“The Importance of Intellectual Capital for the Entrepreneurial Firm”

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Abstract

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Research Issue: Entrepreneurship and intellectual capital (IC) have become important concepts in recent years. It has been realized that entrepreneurial firms are essential for the growth of economies around the world and the search for sustainable competitive advantages has brought firms closer to the concept of IC. However, there has been only a limited amount of studies that investigate the relationship between those two important concepts. This study is therefore directed at answering the following questions: What contributions do the entrepreneur and IC make to the success of the entrepreneurial firm? Is there a circular relationship between the entrepreneur and IC? If so, does this relationship have an impact on the success of the entrepreneurial firm?

Purpose: The purpose of this study is to: (1) Give an overview about Entrepreneurship, IC, and Success, covering some of the most relevant definitions. (2) Illustrate the implications of these phenomena and their contributions to the firm. (3) Develop a theoretical model of analysis that can further illustrate the factors that influence success. (4) Test the model applying it to BPM.

Method: A qualitative research approach has been used in this study. This involved a literature review concerning the concepts of entrepreneurship, IC, and success as well as the specific subcategories of IC, human capital, structural capital, and social capital. To validate the theoretical model developed in this study, a case study approach concerning the company BPM has been selected. Information about BPM was mainly collected through an interview with the CEO and contact to other informants working in the company.

Conclusions: The usefulness of the theoretical model developed, illustrating the effect of the entrepreneur and IC on the success of the firm, both independent and dependent, could be verified through the analysis of BPM. It is therefore suggested that the theoretical model can be used to analyze entrepreneurial firms in the German project-management industry. A general validity could not be proven.

Keywords: Intellectual capital, IC, entrepreneur, entrepreneurship, entrepreneurial firm, success, success factors
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Finally, we want to thank our personal friends and family members for reviewing our thesis and motivating us to successfully accomplish this study. In special focus is the creator and inventor of the “juggler”, for our cover picture, who spent many hours designing it and adjusting it to fit our views.

Again, thanks to all of you!

Västerås, Sweden
04 June, 2008

Javier Vazquez
Markus Michalski
**Glossary**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>IC</td>
<td>Intellectual Capital</td>
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<tr>
<td>EICS</td>
<td>Entrepreneur - Intellectual Capital - Success</td>
</tr>
<tr>
<td>HC</td>
<td>Human Capital</td>
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<tr>
<td>SME</td>
<td>Small and Medium-Sized Enterprise</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
<tr>
<td>BPM</td>
<td>Bau – und Projektmanagement (Construction and Project Management Firm)</td>
</tr>
<tr>
<td>PCG</td>
<td>PCG – Company (Planning Controlling and General Management)</td>
</tr>
<tr>
<td>IBM</td>
<td>International Business Machines Corporation, USA</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>DM</td>
<td>Deutsche Mark (former Germany currency)</td>
</tr>
<tr>
<td>GmbH</td>
<td>Gesellschaft mit beschränkter Haftung (type of legal entity in Germany)</td>
</tr>
<tr>
<td>gGmbH</td>
<td>Gemeinnützige (non-profit) GmbH</td>
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</tbody>
</table>
# Index

1. **Introduction** .............................................................................................................. 1
2. **Background** ............................................................................................................... 1
   2.1 Purpose .................................................................................................................... 3
   2.2 Research Questions ............................................................................................... 3
   2.3 Target Groups ......................................................................................................... 3
   2.4 Limitations ............................................................................................................. 4
   2.5 Disposition ............................................................................................................. 4
3. **Methodology** ............................................................................................................. 5
   3.1 Research Approach ............................................................................................... 5
   3.2 Method for Data Collection and Interpretation .................................................... 5
      3.2.1 Literature Review ........................................................................................... 5
      3.2.2 Empirical Research ......................................................................................... 6
   3.3 Critical Perspective on the Research Approach .................................................... 7
      3.3.1 Why a qualitative approach? .......................................................................... 7
      3.3.2 Reliability of Empirical Data ......................................................................... 7
4. **Theoretical Background** .......................................................................................... 9
   4.1 The Entrepreneur .................................................................................................. 9
      4.1.1 Schumpeter .................................................................................................. 10
      4.1.2 Penrose ........................................................................................................ 11
      4.1.3 Oviatt and McDougall .................................................................................. 12
   4.2 Intellectual Capital ............................................................................................... 13
      4.2.1 Value-drivers ................................................................................................. 15
      4.2.2 Human Capital ............................................................................................... 16
      4.2.3 Structural Capital ......................................................................................... 17
      4.2.4 Social Capital ............................................................................................... 17
      4.2.5 Dynamic Capabilities ................................................................................... 19
   4.3 Success .................................................................................................................. 19
5. **The EICS Model of Analysis** .................................................................................. 22
   5.1 The Model Overview ........................................................................................... 22
      5.1.1 The Entrepreneur and Success ................................................................... 23
      5.1.2 IC and Success .............................................................................................. 23
      5.1.3 The Relationship between the Entrepreneur and IC .................................... 24
   5.2 Deeper into IC ....................................................................................................... 25
      5.2.1 Human Capital ............................................................................................... 26
         5.2.1.1 The entrepreneur’s human capital ......................................................... 27
         5.2.1.2 Employees’ human capital .................................................................... 28
         5.2.1.3 Training ................................................................................................. 28
Figures – Tables - Charts

Figures:

Figure 1: The Model Overview......................................................... 2
Figure 2: The EICS Model of Analysis.............................................. 22
Figure 3: Human Capital................................................................. 26
Figure 4: Structural Capital............................................................. 30
Figure 5: Social Capital................................................................. 34
Figure 6: Reputation Capital........................................................... 55
Figure 7: Revised EICS Model of Analysis........................................... 57

Tables:

Table 1: Overview about the importance of various forms of IC for the succes of BPM......................................................... 54

Charts:

Chart 1: BPM’s performance between 2000 and 2007......................... 40
1. Introduction

Entrepreneurship and Intellectual Capital (IC) have become important concepts for economies around the world over the last decades, even though, due to their multidisciplinary nature, different definitions have been developed concerning these concepts (Oviatt and McDougall, 2005). There are some authors who regard these phenomena as being in strong opposition to traditional theories, such as economics, accounting, finance, to mention a few, but they have played a vital role for a better understanding of the success and/or failure of firms. In this paper we are going to address the factors influencing the success of the entrepreneurial firm, focusing on IC and the entrepreneur as the main contributors to this outcome. A theoretical model of analysis is presented illustrating how entrepreneurs utilize IC to lead firms towards success, which at the same time contributes back to the experience of the entrepreneur. The model will then be tested by applying it on BPM (Bau- & Projektmanagement GmbH), a German project management firm founded by Peter Christa that specializes in administrating small, medium, and large public construction projects, especially in the field of hospital redevelopment and expansion.

2. Background

There has been a particular awareness about the entrepreneur and IC over the last decades that point out their importance to economies around the world. On the one hand, the entrepreneur plays an important role as he/she contributes to job creation and economic growth; promotes crucial competitiveness that boosts productivity, increasing levels of efficiency and effectiveness; unlocks personal potential; and provides societies with wealth, jobs and diversity of choice for consumers (European Commission, 2003). On the other hand, when we talk about IC, there has been a growing awareness that this phenomenon adds significantly to the value creation of the entrepreneurial firm, and, in some cases, represents the whole value base (Guthrie et al., 2001). Organizations have identified that they require IC assets in order to comprise sustainable competitive advantages and be able to create value in a long-term basis (Johanson et al., 2001). This is why we are interested in analyzing these phenomena and their contribution to the entrepreneurial firm’s performance. As these two concepts are known to be important for economies individually, in this research we are also interested in analyzing their importance when they are put together, as there is a strong relationship between the entrepreneur and IC that we are going to address.

Disregarding their importance, there have been a limited number of studies analyzing the relationship between the entrepreneur, IC, and the firm’s success (Nazari and Herremans, 2007). The distressing part of this scenario is that these few studies have not really reached a common outcome regarding the influential factors contributing to the firm’s success (Ibid). Previous work has focused on the definition, classification and measurement of these concepts, but few authors have examined their relationship with business performance (Peña, 2002). A lot of emphasis has been made on the special characteristics of the entrepreneur when it comes to the success and failure of entrepreneurial firms, but those characteristics are often not further specified, just as other
important influences are left unmentioned. Some firms might be working already in an entrepreneurial manner and do not even know it. We would like to understand what IC really stands for? How can we tell if IC in fact does contribute to the entrepreneurial firm’s success? What is the Entrepreneur’s role in all of this? Is there a circular relationship between the entrepreneur and IC? Does this circular relationship influence success? What does success truly involve?

A simple metaphor might be of use at this point to express our personal views about the relationship between the entrepreneur and IC. We consider the entrepreneur to be like a “juggler”, juggling with various aspects of IC, such as networks, knowledge, experience, and organizational culture (Cover Picture). This metaphor implies interesting aspects. For example, a juggler, just like an entrepreneur, must have the abilities and skills required for the job. The more skills he/she develops, the more things he can juggle. Also, an entrepreneur that can juggle with more aspects of IC might be more successful than another. Even though this metaphor is not relevant for our study it might be interesting to keep it in mind since it can offer interesting ways of looking at certain issues.

We intend to provide a theoretical framework for the concepts under discussion to offer the reader the appropriate background for the research to be presented. The entrepreneur, IC, and success will first be analyzed independently, demonstrating some interrelationships between the concepts. Afterwards, a theoretical model of analysis will be elaborated (Figure 1) illustrating a circular relationship between the entrepreneur and IC, and how this relationship positively influences the entrepreneurial firm’s success. As IC significantly depends on the entrepreneur’s capacity to utilize it, the capacity of the entrepreneur is deeply formed by the IC he/she encounters, together they greatly contribute to the entrepreneurial firm’s success. This is the basic idea behind our theoretical model of analysis.

Figure 1. The Model Overview.
2.1 **Purpose**

The purpose of this paper is to:

- Give an overview about Entrepreneurship, IC, and Success, going over some of the most relevant definitions.
- Illustrate the implications of these phenomena and their contributions to the firm.
- Develop a theoretical model of analysis that can further illustrate the factors that influence success.
- Test the model applying it to BPM.

Our main goal is to promote awareness about how these concepts affect the entrepreneurial firm. We would like to provide an understanding of how entrepreneurship and IC can lead to the success of the entrepreneurial firm through a qualitative methodological approach that analyzes diverse theoretical studies concerning the topic in question.

2.2 **Research Questions**

We would like to understand if there is a dependent and/or independent relationship between the entrepreneur and IC and the entrepreneurial firm’s success. Therefore our goal is to answer the following research questions:

- What contributions do the entrepreneur and IC have on the success of the entrepreneurial firm?
- Is there a circular relationship between the entrepreneur and IC?
- If so, does this relationship have an impact on the success of the entrepreneurial firm?

2.3 **Target Groups**

This research paper is targeting scholars, researchers, and firms with entrepreneurial behaviors in the service industry that seek success. Since we are testing our findings on a German project management firm that is service intensive, we are also targeting our research to this industry in this geographical location. This does not mean that only these groups are the ones that can make use of it. The applicability of these theories can extend towards different groups and fields. The idea here is for the user of these theories to analyze if the models and theories are applicable to their particular case. Managers constantly accept the naive belief that if a course of action functions for another firm, it has to function for theirs too (Christensen and Raynor, 2003).
2.4 Limitations

Like many researches, limitations are present to define the boundaries of the analysis in question. Because of the limited time period available for this research, we are only considering specific intangible factors that we contemplate to be the main contributors to the success of the entrepreneurial firm. We are completely aware that there are other IC factors that influence success, not only the ones we are mentioning in this research. Special consideration can also be made regarding economical, political, industrial, competitor, cultural, and tangible factors that also influence the performance of the entrepreneurial firm, but we will not be including them in our research.

By no means do we intend to measure the entrepreneur, IC, and/or success, this research only examines the relationship between these concepts. It is also good to mention that the validity of our theoretical model of analysis is tested on a German service-intensive firm. Considerations should be made while trying to apply this model to firms in other industries and/or in other countries.

Focusing on the success of the firm does not mean that failure should be left unmentioned. Managers also get mistaken when it comes to, unfortunately, focusing only on the successes of firms. They do not pay the required attention to failure (Christensen and Raynor, 2003). In numerous occasions firms can also learn from their own mistakes or from other firms’ wrongdoings. In this paper we will pay considerate attention only to the factors that influence success, but we recommend taking failure into consideration as well.

2.5 Disposition

A methodological approach will be provided in Section 3 to illustrate how the research is going to be presented. We will then commence the early sections by defining, or presenting, the relevant theoretical background regarding the concepts that are to be utilized throughout this research. Furthermore, in Section 4 we will introduce the entrepreneur, IC, and success to the research. This is mainly for the reader to know the precise meaning of the concepts we will be analyzing, avoiding any misinterpretations. In Section 5 we will present the EICS Model of Analysis, demonstrating how the circular relationship between the entrepreneur and IC is of great importance and contributes to the success of the entrepreneurial firm. An in-depth analysis will also be performed in this section to scrutinize the entrepreneur and IC in detail, going over some of their most influential categories. Information about BPM will be presented in Section 6 providing the proper background that leads to our validation analysis. In Section 7, the applicability of the model will then be validated on BPM to furthermore correlate the diverse components on this Case Study and determine if the model has any practical implications. A conclusion will be presented at the end, in Section 8, highlighting our findings and leading the way to practical implications and future research.
3. Methodology

3.1 Research Approach

According to Gartner and Birley (2002), “many of the important questions in entrepreneurship can only be asked through qualitative methods and approaches.” (p. 387) They further state that “the study of entrepreneurship involves the process of identifying and understanding the behavior of the ‘outliers’ in the community - the entrepreneurs. To us, the ‘numbers’ do not seem to add up to what would seem to be a coherent story of what we believe to be the nature of entrepreneurship, as experienced” (Gartner and Birley 2002, p. 388). Since our research concerns entrepreneurial firms and we entirely agree with Gartner and Birley’s view, we have chosen a qualitative approach as the best way to tackle our research problem. This approach involves a literature review about entrepreneurship, IC, the various forms of IC, and success, as well as empirical research in the form of a case study.

In a first step, we collected and analyzed academic literature from the fields of entrepreneurship and IC to be able to present an overview about those fields, investigate their relationship with each other and their relationship towards a firm’s success. To clarify the concept of success, we also collected and interpreted literature concerning the success of entrepreneurial firms. To deepen our understanding about the effect of IC on success and its relationship to the entrepreneur, we performed a literature review focusing on three forms of IC: human capital, structural capital, and social capital. From the whole literature review, a general theoretical model has been established, illustrating the relationships between the entrepreneur, IC, and the success of entrepreneurial firms. Then the three forms of IC named before were placed into the model to explain their relationship to the entrepreneur and success. To verify the model, empirical research, in the form of a case study about the firm BPM, has been used. It is important to mention that it is not our aim to measure the impact of IC or the entrepreneur towards a firm’s success. Our goal is to identify the conceptual relationships that exist between the entrepreneur, IC, and success and combine them into one theoretical model.

3.2 Method for Data Collection and Interpretation

3.2.1 Literature Review

Databases for academic literature, such as Google scholar, Elin, Emerald, and JSTOR have been searched with combinations of key words to find relevant and trustworthy literature for the theoretical part of this study. Academic articles and text books in the English language have been considered for the literature review. The key words in question were: entrepreneur, entrepreneurship, entrepreneurial firm, entrepreneurial, success, intellectual capital, IC, and intangibles. After applying all useful combinations to the databases, possible literature was collected and analyzed towards its usefulness. The databases have also been searched to collect literature relating to the various forms of IC and their relationship to the entrepreneur and success. Here, different
combinations of key words were used. Those include: human capital, HC, structural capital, social capital, relational capital, entrepreneur, entrepreneurial, success, network, organizational culture, organizational structure, R&D, and training.

After collecting the literature, it has been analyzed for two purposes. First, to extract information that enables an up-to-date overview about the concepts of entrepreneurship, IC, and success. It should be kept in mind, however, that those overviews are by no means conclusive. It is not our goal to establish an all-embracing review of the concepts in question, but to give an overview about relevant information for our study. Second, to extract information that identifies and explains relationships between the three concepts. This information was then combined to establish the theoretical model. Contradictory findings have been analyzed and solutions have been proposed in the model description.

