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The Winds of Change at Siemens

Master in Science in Business Administration
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Abstract

Strategic change is a topic of great importance given the turbulence of the markets in which firms operate. Related to this topic, it has recently been developed the concept of dynamic capabilities, which refers to the ability of companies to sustain their competitive advantage in changing environments.

Often as a mean to cope with the challenges presented by the environments, companies hire outside CEOs in order to acquire new perspectives, capabilities and mindsets to improve company's performance.

This dissertation comprises a teaching case about Siemens. The longstanding corporation has a history of success but where there were also some threats to the sustainability of the company in the market. In this case, the main focus is on the period since 2007. In that period, Siemens hired the first outside CEO in its history and the crisis took place, putting to the test the endurance of the CEO and, ultimately, of the company.

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Introduction

Strategic management is a field of great importance in management studies as the environment is becoming more competitive and more volatile. Variables as technology, politics, demographics and even competition are sources of instability in the market that often cause shocks that completely shift the condition under which the company operates, demanding strategic change.

Be that as it may, the topic of Dynamic Capabilities has gained increasing importance in the field of strategic management. This view emerged due to a limitation in the Resource-based Theory (Barney, 1986, 1991): the environment is dynamic in its nature instead of static as Barney assumed in his theory. Teece (1997) attempted to overcome this hurdle through the development of an article, triggering the work of several scholars (Barreto, 2010).

The Resource-based Theory explains how to achieve a sustained competitive advantage, assuming that resources and capabilities are heterogeneously distributed across firms and that such conditions are stable over time (Barney, 1991). On the other hand, in his work, Teece et al. (1997:516) defined Dynamic Capabilities as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments”.

Barreto (2010) also acknowledged the dynamic nature of the markets. In his definition of Dynamic Capabilities, Barreto (2010) considered it as a multidimensional construct: “A dynamic capability is the firm’s potential to systematically solve problems, formed by its propensity to sense opportunities and treats, to make timely and market-oriented decisions and to change its resource base”.

Under this umbrella topic that is Strategic Change, there is a very interesting topic that often relates to Dynamic Capabilities which is CEO origin, tenure and discretion. When a company changes its CEO, the new CEO characteristics play an important role and ultimately affect the company performance (Zhang and Rajagopalan, 2009). Furthermore, the impact of the decisions of an inside CEO versus an outside CEO on firm’s performance differs depending on the level and positive versus negative effect of strategic change (Zhang and Rajagopalan, 2009).

This dissertation will focus on the Siemens case. From the World War II to the current crisis, many were the shocks that the 165-year old engineering giant faced. I will analyze major structural changes occurred in last decades, but a special emphasis will be given to recent restructurings occurred in the company.

Over the years, many leaders headed the company to success. For over 100 years the company was run by Siemens family members and by 1968 the company began to be leaded by inside, (or promoted) CEOs. However, in 2007 the situation changed greatly: for the first time Siemens had an outside CEO.

The dissertation is divided into Literature Review, Teaching Case, Teaching Note, Discussion and Conclusion. In the first, the theory will be presented to frame the Teaching Case. After the Teaching Case, the Teaching Note will provide a comprehensive guide to class discussion of theoretical topics and case study. Finally, the last two sections will feature the Discussion and Conclusion parts to complete the dissertation.

Literature Review

The Emergence of Dynamic Capabilities

The Strategic Management field has been greatly developed in the last few years. In fact, nowadays markets operate in situations much more challenging as the occurrence of sudden shocks in economies, competition, technology and regulation is more frequent (Barreto, 2010). Therefore, this instability results in a difficulty in sustaining a long-term competitive advantage, which, in turn, has been proved to be decreasing its longevity (Wiggins & Ruefli, 2005).

Indeed, the realization that firms operate in changing markets enabled to overcome the limitations of the Porter's Five Forces Model and the Resource-based Theory (Barney, 1986, 1991). The former, assesses the industry attractiveness and, thus, the likelihood of thriving in a certain industry, while the latter, on the contrary, considers that superior returns lie in the resources and capabilities of the corporation, privileging internal resources in detriment of external context. However, both assumed that market conditions are relatively stable over time, hence the emergence of Dynamic Capabilities.

The Dynamic Capabilities' concept became popular when Teece et al. (1997:516) defined Dynamic Capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments". The work of the scholars had an undeniable impact, prompting the work of many others and leveraging the importance of the topic in the strategic management field. Nonetheless, the definition was criticized by many scholars due to its vagueness (Kraatz & Zajac, 2001), confusing (Winter, 2003) and tautological (Williamson, 1999) nature among others.

Resource Reconfiguration and Dynamic Capabilities

Eisenhardt & Martin (2000) made an important contribution to the study of Dynamic Capabilities. Considering the firm's processes that use resources as the foundation of market change, Eisenhardt & Martin (2000) defined Dynamic Capabilities as "the

organizational and strategic routines by which firms achieve new resource configuration as markets emerge, collide, split, evolve and die".

Menguc & Auh, 2006 was also of great relevance to the development of the Dynamic Capabilities' topic. The scholars also privileged the role of internal capabilities as a mean to neutralize external threats (Menguc & Auh, 2006). Yet, under the proposition that superior competitive advantage lies in the effective implementation of market orientation (Jaworski & Kohli, 1993), innovativeness plays an important role in this model, as it is believed to have a positive and significant interaction with market orientation. Thus, the ability to respond to changing environments will be improved should it be complemented by other internal transformational resources.

The new definition of Dynamic Capabilities: a multidimensional construct

Since it became a popular topic, Dynamic Capabilities have had a large array of definitions and, even though the previously mentioned definitions relied on the resource configuration as a mean to achieve a sustained competitive advantage, many authors believed otherwise. According to Barreto (2010) the different definitions varied in nature, specific role, relevant context, creation and development mechanisms, heterogeneity assumptions, outcomes and purpose.

Barreto (2010) considered imperative to take into account the previous criticisms and the most recent theoretical and empirical developments. Hence, the new definition comprised four dimensions: "A dynamic capability is the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base". Hence, Barreto (2010) considered that a multidimensional construct would grasp the complexity of Dynamic Capabilities, as the four dimensions are distinct yet related in a single concept.

Strategic Change

Strategic change is the intended intermediate outcome of dynamic capabilities. It often comes as a result of a firm's response in the context of a shock. In some studies, it has been defined as a shift in a single and specific strategic dimension (Zhang &

Rajagopalan, 2009), such as product diversification level (Wiersema & Bantel, 1992) or investment intensity (Hoskisson and Hitt, 1988). However, many other scholars consider strategic change as the overall change in a firm's pattern of resource allocation in multiple key strategic dimensions (Zhang & Rajagopalan, 2009; Carpenter, 2000; Finkelstein & Hambrick, 1990; Zhang, 2006). The latter approach is based on the idea that strategic change is based on the perspective that reckons strategy as the configuration in a firm's resource allocation (Mintzberg, 1978).

Strategic Change and CEO Origin

Managerial succession epitomizes the periodic occasion to reconfigure the company's strategy and structure to the changing requirements of environments (Miller & Friesen, 1980; Pfeffer and Salancik, 1978; Tushman, Virany, and Romanelli, 1985). Indeed, the topic of CEO origin has been drawing significant attention as the situation often also underlies strategic change. In fact, Zhang & Rajagopalan (2009) have shown that having an outside CEO (hired from outside the firm) versus an inside CEO (promoted from within the firm) differs the level of strategic change and performance attained by the firm. Since inside CEOs have accumulated knowledge of the firm acquired through their experience on the business and outside CEOs bring new knowledge and ideas (Harris and Helfat, 1997; Zhang and Rajagopalan, 2003, 2004), the strategy formulation and implementation is likely to be different, resulting in different outcomes, which, ultimately, have a different impact in company's performance.

