

Demystifying the Fourth Industrial Revolution

By William Shoki

William Shoki is a writer, researcher and law student at the University of the Witwatersrand.



The author argues that capital has always rolled out new technologies, and will continue to do so because it's driven to increase profits; the scale and impact of technology on society is shaped by the antagonism between the interests of labour and the interests of capital, chief of which is maximising profits. The Fourth Industrial Revolution is not a new or sudden arrival. Capital will

always introduce enough automation to keep labour costs down and profits high. However, this does not signal an end to traditional workers' demands.

In South Africa, 'The Fourth Industrial Revolution' is proving to be a catchphrase with tiresome longevity. In a radio interview not so long ago, the prominent South African columnist Peter Bruce exclaimed, "We're actually in the middle of it, and we've done nothing about it!"¹ To be fair, President Cyril Ramaphosa has in fact established a commission tasked with recommending policies and strategies to prepare for this "new frontier" if that counts as doing something.

While Ramaphosa will chair the commission, some of its members are high-profile executives such as Calvo Mawela, the CEO of satellite television operator MultiChoice as well as Shameel Joosub, CEO of mobile communications giant Vodacom.

It is well known that Ramaphosa has a penchant for tackling issues by assembling high level task teams of "experts" — credentialed business executives, academics and politicians. In classic Ramaphosa fashion, the effects of technology on the labour process and

commerce are a puzzle, solvable only if the right people are involved. Yet, part of why the visible evolution of technology happens so haphazardly and with a sense of menacing rupture comes by shrouding its underlying drivers in a mystery knowable only to these experts.

When South Africans started to realise that major banks had for the past year quietly retrenched workers in apparent efforts to 'digitize', anxieties about automation peaked. In a country with already staggering levels of unemployment, the panic is understandable. Obviously, real changes in technology are happening and earlier ones are becoming easier to adopt. The problem is that as we spend all our energy trying to understand the scientific intricacies of these developments, the balance of power that determines their pace and extent stand unnoticed.

If we understand capitalism as fundamentally concerned with maximising profits within fiercely competitive markets then the profit motive is what drives the introduction of technology, with the surrounding market pressures determining when such implementation is appropriate. Corporations will not always roll out new technologies from their advent, nor just because they improve productivity. Only when technology increases profits by reducing costs will it become worthwhile, that is, when the machines are cheaper than the workers they would replace.

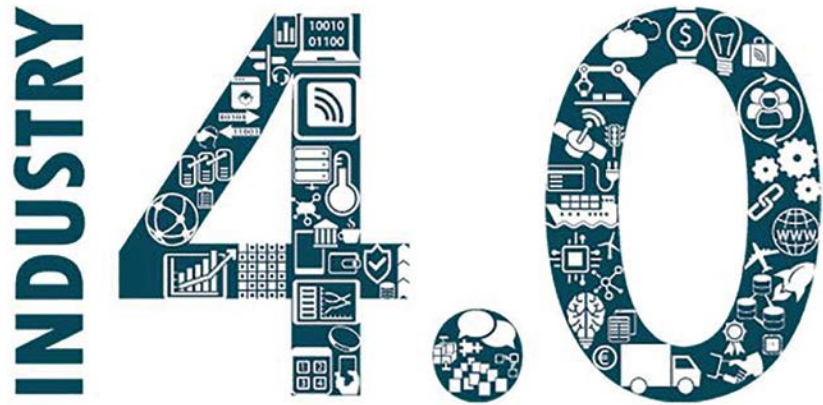


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This raises the predictable view that surely it must *always* be cheaper to use machines instead of humans — until one also realises that this cannot be the case given that before Ramaphosa’s now frequent invocations of the phrase (although to his credit he only mentioned it twice in the post-election State of the Nation Address), the onset of the Fourth Industrial Revolution has actually been with us since the dawn of the new millennium when optimistic futurists started trumpeting it. Despite that, most industries almost 20 years into the 21st century preferred to employ real people. The turning point, which is revealing enough, was in the hangover of the 2008 financial crisis when the use of machines climbed.²