3.2.2 Empirical Research

Concerning the empirical part, companies that were previously known to the authors have been analyzed towards their usefulness in relation to the research problem. The company BPM has been selected as subject for the case study because of easy access to useful information through previously established valuable contacts. Further, the fact that BPM is a successful entrepreneurial firm in the service industry rendered it the ideal subject for our study. When contacting the firm and informing the CEO about our intentions, he immediately agreed to support us with as much information as needed.

Information has been collected through three channels. First, an interview with BPM’s CEO, Peter Christa, has been performed (see Appendix A for interview guidelines) to acquire specialized information about himself, and the company. The questions asked to Peter Christa directly related to the two main topics under investigation, entrepreneurship and IC. The questions concerning entrepreneurship should answer how Peter Christa sees the entrepreneur in general, and his specific contributions towards success as the entrepreneur. The questions concerning IC were developed to get an overview about BPM’s success factors, specifically the IC factors. In the interview, Peter Christa presented his views about BPM and business in general, and the factors that he considers to be important for the success of BPM. He also commented on the importance of the various factors of IC presented in our model for BPM. According to Fisher (2007), interviews can be performed in three ways: (1) Through an open interview, where the interviewer discusses certain topics in a informal unstructured way; (2) through pre-coded interviews, where the interviewer strictly relies on a set of questions developed beforehand; and (3) through semi-structured interviews, a mix of the first two types, where the interviewer has prepared questions, but the respondent is relatively free in answering them and bringing up additional issues. The interview with Peter Christa has been performed in a semi-structured manner. Second, to receive general information about the firm, we requested documents concerning its history, development process, structure, and performance indicators. Third, to receive additional specialized information and get an impression about employees’ “opinions” about the firm and the CEO, we were in frequent e-mail and telephone contact with several informants at the firm’s headquarter.
including the vice-CEO, the human resource director, the financial director, and various project-managers (see Appendix B to get an overview about those interviews). The interviews with other informants have been performed as open interviews.

The information collected about BPM has been analyzed to understand the firm and its relationships concerning the theoretical model. Through the variety of sources, a reliable and complex picture about the firm has been created. This information base has been used in three ways. First, to extract important information and establish an introductory background about BPM (Section 6) that presents the reader an overview about the company. Second, to verify the usefulness of the theoretical model (Section 7) developed. The main interest here was whether the factors highlighted in the model are relevant for application to BPM. Finally, to analyze the firm with help of the theoretical model (Section 7). Here, the main focus was on the degree of fit between the model and BPM. Why are the factors important for BPM? And are there other factors that should be considered?

3.3 Critical Perspective on the Research Approach

3.3.1 Why a qualitative approach?

We chose to rely on academic literature for the creation of our model, because certain amounts of reliable information on the subjects of entrepreneurship and IC were already available in this literature base. Furthermore, we believed that a relationship between entrepreneurship, IC, and success can best be analyzed through personal contact in the form of interviews since the information is very specific and one has to deeply understand a person’s line of thinking. The case study used to test the model developed in this research has to include specific and detailed information, otherwise a clear relationship between entrepreneurship, IC, and success could have not been established.

A quantitative approach in the form of a questionnaire could have also been used to establish and proof a more generally valid model. This questionnaire, however, would have to be very complex to receive sufficient and viable information. Since this approach is very time consuming, and a time-lag between sending out questionnaires and receiving them back for analysis would most likely occur, it would almost certainly exceed our limited possibilities. Further, in relation to the research problem, it is questionable if sufficient information can be obtained through a quantitative approach. Therefore, in our point of view, a quantitative approach would have to be accompanied by numerous interviews.

3.3.2 Reliability of Empirical Data

Our empirical data is limited to only one firm, BPM, and therefore the validity of our findings can only be verified for this particular firm. Further, the research about BPM is to a large extent based on the interview with Peter Christa. Therefore, the picture of a one-sided information source might evolve. We have to admit that the reliability of our findings could be limited since the views Peter Christa presented in the interview might
not represent reality. We have, however, taken several steps to limit this risk. The major task was to evaluate the information gathered in the interview in its degree of fit to the other forms of information, such as documents and information from informants. Especially the information we received from informants was useful in evaluating the reliability of the interview. We have, for example, confronted the human resource director of BPM with the information from the interview and she strongly underlined its validity. According to Yin (2003), "triangulation", which is the comparison of information or findings from multiple sources, increases their validity. Since we have performed a triangulation with three sources, the interview with Peter Christa, company documents, and open interviews with employees, we consider our empirical findings to be reliable.
4. Theoretical Background

In this section we present the theoretical background concerning the terminologies that will be used throughout this study. We consider it appropriate to define the diverse concepts being utilized from the very beginning to avoid any confusion, as there have been different points of view regarding the entrepreneur, IC and success. As we corroborate in defining each concept, we will review some of the different and most relevant views on each element to help us determine an appropriate definition for the topics in question. Furthermore, we will also indicate how these concepts fit into our theoretical model of analysis.

4.1 The Entrepreneur

The interest of researchers in entrepreneurship has grown over the last decades and, even though Cantillon introduced it into economics in the mid 1700’s, Say accorded its prominence in the early 1800’s, and Mill popularized the term in England in the mid 1800’s, but it seemed to have disappeared from the economic literature by the end of the nineteenth century (Casson, 1982). Nowadays, in an increasing number of countries, businesses are seeking for international competitive advantages through entrepreneurial innovation (Simon, 1996, cited in Oviatt and McDougall, 2000). The terminology has also evolved over the last decades as the phenomenon has been usefully studied from a variety of perspectives, such as: economics, sociology, and anthropology, to name a few (Low and MacMillan, 1988, cited in Oviatt and McDougall, 2000). This is the main reason why a general definition of entrepreneurship has been difficult to establish, for it is not easy to satisfy each and every one of the diverse fields it is contextualized in.

It is important to take some time and clarify a concept that may cause misguidance, especially when it has been utilized wrongfully in some occasions. There is a noticeable difference between entrepreneurs and small business owners. Researchers have mentioned, even though there is an overlap between entrepreneurial firms (firms having entrepreneurial behavior) and small business owners, that they are completely different things (Carland et al., 1984). Martin (cited in Carland et al., 1984) makes an important observation stating that a person who owns an enterprise is not necessarily an entrepreneur. This is true when you consider what an entrepreneur really stands for. That is the main purpose of this section, to offer a relevant definition of the entrepreneur. This is why it is important to define the diverse terminologies we are to implement in our research. The entrepreneurial firm is generally distinguished for its ability to innovate, initiate change, and rapidly react to change flexibly and adroitly (Naman and Slevin, 1993).

We should begin this section by exploring how entrepreneurship, mainly referring to the entrepreneur, has been defined throughout the years by some of the most influential authors regarding this concept. The most relevant works have been chosen for the purpose of this research. These authors are going to be addressed chronologically to conclude with a contemporary definition of what entrepreneurship will be regarded as for
the duration of this paper. We should commence with Schumpeter, since he could be considered to be the pioneer for this field of research.

4.1.1 Schumpeter

Economic models had turned out to be mainly in contrast to the phenomenon of entrepreneurship, but Joseph A. Schumpeter was one of the few economists who succeeded in adapting the concept. Schumpeter, as cited by Swedberg (2000), pointed out that economic behavior is somewhat automatic in nature and more likely to be standardized, while entrepreneurship consists of doing new things in a new manner, innovation being an essential value. As economics focused on the external influences over organizations, he believed that change could occur from the inside, and then go through a form of business cycle to really generate economic change. He set up a new production function where the entrepreneur is seen as making new combinations of already existing materials and forces, in terms of innovation; such as the introduction of a new good, introduction of a new method of production, opening of a new market, conquest of a new source of production input, and a new organization of an industry (Casson, 2002). For Schumpeter, the entrepreneur is motivated by the desire for power and independence, the will to succeed, and the satisfaction of getting things done (Swedberg, 2000). Therefore searching for profit is not what ultimately drives the entrepreneur (Ibid). He conceptualized ‘creative destruction’ as a process of transformation that accompanies innovation where there is an incessant destruction of old ways of doing things substituted by creative new ways, which lead to constant innovation (Aghion and Howitt, 1992).

When talking about innovation, it is appropriate to make a distinction between imitation and invention. Imitation is seen as ‘repetition’ or copying something that already exists; it is the basis of innovation, as individuals recombine existing ideas in a new way (Taymens, 1950). On the other hand, inventions are seen as the result of the individual’s collaboration, which may bring forward an unexpected solution to a problem, between its sub-self and its conscious effort over a long period of time (Tarde, 1902, cited in Clark, 1969). These solutions are greatly reliant on individuals and on the result of personal initiative to make new combinations (Ibid). An invention is seen as the creation of something new, while innovation is seen as the introduction and/or delivery of something new or different to the economy. The inventor is considered to be the individual who produces ideas, while the entrepreneur is referred to as the individual who gets things done (Taymens, 1950). Tarde (cited in Clark, 1969) also recognizes these innovations to prevail due to the chance of interaction or introduction of previously existing inventions.

From Schumpeter we can use his conceptualizations on innovation as one of the key ingredients that conforms an entrepreneur. We will now turn to Edith Penrose’s point of view on the entrepreneur, as she has been considered to have established theories much ahead of her time (Augier and Teece, 2007), which will help us to provide a better understanding of this phenomenon.
4.1.2 Penrose

Penrose (1995) also considered entrepreneurship to be a slippery concept because it is not easy to work into a formal economic analysis, mainly due to a close association with the temperament or personal qualities of the individuals involved. There is some information that a balanced scorecard can not provide and be utilized to take future action, so here is where the entrepreneurs make their way.

For Penrose (1995), the business firm is defined both as “an administrative organization and a collection of productive resources; its general purpose is to organize the use of its ‘own’ resources together with other resources acquired from outside the firm for the production and sale of goods and services at a profit” (p. 31). The entrepreneur plays a central role in making adequate use of these resources. She believed that an automatic increase in knowledge and an incentive to search for new knowledge are both a part of the very nature of firms possessing entrepreneurial resources. The more knowledge a firm possesses, the more prepared it is going to be facing the economy. We will discuss this issue in more details later on in the next section when we address IC. With an increase in knowledge, the firm can also confront its productive activities in an optimal manner. “The productive activities of such a firm are governed by what we shall call its ‘productive opportunity’, which comprises all of the productive possibilities that its ‘entrepreneurs’ see and can take advantage of.” (Penrose, 1995, p. 31)

Penrose (1995) used the term ‘entrepreneur’ throughout her study in a functional sense to refer to individuals or groups within the firm providing entrepreneurial services. She stated that “entrepreneurial services are considered to be the contributions to the operations of a firm that relate to the introduction and acceptance on behalf of the firm of new ideas, particularly with respect to products, location, and significant changes in technology, to the acquisition of new managerial personnel, to fundamental changes in the administrative organization of the firm, to the raising of capital, and to the making of plans for expansion, including the choice of method of expansion” (p. 31). Innovation can be seen here as there is a referral to the introduction and acceptance of new ideas, where the acceptance factor is of great importance. As society or the environment in general accepts the introduced new ideas, innovation will be present. The entrepreneur confronts uncertainty and risk, as entrepreneurship can be viewed as a psychological predisposition, as individuals take a chance in gain, and to commit efforts and resources to activities involving speculation. Uncertainty and risk is dealt with by the entrepreneur as he/she seeks to reach the entrepreneurial firm’s goals and objectives with the use of knowledge. These statements are of great importance and will later contribute to define the entrepreneur throughout this research.

The fact that the future can never be known with accuracy means that future planning has to be done with expectations. Uncertainty refers to the entrepreneur’s confidence in his estimates or expectations, while risk refers to the possible outcomes of action, especially to the loss that can be incurred if the action is taken. Risk deals with the chance of loss, but more important, with the significance of that which might be lost (Penrose, 1995). Most entrepreneurs wrongfully work with low estimates of demand and
high estimates of cost to deal with uncertainty and risk, but, as a consequence, a reduction of planned expansion can be seen.

According to Penrose (1995), uncertainty can be reduced by searching, collecting, and computing information about the factors expected to affect the firm’s decisions. On the other hand, risk is always present, and to avoid risk is the goal of the entrepreneur, but there is an effect on the expansion program of the firm as equilibrium has to be found. Entrepreneurs should have the willingness to take risks, but at the same time the willingness to look for ways of avoiding risk and still expand.

Penrose (1995) states that the entrepreneur has to present a variety of different attributes, which she refers to as: entrepreneurial versatility, fund-raising ingenuity, entrepreneurial ambition, and entrepreneurial judgment. Entrepreneurial versatility refers to the quality of imagination and vision of the entrepreneur. It is normally needed to properly develop new markets or branch out new lines of production. Regarding the fund-raising ingenuity, there are certain difficulties obtaining capital, which is commonly one of the factors preventing expansion. Here, the ability to raise capital is dependent on the ability to create confidence and gather up the required sponsorships or funding. Some entrepreneurial ambitions influence judgment in businessmen who are focused on the best way to succeed. The entrepreneurial judgment has to do with personal qualities such as ‘good sense’, and self-confidence. It is related to information gathering and analyzes the effects of risk and uncertainty. Interpretation of the surrounding environment is a must in this case.

From Penrose we can collect diverse elements that make up the entrepreneur. She mentions innovation, the use of knowledge, productive opportunities, entrepreneurial services and facing uncertainty and risk as some of the elemental activities the entrepreneur should develop within the firm. After having reviewed Schumpeter and Penrose, we can now head our research to the more contemporary work of Oviatt and McDougall, who have contributed enormously to defining the entrepreneur. Although they focus on international entrepreneurship, we believe their definition gathers up the necessary elements that provide an optimal ‘image’ of what the entrepreneur stands for.

4.1.3 Oviatt and McDougall

We are now going to relate to some of the more contemporary works on entrepreneurship. Oviatt and McDougall have been among the latest researchers within this field and have evolved their definition from one that was first established in 1997 to one that has become very well accepted nowadays. Although they mainly direct their efforts towards international entrepreneurship, they define the main attitudes and attributes that the entrepreneur should have, which is why this definition serves us the best in our research.

Oviatt and McDougall (1997) first defined international entrepreneurship as “new and innovative activities that have a goal of value creation and growth in business organizations across national borders.” Then they defined international entrepreneurship
as a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations (Oviatt and McDougall, 2000). This has been one of the most widely accepted definitions. Firm size and age are not a major attribute, and entrepreneurial behavior may happen at individual, group, or organizational levels in an enterprise (Ibid).

Afterwards, they embraced a deeper concept of entrepreneurship, defining it as the discovery, enactment, evaluation, and exploitation of opportunities across national borders to create future goods and services (Oviatt and McDougall, 2005). Discovery refers to finding innovative opportunities; enactment means to proactively put opportunities into use acquiring a competitive advantage; evaluation is required to interpret the actions taken, developing experience and knowledge; and exploitation refers to the future development of the opportunity (Ibid). Referring to this definition, we are going to be regarding the entrepreneurial firm as an organization that behaves in an entrepreneurial manner, according to the previous attributes. This is the definition we are going to be utilizing for the remainder of this research, as it contributes to our purpose and provides the diverse elements that conforms the entrepreneur.

4.2 Intellectual Capital

Similar to entrepreneurship, a rapidly growing interest has been witnessed with IC in diverse fields, such as: accounting, economics and strategic management, to mention a few. This importance on IC has increased greatly in the last two decades (Serenko and Bontis, 2004, cited in Nazari and Herremans, 2007) as many firms are still dedicating great effort concerning the better management of IC due to its measurement complexity (Dzinkowski, 2000, cited in Nazari and Herremans, 2007). “Powerful forces are reshaping the economic and business world. Many of these powers have led to a fundamental shift in organizational processes. The prime forces of change include globalization, higher degrees of complexity, new technology, increased competition, changing client demands, and altering economic and political structures.” (Johanson et al., 2001, p. 715) Due to harsh learning curves, this kind of progress has made it more difficult for entrepreneurial firms to adapt quickly, respond faster, and proactively shape their industries. Organizations have recognized that technology-based competitive advantages are temporary and that the only truly sustainable competitive advantages they have is their IC (Ibid). Some authors have mentioned that IC, which stands for the stock of assets usually not recorded in balance sheets, has become one of the most important sources of competitive advantage for the firm (Bontis, 1996; 1998, 2001; Edvinsson and Malone, 1997; Roos et al., 1998; Stewart, 1997; Sveiby, 1997, cited in Nazari and Herremans, 2007). So the main concern with IC is that there is few literature and research on the subject, forcing organizations to still rely on financial information. Stakeholders still require diverse types of information, extending further than the traditional accounting practices (Guthrie et al., 2001).

