



Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection

13th German-Japanese Environment and Energy Dialogue Forum

Digitalization and Circular Economy in Germany

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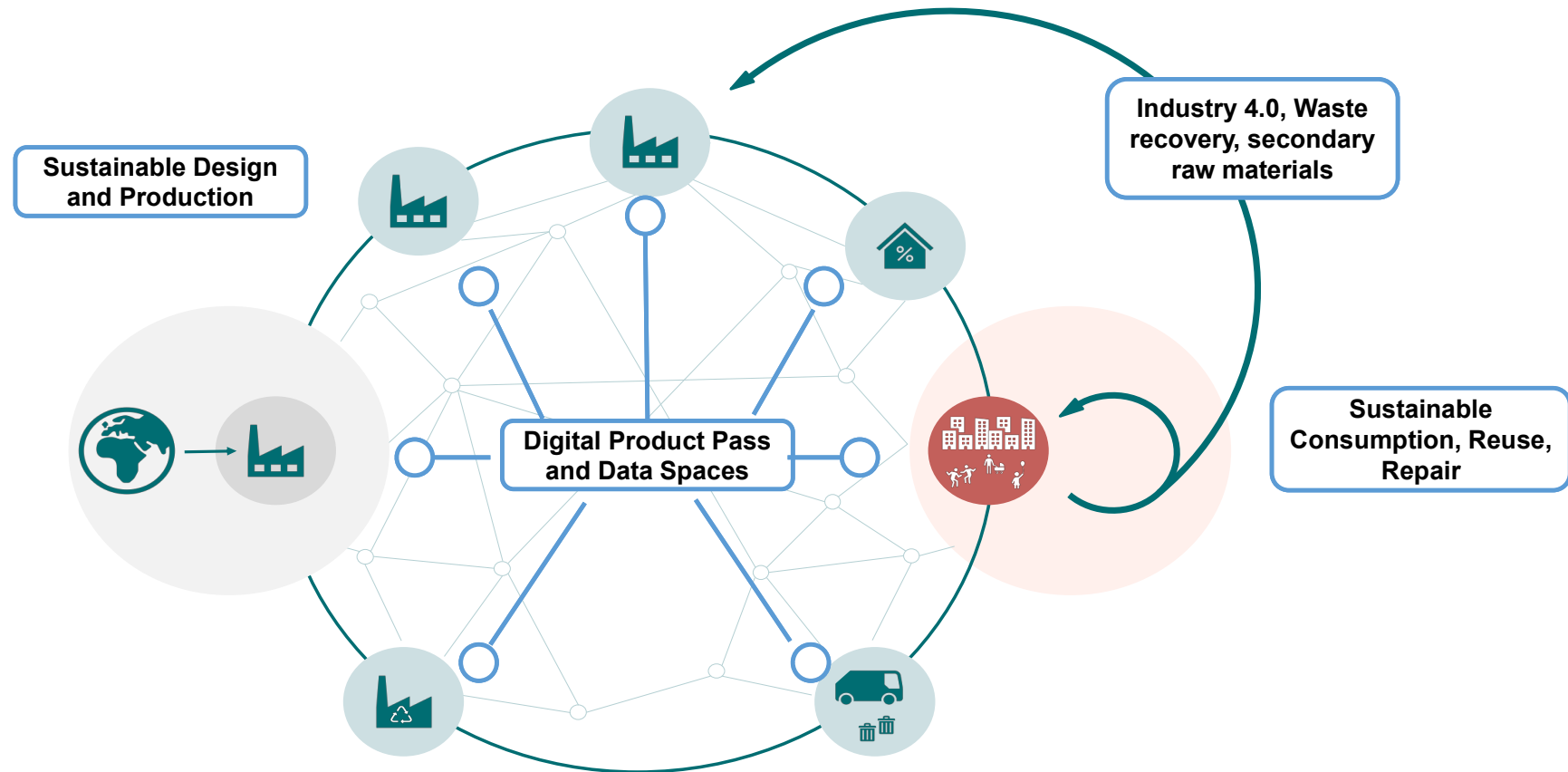
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1. Digitalization as a Leverage for the Circular Economy

