MEGA-TRENDS CARDS

SITRA

MEGATRENDS

GET TO KNOW YOUR FUTURE

The trend cards describe the underlying changes shaping megatrends. Now they also include surprises, or wild cards, which may radically alter the direction of the future. The cards help you stretch your thinking, generate new ideas, and envision what the future could look like. Tips for using the cards can be found on the instruction card. On Sitra's website, you will also find digital trend cards and workshop templates to support the use of the cards.

sitra.fi/en/foresight/megatrends/

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TRENDS AND WILD CARDS

Welcome to a journey into possible futures! Sitra's trend cards present different trends – ongoing developments that are already affecting our lives and, in turn, the future. The deck also includes surprises, or wild cards, which may radically change the course of the future.

The trend cards do not predict the future. Instead, they help build understanding in an era of surprises and unrest: they support flexible thinking, spark new ideas and enable you to envision possible futures – on your own or with others.

INSTRUCTION

BROWSE. Read through the cards and think about the ideas the trends evoke. Do the trends appear familiar? Which are already apparent? Which are surprising?

ANALYSE. Pick a card and think about the factors that are driving the change described and affecting its direction. How was the situation 10 years ago? What could it look like 10 years from now? What should we prepare for, and what opportunities may emerge?

PRIORITISE. Choose or randomly pick 3 to 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 how you have ranked the cards. Do you agree on the card order?

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

CHANGE PERSPECTIVE. Pick a card at random and think about the trend it describes from a perspective that is very different from your own. What does the trend look like from the perspective of that person, community or organisation? Does the trend have different impacts?

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

INVENT. Choose or randomly pick 1 to 3 cards and use them to come up with a future service, solution, product or practice that is related to something that interests you and would make the thing that interests you better.

BE SURPRISED. The wild cards encourage you to think about developments that may radically alter the direction of the future. Pick a trend card and a wild card and contemplate how the wild card could change the trend. You can also think about answers to the "What if?" questions on the cards or come up with more questions. The deck includes two empty cards for you to think up a trend that would transform the future.

Sitra's trend cards are based on Sitra's work on trends and lists of megatrends.
Read more about the topic: **www.sitra.fi/en/foresight/megatrends/**

POPULATION GROWTH IS SLOWING DOWN

Population growth is slowing down globally. According to forecasts, the population will grow to around ten billion before it begins to decline. Population growth is mainly concentrated in countries in sub-Saharan Africa, but in countries such as the United States, the population is also expected to grow throughout the century. In the EU, the population is expected to start declining in the coming years. In Finland, population growth depends on immigration, but even so, the population is likely to start shrinking in the near future.

LIFE COURSES ARE GETTING LONGER

People are living longer with more healthy years than before. As a result of low birth rates, the proportion of people over the age of 65 is increasing, and young people are in the minority. Society must be renewed to fit longer life courses: this applies to education, working life, and care alike. The dependency ratio is weakening as the proportion of working-age people decreases, which challenges the financing of the welfare society. The need for work-based immigration is growing.

URBANISATION CONTINUES

Migration from rural areas to cities is continuing globally, and two thirds of the population growth is taking place in cities. Rapid population growth is putting pressure on urban infrastructure, especially in megacities in Asia and Africa, and inequalities are increasing. In Finland a key trend is the concentration of the population in southern Finland and a few major growth centres. The gap between growth centres and municipalities losing population is widening.

GLOBAL MIGRATION IS INCREASING

Global migration flows have increased as a result of changes in livelihoods, urbanisation, wars and environmental change. Climate change is making some areas uninhabitable and forcing people to leave their home regions, although most migration still takes place within countries. Immigration to Finland has grown significantly in recent years. People move to Finland particularly from Ukraine and from South and Southeast Asia.

PANDEMICS AND EPIDEMICS ARE BECOMING MORE COMMON

Climate change and human activity are increasing the likelihood of widespread epidemics and pandemics. The fragmentation of natural habitats is shrinking animals' living spaces, making it easier for animal diseases to pass to humans. Floods and droughts, exacerbated by climate change, increase infectious diseases, and ancient pathogens may be released from thawing permafrost. Mobility accelerates the rapid spread of diseases. Future pandemics can be prevented by preserving animals' habitats and biodiversity.

HEALTH CHALLENGES ARE CHANGING

Well-being is increasingly challenged by environmental degradation, the rise in mental health problems and physical inactivity. People in Finland are not getting enough physical activity, and obesity is becoming more common. Mental health issues are increasing, particularly among young people, and are an increasing cause of absence from work. Overlapping crises, a digitised environment and a lack of positive future prospects all add to the strain. People's health is increasingly understood to be linked to the well-being of nature. In addition to the treatment of diseases, more emphasis is placed on preventive measures and on harnessing the health benefits of natural environments.

