

Digital and Green Transformation of small manufacturing firms in Estonia (Focus on Metal and Machinery industry)

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The manufacturing industry has fallen behind in digital maturity, due to the fact that it tends to be more conservative to changes and one sector can be classified as more or less digital in a variety of ways. The further major challenge is the transition to green in the context of the circular economy and stricter environmental regulations.

Compared to world-class manufacturers, smaller manufacturers struggle with short-term survival and lack of knowledge, strategy, and resources. There is a lack of clear vision on how small manufacturing company can make digital and green transformation, so called “twin transition”. This transition goes beyond Industry 4.0 by decreasing emphasis on the technology and assuming that the potential for progress is based on collaboration among the humans and machines, which is Industry 5.0. Human-centric approach in developing innovative technologies is one of the drivers of twin transition. This approach is used in establishing innovation ecosystems which facilitates cooperation among multiple stakeholders such as business, universities and other competence centres. The main hypothesis of my research is that innovation ecosystems are enablers of digital and green transformation of metal manufacturing industry in Estonia.