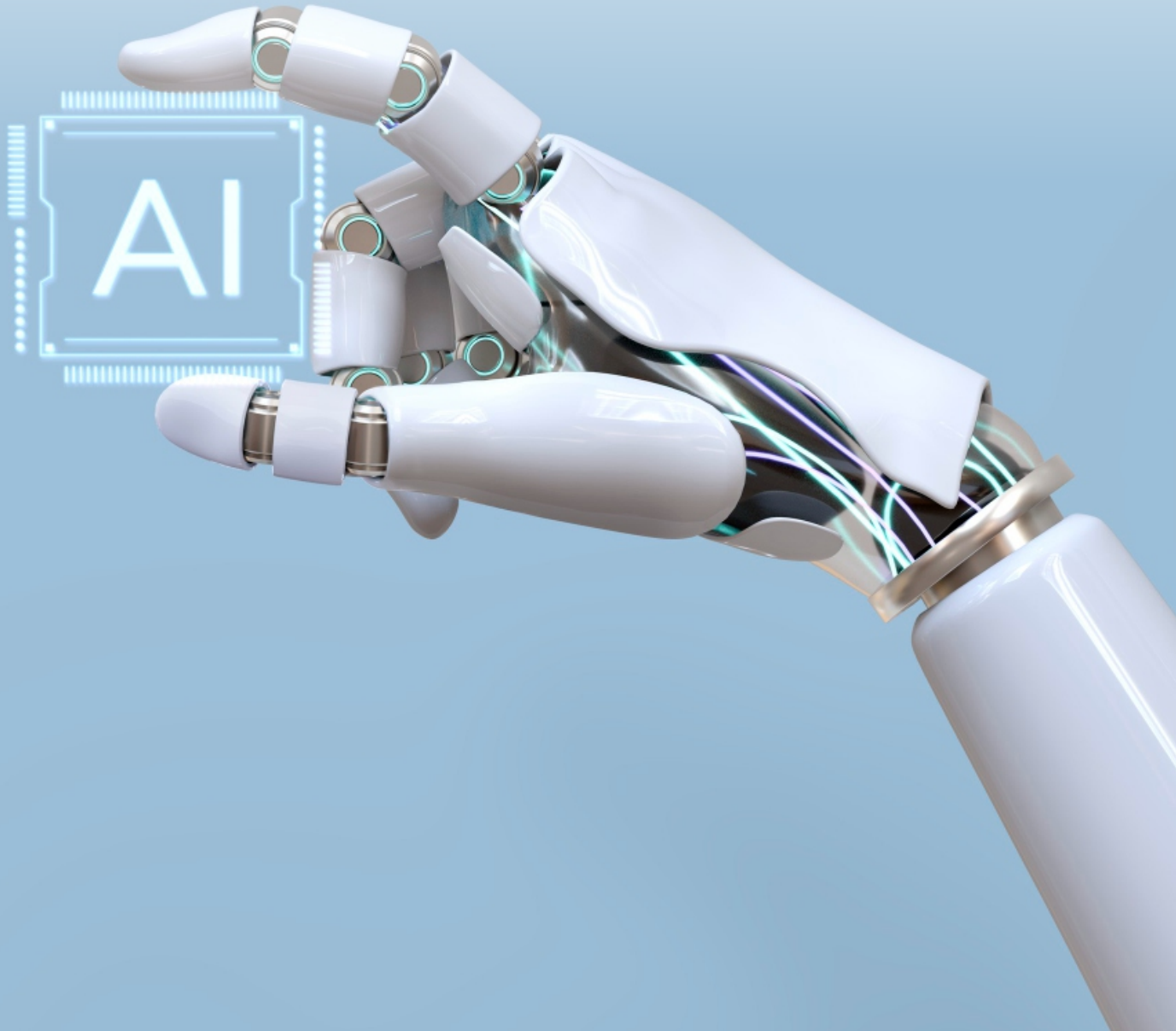
NATIONAL COMPETITIVENESS COMMISSION

"Enhancing Zimbabwe's Global Competitiveness"

State of Jobs of Tomorrow

Technology and the Future of the World's Largest Workforce and its implication to Zimbabwe.



1.0 Introduction

1.1 According to the World Economic Forum's Future of Jobs Report 2025, technological changes are expected to be the biggest driver of labour market transformation in the coming years.

