

The strategist's bookshelf

Breaking the rules to make rules that work

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Sheldon Weinig: *Rule Breaker: An Entrepreneur's Manifesto* (CreateSpace, 2018).

Prof. Sheldon Weinig, the author of *Rule Breaker: An Entrepreneur's Manifesto*, is known as “the father of electronic materials” for the role his company played in the semiconductor revolution of the latter half of the 20th century. The Semiconductor Equipment and Materials Institute recognized his achievements with the 1980 SEMMY Award for developing the critical materials necessary for the growth of the semiconductor industry.

The recipient of many other honors, Weinig, 90, takes readers of *Rule Breaker* on a journey through his life as a CEO in the U.S., Europe and Japan and the lessons he learned about entrepreneurship, managing people and implementing innovation. After leaving management for academia, he's been teaching those lessons at Columbia and SUNY Stony Brook for almost a quarter century. And, according to students who praise his book on Amazon.com, his “Manufacturing Enterprise” course was the best one they took.^[1]

Lesson: Never say “No” to a client's needs

In 1957 Weinig used money that he earned as an independent consultant to set up Materials Research Corporation (MRC). His Ph.D. from Columbia was in metallurgy and MRC built a reputation by its work with metals and metal coatings. As a

startup he began with “one-off custom projects that weren't too complex.” For example, he got “a purchase order from ALCOA” for small titanium slugs to try impact extruding, a method for making toothpaste tubes. ALCOA wanted to experiment using titanium as an alternative to aluminum, the industry standard, for different applications, and because no titanium producer would supply such slugs, Weinig saw an opportunity. (p. 19) Titanium was only fabricated in large-diameter rods and he found a way to heat and forge them down to the client's desired size. It was a high-risk, high-profit job and was only the first of many entrepreneurial projects Weinig undertook to build his company's sales and reputation. With characteristic candor he describes this period: “. . . although the primary mission was the development of a pedigree materials pharmacy, the immediate task was paying the rent. This widened the scope of jobs we considered. In short, any job was acceptable Since starting MRC, at the end of every consulting appointment, I'd ask the client if there were any difficult jobs on which they might need a quotation.”(p. 21)

Lesson: No job is too menial for the startup CEO

In attempting to obtain a research contract from the Office of Naval Research MRC had to survive a site visit when they were domiciled in a “loft in no condition to be inspected by the U.S. Navy,” so he and his sole employee “swept, mopped and

polished,” and he warns the reader that, “If you have a vision of entrepreneurship that doesn’t include doing whatever it takes, forget it. Not only does every responsibility fall on your desk, but also you are the chief executive officer of all things, including toilet maintenance.”(p. 22) P.S., MRC won the contract.

Lesson: Always aim high, never give up and cast a wide net

In the early 1960s, MRC was trying to focus on its original objective – to build and stock a metals and alloys inventory of uniquely valuable products. Weinig approached the Defense Department’s Advanced Research Projects Agency (ARPA, later called DARPA) and proposed that the government fund “laboratories of excellence” that would prepare materials for government and non-government research. MRC won a million dollar grant to build a laboratory for excellence in metals which became a major part of MRC. An important goal in MRC’s stated mission was now accomplished. (pp. 33-34)

Not too far into *Rule Breaker* the author quotes Supreme Court Justice Louis Brandeis, who said, “Most of the things worth doing in the world had been declared impossible before they were done.”(p. 46) Weinig demonstrates multiple times how MRC would innovate a process or a device that changed manufacturing for the better. And throughout the book, he emphasizes the importance of keeping customers happy, which is why he offers that, “one of the most important business lessons I have learned is to use mediation instead of litigation.”(p. 57) This was unusual advice from an American CEO pioneer of the semiconductor era, and it hints at how it was possible for Weinig to become a business star in the Japan of the 1980s, where litigation was almost taboo.

