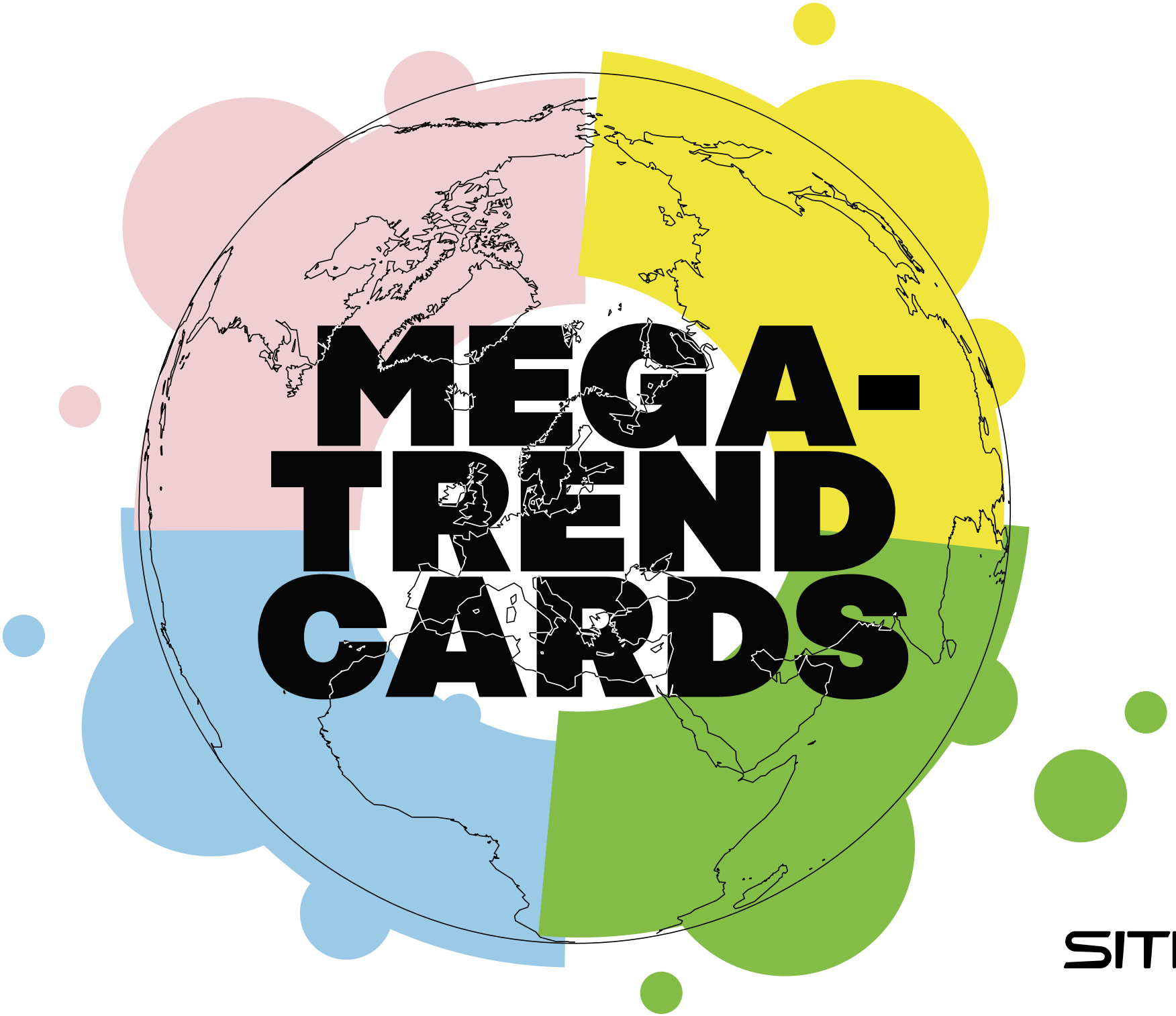

SITRA

MEGATRENDS

THE FUTURE BELONGS TO EVERYONE

Trend cards describe the changes that contribute to megatrends. They help you stretch your thinking, brainstorm new ideas and envision what the future could be. For tips on using the cards, see the instruction card. Sitra's website also contains the digital trend cards and templates for using them.

sitra.fi/megatrends

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MEGATRENDS

UNDERSTANDING AN ERA OF SURPRISES

Take a journey to the future! Sitra's trend cards contain different trends – developments that are already influencing our lives and, as a result, our future.