To better grasp the march of technological change — which upon scrutiny really shows itself to happen in fits and starts — it is helpful to go back to one of the earliest, and as will be argued, most prescient theorist on the role of technology under capitalism: Karl Marx. For many, Marx’s name probably orbits around those of supposed technosceptics such as the infamous Luddites — the 19th century English textiles



workers who destroyed machinery as a protest method — than it does around those who would encourage technological progress. However, Marx viewed the productive efficiency created by technology as opening new possibilities, including saving people from the drudgery of modern work. In the *Grundrisse* (Marx’s collection of rough notebooks published only after his death), he had this to say about machinery:

The free development of individualities, and hence not the reduction of necessary labour time so as to posit surplus labour, but rather the general reduction of the necessary labour of society to a minimum, which then corresponds to the artistic, scientific etc. development of the individuals in the time set free, and with the means created, for all of them. Capital itself is the moving contradiction, [in] that it presses to reduce labour time to a minimum, while it posits labour time, on the other side, as sole measure and source of wealth.

In short, Marx envisioned that the development of machinery would render the production of goods and services so inexpensive that it could

provide fertile ground for a post-capitalist society. Part of this thinking has found contemporary expression in the slogan of Fully Automated Luxury Communism, a creed that champions technological expansion to abolish work, end class distinctions and create a post-scarcity world of comfort, relaxation and luxury. This is a position advanced in a recent book by Aaron Bastani, the co-founder of the left-wing British media organisation, Novara Media. Bastani argues that rising technology presents a threat to capitalism, breaking its internal dynamics which depend on scarcity.³

Still, having spirited faith in technology alone to positively transform society can become as unhelpful as having doom and gloom misgivings about its place within it. Both surrender to what the Frankfurt School critical theorist Herbert Marcuse called a “technical rationality”.⁴ Per Marcuse, this rationality develops when technology and its instrumentality become a superimposing logic, one that moulds technology as a force unto itself rather than being situated in and limited by a prevailing social, political and economic context.

Technology, as with everything in a classed society, is relational. Whatever impact technology has on society is shaped by the antagonism between the interests of labour and the interests of capital, chief of which is maximising >>



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profits. But as Marx explained, technology can complicate the pursuit of profit as much as it benefits it. At the heart of this internal contradiction is Marx's value theory,⁵ which at its simplest posits that if uninterested in making a profit, a firm would only recover enough money to compensate itself for the inputs of commodity production. However, seeing as they also want to pocket something extra, a new value is "extracted" over and above the inputs — but it can't be from the machinery or raw materials which are already accounted for at the point of production, and only from the labour time of the employee that transforms this matter (which is meaningless by itself), into something worth selling on the market.

The unpaid labour of workers is what constitutes this surplus value, and machines as a means of production merely contain the crystallised labour performed by other workers in the past. The function of machines is first to increase profits by pushing down labour costs while spiking productivity, made possible by paying whatever remaining workers the same as before, if not less. The conundrum for capital happens when market competition compels other firms to do the same, so gradually,

the widening availability of technology cheapens commodities and eventually shrinks the profit margins that firms can attain.

This is why technology doesn't fully realise its promise. It is in the interests of companies to park in a goldilocks zone of just enough automation that keeps profits high and reduces labour costs, all without losing the very markets of consumers that have to buy what is produced. The randomness of the scale of when and how these rollouts happen, is shadowed by the sense that "something is happening" — which is what most research is only able to definitively conclude, is simply because what ultimately happens is dictated by market pressures which chaotically fluctuate.

Grappling with the role of technology in South Africa is challenging. Consider that the lines of work often flagged to be at most risk of automation here is "low-skilled, low wage labour." The groups of workers that come to mind are probably assembly-line workers or mineworkers. That said, these sectors don't seem to be facing the brunt of automation as suddenly as others. Conversely, workers in South Africa's services industry, which include clerks, cashiers and tellers are the ones taking a hit. As it appears, it's cheaper to replace workers in these sectors, notwithstanding the fact that far-reaching labour-saving technologies in the others have existed for some time.

