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Technology isn't a job killer

By Tamar Jacoby

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The issues at the heart of “Learning by Doing” come into sharp relief when James Bessen visits a retail distribution center near Boston that was featured on “60 Minutes” two years ago. The TV segment, titled “Are Robots Hurting Job Growth?,” combined gotcha reporting with vintage movie clips – scary-looking Hollywood robots – to tell a chilling tale of human displacement and runaway job loss.

Mr. Bessen isn't buying it. Although robots at the distribution center have eliminated some jobs, he says, they have created others – for production workers, technicians and managers. The problem at automated workplaces isn't the robots. It's the lack of qualified workers. New jobs “require specialized skills,” Mr. Bessen writes, but workers with these skills “are in short supply.”

LEARNING BY DOING

The Real Connection between Innovation, Wages and Wealth

By James Bessen

Yale, 295 pages

It is a deeply contrarian view. The conventional wisdom about robots and other new workplace technology is that they do more harm than good, destroying jobs and hollowing out the middle class. MIT economists Erik Brynjolfsson and Andrew McAfee made the case in their best-selling 2014 book, “The Second Machine Age.” They describe a future in which software-driven machines will take over not just routine jobs – replacing clerks, cashiers

and warehouse workers – but also tasks done by nurses, doctors, lawyers and stock traders. Mr. Bessen sets out to refute the arguments of such techno-pessimists, relying on economic analysis and on a fresh reading of history.

Consider the ATM, a classic example, supposedly, of technological progress that has all but eliminated a white-collar job. In fact, Mr. Bessen shows, the number of bank tellers working in the U.S. has risen since the 1970s, when ATMs were introduced. How could that be? The average bank branch used to employ 20 workers. The spread of ATMs reduced the number to about 13, making it cheaper for banks to open branches. Meanwhile, thanks in part to the convenience of the new machines, the number of banking transactions soared, and banks began to compete by promising better customer service: more bank employees, at more branches, handling more complex tasks than tellers in the past.

Many predicted ATMs would eliminate bank tellers, but the number of tellers has risen since the machines were introduced

Another job category that has grown rather than shrunk as a result of technology: licensed practical nurses, or LPNs. Many in the medical profession expected computerized medicine to eliminate LPNs, who were thought to lack the skills needed to run new, sophisticated machines. Instead, developments like lasers and advanced endoscopy made it possible to perform minimally invasive surgery at short-stay clinics, which have multiplied in the past three decades, creating jobs and raising wages for licensed practical nurses. “The effect of technology on jobs is simply more dynamic and more complicated than many people recognize,” Mr. Bessen writes.

Now a lecturer at Boston University Law School, Mr. Bessen learned about technology the hard way, when he founded a desktop-publishing company in the 1980s. And part of what makes “Learning by Doing” so persuasive is the way it combines policy arguments with a practical sense of the workplace. Transitioning to desktop publishing, Mr. Bessen says, was a small step technologically: His customers could run his software on a first-generation PC. But adopting the program at a company required a host of other changes, first to machinery, then to skills, then to workflow and organizational structure. Jobs requiring keyboarding were largely eliminated, but these combined changes created new demand for programming, product design and customer service.

In Mr. Bessen’s view, the Industrial Revolution also vindicates his optimism. He revisits the story of the power loom that Karl Marx made so much of in “Das Kapital.” “History discloses no tragedy more horrible than the gradual extinction of the English handloom weavers,” Marx wrote. In fact, Mr. Bessen shows, the power loom was the best thing that ever happened to the textile industry and its workers.

True, it took decades for workers and managers to learn specialized skills and reorganize production. Weavers had to adapt their technique to the faster machines – new knots, new hand movements, new ways of preventing broken threads – and develop monitoring and planning skills so they could coordinate work on several looms at once. Meanwhile, management made changes to training and hiring to take advantage of more experienced workers. None of this happened overnight – but when it did, productivity soared, jobs proliferated and eventually wages caught up.

Will this sequence happen again today? It should, but there is a danger that, left to itself, the process will unfold too slowly. What is needed, in Mr. Bessen's view, are policies to restructure labor markets, spur more training and drive what he calls a "standardization" of skills. Unfortunately, at this point, with readers wondering what exactly he means – how do we speed up the standardization of skills or restructure labor markets? – Mr. Bessen changes the subject from promoting skills to promoting technology.

One of the book's most suggestive ideas is captured in its title: learning by doing. Weavers in the 19th century learned on the job, finding their own methods of using technology more productively. So did employees at the companies that bought Mr. Bessen's software and adapted it for their specialized needs. This can be a long, painful learning curve – developing skills through trial and error and reorganizing production. But it usually pays off in the long term.

Mr. Bessen concedes that this time may be "different" – that the pace of change may be faster than in the past and the transition more difficult. Still, it's hard not to be drawn to his hopeful case. Technology may cause inequality, Mr. Bessen concedes, but "it doesn't have to be that way."

Ms. Jacoby is president of Opportunity America, a nonprofit group working to promote economic mobility.