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A Theoretical Approach of Corporate Entrepreneurship and its application to the Asea Brown Boveri, Sweden (ABB)

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Abstract:

This research study tried to combine a theoretical point of view on corporate entrepreneurship with a practical application of this theory base. The main objective of the study is to analyse the main theories and studying the main differences among them. These theories are critically analysed and compared with each other and a theoretical framework is developed based on the analysis conducted. The theoretical reflections showed that corporate entrepreneurship could not be understood without approaching the overall concept of entrepreneurship. The theoretical issues addresses some important factors that can be applied to distinguish entrepreneurial characteristics within a larger organization. The study seeks to identify those factors in a real business case is one of the main motive of this research. Moreover, organizational, managerial, network and strategical aspects and implications of the proposed MNC are discovered and analysed.

Key words: Innovation, Entrepreneurship, Venturing, Network approach, ABB, Intrapreneur, Entrepreneurial architecture.

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1. Introduction

The purpose of this paper is to examine corporate entrepreneurial issues both in a theoretical approach and an application to a real life business case. The theoretical issues addressed serve to provide a framework which points out factors that can be applied to distinguish entrepreneurial characteristics within a larger organization. The identification of these factors in a real business case is one main purpose of this essay.

The main research question is to first of all give theoretical insight in the topic of corporate entrepreneurship. In order to do so, we took the starting point of shedding light on Entrepreneurship from a classical point of view. Furthermore, organizational, network and strategical aspects are covered.
Based on these aspects, the second major research question is to identify corporate entrepreneurial structures in the business case of Asea Brown Boveri (ABB). As pointed out later, this attempt can hardly be accomplished in a comprehensive way. This is mainly due to the company size and the heterogeneous company structure. Furthermore, we attempt to draw a conclusion that contains a statement on the research questions in a clear and well-founded manner.

2. Methodology

In this section, we aim to describe the method used in carrying out our task. The aim is to make it easier for the readers to understand the work process and be able to make their judgement concerning the content and quality of our study. We carried out our task by using both primary and secondary sources of data collection. Kotler (2000, 106) stated that "secondary data provide a starting point for research", hence we started by gathering relevant data from ABB group official website (www.abb.com) and reviewed articles and journals

relevant to our task.

Our study employed both methods, in order to assess, interpret, apply our judgement, and draw conclusions and suggestions. Although, more secondary data were used, the primary data obtained also helped considerably in our analysis and conclusion. We used a number of secondary sources of information in this study. These sources could be categorised as databases, articles, journals and the internet. These sources have enabled us to obtain an overview of ABB group and its various business areas. Thus, this background information facilitated our preparation for the informal interview, in order to confirm the information obtained earlier from the secondary sources.

Certain information were impossible to be obtained out rightly from the secondary source, as such we conducted an interview which was our primary source of data collection in order to compliment the secondary sources. We have chosen the interview as our main primary source because we consider an interview as important and it constitutes one of the key source of information in a case analysis. We relied on an interview since the phenomenons we want to study are set within the social and business context of ABB group and its management. Interviews are the best way, perhaps the only way to find out what people are thinking and are carried out to discover things we cannot observe directly (Yin 1994, 80).

3. Literature Review

3.1 General Perspectives on Entrepreneurship

Entrepreneurship is an ill-defined concept. Though the concept has been around for more than a century, its meaning still puzzles different scholars in the field. It is a multidimensional concept and can further be broken down to an 'enterprise' and 'entrepreneur'. While enterprise is the distinct characteristic of an entrepreneur, an entrepreneur is the

central figure of any economic activity. Even if there is no standard definition of an entrepreneur, he can simply be defined as a person who sees opportunity and takes risks to initiate, organize, manage and control the affairs of a business unit that combine factors of production to supply products whether the business pertains to agriculture, industry, trade or profession, be it in small or large companies. A lot of large companies are in search of ways of reinforcing or invigorating their entrepreneurial roots. These companies often yearn for some of the spark, innovation, haste and risk taking that they once had, but which have slowly eroded under the weight of size, bureaucracy, complex processes and hierarchy (Thornberry 2001). An attempt has been made here to demonstrate an entrepreneurial overview of some important classical contributions and later analyzing if any of these contributions are directed or helpful to large firms. The views of classical contributors considered are those of Knight, Schumpeter, Kirzner, Mises and Hayek.