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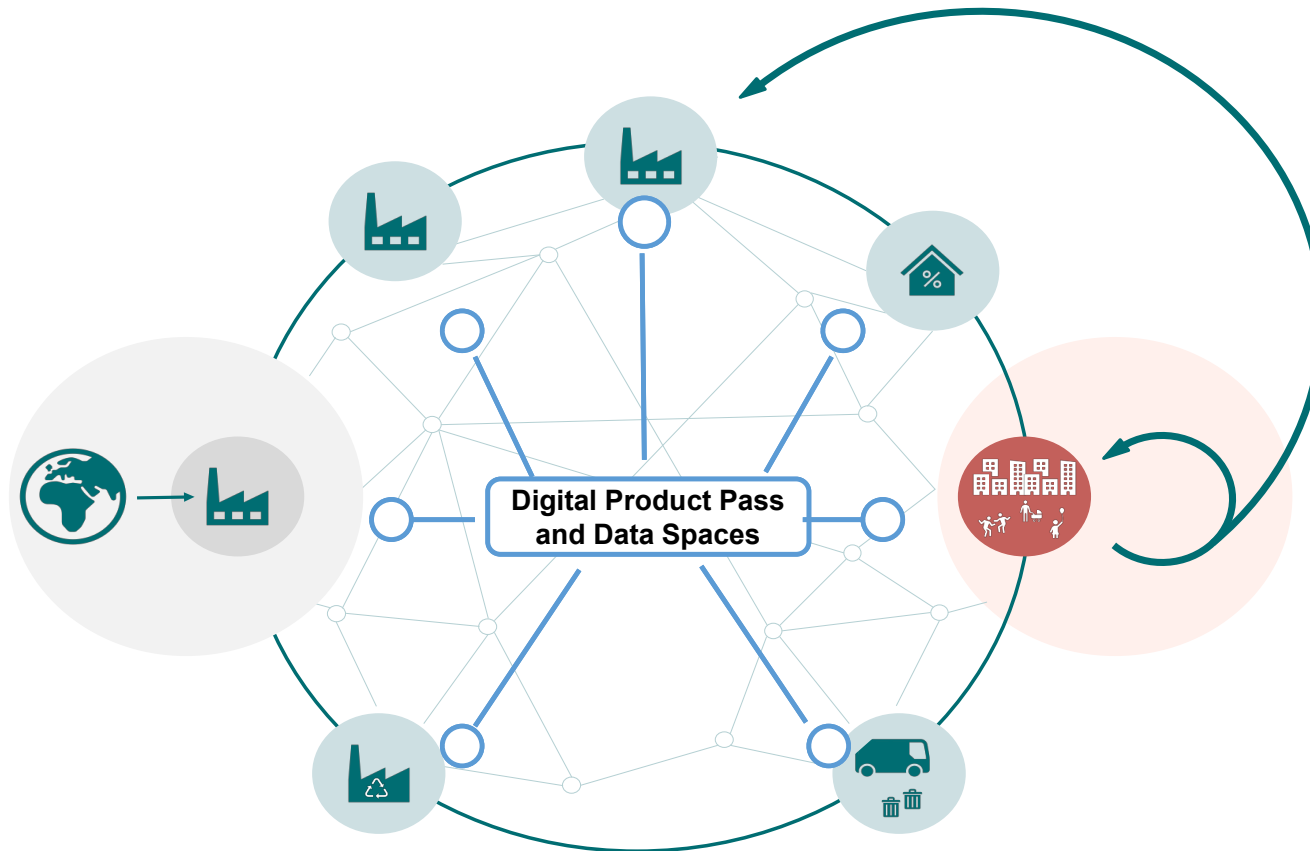




2. Digital Product Passports and Data Spaces



2. Digital Product Passports and Data Spaces



Digital Product Passports =
Combination of datasets on
materials and products that
can be accessed directly on
the product



2. Digital Product Passports

Digital Product Passports (DPP)

- In development in collaboration between EU regulations and private-sector initiatives
- Sector specific obligations (will be) introduced in EU product legislation for the entire European Single Market
 - Sustainable batteries (mandatory in 2027)
 - Currently in negotiation: Circular Vehicles; Construction Products; Toys; Detergents;
 - Future product groups to be introduced in the EU Ecodesign for Sustainable Products Regulation (ESPR): Textiles, Electronics, etc.



3. Digital Tools for Sustainable Design and Production



3. Digital Tools for Sustainable Design and Production



Source: fanjianhua, Freepik

- Design and manufacture of products is key for circular economy.
- In this phase at the beginning of life cycle, important decisions are made regarding the circularity of a product
- Digital design and construction tools enable optimal production processes
- The data space facilitates access to data



High-quality data is a prerequisite for sustainable design. The German Federal Environment Agency conducts research advancing this data base.



4. Sustainable Consumption and Digital Technologies



4. Sustainable Consumption and Digital Technologies

- For circular economy, it is essential that digitalization helps consumers in their everyday lives to increasingly align their consumption with sustainability goals
- BMUV is committed to driving forward pilot projects that provide digital solutions for sustainable consumption.



Source: Freepik



4. Sustainable Consumption and Digital Technologies

Four central starting points for how we can make private consumption more sustainable with the help of digital technologies:

1. Digital assistance systems to provide customers with information and guidance
2. Help to extend the lifespan of products
3. Facilitate and expand the second-hand use
4. Expand sharing or repair economy



5. Digitizing Waste Recovery and Secondary Raw Material Markets

5. Digitizing Waste Recovery



Source: Freepik

Optimizing Logistics of Waste Collection, Sorting and Recycling Facilities, inter alia through '...

- Networked Sensors and Internet of Things (IoT)
- Cloud Computing
- Digital Platforms
- Analysis based on Big Data or Artificial Intelligence



5. Digitizing Markets for Secondary Raw Materials

Improving the assessment of secondary raw materials

- Increase the amount of data available
- Develop quality standards for secondary raw materials
- Linking of physical material flows and usage patterns with digital data streams
 - Enables tracking of life cycles and material flows through the supply chain
 - Enables optimization of material flows as basis for circular economy strategies and business models



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Thank you!

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