Outside CEOs are often hired in a situation of performance decline and, thus, changes are needed (Cannella and Lubatkin, 1993). As CEOs bring new skills, are more emotionally detached and have less concerns related to the company's status quo, they are more prone to look for irreverent strategic options (Zhang & Rajagopalan, 2009). Hence, relative to the promoted CEOs, outside CEOs may be more adaptive yet can also intensify the disruptive effect of strategic change (Zhang & Rajagopalan, 2009). Therefore, the costs and risks associated with strategic change are higher in the case of outside CEOs.

In what concerns strategic change endured by the two types of leaders, Zhang & Rajagopalan (2009) realized that, in the case of outside CEOs relative to promoted CEOs, the increases in performance are greater in the case of low levels of strategic change, while the opposite effect occurs in high levels of strategic change. This situation can be justified by the fact that, as promoted CEOs are very acquainted to the companies resources and capabilities, they try to capitalize on these, acting in a continuous way, which is biased by they prior experiences. However, this situation is not applicable in the early years of tenure (about three years) as some degree of change is anticipated (Zhang & Rajagopalan, 2009).

The strategic change topic has been proving to be very important to understand the strategic management of the companies. Although seemingly unrelated, the topics of Dynamic Capabilities and CEO turnover fit under the strategic change topic, which will be illustrated in a teaching case in the following chapter.

Teaching Case

The Winds of Change at Siemens

160 years of History

It was on October 12th, 1847 that Werner von Siemens and Johann Georg Halske along with eight employees began the production of pointer telegraphs, on the company founded by the two: the Telegraph Construction Company of Siemens & Halske. Indeed, the company's main source of income was telegraphs for many decades, having won the contract to build the first long–distance telegraph line in Europe: a 500-km line connecting Berlin to Frankfurt, in the year after its establishment.

After eight years of activity in the home country and abroad, Siemens & Halske decided to open their first foreign subsidiary in Russia, where the company expanded the national telegraph network. This subsidiary was managed by Carl von Siemens, the youngest brother of Werner.

In 1866, Werner von Siemens discovered the dynamo-electric principal, which enabled the idea of the use of electricity as a cost-effective power source. The groundbreaking discovery paved the way for private and public electrification. At this point, the company already realized how important it was to have qualified and experienced employees[1], thus, implementing pension funds, reducing the working hours and providing apprentice training programs and onward training[2].

A few years later, the company introduced the first electrical railway with an external power supply as well as many innovations related to lighting and drive technology, positioning the company as a pioneer in electric engineering. Simultaneously, in an attempt to strengthen the company's position in its key markets, while capitalizing on the sales volume that it reached by then, Siemens & Halske opened agencies in several countries.

At the end of the 19th century, the company started a period of growth characterized by consolidation and partnerships. In China, the company built an electrical plant, which supplied power to several cities and run the rail system. Shortly after, the company

opened its first agency in Shanghai. Already in the beginning of the 20th century, the company's heavy current divisions merge with the joint-stock corporation Schuckert & Co. to form Siemens-Schuckertwerke GmbH. Also in 1903, Siemens also co-founded a company with AEG specialized in developing the radio.

The World War I had a strong and lasting impact on the company, causing the collapse of the markets and the expropriation of foreign subsidiaries[3]. The losses accounted for 40% of the capital, including nearly all its foreign patent rights. Hence, the priorities of the company included the restructuring of the company's manufacturing operations and the recovery of the business abroad[4]. At this point, Carl Friedrich von Siemens, the youngest son of Werner von Siemens, was in charge of the business, establishing a clear vision for the company on this period: to focus on the whole field of electrical engineering but assigning specific areas of the business to subsidiaries and affiliated companies.

In the middle of the 1920's, the company attained the largest foreign contract awarded to any German company since the beginning of the 20th century[5]. Siemens-Schuckertwerke GmbH was responsible for the construction of a power plant in the Irish Free State, which would electrify the whole land of the country.

Due to World War II, many civilians were forced to work in the German Industry. Siemens was included in this segment and, as such, more than 20% of the company's employees were working against their will[6]. By the end of the war, many plants were ruined, therefore, the manufacturing operations were moved abroad to places not affected by the war, having 400 relocated manufacturing plants at the end of 1944 and at the beginning of the following year[7]. However, on April 20th, 1945, Siemens plants closed at the expense of Germany's collapse, buildings and factories were ruined, accounting for a loss of 80% of company's assets[8].

Once the war was over, it was time to regain momentum and achieve the successful position that the company held before the world tragedy. Thus, Siemens approach entailed programs that aimed at the reconstruction of public services and utilities. The

Group Directorates appointed during the war remained in charge of the west and south of Germany. Even though both had the same goal of recovering its position, the Directorates worked independently of the headquarters.

As the domestic business grew, there was no apparent progress in sales abroad. It was not until the 1950's that foreign sales started to grow, when the company regained its patents and trademarks' rights as well as expropriated foreign companies. Siemens capitalized on these changes by restructuring its operations and formed new companies. The growth was visible in many large-scale projects in which Siemens was involved, so, by 1960's Siemens had already achieved its position in the market[9].

In October 1966, Siemens & Halske AG, Siemens-Schuckertwerke AG and Siemens-Reiniger-Werke AG merged to form Siemens AG. This decision intended to bring together the company's activities and competences to strengthen its position, as there was a clear convergence in the business of the companies[10]. Additionally, one internal restructuring had been made, which decentralized the power in an attempt to gain more flexibility and reduce the response time. Before the 1970's the company had already reached 270,000 employees worldwide and annual sales over DM[11] 10 billion[12].

Once Germany was reunified, the eastern started to be developed by Siemens and in a few years the organization took over 11 companies and implemented a number of sales locations[13]. Also, as Central and Eastern Europe opened their markets, the company expanded its activity when it established projects in telecommunications, transportation systems, medical equipment and environmental protection[14].

In the early 1990's, when the word "Globalization" started to become a big hit, the company adopted a new global approach, as the world became a sole market where country boundaries became less relevant. Productivity, innovation and growth were the keywords for this new approach[15]. Asia-Pacific and the U.S. were immediately considered key locations, so Siemens had a pressing presence in both. In 2001, Siemens attained a listing in the New York Stock Exchange.

160 years after the company's inception, Siemens had built a global network of innovation, operating in a wide variety of sectors, connecting 450,000 people in over 190 countries worldwide[16], being known as the "global powerhouse in electronics and electric engineering"[17].

Faces of progress, faces of change

Throughout Siemens history many important people helped developing and shaping the engineering giant. With different roles, the Siemens's family, along with a few partners, was responsible for inventions, ideas, projects, international expansion and strategy.

Werner von Siemens was an inventor and farsighted businessman whose achievements, through the foundation of Siemens, were very important for the development of the field of electrical engineering[18]. His brother Wilhelm, later Sir William, due to the English naturalization, was key to the internationalization of the corporation, especially in England[19]. While taking care of managerial endeavors, Sir William also embraced a research activity and published several articles[20].

On the other hand, Carl von Siemens, Werner's youngest brother, established the company in the lucrative Russian market, where he dealt with large-scale projects. Carl was the successor of Werner in Siemens & Halske upon his brother retirement from management tasks[21]. He was, then, responsible for turning the organization into a public corporation[22].

Arnold and Wilhelm von Siemens were the two oldest sons of Werner von Siemens. Both of them were in charge of the management of the company with their uncle Carl.[23] The youngest son of the founder, Carl Friedrich von Siemens, played a major role in restructuring the company after World War I (when his brothers were already deceased)[24]. Visionary as his father, he defined the strategy that enabled the company to overcome the difficult political regimes in Germany, which ranged from disastrous losses to leadership in the industry[25].

