

## **Computer generations and customer blindness**

*In the computer industry, there have so far been three major eras: the era of the mainframe, the era of the minicomputer, and the era of the personal computer. Each era was distinguished by rapid expansion of markets and entry of multiple competitors. As the next era approached, the cost of computing moved down by an order of magnitude or more, bringing entirely new markets – and customers. While the markets of the previous era continued, they ceased being high-growth businesses.*

*How many of the original competitors in the mainframe computer business survived as high-growth businesses in the minicomputer era? One (IBM).*

*How many of the original competitors in the minicomputer business survived as high-growth businesses in the personal computer era? One (IBM again.)*

*Now that the era of the personal computer is finished (it is no longer a high-growth business), it will be interesting to see how many of the competitors in the PC business survive as high-growth businesses in the next computing era – probably to be known as the era of mobile devices.*

*What made it so difficult for these companies to apply their technology to new markets? Computing is not so different inside a PC from inside a minicomputer. I believe that a large factor in the failure of most of the companies to adapt was identification with their current customer base.*

*In the minicomputer business, for example, customers were classified as scientific, educational, industrial, communications, and so on. Each customer was installing the computing machinery in an environment where there were specialists who customized the installation and wrote or purchased software that further adapted the hardware to the specific use. In almost all of the markets except education, the final product was not primarily interacting with humans.*

*When the cost of a computer dropped enough so that an individual could consider owning one, everything about the sale, support and software contents of a computer system had to be re-thought. And, in particular, the way in which the computer software interacted with the consumer made all the difference in the “user experience.” This*

*created an opening for a new entrant – or multiple entrants – into the personal computer business who focused on user interaction rather than computing. Apple Computer launched itself into this opening, defining the start of the PC era.*

*And who were left behind when the PC developed into a major growth market? Large, powerful companies, such as Digital, Data General, Harris, ModComp, EMR, XDS, NCR, and even the minicomputer divisions of IBM and Hewlett-Packard. Only by launching independent consumer-focused divisions did IBM and HP become viable entities in the PC space.*

From Chapter 5 of  
**Get Out of the Way!**  
How to Manage Development  
of Timely, Innovative, and Relevant Products  
by John V. Levy, Ph.D.