3.1.1 Classical Views on Entrepreneurship

Frank Knight work explicitly distinguished between risk and uncertainty. The objective probability of 'risk' it is here argued, can be calculated, while 'uncertainty' can never be known (Swedberg 2000, 19). According to him, the economic function of the entrepreneur is bearing the real uncertainty. The Knightian entrepreneur contributes savings to society by bearing all the uncertainty, he makes decisions for which he is responsible. He guarantees the factors of production their fixed remuneration. According to him, entrepreneurship requires the ability to bear uncertainty as well as the availability of enough capital to pay the remunerations, which have been guaranteed, Mirjam (1999). Entrepreneurial services are remunerated by profit, a residual payment, but also by prestige and job satisfaction. Knight continues to argue that the amount of profit any particular entrepreneur makes, increases in his

own ability and good luck and decreases in the degree of self-confidence that entrepreneurs have as a group. In Swedberg (2000, 19), it is argued the objective probability is 'risk', it is here argued, can be calculated, while 'uncertainty' can never be known. Knight's view of entrepreneurial profits as gain resulting handling uncertainty, it is often noted, is fully compatible with the theories of perfect competition and of equilibrium in the long run.

Another scholar, Joseph A. Schumpeter has contributed significantly to the theory of entrepreneurship. Swedberg (2000, 12) claims he is considered the main figure in the literature on entrepreneurship. His work focuses on two typologies namely innovation and motivation. However, his famous and widely accepted and explored typology is that of innovation. Schumpeter's entrepreneur is an innovator and leader. The innovator is the engine of economic growth. His theory was the first to treat innovation as an endogenous process (Mirjam 1999). Innovations are endogenous developments in a dynamic economic system. Entrepreneurs are willing to innovate, due to the possession of some scarce motivating forces. He continues saying entrepreneurship is a temporary condition for any person, unless he keeps on innovating.

Swedberg (2000, 17) mentions that Schumpeter introduced new ideas as well as some interesting reformulations of old ideas. According to Swedberg (2000, 17) this is when he made clear that the entrepreneur does not have to be a single person but can equally well be an organization. Schumpeter furthermore argued what matters is the behavior not the actor.

Israel Kirzner is another credited scholar in this field. He is an Austrian scholar and widely known for bringing the concept of alertness in the field. Kirzner's entrepreneur is a person who is always alert to discover and exploit opportunities (Swedberg 2000, 20). According to him, an entrepreneur essentially tries to discover profit opportunities and helps to

restore equilibrium in the markets by acting in these. On expounding further on his work Mirjam (1999), mentioned that Kirzner's entrepreneur requires a very special type of knowledge:

> The kind of knowledge required for entrepreneurship is 'knowing where to look for knowledge.'... The word, which captures most closely this kind of 'knowledge' seems to be alertness. It is true that 'alertness' too may be hired; but one who hires an employee alert to possibilities of discovering knowledge has himself displayed knowledge of a still higher order. Entrepreneurial knowledge may be described as the 'highest order of knowledge' (Kirzner 1973, 68).

The entrepreneur only needs to perceive profit opportunities in an earlier stage than others. Hence he needs to be alert and this alertness somewhat brought about by the special knowledge that an entrepreneur possess.

Ludwig von Mises' argument is that when the economy is stable in a repetitive equilibrium cycle, there is no place for entrepreneurship (Swedberg 2000, 21). His entrepreneur is exclusively driven by desire to make money, and he does that by figuring out what the consumers want. Swedberg (2000, 21) points out that Mises is one of the few theoreticians of entrepreneurship who stresses the role of entrepreneurial errors, i.e. just as an entrepreneur can make money, he can also lose money. He defines entrepreneurship as anticipations of uncertain events.

Friedrich von Hayek's idea is that a lack of knowledge is constitutive for the very existence of entrepreneurship. The role of 'practical knowledge' has already been mentioned. (Swedberg 2000, 20) To Hayek existing information is that that is new and unknown knowledge, which is being created through the process of entrepreneurship

In summing up, the above discussed scholars have greatly contributed to this field of entrepreneurship, therefore highly credited. With their different ideas and notions sufficient

knowledge of this field can be comprehended and further applied in the practical world. Some of their ideas seem to complement on one another, other ideas contrast others, making it complicated to come to the standard meaning. Schumpeter and Kirzner all explicitly give an essential role to the entrepreneur as mover of the market into a certain direction as compared to its equilibrium position. On the other hand Schumpeter's entrepreneur destroys the equilibrium and he initiates a movement to a higher equilibrium position through innovation, (Swedberg 2000, 20). Kirzner's entrepreneur, on the contrary, achieves tendencies towards an equilibrium position which is never realized.