“Firms, like individuals, occupy at any moment of time a given position with respect to the external world. This position is not only determined by time and space but also by the ‘intellectual’ horizon, so to speak; it provides the frame of reference from
which external phenomena are approached and the point of origin of all plans for action.” (Penrose, 1995, p. 86) This is what makes IC an important asset, for it determines the uniqueness of the firm’s resources that contribute to the value creation and generation of competitive advantages that aids plans for action in a long-term perspective. Some studies have even suggested that non-financial performance measures are superior predictors of long-term performance and thus should be utilized to aid managers in refocusing the long-term aspects of their decisions (Ittner et al., 2003, cited in Nazari and Herremans, 2007).

“Strictly speaking, it is never resources themselves that are the ‘inputs’ in the production process, but only the services that the resources can render. The services yielded by resources are a function of the way in which they are used – exactly the same resource when used for different purposes or in different ways and in combination with different types or amounts of other resources provides a different service or set of services. …resources consist of a bundle of potential services…” (Penrose, 1995, p. 25) Two persons with a similar product or service, under similar circumstances, may act or make decisions in a different manner when they have different information at their disposal, this is why entrepreneurship treats unique resources with the importance it has (Casson, 1982).

It can be seen that the entrepreneurial firms are not necessarily very different from the more traditional organizations, as many of the core business activities remain the same. The main idea here is that there seems to be a greater emphasis given to the “knowledge-based” intangibles of the organizations, such as human and corporate know-how, and the organizations intellectual and problem-solving capacity; this IC will determine the organization’s value and performance (Guthrie et al., 2001). “Internal inducements to expansion arise largely from the existence of a pool of unused productive services, resources, and special knowledge, all of which will always be found within any firm.” (Penrose, 1995, p. 66)

We have arrived at a certain point now where many would ask: What is IC? What constitutes an ‘intangible’? What is it that makes this concept so important to the entrepreneurial firm? As there has been no common agreement regarding a definition of IC, various theories will be discussed to determine how we will consider this concept throughout this research.

The literature on IC shows that there is a separation between resources and capabilities. Initially, Amit and Schoemaker (1993, cited in Arvidsson, 2003) defined the resources part as stocks of available factors that are owned or controlled by the firm, while they described capabilities as the firm’s capacity to deploy its resources. The problem here is that the diversity of IC can not be fully appreciated. Brooking (1996, cited in Hayton, 2005) defined IC as the term given to the combination of intangible assets which allow an organization to function properly. Edvinsson and Malone (1997, cited in Nazari and Herremans, 2007, p. 596) simply stated that IC was “knowledge that can be converted into value.” Stewart (1997, cited in Hayton, 2005, p. 138) related to IC as “intellectual material – knowledge, information, intellectual property, experience –
that can be put to use to create wealth”, while Roos (1997, cited in Guthrie et al., 2001) considers it not a thing of only measuring intangibles, but also about managing them. Youndt (1998, cited in Hayton, 2005, p. 139) referred to an organization’s IC as “the aggregate stocks and flows of its potentially useful skills, knowledge and information.” Roberts (2000, cited in Guthrie et al., 2001) defines IC as the connectivity between intangible resources. Mouritsen (2001, cited in Guthrie et al., 2001) has defined IC as indicators that are an integral part of managing the firm’s knowledge resources. Hayton (2005) describes IC as assets that provide unique sources of advantages that make it easy for entrepreneurship to occur by reducing risks and improving returns on investments. When intellectual material is formalized and utilized effectively, it can create wealth by producing a higher value asset called IC (Nazari and Herremans, 2007).

What these previously mentioned authors mainly have in common, regarding IC, is that it creates value and promotes competitive advantages to the entrepreneurial firm. In a more recent study, using a sample of Taiwanese firms, Chen et al. (2005, cited in Nazari and Herremans, 2007) found that IC has positive effects on market value and financial performance. This is why it is significant to analyze the value drivers for this phenomenon. “It is essential to distinguish between knowledge embodied in a particular form (i.e. human capital, intellectual property, stakeholder perceptions of corporate reputation) and the firm’s ability to combine knowledge to generate value.” (Hayton, 2005, p. 138)

4.2.1 Value-drivers

It is important to analyze, concerning the entrepreneurial firm, what factors can be considered to drive value. Green (2004, cited in Andreou et al., 2007) states that there are eight main value drivers of intangible assets, which are: (1) Customer: It refers to the economic value that comes from the relations (e.g. loyalty, satisfaction, longevity) an entrepreneurial firm has elaborated with the consumers of its goods and services. (2) Competitor: This value driver relates to the economic value that comes from the position (e.g. reputation, market share, name recognition, image) an entrepreneurial firm has constructed in the business market place. (3) Employee: This economic value is seen with the collective capabilities (e.g. knowledge, skill, competence, know-how) of the entrepreneurial firm’s employees. (4) Information: This value driver has also an economic perspective as it comes from an entrepreneurial firm’s ability to gather and distribute its information and knowledge in the correct manner and with the appropriate content to the right people at the right time. (5) Partner: This economic value results from associations (financial, strategic, authority, power) an entrepreneurial firm has set up with external entities (e.g. consultants, customers, suppliers, allies, competitors) in chase of advantageous outcomes. (6) Process: This economic value comes from an entrepreneurial firm’s capacity (e.g. policies, procedures, methodologies, techniques) to influence the ways in which the organization functions and generates value for its employees and customers. (7) Product/Service: It refers to the economic value that result from an entrepreneurial firm’s ability to build up and deliver its offerings (i.e. products and services) that reveals a better understanding of the market and its customer requirements, expectations and desires. (8) Technology: This economic value comes from the hardware
and software an entrepreneurial firm has invested in to help out in its operations, management and future renewal.

As we continue to analyze IC from diverse angles, many authors break up the concept into three primary categories: human capital, structural capital, and social capital (Nazari and Herremans, 2007). These are the three main categories we are focusing on for the remainder of this research. There have been several authors that break down IC into more categories. For example, Arvidsson (2003) focuses on five categories of IC: human, structural, social, R&D, and environ/social capital (which stands for: ethical, environment friendly and social responsible). We are also going to mention these two additional categories (R&D and environ/social) separately because it is pertinent to arise an awareness of their importance to IC. R&D can actually be integrated into the structural capital category, as environ/social can also be talked about in the social capital category. A relationship has been identified between the different categories of IC and empirical studies, which have observed their capacity to improve a company’s value-creation potential and enhance its performance (Arvidsson, 2003). This is why we consider analyzing these categories of IC as important.

4.2.2 Human Capital

Arvidsson (2003) addresses the human capital category as the most commonly discussed within IC, mainly because of its relationship with the other categories. This category relates to the knowledge, skills and competence of the entrepreneur and the employees working in a firm. It has been emphasized as one of the most important assets, especially in knowledge-intense companies. We address knowledge, experience and training in this category. Human capital has been considered to be the key resource behind sustainable competitive advantage (Castanias and Helfat, 1991, cited in Arvidsson, 2003). Investment in human capital is expected to give way to higher productivity of individuals (Peña, 2002). McGregor et al. (2004, cited in Nazari and Herremans, 2007) also constitute to the human capital category as both, the broader human resource considerations of the business workforce and the more specific requirements of individual competence in the form of knowledge, skills and attributes of employees.

Bontis (1999, cited in Nazari and Herremans, 2007) argued that human capital is important since it is the source of strategic innovation for organizations. It has also been assumed that human capital is necessary in order to establish structural and social capital (Bollen et al., 2005; Bontis, 2004, cited in Nazari and Herremans, 2007). For Arvidsson (2003), human capital is an actual importance to the success of an organization without question, and the objective to discover the optimal manner of developing and utilizing this category of IC is high up on every management team’s agenda.

When it comes to the human capital category, it is of great importance to talk about knowledge and provide a definition of the term to avoid any confusion. According to Penrose (1995), there are two types of knowledge: (1) objective knowledge, which can be coded, taught, learned, or transmitted from person to person; and (2) experience,
which is the result of learning from personal experience, it cannot be transmitted, as it
produces a change in individuals that cannot be separated from them. She states that
experience comes in two ways, changes in knowledge acquired, and changes in the
ability to use knowledge. An increase in knowledge, she mentions, implies increase in
productive services and increased productive opportunities, which would require an
enlargement of the firm’s activities.

4.2.3 Structural Capital

The structural capital category, sometimes also referred to as organizational
capital, relates to the knowledge that has been captured/institutionalized within the
processes, routines and culture of the organization (Arvidsson, 2003). R&D,
organizational structures, and organizational culture, to mention a few, can be discussed
in this category. Collis (1996, cited in Arvidsson, 2003) emphasizes this category as a
source of competitive advantage as it generates continuous improvement in the efficiency
or effectiveness of the firm’s performance of product market activities. Structural capital
deals with the structure and the information systems which can lead to business intellect
(Nazari and Herremans, 2007). As we discussed previously, human capital is the primary
factor for developing structural capital (Ibid).

According to Peña (2002), structural capital originates from the derivation of
organizational value, on the one hand, from internal processes, infrastructure and culture,
and on the other hand, from renewal and developmental strategies. “Rather than taking a
static view of each of these forms of capital, we must understand the existence of changes
in the stocks of capital and consider the ‘flows’ of capital or interactions among all the
Peña, 2002) described traditional accounting as a ‘presentational tool of the past’ by
design, while IC was described as the ‘navigational tool of the future’.

R&D has been referred to in this category as an important intangible activity,
which is fundamental for developing the firm’s innovative capacity. This category relates
to the company’s ability to innovate, acquire knowledge and develop its strategic
flexibility (Arvidsson, 2003). According to Arvidsson (2003), firms have increased their
investments in R&D over the last decades, as it, in return, contributes with competitive
advantages and value creation. It can also be recognized that when a company announces
its investments in R&D, subsequent stock returns can be perceived.

4.2.4 Social Capital

As the business environment has undergone major changes (i.e. globalization and
technological innovations) over the last decades, the social capital category, sometimes
referred to as relational capital, has grown in importance. This category concerns the
company’s relations with external entities and the relations between employees working
within the company (Arvidsson, 2003). Networks in the form of customers, suppliers,
partners, competitors, employees, investors, to mention a few, can be viewed in this
category. The importance of customer satisfaction is related to the company’s performance in a value-creation process (Ibid).

The social capital category is also defined as the ability of an organization to interact positively with business community members to motivate the potential for wealth creation by enhancing human and structural capital (Marti, 2001, cited in Nazari and Herremans, 2007). Social capital comprises the knowledge embedded in all the relationships an organization develops, whether it is with customers, competitors, suppliers, trade associations or government bodies (Bontis, 1999, cited in Nazari and Herremans, 2007). One of the main categories of social capital is usually referred to as customer capital and denotes the “market orientation” of the organization (Nazari and Herremans, 2007).

Arvidsson (2003) related to the Environ/Social category separately from social capital, but we consider it should be referred to within the latter. The environ/social category relates to a company’s reputation as ethical, environment friendly and socially responsible. It is considered to be an important intangible asset as it supports the creation of sustainable competitive advantages. Environmental performance has become an increasingly elemental component regarding a firm’s reputation, as the world has become more environmentally and socially aware (Miles and Covin, 2000, cited in Arvidsson, 2003). The social aspect in entrepreneurship has been defined as innovative activity aimed at creating social value (Austin et al., 2006). The measurement of success in social capital is often difficult because the results of social innovation are embedded in theories of long-term social change (Ibid).

In contrast to human capital, social capital addresses the opportunities permitted by the social structure; it refers to an alternative of resources made available through organizational positions, elite institutional ties, social networks and contacts, and relationships with others (Maman, 2000, cited in Baron and Markman, 2003). Human capital and social capital are quite complementary, as high levels of social capital make possible flows of knowledge and determine access to resources contributing to the entrepreneurial firm’s success (Nahapiet and Ghoshal, 1998, cited in Baron and Markman, 2003). Research also suggests that social capital supplies the entrepreneur with improved access to information, as a study of 1700 new business ventures in Germany shows a positive relationship between social capital and venture success (Brüderl and Preisendörfer, 1998, cited in Baron and Markman, 2003).

“It is desirable that in addition to maintaining conceptual clarity between the dimensions of IC, any definition should recognize the distinction between component competencies such as stocks of knowledge and dynamic capabilities that integrate these components to create value. By doing so, it is possible to also maintain a clear distinction between an organization’s IC and its ability to exploit this resource.” (Hayton, 2005, p. 139) This is why it is also important to mention how dynamic capabilities contribute to a better understanding of IC.
4.2.5 Dynamic Capabilities

Dynamic Capabilities try to present an evolutionary and rational framework for trying to understand how firms increase their competitive advantages and maintain them over time. They refer to the “inimitable capacity that firms have to shape, reshape, configure and reconfigure the firm’s asset base so as to respond to changing technologies and markets. Dynamic Capabilities relate to the firm’s ability to proactively adapt in order to generate and exploit internal and external firm specific competences, and to address the firm’s changing environment.” (Augier and Teece, 2007, p. 179) The firm has the opportunity to elaborate a competitive advantage in a short period having resources and competences, but superior returns cannot be sustained in the long run without Dynamic Capabilities (Ibid). For Augier and Teece (2007), Dynamic Capabilities not only include the inimitable way in which a firm senses changing customer needs, new technologies, and competitive developments; but also include the ability to adapt, or even possibly change the business environment.

We have offered a theoretical background on IC that thoroughly conceptualizes this field of research and provides an overview on how this term is going to be utilized in further analysis. Human capital, structural capital and social capital are going to be discussed more into detail when we present the theoretical model of analysis. It is of great importance to point out how these categories promote value creation in today’s dynamic economies.

4.3 Success

The term “success” is probably one of the most subjective in English. What is success? Most people would start arguing that it depends on the person or thing that is under consideration and what this person or thing considers to be success. If a football player, for example, would have to define success, he would most likely begin talking about scoring goals, winning single games, the victory in a competition, and so on. When talking about the launching of a new software in accounting, however, success would have a completely different meaning. We entirely agree with that common view, so we ask: What does success mean throughout this research paper and what is the person or thing we consider? Well, it is the entrepreneur, particularly the entrepreneurial firm, we analyze, so we have to define what success for an entrepreneurial firm means.

The success of an entrepreneurial firm could be termed “entrepreneurial success”. Osborne (1995) describes entrepreneurial success as follows:

Large company or small. Start-up or existing firm. The essence of entrepreneurial success is found in the strategies that link the company and its environment. (p. 4)

The essential elements of entrepreneurial strategies are always the same. The entrepreneur must have the prerogative and resources to initiate risk-bearing
actions. The focus must be on innovatively linking the firm’s business concept with opportunities discovered in the environment. (p. 8) (Osborne, 1995)

While Osborne emphasizes the act of being entrepreneurial, we place emphasis on the entrepreneurial firm per se, which does not have to act entrepreneurial at all times. Not all entrepreneurial firms have the resources to initiate constant innovation, but that does not mean that this firm is not entrepreneurial. We integrate the “act” of being entrepreneurial, described by Osborne as innovatively linking the firm and its environment, in our definition of the success of the entrepreneurial firm which therefore has to be differentiated from entrepreneurial success.

To generally define success, we turn to Werbner (1999), who defines success “as the competitive achievement of prestige and honor, and of the symbolic goods signaling these, within a specific regime of value” (p. 551). “Success may be collective or individual, but even individual success depends on a context of sociality which elicits, facilitates and finally recognizes success as success” (Ibid, p. 551). The key issue here is that “success is always relative to the definition of value in a particular social and cultural context” (Ibid, p. 552). Therefore we have to elaborate what ‘values’ the entrepreneurial firm, particularly its owner, has and what symbolic goods signal the achievement of prestige and honor, to finally define its success criteria.