But if we understand this phenomenon as a matter of class power and distribution, its curious happening makes a bit more sense. Mineworkers and metalworkers have strong union histories, with the nature of the work being more amenable to cultivating sector-wide solidarities when their interests are undermined. By contrast, call-centre operators, for example, have to spend the majority of their day endlessly interacting with customers such that human interaction becomes stultifying and alienates them from their fellow colleagues. It additionally

helps that mining and manufacturing hold strategic significance in the South African economy, so resistance to sweeping and abrupt changes is more effective, at least in the short term.

Already, a host of heavyweight companies have announced plans to retrench workers in the last couple of months, most of them in media, communications and banking. Even though these announcements have attracted a flurry of media attention, what is mostly ignored are the labour struggles unfolding across the country, such as the ongoing three-month strike at Oak Valley Farm in the Western Cape over wages, housing and labour broking. Another was a devastating nine-day underground sit-in at Lanxess Chrome Mine near Rustenburg against the unfair dismissal of workers, lack of union recognition and allegations of sexual harassment (the strike eventually ended after some concessions were made).

The sad truth about labour, especially in the developing world where unemployment is rife, people are desperate and unions have lost strength and militancy — which is not helped in South Africa by our largest trade union federation, the Congress of South African Trade Unions, (Cosatu) remaining tame and tethered to the pro-business Ramaphosa alliance — is that workers remain so easily exploited that a shift to new technologies doesn't completely maximise profitability, not always. As a paper from the Center for Global Development points out, "given widespread low-skilled manual routine work, work tasks that are prevalent in developing countries are easier to automate from a technological viewpoint," but at the same time, "labor is cheaper than in high-income countries, thus more competitive vis-à-vis machines, and there is thus less of an incentive to automate".⁶ In other words, the contradiction of automation in the developing world is that it is simultaneously more technologically feasible, but less economically so.



What is clear is that despite the chorus of complaints typically levelled by companies in South Africa about suffocating labour laws, they remain lax enough for the traditional challenges of the labour force to greatly prevail. And so even the infamous, aforementioned Luddites, viewed in history as oppositional to technology, were misinterpreted — and were originally just modestly engaged in class struggle hitting at the heart of labour’s fundamental relation to capital. According to the great Marxist historian, Eric Hobsbawm, they were, “using attacks upon machinery, whether new or old, as a means of coercing their employers into granting them concessions with regard to wages and other matters”.⁷

Poor working conditions, low wages and constraints on organising persist, with new challenges to workers’ power coming not by any outward and concerted effort from capital, but through a stealthy, mutating neoliberalism that brands job precarity and insecurity as labour “flexibility” and “freedom.” The move to the informalisation and casualisation of work sees the traditional risks of capitalist enterprise being directed away from capital and onto labour. This turn towards “responsibilization” undergirds much of what is being said about the Fourth Industrial Revolution too.

Tshillidzi Marwala, Vice-Chancellor of the University of Johannesburg and deputy to Ramaphosa on the commission, recently wrote that, “we need to educate our people so that they are able to understand these developments ... Different skills are required; the 4IR demands critical thinking rather than memorizing facts.”⁸

True as that may be, the regurgitated soundbites imploring people to upskill in order to prepare for its arrival is as political theorist Wendy Brown describes, “the moral burdening of the entity at the end of the pipeline”.⁹ Individuals become liable for

undertaking the necessary strategies for surviving these structural shifts in the economy over which they exert little control, thereby becoming the “only relevant and morally accountable actor”.¹⁰ The role of capital, the agents precipitating these shifts, tectonic or otherwise — is obfuscated, and technological change is rationalised as purely a natural and inevitable process for which individuals must adapt or die.