The entrepreneur's contribution to the economy as perceived by Knight and Kirzner results from the assumption of imperfect information, in one way or another. Knight's entrepreneur deals with uncertainty and Kirzner's and Hayek's focus mainly on knowledge through from different approaches. Schumpeter explicitly excludes risk-bearing from the business of the entrepreneur, while, Knight, on the contrary, defines the entrepreneur as a person who bears real risk and uncertainty. Among the scholars discussed above, Mises is the only one who mentioned the concept of entrepreneurial errors, that, there are times when entrepreneurs make losses. Others tend to focus on an entrepreneur as a successful individual. Generally, the scholars attribute economic progress and innovation to the entrepreneur's activities.

It is worthy to note that due to its ambiguity and broadness there is still room for further exploration in this field. Today, researches are carried out for further understanding.

3.1.2 Classical Views on Large Firms

Though the above named classical entrepreneurship scholars have contributed significantly in this field of

entrepreneurship, their contribution to corporate entrepreneurship is almost nil. Their views are mainly focus on single individuals especially in new or small firms. However, Schumpeter is credited for presenting his work regarding entrepreneurship in large firms. Schumpeter includes the modern 'intrapreneurs', employees who are in a position to 'carry out new combinations' in his definition of an entrepreneur and excludes those business owners who cease to carry out new combinations. (Mirjam 1999)

According to Mirjam (1999), Schumpeter's theory was the first to treat innovation as an endogenous process. Schumpeter integrated the dynamics of technology and business enterprise by defining the entrepreneur as an innovator. Schumpeter claimed that by means of modern techniques and modern modes of organization the innovation process would become more and more automated. Innovations would no longer be connected with the efforts and the brilliance of a single person. Quoting Schumpeter, Mirjam (1999) said they were increasingly to become the fruits of the organized effort of large teams. According to him, the organized effort of large teams would be done most effectively within the framework of large corporations (Mirjam 1999). He explicitly considered large organizations as monopolies as most of his views were socialism oriented (Magnus and Ulf 2001). He commented with its proceeds, a large firm could use its size and its monopoly power to finance new innovations. Schumpeter presents some interesting reasoning for why a firm will want to increase its entrepreneurial activity. Schumpeter points out that a single entrepreneur creates new profitable avenues. As a result, he indicates that more entrepreneurs innovating are good for the economy as a whole (Magnus and Ulf 2001). Applying Schumpeter's argument to the scope of an organization, the more sources of entrepreneurial activity within the firm, the more opportunities are created for the firm. Schumpeter described five types of innovations (Burns 2004,

243). These innovations should be coordinated as cross-functional activities to achieve maximum desired results. They can be elaborated by the help of the following diagram;

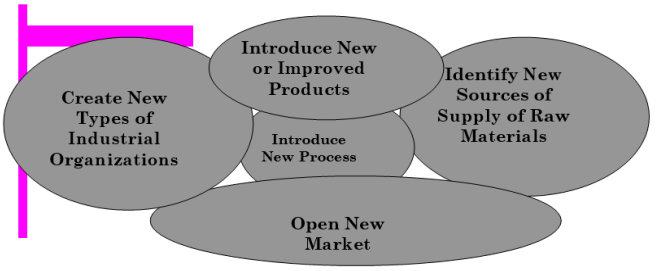

Figure 1. Schumpeter's Innovations as Cross-Functional Activities

Furthermore, Burns (2004, 257) argues that Schumpeterian approaches to innovation can be adapted to a firm of any size, be it large or small. In favor of big firms he mentions product innovations, particularly those involving large amounts of capital, originating from large companies. Additionally, in describing four types of Corporate Entrepreneurship, that is, *Corporate Venturing, Intrapreneuring, Organizational Transformation*, and *Industry Rule Breaking*, Thornberry (2001) demonstrated that *Organizational Transformation* fully follows Schumpeter's innovation concepts. He says, this type of entrepreneurship fits the original Schumpeterian definition when the transformation involves innovation, a new arrangement or combination of resources, which will further results in the creation of sustainable economic value.

Thornberry (2001) went on to elaborate that some transformations meet these requirements, while others do not. According to him, transforming an organization by de- layering, cost cutting, re-engineering, downsizing, and using the latest technology do not guarantee that the organization will recognize or capture new opportunities.

Other researchers like Magnus and Ulf (2001)

speculated the possibility of routinization of innovation processes to explain how Schumpeter's ideas can be used in large firms, however, there is still much to be investigated in this area. On the other hand, routines have been highly criticized to be hindrances of innovation in large firms. And there is a need for individuals that are able to initiate a process of departing from the organization's established routines or systems. (Swedberg 2000, 171)

To summarize, Schumpeter's views corporate entrepreneurship as a key to long-term economic success of a firm. As mentioned earlier, the classical scholars were oriented to new and small firms hence there is no contribution made regarding large firms. Recently different researchers have come up with proposals on why and how large firms can increase their entrepreneurial activity.

