Opportunities & Challenges: *Beyond 2030*

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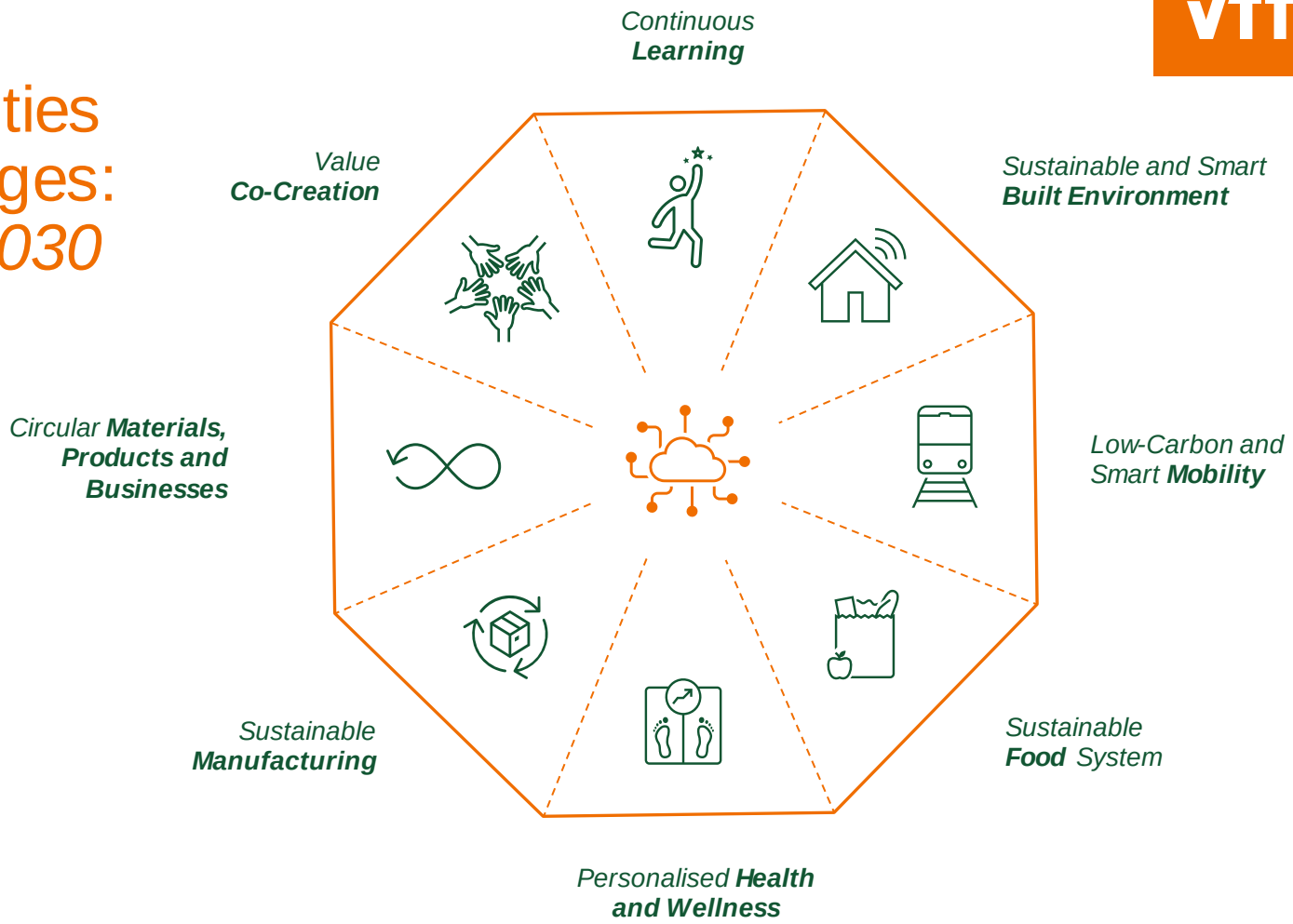

Value **co-creation**

Innovation and development activities are becoming more and more networked and dynamic. Collaboration is the key to successfully solving complex and systemic challenges and create sustainable growth.

