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PRESS RELEASE

Europe has more potential: Future technologies require better links between regions

Technological capabilities for the green and digital transition are found across Europe – but they are unevenly distributed between regions. This can lead to economic imbalances in Europe, concludes a new study by the Bertelsmann Stiftung. The study also makes clear: There is considerable untapped potential in Europe for regional cooperation in the development of new technologies for the twin transition. The Bertelsmann Stiftung provides an overview of these developments across the continent with a new detailed mapping.

Berlin, 24 April 2023. In recent years, it has become apparent that the development of new technologies is unevenly distributed across European regions. The strong demand generated by the green and digital transition for these new technologies threatens to exacerbate this development even further. To better exploit the strengths and opportunities of different regions, an overview of the capabilities and potentials for the development of green and digital technologies is needed. Where can synergies be identified? Which regions can learn from and support each other? This new study answers these questions by mapping which regions are key for the twin transition.

Technological pioneers in Europe: From Stockholm to Sicily

Stockholm stands out in the field of digitization. In the Swedish capital, technologies like 5G, internet of things and broadband were well represented in new patents in recent years. In green technologies on the other hand, a particularly strong region is around Utrecht, in the Netherlands, which has strengths in greenhouse gas capture, bio fertilizers and fuels from waste. Sicily also emerges as a digital leader in Europe. The region is particularly strong in cybersecurity, but cryptography is also a fast-growing field.

Strong national bias in the development of future technologies

The development of new green and digital technologies frequently involves inter-regional collaboration, but often ends at the national borders of European countries. In many cases, complementary technological capabilities are not linked between regions in different countries. As a result, much of the potential for developing future technologies is lost. This not only slows down the twin transition, but also worsens Europe's global economic competitiveness.

Technological cooperation to foster economic development across Europe

European regions with the highest levels of economic development produced 80 percent of patents in green and digital technologies. Thus, richer regions have more potential for developing future technologies and better prospects for further economic development. This disparity threatens internal cohesion between EU regions. At the same time, it provides an opportunity: there are plenty of options for cooperation between leading and lagging regions all over Europe to develop technologies by combining complementary capabilities. Both sides would benefit: Already patent-rich regions can diversify and exploit new economic sectors. Regions with fewer patents can also diversify their economic activities and promote innovation to, ultimately, catch up on economic performance. For example, the economically lagging region of Andalucía, which is a hidden champion when it comes to green technology,

exhibits additional potential to collaborate in developing virtual and augmented reality technology with economically leading regions in Germany and France. It also has potential with less economically developed regions in Portugal and Hungary, though it currently collaborates only with other Spanish regions.

There is substantial untapped potential in inter-regional collaboration when it comes to the development of twin transition technologies across European regions of varying economic advancement. For Europe, this means that the potential arising from cross-border technology cooperation can be used both to accelerate the dual transformation and to strengthen European cohesion simultaneously. “Policies should aim to exploit this potential,” says economist and study co-author Thomas Schwab at the Bertelsmann Stiftung, “through the support of entrepreneurship, educational reforms, research capacity-building and institutional change, to ensure local opportunities are activated and obstacles are removed that prevent the mobility of resources to the development of new twin transition technologies.”

More information
As part of the “Europe's Economy” project, the Bertelsmann Stiftung is investigating which economic, social and territorial imbalances are significant for the EU. It analyses how the structural changes associated with the digital and green transformation are affecting Europe's economy and its cohesion. The study provides information on the technological profiles of 288 European regions and their potential to develop 42 technologies necessary to master the twin transition. It was conducted jointly with a consortium of researchers from the University of Utrecht and the Austrian Institute of Economic Research (WIFO).

To the study:
https://www.bertelsmann-stiftung.de/en/publications/publication/did/technological-capabilities-and-the-twin-transition-in-europe

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