2.0 Technology and the Future of the World's Largest Workforces

2.1 The Global Future Council on Jobs and Frontier Technologies defines workforce-transforming technologies as recent technological advances with the potential to rapidly transform the workforce. Such advancements would provide productivity, or capability boosts to help address society's key challenges, and have substantial or systemic risk that requires governance and/or compliance enhancements. The Global Future Council on Jobs and Frontier Technologies identified Artificial Intelligence (AI), robotics & autonomous systems, energy technology, and networks and sensing technologies as four frontier technologies having the greatest workforce transformation potential.

Artificial Intelligence

2.2 Artificial Intelligence (AI) has been especially topical since the release and rapid uptake of consumer-focused genAI models, and 86% of employers expect it will transform their organization by 2030. This technology incorporates machine learning and data processing, genAI, artificial general intelligence and agentic AI. Organizations utilize AI for efficiency, productivity, fraud prevention, and customer service, which are all key tenets of competitiveness in the business world.

Robotics and Autonomous Systems

2.3 These systems are also referred to as physical AI and can perform an expanding array of functions. Since 2020, the application of robots and autonomous systems has been steadily growing at about 5 - 7% annually. Robots and autonomous systems are associated with an estimated 40% cost reduction in the last two years, hence can positively influence competitiveness. However, in countries like Zimbabwe, uptake has been slow, with robot installations heavily concentrated in China, Japan, the US, the Republic of Korea and Germany. These countries collectively account for 80% of global robot installations.

Energy Technology

2.4 Energy technology encompasses energy generation, storage and distribution. Overall, 41% of employers expect energy technology to transform their organizations by 2030. Changing energy demands such as an increases in the use of electric vehicles and need for power in data centres could also be disruptive, with significant changes in the types of demanded jobs and skills related to energy use.

Networks and Sensing Technologies

2.5 Networks and sensing technologies enables effectiveness of other technologies, including AI, robotics and energy technologies. Developments in sensing technologies enhance the role of networks as well as other technologies like physical AI. Recent advances include affordable high-resolution cameras, light detection and ranging (LiDAR) and next-generation tactile sensors, which allow interpretation of complex environments in real time.

3.0 Large Global Workforces

3.1 Seven major job families, namely, agriculture, manufacturing, construction, business and management, wholesale and retail trade, transport and logistics, and healthcare face distinct technological transformation, with varied global impacts. Collectively, these workforces make up almost 80% of the world's workers, with differing concentrations across economies at different income levels. Table 1 below shows Workforce Transformation by Sector (%).

Table 1: Workforce Transformation by Sector (%)

Sectoral Workforce Transformation (%)							
Income Group	**Agriculture**	**Manufacturing**	**Construction**	**Business and Management**	**Wholesale and Retail Trade**	**Transport and logistics**	**Healthcare**
Low Income	57%	6%	3%	3%	14%	3%	1%
Lower - Middle	39%	12%	9%	4%	15%	6%	1%
Upper-Middle	20%	18%	8%	7%	13%	7%	2%
High	3%	13%	8%	14%	14%	10%	8%
World	26%	14%	8%	7%	14%	7%	3%

Agriculture

3.2 Agriculture workforce is the world's largest, making up a quarter of total global employment. Technology is already transforming demands on the agriculture workforce in South America, through the use of agricultural drones to transport cut banana bunches from steep hillside plantations. This has had drastic increases in worker productivity and quality improvements, leading to enhanced competitiveness of the sub-sector.

Manufacturing

3.3 Manufacturing represents the world's second largest workforce, making up 14% of total global employment. This employment is particularly prominent in some Asian countries, including China, Viet Nam, and Taiwan, China, and European countries, including Czechia, Slovenia and Hungary. Textiles, automobiles and pharmaceuticals form distinct manufacturing hubs in different countries and regions around the world. While robotics has been adopted in manufacturing processes for a long time, physical AI is increasingly enhancing the capabilities of these systems. These AI incorporations into existing manufacturing processes could transform jobs into higher-productivity roles with higher expertise requirements.