The trend cards cannot be used to predict the future. Instead, they can be used, alone or in a group, to increase understanding in a time of surprises, stretch your thinking, brainstorm new ideas and visualise the future.

A BETTER TOMORROW!

INSTRUCTIONS

BROWSE. Read through the cards and think about the ideas that the trends evoke. Are they familiar? Which are already apparent? Which are surprising?

ANALYSE. Pick a card and think about what factors are driving that change and what factors are influencing its direction. What effects might this trend have on the future in 5, 10 or 20 years's time? What positive things could happen?

PRIORITISE. Choose or randomly pick 3–6 cards. Rank the cards in order of importance: which trends would have the biggest impact on the future of your community, organisation or company? If you are working with others, discuss and compare the order of the trend cards. Are there any common points in your discussion? Do you all agree on the card order?

CREATE A STORY. Pick 3–6 cards and use them to create a story about the future. Include topics that relate to your work or other things in your life. Share your story with others.

CHANGE YOUR POINT OF VIEW. Pick a card at random and think about that trend from a perspective that's different to your own. What does the trend look like from the perspective of a totally different person, community or organisation? Are the effects different?

DREAM. Choose or randomly pick 1–3 cards and use them to create the best possible picture of the future by describing the future of something that is important to you in combination with your cards.

INVENT. Choose or randomly pick 1–3 cards and use them to come up with a future service, solution, product or way of doing things related to an issue that interests you that would make it better.

BE SURPRISED. Pick 3–6 cards and come up with the exact opposite scenarios for them. What would have had to happen to make the opposite scenario come about?

Sitra's trend cards are based on our trend work and megatrend lists.
For more information, please visit **www.sitra.fi/megatrends**

THE CLIMATE IS HEATING UP

The climate continues heat up, but the severity of the impacts will be influenced by the actions we take now. At the current rate, the climate will heat up by about 3°C this century, potentially by double that in Finland. That rate of climate change would result in irreversible changes and cause an uncontrollable chain reaction. There is a need for stronger climate policy and more decisive action to reduce emissions to limit the warming of the climate to 1.5°C.

INCREASE IN EXTREME WEATHER EVENTS

Climate change will lead to more extreme weather events. Floods and droughts will become more common, as will more intense storms. Fluctuating weather conditions will challenge food production and infrastructure that was not originally designed for extreme weather. As intense heatwaves become more common, current Finnish summers will seem cool by comparison. The importance of societies' preparedness and adaptation will grow.

LOSS OF BIODIVERSITY

We are in the midst of a mass extinction of plants and animals caused by human activity. A million species are threatened by extinction within the next few decades. The degradation of nature threatens the well-being of hundreds of millions of people and will also cause annual economic losses measured in hundreds of billions of euros. Biodiversity loss can be slowed by reducing pressures on nature (land and sea use, climate change, pollution, resource utilisation and invasive species) and by managing, restoring and conserving habitats.

RESOURCE AVAILABILITY IS BECOMING INCREASINGLY UNCERTAIN

Growing consumption means that many resources are becoming increasingly scarce or costly to obtain. The availability of critical materials for industry may face challenges that will be reflected all the way to consumers. Resource uncertainty can be mitigated by developing substitute materials and by enhancing the recycling and reuse of materials.

SOIL DEGRADATION

At the current rate, 90% of the world's soil will be degraded by 2050 and the world risks running out of arable land in 60 years. Climate heating will make the situation worse with more extreme weather events. Preventing erosion and sequestering carbon dioxide in the soil can increase food security while also mitigating climate heating.

WASTE IS INCREASING

Due to rapid urbanisation and population growth, the amount of waste generated worldwide is predicted to increase by 70% by 2050. People in Finland generate 600 kg of waste per capita per year (2020), and the amount is expected to grow. Pharmaceutical residues in wastewater have also increased. Reducing waste requires a transition to a circular economy: preventing waste from being generated through smart product design, reusing and recycling materials, and removing hazardous chemicals and materials from circulation.

A STRONGER UNDERSTANDING OF THE INTRINSIC VALUE OF NATURE

Environmental awareness is growing. Nature is no longer viewed merely as a resource for people to exploit, but as having intrinsic value that underpins human well-being. Nevertheless, there is still a long way to go from awareness to large-scale action.