The great opportunity that Weinig was wise enough to seize upon was the “disruptive technology” of the semiconductor. The leading vacuum tube suppliers – GE, RCA, Westinghouse, Sylvania and a host of others – had to invest huge sums to reinvent their businesses to meet the new requirements of the silicon age. (p. 61) Weinig recounts, “As AT&T and Texas Instruments began making successful silicon devices in 1955, I stepped out of Columbia University with a newly minted doctorate degree and stepped right into the middle of the revolution.” (p. 63) Weinig emphasizes that “disruption takes place not only in a primary business but also down the line. ...don’t ask, ‘how can I compete against the giants in that market?’ Ask, ‘What can I sell to everyone who tries to compete in that market?’” (p. 63) MRC got Texas Instruments as a client in the early 1960s, and was challenged by TI’s pressure on suppliers to implement both zero defects quality control and a Just-in-Time inventory process. Both of these high-pressure experiences helped prepare MRC for its eventual success in Japan.

Weinig’s technology capability was also crucial. The birth of the integrated circuit required the use of very pure aluminum and MRC’s success in manufacturing the metal at the required “five nines pure” level was, according to Weinig, “the beginning of becoming world-renowned as an electronic materials supply house. Our business expanded very rapidly and laid the groundwork for our initial public offering. It also led to our building materials plants in Europe and Japan.” (p. 71)

In a digression from the integrated circuits business, MRC developed a coating for razor blades that gave Gillette a powerful marketing tool in their Platinum Plus product which MRC supplied with material and service on Gillette’s machines for many years. (p. 92) Weinig considers

this an example of a “keyhole material” which can create an entirely new business from a simple idea that was prompted by curiosity.

In 1963 Weinig gave a talk in Japan as part of an American government supported NSF “scientific exchange” delegation. The Japanese government enthusiastically responded to his talk on the benefits of “materials laboratories of excellence to accelerate research” – an attitude which his own U.S. government did not adopt. From a modest beginning, MRC used sales reps to sell its equipment and materials to the Japanese semiconductor industry. But in the late 1970s Japanese law changed, permitting foreign companies to incorporate in Japan with foreign majority ownership. But the then powerful Japanese government organization MITI (Ministry of International Trade & Industry) gave MRC the “cold shoulder.” (p. 135) Instead of retreating, Weinig hired a PR firm and had a press conference at the Tokyo American Club in which he announced that he wanted to build a factory on the island of Kyushu. The die was cast, and in a few weeks his “bait” caught invitations of welcome from three Kyushu prefectural governments. Weinig obtained a cheap lease on land and then pushed even harder by asking the governor of Oita prefecture – who had provided the cheap land – where a Japanese company could get money to build a factory. The answer: the Japan Development Bank (JDB). By this time the company had completed the filing to be a Japanese firm – MRC KK – and could apply to the JDB. MRC became the first non-Japanese owned company to get money from the JDB, which made Weinig something of a celebrity in Japanese business circles. (pp. 136-138)

Lesson: Knowing when to check out

Some years later Sony acquired MRC and Weinig was given an impressive

title but he admits that, "I could not adapt to Japanese business culture after spending my entire professional life as an American CEO of a public company that I had founded. . . . Every. . . decision had to be vetted in Tokyo, and I was frustrated and bored." (p. 165) At this point Weinig's began to focus his considerable energies and experience on teaching and mentoring engineers and managers, which he has been doing ever since.

The saga of MRC as told by Weinig is partly a valuable case history of how the digital revolution impacted American industry and management

and partly a useful guide for entrepreneurs who want actionable, practical and no nonsense guidance to help them succeed. *Rule Breaker* also happens to be an entertaining story of one of the most colorful business figures of the postwar world told in Weinig's own distinctively engaging voice. Two things readers will take away from this lively hybrid memoir and business guide are an appreciation of Weinig's honesty in talking about how he landed a client or kept a client after a company screw up, and his distinctive sense of humor, such as his explanation of how

tough it is to open a factory in France. . . sober. In honor of such work, in 1988 the Government of France awarded him the rank of Chevalier dans l'Ordre National de la Legion d'Honneur.

Note

1. www.amazon.com/Rule-Breaker-Entrepreneurs-Shelly-Weinig/dp/1719574944#customerReviews

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