3.2 Organizational Aspects

Corporate Entrepreneurship

In the late 1980s, large companies like IBM, DEC, Siemens and others found it increasingly difficult to compete with the multitude of smaller, faster, more opportunistic companies challenging them in the market place, with lower prices, faster service, newer designs, and faster product development. This phenomenon of the smaller feeding on the larger has not been confined solely to the high-tech industry alone (Thornberry, 2003). In this context, entrepreneurship is quickly becoming the weapon of choice for many of these large companies in an attempt to take both the mindset and skill set demonstrated by successful start-up entrepreneurs and inculcates these characteristics into their own cultures and activities (Thornberry 2001).

But most of the earlier literature on entrepreneurs focuses on start-ups and smaller firms. More often, it is assumed that a large organization equals a bureaucratic

organization and entrepreneurial activities can hardly take place in larger and bureaucratic organizations. Notwithstanding this, large firms are looking anew at the concept of corporate entrepreneurship and searching for real growth mechanism. There are many conceptualizations of corporate entrepreneurship (CE). Guth and Ginsberg (1990) stressed that CE encompasses two major phenomena: new venture creation within existing organizations and the transformation of ongoing organizations through strategic renewal. Zahra (1991, 262) observed that "corporate entrepreneurship may be formal or informal activities aimed at creating new businesses in established companies through product and process innovations and market developments. These activities may take place at the corporate, division (business), functional, or project levels, with the unifying objective of improving a company's competitive position and financial performance." In order to understand these different strands better, four typologies or categories of viewpoints Birkinshaw (2003) have been identified in the literature, namely:

(1) Corporate venturing
(2) Intrapreneurship
(3) Bring the market inside
(4) Entrepreneurial transformation

Corporate venturing is concerned with the need of a larger business to manage new, entrepreneurial business separately from its mainstream activities. It is concerned with the investment by larger firms in strategically important smaller firms and different forms of corporate venturing units (Cherbourg 2002). It is concerned with the organizational structures needed to encourage new business whilst aligning them to the company's existing activities (Burgelman 1983; Drucker 1985; Galbraith 1982). It also deals with how companies can manage disruptive technologies (Christensen

1997).

Intrapreneurship, first espoused by Pinchot (1985), is an attempt to take the mindset and behaviors that external entrepreneurs use to create and build businesses, and bring these characteristics to bear inside an existing and usually large corporate setting. It is concerned with individual employees and how they can be encouraged to conduct entrepreneurial activities with a larger company. It focuses on the organizational systems, structures and culture that may stifle entrepreneurship and how their influence can be challenged and mitigated.

The third type focuses mainly on the structural changes needed to encourage entrepreneurial behavior and stresses a market approach to resource allocation and people management systems with market-based techniques such as spin-offs and venture capital operations (Foster & Kapln 2001; Hamel 1999).

The premise for the fourth school of perspective is that large firms, if they want to survive, need to adapt to the ever-changing business environment and adapt their structures and cultures so as to encourage entrepreneurial activities among individual employees (Ghoshal & Bartlett 1997; Kanter 1989; Peters and Waterman 1982; Tushman and O' Reilly 1996). This point of view is concerned with the influence of the leadership, strategy, systems, structures and culture of an organization on its individual employee's behavior.

The notion of building entrepreneurial thinking and acting inside a large organization is quite seductive, but what is the reality? How can corporate entrepreneurship really be instilled into a bureaucratic culture? How different are corporate entrepreneurs from external entrepreneurs, and how well does the entrepreneurial mindset fit within a hierarchical corporate structure? The answers to these questions may be related to another important issue, that is, managing an entrepreneurial organization. Entrepreneurial behavior does not occur in a vacuum. Rather, it takes place

within the context of the organization's full array of actions (Dess, Lumpkin & Covin 1997) and all managerial behavior will influence the CE success. But compared with smaller and entrepreneurial firms, the traditional management techniques applied in larger companies, unintentionally discourage corporate entrepreneurship and limit the entrepreneurial behavior of the individual employees (Burns 2004, 143). Examples of these accepted management techniques include:

> Focus on efficiency or return on investment, Plan for the long term and ten control against plan, Enforce standard procedures, rules and regulations, Avoid risk, Make decisions based on past experience, Manage functionally and Promote individuals who conform (Burns 2004, 143-144).