Construction

3.4 Around 8% of the world's workers are part of the global construction workforce. The combination of AI and robotics in work planning and scheduling, optimize footprint use, ensure compliance with local regulations and incorporate local comfort and safety into buildings could also transform construction roles. One example is semi-automated bricklaying machinery, which can lay bricks according to the design and specifications input by construction workers. On a larger scale, the entire 84-metre-high Kawakami dam in Mie, Japan, was completed in 2023 using robotics. Combining AI with technologies like computer vision enhances equipment monitoring, hazard detection, and quality assurance while improving logistics in construction.

Wholesale and Retail Trade

3.5 This make up around 14% of the global workforce and is predominantly urban-centric and a key entry point for women and youth in low- and middle-income countries, who are overrepresented. AI-enabled business-to-business (B2B) apps are changing how small and informal retailers restock. Across Egypt, Morocco, Kenya, Rwanda and Tanzania, small retail shops and hundreds of thousands of informal retailers now restock via B2B apps. In Zimbabwe, 'runners' have taken the wholesale and retail market by storm, leveraging on IT tools to outcompete well established formal markets. Clothing and fashion industry, Motor Spares industry and other goods are now being marketed and sold via social media in Zimbabwe.

Transport and Logistics

3.6 About 7% of the world's workers are in the transport and logistics sub-sector. AI is increasingly transforming this workforce, including through agentic AI processes that can automatically process order forms and optimize logistics. Robotics, especially drones for delivery could also transform the transport and logistics workforce. This is already seen in countries such as the United Arab Emirates, where drone delivery forms part of a smart cities plan, moving demand away from road vehicle operators towards back-end control of autonomous or semi-autonomous drones.

Business and management

3.7 The business and management workforce includes roles such as accountants, lawyers, human resource professionals, operations managers, executive assistants and business processing workers. This job family makes up around 7% of the global workforce, with higher concentrations in higher-income economies. The increasing ability to do many of these jobs remotely (alongside rising global connectivity and education rates and the growing capability of AI to perform elements of this work) creates an uncertain outlook for this workforce.

Healthcare

3.8 The healthcare workforce makes up around 3% of the global workforce, but increases significantly with country income. Agentic AI systems are now being used to automate many administrative tasks, including documentation, data entry and initial referral assessments. AI is also supporting predictive analytics, allowing healthcare professionals to have more targeted interventions. Robotics, combined with AI data processing, could also reshape the patient journey and subsequently the demands on the healthcare workforce.

4.0 Challenges and Opportunities from Transformative technologies

4.1 Clear opportunities exist to enhance the productivity of the agriculture workforce, through investment in new technologies like precision agriculture and drone harvesting. Globally, reaping the potential benefits of technology for the agriculture workforce requires enhanced technological dispersion to areas that may currently lack the investment capacity.

4.2 As transformative technologies reshape the manufacturing workforce, new comparative advantages could shift the geography of jobs, while differing investment capacity could also shape the speed at which workforces transform. Transformative technologies could enhance productivity and safety for the construction workforce, while the less predictable nature of worksites means large scale automation is less likely here than in manufacturing. Roles are still likely to evolve, however, with increasing demand for semi-automated machinery skills and technician capabilities.

4.3 Opportunities for the retail, wholesale and logistics workforces are inherently linked. There are significant opportunities to increase access to markets and jobs, especially for small business owners in lower-income economies where distribution network structures may be more

changeable. There are also efficiency opportunities with improved routing, new delivery methods and direct access to consumers.

4.4 The future of the business and management workforce will be substantially shaped by technology development and adoption choices. As agentic AI, in particular, is developed to take on more tasks, employers will decide whether to adopt it for cost savings or to enhance business capability.

4.5 Global healthcare worker shortages, alongside unmet healthcare needs, mean potential productivity gains are unlikely to be offset by large reductions in demand for healthcare workers. To realize the potential benefits for this workforce, stakeholders will need to source finance for initial investments and ensure policies enable technology to be integrated into healthcare work programmes.

