Dealing with Robots and other Realities

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The digital transformation of our economies demands a different approach to education, both at the school and college levels
- S Chandramohan

A few months back Amazon advertised that they needed to recruit 800 people in addition to 200 robots. In recent times, changing technologies and geographic shifts in production have been posing challenges as well as providing opportunities to the entire working population to unlearn and learn skills.

Technology driving a change in jobs over the last three decades in advanced economies has seen labour-intensive sector jobs move to the emerging markets.

However, according to the policy brief released by Unctad last year robots could take away two-thirds of the jobs in developing countries too.

The big five

Today's five largest global companies are: Apple, Alphabet (Google), Microsoft, Amazon and Facebook. (Tencent replaced Facebook recently). They employ around 7,20,000 people. A decade ago, the big five were completely different: PetroChina, Exxon Mobile, General Electric, China Mobile and Industrial and Commercial Bank of China. They employed around 1.3 million people. What a decade can do!

Today's five biggest entities are all technology companies. Their market capitalisation is 30 per cent higher than that of the top five a decade ago; and they have achieved this with a whopping 44 per cent less staff. This has a large impact on labour markets and jobs.

The shift, of course, has been going on for some time. It's been driven by a succession of technologies — the internet, the cloud, big data, robotics, machine learning, and now artificial intelligence. Clearly, we are in the midst of a digital economic revolution. Things like cloud computing and artificial intelligence did not even exist five years back.

We are in the midst of a digital economic revolution that is driving massive shifts in jobs and the labour market

Tectonic shifts

Some airports abroad have only a kiosk to issue the boarding pass, another to punch out the luggage tag, and a computer screen that helps the passenger place the luggage on the conveyor belt. There are no human beings.

Andrea Danti/shutterstock.com Human hand touching an android hand.

Banks are opening branches with no human employees, drones are delivering packages in small European towns, and robots are changing the landscape for manufacturing jobs

The third largest retail bank which is a subsidiary of ING Holland has only digital branches in Germany where no human beings are employed. The parent bank intends to close down 600 Belgian branches by 2021 and cut 7000 jobs.

In smaller towns in Europe drones are being used to deliver consignments. In developed economies, Industry 4.0 systems are altering the landscape for manufacturing jobs. Flexible robots that perform assembly and packaging operations, data-driven quality control systems, 3D printers which could make assembly redundant, and entire supply chain monitoring through network are slowly decreasing the opportunity for workers who perform simple repetitive tasks, while creating opportunities in newer areas such as 3D computer-aided design, robot coordinators, data modelling interpretation engineers and data analysts. The shift is happening slowly in India due to volume, cost and resource constraints.

Elon Musk claims that using mechanically propelled capsules (hyperlube) would enable people to cover the distance of 320 km from New York to Washington in 30 minutes using tunnels; he also wants to move into the tunnelling business.

Ant, an affiliate of online shopping giant Alibaba, has a loan portfolio of over $5 billion with more than 20 billion digital payments. Business analytics based upon the data available on the Alibaba site was smartly used. Data analytics is being extensively used in several leading audit firms to check the robustness of systems and processes in companies.

Pushing skilling

Distribution at the product and process levels, and a change in the business model itself in the manufacturing and service sectors are

forcing the people to hone their skills.

Thanks to the shift to a digital mode of distribution, the location of the manufacturing facility in the place of consumption in certain sectors is slowly losing relevance. We see already the trend of established companies shifting their base back to advanced countries.

The economy has perhaps reached a point where it produces enough in principle for everyone, but where the means of access to these services and products — jobs — is steadily declining. We are perhaps entering into an era where the emphasis is more on distribution and how people get a share in what is produced.

The autonomous economy is steadily digesting the physical economy and the jobs it provides. The current transfer of jobs from the physical to the virtual economy is a different sort of offshoring, not to a foreign country but to a virtual one. If we follow recent history we cannot assume that these jobs will be replaced either.

The shift in skills and consequently even reduction in employment opportunities has huge implications across the human spectrum. In the past, employees learned to gain skills for a career; now the career itself is a journey of learning. The new approach to recruiting may focus on capabilities rather than qualifications determined by degrees.

In the current scenario, what should our education system do?

Educational systems must be revamped to provide the skills-sets and job-specific capabilities required in this digital age

Way forward

We need to revamp our education system at the school level as well as at the college level and prepare for the digital age. The education process should seek to provide broader skill-sets and job-specific capabilities, close the IT skills gap and offer new formats for continuing education. According to the Boston Consulting Group, universities should increase the number of interdisciplinary study programmes that integrate IT and engineering, building on current programmes in business informatics and business engineering. Traditional study programmes, such as mathematics and physics, should include additional IT-related and basic engineering coursework.

The good news is that an explosion of high-quality, low-cost content offers organisations and employees ready access to continuous learning. Thanks to innovators such as Khan Academy, Udacity, Udemy, NovoED, edX and host of others, s new skill is often only a mouse-click away.

It is also important that we train teachers both at the school and college level, so that they in turn are able to teach their students the skills required for a digital age.

We have a huge opportunity to be leaders in innovating our education system in line with technology and trends that will have a positive effect on growth and employment. ■

This article is authored by S Chandramohan, President and Group CFO of TAFE; this piece was also published by the Hindu Business Line.