April 23, 2015, 11:54 AM ET

# Is Software Eating the World's People Too?

By Thomas H. Davenport

If software is eating the world, as Marc Andreessen famously noted here in 2011, what does that mean for the world's people? With companies from AstraZeneca (A to Z in one organization) to Ford Motor Co. to Santander declaring that they are technology companies, what are the implications for their nontechnical employees? Does it mean that humans need to thrive on software and IT if they are going to succeed? I am increasingly thinking that it does, but many humans need help in doing so.

I thought of this issue a couple of times recently, including yesterday while interviewing a teacher for a new book I am writing on the human implications of automation. This New York-based young teacher is a heat-seeking missile for ed tech. He teaches math and science, but in his job he uses technology for adaptive learning and individualized curricula, online behavior monitoring, rapid polling and assessment, and a variety of other tasks. I asked him if other teachers in his school are similarly interested in technology. "Not as much as I am," he admitted, "but it's getting hard to do the job without technology." Try individualizing curricula, for example, for 30 different learners with different levels of content mastery and learning styles, without technology.  The interview made me wonder what's going to happen to teachers who can't or won't master the latest educational tools.



Morris Mac Matzen/Reuters
Franz Fitzek,a professor at the technical university of Dresden stands in front of an installation of tablet computers of his institution at the CeBit trade fair in Hanover, March 16, 2015.

Then there's the other extreme of my interview subject. I also heard recently about the travails of an old friend who recently lost his job with a major corporation. He ran a key business function for the company, and he'd previously been the head of a large trade association. In none of his jobs did he directly use software or the Internet. He relied on his executive assistant to print out his messages, he wrote or dictated responses to them, and few people other than his assistant knew of his technical deficiencies.

Now he no longer has a job or an executive assistant. He got enough severance pay so that he can afford to retire early, but he still wants to do something useful. So he approached a local university about teaching a course in his area of expertise. The dean said, "Sure, send me a sample syllabus." But my friend doesn't know how to use the Internet to find syllabi or relevant books and articles. He can't type up the syllabus in Microsoft Word. I don't even think he knows how to order something from Amazon. He's having to rely on his wife and kids to help him. It's just what your ego needs when you've just been cut loose by your employer.

Many of us with technical skills are relatively unforgiving of techno-illiteracy. "Take a course," we might say. Read *The Internet for Dummies*. Check out the videos on YouTube or Kahn Academy. These are all great ideas, but some people lack the skills even to find out about these resources. My technically backward friend would probably try to look up Kahn Academy in the printed Yellow Pages, or drive to a (probably closed) local bookstore to buy a Dummies book.

We need to remember that not everyone can grasp these ideas, even with considerable instruction. I have given countless lessons on email and Web usage to my mother and mother-in-law, but they just never seemed to take. If you've spent a lifetime without using computers and software, mastering them is like learning Mandarin from scratch.

Keep in mind that I am thus far only talking about people in rich, industrialized countries. If they are having problems, think about the humans who have never seen a web page or computer screen. As a recent article in this newspaper pointed out, two thirds of people in the world don't have access to the Internet. The article suggests that it's not going to be a simple matter of bandwidth to get them using these tools effectively.

I and many of the people with whom I hang out were lucky enough to be exposed to information technology at an early age. And we've made the effort to keep up for the most part (Snapchat and a few other apps are exceptions). But it's not a moral failing to feel that

all this stuff is impenetrable, or to have no access to it. And even the most ardent technophiles have to admit that IT doesn't always work in a transparent and reliable fashion.

So other than using some compassion in dealing with nontechnical people, what is to be done? More educational resources would help—and they shouldn't all be online, for obvious reasons. Maybe we need a "Service Corps of Retired Techs" (SCORT) to provide hands-on help. And just as we have volunteers to help the needy with their tax returns, maybe we should have nice people who will print out and reply to emails for those who need such assistance.

In fields like education, health care, and general management that were previously safe for non-techs but are rapidly becoming more technical, we should give incumbents plenty of time and understanding in making the transition. We can't afford to drive these people, who may not have IT talents but have plenty of other skills, out the door before their time.

Software and technology are certainly eating the world these days. But the world will develop a massive case of indigestion if we don't bring people along with this historic transformation.

*Thomas H. Davenport is a Distinguished Professor at Babson College, a Research Fellow at the MIT Center for Digital Business, Director of Research at the International Institute for Analytics, and a Senior Advisor to Deloitte Analytics.*