



Science Forum
SOUTH AFRICA

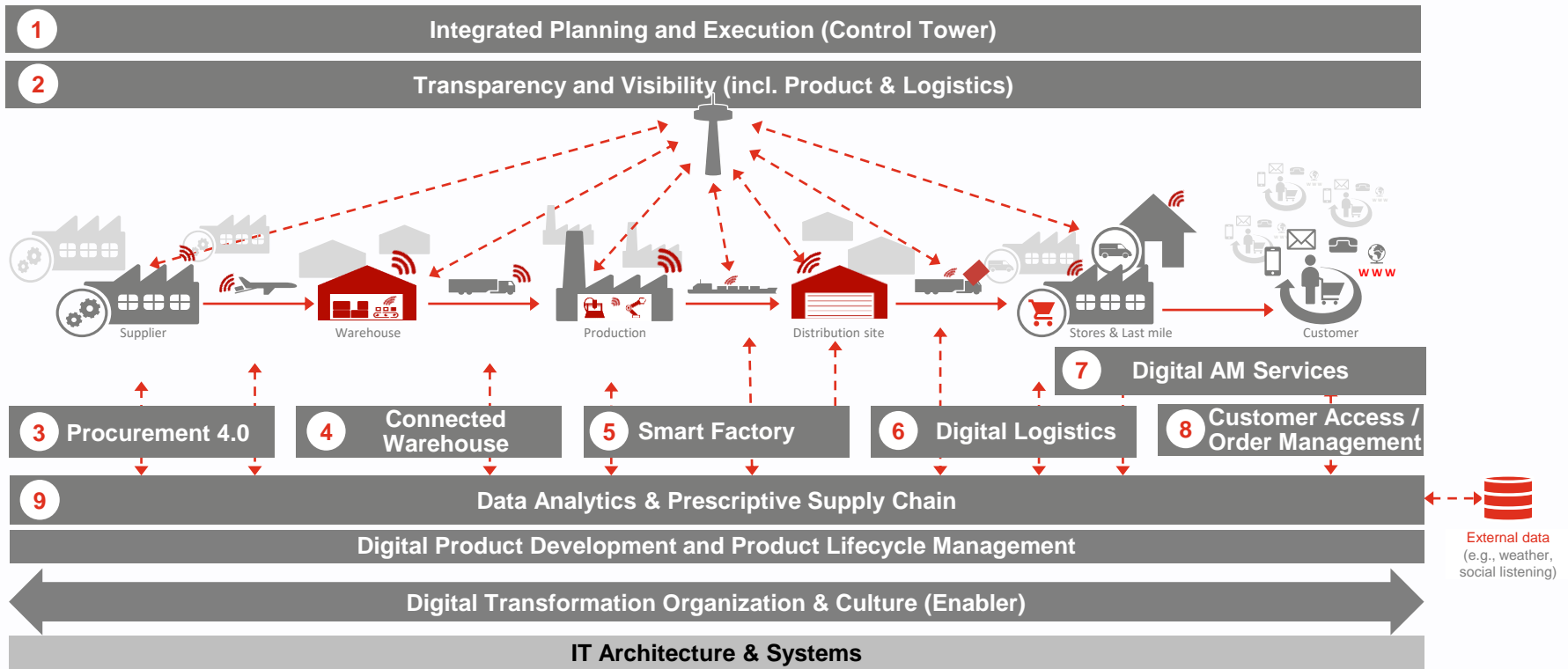


SFSA 2023

AI – The risks and opportunities to the
Manufacturing sector

Navigating the Future of Smart Manufacturing

The Factory of the future could be structured as follows...



Opportunities for Manufacturing

1. Increased Efficiency:

AI-driven automation in manufacturing streamlines processes, reducing production times and enhancing overall efficiency.

2. Quality Improvement:

AI systems can consistently monitor and maintain product quality, minimizing defects and ensuring higher standards in manufacturing.

3. Predictive Maintenance:

AI analytics can predict equipment failures, allowing proactive maintenance, reducing downtime, and extending the lifespan of machinery.

4. Cost Reduction:

Automation through AI can lead to lower operational costs by optimizing resource utilization and minimizing waste in the manufacturing process.

5. Customization and Flexibility:

AI enables agile manufacturing processes, allowing quick adaptation to changing demands and facilitating customized production at scale.



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What's the real value of AI for your business and how can you capitalise?

- ❑ Artificial intelligence (AI) can transform the productivity and GDP potential of the global economy. **Strategic investment in different types of AI technology** is needed to make that happen.
- ❑ Labour productivity improvements will drive initial GDP gains as firms seek to "augment" the productivity of their labour force with AI technologies and to automate some tasks and roles.
- ❑ Our research also shows that 45% of total economic gains by 2030 will come from product enhancements, stimulating consumer demand. This is because AI will drive greater product variety, with increased personalisation, attractiveness and affordability over time
- ❑ The greatest gains from AI are likely to be in China (boost of up to 26% GDP in 2030) and North America (potential 14% boost).

\$15.7tr

Potential contribution to the global economy by 2030 from AI

+26%

Up to 26% boost in GDP for local economies from AI by 2030

Source: [PwC's Global Artificial Intelligence Study: Exploiting the AI Revvo](#)



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Risks for Manufacturing

1. Job Displacement:

Automation by AI may lead to job displacement for certain manual and repetitive tasks, impacting the workforce in the manufacturing sector.

2. Security Concerns:

Increased connectivity and reliance on AI systems make manufacturing facilities susceptible to cybersecurity threats, posing risks to sensitive data and operations.

3. Initial Implementation Costs:

Integrating AI technologies into manufacturing processes requires significant upfront investment, which may be a barrier for some businesses.

4. Dependency on Technology:

Overreliance on AI systems without proper backup plans may lead to disruptions in case of system failures or malfunctions.



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Conclusion

- ✓ **AI has significant potential to help us grow manufacturing in SA**
 - ✓ Increasing efficiencies and reducing costs
 - ✓ Addressing the skills challenges
 - ✓ Create more meaningful and higher paying jobs
- ✓ **Potentially grow the economy by 2030 at a higher rate, by export led growth**
- ✓ **It needs to be implemented in a responsible manner to manage risks such as job displacement, data security and ethics.**
- ✓ **We need the workforce to be upskilled to take full advantage of AI***

* AI catalysing a workforce revolution, now!



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Thank you

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