Brown and Walker (2004) found that people can have many different reasons to become entrepreneurs. Those reasons, or values, can be grouped into financial and non-financial factors, such as personal satisfaction, independence and flexibility. Non-financial values can also include environmental and social aspects, which are especially difficult to measure for outsiders (Austin et al., 2006). Therefore, entrepreneurs can have many different views as to what constitutes success. To simplify matters, however, we turn to traditionally accepted ways of measuring the success of entrepreneurial firms. According to Schutjens and Wever (1999), the three most useful success indicators are: survival of new firms, the size and growth of turnover, and growth of the number of employees. Brown and Walker (2004) present a similar list of traditional success indicators consisting of employee numbers and financial performance, such as profit, turnover and return on investment. For our purpose, the following factors are used to determine the success of an entrepreneurial firm:

- Profit
- Growth of turnover
- Number of employees
- New firm survival

Throughout this thesis, we refer to the success of the entrepreneurial firm when we use the term success. We consider an entrepreneurial firm to be successful when it reaches its financial goals and objectives, increases its employee base, or, in case of a start-up, simply survives. It should be noted that, generally, success is a slippery concept in relation to entrepreneurship, because in an entrepreneurial organization there has to be
space for failure in order to achieve success (Burns, 2005). Risk-taking behavior and innovativeness are at the core of entrepreneurship and highly related to frequent failure. The truly successful entrepreneurial firm is therefore one that succeeds more often than it fails (*Ibid*).

In this section we have investigated previous researches that focus on the entrepreneur, IC, and success. An overview has been presented providing a specific definition of the general concepts we are regarding in this research, creating a strong theoretical background that validates our study. To avoid confusion and assure a straight reading flow, more detailed information concerning the three theoretical concepts and their relationship with each other will be added as needed. In the next section, furthermore, we are going to utilize these concepts to develop a theoretical model of analysis. A correlation between the entrepreneur and IC will be further scrutinized. We will also analyze how these two fields of research relate, dependent and independently, to the success of the entrepreneurial firm.
5. The EICS Model of Analysis

In this section we are going to present the EICS (Entrepreneur, IC, and Success) Model of Analysis. It is appropriate to mention that this model of analysis has been developed from a theoretical background. We have encountered a strong relationship between the entrepreneur, the diverse categories of IC, and success, and how these concepts influence the entrepreneurial firm. There are obviously other factors that influence the entrepreneurial firm, but we consider these factors mentioned above to be the most influential, this is why we are going to narrow our research to cover these three concepts.

5.1 The Model Overview

Our purpose here is to provide a theoretical model of analysis (Figure 2) which helps us to better understand and illustrate the relationships between the concepts presented in this research, that is, the entrepreneur, IC, and success. We are going to begin by explaining how the entrepreneur and IC, independently, contribute to the success of the entrepreneurial firm, according to various authors, to help us better illustrate the model of analysis. We are then going to analyze how the entrepreneur and IC contribute to each other in a circular manner, afterwards demonstrating how this circular relationship adds significantly to success. Furthermore we will conclude that IC, as a resource, greatly depends on the entrepreneur’s capacity to make use of it, but the capacity of the entrepreneur is greatly formed by the IC he/she encounters, and together they deeply contribute to the entrepreneurial firm’s success. We are going to validate these statements in the following subsections as we investigate five major direct relationships: the entrepreneur and success; IC and success; the entrepreneur and IC; IC and the entrepreneur; and both, the entrepreneur and IC, and success.

Figure 2. The EICS Model of Analysis.
5.1.1 The Entrepreneur and Success

The entrepreneur is considered to play an important role in today’s economies. His/her contributions to the firm can be observed in different ways, but for the purpose of this section, we are going to regard his/her effects on success. Naman and Slevin (1993) state that many organizations need enhanced means of increasing the skills and effectiveness of their entrepreneurial management and assisting their development to have the potential to encounter a more successful organization. They emphasize that special consideration has to be given to the entrepreneur’s capabilities to help lead the firm towards success. There has been an attention to organizational choices driven by the thought that, while individuals may possess significant resources, organizational choices establish whether and how individual resources are translated into organizational competences, which ultimately lead to a firm’s superior competitive position (Nelson and Winter, 1982, cited in Mosakowski, 1998).

Entrepreneurs are faced with the complexity of decision-making, facing an everyday changing economy, where uncertainty and risk are to be dealt with. They are the ones who confront difficult scenarios to guide the entrepreneurial firm towards the realization of its goals or objectives, procuring to hit upon and succeed more often than failing. “A missing component of several leading theories of the firm, entrepreneurship, is the key to the growth and survival of firms in a volatile environment, because entrepreneurial judgment is necessary for success in making complex decisions under uncertainty.” (Casson, 2005, p. 327)

The analysis will be centered towards the factors that, according to Baron and Markman (2003), are the strongest links to entrepreneurial success, which are:

- High self-efficacy.
- Ability to spot and recognize opportunities.
- High personal perseverance.
- High human and social capital.
- Superior social skills.

We will furthermore review these factors in detail in our model analysis, focusing on how they relate to BPM.

5.1.2 IC and Success

There have been many authors who consider IC as being an important influence regarding the entrepreneurial firm’s success, as it contributes to the creation of value and competitive advantages to facilitate the ability to reach goals and objectives. For example, Bontis et al. (2000, cited in Peña, 2002) stated that there is an important positive association of IC with business performance, regardless of the industry sector it may pertain to. Sánchez et al. (2000, cited in Peña, 2002) mentioned that IC is important in management as it is considered to be a great source of sustainable competitive advantages. Roos et al. (1997, cited in Peña, 2002) linked IC and the value creation
As we previously have described, IC has been categorized into human capital, structural capital, and social capital. All of these categories add significantly in their own manner to the entrepreneurial firm’s success. Results suggest that “human capital of the entrepreneur (i.e. education, business experience and level of motivation), organizational capital (i.e. firm capacity to adapt quickly to changes and the ability to implement successful strategies), and relational capital (i.e. development of productive business networks and an immediate access to critical stakeholders) are important intangible assets, which seem to be related positively to venture performance.” (Peña, 2002, p. 180)

In human capital, for example, empirical evidence has demonstrated that knowledge and experience contributes to explain business success (Duchesneau and Gartner, 1990; Dunkelberg et al., 1987; Cooper et al., 1987, cited in Peña, 2002). An uninterrupted practice of organizational learning and adaptation will always be employed by successful firms to guarantee long-term development (Naman and Slevin, 1993). Structural capital elements, such as firm’s resources, organizational learning, structural flexibility and business strategies, are appropriate factors of IC that are set in the firm and seem to influence on the business’s performance (Peña, 2002). Social capital has been analyzed as entrepreneurs interact with customers, suppliers, financial institutions, consultants, and local regulators, to mention a few business networks, to highly impact on the performance of the firm (Peña, 2002). Some of the external factors, mainly pertaining to the social category, that contribute to the entrepreneurial firm’s success are networks, industrial sectors, geographical choices, and policies (Peña, 2002).

We have seen how the entrepreneur and IC influence on the success of the firm, each concept on its own, but we cannot negate that there is a strong relationship between these two elements. This relationship can help us furthermore understand the factors that influence a firm’s success.

5.1.3 The Relationship between the Entrepreneur and IC

We should commence this sub-section by stating that entrepreneurs and IC complement each other in a circular manner. Each of them contributes back to the other as no resources, not even entrepreneurial resources, are of much utilization by themselves alone (Penrose, 1995). These two phenomena need each other for the entrepreneurial firm to function in an optimum manner. Any valuable use for them is always viewed in terms of potential combinations with other resources (Ibid). Penrose (1995) stated:

The services that resources will yield depend on the capacities of the men using them, but the development of the capacities of men is partly shaped by the resources men deal with. The two together create the special productive opportunity of a particular firm.
(Penrose, 1995, p. 78)
The correlation between the entrepreneur and IC can be highlighted as an important complementation for the success of the entrepreneurial firm. As we have covered in the previous sections, the entrepreneur’s utilization of the available resources and opportunities to the firm with the best use of his/her knowledge is contributed by a good use of IC assets. These IC assets are of great value to the entrepreneur, as they are the base of the competitive advantages and value drivers for the entrepreneurial firm. They portray the uniqueness of the entrepreneurial firm and contribute back to the entrepreneur’s background.

Peña (2002) stated that the different forms of IC that an entrepreneur introduces to an organization can be expected to determine the success level achieved by firms. He also mentioned that the entrepreneur plays a vital role in social capital, as he/she is the one that faces and relates to the different entities in the networks, and the way in which the entrepreneur develops those relationships contributes to the success of the entrepreneurial firm. Firm performance depends greatly on the effectiveness of IC management achieved by the entrepreneur (Ibid). Seeking optimum efficiency levels for competitive advantages and exploring new business opportunities to expand activities permanently expose entrepreneurs to a learning process, which regardless of the category of IC it comes from, it constitutes a vital intangible asset that influences the firm’s performance (Ibid). This does not mean that tangibles should be left unmentioned, but tangibles without intangibles would simply not be representative now-a-days.

We have previously discussed how the entrepreneur and IC influence to an entrepreneurial firm’s capacity to obtain goals and objectives. First we identified how researchers have independently visualized these phenomena. Furthermore we created an awareness on the dependency this two actors play for the success of the entrepreneurial firm. In the next section we will further explain the relation of IC, which we have treated in a very general way so far, with the entrepreneur and success, focusing on three specific categories of IC.

5.2 Deeper into IC

For an in depth description of the relationship between the entrepreneur, IC, and success, we investigate the specific implications of the following types of IC: human capital, structural capital, and social capital. In the field of human capital, we focus on the knowledge, skills and experience of the entrepreneur and the employees, as well as training. In the field of structural capital we investigate the implications of R&D, organizational structure, and organizational culture. Finally, in the field of social capital, we describe the effects of an entrepreneur’s personal network and an organization’s network on the entrepreneurial firm. It should be noted at this point that there are other types of IC, such as reputation capital, that could be investigated. Further, within the fields under investigation, there are many more topics that may be of interest. However, we limit our research on the fields and topics named above, to keep the scope of this
work in range. An investigation of the other fields could be an interesting topic for future research, but for the purpose of this research we will analyze the most influential topics to our appreciation. The following section represents the heart of this study and will be used to analyze the case of BPM in section seven. To entirely understand the relationships presented, it is important to keep in mind that the entrepreneur has to be seen in a functional way (Penrose 1995). The entrepreneur can therefore be only one person or a group of persons. Further, he/she can be the owner of a company, an employee, or a work group within the firm.

5.2.1 Human Capital

Many authors have already investigated the positive relationship between human capital, in general, and the success, or improved performance, of entrepreneurial firms (Rauch et al., 2005; Baron and Markman, 2003). Brush and Chaganti (1999) found that “young firms’ performance and positive cash flow are more significantly related to their human and organizational resources (e.g., owner’s industry experience and commitment, staff skills) than to their strategy” (cited in Baron and Markman, 2003, p. 287). Pennings, Lee, and Van Witteloostuijn (1998) also found evidence “that a high level of human capital is related to firm survival and growth” (cited in Baron and Markman, 2003, p. 291). Human capital by itself is, however, relatively low in value without managers or entrepreneurs using it in the right way (Penrose 1995). Since the entrepreneur is of specific concern to us, we will focus on the later to describe the relationship between human capital and success. In general, we propose that entrepreneurs use human capital to generate value and discover opportunities in the marketplace. The interaction with human capital then adds to their experiential knowledge (Ibid). The various aspects of human capital we consider for this research project (Figure 3) are: the entrepreneur’s human capital, employees’ human capital, and training.

![Figure 3. Human Capital.](image-url)
5.2.1.1 The entrepreneur’s human capital

An entrepreneur’s human capital, for our purpose, consists of his/her education, knowledge, experience, and skills. The effects of entrepreneur’s human capital on firm performance have been studied by numerous researchers in the field of entrepreneurship (Rauch et al., 2005). Davisson and Honig (2003) found that an entrepreneur’s previous start-up experience plays an important role in both the founding process and the further development of a new business. They also found that formal education, or objective knowledge, of the entrepreneur plays a less significant role. Only during the start-up phase of a new venture, education plays an important role for success. After inception, education has not been found to influence the performance of entrepreneurial firms. Harada (2003) found slightly different results for the importance of the entrepreneur’s education and experience. His findings support the importance of education and experience for post-entry performance. He further found that “an entrepreneur’s higher education does not increase the probability of success and provides no advantage to start-up” (Ibid, p.218). The positive impact of experience in the start-up phase is also supported by Harada. Therefore the findings of Davidsson and Honig and Harada are contradictory with respect to education. Politis (2005) underlines the central role of experience, finding that “it provides entrepreneurs the possibility to improve their ability to discover and exploit entrepreneurial opportunities and to learn how to overcome traditional obstacles when organizing and managing new ventures (i.e., the liabilities of newness)” (p. 415). Summarizing, we can say that according to researchers in the field of entrepreneurship, experience does have a positive effect on performance in both the start-up and the post-entry phase of a new venture, while education may have a positive effect in one or both phases.

Concerning the entrepreneur’s skills, Baron and Markman (2003) developed a model which compares the requirements of being an entrepreneur to the actual characteristics or skills of individual entrepreneurs. One requirement of an entrepreneur is, for example, the ability of “creating new companies by transforming discoveries into marketable items” (Ibid, p. 281). The characteristics of entrepreneurs that are used are: self-efficacy, ability to recognize opportunities, personal perseverance, human and social capital, superior social skills (Ibid). The more entrepreneurs fulfill those characteristics, the higher the “person-entrepreneurship fit” (Ibid). In their study, it has been found that “the greater the person–entrepreneurship fit, the higher the likelihood of entrepreneurial success” (Ibid, p. 293). This result has already been underlined by Milne and Thompson (1986), who found that “the ability of the owner/manager to judge appropriate market opportunities was a key discriminator of probable success” (cited in Chaston, 1997, p. 814). Chandler and Jansen (1992) also found that “the skills and abilities founders bring to the business constitute an important resource” (cited in Chandler and Hanks, 1998, p. 356). Without going too much into detail regarding the complex field of the entrepreneur’s special skills and abilities, we can conclude that it has definitely been proven that they do play an essential role in the success of entrepreneurial firms.
In sum, we can say that an entrepreneur’s human capital has a significant impact on the performance of entrepreneurial firms. We propose that there is a circular relationship between the entrepreneur and its human capital that leads to increased success. When the entrepreneur uses his/her own skills, education, and experience, not only the performance of the firm is affected, as proven above, but also the entrepreneur himself. The use of his/her human capital increases the entrepreneur’s experience and therefore increases the value of the entrepreneur’s human capital in general (Penrose 1995). This process is repeated every time the entrepreneur uses his/her human capital and therefore the entrepreneur’s human capital is clearly dynamic and constantly improving over time.

5.2.1.2 Employees’ human capital

The human capital of employees under consideration in this section, are employees knowledge, working experience, and skills. Research in the field of entrepreneurship has widely ignored the human capital of employees in small enterprises (Rauch et al., 2005). In one of the few studies, Black and Lynch (1996) showed “that the average educational level in private firms is related with business productivity” (cited in Rauch et al., 2005, p. 683). Thorpe et al. (2005) have found that “in terms of what constitutes a knowledge base for innovative SME’s, a critical and overriding element of their intellectual capital seems to be those people they employ” (p. 267). They further found that “the right people in the right place” is an important condition for a competitive future of SME’s (Ibid).

In general we can therefore say that from research in the field of entrepreneurship, the importance of employees’ knowledge, experience and skills for the success of entrepreneurial firms can only be partly understood. It is suggested that there may be a positive relationship between employees’ human capital and firm success in some, but not in every cases. Our proposal, related to the findings of Thorpe et al., is that employees’ human capital may be important for the innovative processes in an entrepreneurial firm if used by the entrepreneur. This means that an entrepreneur might use employees’ human capital as source for information as well as opportunity recognition and exploitation. In this case, employees do contribute directly to the firm’s success though their human capital. Further, related to the circular relationship described before, the entrepreneur does gain experience while using employees’ human capital and therefore increases his/her own human capital which can then be used in the future. This important relationship leads us to the importance of managing employees’ human capital, so that it develops and is available in maximum amounts to the entrepreneur.