Ernst von Siemens, son of Carl Friedrich, also built remarkable milestones while working in the company. He was able to revive the international businesses after World War II with his cousin Hermann von Siemens, as he was also the Chairman of the Supervisory Board of Siemens & Halske and Siemens-Schuckertwerke[26]. It was during his tenure that the merge of the companies into Siemens AG occurred[27].

At the end of the 1960's the management of the company shifted to non-relatives of the Siemens family. Gerd Tacke was the first president of the Managing Board in 1968[28]. His long career at the company and many years working alongside Ernst von Siemens, allowed him to share the views and, ultimately, fit the brief[29]. After leaving the Managing Board, Tacke was elected member of the Supervisory Board, a position which he held for six years.[30]

Then, Bernhard Plettner succeeded in the Managing Board. With a career that began with an internship while in school and a career that entailed the restoration of the export business after World War II, Plettner achieved important landmarks as the head of the Planning Department of Siemens-Schuckertwerke and also as Chairman of the company[31]. Upon the restoration of the company into Siemens AG, Plettner became a member of the joint presidency. Later, Plettner was elected member of the Supervisory Board after his mandate in the Managing Board[32]. Indeed, in 1981, he became the first President of the Supervisory Board who was not related to the Siemens family[33].

Karlheinz Kaske took the lead after Plettner. Kaske joined the company in 1950 yet left three years after to be a lecturer at the School of Mines e Aachen.[34] In 1960, he returned permanently. The Sales Engineer, whose experiences included working abroad to increase the company's foreign business and shifting it from an electric to an electronic engineering company, became a member of the planning department that merged the companies into Siemens AG[35]. By 1975 Kaske was member of the managing board, having reached the position of chairman in 1981 and sustaining it for 11 years.

Heinrich von Pierer filled the position of the President of the Managing Board. The economics graduate joined Siemens in 1969 after serving as an assistant professor at University of Erlangen-Nuremberg[36]. At Siemens, his career started at the Legal department of Siemens AG but by 1977 he was working on the company's subsidiary Kraftwerk Union AG, becoming the head of Business Administration in 1988[37]. In the following year he was a member of the Managing Board of Siemens AG and in 1992 Pierer was appointed President and CEO of Siemens AG[38]. Pierer remained in the position until 2005, when he became Chairman of the Supervisory Board[39]. While in the lead of the company, Pierer introduced the company to a globalized world, a company fit to survive a fierce global competition as well as a company that fulfills the shareholders' expectations and needs. Hence, Pierer had a clear vision: should a company fail to match the expectations, there were five options: fix, buy, cooperate, sell or close. According to the CEO this was how the company could ensure a leading position in the market. Pierer remained in the chair until April 25th, 2007.

In 2005, Klaus Kleinfeld replaced Heinrich von Pierer in the lead of Siemens AG. The former consultant and product manager of the Pharmaceutical Industry entered Siemens in 1987 for the Corporate Sales and Marketing Unit[40]. Kleinfeld moved to the the U.S., where he was appointed COO in 2001 and President and CEO of Siemens U.S. in 2002 due to his remarkable endeavor in the turnaround of this Regional Company. By 2004, Kleinfeld was member of the Corporate Executive Committee. In spite of being in the power for a mere couple of years, Klaus Kleinfeld impact was undeniable. During his tenure, he put into place the program *Fit4more,* which made the organization reach record-breaking figures, resulting in a 50% increase in company value[41].

At last, Peter Löscher. The Austrian economics graduate worked in consultancy for a few years. By 1988, he worked around the world for the Hoechst Group, whereas in 2000 he was President and CEO of Aventis Pharma. In 2004, he was President of General Electric Healthcare and member of the Executive Board. Moreover, in 2006 Löscher was President of Global human Health at Merck & Co. 2007 was the year when he entered Siemens to fill the vacant position of President and CEO of Siemens AG. For

the first time, Siemens appointed a President that was neither German or had a long career in the company[42].

Restructuring – Take 1: A New Triad – Energy, Industry and Healthcare

In Siemens's history several organizational restructurings took place. On October 1st, 1966 occurred the first major restructuring of the company, the merge of Siemens & Halske AG, Siemens-Schuckertwerke AG and Siemens-Reiniger-Werke AG to form Siemens AG[43]. Ernst von Siemens decided to put this idea into place given the convergence of the businesses of the companies. Thus, the existing structures were adapted to fit a wider portfolio[44]. With the aim of decentralizing the decision making power, decreasing the response time and increasing flexibility, the split into groups was adopted in 1969. For the next 20 years Siemens would have six operating groups (see Exhibit 3)[45].

The following structural change occurred in 1989[46]. By this time, Siemens was seeking a closer relationship with the customer and more flexibility to tackle a now globalized and fiercely competitive market. Thus, the former units were divided into smaller standalone entities which would have an increased responsibility (see Exhibit 4).

By 2004, following the portfolio adjustments that occurred overtime, Siemens had six groups (see Exhibit 5). Subsequent to the nomination of Kleinfeld as President and CEO, there was another structural change but now in the opposite direction: in 2006 Siemens increased once again its number of operating groups to nine (see Exhibit 6). However, it was in 2008 that the biggest change occurred since the 1989 restructuring[47].

Propelled by the entry of the new leader, on January of 2008 the number of operating groups was severely reduced: the company would have three sectors - Industry, Energy and Healthcare (see Exhibit 7). However, the change exceeded the number of sectors. Despite maintaining the scope of the company as an integrated technology company[48], Siemens eliminated the Corporate Executive Committee of the Managing Board. Hence, each member of the new managing board was assigned a specific chain of command,

making the whole managing board responsible for the operational profit and loss of the corporation[49]. Also, the sectors would be split into divisions and these into business units. Every division and business unit would have its own CEO, which would lead the business worldwide[50]. The new structure allowed more transparency, faster decision-making processes, less complexity[51] and lower administrative and general costs.

Moreover, the company also restructured its portfolio as it remained following Professor Pierer strategy regarding the market. Therefore, Siemens sold the VDO Automotive group to Continental AG[52], it bought two companies to complement its healthcare and automation portfolios and it also discontinued part of its Communications business, the Siemens Enterprise Communications, which was not included in the joint venture with Nokia celebrated in the previous year: Nokia Siemens Networks.

The three sectors were constituted by former groups of the company, enabling the organization to achieve its purpose: attain the leading position in each market addressed.

It was also in 2008 that Siemens's competitor in several businesses, General Electric, restructured its business, also simplifying its structure, decreasing the number of sectors from six to four[53] (see Exhibit 8).

Restructuring – Take 2: The Birth of a New Sector

The goals of Siemens's restructuring were met, as the organization was able to reduce its selling, general and administrative (SG&A) costs, having even reached the objective a year prior to the plan in 2009. However, 2008 turned out to be the beginning of the one of the darkest periods in the modern history for the economy, as it was the peak of the financial crisis, offsetting the potential of the new setup. In 2009, Siemens's new orders and revenues behaved according to Peter Löscher's predictions in the previous year, having registered a decrease of 16% in New Orders and 1% in Revenues[54].

The economic situation completely shifted how to make business and where the greatest markets laid. Hence, Siemens believed that it was time to address new markets and explore new business models[55].

As the global economy was gaining a new structure, the former strong economics were suffering from the most severe crisis since post-war era while the businesses in the emerging economies, specially BRIC countries (Brazil, Russia, India and China) and the Middle East, were soaring. With experts stating that it was likely these countries account for half of the world's economic growth[56], the once underdeveloped countries were at this point the epicenter of opportunities.

Moreover, the topic of sustainability has always been key for Siemens. The 2009 G20 summits in London and Pittsburgh strongly emphasized the subject, specially the balance of 3 factors: environmental stewardship, economic development and social responsibility[57]. Therefore, it became clear that the strategy for the next years would also have to carefully focus this topic.

