

# We Need a NEW VERSION OF CAPITALISM for the Jobless Future

By Vivek Wadhwa

*There are more net jobs in the world today than ever before, after hundreds of years of technological innovation and hundreds of years of people predicting the death of work. The logic on this topic is crystal clear. Because of that, the contrary view is necessarily religious in nature, and, as we all know, there's no point in arguing about religion.*

– Marc Andreessen, tech mogul

**M**arc Andreessen wrote this to me in an e-mail exchange on the effect of advancing technologies on employment. Andreessen steadfastly believes that the same exponential curve that is enabling the creation of an era of abundance will create new jobs faster and more broadly than before and calls my assertions that we are heading into a jobless future a luddite fallacy.

I wish he were right, but he isn't. It isn't a religious debate; it's a matter of public policy and preparedness. With the technology advances that are presently on the horizon, not only low-skilled jobs are at risk, so are the jobs of knowledge workers. Too much is happening too fast. It will shake up entire industries and eliminate professions. Some new jobs will surely be created, but they will be few. And we won't be able to retrain the people who lose their jobs, because, as I said to Andreessen, you can train an Andreessen to drive a cab, but you can't retrain a laid-off cab driver to become an Andreessen. The jobs that will be created will require very specialized skills and higher levels of education—which most people don't have.

I am optimistic about the future and know that technology will provide society with many benefits. I also realize that millions will face permanent

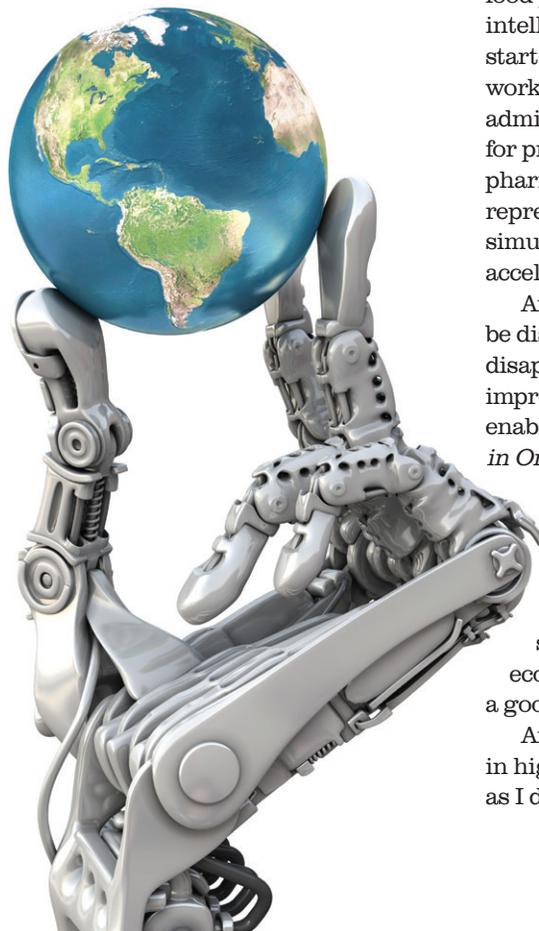
unemployment. I worry that if we keep brushing this issue under the rug, social upheaval will result. We must make the transition easier by providing for those worst affected. In the short term, we will create many new jobs in the United States to build robots and factories and program new computer

systems. But the employment boom won't last long.

Within 10 years, we will see Uber laying off most of its drivers as it switches to self-driving cars; manufacturers will start replacing workers with robots; fast-food restaurants will install fully automated food-preparation systems; artificial intelligence-based systems will start doing the jobs of most office workers in accounting, finance, and administration. The same will go for professionals such as paralegals, pharmacists, and customer-support representatives. All of this will occur simultaneously, and the pace will accelerate in the late 2020s.

Andreessen agrees that there will be disruption and that professions will disappear because of the productivity improvements that technology will enable. The libertarian book, *Economics in One Lesson*, that he wanted me to read, claims that although the unemployment of skilled workers through mechanization is a tragedy for those involved, it is an inevitable consequence of societal progress which makes the economic pie bigger and is, therefore, a good thing.