5.2.1.3 Training

Barney (1991) found that “to achieve a competitive advantage, firms need to generate specific knowledge because specific resources are unique and difficult to imitate” (cited in Rauch et al., 2005, p. 682). Lepak and Snell (1999) argued that one way of generating a firm-specific advantage is human capital development (cited in Rauch et al., 2005). In their own research, Rauch et al. (2005) found that human capital
development and utilization has a significant impact on the success of SME’s. Bell et al. (2004) supported this result by finding that “the ability of firms to actively manage knowledge is viewed as important in their competitive success” (cited in Thorpe et al., 2005, p. 272). With human capital development and utilization, Rauch et al. (2005) refer to the “practices used for enhancing employee skills through training and other forms of knowledge and skill enhancement” (p. 683). For the remainder of this section we will refer to human capital development and utilization simply as “training”, since training is in special focus for our purpose. Training improves employees’ human capital and the business-owner plays an important role in providing opportunities for training (Ibid). Huselid (1995) found that training increases productivity, not only because employees’ skills and knowledge are improved, but also because of greater motivation (cited in Rauch et al., 2005).

To summarize the research findings, we can say that training has definitely proven to be important for the success of entrepreneurial firms, because it increases employees’ human capital. Regarding the findings from the last section, on employees’ human capital, this result seems to be somewhat surprising, since a clear, positive relationship between employees’ human capital and improved firm performance could not be established from the literature used in that section. Regardless of this contradiction, we propose that a circular relationship between the entrepreneur and training exists, and affects venture performance. The entrepreneur can use training, in selected fields important for him/her, to increase employees’ knowledge and skills. This increased human capital can then be used by the entrepreneur as described in the section on employees’ human capital.

5.2.2 Structural Capital

According to Hayton (2005), “it is essential to distinguish between knowledge embodied in a particular form (i.e. human capital, intellectual property, stakeholder perceptions of corporate reputation) and the firm’s ability to combine knowledge to generate value” (p.138). The routines and processes that aim at integrating the different kinds of knowledge within a company are referred to as structural capital (Ibid). The different types of structural capital such as organizational structure and organizational culture are directed at making the knowledge of individuals organizational (Ibid). The literature concerning the use of knowledge in SME’s is often related to Barney’s (1991) resource-based view of the firm (Thorpe et al., 2005). According to Barney (1991) “performance is related to the ability of entrepreneurs and managers to integrate their knowledge of markets (awareness of customer and supplier needs along with other stakeholders; proximity to emerging markets; insight into commercial potential) and of technology (recognizing and exploiting ideas through innovation) with the routines, norms and physical spaces that govern everyday organizational activity” (cited in Thorpe et al 2005, p. 261). Therefore a clear relationship between the entrepreneur, his/her use of structural capital, and performance is visible.

We argue for an extension of those findings, proposing that entrepreneurs who manage structural capital not only affect firm performance, but also their own human
capital. In our view, the entrepreneur is affected by valuable structural capital, since it serves him/her as a resource for entrepreneurial work and increases experience. Further description about the processes that make structural capital valuable to the entrepreneur will be given in the sections on R&D, organizational structure, and organizational culture (Figure 4). In general, however, we propose that there is a circular relationship between the entrepreneur and structural capital that has a positive effect on firm performance.

Figure 4. Structural Capital.

5.2.2.1 R&D

R&D investments have been shown to pay off in a majority of industries. They are mainly associated with improvements in market share and higher levels of innovation, controlling firm size regardless of industry or region of the world (Ettlie, 1998). According to Ofek and Sarvary (2003), firms actually invest in R&D in an attempt to attain industry leadership. With this they secure high profits and benefiting from advantages pertinent for the success of future product generations. It has been revealed that when the actual leader possesses high R&D competences, it tends to keep its lead position (Ibid). Long-term growth leaders in any industry do invest significantly in R&D (Ettlie, 1998).

R&D contributes significantly to an entrepreneurial firm’s productivity and profitability. When firms formalize their R&D, investments tend to pay off significantly with improved productivity (Lichtenberg and Siegel 1991, cited in Ettlie, 1998). Kim and Lyn (1990, cited in Ettlie, 1998) also found a positive relationship between R&D intensity and the profitability of the firm.

According to Ofek and Sarvary (2003), regarding the efforts to attain the lead position in an industry, advantages may arise that considerably affect the leader's ability to achieve future success. They mention that R&D promotes innovative advantages and reputation advantages. Innovative advantages come out to impose new combinations in
the capability function of the firm, setting up the grounds or rules for other players. Reputation advantages can be seen throughout time with trust, and it contributes with the client’s loyalty. One of the strongest arguments supporting R&D is the first-mover advantage theory (Ettlie, 1998), as also with innovation, the leading firm sets the tone for others to follow, but it can also make the firm face some difficulties as being the first to cover that ground. Numerous risks have to be undertaken, but the payoff can be extremely high.

As we previously discussed, when R&D contributes to the entrepreneurial firm’s stock of knowledge, it enables the entrepreneur to be better prepared when facing uncertainty and risk. As the entrepreneur acquires specific knowledge offered by R&D, he/she has the necessary information to make appropriate decisions that can lead the entrepreneurial firm towards success. While economies are constantly changing, R&D keeps the entrepreneurial firm up-to-date with the necessary knowledge to have a good performance.

5.2.2.2 Organizational structure

The concepts of organizational structure and organizational culture are closely related. We will first focus on organizational structure, but it has to be kept in mind that overlaps in some points might occur. According to Burns (2005), it is important to understand that different types of structures fit different types of companies. One therefore cannot clearly say that a particular type of structure is suitable for all entrepreneurial firms. The best structure depends “on a number of factors: the nature of the organization, the strategies it is employing, the tasks to be undertaken, the environmental conditions under which the firm operates and the size of the firm” (Ibid, p. 125). A firm can behave entrepreneurial or bureaucratic and can have a mechanistic or organic structure (Burns, 2005). Covin and Slevin (1990) found that “entrepreneurial behavior within an organization is positively correlated with performance when structures are more organic” (cited in Burns 2005, p. 157). Burns (2005) found that a mechanistic organizational structure is suitable for a more bureaucratic style of management. He further found that if there is a misfit between the structure and the firm’s behavior, the efficiency and overall performance of the firm will suffer. It has to be kept in mind, however, that different parts of a firm might show different behavior and therefore need different structures. Consequently an organizational structure might have to consist of a mixture of mechanistic and organic structures.

The most common mechanical structure is a hierarchical structure. In a hierarchical structure, control is centralized, usually at the top-management level, and departmentalization (forming functional groups such as marketing, production, and accounting) occurs (Burns, 2005). An organic structure, in contrast, has only limited hierarchy and is highly flexible (Ibid). It supports personal interaction and decentralized power and authority while only few bureaucratic rules and regulations exist (Ibid). Further, it has been found to strongly support entrepreneurial behavior, since innovation needs a flexible environment (Ibid). Usually, organizations use tight control systems to eliminate uncertainty and risk, but the entrepreneurial firm requires a great amount of
freedom so that employees get access to a maximum of resources in the innovation process (*Ibid*). A fairly loose structure, however, bears the risk of losing control entirely. Therefore, Burns (2005) emphasizes the importance of strong organizational culture and leadership to assure that everyone moves in the same direction.

An important aspect of entrepreneurial organizations is that they often find themselves in frequently changing environments (Burns, 2005). In a changing environment, standardization of processes is rarely possible and therefore the ability to cope with non-standard, unexpected problems needs to be pushed down the hierarchy of an entrepreneurial organization (*Ibid*). This calls again for an innovative, flexible, decentralized organizational structure (*Ibid*). In sum, a clear picture is evolving from entrepreneurship literature that highlights the importance of having the suitable structure for the specific needs and behavior of a company.

Referring back to the EICS Model of Analysis, the relationship between the entrepreneur, organizational structure and success is clearly visible. It is the entrepreneur’s task, in collaboration with other managers, to establish an organizational structure that fits the specific characteristics of the firm. When an organizational structure that supports entrepreneurial behavior is in place, it can be used by the entrepreneur to pursue his/her entrepreneurial goals successfully. The organizational structure, in that case, works as a valuable resource that supplies the entrepreneur with information, ideas, and human capital necessary for innovation. We propose that a suitable organizational structure might even be a requirement for entrepreneurial success.

### 5.2.2.3 Organizational culture

As previously mentioned, organizational culture is *one* important method to control the fairly loose structure in an entrepreneurial organization. It fulfils, however, many more purposes than control and is probably one of the most important IC resources entrepreneurial firms have. The academic world has so far failed to reach an agreement on its definite meaning (Dimitratos and Plakoyiannaki, 2003). Most researchers, nevertheless, see organizational culture “as a set of cognitive elements, namely values, beliefs, norms, and assumptions, which determine the thoughts, feelings, and actions of organizational members” (*Ibid*, p. 191). Organizational culture, however, does not only consist of cognitive elements, but also of material elements such as logos, art, appearance, buildings, and physical layout (*Ibid*). It is important to understand that culture evolves and changes over time, influenced by many different factors (Burns, 2005). Further, culture always emerges within a company, whether directed or not, but it is the task of entrepreneurs and other managers to construct a suitable culture, otherwise objectives may not be reached (*Ibid*).

According to Burns (2005), an entrepreneurial organization’s culture is constructed through values (e.g. creativity, achievement, ownership, change and perseverance), organizational processes (e.g. leadership style, structures, empowerment, controls and reward, and stories and symbols), cognitive processes (e.g. ethics, beliefs, assumptions, attitudes, and norms and rules of conduct), and behaviors (e.g. how things
actually get done, job titles, slogans, and metaphors). For an entrepreneurial firm it is essential to have entrepreneurship at the core of its values to be successful (Ibid). Researchers in the field of entrepreneurship find it problematic to clearly define the most important dimensions of an entrepreneurial firm’s culture, because too many elements might be of significance (Ibid). In a first try, Burns (2005), related entrepreneurial firms to Hofstede’s (1981) four dimensions of culture: individualism, power distance, uncertainty avoidance, and masculinity (cited in Burns, 2005). He argues that an entrepreneurial firm must move away from individualism to collectivism as the firm grows, because the entrepreneur depends more and more upon a team. He further argues that power distance has to be low in entrepreneurial firms, because a more consultative and participative leadership style is needed. Obviously, uncertainty avoidance also has to be low in entrepreneurial firms since risk-taking is a major aspect of entrepreneurial behavior (Ibid). Concerning masculinity, Burns (2005) argues for a balance between the masculine and feminine dimensions “to build a culture of achievement against ‘outgroups’ through co-operation, networks and relationships with the ‘ingroup’” (p. 131). Concerning the named dimensions, Burns (2005), criticized, however, that Hofstede’s research was based on the multinational company IBM which can hardly be described as an entrepreneurial company and is therefore fairly unsuitable for an application to entrepreneurial firms. He therefore, tried to establish a short list of dimensions, “the high level elements of culture”, “that really set the culture of the organization apart as being entrepreneurial” (Ibid, p. 119). These dimensions are:

- Creativity and innovation
- Empowerment of employees
- Strong relationships
- Continual learning (sharing information and knowledge)
- Measured risk taking

Whether those dimensions are really the most important for an entrepreneurial culture is difficult to say, but Dimitratos and Plakoyiannaki (2003), found very similar results in their research on international entrepreneurial culture. Based on the findings above, we can conclude that a suitable organizational culture is essential for the survival or success of entrepreneurial firms and it is, among others, the entrepreneur’s task to construct and change culture in proper ways. Similar to organizational structure, a circular relationship between the entrepreneurs is fairly obvious. We propose that the entrepreneur builds organizational culture which he/she can then use to pursue his/her entrepreneurial goals. Organizational culture is strongly supporting the entrepreneur, for example, in innovation processes, but he/she also gains experience through, team-work and other aspects of organizational culture.

5.2.3 Social Capital

Baron and Markman (2003) describe social capital as additional resources that become available through organizational positions, elite institutional ties, social networks and contacts, and relationships with others. Numerous researchers in the field of entrepreneurship suggest that high levels of social capital grant entrepreneurs access to
information and increased cooperation and trust from others which has a positive impact on firm performance (*Ibid*). Among them was Penrose (1995), who found that “the accumulation of knowledge, information, and other resources through social ties opens new productive opportunities and constitutes a driving force in the development and growth of new ventures” (cited in Liao and Welsch, 2003, p. 153). Brüderl and Preisendörfer (1998), in a study of 1700 new business ventures in Germany, also found a positive relationship between social capital and venture success. Social capital can be classified as a property of social interactions and networks and is therefore not individually owned (Cooke and Willis, 1999), even though the social capital of an organization consists of the social capital of all its employees combined (Swedberg, 2000). Cooke and Willis (1999) therefore argue that the concept of social capital presents a new perspective for research in the area of entrepreneurship, away from the often highlighted individual attributes of entrepreneurs to the social skills of all employees as success criteria.

From the facts above, it becomes apparent that an increasing awareness, in both the academic and business world, has gained ground concerning the importance of social capital. It is clearly shown that social capital does have a positive effect on the performance of entrepreneurial firms and therefore has to be considered for the EICS Model of Analysis. Coming back to the circular relationship, in this case between the entrepreneur and social capital, we propose that the entrepreneur does influence the overall social capital of the firm through his own human and social capital. It might be the social skills of the entrepreneur, for example, that play a decisive role in the establishment and development of social capital. Existing social capital can then be used by the entrepreneur as source for information and other resources in his/her entrepreneurial work. While using social capital, the entrepreneur may increase his own human and social capital, which results in a higher level of social capital available for use in the future. Therefore the circular relationship increases the level of social capital step by step and contributes to success.

In the following two sub-sections, we will take a closer look at a specific form of social capital, which is networking in entrepreneurial firms. For that purpose we

![Figure 5. Social Capital.](image-url)
distinguish between two different network approaches to entrepreneurship (Figure 5): the personal network of the entrepreneur and the organizational network of businesses (Brüderl and Preisendörfer, 1998). The former concerns the individual relations of entrepreneurs independent of other employees’ relationships. The latter comprises all collective relationships new businesses are implanted in.

5.2.3.1 The personal network of entrepreneurs

Concerning networks, most research in the field of entrepreneurship applies to the “personal network perspective” (Brüderl and Preisendörfer, 1998). Many of these researchers, among them Brüderl and Preisendörfer (1998), found that entrepreneurs, who possess a broad and diversified personal network and receive support from it, are more successful than others. Liao and Welsch (2003) argue that the success of new ventures depends on the entrepreneur’s ability to gain access to external resources, which can be both tangibles (e.g. financial capital or material for production), and intangibles (e.g. information and knowledge). Penrose (1995) classifies those resources as “productive opportunities of a firm”. In their reasoning, Liao and Welsch (2003), consider productive opportunities to be a “function of accessibility and appropriatability” (p. 153). Accessibility concerns the ability of the entrepreneur to “reach parties in his/her social networks that may possess the resources needed for growth” (Ibid, p. 153), and is to a large extent determined by the number of social relationships and the network position of the entrepreneur. Appropriatability concerns the relevance and usefulness of particular social relationships for business purposes (Ibid). Therefore the concepts of accessibility and appropriatability, to some extent, measure the quality of an entrepreneur’s personal network.

An interesting aspect concerning entrepreneur’s personal networks was found by Davidsson and Honig (2003). They found that strong relationships to parents, close friends, or neighbors who are in business have a high impact on the success of entrepreneurs in both the start-up and post-entry phase. The major reasons presented are encouragement and help with opportunity discovery, but also financial support. Cable and Shane (1999), generally, found that an entrepreneur with a high level of social capital is likely to get easier access to financial capital from venture capitalists than others (cited in Baron and Markman, 2003).

From the above mentioned research findings, we can clearly see that the personal network of the entrepreneur does have a significant impact on the success of entrepreneurial firms in both the start-up and post-entry phase. The responsibility to create and maintain such a network over time lies entirely with the entrepreneur. He/she may use the existing network to get access to useful, internally not available, resources, such as information. While using the network, the entrepreneur gains experience, knowledge, and social skills which allow increased networking opportunities in the future.
5.2.3.2 The organizational network of businesses

The concept of networking has, in the past, only been used in sociology, but recently, it has been applied to understand entrepreneurial behavior in the start-up as well as in the developing phase of a new venture (Brüderl and Preisendörfer, 1998). There are external network relationships, those with customers, suppliers, government agencies, research institutes, and competitors, and internal networks, among the persons working within a firm (Hall, 1992). Cooke and Willis (1999), ascribe great importance to intra-firm relationships, because it enables the achievement of synergy and fosters innovation. Since we have to a large extent covered intra-firm relationships in the sections regarding organizational structure and culture, we will not go further into detail at this point and focus on the relationships the firm has with its external environment.