However, it is important to notice that these management techniques themselves are not wrong and the only problem is that they are used in the wrong environmental context (Burns 2005, 144). To analyze the issue in a more systematic way, Burns (2004, 145) quoted the six groups of barriers to corporate entrepreneurship developed by Morris (1998):

(1) Systems: inappropriate evaluation and reward systems, excessive and rigid control systems, inflexible budgeting systems, overly rigid and formal planning systems and arbitrary cost allocation systems.
(2) Structures: too many hierarchical levels, top-down management, overly narrow span of control, responsibility without authority, restricted communications and lack of accountability.
(3) Strategic direction: no formal strategies for entrepreneurship, no vision from the top, no entrepreneurial role models at the top, no innovation goals, lack of senior management commitment.
(4) Policies and procedures: Long, complex approval procedures, excessive documentation requirements, unrealistic performance criteria and over reliance on

established rules of thumb.

(5) People: fear of failure, resistance to change, parochial bias, complacency, protection of own sphere of activity, short-term orientation, inappropriate skills and talents. People can be the greatest barriers of all. Changing people- their attitudes and the way they do things- is the biggest challenge facing management.

(6) Culture: Ill-defined values, lack of consensus over priorities, lack of congruence, value that conflict with those of an entrepreneurial culture. Culture is the cement that binds the entrepreneurial organization together. The strong it is, the stronger the entrepreneurial architecture.

Based on all above, we believe that whether entrepreneurship can be successfully implemented in a large organization mainly relies on the skills adopted to manage the entrepreneurial process. The tasks of the management are to guide, encourage and protect entrepreneurial activities so as to benefit the organization.

3.3 The Network Approach

It seems reasonable to argue that processes of innovation, knowledge creation and the creation of entrepreneurial behavior within a company fit well to the network view of a corporation.

In general, the development of relationships lies in the center of the entrepreneurial approach to conducting business. This comprises relationships with customers, as well as with staff, suppliers and stakeholders. By building up a network of relationships, based on informal bonds rather then formal ones, the firm can conduct change more easily (Burns 2004, 43). This in particular applies to a large multinational corporation.

Goshal and Bartlett (1990) point out that a multinational corporation can be characterized as an "interorganizational grouping rather than as a unitary

organization" (Goshal & Bartlett 1990, 604). Every item in such a network is on the one hand connected with the rest of the corporation, but just as well with an external network. Furthermore, it is stated that the characteristics of the external network have direct or indirect effects on different attributes of the multinational corporation. Attributes can e.g. be the dispersion of organizational resources or the nature of inter-unit exchange relations (Goshal&Bartlett 1990, 604 et seqq.)

In order to foster an entrepreneurial culture within an organization, this view has to be taken into consideration. If a single member of an organization, or a small group of members attempts to show entrepreneurial initiative, this hardly can be conducted without the intensive usage of existing network linkages.

By definition, there is a certain level of risk involved when showing intrapreneurial behavior. It is of interest for the organization as well as the individual member of the organization to reduce this risk as far as possible. This way, the probability of succeeding with the intrapreneurial initiative in question can be raised. In turn, this raises the probability of generating a higher rate of return for the organization, e.g. a company.

Burt (2000) explicitly states that it is the structure of a player's - i.e. an individual that shows entrepreneurial or intrapreneurial behavior – network that determines the rate of return concerning his activities. This does not imply that the network structure directly determines the behavior or the attitude of the player. However, behavior and attitude cannot be regarded in an isolated way. They are embedded in a social structure and this social structure can be regarded as capital – i.e. the base for return on investment. (Burt 2000, 281 et seqq.).

Of course, for using the network for entrepreneurial or intrapreneurial behavior, certain characteristics of the individual have to be given. These psychological characteristics then materialize into a certain kind of behavior, e.g. taking

business opportunities (Burt 2000, 301). A brief insight in the entrepreneurs' characteristics from a classical theorists point of view has been given in chapter 3.1.

3.4 Strategical Aspects

When analyzing the theoretical background of the creation of successful corporate entrepreneurship, the real business life implications are not always clear. Therefore, it appears helpful trying to figure out major strategical implications concerning the relevant questions.

It appears helpful to take general growth strategies for companies into consideration.

Porter (1986) recommends making a strategic choice among differentiation, i.e. the creation of a unique product or service or cost leadership, i.e. obtaining cost and price leadership among homogenous products (Porter 1986, 47 et seqq.).

Prahalad and Hamel (1990) in turn refer to a sustained competitive advantage that enables firm growth. As a precondition for this growth and based on a resource view of the firm, firm resources have to be heterogeneous and immobile. Furthermore, the relevant resources have to show the characteristics of rareness, imperfect imitability and non-substitutability. (Prahalad &Hamel 1990, 112 et seq.)

Apart from these general growth strategies, there are factors identifiable that to a high extend foster the development of particularly heavily growing companies. These factors in turn can be regarded as a base for the design of strategic directions. Namely these factors are

1. The competition on quality, rather than on price. This factor mainly seems analog to Porters product differentiation.
2. The domination of a market niche.
3. The competition in areas of strength.
4. Obtaining tight control on financial and operating controls.

