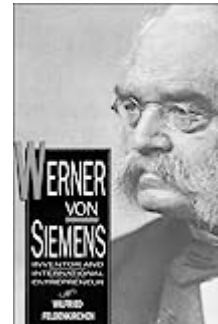


H-Net Reviews

in the Humanities & Social Sciences



Wilfried Feldenkirchen. *Werner Von Siemens: Inventor and International Entrepreneur.* Columbus: Ohio State University Press, 1994. xxv + 203 pp. \$19.95 (cloth), ISBN 978-0-8142-0658-4; \$17.95 (paper), ISBN 978-0-8142-0659-1.



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Published on H-Business (November, 1994)

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I. Table of contents

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II. Summary of design, argument and content

This book is a translation of the German original, published in 1992 by the Siemens corporation to commemorate the 100th anniversary of the death of its founder, Werner von Siemens (1816-1892). The author, Wilfried Feldenkirchen, is professor of business history at Friedrich Alexander University Erlangen-Nuremberg,

and academic director of the Siemens Archives in Munich. His brief study is now available in English as a title in the Historical Perspectives on Business Enterprise Series, edited by Mansel G. Blackford and K. Austin Kerr, published by the Ohio State University Press. The author, the editors and the publisher can take pride in a carefully produced volume. It has virtually none of the editorial flaws and typographical errors that mar so many academic books these days. The various visual aids, such as illustrations, tables, and graphs, are both attractive and informative, and the translation by Bernhard Steinebrunner is also fine. Considering these uniformly high standards of production, the absence of an index is surprising.

Part biography and part company history, Feldenkirchen's survey concentrates on Werner von Siemens's entrepreneurial activities and business strategies, rather than his scientific and inventive accomplishments or his sociopolitical significance. The author's purpose with this emphasis is twofold. First, it is to create a better balance between the abundance of information about Siemens the scientific inventor and the dearth of literature about Siemens the capitalist entrepreneur.

This imbalance, according to the author, is the product of deliberate image management that started with Siemens himself, who wished to be remembered first and foremost as a technological giant, and that continued after his death. Not so much false as one-dimensional, the conventional picture is fundamentally misleading, according to the author. It was only in conjunction with his talents as businessman and his strategic vision as international entrepreneur that Siemens the inventor could build a successful company, pioneer a new industry, and become a truly significant historical figure. Thus, Feldenkirchen's second purpose is to demonstrate that Siemens was more than just an inventor in the strictly technological sense of the word. Rather, he was "a man with a business vision and the ability to carry out that vision" (8). Siemens the electrical inventor did not stop where lesser contemporaries such as Wheatstone and Morse halted—before the commercialization of their ideas—but instead used his own inventions and those of others as the springboard for a whole new industry and way of life. Even in the 1860s, the author writes, "Werner von Siemens already envisioned the principal applications for electric power that were in general use by the time of his death. This vision, combined with Siemens's business acumen, led to the creation of a significant industry" (8). In short, Feldenkirchen argues Siemens was important because he belonged to the species of inventors Thomas P. Hughes has conceptualized with the term "radical inventing," i.e., the visionary type who use their inventions to become innovators, creating new technological systems and displacing older ones. The author does not mention Hughes, but he does anchor his approach in the older work of Joseph Schumpeter, whose theory of the entrepreneur's pivotal role as the engine of economic development and the business cycle in capitalism belongs to a kindred field of discourse.

The next step in Feldenkirchen's argument is more audacious. He interprets the international orientation of Werner von Siemens's business strategy as evidence of the founder's economic modernity and as the first manifestation of the current Siemens company's character as a modern multinational. In the author's words, "the international orientation and the corporate identity of the present Siemens Corporation dates back to the spirit of the founder" (9). Feldenkirchen explicitly rejects the idea that preindustrial examples from the world of banking or commerce might have inspired Siemens's concept of internationalism, contending instead that "by starting subsidiaries and manufacturing establishments ... [abroad] almost without delay after the founding of the parent

firm in Berlin, Siemens met an important criterion of the multinational enterprise" (10). This thesis is the book's guiding idea. Chapter 1 reiterates it when it concludes with the remark that, "One important reason for studying the life of Werner von Siemens and the origins of the company that bears his name is to appreciate the multinational character of German business even at an early stage of industrialization" (27). The study ends on the same, forward-looking note. The final paragraph opens with the observation that, "The foundation laid by Werner von Siemens served his family, his company, and the electrical industry well"; it closes with a metaphor of biological fulfilment and future growth: "The work of Werner von Siemens as an inventor and as a businessman was bearing great fruit" (159-160). In sum, Feldenkirchen sees Siemens as someone way ahead of his own time, a twentieth-century man in business as well as technology.

