

Nicolas Coupain, Kenneth Bertrams and Ernst Homburg, *Solvay: History of a Multinational Family Firm*, Cambridge, Cambridge University Press, 2013, 630 pp.

Solvay: History of a Multinational Family Firm is a book written by Nicolas Coupain (*Fonds National de La Recherche Scientifique*), Kenneth Bertrams (*Solvay S.A.*), and Ernst Homburg (*Maastricht University*). The volume outlines the results of a five-year research project about the history of a leading European chemical company, Solvay, through 150 years of historical change. It presents an insightful, honest and first-hand analysis, drawn extensively from primary sources, of a worldwide company which remains a successful and well-managed business firm up to this day. It is a harmoniously arranged book where the parts tie into the whole and weave a compelling, gripping story of Solvay in the historical context of its times. The book is divided into three distinct and sequential parts of six, eight, and nine chapters, respectively. Each chapter covers an important part of the company's history. Part 1: "The Pioneering Years (1863-1914): The Quest for Leadership and the First Stages of Internationalization" is written by Nicolas Coupain; Part 2: "The Years of Crisis (1914-1950): The Making and Unmaking of International Alliances" by Kenneth Bertrams, and Part 3: "The Era of Diversification and Globalization (1950-2012)" by Ernst Homburg. This book is by far the most complete academic work about the history of the Solvay Company.

A second, compelling historical book about Solvay is *A Company in History: Solvay, 1863-2013*. The two books were published during the same period and, of note, Kenneth Bertram is the author of both publications! This volume recounts the history of Solvay from an encompassing historical perspective. The story unfolds from a larger context of events which characterized the world stage in the context of its times; and by consequence had a material impact on the life of Solvay individuals and the company's history. *A Company in History...* examines the history of Solvay from an outside perspective, telling the reader the story of Solvay as a product of macroeconomical, geopolitical, and historical events. It defends a reductionist approach comparatively to *Solvay: History of a Multinational Family Firm*. The second depicts 150 years of the family history business from an insider's perspective. It scrutinizes every aspect of Solvay's governance, its business strategy, structure, marketing, and technological leadership. The work provides the reader with a better understanding of Solvay and its well-earned recognition as a premier Belgian business. This publication gives a knowledgeable, invaluable insider's account of one of the

most successful and abiding chemical firms in modern European history. And smartly contextualized in its time.

In Part 1, Nicolas Coupain begins the story with an outline of Solvay's pioneering times (1865-1914). It describes how Solvay happened to become one of the first multinational companies of the nineteenth century. As the story unfolds, the author tells the reader about the company and founder's heroic beginnings, painting an image of Ernest Solvay as an autodidact and a self-made man. Solvay and its pioneering members are exposed as the "archetype of the mid-nineteenth century entrepreneur-innovator" (p. 9). Ernest and his brother Alfred Solvay established the basis for a new chemical industry with the development of a new method for manufacturing soda ash. Unbeknownst to the young inventor, Nicolas Leblanc had already discovered soda ash but, by contrast, the process for sodium carbonate had never been run on a large industrial scale. According to the author, Solvay's empire, established under the auspices of Ernest Solvay, benefited from the prolific conditions of the industrial environment in Europe: the glass, textile, chemical, paper and soap making industries were experiencing a period of intensive growth. The author proceeds to focus on the Solvay family in the context of exploring the relationship between its members and the firm's performance. It is the author's opinion that the unique dynamic of Solvay's business and its lasting success was a product of the family structure of its business. The family's leadership role played a deciding part in the unfolding of the Solvay story, as well as the evolution of the chemical industry as we know it today. Alongside the visionary Ernest, and his very practical brother Alfred, were a network of individuals whose personalities played a key role in protecting the company from competition and facilitated the building of its first industrial plant in Belgium. Despite a difficult beginning, Solvay became one of France's most successful chemical companies.

At the end of the first chapter, the author emphasizes the cohesive, resilient nature of the group in dealing with this challenging time in its history. The company implemented a new industrial process during the construction of the Belgian plant, which in retrospect changed its history, despite nearly causing its bankruptcy. For many years after, the company, its founders and its employees had to work under extremely difficult conditions. The first workers were poorly paid and proved to be unreliable by contrast to Solvay brothers, who were very liable for the risk venture that had gone into debt. However, in 1867, in a plot twist worthy of a novel, the Solvay company was on the verge of collapse when suddenly it hit a winning streak, sustained by a decisive new innovation and a new piece of equipment: "the vertical column" for the soda-ash reaction, which boosted the firm's performance; and whose invention represented a technological advantage over its competition and a better product.

