

Zbigniew Stachniak, *Inventing the PC. The MCM/70 Story*.
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In 2000, Paul Ceruzzi's *The History of Modern Computing* (MIT Press) established the canonical narrative for the history of computing. All over the world, computer science students as well as the general public interested in this topic read Ceruzzi's book to learn how computers evolved from huge mainframes that occupied a whole building to tiny handy little objects that became our everyday companions. Although Ceruzzi clearly stated in the introduction that he had focussed on the United States, just occasionally touching the European and the Japanese cases, his book has been appropriated as a global-wide narrative, very much because California and Silicon Valley are the leading centres of the computer industry.

Zbigniew Stachniak's book deals precisely with one of those other computers that fade into oblivion: the MCM/70 designed by Mers Kuut, in Toronto, Canada, in the early 1970s. Stachniak uses as main sources Kuut's personal archive (which includes a variety of documents ranging from personal notes to management documents) and interviews to the staff that worked in the MCM/70 project, aiming at reconstructing both the human and the corporate sides of the making of the MCM/70.

Along chapters 2 to 4 the author describes how Mers Kuut developed the idea of a microprocessor-based desktop APL computer (APL is a programming language), from the first experience—the Key-Cassette—to the final MCM prototype, how he and his team designed and implemented MCM/70, and how they tackled both software and hardware challenges. In 1973, the MCM/70 was ready to conquer the world: the MCM team successfully toured Europe and, later North America, in both cases MCM/70 being considered as a major breakthrough in the computer industry.

By the time the reader reaches the end of chapter 4 it is impossible not to ask him/herself where it did went wrong. Why don't we have MCM personal computers on our desks? Chapters 5 to 7 answer the reader's growing questions: on the one hand minor technical issues, mainly associated with the power supply, exposed major financial and management problems and eventually led to the fall of MCM; on the other, external factors, such as the North

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American computer hobbyists' movements also contributed to the failure of MCM, as Kuut always kept his interests close to the professional market, disregarding the strong potential of the hobby computer market.

Zbigniew Stachniak ends the book with a nice a conclusion in which he brings together the facts and the testimonies he collected, and reassembles them in a tighter narrative, enabling the reader to revisit the previous chapters and reflect on the way technical expertise interacts with society at large. Despite their low graphic quality, pictures are nonetheless interesting, by showing models of MCM/70 and other computers, as well as advertisements, flyers, and posters. The book also includes a MCM timeline (including the making of MCM/70), bibliography, and an index by subject.

Stachniak's case-study, although sometimes difficult to read, especially by those who do not master a minimum of software and hardware vocabulary, is an interesting reading for historians of technology, in particular for those who are interested in the history of computers, and on topics revolving around centres and peripheries. It is worth mentioning that in this case Toronto, Canada, may be considered as a periphery when compared with the Californian cluster. Also the role played by consumers, in this case the hobbyists' movements, in the success or failure of a new technology, is an interesting topic for computer historians. As to economic and corporate historians, Stachniak's book shows how bad managerial options can jeopardize good technological solutions. The MCM/70 story, which has been "for three decades after its introduction (...) exiled from computing history, remaining no more than a footnote to the personal computer narrative" (p. 188), is thus not an oddity within computer history, but an interesting piece of a larger puzzle, which invites historians of technology to think beyond artefacts and look at the people that shape them, either as experts and entrepreneurs or as users. Zbigniew Stachniak's arguments on the role of the hobbyists' movements, in addition, can be read in the light of the recent book by Ruth Oldenziel and Mikael Hard, *Consumers, Tinkers, Rebels*, Palgrave Macmillan, 2013, with the greatest benefit. By being a very specific and active subculture, the world of personal computing is particularly appropriate to crisscross these different scripts and look into technology(ies) in an inclusive and broad perspective.