To substantiate his interpretation, Feldenkirchen in chapters 3 and 4 recounts the various international business exploits and entrepreneurial activities of Siemens and his brothers, from constructing electric telegraph systems in tsarist Russia, Iran and India, to producing power generating equipment in Austria, to mining copper in the Caucasus, to manufacturing and laying transatlantic cables by the company's branch in England, to building electric streetcars in Berlin. Comprising more than half the entire text, these two core chapters highlight Siemens's strategy in creating an international enterprise. The author does an excellent job showing the advantages as well as the drawbacks of Siemens's basic organizational concept—which was, in brief, to use immediate relatives as extensions of himself.

Siemens always relied on his younger brothers as the only dependable means of coordinating complex projects involving a few large customers and delegating authority over great distances. This familial management concept worked well in the early, adventurous stages of pioneering new enterprises, of venturing into new territory and launching untried technologies in the unpredictable environment of an emerging industrial-capitalist age. Relying on his brothers made for maximum trust and flexibility and reinforced the personal contacts required to win government orders. It also facilitated quick improvisation or retrenchment. Initially, failure was almost as common as success in the low-current but high-finance telegraphy business, which required technological sophistication of just a few key people but otherwise involved lots of casual labor for erecting the large, customized installations typical of early telecommunications.

Running a large and growing international business empire through relatives also had serious disadvantages. Feldenkirchen mentions frequent personality clashes and rivalries between Werner Siemens and the eldest of his younger brothers, William, who headed the firm's British branch but resented the dirigism from Berlin and increasingly pursued his own scientific and technological interests. Eventually this resulted in the formation of a fully independent Siemens Brothers Ltd in London and an all but complete split from the German mother firm. Likewise, the author points out that from the 1870s forward, "Werner's aversion to delegating authority and his strong mistrust of anybody not belonging to the family turned out to be an increasing hindrance to the company's international business" (89). So long as the company dealt mostly in the highly customized low-current technologies, the problem remained more or less manageable. But with the gradual perfection of Siemens's own invention of the electric generator (dynamo) and the development of high-current technology for power and lighting in the 1880s, the original management concept became increasingly unworkable. The newer electric technologies meshed with the rise of standardization, mass production, mass marketing, financing in the public capital markets, and other features of an increasingly organized capitalism to produce a wholly new business climate. In this environment Siemens's patriarchal management concepts, his financial cautiousness and his unwillingness to raise new capital on the financial markets through public incorporation proved no match for aggressive competitors such as AEG, Schuckert, Union, and Thomson-Houston.

More or less appendages to the core text, the remaining chapters deal with aspects peripheral to the author's central theme. Chapter 1 offers a brief description of German industrialization. Chapter 2 reviews Siemens's childhood, his education at the Artillery and Engineering Academy in Berlin and his brief career as a technical officer in the Prussian Army. In chapter 5, the author summarizes various other aspects of Siemens's life and work, such as his politics, lobbying, involvement in public research institutions, honors, children, and his company's social-security policy. The final chapter is a synopsis of the major reorganizations and other developments in the company's history that took place during the quarter century after 1890, when Siemens withdrew from active management. Finally, it should be noted that the book includes a 13-page chronology of major events in Siemens's life juxtaposed to milestones in the development of electrical theory and practice.

III. General discussion

One does not have to admire Siemens quite as much as does Feldenkirchen to recognize that the founder of Siemens & Halske was indeed what historians call a "great man," an individual who shaped history more than most other people. The intellectual justification for writing a book about the deeds of such individuals is therefore solid, regardless of whether one relies on the theories of Joseph Schumpeter, as the author does, or those of Thomas Hughes, or Max Weber's concept of the charismatic personality who transforms an inherited order. Undoubtedly, the author is also correct in widening the scope of Siemens's historical significance from his role as an electrical inventor to that of entrepreneur and international businessman. After all, how many industrial enterprises founded in the 1840s are still around today?

