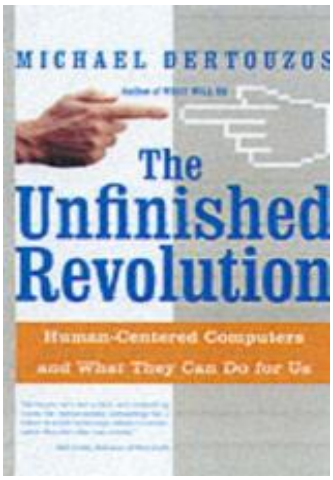
The Unfinished Revolution

by Michael Dertouzos



About the Book

Michael Dertouzos begins his latest book, **THE UNFINISHED REVOLUTION**, with an all-too-familiar scenario when he describes spending the bulk of a long transatlantic flight trying to download his personal calendar onto his laptop using a so-called "smart card." The frustration felt by the author, who has headed up the MIT Laboratory for Computer Science for over twenty-five years, is replicated thousands of times a day by people who have considerably fewer computer skills than he. After all, it is an accepted fact that computers will crash, software will be indecipherable and machines in the same home or office will be incompatible when linked together. In THE UNFINISHED REVOLUTION, Dertouzos proposes a solution to these modern technical woes. Using one's computer, he argues, should be as easy as driving a car -- with one pedal for the gas, one for the brake, and no impossibly dense manuals to figure out.

The solution, as Dertouzos sees it, is to make computers "human-centered," a concept that goes beyond the idea of the "user friendly" PC or the high speed modem. Computers, Dertouzos argues, should be designed around the needs and capabilities of people rather than people trying to adapt to the machine. We have become so used to battling with inefficiency in our computers that we are unable to see the need to change them. The first step, Dertouzos argues, is in changing our mindset.

Once we have realized the need to make computers more human-centered, Dertouzos proposes five striking new technologies that will aid in the process. These technologies are possible, even feasible, right now. In order to become truly human-centered, Dertouzos says, computers will interact with us (understand human speech and respond in ways that we can understand), automate human tasks (saving time and increasing human efficiency), individualize information access (gather information relevant to a specific person based on preset commands and preferences, again, saving valuable time), facilitate human collaboration across space and time (linking humans together through a common network to allow for increased productivity), and offer easy customization (wherein the computer adapts to our individual preferences instead of the reverse).

Dertouzos describes each of these five types of interactions and the type of technology needed with several detailed examples. Extrapolating from the fundamental technologies he proposes, Dertouzos goes on to describe how almost every aspect of our daily lives can be enhanced by a transition to human-centered computers. There is great potential in the field of health care, for example, as sophisticated tests could be administered quickly and efficiently and an individual's entire medical history could be tracked, from home, by a personal "guardian angel." Commerce is another field that would benefit greatly as businesses could link and share information for products and research. Finally, Dertouzos explains how education, so critical in today's society, could be vastly improved by pooled and efficient information available across a broad base.

Dertouzos finishes by describing how his model can be created in the near future by detailing a current experimental system used by MIT called Oxygen that combines all of the five human-centric technologies. In his description, Dertouzos demonstrates how human-centered computing has the potential to relieve us of the inevitable frustrations of today's computers and save us immeasurable hours of time, trouble and inefficiency.

Discussion Guide

1. What, in your opinion, does the author mean by "human-centric computers?" Does this mean computers should be more like people?

2. Often we factor obsolescence into our purchase of computer equipment and upgrade continuously. Dertouzos describes this as being brainwashed to think we have more efficient or faster computers when, actually, we are experiencing even greater inefficiency. Aside from personal computers, what other technologies can you think of that are similarly inefficient?

3. There is a persistent image in our popular culture of a world running amok with over-intelligent computers that seek to dominate their creators. How is this model different from the one that Michael Dertouzos presents?

4. What is the difference between human intelligence and computer intelligence? Can computers be trained to "think?" On what level?

5. Discuss the differences in the ways computers see and the way humans see. How can computer vision and human vision become compatible?

6. Dertouzos mentions medicine, emergency response and commerce as areas that will benefit greatly from human-

centered computing. What other arenas can you think of that would benefit?

7. Besides the example offered in the book of a streamlined, computerized doctor visit, how do you think human-centered computers could advance medicine? Do you see a potential conflict between the human touch and the human-centered computer? Could the latter ever replace the former?

8. One of the author's five key technologies is automation -- getting computers to work together to save humans time and energy and increase efficiency. Discuss some specific ways, other than those presented in the book, that this could be effected.

9. In your opinion, will the increased efficiency of computers eliminate human jobs? Why or why not? What opportunities and jobs might result for people when/if computers become more human-centric?

10. Part of the author's vision for human-centered computers includes linking various information systems to create individualized information. Does this interconnectedness mean a loss of privacy? Can privacy be insured when there is such a wholesale exchange of information? How?

11. Dertouzos makes a compelling argument that whenever technology advances so do its potential abuses. Given human nature as you see it, will the advantages of a human-centric society outweigh its disadvantages?

Author Bio

Tech oracle Michael Dertouzos, head of the MIT Laboratory for Computer Science and author of the bestselling Made in America, offers a learned, accessible, and fascinatingly detailed preview of new information technology and the ways it will remake our society, culture, economy, and private lives in the next century. Speaking to every reader affected by technological change and written by a key architect of the very revolution it describes, What Will Be is the first thorough roadmap to the world of the technological future.

Critical Praise

"With wry humor and searing wit, the man Time Magazine calls, "MIT's #1 computer guru"...envisions a time when we alternate ample leisure with intellectually stimulating work, seamlessly."

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