

Innovation trends in the computer and related activities sector, 2019-2021



South Africa's tech sector is spurred on by global trends toward digitalisation and datafication, accelerated in 2020 during the Covid-19 pandemic. The sector's importance lies in advancing technological capabilities, fostering digital transformation, and enabling economic inclusion in global markets.

This brief examines how much innovation happened in the computer and related activities sector from 2019 to 2021, including the types of technologies computer-related businesses used, the innovation challenges they faced, and the outcomes of their innovations.

During 2019-2021, almost 80% of businesses in the computer sector carried out activities intended for innovation, and almost all had developed product or process innovations by the end of 2021. The sector had relatively high rates of innovation activity and success compared to other sectors.

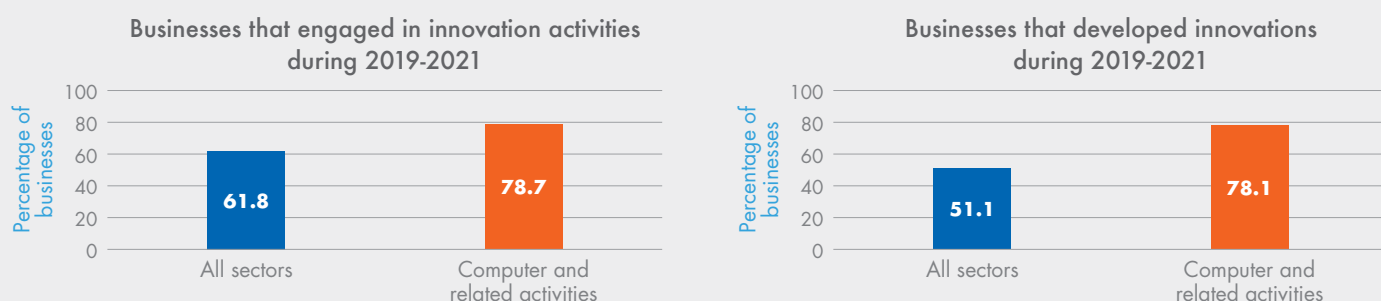


Figure 1: Percentage of businesses in computer and related activities that engaged in innovation and developed innovations.

What types of advanced and emerging technologies did businesses in the computer sector use and/or develop during 2019-2021?

Internet of Things and **business intelligence technologies** were the most widely used technologies, by 50.2% and 47.8% of businesses respectively.

A quarter of businesses in the sector engaged with **AI**, making it the most widely used of the emerging technologies (others included robotics, blockchain and VR).

Both Internet of Things and business intelligence technologies were used by about half of businesses in the sector, while AI was used by a quarter of businesses.

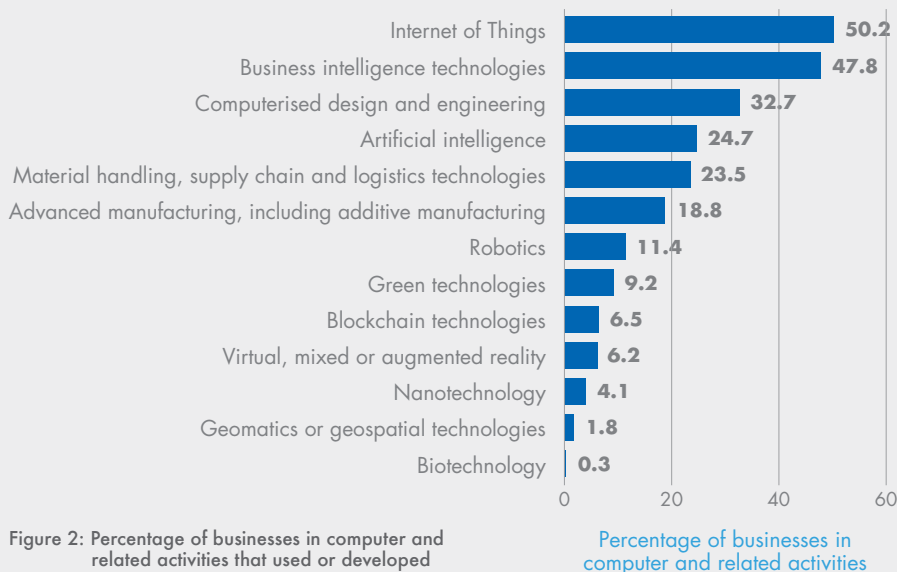


Figure 2: Percentage of businesses in computer and related activities that used or developed advanced or emerging technologies.