What is to be done? Figuring that out is tricky. To be sure, properly understanding the direction of automation in South Africa is a worthwhile endeavour since much too much of the discourse recycles the trends happening in North America, Europe and East Asia when they don’t always comfortably apply to our situation. At the very least, it suffices to say that whatever ends up happening cannot solely be understood as an indomitable march of progress that leaves all helpless in its wake. Technology *can* be wielded positively, it depends on who’s doing the wielding — and so the answer really comes back to reviving a mass struggle politics in South Africa capable of articulating programmes centering jobs and living conditions, with technology featuring only as the means to *make* things better, not the ends that pretends things *are* better.

If the South African Left ever gets its house in order, we will be prepared enough for the havoc outside. Getting too swept up in the Fourth Industrial Revolution buzz means surrendering to technical rationality, the consequence being that capital is well-placed to manufacture consent for the new world that comes, under the guise of “it’s just the way things are”. While changes trickle in, we could consider agitating for cushions like a Basic Income grant as some on the Left have proposed — but even then it must be on the terms of labour to be a “non-reformist reform,” and not on the terms of whatever the Silicon Valley equivalent is here.¹¹

To do that, we must in any case

rebuild the vision of radical and emancipatory alternatives, the world that comes is as contestable as ever. To quote Marcuse, “Progress is not a neutral term; it moves toward specific ends, and these ends are defined by the possibilities of ameliorating the human condition”.¹² Technology presents new possibilities for the world we want to live in, ours is the challenge of specifying what that world is, and how we get there.

This article was first published in “Africa is a Country.”

ENDNOTES

- 1 Radio 702, “Can Nzimande and science ministry drive the 4th Industrial revolution?” Interview with Peter Bruce (18 June 2019). Available at: <http://www.702.co.za/articles/352042/can-nzimande-and-science-ministry-drive-the-4th-industrial-revolution>
- 2 IFR, “Global industrial robot sales doubled over the past five years,” *IFR Press Releases* (18 October 2018). Available: <https://ifr.org/ifr-press-releases/news/global-industrial-robot-sales-doubled-over-the-past-five-years>
- 3 Aaron Bastani, *Fully Automated Luxury Communism* (London: Verso Books, 2018)
- 4 Herbert Marcuse, *One Dimensional Man* (London: Routledge, 1964)
- 5 See: David Harvey, “Marx’s refusal of the labour theory of value,” *DavidHarvey.org* (14 March 2018) Available at: <http://davidharvey.org/2018/03/marxs-refusal-of-the-labour-theory-of-value-by-david-harvey/>
- 6 Lukas Schlogl and Andy Sumner, “The Rise of the Robot Reserve Army: Automation and the Future of Economic Development, Work, and Wages in Developing Countries,” Centre for Global Development Working paper 487 (July 2018). Available at: <https://www.cgdev.org/sites/default/files/rise-robot-reserve-army-automation-and-future-economic-development.pdf>
- 7 Erik Hobsbawm, “The Machine Breakers,” *Past and Present* No. 1 (Feb 1952), pp. 57-70.
- 8 Tshillidzi Marwala, “The fourth industrial revolution and the prospect of human irrelevance,” *Sunday Times* (23 December 2018). Available at: <https://www.timeslive.co.za/sunday-times/opinion-and-analysis/2018-12-23-the-fourth-industrial-revolution-and-the-prospect-of-human-irrelevance/>
- 9 Wendy Brown, *Undoing the Demos: Neoliberalism’s Stealth Revolution* (New York: Zone Books, 2015)
- 10 Ibid.
- 11 See: Erik Olin Wright, “Basic Income as a Socialist Project,” Paper presented at the annual US-BIG Congress (4-6 March 2005). Available at: <https://www.ssc.wisc.edu/~wright/Basic%20Income%20as%20a%20Socialist%20Project.pdf>
- 12 Marcuse, *One Dimensional Man*, p. 18. **NA**