Entrepreneurship literature has recently emphasized the importance of social networks for the creation and sustaining of new ventures (Anderson and Jack, 2002). One of the first to realize this was Hall (1992), who identified the most important contributors to company success. The top five intangible success factors emerging from his analysis, beginning with the most important, are:

1. Company reputation
2. Product reputation
3. Employee know-how
4. Culture
5. Networks

His findings support the general importance of IC for the success of the entrepreneurial firm. Interestingly, reputation plays a significant role in his findings. Cooke and Willis (1999), in their UK based research about the effect of government programs that promote collaboration among SMEs by increasing social capital through networking, also found a positive relationship between networking and business performance. Their conclusions are that “policies in support of enhanced innovation that aim and succeed to build up social capital for SMEs through encouraging and incentivising collaboration and networking, produce results whereby significant portions of the surveyed SME population ascribe improvements to business performance, innovation and knowledge exploitation to the newly-formed social capital” (Ibid, p. 233). If it is agreed that networks do improve performance, we have to ask: Why? Brüderl and Preisendörfer (1998) propose three advantages networks bring to a firm:

- Access to information
- Access to customers and suppliers
- Possible additional financial funds

Social networks provide access to useful, reliable, exclusive, less redundant information and can therefore open up entrepreneurial possibilities. Access to customers and suppliers can give access to physical resources, improve quality through increased communication, and add significantly to the customer base. Additional funds might
become available through one or more network relationships and therefore risk can be spread (Anderson and Jack, 2002). Concerning the management of risk and uncertainty, increased access to information and experience can also play a major role (Cooke and Willis, 1999; Anderson and Jack, 2002). Penrose (1995) argued that one can reduce uncertainty by increasing information. Therefore, increased access to related information can be expected to lower uncertainty. An important point that should be mentioned, however, is that networks can improve success only if the entrepreneur makes use of them (Brüderl and Preisendörfer, 1998). Furthermore, it is important that entrepreneurs both accumulate network arrangements and also use them (Anderson and Jack, 2002).

A topic that is often discussed among researchers is the difference between strong and weak network relationships in their contribution to success. Brüderl and Preisendörfer (1998) found, for example, that “support from strong ties seems to be more important than support from weak ties concerning success” (p. 224). According to Davidsson and Honig (2003), however, “it seems that weak ties connecting to specific knowledge that the individual does not have which therefore is unlikely to be available within the close network of strong ties, becomes increasingly important as the process progresses” (p. 322). These conflicting results show us that one cannot clearly say which kind of ties is more important. We therefore propose that both weak and strong ties can be valuable, depending on the particular circumstances surrounding such a relationship.

In sum, networks do affect firm performance in a positive way. The entrepreneur is however needed to build, maintain, accumulate, and use social relationships. What entrepreneurs receive from networks is access to information, experience, and physical resources, which he/she can then use for his purposes, such as lowering uncertainty and evaluating opportunities. A circular relationship that contributes to the success of an entrepreneurial firm is therefore clearly supported by the findings above.

We have now completed the description of the EICS Model of Analysis, both in general and going deeper into IC. In the following section we will now present background about BPM that will be used in a later section to analyze this firm with the help of the EICS Model and test the model’s validity.
6. The case of BPM: Bau- & Projektmanagement GmbH

As mentioned in the methodology section, the data and information concerning BPM was gathered through an interview with Peter Christa, interaction with other employees via telephone and e-mail, and documents provided to us by the company. The purpose of the following section is to provide the reader with an overview about BPM, its history, past performance, and development process. It should be noted that the information used for the analysis, in section seven, is not entirely based on the findings from section six. Additional, more specific information will be added in section seven as needed.

BPM Bau- & Projektmanagement GmbH is a German project-management company located in Eggenfelden, Bavaria. The company has specialized in managing large, medium, and small public construction projects, especially in the field of hospital redevelopment and expansion. The German name Bau- & Projektmanagement (BPM), stands for “construction and project management” when translated to English. The company can be classified as a service intensive and entrepreneurial firm, which renders it particularly useful for an investigation in the IC field. The company was founded by Peter Christa, who can be considered as being a “true” entrepreneur (Sieglinde Michalski, 2008). He is currently still the owner of the company, even though a CEO, Markus Hartl, has been put into place. In the following sub-sections, a more detailed overview of the company will be given. In special focus are: the development and execution of the business idea, the growth and expansion process that happened after the firm’s inception, and the company’s major success factors.

6.1 The founding process

In June, 1995, Peter Christa, had been employed by “Kreiskrankenhaus Rottal-Inn gGmbH”, a central management institution for the three county hospitals in the county of Rottal-Inn, Bavaria. He served as an advisor and manager for construction matters, concerned with general redevelopment and structural improvement in all of the three county hospitals. The total volume of those redevelopment and restructuring projects was at that time 140 million DM (about 71.6 million EURO).

One year later, in 1996, the board of directors accepted Peter Christa’s proposal to establish an administrative department concerned with construction and project management within Kreiskrankenhaus Rottal-Inn gGmbH. This department had to accomplish all building measures as internal project management. At this time the institution was unique within the state of Bavaria. Enormous cost savings were achieved through this department since the task would have otherwise been carried out by an external, more expensive, provider. Reason for the immediate success was the concept of a holistic service, from project development until completion.

Already in early 1996, Peter Christa developed a cost and control software which included the different kinds of financing and subsidizing available into the cost monitoring process. This was an innovation at this time. The software has been
constantly developed and updated by Peter Christa in collaboration with an IT firm and is today used by many communes and engineering firms.

The concept of “tight” cost monitoring, with daily control, from the beginning of a project until its completion, was appreciated by the authorities responsible for giving subsidies to hospitals and other public institutions. Furthermore, because of this concept, deadlines and cost limits set by the client have always been kept. Information about the success of the department was quickly transferred to other public entities, who then wanted to utilize the department’s services.

This was one of the factors that supported Peter Christa in the decision to break away the department from the public institution and found his own company, BPM, in 2000. At inception, Peter Christa’s team of employees consisted of one administrative employee, who was also working full-time in his previous team at the construction and project management department, and one part-time project manager. The ongoing projects for the Kreiskrankenhäuser Rottal-Inn were continued with accustomed holistic services until completion. Due to successful project completions, numerous new clients, such as city and county authorities, contacted Peter Christa to purchase his services.

6.2 Growth and Expansion

Resulting from continued successful project completion, the number of follow-up contracts and new contracts increased rapidly in the years following inception. The firm expanded its services to all public construction projects, such as school construction and redevelopment and urban development, not only hospitals (Marcus Hartl, 2008). The fact that Peter Christa was in his previous career the head of a city’s public construction authority supported this expansion since his knowledge about subsidizing opportunities were not limited to the hospital sector only (Peter Christa, 2008). A consequent increase in the number of employees, especially project managers was soon necessary. From 2000 to 2007, the number of employees grew from two full-time and one part-time employee, including Peter Christa himself, to 33 employees in 2007 (Chart 1). With only 4 projects in 2000, the company had a total project volume of 45 million EURO. Those numbers increased to 85 projects and a total project volume of 900 million EURO until 2007.
In line with an expansion of services offered, there has also been a rapidly increasing geographical expansion. While the clients were only from lower Bavaria, particularly from the county of Rottal-Inn in 2000, they currently come from all regions in Bavaria and, in a more limited amount, the rest of Germany (Marcus Hartl, 2008). Projects that would have crossed the national border of Germany, some even outside Europe, have also been offered to BPM, but after evaluating those opportunities Peter Christa has declined this offer since it is not yet the time to undertake steps like that (Peter Christa, 2008).

In September 2004, Peter Christa had the idea to create another firm that does not only give advice and perform the project management part of a construction project, but also plans the building. Therefore, the PCG Company, which is 100% owned by BPM, was founded. PCG stands for planning, consulting and general management. At PCG, clients, who can be public authorities but are mainly private investors, can order final objects such as a new private house, a building for a store, schools, or medical centers. PCG then carries out the whole project, including the architectural planning service, which is of course outsourced to architects, but evaluated by PCG’s project managers to fit the needs of the client (Marcus Hartl, 2008). An interesting service PCG offers to its customers is public-private partnership (PPP) models (Sieglinde Michalski, 2008). This means that if a commune does not have sufficient budget to perform a certain project, a partnership of private investor(s) and public funding is created to finance the project. Of course, this system also works the other way around when private investors need public financing. Through its great network, PCG has the ability to establish those partnerships for their clients if needed.
Since Peter Christa can be considered as a serial entrepreneur, an “idea machine” (Sieglinde Michalski, 2008), he did not stop after establishing the two companies, BPM and PCG. A new company, called Progra Med was started in May 2006. The background for the establishment of this firm lies in recent changes in legislation by the German government concerning the health industry (Marcus Hartl, 2008). Due to those changes, German hospitals had to be restructured. To assure economic operation for the hospitals, reorganization and structural changes were therefore urgently needed. This is where Progra Med came into play. Progra Med is a pure consultant firm for the hospital sector that establishes clinical concepts, and operating and space programs, such as analyzing possible flaws in structure and resolving them. The company works hand in hand with BPM. If Progra Med establishes plans for restructuring and reorganization, resulting from flaws in current structure, structural measures have to be taken. This can be, for example, a central admission station in a hospital. BPM performs those projects according to the plans of Progra Med and therefore automatically gains new clients (ibid).

Reliability concerning costs, due dates, and quality was and is the reason for BPM’s rapid growth (Peter Christa, 2008). Even though the German construction industry has been in a recession for almost the whole past decade, BPM can look into a bright future. Especially because of tensions in the budgets of communes, the adherence of costs and due dates, as well as the maximum amount of public subsidies possible has highest priority for clients (Marcus Hartl, 2008). Many clients have confirmed that the fees BPM charges for its services are much lower than the amount of construction costs saved (Peter Christa, 2008). In the following section we will have a more in-depth look at the success factors of BPM

6.3 BPM’s success factors

6.3.1 Networking

Peter Christa described networking as an essential factor for the success of his business. Being employed by the government for a long time, he can look back on a large network of very good political contacts. This includes persons in lower ranked positions, such as mayors, and very high ranked persons, such as the heads of the Bavarian government. BPM also has contacts to the academic world, reaching from single professors to whole universities. The exchange of information with those entities has lead to improvements in the quality of BPM’s services and, for universities, to new courses for project-management students. BPM’s network further includes many satisfied customers, which can be seen by the high amount of follow-up contracts. A special characteristic of the network is that relationships are kept on a high level of trust and a personal and “authentic” way of communication.

6.3.2 Customer relationship management (CRM)

To assure that satisfied customers stay satisfied and loyal, Peter Christa early on realized the importance of managing those relationships. He therefore every year visits every single client the company has and listens to their criticism, whether good or bad,
and possible suggestions (Peter Christa, 2008). This helps to maintain good quality and improve the services where needed. Small presents, such as gift baskets or cards, are also sent to customers on occasions, like Christmas or birthdays, to stay in peoples mind. Further, BPM organizes a hospital symposium for its clients every year. At this symposium, customers get informed about innovations in the health industry by high ranked politicians, doctors, university professors, and other professionals relating to the hospital industry (*Ibid*).

### 6.3.3 R&D: Cost and control software and project guidelines

As mentioned before, Peter Christa has developed his own cost and control software which allows his employees and related other professionals, such as architects, to work more efficient and monitor costs “tightly” (Ulrike Saller, 2008). This software is further developed and updated according to changes in the market place, legislation, and to achieve quality improvements. The same applies for the “project guidelines”, also developed by Peter Christa. The project guidelines, an over 150 step outline of what has to be considered when managing a project from beginning to end, are intended to serve the project managers as supportive help and structure (Peter Christa, 2008). The guidelines assure a constantly good and similar quality to all customers.

### 6.3.4 Corporate culture and attitude towards work

Corporate culture and attitude towards work can probably be named as most important success factors for BPM (Peter Christa, 2008). Peter Christa developed a great corporate culture that resulted from his philosophy towards life and doing business. He describes a firm’s culture as the “heart”, and only if the heart is working properly, the rest can function as well. He sees the world as one large network of social relations and therefore one has to be careful how to interact and pay respect to other human beings. He tries to live as an example for his employees and therefore influence their attitude towards work and their appearance towards clients. Motivating employees through appreciation of their good performance, having respect and esteem, and involving them in the development of the company are critical factors for a good corporate culture. Generally, he views success as a gift which cannot be kept alone but has to be transferred back to employees and the society. Social relationships play an important role within BPM and Peter Christa always devotes time to learn about his employees’ concerns and worries. Also among employees there are strong social bonds which strongly affect their team-working abilities and the great atmosphere within the firm (Marcus Hartl, 2008). Resulting from this strong corporate culture, employees have a quite unique attitude towards work. A project is not seen as something that belongs to someone else, but as ones “own” (Peter Christa, 2008). Employees in contact with clients appear “authentic” and do not tell the clients what they want to hear, but what is best for them. Signaling trustworthiness and reliability to clients is also a critical factor (*Ibid*).
6.3.5 Knowledge, experience and training

Peter Christa, being autodidactic, has one of the lowest formal education levels possible in Germany and had to learn, as he said himself, “through watching, trying, experiencing, and interacting” (Peter Christa, 2008). For himself he ascribes lower importance to objective knowledge, but high importance to experiential knowledge (Penrose, 1995). This different way of acquiring knowledge has helped him to think in less formal lines and therefore be more innovative (Peter Christa, 2008). He further stated that his employees use only 5% of the knowledge acquired through formal education in their daily business live. The rest is experience gained through their interaction with clients and public authorities. However, he realized the need to train his employees according to changes in the business environment and therefore arranges those trainings on a regular basis (Ibid).

6.3.6 Innovation

Innovation plays an essential role for the success of BPM. Peter Christa realized that innovation must not be a one-time action, but must be frequently used to stay ahead of the competition and improve the business in a natural way (Peter Christa, 2008). He is aware that the new ideas so far are mostly developed from his own initiatives and that the ability to be creative needs to be transferred to his employees if future success wants to be achieved. Improvements have, however, been visible in recent years and he makes his employees aware that he is open for innovative ideas from “everyone”.
7. Analysis: Testing the EICS-model on BPM

In the following section we will apply the findings and proposals concerning the EICS Model of Analysis, in general and in detail, towards BPM. The aim is to verify or vitiate the model’s accuracy for entrepreneurial firms in the German project management industry. As basis for the analysis we will first show that Peter Christa can indeed be considered as an entrepreneur and that BPM is a successful entrepreneurial firm. We will then analyze BPM’s fit with the general model, investigating whether Peter Christa and IC individually contribute to the success of BPM, and if there is a relationship between the two factors that also contributes to success. Finally, we will analyze how our findings concerning the various categories of IC, human capital, structural capital, and social capital, relate to BPM. As previously mentioned, while section six is purely empirical, section seven is a mix of empirical findings and a theoretical analysis.

Peter Christa, to our understanding, can be noticeably considered an entrepreneur, especially if we utilize the definition used for this study (Oviatt and McDougall, 2005). Christa has discovered an innovative business opportunity in Germany, filling in the gap that the government had left untouched. He enacted proactively on this opportunity to create future services utilizing his previous experience and the experience of the people he works with to generate competitive advantages and to create value. As the CEO of BPM, he has influence on the further evaluation of the opportunities at hand by interpreting present and past actions that continuously develop experience and knowledge that contribute back to the entrepreneurial firm. Finally, Christa has done a great work exploiting the services he offers, as he has contributed to the future development of the business itself. All in all, we can therefore consider Peter Christa as a “true” entrepreneur.

We previously defined the success of an entrepreneurial firm to be indicated by profitability, growth in turnover, growth in the number of employees, or, in case of new firms, simply survival. Even though we did not get access to detailed information concerning BPM’s profitability, Peter Christa (2008) assured us that the firm was profitable in all of the last years. Sales constantly increased over the past seven years, from 0.245 million EURO in 2000 to 3.7 million EURO in 2007. The average number of employees per year also increased constantly, from only 2.5 in 2000 to 33 in 2007. Concerning survival, we can say that BPM can be considered to be past the start-up phase, since it is in business for already eight years. Therefore it has clearly survived as a start-up. Taking all the factors together, it can be verified that BPM is truly a successful company.

