Industry 4.0, employment and skills

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COMMENT

Unemployment in South Africa, according to Derek Yu of the University of the Western Cape, is "shockingly high" and a deeper analysis reveals an even scarier picture: chronic joblessness and worrying details about the country's youth unemployment statistics.

Yu reports that 39% of all unemployed South Africans have never worked before and, among young people, this figure is even higher – at 60.3%.

In addition, the elderly face the problem of long-term unemployment after they lose their jobs. A greater proportion of them last worked more than five years ago : 47.4% for 50-65 year-olds.

Despite policies such as the 2011 New Growth Path to create five million jobs and reduce unemployment to 15% by the end of 2020, only 2.2-million jobs have been created since and unemployment is sitting at 27.7%. This compared to the World Bank's 2016 average unemployment rate for all upper and middle-income countries of 6.2%.

6.17-million South Africans are currently unemployed and "even more concerning is that the annualised unemployment growth rate of 4.8% is double that of employment growth (2.4%)".

Yu suggests that, to save the situation, the government might have to make difficult choices: "accepting that certain age groups, above youth age are unemployable and need poverty alleviation interventions" and that government's focus should be on "facilitating job opportunities for those aged between 15 and 29 who account for nearly half of the total unemployed".

Artificially created jobs are often associated with very low pay and the least job satisfaction. Arguments already abound about the minimum wage, with labour unions wanting it raised and employers arguing that, to reduce unemployment, the minimum wage has to be virtually abolished. What is the quality of the jobs we are talking about, though? Shouldn't we care?

The world is currently going through its fourth industrial revolution, Industry 4.0. In the first, steam and water powered machines began to be used in factories to weave cloth, for example, putting the rural cottage industries out of business. Mass production of motorcars such as the Model T Ford followed in the second revolution, driven by the widespread availability of electrical power.

Then along came electronics, computers and advanced control of automatic machines and robots, which put the manual workers in factories on the streets, turning parts of traditional automotive cities, such as Detroit into ghettos.

Today we have Industry 4.0, which advances the use of the Internet to connect and communicate with and between systems, machine and components to enable further transparency, autonomy and optimisation of factories and production plants. It is already being implemented in upper and middle-income countries and aspects of it are arriving on our shores, too.

Through all of these revolutions, working people have feared the change, arguing that factories/machines/robots/The Internet will replace them. Yet today, unemployment in highly industrialised nations is low: 4.5% in the US and UK and 3.9% in Germany, while the rate in recession-hit Japan is lowest of all, at 3.6%.

These statistics suggest that the advance of industrialisation is not the cause of high unemployment in South Africa.

In addition, wages in the industrialised nations are significantly higher and, while poverty exists, it is less extreme. Why? Because working people are properly trained to do proper jobs involving the available technologies.

In his talk on the convergence of the Industrial Internet of Things and PLM software delivered at the AMD conference earlier this month, Charles Anderson of productONE pointed out some interesting ways that Internet access and artificial intelligence, both central tenets of Industry 4.0, could be used to assist people towards higher productivity and skills levels.

"Through augmented reality, it is possible to use technology to help tradesman such as welders to work at much higher quality standards and productivity levels. This can help to transform our industry: creating jobs without sacrificing the high quality of the required products," says Anderson, adding, "augmenting people's skills rather than replacing them with automation technology enables people to remain competitive … In the South African context, such technologies can help overcome our skills challenges while creating jobs and improving productivity."

The tools involved in implementing the likes of augmented reality technologies – Microsoft HoloLens, Tablets and Smartphones – are far more 'youth-friendly' than the hacksaws and files associated with past industrial training programmes, as are the training methodologies. If made accessible, our youth are sure to respond.

To resolve our unemployment issues, we cannot simply close our eyes and wait for economic growth to miraculously return. Let's embrace the new technology, use our youth's love for all things Internet-connected to develop high-level training courses.

Then we can implement locally customised versions of Industry 4.0 to better produce what we want and need while creating real jobs with real prospects. ❑