WILFUL INDIFFERENCE ABOUT THE STATE OF THE ENVIRONMENT IS INCREASING

Information on environmental degradation is available to everyone, and environmental issues are increasingly in the news. Many people refuse to believe or else downplay the problems highlighted by science and opt to live like they always have. Tensions are growing between those who demand environmental action and those who belittle it.

STRONGER NON-HUMAN RIGHTS

There is a growing understanding of the rights of non-human animals. Fur farming has already been banned in 15 European countries and the debate on animal rights has also gathered momentum in Finland.

DEGRADATION OF THE SEAS

The warming and acidification of seas are destroying coral reefs and other fragile marine ecosystems. It also impacts the ability of seas to sequester carbon and, in the long term, oceanic currents will also be affected. Nutrient emissions are increasing eutrophication and cause oxygen depletion. Marine degradation also poses a threat to livelihoods and food security. Threats to marine ecosystems can be mitigated through climate action, the protection of the seas and reducing nutrient emissions.

THE DEPENDENCY RATIO IS DECLINING

The population is ageing and the working-age population is shrinking. This weakens the dependency ratio, increasing the numbers of children and older people relative to the working-age population, and challenging us to consider how to ensure the quality and availability of services in society. The need for employment-based immigration is growing.

LONGER LIFE EXPECTANCY AND AN AGEING POPULATION

People are living longer and the population is ageing. In affluent societies, the birth rate is declining particularly among less educated population groups, and young people are in a minority. The need for services for an ageing population is growing. On the other hand, people's functional capacity may become a more age-defining factor in the future and more treatments for slowing down ageing may become available.

POPULATION CONCENTRATION

In Finland, the population is concentrated in southern Finland and a few large growth centres. In more remote regions the population is decreasing and the portion of older people is growing. The gap between growth centres and low-migration municipalities is widening although migration and multi-location that started during the Covid-19 pandemic have mitigated the migration loss in many municipalities and regions.

CONTINUED URBANISATION

Migration from rural areas to cities will continue globally. By 2050, nearly 70% of the world's population will live in cities. Rapid population growth is challenging to urban infrastructure particularly in the megacities of Asia and Africa, and population inequality is growing. Cities have great potential to develop sustainable solutions if sufficient investment is made in urban planning.

INCREASING GLOBAL MIGRATION

Global migrations are growing due to changes in livelihoods, urbanisation, wars and environmental changes. The heating of the climate is making some regions uninhabitable. Immigration to Finland is also increasing, making immigrant integration more important.

PANDEMICS AND EPIDEMICS ARE INCREASING

Human activity increases the probability of widespread epidemics and pandemics. The fragmentation of natural habitats reduces the living space for animals, leading to a higher risk of zoonotic diseases. The heating of the climate exacerbates flooding and drought, increasing the incidence of infectious diseases. Mobility contributes to the rapid spread of diseases. Future pandemics can be prevented by protecting animal habitats and biodiversity.

MENTAL HEALTH PROBLEMS ARE INCREASING

Mental health problems are on the rise, particularly among young people. Absenteeism and disability are increasingly caused by mental health disorders. Stress is increased by various crises, information overload, the competitive nature of society and the growing complexity of life. At the same time, deprivation is accumulating. Tackling these problems requires adequate resources, multidisciplinary co-operation and focusing not only on the individual but also on the structures of society.

MINDSETS ABOUT HEALTH ARE CHANGING

Increasing antibiotic resistance and zoonotic diseases challenge people to take a more holistic approach to health. Human health is understood to be linked to the well-being of nature and the environment. Preventive measures, such as increasing biodiversity and reducing air and noise pollution, are being emphasised in addition to disease treatment.

THE CONCEPT OF WELL-BEING IS BROADENING

The income-centred view of individual well-being is expanding, and the importance of perceived well-being related to quality of life is growing alongside it. Well-being is not measured only in monetary terms, but also in terms of other factors, such as sustainable lifestyles, social relationships, experiences of meaningfulness and the opportunity to work for the common good.