Even so, there is good reason to question Feldenkirchen's position that the international entrepreneurship of Werner von Siemens was consciously forward-looking and modern—of the same cloth as today's corporate multinationalism. The evidence the author himself presents with great abundance would seem to argue instead for the interpretation he rejects at the outset: that as entrepreneur and businessman—though certainly not as technologist—Siemens derived his inspiration from preindustrial models. Instead of anticipating the twentieth century, that is, a much stronger case could be made for Siemens's entrepreneurial orientation as modeled on the great preindustrial, family-based international banking and mercantile houses, such as the Fuggers, the Rothschilds, and the Warburgs. In chapter 1, for instance, Feldenkirchen cites a letter in which Siemens at age seventy-one remembers how "since my youth I have dreamed of founding a worldwide business in the style of the Fugger family in Augsburg" (31). In the same vein, it became a longstanding Siemens tradition to speak of the "House of Siemens." Likewise, it could be argued that the early telegraphy business was in many respects more like traditional banking or commerce than modern industrial production. As the author himself shows, until very late in the nineteenth century the Siemens manufacturing base in Berlin involved high-tech products but also a traditional, almost craftsman-like way of bringing those products into existence. Telegraphy itself centered on invisible commodities such as the transmission of electrically coded information over great distances, the securing of patent rights, and the maintenance of esoteric communication links, all of which had originally more affinity with older long-distance services for the rich and powerful than with modern industrial

production for the masses. Finally, the author's own, very good discussion of the shortcomings of the patriarchal, familial business strategy espoused by Siemens until the very end, as well as the radical restructurings and mergers necessary to save the company after his death, fit much better with the notion of a preindustrially oriented entrepreneur than a forward-looking one. In sum, interpreting Siemens as someone who married innovative technology to traditional entrepreneurship would appear to be rather more plausible than Feldenkirchen's argument.

To question the author's portrait of Werner von Siemens is to pose a further problem as well. Just as Siemens himself sought to emphasize his role as scientist and inventor in order to maximize his standing in a society that disdained entrepreneurship, so casting Siemens as a forward-looking international entrepreneur has broader interpretative implications. Deemphasizing Siemens's traditionalism in this respect means to skirt some of the more problematic aspects of Germany's history that the founder of Siemens & Halske also exemplifies. Specifically, it is to pass in silence over an entire tradition of scholarship—embodied in the work of scholars such as Thorstein Veblen, Ralf Dahrendorf, Hans-Ulrich Wehler, and especially Juergen Kocka—that has shown how premodern elements in German industrialization and modernization contributed to the country's political problems and disasters in the first half of the twentieth century. Thus, some readers might think Feldenkirchen's construction is perhaps a bit anachronistic, in as much as his Siemens occasionally looks more like an early denizen of post-1945 West Germany—internationalist, a good Eu-

ropean, mostly apolitical—than the contemporary of Otto von Bismarck that he was.

A related point is the way Feldenkirchen portrays the institutional context in which Siemens accomplished his inventive and entrepreneurial feats. The author tends to treat as a static given the capitalist social order, in which Siemens the businessman operated as though a political innocent. In reality, the specific institutions and features of German capitalism were in the process of being constructed during Siemens's life time. Siemens himself took an active part in this task (as when framing the highly pro-employer patent code of 1877), thereby helping build the sociopolitical environment and the conditions of entrepreneurship in Germany just as he built telegraphs, generators, and a company. To deal with these larger, societal aspects of Siemens's activities as peripheral to his role as a businessman seems rather artificial, considering they were an integral part of the rise of big business in Imperial Germany.

The above observations suggest this book should be used with a certain amount of caution, especially by readers who have only a passing acquaintance with German history. It should be understood as well, however, that Feldenkirchen's study is a welcome addition to the scarce literature on nineteenth-century German business history available in English. The fascinating story of Siemens's great inventions and business adventures, and his indomitable determination to succeed against all odds, is a valuable object lesson for all who would denigrate the role of the individual in history. Feldenkirchen tells this story very well, indeed.

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Citation: Kees Gispén. Review of Feldenkirchen, Wilfried, *Werner Von Siemens: Inventor and International Entrepreneur*. H-Business, H-Net Reviews. November, 1994.

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