
James W Cortada. *The Rise and Fall and Reinvention of a Global Icon*. Cambridge, MA: The MIT Press, 2019. xxii + 723 pp. ISBN-13 9780262039444, \$32 (paper), £25 (e-book).

Retired from life after 38 years in several roles at IBM, the prolific academic production of James Cortada now continues as Senior Research Fellow at the Charles Babbage Institute. Cortada has put forward the argument that computers fundamentally changed the nature of work and supported this idea through a number of key contributions to the business history of computing. This title is the latest addition to that already impressive list and surely, it will be one of those texts that will be required reading for historians of technology and of business for years to come.

This massive book started life about two years after Cortada retired from IBM. As you would expect, the book brings the insider's view to the historiography of "Big Blue" as well as an interpretation of archival material (some of it collected throughout his career in anticipation of someday writing a formal history of his employer). Somewhat in a departure to previous contributions, Cortada takes the time to engage in scholarly discussion around relevant topics throughout individual chapters. Thus, offering a robust and stimulating discussion of a 130-year history (from 1880s to 2012) of one of the most important and emblematic companies of the 20th century.

The 20 chapters in the book are organised into four sections: origins (1880s-1945), market dominance (1945-1985), crisis (1985-1994), and renewal (1995-2012). Reading this title cover to cover is no small feat. Even though it is written in Cortada's open and approachable style, there is too much detail and nuance that few will find the time to digest it all. Indeed, the author acknowledges there was no intention for the larger audience of this book to go through all its contents. Instead, each chapter provides a step by step, in-depth discussion in the evolution of the most emblematic firm of the 20th century and the digital revolution. The main audience being readers mainly interested in specific episodes of the long life of a company that was instrumental in shaping today's world.

For those interested in the mechanisation of business and the origins of the computer industry, the first section offers an excellent compendium with perhaps more detail and nuance than previous work by other authors. Throughout this and the second section, we get substantial evidence of the importance of government spending to support key innovations, from Herman Hollerith's electromechanical punched-card tabulators for the 1890 census to mainframes, encryption, guided missiles, atomic energy, etc. These were technologies that served organizations that had big and complex data

requirements but had the financial muscle to pay for it and hence the importance of government agencies. But there was more than data processing in the US federal government being the most important client of “Big Blue” for a century. This is because Cortada’s multiple and detailed examples of how key and, at the time, very risky technologies were funded at their early stages by agencies of or directly by the US federal government provide further empirical support to the symbiotic relationship of business and the state at the heart of Mazzucato’s “state as an entrepreneur” argument.

While we see the rise of IBM through the great and unique leadership of the Watsons, perhaps reaching its apex with the launch of 360 equipment in the mid to late 1960s, in section three (crisis), Cortada also tells of the process leading to its downfall. This demise was paradoxically engineered by its main client, the US government through the anti-trust proceedings of the 1970s. But also, by the inability of IBM to sell small equipment. The latter is evident in the success and failure of the personal computer (which is discussed at length in the book through to the sale of all PC manufacturing to Lenovo in 2005) or to cement its leadership of the ATM market during the late 1980s (and thus missing the huge growth of this market in the 1990s and early 2000s).

Cortada criticises senior management at the time as well as the subsequent emphasis on stock market driven measures of performance (namely earnings per share) to the detriment of investments for the future. When discussing the process of renewal in the fourth section, he is candid in his evaluation of the reorientation of the company to services noting that leaving manufacturing was appropriate as most other large US companies (including IBM competitors) were also relocating production to capitalise on cheaper labour in the southern hemisphere and Asia.

All in all a very enjoyable book which, as mentioned, I am sure to see widely cited in the near future.

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