THE CONTINUOUS SKILLS DEVELOPMENT IS BEING HIGHLIGHTED

Our changing working life and society require lifelong learning and the continuous skills development. The importance of new learning, creativity, holistic thinking and meta-skills is increasing. Longer careers also create a growing need for continuous learning. The structures and practices for skills development are under growing pressure to change.

REMOTE AND HYBRID WORK ARE CHANGING THE LABOUR MARKET

The pandemic led many societies to go digital, as remote and hybrid working became more common. The increase in remote working has also led to the development of employers' practices for monitoring employee performance and productivity, raising questions about employer-employee trust. The labour market is changing as remote working enables new approaches to the organisation and decentralisation of work, even globally.

LABOUR MARKET MISMATCHES ARE INCREASING

Digitalisation is changing work in affluent societies. Labour market mismatches are increasing due to the lack of available talent to match the jobs on offer, and jobseekers face difficulties finding jobs that match their skills. Many jobs are automated or outsourced to countries with cheap labour.

INFORMATION INFLUENCE CREATES A MORE POLARISED ATMOSPHERE

Misinformation and hybrid operations are increasing due to actions taken by provocateurs inside countries as well as by international operators. Efforts to influence opinions are increasingly geared towards causing confusion and discord. Polarised debate, defamation and hate speech make many people withdraw from exercising an influence on society. There is a need for responsible communication, information literacy and channels for constructive social debate.

GEOPOLITICAL TENSIONS ARE INCREASING

The divisions between countries worldwide are becoming sharper and the differences and tensions between different social systems of society are becoming more pronounced. The rules-based world order is teetering, spheres of influence are returning to the foreign policy debate, and power struggles over resources such as critical metals are emerging. The pursuit of self-interest is increasing in politics. The tense situation increases uncertainty in international relations, in the markets and in people's minds. The need for diplomacy and conflict prevention is growing in importance.

GROWING PERSONALISATION OF POWER

The political debate in the media is becoming focused on personalities, and social media amplifies the personalisation of power. Individual politicians may become more prominent than the parties they represent. While personalisation makes decision-makers more approachable, it can blur the differences between political parties and the structural problems of the political system. It may also turn politics into entertainment, leading to important issues taking a back seat. Participating in politics increasingly requires politicians to manage and exploit publicity.

POPULIST PARTIES ARE GAINING POWER

Uncertainty about the future and the perception of an increasingly complex world make many people long for simple solutions. The energy transition, the impacts of the pandemic and the need for ecological reconstruction intensify this mood. Right-wing populist parties appeal to voters by defending conservative values and national interests in the midst of crises. Populist parties are seizing power in many countries.

TRUST IS BEING PUT TO THE TEST

Internationally, people's trust in political decision-makers has declined and more and more people have reservations about the information published by mainstream media. In Finland, trust is relatively high and the recent crises have strengthened trust in decision-makers. Still, there are significant differences in trust between regions and population groups. High-quality information provided by social institutions is seen as an important factor in building trust.

THE BATTLE FOR SPACE SUPREMACY IS INTENSIFYING

Human activity in space has increased and the competition for space is growing. The diversity of those involved and the lack of common rules increase the risk of the militarisation of space. This fierce competition is also leading to a growing amount of space debris that can pose challenges to satellite operations.

RAPID AND DIRECT CIVIC ENGAGEMENT IS BECOMING MORE COMMON

Commitment to NGOs is decreasing and fewer people want to influence society through traditional political parties. People – especially young people – are looking for quick and direct engagement. Digitalisation and the platforms and networks it enables have revolutionised the way we produce, distribute and use information. Microactivism is becoming increasingly common, and more and more people are using social media for civic engagement. New initiatives are emerging and spreading quickly.

DEMOCRACY CONTINUES TO DECLINE

Democracy continues to decline globally and authoritarianism is on the rise. Some 70% of the world's population now live in countries categorised as non-democratic. At the same time, there is a growing awareness of the need to actively defend democracy. Developing democracy calls for determined action to enhance engagement and reform decision-making practices and structures.

THE ROLE OF RELIGIONS AND IDEOLOGIES IN SOCIETY IS GROWING

The importance of religions is growing globally and the role of religion in political decision-making has strengthened. Examples of this include the restriction of abortion rights on religious grounds and the success of political parties with religious affiliations in elections in different countries. Religion has also been used as a tool of politics and influence in Finnish society, for instance, in connection with the reform of the Marriage Act. Alongside traditional religions, new ideologies such as posthumanism and dataism are emerging.