5. Ensure a high frequency of product or service innovations (Burns 2004, 188).

Therefore, considering these factors in designing overall growth strategies seems highly recommended.

However, implementing an entrepreneurial orientation by following certain strategic directions cannot simply be decided and turned into practice by the management. Instead, time and continuous effort is required for building up an entrepreneurial orientation. As pointed out earlier, a larger organization poses a number of obstacles to entrepreneurial orientation respectively behavior. It is up to the management to implement an entrepreneurial spirit in the organizations' mission, goals, structures, processes, values as well as strategies.

The importance of entrepreneurial orientation is mainly determined by environmental factors i.e. environmental change and complexity. Therefore – as Morris (1998) points out – strategic approaches can be characterized in the way of reacting to such environmental changes. Two approaches are possible.

First, the adaptive approach stated that the management anticipates environmental change and then tries to adjust the organization to it. Thereby, potentially negative effects of change on the organization shall be prevented. As can be seen this approach obtains a passive and reactive character.
Second, the entrepreneurial approach in contrast obtains an active character. In this approach, managers actively try to change the environment and act as agents of change. Companies managed in this way, should be able to influence the rules and competitive circumstances by themselves.

This in turn implies, that a company's need to follow an entrepreneurial approach in general, which is reflected by its strategic approach, is to a large extend determined by the characteristics of its business environment. (Morris 1998, 93 et

seq.)

As an outcome of the discussed strategical aspects, it can be stated that in the analysis of the entrepreneurial character of a larger organization, as conducted in this work, two points seem most relevant. The first is the crucial role of the management's approach to implement and obtain an entrepreneurial respectively intrapreneurial orientation of the organization. The second aspect is that the entrepreneurial character of an organization cannot be regarded isolated. Instead, the need for building up such character is very tightly linked to the companies' environment.

4 The Case of ABB

4.1 Company Description

ABB is an internationally known corporation, which has a history dating back to 1987. This very year was the time when ASEA AB of Västerås, Sweden and BBC Brown Boveri Ltd of Baden, Switzerland merged their operations giving birth to today's ABB Asea Brown Boveri Ltd. It is headquartered in Zurich, Switzerland, however, initially, each parent company was to hold 50 percent of the new company. Subsequently, the boards of directors of ABB Asea Brown Boveri Ltd, ABB AG of Switzerland and ABB AB of Sweden collectively made a decision to realize the plan of creating a unified, single-class ABB share marking the final step in completely integrating the corporation (ABB 2013a).

At present, ABB is a global leader in power and automation technologies enabling utility and industry customers to improve their performance and, at the same time, lowering environmental impact. On the one hand, the Power Technologies division serves electric, gas and water utilities, as well as industrial and commercial customers, and channel partners with a broad range of products, systems and services for power transmission, distribution and power plant

automation. One the other hand, the Automation Technologies division blends a comprehensive portfolio of standard and customer-tailored products, solutions and services for increased productivity and energy efficiency among industrial, utility and building industry customers (ABB 2013d). The ABB Group of companies operates in approximately

100 countries and employs around 103,000 people (ABB 2013b). The company's businesses are divided into 5 main divisions; Power products, Power systems, Automation Products, Process Automation, and Robotics (ABB 2013b).

Power Technologies

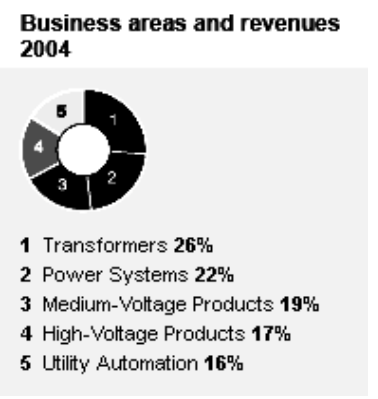

Figure 2.1 Power Technologies: Business areas and revenues 2004 (ABB 2013d)

Automation Technologies

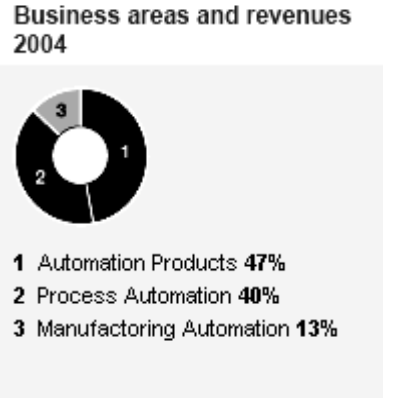

Figure 2.2 Automation Technologies: Business areas and revenues 2004 (ABB 2013d)

The dominant factor positioning ABB as a significant actor in the industry is none other than technology. This is served and propelled by the fact that the corporation has nine research centers, 6,000 scientists and 50 university collaborations across the world- all working to develop unique technologies that make its customers more competitive, while minimizing environmental impact (ABB 2013c). In order to pursue research and development, the company's R&D engineers and scientists have contributed their effort to develop breakthrough

technologies stimulating the dynamism of the way the world works and the way industries do business on the global scale. To serve this purpose, the company has established two Group R&D laboratories, that is, Automation and Power Technologies. Each laboratory links and integrates its global R&D operations in these areas with universities and other external partners in a fully networked online environment (ABB 2013c) and this very factor can be considered as the drive which propels ABB technology advancement which we can witness today.

