

The Challenge of Automation: Finding Our Place Amongst the Machines



New America Media [URL: <http://www.newamericamedia.org/>], Commentary, Kumar Venkat, Posted: Apr 05, 2017

The automation revolution underway now is profoundly different from previous technological revolutions, with job losses likely to far exceed job creation and no clear solutions in sight. This is an uncomfortable reality for many of us. We are used to cheering all technological advances and the conveniences they bring. The progress of technology has always seemed both inevitable and exciting in its unpredictability, but never a choice that we have had to make as a society. This may be about to change in the coming years and decades as we struggle find a place for human beings amongst all the machines.

When the farm sector embraced mechanization that allowed agriculture to scale and eventually eliminate more than 90 percent of the manual labor, the next wave of workers found employment in the growing manufacturing sector. But this sector too experienced huge productivity increases through technology and automation. US manufacturing output doubled in the last 30 years while employment declined by a third.

Studies show that each industrial robot reduces employment by nearly seven jobs. Rather than needing sorters, assemblers and machinists, modern factories increasingly need technicians who can write code, run diagnostics on complex machinery, and think in terms of algorithms. The transition is from skilled workers who could work on physical objects to far fewer knowledge workers who can work at a more abstract level.

The service sector would have been a natural destination for displaced manufacturing workers, but it too is on the verge of being reshaped by the relentless advance of automation. Grocery checkout clerks who are already competing with self-checkout systems may be giving way in the future to cashierless stores built around computer vision and machine learning. Restaurants that allow customers to place orders and make payments through touch screens located at their tables can already operate with fewer waiters. It is not a huge stretch to imagine robots eventually replacing many waiters. Pizza, a \$38 billion dollar industry in the US, is already a prime target for disruption with robots potentially cooking and delivering pizzas.

Autonomous vehicles of the future could greatly reduce the demand for skilled truck, bus and cab drivers. Driverless vehicles and robots could conceivably deliver packages right to your doorstep – assuming systems using drones do not get there first with a cheaper solution.

If these and other technologies proceed on the current trajectory, we could have a huge population of displaced workers from both manufacturing and service sectors simultaneously. An Oxford University study estimates that 47 percent of US jobs are at risk of being automated within the next 20 years. What will we do with the resulting mass of people who will have nothing to do and nowhere to go?

Technology in our society occupies the exalted position that religion once did in past societies and civilizations. It is taken as a matter of faith that technological change is always good. This makes a debate on the social impacts of automation fraught with risks for both policymakers and for those of us employed in the technology industry. Even so, there are a couple of courageous proposals out there that could serve as starting points.



[URL: <http://newamericamedia.org/Robotic-automation.jpg>]

Microsoft founder Bill Gates has suggested taxing the use of robots to slow the spread of automation and using the funds to create jobs in fields like education and elder care where human empathy and understanding still matter. This wouldn't come anywhere close to replacing the tens of millions of

jobs that are going to be in jeopardy, but it does introduce into this debate the idea of taxation as part of a solution. Former labor secretary Robert Reich has proposed a universal basic income as a safety net for unemployed workers, also financed by some form of taxation on labor-replacing innovations.

Even if we could get a safety net in place, we as human beings need more – we need to find useful things to do with our minds and hands, lest we forget how to work and become subordinate to machines. Most of us also desire purchasing power that can only come from gainful employment. If automation is not targeting problems where the scale or complexity is beyond human capacity, but is merely replacing workers who have the skills to do ordinary jobs, then we have a choice to make regarding the technologies that we want to support as consumers and citizens.

If we want human labor to remain competitive, we will need to get behind policies to reduce the cost of labor and shift some of the tax burden to capital investments that replace humans with machines. This does not at all have to be anti-technology, but could set the ground rules to encourage innovation in areas where the net benefits to society would be maximal.

E.F. Schumacher pointed out four decades ago that the choice of technology was the most critical decision that a developing country needed to make. Now technology has advanced so far and so fast that a highly developed country like the US faces the same difficult task of deliberately choosing the right technologies rather than just the biggest and most powerful technologies possible.

Author bio: Kumar Venkat is a technologist and writer based in Portland, Oregon.

New America Media, 209 9th Street, Suite 200, San Francisco, CA 94103