Another technologist whom I hold in high regard, Vinod Khosla, worries, as I do, about the effect of increasing



income disparity. Discussing the revolution in progress in machine learning technology, which is enabling computers to analyze information and make judgments better than human beings can, Khosla wrote:

*While the future is promising and this technology revolution may result in dramatically increasing productivity and abundance, the process of getting there raises all sorts of questions about the changing nature of work and the likely increase in income disparity. With less need for human labor and judgment, labor will be devalued relative to capital and, even more so, relative to ideas and machine learning technology. In an era of abundance and increasing income disparity, we may need a version of capitalism that is focused on more than just efficient production and also places greater prioritization on the less desirable side effects of capitalism.*

So the real debate is about the new version of capitalism: do we design this or pretend that everything will be okay as the tech elite get richer and people who lose their jobs get poorer?

The impact of advancing technologies will be different in every country. China will be the biggest global loser because of the rapid disappearance of its manufacturing jobs. It has not created a safety net, and income disparity is already too great, so we can expect greater turmoil there.

But developing economies will be big winners.

In his office in Mexico City last month, I had a lengthy discussion about the global impact with Mexican industrialist Carlos Slim Domit. He had a surprisingly good understanding of the advances in technologies such as computing, sensors, networks, robotics, artificial intelligence, and 3D printing. He spoke of the uplift of society in the developing world through broader access to information, education, health care, and entertainment—and the need to share and spread the prosperity that advancing technologies will create.

Slim Domit predicted the emergence of tens of millions of new service jobs in Mexico through meeting the Mexican people's basic needs and enabling them to spend time on leisure and learning. He sees tremendous opportunities to build infrastructure where there is none and to improve the lives of billions of

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people who presently are trying to earn enough on which to subsist.

Countries such as India and Peru and all of Africa will see the same benefits — for at least two or three decades, until the infrastructure has been built and necessities of the populations have been met. Then there will not be enough work to employ the masses.

Slim Domit's solution to this is to institute a three-day workweek so that everyone can find employment and earn the money necessary for leisure and entertainment. This is not a bad idea. In the future we are heading into, the cost of basic necessities, energy, and even luxury goods such as electronics will fall low enough to seem almost free — just as cell-phone minutes and information cost practically nothing now. It is a matter of sharing the few jobs that will exist in an equitable way.

The concept of a universal basic income is also gaining popularity worldwide as it becomes increasingly apparent that declining costs and the elimination of bureaucracies make it possible for governments to provide citizens with income enough for the basic necessities. The idea is to give everyone a stipend covering living costs and to get government out of the business of selecting what social benefits people should have. The advantage of this approach is that workers gain the freedom to decide how much to work and under what conditions. Enabling individual initiative in the work that people pursue in fields ranging from philosophy and

the arts to pure science and invention will result in the enrichment of their cultures in ways we can't foresee.

In his book *Rise of the Robots*, Martin Ford says that a basic income should be tied to measures such as gaining education, performing community service, or participating in environmental projects. This might motivate people to work instead of spending all of their time in holographic worlds. But it would get government back into the business of unnecessarily deciding what is right for individuals.

Another opportunity is for governments to direct labor to rebuilding the crumbling infrastructure of cities. With sensors, new nanomaterials and composites, and 3D-printing technologies, we could be building massive smart cities that use energy more efficiently and provide a better quality of life for their inhabitants. Think of the futuristic cities we saw in science-fiction movies. Infrastructure projects such as these would require all sorts of skills that laid-off workers could be retrained for.

Another potential solution, the brainchild of Internet pioneer Vint Cerf and entrepreneur David Nordfors, is to develop A.I. software that matches jobs to the skills, talent, passions, experiences, and values of each individual on the planet. They say that there is an almost infinite amount of work that needs to be done and that only a fraction of all human capacity is being used today.

People hate their jobs, consequently losing tremendous amounts of productivity. With jobs tailored to a person's passions, we could create a work environment in which people give 100 percent of their capacity to work and the economy expands because more is being done. This is indeed a utopian dream, but it's something we can and should aspire to.

In the future, problems and possibilities are endless. We need to be prepared and to develop a new version of capitalism that benefits all. **N**

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