In chapter two, Coupain describes the company's geographical and international expansion, and the strategies the firm used to grow its business in other industrialized countries. The author points out that Solvay was one of the earliest multinational enterprises, in a fast-growing industry; and that its success was based upon a single product orientation. The author calls the reader's attention to one of the main reasons for Solvay's lasting success: its manufacturing secrets and the embedded nature of the family oriented business.

In the 1880's, Solvay had become a multinational group constituted basically by wholly owned factories and, to a lesser extent, subsidiaries, reaching a dominant position as explained in the third chapter. The paternalistic social policy implemented by Solvay, which was considered one of the most advanced of its time, is examined in chapter four. Its welfare initiatives towards its workforce smartly anticipated the social discontent to follow throughout most of the industrialize world, and strengthened Solvay's reputation as one of the leaders of its time.

In the fifth chapter, the author stresses the philanthropic character of Ernest Solvay, who funded and promoted in Brussels a series of Councils, thereby bringing together the best and brightest scientists at his firm. This would become a hallmark of the Solvay Company. Renowned scientists joined the first Council of Chemistry including Einstein, Curie, Langevin, Nernst, Planck, Brillouin, Rubens, Sommerfeld, Lindemann, Lorentz, De Broglie, Knudsen, Warburg, Perrin, Hasenohrl, Wien, Jeans, Rutherford, Poincaré and Kamerlingh Onnes.

Coupain concludes Part 1, in chapter six, stressing that with the arrival of the year 1913 the company reached its zenith. It was designated then as the largest chemical group worldwide. He summarizes how a young man named Ernest Solvay, with no formal education, transformed a simple idea into one of the largest and most resilient chemical multinational companies in the Western world.

Part 2, by Kenneth Bertrams, recounts the story of Solvay during the two World Wars and the interwar period. The author points out that World War I represented a watershed moment for the business development of Solvay's company, which was already experiencing a prosperous and fruitful period by that time. In the seventh chapter, the author describes Solvay's experience during World War I and its ability to cope with multiple disastrous events. During the conflict, Solvay's subsidiaries were located in both Nazi-dominated Europe and the Allied Zone, which became caught up in the hostilities. In Russia, as a consequence of the Russian revolution, factories were confiscated. Control over the American business was lost, furthermore, as a result of World War I. The author stresses the humane side of Ernest Solvay, pinpointing the pivotal role he played with his partners in providing food to the Belgian people and saving the country from the risk of starvation: "[...] Ernst Solvay became committed to a wider action dedicated to the distribution of food in and around Brussels. With his grandson-in-law, Emmanuel Janssen, who was by then the general secretary of Solvay, they formed the core of what was about to be known as the Comité National de Secours et d'Alimentation" (pp. 152-153).

Bertrams depicts in the next three chapters (eight, nine, and ten) the interwar period. In the aftermath of World War I, the company encountered numerous challenges: the changing landscape of the chemical industry and new forces of competition with high value chemicals; the rise of economic nationalism and the creation of giant conglomerates with whom Solvay attempted to negotiate without giving up his firm's independence. Thus, for the first time in its history, Solvay found itself at a crossroads. As described by the author, it was a period of intense questioning for Solvay's leaders concerning whether it should become a financial holding entity or remain an industrial company. Uncertain of the path to follow, Solvay decided on the second. This

saved the company from harsh consequences that followed the Depression, which came in the wake of the 1929 stock market crash.