We have now shown that Peter Christa is an entrepreneur and BPM is a successful company, two characteristics that are needed for application of the EICS Model of Analysis. If there would not be an entrepreneur in the firm, we could not investigate his/her impact on success and his/her relationship to IC. If the firm would not be successful, we could not apply a model that analyzes the IC factors that lie behind that success. We will now start with the analysis by applying the general model towards BPM.
7.1 Correlation with the general model

First, we will analyze the impact Peter Christa, as the entrepreneur, had on the success of BPM. We have previously shown that an entrepreneur’s special character traits and abilities contribute to the success of the firm. The named characteristics were: high self-efficacy, ability to spot and recognize opportunities, high personal perseverance, high human and social capital, and superior social skills (Baron and Markman, 2003).

In the interview with Peter Christa it became clear, that he can be considered as being very confident in himself and his judgment. He explained to us that he sees himself as a person that takes action and realizes his ideas, even though this might be associated with taking high risks, because he believes in his gut feeling and views.

Also, the ability to spot and recognize opportunities is very strong in Peter Christa. He considers himself to be creative and able to think outside the box. An important issue he mentioned concerning opportunity recognition is that it is important to not only spot opportunities but also to realize them for else they are of no use at all. Many people might have the ability to spot opportunities, but do not have the courage to act on them, because the fear of failure is higher than the prospective of success.

With respect to personal perseverance, he also scores high. When BPM was established in 2000, with only two full-time employees, Peter Christa being one of them, and one part-time employee, Peter Christa had to perform all project management tasks and at the same time had to plan for growth. This indicates that he must have high perseverance for otherwise such a workload could not have been managed by one single person.

Concerning human capital and social capital, Peter Christa is sufficiently equipped. Even though his formal education level is fairly low, he built an excellent stock of knowledge and experience through watching, trying, experiencing, and interacting. As mentioned in the case introduction, Peter Christa built a large and unique social network reaching from high-ranked politicians to research institutes. We will not go into more detail about human and social capital at this point, because those two elements will be analyzed in more detail in a later sub-section.

The last characteristic named previously is superior social skills. From our interactions with employees at BPM, via telephone and e-mail, we learned that Peter Christa’s social skills can be classified as ‘unique’. They say that he feels what other people desire and fear and acts accordingly. In the interview he told us that he considers attentiveness towards fellow human beings, knowledge of human nature, and awareness that the whole world is one net of social relationships to be his most important personal character traits. Therefore he clearly has very high social skills. In sum, we can say that Peter Christa fulfills the characteristics that researchers have identified as main contributors to firm success. The ‘story’ of BPM, as described before, shows that Peter Christa, using his entrepreneurial abilities, has had the most important impact on the success of BPM.
Next we will elaborate how IC, in general, contributes to the success of BPM. In the interview with Peter Christa, he classified IC as the most important success factor. Since BPM is a service intensive company, IC works as the firm’s ‘bank’ (Peter Christa, 2008). Experience and knowledge about the project management and construction industry (competence), as well as social network relations and organizational structure are the essential source for BPM’s success (Ibid). We will not go into further detail about the importance of IC at this stage since we perform an in depth analysis of the various types of IC and their relationship to BPM’s success in the following sub-section.

A last point that has to be investigated in this ‘general’ analysis is whether a circular relationship between Peter Christa and BPM’s IC exists, and if so, if that relationship contributes to success. As we have explained in the description of the model, the different forms of IC, the entrepreneur introduces to a firm and his/her effectiveness in managing them, strongly affect firm performance (Peña, 2002). Peter Christa has introduced many forms of IC to the company, for example, employees’ human capital and valuable network relationships. He has also shown an awareness that those IC factors must be efficiently managed. He highlights, for example, the importance of training employees and supporting them in their development, the maintenance of network relationships, and quality assurance concerning the services delivered to customers (Peter Christa, 2008). Through the work of Peter Christa a great base of IC now exists within BPM. This base can obviously be used by Peter Christa to pursue his entrepreneurial goals and objectives. In that sense, the firm’s IC has a positive impact on Peter Christa and while interacting with the firm’s IC, he also gains experience. If, for example, Peter Christa has put in place a network relationship to a politician and managed this effectively, he can use this relationship to get access to information, such as new industry trends or perceived problems that need to be addressed. Through this interaction with his network, Peter Christa learns and therefore gains in experience and knowledge. This experience and knowledge might be the basis for a new idea, or, more generally, innovation, and therefore strongly contribute to the success of BPM. In the interview, Peter Christa explained to us that he has experienced this chain of relationships many times and that it is essential to be aware about those relationships to use them effectively.

The upshot of this general analysis is that, in the case of BPM, there are strong relationships between the entrepreneur and success, IC and success, and a circular relationship between the entrepreneur and IC that leads to success. We will now proceed with an in depth analysis about the various forms of IC and their relation to BPM’s success.

### 7.2 Correlation with the various categories of intellectual capital

#### 7.2.1 Human capital

The information about BPM available to us clearly shows that human capital has a significant impact on the firm’s performance. In the interview, Peter Christa explained that a company within the project management industry could hardly survive without
having sufficient knowledge and experience. We will now go into more detail about human capital and analyze the effects of Peter Christa’s human capital, the human capital of employees, and training on BPM’s performance.

7.2.1.1 Peter Christa’s human capital

According to Peter Christa (2008), his personal, formal education has played only a minor role for the success of BPM. Instead, he ascribes great importance to the specialized knowledge gathered through working experience. His experience gained as head of a city’s construction authority, as well as the experience gained through the work for the Kreiskrankenhaus Rottal-Inn gGmbH have had a major impact on himself and his knowledge. However, since BPM was his first venture, he did not have any previous start-up experience. We can therefore say that education has not played an important role in the start-up and the developing phase of BPM, while experience has played a significant role in both phases. In the previous analysis of BPM with help of the general EICS Model of Analysis, we have already shown that Peter Christa’s unique personal characteristics, skills, and abilities have also played a significant role.

We have previously proposed that the entrepreneur gains in experience and knowledge while interacting with his/her human capital and that a higher level of human capital has a positive effect on success (Baron and Markman, 2003). For Peter Christa, it can be shown that when he used his human capital, he indeed gained in experience and knowledge. During the establishment of BPM, for example, he has gained important start-up experience that has later supported the creation of PCG and Progra Med. Also, Peter Christa (2008) outlined that while he used his knowledge and experience to perform a certain project management task, he constantly gains new experience. Especially, when there is a problem, which occur fairly often in the project management business, solving it adds to ones experience and the next time the same or a similar problem comes up, one knows how to tackle it. This adds to efficiency and competence and therefore definitely affects success. The findings concerning the entrepreneur’s human capital, including the circular relationship can therefore be verified for BPM. Next, we will take a close look at the importance of employees’ human capital within BPM.

7.2.1.2 Employees’ human capital

Peter Christa places emphasis on the importance of employees’ experience for the success of BPM. Concerning employees’ formal education, however, he stated that “employees use only five percent of the knowledge acquired through their university education” (Ibid). Therefore he does not value education as high as experience. In general, employees’ knowledge and skills, gained through experience, are important for BPM, because the personal contact between the project-manager and a client or another party involved in a project requires flair and sensitivity.

The human capital of BPM’s employees therefore needs to be managed in order to be useful (Rauch et al., 2005). Peter Christa is completely aware of this and therefore devotes a lot of effort on putting employees in the right position within the firm. He
assesses their skills, abilities, and experience and supports their development so that they can improve their human capital. We can say that employees’ human capital does have a positive effect on the performance of BPM, even though it is by far not as important as Peter Christa’s human capital.

BPM currently has a large base of experienced and skilled employees that Peter Christa can rely on. He explained that the interaction with employees also supports him in his own human capital development. There are, for example, frequent team meetings and meetings with single employees, where people can present their opinion about certain issues or problems and discuss strategy. Peter Christa therefore combines the company’s human capital in order to find superior solutions to problems and opportunities. He told us that this is a valuable resource that strongly affects the performance of BPM. Also, while interacting with his employees he gains access to their experience and therefore adds to his human capital. A circular relationship between Peter Christa and his employees that impacts on success can therefore be verified.

7.2.1.3 Training at BPM

Peter Christa values training as highly important for the success of BPM. As mentioned before, he is aware that human capital needs to be managed and developed (Rauch et al., 2005; Thorpe et al., 2005), and therefore arranges frequent training measures for all his employees. Also, when new project-managers come to BPM, they are first trained by Peter Christa and another experienced project manager to assure that new employees gain experience and adjust to BPM’s high quality level. In general, when Peter Christa provides training for his employees, he increases their human capital and can therefore use higher levels of knowledge and experience to support him. This proves a circular relationship, where Peter Christa gets increasing amounts of information, the more training he provides for his employees. This increased availability of information has, according to Peter Christa (2008), often substantially supported him in decision-making processes and updated his own knowledge, and therefore contributes to the success of BPM. In the next section we will take a look at the importance of structural capital for the success of BPM.

7.2.2 Structural capital

We have previously shown that structural capital, or the ability to combine individual knowledge into organizational knowledge (Hayton, 2005), has a significant impact on the success of entrepreneurial firms (Thorpe et al., 2005). Since BPM is a service intensive firm, knowledge plays an important role. Peter Christa has early on aimed at providing his employees with a set of routines that allow project-managers to use his knowledge gained through experience. One example is the project guidelines, developed by Peter Christa, that summarize his experiences as a project-manager and strongly support other project-managers within the firm. Another example is the cost and control software that was built to comprise Peter Christa’s knowledge and make it available to all employees. In general, sharing knowledge is emphasized at BPM and this strongly affects success (Peter Christa, 2008). The source of knowledge is of course not
always Peter Christa and therefore, structural capital can also add to his knowledge. We are now going to analyze the effects of R&D, organizational structure and organizational culture, three aspects of structural capital, for BPM.

7.2.2.1 R&D at BPM

As mentioned before, BPM invests in R&D in two instances: its cost and control software, and its project guidelines. The cost and control software is kept up to date providing Peter Christa, his employees, and outsourcing professionals with elemental actual information. Therefore, the software contributes to an efficient information flow, permitting knowledge to arrive to the right person at the right time. Having this in mind, the knowledge provided by the software contributes to the success of BPM. It is a tool that Peter Christa utilizes to face uncertainty in the future, and he contributes back to the software keeping it up to date, realizing the proper improvements when changes in the networks occur.

Concerning the project guidelines developed by Peter Christa, they provide an excellent aid and structure when it comes to managing projects from beginning to end. They assure quality and excellent results to all customers. This effective tool offers Peter Christa and his employees an actual, step-by-step, guideline that avoids elemental actions to be left out and ensures quality assessment. The project guidelines influence on value creation as a competitive advantage that guarantees customer satisfaction, which at the same time contributes to the entrepreneurial firm’s success. Peter Christa, the entrepreneur, contributes back to this form of structural capital by adjusting the guidelines to fit current customers’ needs. These adjustments have to be made for the mere fact that customers’ preferences and the characteristics of the environment constantly change.

7.2.2.2 BPM’s organizational structure

We have previously found that it is important for the success of a firm that its organizational structure fits the behavior and type of firm (Burns, 2005). BPM is an entrepreneurial firm, with entrepreneurial and innovative behavior, but the project management task also involves many bureaucratic aspects. It is, for example, highly important to have routines concerning the documentation of project progress and all related activities. At first sight, this might create a problem, because on one hand side the firm needs a decentralized, flexible, and organic structure, but on the other hand it needs a bureaucratic, standardized, routine structure (Ibid). Peter Christa has early on created a structure that mixes aspects from both an organic and a bureaucratic structure. BPM’s overall organizational structure is decentralized, flexible, and supports personal interaction. Employees can generally make contributions to decision-making processes and innovation. Also, project managers are responsible for their projects and have full decision-making authority even though they can always ask colleagues or the CEO’s for help and advice. In case major problems appear in a project, Peter Christa, who is always sufficiently informed about all projects, will get involved and resolve it. Hierarchical control is usually very low in BPM. For tasks that need a more hierarchical and
standardized control, such as documentation, Peter Christa and his CEOs laid down clear procedures and routines to assure quality and uniformity. We generally consider BPM’s organizational structure to fit BPM’s behavior and characteristics.

Peter Christa (2008) explained that this organizational structure is highly important for the firm, since it supports both innovation and the control of services delivered to customers. We can therefore consider organizational structure to play a major role for the success of BPM. It is, however, important to understand that Peter Christa plays an important part in the creation of such a structure (Burns, 2005). He, together with his CEOs is responsible for the establishment and maintenance of organizational structure and therefore influences it to a large extent. Nevertheless, he is also affected by the existing organizational structure, because it supports him in innovative and strategic tasks (Ibid). If a project-manager, for example, has the idea to change the routines for a certain task to achieve efficiency, Peter Christa can act upon that idea and further develop it. In the end, the company will end up more efficient or the quality of services delivered to the customers increases. That circular relationship therefore definitely has a positive effect on success. In BPM’s fairly loose organizational structure, it is important to assure that one does not lose control entirely (Ibid). Therefore, BPM has developed a strong organizational culture, early on, to assure that all employees head in the same direction.

7.2.2.3 Organizational culture at BPM

Starting from inception, Peter Christa has placed great emphasis on the establishment of an organizational culture that reflects his personal values and beliefs. He considers the creation and maintenance of organizational culture to be one of his most important tasks within BPM. The most effective means to transfer values to all employees is, according to Peter Christa (2008), “to live as an example”. BPM’s current organizational culture clearly reflects Peter Christa’s views. The most important aspects are: trustworthiness, honesty, and reliability towards clients, authentic working style and appearance, to value and establish strong social relations both within the firm and in relation to external entities, appreciate good performance, respect and esteem, collective innovation, and team-work (Ibid). Concerning the contribution of organizational culture towards the success of BPM, Peter Christa said that organizational culture can be considered as the heart of the firm and if the heart is well the external environment realizes that. Therefore, organizational culture plays a significant role for the success of BPM.

Referring to Burns (2005), high level elements of entrepreneurial culture, creativity and innovation, empowerment of employees, strong relationships, continual learning, and measured risk-taking, we can see that BPM has indeed an entrepreneurial culture. Creativity and innovation are important aspects in BPM’s culture, even though Peter Christa realizes that employees have to participate more actively in those processes in the future. Empowerment of employees is very strong in BPM’s culture, since most employees have certain authority. Strong relationships are also a major factor within BPM. Peter Christa fosters personal relationships within the company and he himself also
often communicates with employees to understand their concerns or proposals. Also, in relation to the external environment, relationships are carefully maintained and strengthened. The relationships with customers, for example, are strengthened through frequent visits (at least once a year) by Peter Christa where he gets informed about their level of satisfaction with BPM’s services and discusses possible suggestions for improvement. As mentioned in the human capital section, learning, or human capital development, also plays a significant role for BPM. The last factor, measured risk-taking, is definitely also strong in BPM. With the rapid expansion of BPM, involving significant risk at certain stages, it is clearly shown that opportunities do not fail because of missing risk propensity. With his gut feeling, knowledge, and experience, Peter Christa, however, keeps risk-taking at an acceptable range.

In sum, we can say that BPM’s organizational culture fits and has a significant impact on performance. Peter Christa is aware about his responsibility to create, maintain, and if necessary adjust the culture. Organizational culture does, however, also affect Peter Christa. It supports him in the task of controlling and motivating his employees and keeping all employees in the same direction. The existing social and democratic organizational culture also supplies Peter Christa with additional information. All in all, a circular relationship between Peter Christa and BPM’s organizational culture that has a positive impact on success can be verified through the facts presented. In the next section we will investigate the effect of social capital on the success of BPM.

7.2.3 Social capital

As described before, Peter Christa emphasizes the social aspect in BPM’s work. Intra-firm social relationships and networking with external entities are therefore highlighted at BPM. Peter Christa explained that social relations, in general, are one of the most valuable resources of BPM, because they grant the firm access to information and other resources that can not be acquired through other means, and therefore strongly affect the success of BPM. The person responsible for the creation of BPM’s highly valuable social capital is to a large extent Peter Christa himself, using his unique social skills (Peter Christa, 2008). He is, however, not only responsible for the creation of social capital, but also one of the main beneficiaries of existing social capital. It assists him, for example, in idea creation and execution processes and, through access to important information, adds to his knowledge and experience (Peter Christa, 2008). Also, while using social capital, Peter Christa increases his social skills, resulting in an even higher ability to create valuable social capital in the future. In the next section we will analyze the impact of two special forms of social capital, Peter Christa’s personal network and the organizational network of BPM, on the success of BPM.