Thus, the strategy for the difficult times ahead for Siemens would concentrate two dimensions: the emphasis on emerging economies and on sustainability. With a presence of over a century in growing markets and a green portfolio that amounted €23 billion for Siemens in 2009[58], Siemens seemed to be on the right track. Indeed, despite the severe economic environment Siemens was able to be successful in 2010. It achieved its best operating results ever, while increasing its New Orders by 3%.

Concomitantly, there have been recognized emerging megatrends in the market by companies like Pricewaterhouse Coopers [59], McKinsey & Company[60], Frost & Sullivan[61] among others. These megatrends comprise topics like demographics and the environment, but mostly, they emphasized the topic of urbanization, as cities seem to be a matter of concern in the future due to the numbers expected to be reached in the future as consequence of population growth. Indeed, about 400 cities in the world have more than a million people[62], 60% of the population will live in a city by 2030[63] and 600 cities will be responsible for about 65% of the GDP growth[64].

Hence, in 2011, Siemens decided to implement a new sector: Infrastructure & Cities (IC)[65]. With this new sector, Siemens would be geared to tackle the 21st century megatrends, which the organization believed would be a driver of global demand[66], while maintaining a frame to cope with the more immediate issues that crisis posed. Indeed, the company's CEO promised to increase annual sales by a third to 100 billion euros[67] through the creation of the fourth sector[68].

Through the merge of several existing Siemens's business units and divisions into a single sector, the Infrastructure & Cities sector focused on everything a city needs to work properly: building technologies, solutions related to mobility and transportation and energy distribution. The organization took advantage of this decision to develop its already comprehensive portfolio of products and solutions[69] in order to answer to the greatest challenges of the current and future generations.

IC Strategies for a Sustainable Growth

By 2012, in spite of having the lowest margin among Siemens's sectors[70], Infrastructure & Cities was already generating 17.585 billion euros in revenues, which accounted for 22% of the company's total and employing 89,000 people[71]. In addition, in September of the same year, the sector received the prize of the "2012 Global Frost & Sullivan Company of the Year Award for 'City as a Customer'"[72] from Frost & Sullivan due to Siemens's ability to recognize megatrends, turn them into opportunities and capitalize on them with customized and innovative solutions.

However, unlike competitors like General Electric which grew 40% over the last couple years, Siemens's shares have nearly stagnated[73]. The company's profit margin in 2012 was 9.5%, while competitors such as ABB or GE reached 10.3% and 15% respectively[74]. Indeed, the investments in the medical diagnostics specialist Dade Behring, and, to embrace and push the green strategy, Israel's Solel Solar Systems and Archimede Solar Energy underperformed, resulting in millionaire losses and, ultimately, the closure of the solar business[75].

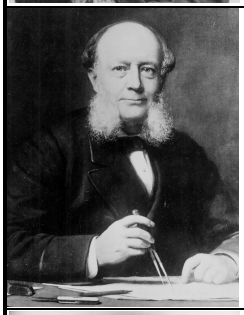
With an extensive green and cutting edge portfolio, a global reach and a culture centered in the values of the company (Responsibility, Excellence and Innovation), Siemens's believes that it is ready to answer the questions of our time**.** Whether the strategies of the corporation will lead to a sustainable growth, that is uncertain but one thing is for sure, in the words of the founder: *"I won't sell the future of my company for a quick profit"*. The sentence with over a hundred years remains deeply rooted in the company's strategy and beliefs. So, how will the 160-year old tale evolve? "200 and still growing" or "the history of the engineering powerhouse that was not able to keep up"?

Exhibits

Exhibit 1 – The faces of Progress, the faces of Change – The family

Werner von Siemens

- Founded, along with Johann Georg Halske, Siemens & Halske.
- Responsible for significant progress in the field of electrical engineering
- Discovered the dynamo-electric principal
- Was in charge of several important large-scale projects that were vital for the company's establishment in the market
- Was ennobled by Emperor Friedrich III due to his accomplishments.



Wilhelm von Siemens, ***Sir William***

- Brother of Werner von Siemens
- Developed the business internationally through his presence in England.
- Carried out many relevant projects in England
- Was a researcher and published articles while also being involved in several associations
- Was knighted by Queen Victoria shortly before his death.

Carl von Siemens

- The youngest brother of Werner von Siemens
- Developed the Russian market, through major projects as the telegraph network
- Was Senior Chief Executive in 1890's of Siemens & Halske subsequent to the retirement of his brother Werner
- Turned the company into a stock corporation
- Was ennobled by Tsar Nicholas for his service to Russia.

Carl Friedrich von Siemens

- Youngest son of Werner von Siemens
- In charge of the company after World War I
- Designed the strategy that guide the firm through Weimar Republic and National Socialist Regime
- Strategy "Preserve the company's universal scope within electric industry"
- Reached leadership in the industry after 80% asset-loss due to the War.

Ernst von Siemens

- Son of Carl Friedrich von Siemens
- Played major role in the revitalization of the company after World War II
- Was a member of the Managing Board of Siemens & Halske in 1943.
- Was a full member of the Managing Board of Siemens-Schuckertwerke by 1948
- For 10 years was Chairman of both companies.
- Responsible for the merge of the companies into Siemens AG.
- Was Chairman of the Supervisory Board of Siemens AG for 5 years.

Exhibit 2 – The faces of Progress, the faces of Change – The Chairmen of the Managing Board

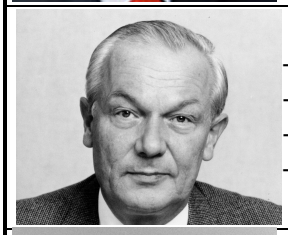
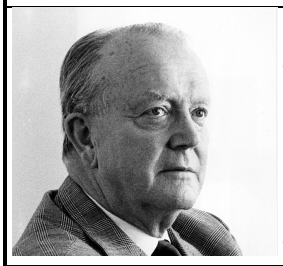
	***Peter Löscher*** - Started his career in consulting. - In 1988 worked for Höchst Group, having held several management positions throughout Europe, Japan and U.S. - By 2000 was Chairman, President and CEO of Aventis Pharma. - In 2004 was President and CEO of General Electric Healthcare, while member of the Executive Board. - Two years later was President of Global Health at Merck & Co - Was hired for the position of CEO of Siemens AG.
	***Klaus Kleinfeld*** - Began his career in a consulting firm in Germany - By 1986 was product manager of a company that merged into Novartis - Joined Siemens in 1987. Worked for Corporate Sales and Marketing Unit. - In 2011 was COO in U.S. and from 2002 to 2004 was CEO also in U.S. - Became CEO of Siemens AG in 2005 and resigned in 2007.
	***Heinrich von Pierer*** - With previous experience as a Teaching Assistant in University of Erlangen-Nuremberg, started his career at the legal department of the organization - Started to work solely for one of Siemens's subsidiaries, Kraftwerk Union AG, in 1977. By 1989, became President of Kraftwerk Union AG. - Was president and CEO of Siemens AG from 1992 to 2005. - Became Chairmen of the Supervisory Board in 2005 but resigned in 2005.
	***Karlheinz Kaske*** - Joined Siemens in 1950 but left 3 years later to focus on the academic career - In 1960, returned to the company as Sales Engineer - In 1968, was a member of the planning department that formed Siemens AG - By 1975 was appointed member of the managing board, having become the Chairman in 1981. Hold the position for 11 years.
	***Bernhard Plettner*** - Joined Siemens while in college, as Project Engineer - Helped to build the export business after the war - By 1962 was Chairman of Siemens-Schuckertwerke AG - Was a member of the joint presidency of the companies, but by 1971 he was appointed President and CEO of Siemens AG. - In 1981 become the first Chairman of the Supervisory Board not related to the Siemens family
	***Gerd Tacke*** - Began his career at Siemens in 1932 - Worked closely to Ernst von Siemens in Foreign Affairs and Sales Organization, as was also part of the group that merged the companies into Siemens AG. - Became the first Chairman of the Managing Board in 1968 unrelated to the Siemens family - By 1972 was a Member of the Supervisory Board.