In chapter eleven, Bertrams describes the product diversification of the Solvay portfolio, as it diversified, for example, from soda carbonate to caustic soda, then from caustic soda to electrolysis, and from electrolysis to chlorinated derivatives. “Solvay mobilized its international networks in alkali products to obtain a privileged observation point in the chlorine business – a field in which it was deprived of its technical commercial know-how” (p. 255). Bertrams addresses the impressive growth of production capacity of liquid chlorine in the United States of America, regarding the electrolytic industry. Here the company established important relationships with giant chemical brands such as ICI, Dupont, etc. Although it had reached a prominent position, Solvay lost its influence in America, where their American partners (Allied Chemicals) exited the group. This action forced the group to retreat back towards Europe and refocus its activities on Continental Europe at the outbreak of World War II. In chapter twelve, the author examines the great challenges that the multinational Solvay faced during this conflict, in particular the preservation of Solvay’s pre-war independence in both occupied territories and the free world. The author highlights two figures that played a major role during this conflicted period: Ernest John Solvay, and his brother in law René Boël. While the first was in charge of relations with the authorities in occupied Europe, the second safeguarded Solvay’s interests in the Allied Zone. Moreover, in chapter thirteen, the author focuses on the post-war period and its painful consequences, pointing out how the Solvay Company suffered losses at sites that were nationalized by Communist regimes. To offset these losses, Solvay did not neglect to make new developments, through geographic relocations and product diversification. Bertrams explains in his conclusion the extent to which Solvay’s empire was stricken by major historical events that affected its own history, and the resources and mechanisms used by the firm to reverse the situation. Through resourcefulness and innovation, Solvay turned potential disasters into an impressive progress of growth and success.

Finally, Ernst Homburg, in part three, chapter fifteen, describes Solvay’s diversification process in a globalizing economy. This included Solvay’s successful expansion into the production of plastics (PVC, Polyolefins), considered to be a symbol of this new booming period, even exceeding that of steel, which was seen as the symbol of the Industrial Revolution. Plastics invaded people’s daily lives in the most extraordinary forms and manners.

Since plastic materials came in powdered and organic form, and could be transformed into various objects, Solvay understood that he had to get closer to consumers to understand their needs. In chapter sixteen, Homburg outlines the large scale of the production of plastics, which was necessary for diversification into new product areas, such as peroxides, which earned Solvay a position of leadership in the plastics industry. After working for more than a century as a privately owned enterprise, in 1967 Solvay adopted the status of a public limited company, as explained by the author in chapter seventeen. Solvay went from a closely held family business structure to a publicly held company. The latter provided Solvay the financial resources to expand

into a multinational chemical company. Chapter eighteen is dedicated to Solvay's return to the United States and its strategy to "become active industrially".

In chapter nineteen, Homburg describes the blueprint of the economic landscape of the 1970s, which was shaken by the oil crises and its material, adverse impact on the plastics sector, which was at the heart of Solvay's diversification effort. Hence, Solvay encouraged the Group to reduce the cyclical nature of its activities and to develop new products in life sciences (human and animal health, enzymes, crop protection, and human health and pharmaceuticals). The result of this became apparent in the 1980s, when life sciences complimented its many other businesses, and Solvay became less susceptible to the cyclical nature of the chemical industry.

Chapters twenty and twentyone analyze the age of globalization and sustainability of product leadership through the changing of new strategies and structures. In chapter twenty the author details the choices and decisions made by Solvay as a leader at the turn of the new millennium. The accelerated pace of globalization has driven Solvay to increase its presence in fast growing regions in order to maintain its high rank in a globalized economy. The company continues to adapt itself, as in the past, through diversification in the pharmaceutical industry, which accounted for a large share of the Group's profits, and other high value added products, such as chemicals, plastics, and polymers of the future, as outlined in chapter twentytwo. The author ends this chapter by pointing out that the sale of Solvay's pharmaceutical business to Abbott Labs helped to finance the acquisition of the French chemical company Rhodia in 2011, which "will be one of the great challenges of the future" (p. 557). In the concluding chapter, Homburg attributes the company's wide ranging product portfolio and decentralized organizational structure to be a critical component of its successful diversification, thereby fortifying its knowledge base and strengthening its productive capacity.

This book is well written with a clear and engaging style. The message is clear and powerful and will prove to be valuable to a wide public of various disciplines: entrepreneurs, scientists, engineers, historians and chemical historians. The work helps to fill a much needed gap in the history of the European chemical industry during one of the most turbulent periods of recent history. Solvay has survived wars, social crises and revolutions. Throughout these challenges, Solvay has remained one of the leaders in its field right up to the present time. For these reasons, this book is a source of inspiration for those who decide to build and create their own business in tough times. It is an insightful book that entrepreneurs and employees will benefit from reading. The three authors provide an entertaining history of Solvay's 150-year enterprise, showing how this particular company has successfully and continuously adapted to technological innovations, competition and world changing events.

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