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Initial Post

by Demian Berisford-Maynard - Monday, 15 August 2022, 5:43 PM

An introduction to Industry 4.0

The 4th Industrial Revolution, refers to advances within the IT sphere, and how this advances all spheres of the established economy (Rose et al, 2015).

The 4(IR) could be define as any tech that focuses on further advancing and accentuating existing technology from the 3rd Industrial Revolution.

All things futuristic are included, like Nanotechnology, Artificial Intelligence, Internet of Things and Autonomous Vehicles.

Industry 4.0 currently only pervades through highly developed economies. The majority of the 2nd World and 3rd World countries are lagging (Bonciu, 2017) , with a single exception in the People's Republic of China (Da Xu et al, 2014).

Due to the highly academic nature of the 4(IR), countries with a lack in education, may not benefit from the boom (Spöttl, G. & Windelband, 2021).

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Bonciu, F., (2017) Evaluation of the impact of the 4th industrial revolution on the labor market. *Romanian Economic and Business Review*, *12*(2) : 7-16.

Da Xu, L., He, W. & Li, S., (2014) Internet of things in industries: A survey. *IEEE Transactions on industrial informatics*, *10*(4) : 2233-2243.

Rose, K., Eldridge, S. & Chapin, L., (2015) The internet of things: An overview. *The internet society (ISOC)*, 80:1-50.

Spöttl, G. & Windelband, L., 2021. The 4th industrial revolution–its impact on vocational skills. *Journal of Education and Work*, *34*(1) : 29-52.

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Re: Initial Post

by Doug Millward - Thursday, 25 August 2022, 3:15 PM

Hi Demian
you make some very good points in your post. As I replied elsewhere, arguably the developing world benefited from not going through the wired infrastructure communications phase and jumped straight to digital, cellular comms and arguably has adapted and adopted that technology much more closely than say the US. Could we learn from this and adopt Industry 4.0 in the same way? Which parts I 4.0 are most relevant to the developing world - and which parts can be ignored?

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Re: Initial Post

by Uvaraj Balasubramaniam - Saturday, 27 August 2022, 4:08 AM

Hello Demian,

Thanks for sharing your thoughts on the topic; I agree with your opinion of Industry 4.0. There are risks associated with nanotechnology, artificial intelligence, the Internet of Things, and self-driving cars, to name a few of the other futuristic technologies that have advanced. In the case of autonomous vehicles, for instance, there have been numerous reports of accidents and widespread misuse of the technology. (WashingtonPost, 2022)

Agreed, many developing nations lag far behind the industrial revolution 4.0; these advances are directly related to GDP growth. (Roy 2019)

Reference:
1. Katica, R (2019), How is the Fourth Industrial Revolution changing our economy?

Available from: https://www.weforum.org/agenda/2019/11/the-fourth-industrial-revolution-is-redefining-the-economy-as-we-know-it/ [Accessed Aug 26 2022]
2. N.D Washingtonpost, 2022 The problem with self-driving cars? Many don't drive themselves. Available from: https://www.washingtonpost.com/opinions/2022/06/26/problem-with-self-driving-cars-many-dont-drive-themselves/ [Accessed Aug 26 2022]

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Re: Initial Post

by Beatrice Mutegi - Saturday, 27 August 2022, 5:41 AM

Hello,
Thank you all for sharing your knowledgeable views.

I would like to add on to Uvaraj's post. Even though Industry 4.0's technological drivers like Artificial Intelligence, Internet of Things, Robotics, etc: have great advantages, they also bring forth major threats.
For example, if more machines were more efficient and intelligent in performing their tasks, it will result to the increase of the unemployment rate and the need for workers to be highly trained on the new technologies (Rajnai & Kocsis, 2017).

Additionally, some innovators like Elon Musk have raised some concerns on Artificial Intelligence stating it to be an "existential threat to humanity". The late physicist, Stephen Hawking, also said that, "The development of full Artificial Intelligence could spell the end of the human race." (Ventura, 2019).

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Ventura, T., 2019. Elon Musk & the Dangers of AI. [Online]
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Peer Response

by Nkosana Mlambo - Thursday, 22 September 2022, 1:52 PM

Hi Demian,

Thank you for your post, yes, it is true that under-developed countries are lagging when it comes to the 4IR technological advancements. There is a noticeable digital divide and countries with lack of education may not benefit from the Industry |4.0, however, Industry |4.0 represents a plethora of opportunities to 2nd and 3rd world countries in transforming their education system and infrastructure which will gradually grow their economies.
There are other socio-economic factors which directly contribute to this, mainly the digital infrastructure of the country, digital literacy, poverty, and poor communities. Therefore, I think it is imperative that policymakers, government entities, partners, and 1st work countries collaborate to eradicate the divide in the digital transformation for the benefit of everyone and humanity.

Tony Blair (2019) States that:
'If the right investments are made now in Africa's digital infrastructure, with the right external engagement to foster innovation and support for their government's adaptability in responding to emerging sectors, Africa could leapfrog into the 4IR the way that China leapfrogged into the twenty-first century.'

References
Blair, T. (2019) Adapting to the 4IR: Africa's development in the age of automation. Institute for Global Change. Available from: https://institute.global/insight/governance/adapting-4ir-africas-evelopmentage-automation [Accessed 22 September 2022]

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