Exhibit 3 – Siemens's organizational structure in 1969[76]

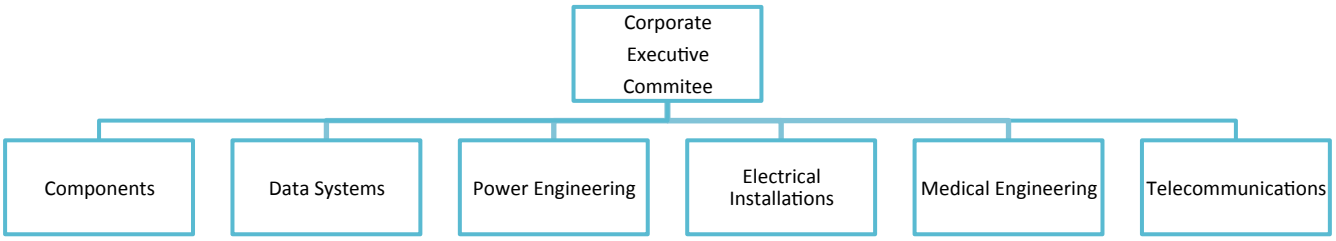


Exhibit 4 – Siemens's organizational structure in 1989[77]

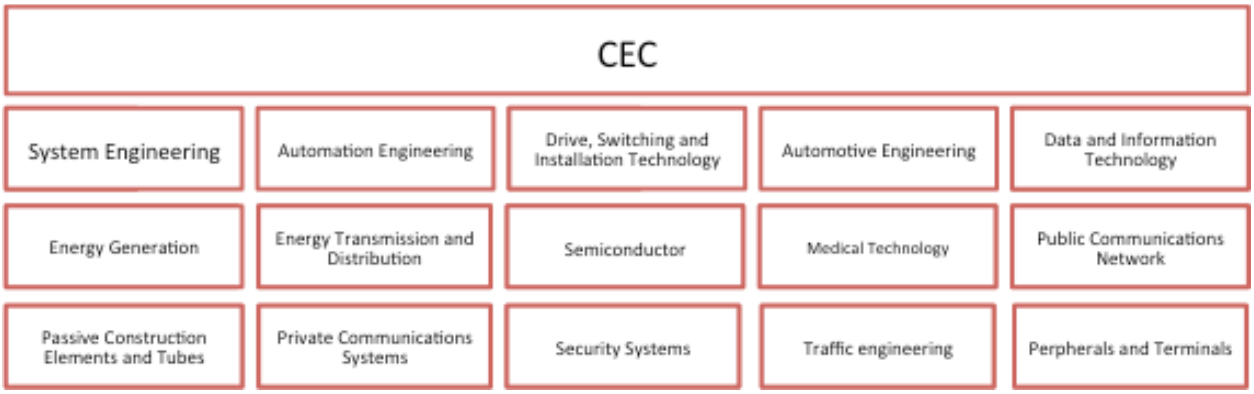


Exhibit 5 – Siemens's organizational structure in 2004[78]

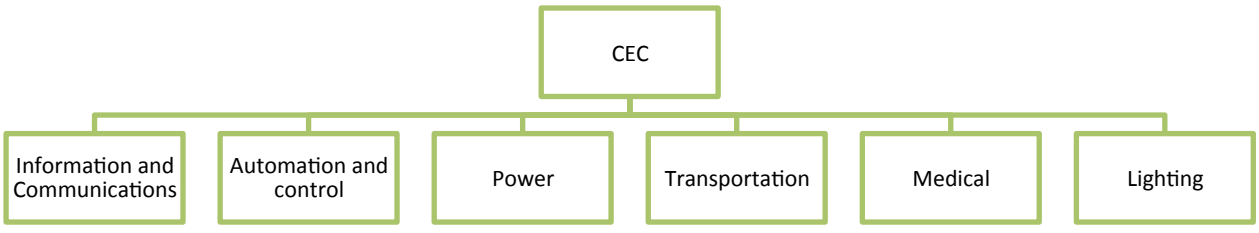


Exhibit 6 – Siemens's organizational structure in 2006[79]

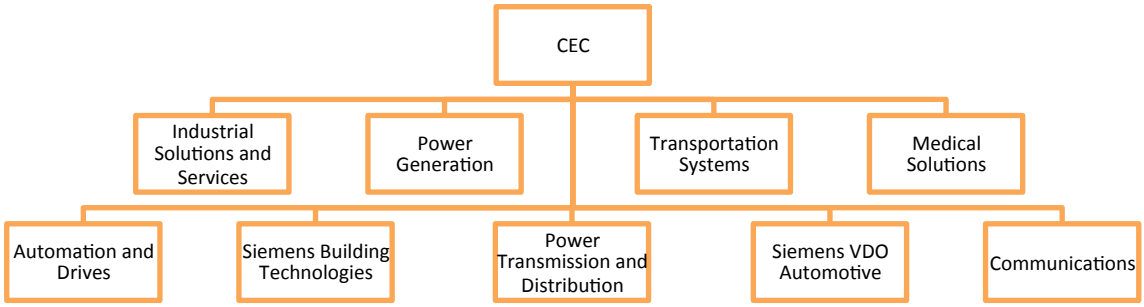


Exhibit 7 – Siemens's organizational structure in 2008[80]

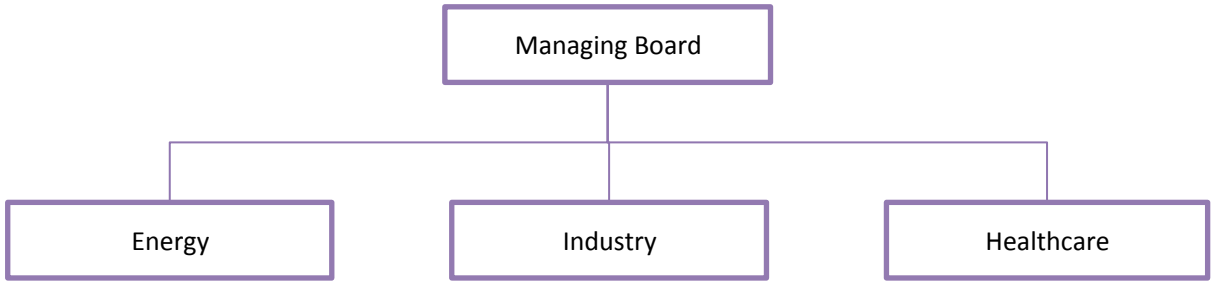
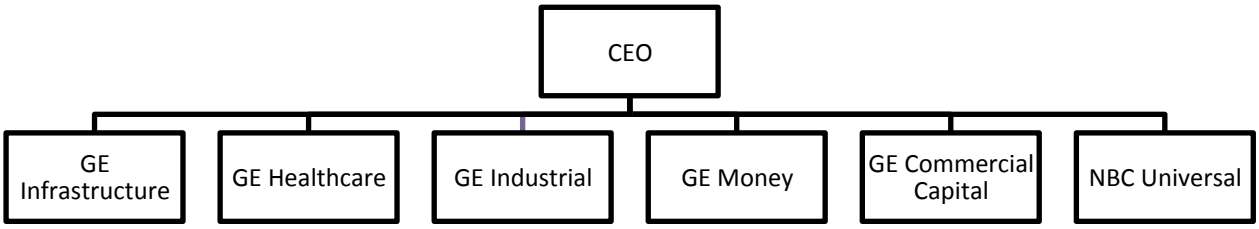


