



Sector Overview

Fourth Industrial Revolution

The Fourth Industrial Revolution has the potential to transform the African economy, increasing its productivity and improving its global trade. In this way, it would positively affect the well-being of African citizens. In the past, Africa did not receive the full advantage of previous industrial revolutions and this has weakened its position relative to international competitors. For this reason, the African continent must seize the opportunities offered by the 4IR, and South Africa can be one of the leading countries to lead the fourth IR in the region.

South Africa is the most advanced country in the continent in terms of innovation and technology. Despite its slowness in embracing the Fourth Industrial Revolution, it boasts one of the biggest innovative ecosystems in the continent.

South Africa is getting closer and closer to the sectors of the Fourth International Revolution, such as Artificial Intelligence, Robotics, Drones, Additive Manufacturing, and Internet of Things. However, the road is still long and, among these sectors, the one that appears to be the most competitive in South Africa is the Additive Manufacturing, as it allows SMEs in the manufacturing sector to perform their tasks more quickly, effectively, and precisely. Within Additive manufacturing, the most used technique, both globally and in South Africa, is the one of 3D printing.

In terms of 4IR implementation, South Africa exhibits both strengths and weaknesses. On one hand, the country has a strong financial and banking system, a robust legal system and a foreign policy aimed at internationalization and collaboration with other countries. On the other side, it is worth saying that some aspects have to be improved, such as the inefficient of bureaucracy, poor labor relations and a sub-skilled workforce. There is also a problem of digital literacy and skills mismatching which are clearly the result of the long and troubled process of political stabilization that South Africa experienced until the 1990s.

Nevertheless, South Africa has achieved technological, digital and innovative progress that have been the result of the South African government's desire to compete with the rest of the world for 4IR. Some of these achievements are the following:

- Since 2016, the government has adopted the Additive Manufacturing Strategy which incorporates and integrates new technologies into the sector.
- Since 2017, the South African Department of Trade and Industry has assigned a leading role to industrial production associated with emerging digital technologies.
- Since 2019, the Presidential Commission on the Fourth Industrial Revolution has been working to investigate the benefits and strategies that best suit South Africa in the fields associated with the fourth IR.

Those achievements and the support of the government have allowed South Africa to advance significantly in terms of 4IR. For instance, in South Africa hosts the biggest 3D printer in the world - called Aeroswift – which is a part of a collaboration project between the CSIR and Aerosound Innovation Centre. The 3D printer creates components for companies of the aerospace industry. Moreover, in South Africa innovative technologies are being developed in the drone sector and for the Internet of Things and the use of Big Data.

The South African industry 4.0 is focused in the following seven sectors:

1. Additive Manufacturing
2. Artificial Intelligence
3. Internet of Things (Drones)
4. Cloud Computing
5. Big Data Analytics
6. Internet-based services
7. Aerospace

Nevertheless, South Africa is still very much undergoing a Third Industrial Revolution, and many industries of the Fourth Industrial Revolution still need to be explored. This could represent an opportunity for Italian firms, which already have experience in the 4IR sectors, who are willing to expand their businesses to countries like South Africa, where there is still a lot to be done in terms of technology and innovation. Italian flagship production of machinery and technology combined with the lack of automation and innovation in some South African provinces may lead to areas of collaboration and increased trade.

If you are interested in more in-depth research into a particular sector please contact dsg@italcham.co.za