5.0 Implications of Transformative Technologies in Zimbabwe

Sector	Implications
Agriculture	• Vocational training and agricultural extension services is urged to urgently integrate digital skills to prepare the next generation of farmers and farm workers. • Government and private sector initiatives to focus on promoting affordable access to technology through subsidies or leasing models for smallholder farmers. • Focus on Value Addition: As primary production becomes more efficient, job growth can be channelled into agro-processing, marketing, and export logistics, building a more robust and value-added agricultural sector. The implementation of new technologies will at most replace manual labour in farmers.
Manufacturing	• The future of manufacturing employment lies not in mass unskilled labour, but in a smaller, highly skilled workforce capable of managing, programming, and maintaining advanced technological systems. Proactive investment in STEM education and vocational training for these new roles is essential to ensure the workforce is not left behind but is empowered to lead this new industrial era.

Sector	Implications
	• The most immediate effect will be the automation of repetitive, predictable tasks. AI-powered robots excel at assembly, welding, and packaging, while advanced sensors can monitor production lines more consistently than human labour. This poses a risk to a significant number of low-skilled and medium-skilled assembly line jobs, similar to trends seen globally. Conversely, these technologies will create new, higher-value job categories, transforming the factory floor into a "smart" environment.
Construction	• The initial high cost of technology is a barrier, but the long-term benefits of reduced waste, improved speed, and enhanced worker safety are significant. The key challenge and opportunity lie in workforce transformation. • To harness this change, a strategic focus on vocational retraining is essential. Curricula need to be updated to equip the next generation of construction workers with digital literacy, data analysis, and mechatronics skills. This ensures that Zimbabwean workers are not displaced but become the essential operators and managers of a modernized, more productive construction industry, capable of building the nation's future.
Wholesale and Retail Trade	• This technological wave presents a critical chance to leapfrog infrastructure limitations. Solar-powered kiosks and reliable battery systems (energy tech) can power digital point-of-sale systems in areas with an unstable grid. Mobile money, already widespread, integrated with AI-driven logistics networks, can create highly efficient, digitally connected supply chains that serve both formal and informal traders. • The greatest impact will be on the vast informal sector. The challenge is to prevent a "digital divide" where small traders are left behind. The opportunity lies in empowering them with technology through apps for inventory management, access to digital marketplaces, and leveraging mobile data for better business decisions ensuring they evolve and remain competitive in the new trade landscape.

Sector	Implications
Transport and Logistics	• Displacement of Direct Driving and Manual Roles: The most significant long-term impact is the potential for autonomous vehicles. While not immediate, AI and sensor technology could eventually reduce demand for long-haul truck, taxi, and bus drivers. In warehouses, robotic forklifts and automated sorting systems will diminish manual handling jobs. • Creation of High-Tech Management and Support Roles: The sector will see a surge in new, specialized positions • The critical challenge is workforce transition. The key to harnessing this change lies in strategic reskilling. Vocational training to pivot on data literacy, software management, and the maintenance of high-tech systems. By proactively preparing its workforce, Zimbabwe can build a more resilient, efficient, and cost-effective logistics sector, turning a potential job crisis into an opportunity for economic modernization.
Business and Management	• The challenge for managers is the urgent need for continuous learning. The future business leader in Zimbabwe needs to be adaptable, digitally literate, and capable of steering their organization through rapid technological change. Those who embrace this will unlock unprecedented levels of efficiency and competitiveness, while those who resist risk being left behind. The role of a manager is evolving from a gatekeeper of information to a driver of innovation and a cultivator of a tech-empowered workforce.
Healthcare	• The technological shift is a potential game-changer for public health. Solar-powered clinics (energy tech) can ensure refrigeration for vaccines and power for medical devices despite an unreliable national grid. Wearable sensors can remotely monitor patients with chronic diseases, reducing hospital visits • The primary challenge is the digital skills gap within the current healthcare workforce. The critical step is proactive investment in training/upskilling nurses, community health workers, and technicians to work alongside these new

Sector	Implications
	technologies. This will not only create higher-value jobs but also drastically improve healthcare access, efficiency, and outcomes for all Zimbabweans.

6.0 Conclusion

6.1 For many workforces, including agriculture, construction, healthcare and elements of manufacturing, the focus ought to be on enabling investment and technology diffusion. The transport and logistics and wholesale and retail trade workforces, meanwhile, require efficient and supportive market structures. In the business and management workforce, an understanding of strategic workforce goals and technology-enabled workforce capacity possibilities will determine the level of potential transformation.

6.2 Enabling a future with high-productivity and inclusive jobs requires multistakeholder action from employers in private sector, government of Zimbabwe and technology solution providers.

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