In 2030, through technology, data and new ways of working, we bring together broad variety of actors necessary for innovation to identify new opportunities, find solutions and co-create value.

Large companies, small and medium-sized enterprises, start-ups, public sector and research organisations and urban communities are all key innovators when tackling the grand challenges, such as climate change and resource sufficiency. The success is based on effective sharing of information and capabilities – the keys to survival are renewal, adaptability and resilience.

Continuous **learning**

The labour market is changing rapidly with digitalisation, and the workforce needs to stay curious and committed to lifelong learning to keep up with the pace.

It has been estimated that 15 per cent of jobs that exist today will disappear or change, as digitalisation and new business models reshape people's job descriptions and roles.

The ways in which work is performed are also changing, and the revolution of the labour market also requires society to change. In 2030, technology, data and new ways of knowledge sharing are used efficiently for identifying areas for personal and organizational and societal growth and learning.

Sustainable and smart **built environment**

Traditional solutions for construction and the built environment are no longer enough as we aim at carbon neutrality and resource efficiency.

The solutions are already within reach. In 2030 we will have enabled the construction of energy-positive urban districts and living environments based on circular economy.

We create solutions for sustainable and smart design, renovation and repair construction, use, and maintenance of buildings, infrastructure, and cities. We will assist in the decision-making in urban planning that will benefit future generations.

Low-carbon and smart **mobility**

Electric cars and urban cycling have become increasingly popular in recent years. Innovations are emerging at an increasing pace and technology is enabling solutions that are revolutionary.

Data on transport is available that allows us to develop unprecedented services on land, on the sea, and in the air that support the needs of people and the climate.

In 2030, automating and digitising transport chains and systems are giving rise to new, sustainable business opportunities. The forms of transport support the needs of both individuals and communities as well as companies without compromising on goals for emissions.

Sustainable **food system**

Demand for food is growing at the same rate as the world population. Food production needs to be both sufficiently efficient and less harmful for the environment than before. The challenge is massive, but big steps have already been taken in the right direction. Plant-based products are taking over more shelf space in grocery stores and they are also increasingly finding their way into customers' shopping baskets. Cellular agriculture is increasingly being discussed as a feasible way of revolutionising primary production.

In 2030 primary production of food and the food industry support the circular economy in nutrients, energy, and water. With solutions involving plant-based food innovations and cellular agriculture, the use of animal protein has declined considerably. Food production has become a service that combines the individualised production of food, smart packaging, and agile logistics.

Personalised **health and wellness**

Heart rate monitors and smart watches are just the beginning. What if, in addition to your pulse, your smart device were able to tell you the right time to take a sip of your sports drink so that you could ride your bicycle longer?

Soon we will be able to get information that is more precise and more in real time than ever before on how a sports performance, a dinner, or sleep affects the body – and makes our habits healthier without the need to see a doctor.

In 2030 we will have given rise to that help people make the right fact-supported decisions on wellbeing at the right time. Decision-making is easy with the help of automatic artificial intelligence algorithms.

Sustainable **manufacturing**

Customers expect personalisation, speed, quality, and low price from products. At the same time all production and logistics need to be as environmentally friendly as possible.

For all of this to be profitable, collaboration between many actors, new service business activities, and the utilisation of developed technologies are needed throughout the value chain.

In 2030 new products will be manufactured flexibly and efficiently, using recycled materials and without wasting natural resources. We will be capable of manufacturing products that have been personalised to the individual needs of consumers as efficiently as those that are mass-produced.

Circular **materials, products and businesses**

Every phase of a product's lifecycle from raw material to end product as a part of recycling needs to be understood as well as possible. In this way, we can save important natural resources, reduce emissions and create new markets.

In 2030, the planning of new raw materials, materials and products will be sustainable, supported by artificial intelligence. Data collected from industrial processes, markets and product end users will reveal the possibilities for the reuse of materials.

Data analytics, which utilises machine learning, is used to improve the efficiency of business models and supplier chains that support the circular economy.

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