What were the most important barriers to innovation that businesses in the computer sector faced during 2019-2021

The most important barriers to innovation ranged across financial (**costs too high**), market (**domination of established enterprises**) and human resource (**lack of technicians**) related barriers. Each of these barriers was rated important by about one-third of businesses in the sector.

Weakness of intellectual property rights (3.3% of businesses) and **lack of infrastructure** (3.5% of businesses) were not important barriers to innovation.

High innovation costs, market domination, and lack of technicians were the most important barriers to innovation in the sector.

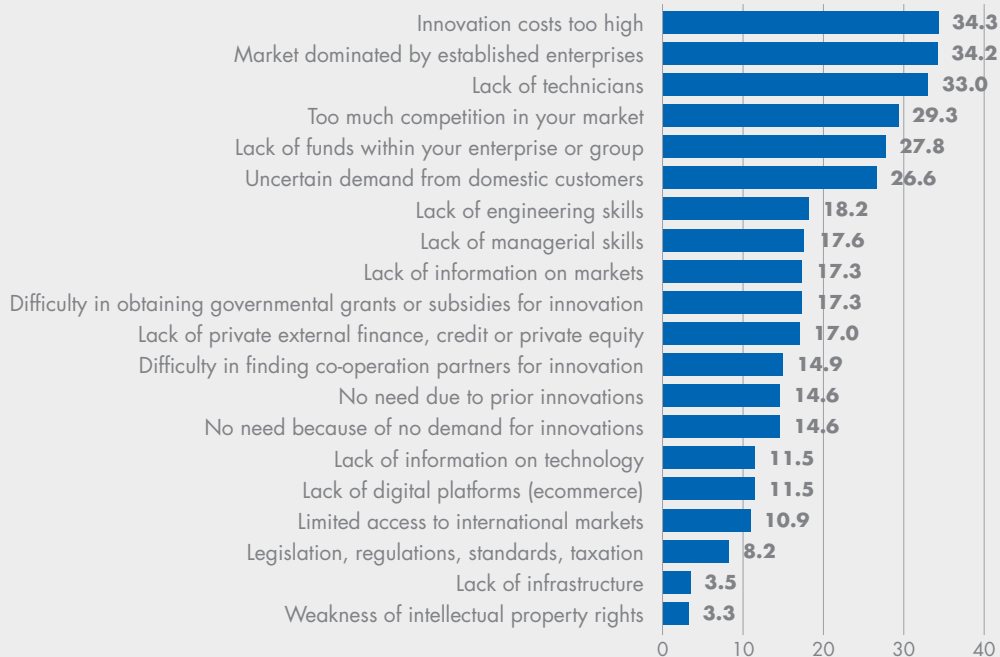


Figure 3: Percentage of businesses in the computer sector that rated barriers to innovation as highly important.

Percentage of businesses in computer and related activities

What did innovative businesses in the computer sector perceive to be the most important outcomes of their innovation(s) during 2019-2021?

Over 70% of businesses in the sector reported that an **improvement in the quality of their products** (goods or services) was a highly important outcome of their innovations. Over 60% reported that an **increased range of goods or services** was a highly important outcome.

Large proportions (over 60%) of businesses in the sector also experienced important organisational improvements, including **increased resilience and adaptability to change**, **improved working conditions of personnel**, and **improved relationships with external entities**.

Entering new export markets or increasing export market share was the least important outcome and was experienced by less than one-fifth of businesses in the sector.

The most important outcomes of businesses' innovations in the sector were related to the quality and range of their products, or organisational improvements.



Figure 4: Percentage of innovative businesses in the computer sector that rated outcomes as highly important.

Percentage of businesses in computer and related activities

About this brief

This brief is one of eight sector-specific analyses drawn from the [South African Business Innovation Survey 2019-2021](#). It provides deeper insight into innovation trends in the **computer sector**, so that businesses can compare and benchmark their innovation activities. Industry associations and policymakers can use the data in their efforts to mobilise and support innovation activities across the computer sector. Contact us: innovation@hsrc.ac.za | First published March 2024