



Future in the light of current industrial revolutions



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Directions of modern industrial revolutions

- **Industry 3.0** – Transition to a "green" economy
- **Industry 4.0** - Transition to cyberphysical systems
- **Industry 5.0** - Transition to personal development of mankind



Key elements of modern industrial revolutions

Industry 5.0

Key elements:

Harmony of physical, informational and biological spheres. Dialogue between man and artificial intelligence. Individualization of needs. Individual human biomonitoring. Individualization of human communications. Human cybergisation. Personalization of production and consumption.

Phase transition

Industry 3.0

Key elements:

Renewable energy. Large-scale energy storage. Additive technologies (3D printers). Internet. Digitization. Horizontal structures of the organization. Solidarity economy. Digitization of social space. Electrification and hydrogenation of transport. Biotechnology (genetic modification, hydroponics, 3D printing). Virtualization of the production process. GPS. New materials.

Industry 4.0

Key elements:

Artificial Intelligence.
Internet of Things.
Circular economy. "Smart" network systems (business, city, territory). Unmanned vehicles.
Blockchain implementation.
Digitization of management. Self-organizing work.
Cybergization of the physical world.



Key features of the III Industrial Revolution

III Industrial Revolution - the transition to a "green" economy:

- clean energy;
- additive technologies (3D-printing);
- network production (horizontal structures).



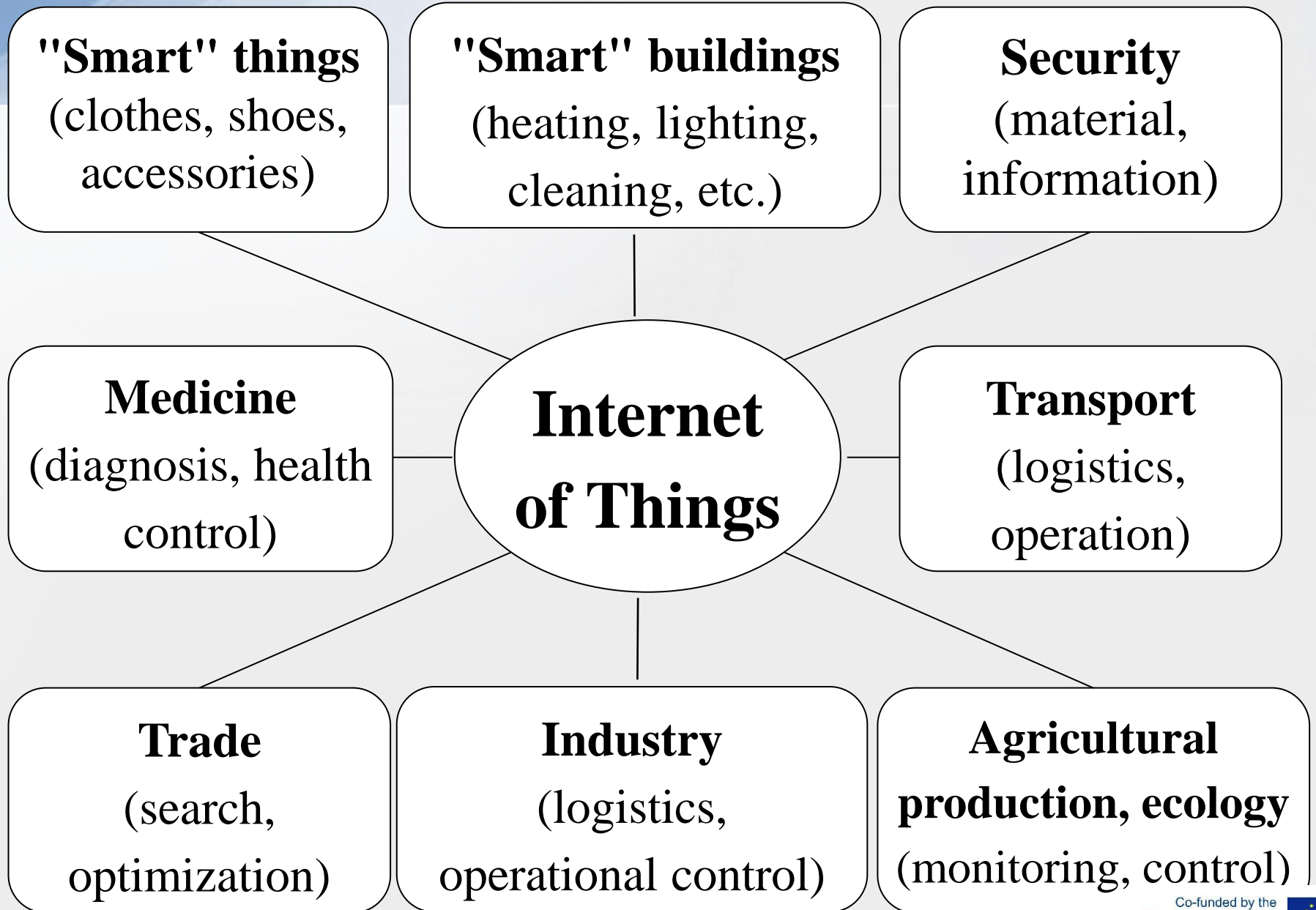
Roof panels (Germany)