Exhibit 8 – General Electric's Organizational structure before and after restructuring

Before



After

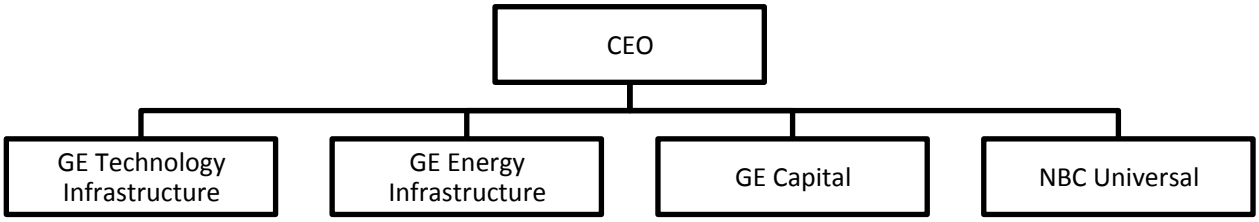
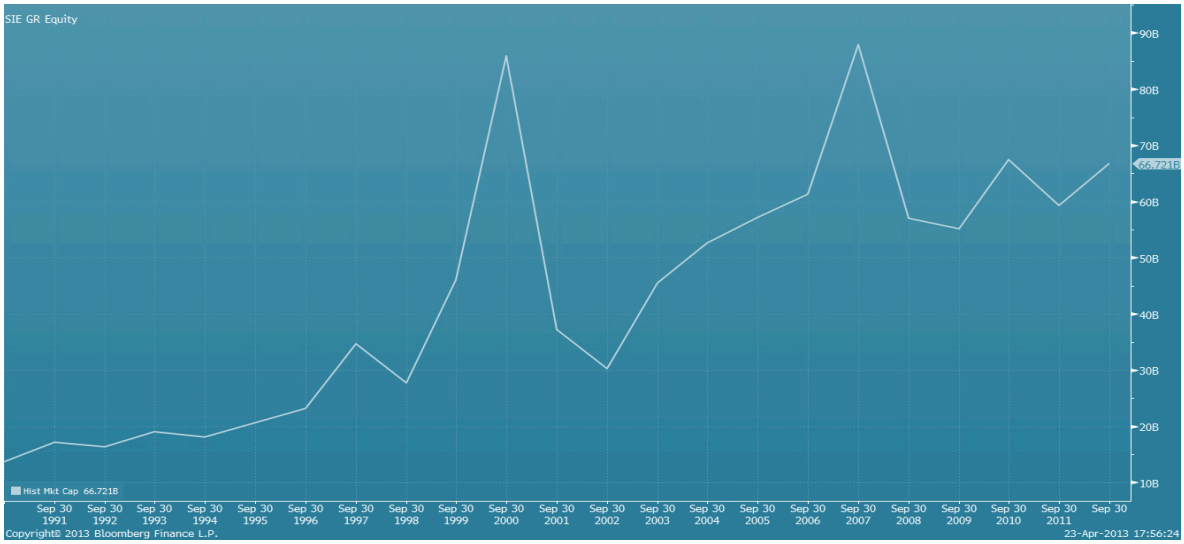


Exhibit 9 – Siemens's Market Capitalization



Endnotes

[1] http://www.siemens.com/history/en/history/1865_1890_triumph_of_heavy_current_engineering_and_internationalization.htm (accessed on April 29th, 2013)

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[5] http://www.siemens.com/history/en/history/1918_1933_return_to_the_world_market_and_unity_within_the_house_of_siemens.htm (accessed April 29th, 2013)

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Teaching Note

Synopsis

This case focuses on Siemens's history. The centenary company was created in 1847 by Werner von Siemens and Johann Georg Halske, who started the activity with the production of pointer telegraphs. Soon after opening doors, the company was already taking on big projects, propelling its international expansion. This way the company was able to increase its size, which was often supported by partnerships and consolidation.

Throughout its history, Siemens faced many challenges that put its resistance to test. For instance, World War I, World War II and more recently the financial crisis assessed the ability of the company to respond to a difficult and uncertain market conditions. Most of these challenges demanded a fast response, otherwise the future of the company could be seriously compromised. As illustrated in the case study, Siemens response was often successful.

In virtually 170 years of history, Siemens had many leaders who had an important role on the strategic direction of the company. The company had always been a family company, being headed by the founder's relatives (i.e. the Siemens's family). Yet, in 1968, the first CEO unrelated to the Siemens family took the lead. Tacke worked, however, closely to the family for over 35 years. The situation was similar with following CEOs who had long careers in the companies before rising to the top. Nevertheless, the pattern changed in 2007, after the resignation of the CEO and Chairman of the Supervisory Board, when a new CEO who never worked for the company become in charge of the engineering giant.

In a nutshell, this case describes the evolution of a small company of ten employees to a global corporation of almost 400,000. Particularly, the case revolves around the strategic decisions that were made in conflicted or transitional periods. Moreover, the topic of CEO turnover in the company is closely regarded due to its relevance for the topic of strategic change.

The first section of the teaching case focuses on the history of Siemens until 2007, which is until the world financial crisis and before the entry of Peter Löscher. In this

section it is provided detailed description of the strategy of the company during this years, including the challenges faced with the world wars.

On the other hand, in the second section the topic of CEO turnover is approached. From foundation to nowadays, every CEO is mentioned and thoroughly examined (i.e. academic background, experience outside and inside the company and tenure) in order to enable discussion about the topic.

The last sections work as a continuation of the first, as they continue to tackle the history of the company but now with Löscher on the lead. Firstly, the major restructuring is arisen, occurred in the year of Löscher's entry and also the beginning of the economic crisis. Second, the creation of a new sector is approached as well as the underlying rationale so as to provide an understanding of the strategy of the company.

Teaching Purpose

This teaching case is meant for students attending an Undergraduate or a Master Program in Business Administration, specifically at courses of general management and strategic management.

In order to properly analyze the case, the student should be able to:

- Identify and analyze the main events that compromised the company's sustainability in the market;
- Understand the role of resource reconfiguration for the success of Siemens;
- Understand the differences of being a promoted versus an outside CEO as well as the challenges associated with both;
- Recognize the influence of a former CEO as a board member.

Intended Contribution

The Siemens case aims to alert student to the need to closely monitor the market in order to respond in best possible way (as far as time, resources and circumstances

allow) in the case of the occurrence of an unpredictable event or shock, as Siemens faced situations that endangered its ability to remain in the market.

In addition, it is intended that students understand the challenges associated with strategic change, specifically, in the case of CEO turnover, as Siemens went through significant changes since the beginning of the mandate of Peter Löscher, the first outside CEO of the firm.

Instructor Preparation

In order to be prepared to discuss the case, the instructor should get more acquainted with the theory and, thus, should read the following articles:

- Barreto, I. 2010, Dynamic Capabilities: A Review of Past Research and an Agenda for the Future, *Journal of Management*, 36: 256-280
- Eisenhardt, K. M., & Martin, J. A. 2000, Dynamic Capabilities: What are they, *Strategic Management Journal*, 22: 1105-1121
- Zhang, Y., & Rajagopalan, N. 2009, Once an outsider, always an outsider? CEO origin, strategic change, and firm performance, *Strategic Management Journal*, 31: 334-346

Besides the theoretical background, the instructor can also explore the history further in company website, especially the timeline, where the history is thoroughly explained. Also, the Ad Hoc Announcements of 2007 are a good source to grasp the chain of events in 2007.

Moreover, the Press Releases “Siemens organizes operations in three sectors with a total of 15 divisions” and “Establishment of the Sector Infrastructure & Cities; planned IPO of Osram” provide detailed information on the restructurings.

