organization divided into three separate business units. On the other hand, all salesmen sell all the product lines.	Job generality is relatively high. Although jobs are specified, they are also changeable if the situation so requires. Mainly two different areas; selling and delivering.
Dynamics of work roles	Quite low. Project manager is in charge of both tendering and project execution.	Quite high. The work roles can be changed only to some extent.	Quite low. The company is transforming from strictly defined and entrusted for broader responsibilities of experts and salespeople.	High. In case of available manufacturing capacity, everyone is involved in sales.

Our third research question is “what types of project business firms can be identified?” Based on the attributes shown in Tables 3 and 4 and reflecting them especially to the attributes shown in Figure 1 (proposed typology), we came to a conclusion that the companies can be roughly characterized and positioned as follows:

- Provider of capital goods in the metal industry – ‘successively operating adhocracy firm’
- Manufacturer of heavy equipments for logistics operators – ‘product-like project business firm’
- Solution provider in filtration – ‘standard project business firm’
- Manufacturer of automatic roll wrapping systems – ‘extreme project business firm’.

The provider of capital goods in the metal industry is a company which provides very unique and tailor-made projects in a very complex and dynamic business environment. Basically, the project staff should be both able to sell and execute the projects. Yet, everyone has his own role in certain project. Therefore, we can conclude that the work roles are quite stable and that expertise areas are quite specialized. Thus it appears that the company within the proposed typology could be positioned quite close to the characteristics of a “successively operating adhocracy firm”.

Manufacturer of heavy equipments for logistics operators is a company which manufactures heavy equipments that in principle vary from each other in a limited way. The products itself are tailored to customers only to certain extent, but the projects are quite unique. The company’s offering can vary significantly, and the current boom due to the Chinese syndrome makes the business dynamic in character. The business is both quite complex and quite dynamic in character. This has implications to the job generality and dynamics of work roles: the project staff has special tasks and areas of expertise. It appears that the company seems to match the characteristics of a “product-like project business firm’, although the character of work roles does not perfectly match to the ideal type characteristics, especially.

Solution provider in filtration is a company which provides solutions for quite many and different types of process industries by selling wide product lines of quite standard-type equipment. In that sense the products themselves are quite standard, and projects can be unique only to some extent. The business seems not to be very complex, but due to different types of customer industries and the rapid technological change of some customer industries the business is quite dynamic. Since the job generality is relatively low and the dynamics of work roles quite low, the company quite well fulfills the characteristics of a ‘standard project business firm’.

Manufacturer of automatic roll wrapping systems is a small company which mainly supplies systems for one customer industry. The projects themselves are unique, although there are a limited amount of technological solutions available. The business environment is well-known and the technologies are developed all the time, but at a slow pace. In these circumstances it is quite natural that the job generality should be relatively high, although in practice the number of experts available limits this kind of requirement. Similarly, in a small company the dynamics of work roles is naturally quite high, and people have to be ready to be involved both in selling and taking care of projects. Altogether, the company quite well fulfills the characteristics of an ‘extreme project business firm’.

Answering to the fourth research question “How the project business characteristics are related to the case companies’ patterns of action” resulted in the following conclusions. The

case companies both alleviated troublesome project business characteristics and aimed at strengthening these characteristics for creating barriers for their competitors. Typical actions aimed at alleviating discontinuity were such actions as emphasizing and increasing the role of after sales services, escaping from the project business towards equipment sales or the effective use of CRM-systems. The discontinuous nature of business varied a lot between the four case companies. The extreme case was the “Manufacturer of automatic roll wrapping systems” which had only 2-3 deliveries annually. On the other end, for the “Provider of capital goods in the metal industry” discontinuity meant as bust periods in the customer industries. Discontinuity seems to be a troublesome business characteristic to deal with. Yet, without some discontinuity of customer relationships (sleeping relationships) the project business companies and their staff were not able to use their resources effectively during the project implementation. Thus discontinuity is very important especially for companies in which the job generality and dynamics of work roles are high.

