



Co-funded by
the European Union

Toolkit Zone 1 Foundations of the Green & Circular Economy

The Digital–Sustainability Nexus (Twin Transition)

Green and Circular Economy in Business by
Digital Solutions

2024-1-EL01-KA210-ADU-000251741

Co-funded by the European Union. The contents of this
publication are the sole responsibility of the authors and do
not necessarily reflect the opinion of the European Union.



AKDENİZ PANORAMA
DERNEĞİ



2.4 The Digital–Sustainability Nexus: The Twin Transition

The growing interdependence between digitalization and sustainability has reshaped how businesses operate and compete. This convergence—often called the twin transition—reflects the parallel and mutually reinforcing shifts toward a digital and green economy. In practice, it means using digital technologies to accelerate sustainability goals while ensuring that digital growth itself remains environmentally responsible (Burinskienė & Nalivaikė, 2024; European Commission, 2023a).

For SMEs, digital tools provide practical means to implement sustainable business practices efficiently. Many still operate at a basic digital intensity, relying on standard tools such as websites and social media (Burinskienė & Nalivaikė, 2024). Enhancing this capacity is essential for environmental performance. Technologies such as data analytics, automation, the Internet of Things (IoT), and digital twins allow SMEs to monitor resource flows, reduce waste, and improve productivity. They also enhance transparency, enabling firms to track emissions and sustainability performance throughout supply chains.

However, digitalization alone does not ensure sustainability. Without environmental alignment, it can increase energy demand or generate e-waste. The goal is sustainable digitalization—where technological efficiency directly supports carbon reduction, circular production, and social well-being. SMEs can achieve this through energy-management systems, smart manufacturing, green procurement platforms, and digital tools for environmental reporting and certification (Burinskienė & Nalivaikė, 2024; OECD, 2021a).

When strategically integrated, the twin transition becomes a driver of competitiveness and resilience. Digitally mature, environmentally conscious SMEs adapt faster to regulations, attract green finance, and meet consumer demand for sustainable products. By embedding digital tools within sustainability strategies, SMEs advance SDGs 9 and 12, promoting innovation and responsible industrial growth (United Nations, 2015).

The integration of digital and sustainable transitions ultimately reshapes how firms compete and grow. Within this context, sustainability has become synonymous with competitiveness—the defining logic of success in the green economy.