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THE 4TH INDUSTRIAL REVOLUTION : BUSINESS AND SOCIETAL IMPLICATIONS

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The 1st , 2nd & 3rd Industrial Revolution

1st , 2nd & 3rd IR

- ✓ The 1st IR brought with it a major shift from relying on animals, human effort and biomass as primary sources of energy.
- ✓ The 2nd IR brought major breakthroughs in the form of electricity distribution, both wireless and wired communication, the synthesis of ammonia and new forms of power generation.
- ✓ What we have recently experienced, the 3rd IR has brought us the development of digital systems, communication and rapid advances in computing power.



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The 4th Industrial Revolution

"The future is already here – it's just not very evenly distributed." William Gibson

4th IR

- ✓ The 4th IR has leverage itself around the 3rd IR (the digitization). There is a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. It represents the convergence of artificial intelligence (AI), machine learning, virtual and augmented reality, 3D printing and the internet of things into still unimagined new products.
- ✓ The convergence of technologies is what distinguishes the 4th IR to other IRs. On its part, WEF points to three reasons what we see today cannot be a prolongation of the 3rd IR
 - ✓ Velocity, scope and system impact.



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The 4th Industrial Revolution – Insights from Business Leaders

4th IR + Business

✓ Recently, Deloitte surveyed 1600 C-level executives in 19 countries to determine their perception on business and government readiness for the 4IR. Deloitte found that:

- ✓ 87 percent of surveyed executives believed that the 4th IR will lead to greater equality and stability,
- ✓ 75% indicated that business would have much more influence than governments and other entities in shaping this future.

Of interest, the survey found that:

- ✓ only 14 percent of respondents were confident that their organisations are ready to fully harness the changes associated with the 4th IR.
- ✓ 25% indicated that they have the right workforce composition and skill sets needed for the 4th IR.



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The 4th Industrial Revolution + Business+ Globalisation

Table 1: Old versus New Globalisation

| Old Globalisation/20th Century | New Globalisation/21st Century |
|--|---|
| Tangible flows of physical goods | Intangible flows of data and information |
| Flows mainly between advanced economies | Greater participation by emerging economies |
| Capital- and labour-intensive flows | More knowledge-intensive flows |
| Transportation infrastructure is critical for flows | Digital infrastructure becomes equally important |
| Multinational companies drive flows | Growing role of small enterprises and individuals |
| Flow mainly of monetised transactions | More exchanges of free content and services |
| Ideas diffuse slowly across borders | Instant global access to information |
| Innovation flows from advanced to emerging economies | Innovation flows in both directions |



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The 4th Industrial Business Implications

4th IR + Business Implication

- ✓ The Deloitte survey indicate that most businesses are not ready – they are adopting 4th IR technologies to make their operations more efficient and cost-effective.
- ✓ Earlier, we highlighted that the speed of current breakthroughs has no historical precedent, that when compared with previous industrial revolutions, the 4th IR is evolving at an exponential rather than a linear pace and that it is disrupting almost every industry in every country.
- ✓ In an environment where technology is disrupting every industry in every country, businesses that are not moving with times are at risk.



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The 4th Industrial Social Implications

4th IR + Social Implication

- ✓ WEF indicates that no less than 41% of all work activities will be susceptible to automation. Thus, 39% of SAs core skills required across all occupations will be wholly different by 2020.
- ✓ According to the UBS Chief Economist, 8-9% of jobs in SA will disappear and be replaced by robots and AI.
- ✓ In view of this, the Financial Mail recently ran the article pointing out 'that there is no concrete local research on what the quantum of job losses could be, which industries will be worst affected and what steps should be taken to mitigate the fallout'.
- ✓ This is concerning because our unemployment rate is already higher around 27% (much higher than in other emerging markets and BRICS partners i.e. India 5%; Russia 5.1%; Brazil 13%; China 4%).



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Conclusion

Conclusion [jobs likely to perish + new careers]

- ✓ In the survey that was conducted by WEF on SA HR managers, their foresee :
 - ✓ Major job losses in office and administrative roles;
 - ✓ A moderate decline in manufacturing and production; and
 - ✓ Strong employment growth across the architecture, engineering, computer and mathematics job families;
 - ✓ Information and communications technology (ICT) jobs is expected to be affected by cloud computing, even though ICT literacy and data analysis will remain in high demand in other industries.
 - ✓ WEF estimates that by 2025, SA could create 462,000 additional jobs by & going green& including in clean energy generation, energy efficiency, pollution control and natural resource management.



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Conclusion

Conclusion

- ✓ For governments, if it does not promote re-skilling, there is a serious risk that governments will have to pay a growing number of jobless population basic income grants.
- ✓ Businesses will have to invest intelligent software's and large data analytics that will provide them with insights and intelligence, to remain competitive otherwise they risk becoming obsolete.
- ✓ Curriculum in our education system would have to shift to reflect the demands of the 4th industrial revolution to remain relevant otherwise they risk producing irrelevant labour force.



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End

THANK YOU!