TECHNOLOGY TRANSFORMS THE WAY WE DO THINGS

Technology is developing rapidly, changing production methods and operating models. Things are increasingly automated, production and operations are decentralised, and interaction takes place remotely or in a virtual environment.

AI APPLICATIONS PERMEATE SOCIETY

Self-driving cars, talking to devices, customised recommendations and other AI applications are becoming more usual. More and more decision-making power is assigned to algorithms, raising questions about data collection, transparency and accountability. It is also important to understand the biases in the data used by AI.

THE DATA ECONOMY IS GROWING

The data economy is growing exponentially. Web 3.0 – blockchains, the metaverse, data growth, open interfaces and decentralised services – are changing the way we operate in information networks. There are high expectations for future of the data economy and the potential for growth is massive. But the direction of development remains unclear: will the power of the digital giants continue to grow, or will we be able to create ground rules for the data economy that are fair with regard to nature, society and individuals?

HEALTH TECHNOLOGIES ARE BECOMING MORE WIDESPREAD

Wearable devices to monitor health have become increasingly common and continue to evolve. Wellness guidance and services that are customised according to each user's individual measurement data are increasing, and access to data enables preventive healthcare. New treatments are also being developed based on genome editing and modifying the microbiome, for example.

THE USES OF SYNTHETIC BIOLOGY ARE EXPANDING

Synthetic biology refers to man-made biological systems, cells, cell components or organisms not found in nature. It involves designing genetic codes by computer, chemically modifying them into equivalent DNA, and introducing them into a cell. Applications include vaccine development, sequestering atmospheric carbon dioxide, producing synthetic fuels, new materials, breeding plants to withstand extreme weather events and storing data.

RENEWABLE ENERGY IS BECOMING MORE WIDESPREAD

Geopolitical tensions and climate targets are accelerating the energy transition and the shift to renewable energy sources. Solar and wind power are becoming more widely used and battery technology related to the storage of solar and wind electricity is developing quickly. There are high expectations for the hydrogen economy. At the same time, energy production will become increasingly decentralised as more and more people produce energy and sell what they have left over.

GREATER EMPHASIS ON UNDERSTANDING TECHNOLOGY

The significance of technology skills will increase in both professional and non-professional contexts. In addition to technical capabilities, there is a growing need for understanding technology. Digital Bildung helps people judge online content, recognise misinformation, understand algorithms and how the data economy functions, and look after their security, rights and obligations in an increasingly digital society.

TECHNOLOGY CREATES INEQUALITY

The rapid development of technology creates disparate technological realities. Different age and population groups use technology differently. As society's services and activities move online, there is a risk that people's agency in society will become more segregated. Making use of technology requires new skills and devices that not everyone can afford. Service development should include careful consideration of accessibility and ensuring that development takes place on the terms of people, not technology.

BLOCKCHAINS ARE CHANGING HOW THINGS WORK

Blockchains, or decentralised digital ledgers, eliminate the need for trusted third parties, such as banks, and create the foundation for decentralised digital services that operate independently of government and local regulation. They can be used as platforms for financial services, identity verification and proof of ownership. They also enable decentralised autonomous organisations, DAOs, which can be seen as the co-operatives of the digital era.

DATA COLLECTION IS INCREASING

Data is increasingly collected in different environments: in cities, in industry, in homes, and from people through smart devices. Digital twins created on the basis of collected data, such as simulations of industrial equipment, are becoming more usual and facilitate the provision of maintenance services and production efficiency. As the amount of data increases, the importance of interpretation and the acceptability of data collection increases: what information does the data actually tell us and how can it be used responsibly? Who owns the data, and who has access to it?

3D PRINTING IS TRANSFORMING PRODUCTION

Industrial 3D printing is growing while the use of renewable and recyclable raw materials in 3D printing continues to increase. Various components and spare parts can be easily produced locally, which reduces transport and storage costs and climate emissions. The opportunities presented by 3D printing are increasingly being used in new fields, such as medicine.

BLURRED BOUNDARIES BETWEEN THE PHYSICAL WORLD AND THE VIRTUAL WORLD

People are in constant interaction with the digital environment, as virtual content can be combined with non-digital environments in various ways. Content previously viewed on the screen of a computer or smartphone is integrated into the sensory experience when devices such as wearable lenses add a layer of augmented reality on top of the real world. If the user experience is highly personalised, very different experiences of reality can emerge.