7.2.3.1 The personal network of Peter Christa

Through his work as head of a city’s construction authority and as advisor and manager at the Kreiskrankenhaus Rottal-Inn gGmbH, Peter Christa had developed an excellent stock of vital network relations to numerous persons in different positions. According to Peter Christa (2008), those social relations were among the most significant
success factors in the start-up phase of BPM. One example is the relationship to the three county hospitals, which was highly important since Peter Christa continued the ongoing projects and therefore had three large clients at inception. Also in the post start-up phase of BPM, Peter Christa’s network relationships, which constantly grow in number, play an important role. The quality of his network, measured through accessibility and appropriatibility, is according to Peter Christa very high. The number of network relationships is large, and through the firm’s good reputation and its importance to network partners, BPM has a central network position. Most relationships in Peter Christa’s network are relevant and highly useful for business performance.

The finding by Davidsson and Honig (2003), that strong relationships to parents, close friends, or neighbors who are in business have a high impact on the success of entrepreneurs in both the start-up and post-entry phase cannot not be verified in Peter Christa’s case. His relationships are mostly established through business activities. In sum, we can classify Peter Christa’s personal network as highly important for the success of BPM since it grants access to valuable information and other tangible and intangible resources. While Peter Christa is responsible for the creation and maintenance of his network, he is also the person that uses it the most. It is not only valuable for the performance of business activities, but also adds to Peter Christa’s human and social capital. Information and other resources acquired through network relationships add to Peter Christa’s knowledge and experience and the use of relationships often opens the door for the creation of new relationships. New relationships may then be used for business purposes. This clearly shows a circular relationship between Peter Christa and his personal network that has a significant impact on success. The following section analyzes the effect of BPM’s organizational network on the success of BPM.

7.2.3.2 Organizational network of BPM

The organizational network of BPM, comprising the network relationships of all employees and Peter Christa with external entities, is extensive and includes persons and organizations in all kinds of strategically important places (Peter Christa, 2008). In the same way than Peter Christa’s personal network, this organizational network plays a significant role for the success of BPM. It can be regarded as an extension of Peter Christa’s network, adding many valuable and new contacts. We already showed in the last section that networking is important for BPM, thus we will now focus on “why” they are important to BPM and “how” they can be used by Peter Christa. We will therefore relate BPM to the three advantages networks bring to firms: access to information, access to customers and suppliers, and possible additional funds (Brüderl and Preisendörfer, 1998).

Through the use network relationships, Peter Christa can get access to useful information that might not be available through other means. BPM is, for example, highly qualified in providing its clients, mainly the public ones, with funding through governmental subsidies (Peter Christa, 2008). Changes in subsidizing policies are often complex and a clear outline of how to proceed in acquiring these funds is difficult to understand (Ibid). BPM, however, does not have that problem since important network
relations to the responsible authorities exist, information is therefore received at first hand and possible obscurities can be discussed (Ibid). Concerning access to customers and suppliers, we can also see clear advantages for BPM. In relation to customers, we can say that BPM’s network of existing customers grants it access to new customers (Ibid). Peter Christa (2008) has described BPM’s marketing strategy to be based on word of mouth, relying on superior quality. Existing customers often recommend the services of BPM to other persons or organizations and therefore build a bridge to new customers and network partners (Ibid). Also, in relation to suppliers, such as architects, network relationships have proven to grant access to qualitatively high services (Ibid). With respect to additional funding, BPM’s network also plays a significant role. For reasons of simplicity, we have focused only on the three firms BPM, PCG, and Progra Med in this study, but Peter Christa has undertaken many more, smaller projects in recent years (Ibid). One of them was “Klugeseiten” (in English: smart pages), a German internet portal where small handcraft firms can get an overview about current requests for proposal in the construction industry and deliver their proposals to project management firms or architects (Ibid). Funding for that project was received from a large German company from BPM’s network (Ibid). This and other examples show that BPM uses its network to finance projects and therefore has the important advantage of spreading risk (Anderson and Jack, 2002). An important point to note at this point is that network relationships are only useful if really used (Brüderl and Preisendörfer, 1998). In the interview, Peter Christa (2008) outlined that he does use the firm’s network relationships extensively and that this use constantly grants him access to valuable new relationships.

Our previous finding that both strong and weak network ties can be important for the success of the firm (Anderson and Jack, 2002; Brüderl and Preisendörfer, 1998) was supported by Peter Christa. He explained that one cannot say which one is more important since it depends on the circumstances. If network relationships are, for example, used to get access to additional funds, strong ties are mostly more effective (Peter Christa, 2008). To get access to diversified information, weak ties might be more useful, since it depends on the amount of network connections and it is easier to manage many weak ties than many strong ties (Ibid).

Summarizing, we can say that in BPM’s case, organizational network relationships have been found to play a significant role. It has also been shown that a circular relationship between Peter Christa and the organization’s network exists, where the former constantly increases his human capital, social capital, and social skills. Those higher levels of human and social capital do have an important impact on success. In the next section we will summarize the findings from the analysis of BPM.

7.2.4 Result of the in depth analysis

Summarizing the analysis, we can say that a positive effect of all kinds of IC: human, structural, and social capital, used, could be verified. Also, a relationship between the entrepreneur and IC that impacts on success was proven in all cases. We can therefore conclude that the EICS Model of Analysis is relevant for the scrutiny of German project-
management firms. The applicability to other types of firms, in other countries and industries has to be shown in future research.

To present an overview about the importance of the various kinds of IC, used in this analysis, for BPM, we have grouped them into:

- Less important factors
- Important factors
- Very important factors

Table 1 presents the result of this grouping. It should be kept in mind, however, that it is not our main goal to measure the success of a firm or the importance of various forms of IC regarding success. Our main goal is to show whether the EICS Model of Analysis is useful for the analysis of firms, in this study especially German project-management firms. Through our qualitative analysis we decided to classify the human capital of the entrepreneur, organizational culture, the entrepreneur’s personal network, and the organizational network as very important factors for BPM’s success. Human capital of employees, training, R&D, and organizational structure are regarded as important factors. Interestingly, we did not find aspects of IC that could be classified as less important for the success of BPM.

<table>
<thead>
<tr>
<th>Form of intellectual capital</th>
<th>Importance for BPM’s success</th>
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</thead>
<tbody>
<tr>
<td>Human capital</td>
<td></td>
</tr>
<tr>
<td>Human capital of the entrepreneur</td>
<td>Very important</td>
</tr>
<tr>
<td>Human capital of employees</td>
<td>Important</td>
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<tr>
<td>Training</td>
<td>Important</td>
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<td>Structural capital</td>
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<tr>
<td>R&amp;D</td>
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<td>Organizational structure</td>
<td>Important</td>
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<td>Organizational culture</td>
<td>Very important</td>
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<td>Social capital</td>
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<td>The entrepreneur’s personal network</td>
<td>Very important</td>
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<tr>
<td>The organizational network</td>
<td>Very important</td>
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A last important question we must ask is whether the theoretical model used for the analysis is sufficient or whether important factors are missing. We can generally say that the EICS Model of Analysis developed includes almost all of BPM’s success factors that belong to the IC category. We have, however, realized that one important category was not addressed in the EICS model. This category could be termed reputation capital. We have previously decided to exclude that category from our research because we considered it to be less important and somehow included in the social capital category. Supported by the research of Hall (1992), who found that company reputation and product reputation are the most important forms of IC firms have, and the findings from the empirical research about BPM, we decided to reconsider our decision.

As mentioned before, Peter Christa has put enormous effort in creating an organizational culture that lets the company function both internally and in relation with the external environment. The attitude towards work, authentic appearance of project-managers and the goal of delivering constantly high services to customers were highlighted here (Peter Christa, 2008). It was also mentioned that BPM has generally created a strong reputation through its qualitatively high services. This is proven by the fact that BPM almost exclusively uses word of mouth marketing and most former clients use BPM’s services again. In sum, we consider the reputation of BPM as a company and of its product (service) to be an important success factor. Therefore we propose that reputation capital, and two subcategories, firm’s reputation and product/service reputation should be added to a revised EICS Model of Analysis (Figure 6).
8. Conclusion

In this research paper we have gone through different phases to offer an explanation regarding the relationship between the entrepreneur, IC, and success. We first defined each concept to avoid any misguidance, as there are various different views concerning these phenomena. It is always good to establish a theoretical background so that everyone knows what we are intending to address with the precise terminology in use. An understanding of what IC stands for was presented, explaining how it contributes to the performance of the entrepreneurial firm. The role and contribution of the entrepreneur also presented a vital component in our research, as he/she is a determinant factor in all of this.

We then presented and analyzed reliable theories that establish a noticeable circular relationship between the entrepreneur and IC, and how this relationship positively influences, both dependent and independently, the entrepreneurial firm’s success. A model, named the EICS Model of Analysis, was elaborated, proving our point by illustrating how IC significantly depends on the entrepreneur’s capacity to utilize it, but the capacity of the entrepreneur is deeply formed by the IC he or she encounters, and together they greatly contribute to the entrepreneurial firm’s success. Further, we investigated the complex relationships between specific forms of IC, human capital, structural capital, and social capital, in relation to the entrepreneur and the firm’s success. Here the main finding was that the entrepreneur is on one side the main factor responsible for the creation and development of those kinds of IC and on the other hand the main beneficiary of existing human, structural, and social capital.

To test the EICS Model of Analysis in its applicability and validity, we applied it towards the German project management firm BPM. The result proved that all the relationships presented in the model could be regarded as being important for BPM. Therefore we propose that the model can be used to analyze German entrepreneurial firms in the project-management industry and their relationship with IC, pointing to possible shortcomings in the range of IC used. It may also help entrepreneurial firms to get an overview about their range of IC used within the firm to clearly see what is available for their use. We have, however, realized through the analysis of BPM that the EICS Model of Analysis developed in this study might have a shortcoming concerning reputation capital. Therefore, we propose that a revised EICS model (Figure 7) should include a fourth group of IC, reputation capital, with the two subgroups, firm’s reputation and product (service) reputation. This revised EICS model can be considered to be the major outcome of this study.

Concerning the research questions of this study, we would like to mention that we consider them to be sufficiently answered. We have clearly shown what contributions the entrepreneur and IC individually make towards an entrepreneurial firm’s success. We have also shown that there is indeed a circular relationship between the entrepreneur and IC, and that this relationship has a major impact on the firm’s success. In the next section we would like to point at some implications of our study that we regard as important.
Figure 7. Revised EICS Model of Analysis.

- Self-efficacy
- Opportunity
- Recognition
- Perseverance
- Human & Social Capital
- Social Skills

**The Entrepreneur**

**Intellectual Capital**

- Human Capital
- Structural Capital
- Social Capital
- Reputation Capital

**The Success of the Entrepreneurial Firm**

- Profit
- Turnover growth
- Number of Employees
- New Firm Survival

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Michalski, M. and Vazquez, F.J. Mälardalen University, EFO705
9. Implications

Swedberg (2000) has placed emphasis on the importance of “practical implications” in entrepreneurship research. We therefore want to reflect on our findings to extract practical implications from them. In general, we believe that our study has given an overview about the complex relationships between the entrepreneur, IC, and firm success. We propose that this overview has practical implications for at least three kinds of individuals. First, students of entrepreneurship that intend to become entrepreneurs in the future. Second, entrepreneurs. And third, researchers in the field of entrepreneurship and IC. Obviously there are many more persons that could find practical use for the findings in our study. We will, however, focus on these three groups in this section, since we regard them as most important beneficiaries.

For students of entrepreneurship that intend to become entrepreneurs in the future, awareness is created that an entrepreneur has to build many different kinds of competencies to be able to successfully handle IC. Therefore one has to start early on to create social skills and develop the own human capital in order to manage IC successfully in the future. Another important implication is that since social capital could be highly important for the start up of a new venture, one should begin to develop a valuable base of, for example, network relationships before to support that process. In general, our research gives students an overview about the complex concept of IC in relation to entrepreneurial firms.

For entrepreneurs, we can also find many practical implications from this study. First of all, an overview about many IC factors that are or could be of importance in their firm is created. Some entrepreneurs might find that some forms of IC are neglected or are not created or sufficiently developed in their firm yet. After realizing that, entrepreneurs can act upon those findings and therefore might increase the performance of the firm. Another point, important for entrepreneurs, is that the responsibility for the creation of social capital, structural capital, and the development of human capital (e.g. training), lies to a large extent with them. That also enables the entrepreneur to act and not wait for other employees to perform this task. A last point we would like to mention is that through our study, awareness is created about how IC can benefit entrepreneurs. This might change the views of the entrepreneur concerning the importance of certain IC factors.

Finally, we also consider our findings to be of use to researchers in the field of entrepreneurship and/or IC. The overview that is created about the relationship between the entrepreneur, IC, and success might deepen the understanding of those relationship and enable researchers to direct research in this direction. Also, the model might be of use to analyze entrepreneurial firm’s relationship with IC. In general, we believe that our study offers many possibilities for future research that could be interesting to some researchers. An overview about the issues we consider to be of interest for future research will be given in the next section.
Concluding, we would like to mention that the practical implications presented are by no means conclusive. Practical implications are not the same to every person and those named above have to be seen as our proposal of implications. Other persons might see entirely different implications from our study. In the next section we will now present possibilities for future research.
10. Future Research

Many possibilities for future research can be found in this study. In the following we will mention only the ones that appear to be most interesting to investigate. A first possibility is to investigate how the EICS model developed in this study can be used to analyze firms in countries and industries different than the German project-management industry. Here it could be investigated whether the model’s validity can be extended to those regions or whether it is limited to the German project-management industry only. Overall, we propose that it should be investigated, for multiple firms, whether the EICS model is generally valid. If the model is not found to be generally valid, adjustments could be investigated, if this is possible. It could be also investigated for what types of firms, industries, and countries the current model is valid.

In this study, not all forms of IC known to researchers have been investigated. We have already proposed that reputation capital should be included in a revised EICS model. The relationship between reputation capital, the entrepreneur, and success could therefore be a topic for future research. It could also be investigated whether other forms of IC should be included and if there is a difference between firms in the service and firms in the manufacturing industry concerning the importance of IC. Finally, in line with the study of Hall (1992), we propose that future research should try to measure the importance of the various factors of IC investigated in our study. Which are the most important? And for what types of firms and industries are they important?
11. References


Christa, P., 03/04/2008, Interview.


Hartl, M., 2008, Open Interview.


Michalski, S., 2008, Open Interview.


12. Appendix

Appendix A - Interview Guidelines:

Interviewer: Markus Michalski  
Interviewee: Peter Christa  
Date: 03.04.2008  
Time: 16.00 - 20.00  
Place: Eggenfelden, Germany

Note: Interview held in German language. Questions translated into German before the interview.

1. How would you define entrepreneurship?
2. How would you visualize yourself within the firm?
3. What would you consider to be the unique resources within the company that differentiate your firm from others?
4. Would you consider yourself as an entrepreneurial person? Why?
5. Would you consider your firm to be entrepreneurial? Why?
6. Which personal traits (characteristics) would you consider to be the most important regarding your personal success and the success of BPM?
7. Would you consider the following factors to play an essential role in your firm?
   o Information and knowledge (experience)
   o Training
   o R&D
   o Networking
   o Corporate Culture
   o Motivation,
   o Human resources
   o Customer relationship management (CRM)
8. How has your own experience (past events) contributed to your entrepreneurial abilities? What events?

9. What is the key to achieve and sustain success?

10. What would you consider to be the biggest threats to success?

11. Would you consider intangibles as being important for the firm? If so, how are they important? Which intangibles would you consider to be the most influential (important)?

12. What would you consider to be more important, tangibles or intangibles, for the success of the firm? And to sustain success?

13. As the company continues to grow, what changes should be made, if any?

Appendix B – Information Concerning Open Interviews With Informants

Interviewer: Markus Michalski

Interviewees:  Marcus Hartl  Vice CEO and Project Manager
              Stefan Häring  Head of Finances
              Sieglinde Michalski  Head of Human Resources
              Ulrike Saller  Head of Cost and Control Department

Time Period for Interviews:  Between 3 April 2008 and 15 May 2008

Communication Methods:  E-Mail and Telephone

Discussion Topics:

1. How do employees see Peter Christa?

2. Do the employees agree with the findings from the interview with Peter Christa?

3. How did employees experience the growth and development of BPM?

4. What factors do employees consider to be important for the success of BPM?

5. What problems do employees see for BPM?