Currently ABB has 9 corporate research centers located in Switzerland, Sweden, Finland, Germany, Poland, Norway, U.S, India and China, all of which establish collaborations with leading universities across the world and within nations such as MIT and Mälardalens University (Västerås). Each of these centers has specific responsibilities and focuses of research areas to serve ABB businesses and different divisions as follows;

> **Switzerland:** creation of power and automation technologies.
> **Sweden:** development of technologies for future products and services for ABB's core businesses.
> **Finland:** manufacturing and engineering and Industrial IT applications for discrete manufacturing industries.
> **Germany:** supports of ABB operations in product and system development as well as in services and consultation with basic research, new technologies and innovative solutions.
> **Poland:** academic supports derived from universities, research institutes and other scientific organizations in Krakow.
> **Norway:** industrial software and automation technologies.
> **U.S.:** base for power technologies and center for automation.
> **India:** software-intensive products and systems
> **China:** power systems, manufacturing technologies and robotics as part of the Power Technologies global lab; and, R&D projects in the automation area (ABB 2013c).

In 2011, the ABB Group went ahead with a streamlining of its business operations as ways towards operational excellence, cost competitiveness and to be more flexible and responsive to customers. The streamlining was pushed forward by organizational changes within the division of Power Technologies, put into effect in the following year of 2012. In addition, the Automation Technologies division was also streamlined by similar measures and took effect at the beginning of 2011. This resulted in the merge of the Power Technologies division's five business areas into two, Power Technology Products and Power Technology Systems while the Automation Technologies division then concentrated its operations in three rather than six business areas: automation products, process automation, and manufacturing automation (ABB 2013d).

Revenues by Region 2011

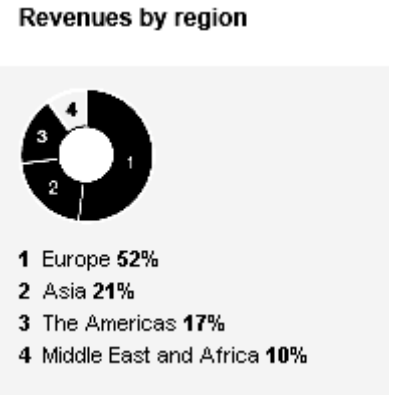

Figure 2.3 Revenues by Region 2011 (ABB 2013d)

Looking around us, one may not realize that technologies developed by ABB do play a role in his or her daily life to a significant extent. ABB is commonly associated with power technologies that improve power transmission and distribution, and automation technologies that enhance industrial productivity. Yet, when we look more profoundly, for

example, considering a car, we will see that it is highly possible that ABB robots helped to assemble the car one drives, in operations ranging from precision material handling, spot welding and production of assemble units to the application of quality environmentally-friendly paint finishes. Another good example would be the newspaper, according to the corporate studies; it is shown that 85 percent of pulp and paper mills in the world have ABB products installed and running, may it be a transmitter, a transformer or a complete automation system, but a part of the process depends on ABB (ABB 2013c). These two examples are just to name ones of a range of products offered by ABB.

4.2 Entrepreneurial Character of ABB

In the following, it is intended to clarify whether ABB creates Corporate Entrepreneurship within its organizational borders. When regarding the size of the company with more then 100 000 employees and operations in more than 100 countries, it seems obvious that this question cannot be answered comprehensively. What can be accomplished in the framework of this paper is to deliver single hints that may indicate the existence of corporate entrepreneurial culture and structures. However, the drawn conclusion very well might not be reasonable for the entire corporation.

All company information where no explicit source is given is based on a conducted interview. The interview partner is employed as a sales manager for power substations. His academic background is engineering studies and 40 years of work experience.

4.2.1 The Role of the Management

As it has been pointed out in the literature review, the management obtains a critical role in regards to the creation of an environment that fosters entrepreneurial respectively intrapreneurial behavior of the company's employees.

There are indicators for the belief that the management of ABB is trying to encourage that kind of behavior within the organization.