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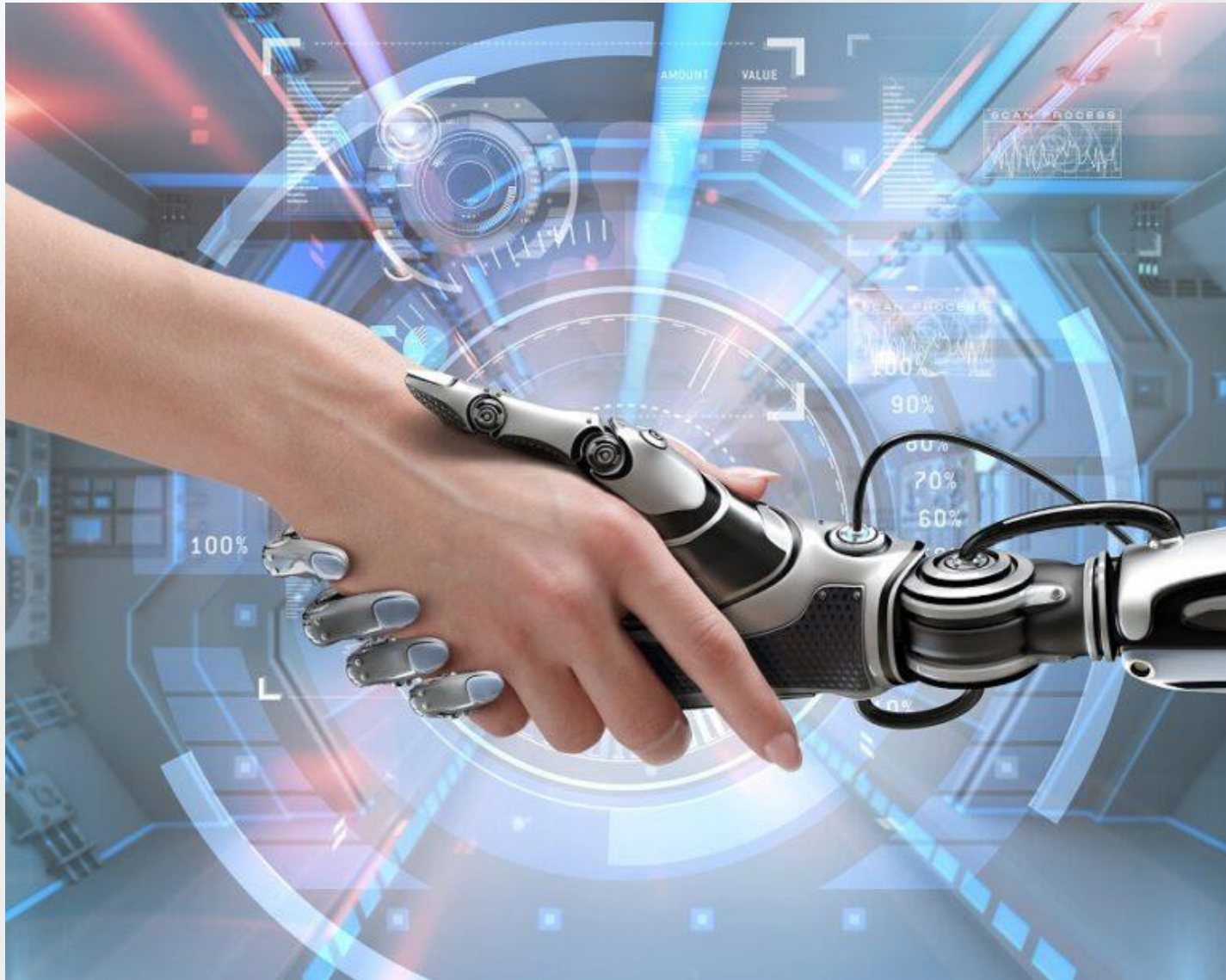


«Internet of Things»





The Fifth Industrial Revolution (Industry 5.0)



V Industrial Revolution (Industry 5.0)

Aimed at returning people to production and personalization of consumption:

- synergy of man and artificial intelligence;
- formation of emotional artificial intelligence;
- creative functions of the person in production;
- from mass production of standard products to the consumption of goods for the individual;
- from efficiency goals to social development goals.



Thank you!

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