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*A History of Modern Computing*

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## *Preface*

A few years ago I met with a group of historians who were planning to write a comprehensive history of computing from its origins to recent years. Led by William Aspray, we surveyed the field and each agreed to write about the topics we knew best. After we had each had a chance to start work, we met again and compared what we had done. We found that we had succeeded pretty well in telling the story of computing before 1945; but after 1945—at precisely the moment when electronic digital computing emerged—we had failed. After several more attempts, we gave up. Computing after 1945 was too complex, too daunting, and too little buttressed by a theoretical framework to allow for solid historical assessment (in some form other than simply listing one machine after another, which we refused to do). We decided to publish the work we had done on events before 1945 and to postpone the rest of the project.<sup>1</sup>

I believe that the time is now ripe to write the rest of that book, or at least a major part of it. What follows is a history of computing from the completion of the ENIAC in 1945 to the networks of personal computers at work and home in the 1990s. The focus is on the United States and on computing systems that were commercially sold and installed in large quantities. That leaves out some parts of the story, but I think it covers enough to offer readers a sense of what has happened to computing in the past fifty years.

The pace of innovation—one of the reasons for the failure of the earlier attempt to write this history—has not slowed. But a half-century of innovation has revealed several patterns on which a structure can be built. These patterns seem to have held fast through successive waves of technology, although I must also admit that the next few years may very well transform computing so much as to render some of this narrative

obsolete. Future generations may look on the transition from large mainframes to desktop personal computers (a transition that I examine at length in this book) as a sort of nonevent, much as we now look on the development of key-driven, as opposed to cranked, adding machines in the 1880s. “What Is Past Is Prologue”—the inscription that greets visitors to the U.S. National Archives in Washington—applies to the history of computing with a vengeance. Perhaps computing advances will slow to a crawl while the world assimilates the advances of recent years. I do not think so, but that has happened with other technologies.

Regardless of what the coming decades bring, however, I believe that the story of computing from the end of World War II to the mid-1990s will come to be seen as beginning one of the great transformations of American life, and I also believe that now is a good time to start telling that story.