As stressed in the interview, the ABB management shows a generally supportive behavior towards innovative ideas of individual organization members. In practical business life, this means that ideas for e.g. innovative technology improvements can be brought forward to the superior management. If the idea seems to bear the potential to develop into a marketable product or service, the management will concentrate human and other resources in order to found a development group.

However, the frequency in which such processes take place is rather rare. This rareness might be an explanation for the fact that routines, i.e. standardized processes, to handle a strong innovative initiative by a single employee do not exist. The handling of such initiative rather is a unique process, varying from case to case.

Rewarding systems deliver a further measure to encourage innovative ideas. Further details on the structure of these systems unfortunately could not been gathered.

This behavior in business reality correspondents to the general statement ABB obtains towards innovation and knowledge. Innovation is seen as the "DNA of Business" (ABB 2012a, 3). Without constant innovation in all fields of business, the company's future is not ensured. Other sources contribute to the picture of ABB, that the company is very well aware of the role knowledge plays for a company with mainly high tech products such as ABB. E.g. ABB Switzerland performs "exit interviews" when an employee retires. This way, the knowledge the employee gained during work is supposed to be kept within the company (Hoegl & Schulze 2005, 268).

When talking about the role of innovation and the knowledge about innovation, the link to the entrepreneurial culture has to be clarified. Based on different theoretical

attempts, innovation plays a crucial role in showing entrepreneurial characteristics. Therefore, it can be hypothesized that by supporting innovative behavior within ABB, the management lays the groundwork for an entrepreneurial culture.

4.2.2 The Network Factor

In Chapter 3.3 the central role of network connections for entrepreneurial processes has been pointed out. Therefore, a closer analysis of ABB's attempt towards the fostering of various kinds of internal and external network connections seems to be relevant.

In the internal proceeding of information, personal network relations play an important role in ABB. This can be regarded as part of the overall corporate culture at ABB. Of course, hierarchical structures do exist as in any other corporation of similar size. However, ABB's corporate culture follows a more informal rather than a strictly formal approach. This informal approach clearly stimulates the building of network relationships. Generally speaking, the network approach can deliver a theoretical base for analyzing the process of picking up information about customer needs, competitors etc.

Based on the opinion of the interviewed ABB employee, personal relations, or the personal network of a single employee play a not unimportant role in this process. This e.g. can lead to improvement proposals for existing products or services if an employee perceives customer dissatisfaction based on personal experience. However, this personal network aspect is only one factor in the obtaining of customer and competitor information. More formal methods to this do exist.

Furthermore, the network approach points out the importance of continuous development of connections with external network partner. Especially relevant for ABB seems to

be the contact with research institutions - i.e. sources of knowledge - in regards to the development of technology. Therefore, the company built up cooperation with more than 50 universities all over the world. One intention behind these network relationships is the overall internationalization of Research and Development, and thereby conducting R&D closer to the markets. However, the most important strategic intention is to turn research outcomes at universities into marketable products and services. This means creating "value in terms of innovation, which results in new business for ABB" (ABB 2012b, 3). In the end, this means a base for future growth and profitability of ABB. (ABB 2012b, 3)

We believe that the described attempt towards connection with external research institutions generally supports an internal entrepreneurial culture. From this kind of cooperation, impulses for innovations derive. These innovations not necessarily have to lead to internal venturing. However, without them – as pointed out earlier – entrepreneurial attempts in a technology based company like ABB are hardly possible. Altogether, the facilitation of information flows and other outcomes of dense internal as well as external network relationships can be regarded as a positive factor in the creation of a corporate entrepreneurial culture at ABB.

5. Conclusion

This paper tried to combine a theoretical point of view on corporate entrepreneurship with a practical application of this theory base. The theoretical reflections showed that corporate entrepreneurship could not be understood without approaching the overall concept of entrepreneurship. Corporate entrepreneurship itself can be approached from various different angles. It bears organizational, managerial, strategic and many more implications. This illustrates the complex character of the task to create corporate entrepreneurship.

This complex character is pointed out by the business case of ABB. After a brief company description, we tried to point out aspects that might show the existence of corporate entrepreneurial culture and structures within ABB. As a conclusion, we in deed identified aspects that support the existence of such culture. This conclusion mainly derives from the strong focus on innovation in ABB. The support of innovation in turn is strongly connected to the existence of corporate entrepreneurship. However, a comprehensive identification of all preconditions that might characterize corporate entrepreneurship cannot be delivered. The complexity and size of the company prevents this.

As a recommendation to the company, we state that the encouragement of innovative ideas towards every single employee is the right approach to lay the groundwork for entrepreneurial respectively intrapreneurial developments. The management should follow up this matter in order to ensure ABB's future competitiveness.

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