The uniqueness of projects was dealt with productization, standardization and modularization of projects or parts of them. It was interesting to note that all the firms described and perceived their projects and offerings as very unique. On the other hand, for efficiency reasons, they put a lot of effort into decreasing uniqueness in their internal processes. However, in the sales processes the same companies emphasized uniqueness by promoting their customer-specific solutions and tailoring ability. Typical actions for strengthening the uniqueness were turn key deliveries, combining products with value-adding and after sales services. Uniqueness seems to be ambiguous concept perceived differently by different actors.

Conclusions and further research

In the present paper, we have opened up the argued business characteristics of the project marketing literature by setting them into the context of organization theory concerning adhocracies and project-based organizational structures. Especially, we have elaborated characteristics of project business firms in connection with their business environment.

Conclusions

In the conceptual part of the paper we identified the *seven key characteristics of project business asserted in the existing project marketing literature*: international nature of business, long term nature of business relationships, processual nature of project cycles, discontinuous nature of business, unique nature of projects, complexity of business, and dynamic nature of business (see Table 1). Then we discussed organization design literature and identified *nine key characteristics of project business firms*: mode of international operations, management of markets and customer relationships, dependence of projects, organic structure of firm, decentralization of power, strategy formulation vs. formation, coordinators and liaison positions, job generality, and dynamics of work roles (see Table 2).

After identifying the characteristics, we identified two core differentiating dimensions for project business firm’s organizational design. Since these dimensions are orthogonal, we were able to propose a typology of project based firms. The proposed typology includes two differentiating dimensions: “Uniqueness of projects” and “Nature of mutual adjustment within and between projects” (see Figure 1).

In the empirical part of the study we first studied what types of project business firms can be identified in light of the proposed typology. Our pre-assumption was that the four companies

would be quite differently positioned within the typology. After conducting the cross-case analysis it came evident that the case companies do not purely represent the proposed ideal types, although the companies clearly differ from each other within the typology. Especially the case company “Manufacturer of heavy equipments for logistics operators” did not match quite well to any sections of the proposed ideal typology.

The dimension “Uniqueness” seems to be ambiguous and difficult to conceptualize, for example. To characterize companies and their business characteristics more validly, simple differentiating characteristics such as the annual number of projects and the size of each delivery could be used. The firm which delivers only 2-3 projects per year is in a very different position compared to the firm executing one hundred projects per year. The possibilities to standardize or productize the offerings vary accordingly.

With respect to the second differentiating dimension in the typology “The nature of mutual adjustment” we argue that the companies clearly varied between themselves. Since the present paper concentrates on business and firm characteristics, we were unable to make in-depth analysis of the stability of the work roles and the level of job specialization on the project level. However, this dimension is clearly relevant and differentiating when classifying different types of project based firms. This dimension certainly needs further research attention especially on the project level.

We feel, however that illustrating the challenges of management of these project business companies by using the developed ideal types would be beneficial, except for the development of the companies themselves, also for the advancement of theories of management project business. In the present study we have shed some light on how the four case companies cope with the challenging business characteristics by designing their organizational characteristics more or less conscious way.

Further research

In the theoretical part of the present paper we formed a typology proposing four ideal types of project business firms: ‘Successively operating adhocracy firm’, ‘Product-like project business firm’, ‘Standard project business firm’, and ‘Extreme project business firm’. Despite of our attempts so far, we were unable to identify perfectly clear-cut ideal types within our case selection.

To find clear-cut ideal types in the empirical level would require further and extensive analyses among the existing case companies. Additionally, it might be useful to refine possible new case company selections by utilizing the results gained in the present study. Still, we believe that in spite of further studies, it probably proves that some sub-characteristics differ from those of theoretical ideal configurations. In that sense ideal types possibly remain theoretical.

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