THE DIGITALISING WORLD IS INCREASINGLY VULNERABLE

As societies become more technological, they become more vulnerable to power and data network blackouts. Cyber attacks can also paralyse companies or entire societies. Ensuring a high level of cyber security is now linked security of supply, to ensuring society's capacity to function under crisis conditions.

QUANTUM COMPUTING WILL PROLIFERATE COMPUTING POWER

Advances in quantum computing are enabling complex computational problems to be solved much more efficiently than with today's computers. They can be used in areas such as pharmaceutical development and the engineering of novel materials. Quantum computers can also be used to quickly break many of the encryption methods currently used on the internet.

THE CIRCULAR ECONOMY IS BECOMING IMPERATIVE

Instead of constantly producing new products, a circular economy makes use of existing resources as efficiently as possible, such as by keeping products and materials in productive circulation for as long as possible. The circular economy is not only about recycling, but also new economic operating models and services, such as sharing, renting, repair and reuse, in which new technology plays a key role.

THE DEBATE OVER THE DIRECTION OF THE ECONOMY IS INTENSIFYING

There is growing agreement about the need to reform economic structures and paradigms, but views vary about the scope of these reforms. The debate over the new direction of the economy is intensifying. Is the aim to fit the economy within nature's carrying capacity, or a restorative economy that is nature-positive and increases human well-being?

CONCENTRATION OF WEALTH AND GROWING INEQUALITY

Wealth gaps are widening in Finland and globally. In Finland, the richest 10% own nearly half of total net wealth. Globally, the richest 10% own 75% of total wealth. The impacts of various societal and global crises further increase inequality.

CONSUMERS AS INFLUENCERS

Consumption – or choosing not to consume – is increasingly seen as a means of influencing society. From the perspective of economic impact, the significance of women and older people as makers of consumption decisions is growing.

CORPORATE RESPONSIBILITY IS EXPANDING

Companies are actively looking for ways to increase the positive impact of their activities (handprint) in addition to minimising their negative impacts (footprint). Many companies' activities contribute to addressing the sustainability challenges of our time. Intergenerational thinking is becoming a more prominent aspect of sustainability thinking. NGOs, the media, investors, public authorities and decision-makers require companies to be responsible and transparent.

MAKING ECONOMIC VALUE CHAINS MORE SUSTAINABLE

The Covid-19 pandemic and geopolitical developments have highlighted our dependence on global value chains but also their vulnerability. Crises have increased the need for sustainable value chains and ensuring the security of supply. At the same time, our understanding of the environmental and human rights impacts of the global economy has grown, amplifying the need for sustainable and flexible value chains and circular economy solutions.

NEW ECONOMIC INDICATORS ARE BEING ADOPTED

Alternative economic indicators, such as ecosystem accounting, the genuine progress indicator and the happy planet index are receiving more and more attention. In addition to illustrating economic development, the new indicators provide information on human and environmental well-being and reflect changes in the values and goals behind economic thinking.

NEW KINDS OF ECONOMIC THINKING ARE BECOMING MORE COMMON

People want to promote new economic thinking in practice. Shared ownership, exchanging goods and various lending services are changing the way markets operate. Field sharing and the direct distribution of local food from producers to consumers are becoming more common practices.

A MORE VARIED UNDERSTANDING OF DIFFERENT FORMS OF CAPITAL

In addition to the resource flows and revenue streams in the economy, increasing attention is being paid to nature capital, which is vital to the functioning of the economy and includes natural resources and environmental quality – and social capital, such as skills and social trust. At the same time, the pandemic, the energy crisis and the ecological crisis have put the role of financing and debt in the economy under new scrutiny.

LABOUR AND SKILLS NEEDS ARE CHANGING

The ecological reconstruction is reshaping the labour market. Jobs that are directly or indirectly linked to fossil energy are gradually disappearing. Jobs are being created in new industries, and entirely new job descriptions are emerging. Ecological sustainability aspects are becoming more important in nearly all professions. To achieve a fair transition, society must support the reorientation of work and skills.

HOW DID IT GO?

Send us feedback!
Praise, criticism or something in between? We appreciate your feedback – it helps us to improve the cards.

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