Finally, the presentations “New organization structure for Siemens” and “Infrastructure & Cities analyst call” consolidates strategic and financial information about the restructuring which can extend the scope of in-class discussion.

Suggested Assignment Questions

1. **Siemens has a long history of successes. However, there were also a few pitfalls. Identify the main shocks that Siemens faced throughout its history and the impact they had on the company. Elaborate on Siemens response to the shocks.**

The two requirements to answer this question properly is to clearly identify the shocks illustrated in the case, that is, the sudden situations who had a strong impact on the company in the external context, instead of mere strategic decisions put in place to improve company's performance. Hence, there are 3 shocks: World War I, World War II and the 2008 Financial Crisis.

World War I

As far as the World War I is concerned, it was responsible for the collapse of the markets, the expropriation of the subsidiaries and loss of nearly all of the patent rights held abroad. The world disaster was responsible for a loss of 40% of the company's capital.

Siemens response to the tragic situation prioritized the manufacturing operations and recovery of the international business. Thus, Carl Friedrich von Siemens, who was in lead, design the following action plan: focus on the whole field of electrical engineering, while assigning specific areas of business to subsidiaries and affiliated companies.

World War II

As a German multinational company, World War II had a severe impact on the company. The reality of forced labor during the war reached Siemens and, during this period, 20% of the workers were working against their will. Besides, manufacturing plants were completely ruined and, although Siemens tried to respond during the war with the relocation of plants in 1944 and beginning of 1945, by the end of April, 1945,

the plants closed, the company's infrastructures were ruined, causing a whopping loss of 80% of the company's assets.

Financial Crisis

Nearly 65 years after, another shock takes place: the financial crisis. This situation started to affect the world in 2007 but it was only in 2009 that it started to have a strong impact on the company.

Although 2008 was the peak of the crisis, Siemens was able to be successful and grow in a turbulent market and that was possible because it had a fast response to the occurrence with the 2008 restructuring, which enabled the firm to save a significant part of selling, general & administrative (SG&A) costs. In addition the solid business in key markets as Russia and China enabled the company to follow its solid performance.

However, further action was needed. In spite of reaching the goal of the SG&A before the target, with Europe plunged in a severe recession, by 2009 Siemens was losing 16% in new orders and 1% in revenues, and investments such as the acquisition of medical diagnostics specialist Dade Behring were struggling. With a focus on sustainability Siemens was able to improve its performance on fiscal year of 2010. Yet, it still was not enough.

Siemens realized that in order to recover from this situation, it had to evolve according to the external context. Therefore, it emphasized the emerging countries, where at this point laid the best opportunities (due to the stagnation of the investment in many developed countries). Also, as most of this countries had massively populated cities or, due to its development, they were expected to have it soon, Siemens implemented the sector Infrastructure & Cities (which was an assembly of previously existing divisions with small acquired businesses). The purpose of this new sector was to answer to the needs of these cities, as it bundled the latest technology needed make a city geared to the future and challenges ahead.

Also, there was also an emphasis in the topic of sustainability and, hence, a stronger investment to be a “green infrastructure giant”, as Löscher stated at the time. The investments in Solel Solar Systems and Archimede Solar Energy were meant to be two important means to achieve the goals. However, these investments failed to meet the expectations, as they resulted in millionaire losses for the company.

It is crucial that by the end of this question that the students understand the role of resource reconfiguration as a mean to sustain the competitive advantage of the company in the market. Indeed, it is paramount that students recognize that even though resource reconfigurations are vital they are not always successful.

2. **Consider the most recent shock. Analyze Siemens at the time according to Barreto’s four dimensions of Dynamic Capabilities.**

In order to fully accomplish the purpose of the question, the student should identify each of the 4 dimensions, assess each of them and provide an overall assessment of the dimensions.

Propensity to sense opportunities and threats

Students should realize that the company did an incomplete job in realizing the threat that the financial crisis constituted. It was in the peak of the financial crisis and at the start of the global recession that it started to take action by making the first restructuring. In addition, Siemens also realized that, even though the decision made previously was fulfilling the objective, it was not enough, so, the company continued to take action once again in 2011 with the creation of the Infrastructure & Cities sector.

Also, it should be clear for students that Siemens was able to turn this threat into opportunities. The company realized that the financial crisis brought new business models and, mainly, new locations for business. With the BRIC countries and other emergent countries growing economically and demographically, Siemens realized that it would have to turn its attention to this new markets and provide solutions accordingly. Moreover, the recognition of Megatrends and the “2012 Global Frost & Sullivan

Company of the Year Award for 'City as a Customer'" constitute relevant evidence that company was indeed able to recognize opportunities.

Nevertheless, it is imperative that the students identify that the company failed to estimate the impact of the implemented changes. On the one hand, the new sector has the lowest margin of all the sectors, which indicates an overreliance on the Megatrends. On the other hand, as the profit margin of the company is significantly lower than its competitors and its performance in the stock market has stagnated while the competitors' has grown considerably, it is fair to consider that Siemens underestimated the threats of the environment and specially of the competition, which apparently was able to cope well with the shock that was the financial crisis.

Propensity to make timely decisions

At this point student can analyze each year individually. Students should understand that the first restructuring, in 2008, was made before the company actually experiencing the effect of the crisis on its activity, as it decided to prepare for the difficult times ahead implementing a restructuring that would provide a significant cut in costs. On the other hand, in 2009 the company saw its new orders and revenues decrease, even though the operational costs behaved according to the expectations.

2010 was a year where Siemens had its best operational results and overall a good performance given the economic situation worldwide, as it started to focus on sustainability. This strategy was pursued in 2011 with the creation of the new sector and the revenues, profit and new orders continued to grow.

However, there were some decisions whose timing may have been part of the reason why they have not met the expectations. The investment in Dade Behring in the beginning of the crisis was an example of a decision whose timing might have negatively influenced the investment. With more relevance to the analysis of this dimension is the investment in solar energy. These investments, that intended to increase the green portfolio of the company, were meant to make Siemens a partner of

companies and governments seeking a green approach. Although it is apparently a good strategy as the world seems to be evolving in that direction, the companies and governments were not ready yet to undertake such projects, especially with the economy struggling the financial crisis and consequent recession.

Propensity to make market-oriented decisions

In this dimension students should analyze the creation of the Infrastructure & Cities sector. It is essential that students understand that Siemens believed that the only way to stay competitive in the market was to increase its presence in the places where the opportunities now laid, that is the emergent markets, as a significant part of the existing clients were suffering the effects of the recession. However, that would not be enough. Siemens would have to increase its presence with the right products and the right setup to address these markets, hence, the creation of the Infrastructure & Cities Sector. This new sector assembled ever aspect related to electrical engineering that a city could possibly need to work smoothly.

According to the Megatrends identified by the company, these countries would have overpopulated cities (due to the urbanization trends) and as there was a deficit of infrastructures, Siemens believed that as they were growing economically they would be at that point interested in investing in Siemens solutions. The new setup would facilitate large-scale businesses, as it would be easier to provide large-scale integrated solutions.

The investments made in solar energy are also very relevant for this dimension. Siemens failed to make a good assessment of the market and made substantial investments in this area, generating a source of loss instead of revenue. Should Siemens make a better assessment, it would concentrate in core areas instead of enlarging an already extensive portfolio.

Propensity to change its resource base

It is imperative that students recognize that this is the most relevant dimension for Siemens success. From the beginning Siemens realized that to be successful and remain competitive, it would have to reconfigure its internal structure, its portfolio and how it operated.

As it is clear in the case study, Siemens is prone to try new structures so as to understand which provides better results and which is more adequate to the firm's current situation. Therefore, the same rationale was applied during the 2008-2013 period. Siemens merged the existing entities in three sectors (Energy, Industry and Healthcare) in an attempt to cut costs and it succeeded.

On the other hand, the second structure intended to enable a more sustainable approach and a leaner access to the growing Infrastructure & Cities segment (at least in the emergent markets). Therefore, to the existing three sectors the IC sector was added. However, apart from a few investments made to complement the portfolio, former divisions of the other sectors constituted the new sector. The IC sector comprises complementary divisions (i.e. the potential for intra-sector business is very high), answering to the most pressing and numerous needs of the large cities in what infrastructures are concerned.

To sum up, the individual and collective assessment is the following:

D1. Propensity to sense opportunities and threats	Medium	**Medium**
D2. Propensity to make timely decisions	Medium-Low	
D3. Propensity to make market-oriented decisions	Medium	
D4. Propensity to change its resource base	Medium	

3. **Peter Löscher's path in the company was different than its predecessors. What were the main differences? To what extent have those differences influenced the strategy adopted by the corporation?**

To answer the first part of this question, the students should focus on tenure in the company, experience, academic background and culture. Hence, it should be evident that Peter Löscher is different from the previous CEOs in almost every aspect mentioned.

Unlike his antecessors, Löscher was Austrian and unknown in Germany, as he had never worked there. It was also in Austria that he took his economics degree, which was also fairly uncommon, given that the only CEO that had a similar academic background was the previous one: Klaus Kleinfeld.

He had a remarkable career in the USA, where he worked for one of Siemens biggest competitors, the giant General Electric. There he was president of GE Healthcare (a direct competitor of Siemens) and member of the executive board. Also, Löscher held several positions in some of the most important pharmaceutical companies worldwide (e.g. President and CEO of Aventis Pharma, President of Global human Health at Merck & Co).

However, the most important aspect that the student should identify is the fact that Peter Löscher was the first outside CEO, in other words, he had never worked in the company before becoming CEO. This situation was completely new for the company since the former Presidents were promoted CEOs: people that had long and outstanding careers, who due to there merit and proven quality to the company were able to rise to the top of the organization.

In order to answer the second question, the students should essentially focus on tenure (even though the other aspects may have also exert a difference).

As an outside CEO Löscher had a significant amount of work to do since he did not know the company and the people, so he had to become familiar and gain the trust

when the two people that were in charge, that everyone knew and trusted, left the company. However, with such a diversified working experience, he brought new ideas and a fresh perspective, which is a great advantage when companies have in place a mindset and ideas of people that have been working on the company for a long period of time and are often biased and unable to see farther. Thus, Löscher was prone to make bold changes in the company.

Löscher's vast experience played an important role in gaining the trust of his fellow board members as he took the risk of implementing a very dramatic change (the 2008 restructuring) at such an early stage of his tenure. The seemingly good results of the first restructuring made him apt for another dramatic change. With the implementation of the Infrastructure & Cities sector and the implementation of the green/sustainable strategy, Löscher proved that he was not afraid of change.

Students should conclude that as an outside CEO, Löscher was expected to make bigger and stronger changes than a promoted CEO, which is already acquainted to the company and prefers smaller changes. In addition, they should recognize that a common downside of outside CEOs is too much change, which is more likely to have a negative impact on the company.

Teaching Plan

Activity	Duration
Review of theoretical concepts	20
Discussion of the teaching case	15
Question 1	10
Question 2	20
Question 3	15
Final considerations and conclusion	10

Discussion

The Siemens teaching case illustrates the challenges of Strategic Change and the difficulties that companies face in changing environments.

In the centenary story of Siemens, one can find several situations that put the company's resistance to the test. Indeed, the firms' competitive advantage are increasingly harder to sustain as its longevity has been decreasing over time (Wiggins & Ruefli, 2005). The realization of the volatility of the markets caused the emergence of Dynamic Capabilities.

According to Teece et al. (1997), dynamic capabilities are "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment". Hence, should one analyze Siemens's strategic choices in light of this definition, the firm would have indeed dynamic capabilities which enabled it to sustain its competitive advantage. The restructurings, acquisition and strategic changes implement are a strong evidence of that. However, the company was not as successful as the theory suggests, hence, the importance of Barreto (2010) for the study of this case.

Resource reconfiguration was Siemens's response for many shocks, and it is at the core of Dynamic Capabilities as Eisenhardt & Martin (2000) considers. However, unsuccessful market-oriented decisions, which are crucial for superior competitive advantage (Jaworski & Kohli, 1993), undermined the potential of the internal restructurings of the company.

Barreto (2010) considers "A dynamic capability is the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base". As the analysis in the teaching note showed, Siemens's ability to sustain its competitive advantage can be classified as medium as its performance in the four dimensions of this multidimensional construct was not consistent, that is, within each dimension there were positive and negative aspects but also the relationship among the dimensions had also weak points, diminishing the probability of success.

As a case of strategic change, that can be defined as a shift in a single and specific dimension (Zhang & Rajagopalan, 2009), the analysis of CEO origin was considered paramount, as Siemens during this period had for the first time in its nearly 200 hundred years an outside CEO.

Zhang & Rajagopalan (2009) realized that having an outside CEO versus an inside CEO differs the level of change and performance. In situations of low levels of strategic change, outside CEOs are more likely to be successful versus inside CEOs, while inside CEOs are more likely to prosper in the case of big changes versus outside CEOs (Zhang & Rajagopalan, 2009).

The situation above reflects the fact that outside CEOs have new ideas, different experiences and are unbiased, being able to implement small positive changes in the company. However, they lack the inside knowledge of the company routine, people and positioning in the market which is crucial for big changes, making inside CEOs more apt for these.

The new outside CEOs, besides having new skills, are more emotionally disconnected, have fewer concerns with the company status quo and, thus, more disposed to chase bold strategic directions. Therefore, there are more costs and risks associated with outside CEOs.

Peter Löscher is a clear example of this situation as he started to make millionaire investments in the beginning of his tenure, which revealed to be a source of loss instead of revenue. Also, the choices he made in the context of the shocks were very bold changes, which not only undertook once, but twice, doing 2 restructurings in a period of three years time. Despite the positive performance of the company in reducing costs and expanding its reach, the changes did not translate into profits.

Thus, the Siemens case illustrates perfectly the risks associated with hiring an outside CEO. Not only did Peter Löscher embrace large changes and bold decisions which

might have had a better outcome if they were implemented by a promoted CEO, but he incurred in a situation of too much change which derailed the company's performance.

Conclusion

Dynamic capabilities endeavor to explain how to achieve sustainable competitive advantage in rapidly changing environments. The Siemens teaching case illustrates the struggles of a centenary company in such an environment. The several situations that the company faced generated huge losses, propelling major resource reconfiguration, which lie at the core of the dynamic capabilities according to Eisenhard & Martin (2000).

According to Barreto (2010), the definition of dynamic capabilities is a multidimensional construct in which, propensity to change resource base is a very important dimension. In addition, with great relevance to the case there is the propensity to sense opportunities and threats, as Siemens was keen to identify opportunities in the context of the last shock that took place (which is the one that is deeply analyzed in the case) the financial crisis.

In addition, the case analyzes the impact of the first outside CEO in Siemens history. This situation is often related with strategic change, as these leaders are prone to make large disruptive changes, as they bring brand new ideas and as they are less concerned with the company's status quo. The Siemens case illustrates this situation perfectly as Mr. Löscher implemented two major restructurings and implemented a brand new strategy in his first years on the job, which generated both positive and negative outcomes.

Strategic change is a very important topic for strategic management as it can ultimately determine the company's success or failure and it is the intended intermediate outcome of dynamic capabilities. Thus, managers should be very attentive to the environment and the impact of their decisions in order to avoid compromise their competitive advantage.

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