ARTIFICIAL INTELLIGENCE AND DIGITALISATION ARE TRANSFORMING WORKING LIFE

Digitalisation and the increasing use of AI are transforming work in wealthy societies. The pandemic forced many societies to make a digital leap, as remote and hybrid work became more common. AI is further changing tasks and the organisation of work. Mismatches in the labour market are increasing: there are not enough people with the right skills for the jobs available, and jobseekers struggle to find work that align with their competences.

WEALTH IS CONCENTRATED AND INEQUALITY IS INCREASING

Wealth disparities are growing both in Finland and globally. In Finland, the wealthiest tenth of the population owns more than half of all net wealth, and globally, the figure is 70 per cent. The richest one per cent in the world own more than 95 per cent of humanity's wealth. The gap between the richest and the poorest is widening, and the impacts of crises are further increasing inequality.

LIFELONG LEARNING IS BECOMING MORE IMPORTANT

The changing world of work requires lifelong learning. The green and digital transition is transforming job descriptions and industries. The importance of learning new skills, unlearning outdated ones, fostering creativity and understanding complex systems is increasing. Longer working careers also add to the need for continuous learning. There is growing pressure to reform the structures and practices of skills development.

THE ABILITY TO NAVIGATE THE INFORMATION ENVIRONMENT BECOMES MORE IMPORTANT

The information environment is becoming more complex. Algorithms and artificial intelligence speed up the production and filtering of information, which may reinforce one's own views, create bubbles and spread misinformation even faster. Managing the information environment requires critical media literacy, regulation and, above all, a clear view of how AI should be used in a sustainable way for the benefit of society, businesses and people.

THE POPULIST USE OF POWER CHALLENGES DEMOCRACY

Platform-driven, social-media-based and AI-fuelled political debate amplifies the personalisation of power. Individual politicians may become more significant than their parties. At the same time, capabilities that are crucial for successful politics, including the ability to compromise, may weaken. Commitment to traditional parties and civil society organisations is declining, and young people in particular are looking for quick and direct ways to make an impact. Yet democracy will continue to need deliberation, reflection, organising and compromise.

THE POLITICAL MAP IS CHANGING

Uncertainty about the future and a sense of an increasingly complex world lead many to desire simple solutions. Right-wing populist parties appeal to voters by defending conservative values and national interests in the midst of crises and by promising solutions. In many countries, populist parties are seizing power, which, if realised more broadly, would significantly reshape the political map of the EU.

THE RULES-BASED INTERNATIONAL ORDER IS ERODING

The dividing lines between states are deepening. The pursuit of national interests in politics is growing in an increasingly multipolar world, which weakens international cooperation. This tense situation increases uncertainty in international relations, markets and people's minds. The need for diplomacy and conflict prevention is becoming increasingly important. The building of resilience and a shared foundation of trust requires the ability to navigate this new operating environment.

DEMOCRACY WEAKENS AND AUTHORITARIANISM GAINS GROUND

A clear majority of the world's population already lives in countries that cannot be considered democratic. Within democracies, too, views on the value of democracy are wavering. The future of democracy depends on its ability to deliver tangible benefits for people – better and faster than authoritarian alternatives. Do citizens believe it is the best way to safeguard rights, security and a shared future?

THE RACE FOR SPACE ACCELERATES

Human activity in space is increasing and the competition for space is intensifying. The diversity of operators and the limited common rules heighten the risk of arming space and using it for military purposes. In this fiercely competitive situation, the amount of so-called space debris also increases, which can create challenges for satellite operations. Commercial space activities have been growing for years.

THE IMPORTANCE OF RELIGIONS AND IDEOLOGIES IN SOCIETY GROWS

The role of religion in political decision-making has become more prominent, for example, in restrictions on abortion rights justified on religious grounds, or the electoral success of religious parties in different countries. In Finnish society as well, religion has been used as a tool for politics and influence, including during the reform of the Marriage Act. How will the political use of religion affect the equality of society, individual freedoms and the legitimacy of decision-making?

CRYPTO TECHNOLOGIES BECOME INSTRUMENTS OF POWER

Digital wealth is a new type of asset, around which innovations and new business models are emerging. The EU, the US and China each seek to strengthen their position by developing digital central bank currencies. AI agents and smart contracts accelerate the need for virtual currencies and related technologies, but they also bring risks, cybersecurity challenges and environmental impacts.

DATA MANAGEMENT BECOMES INTERTWINED WITH SECURITY

The amount of data continues to grow rapidly. Increasing amounts of data are collected in different environments: in cities, industry, homes and from people via smart devices. In the current more tense security policy environment, the long-standing concentration of data collection, management and use is increasingly perceived as a security issue. For this reason, in the coming years, the EU will accelerate the development of European cloud services and other data infrastructure to reduce various dependences, including on US-based providers.

THE CLIMATE IS WARMING AND EXTREME WEATHER IS BECOMING MORE FREQUENT

Globally, the climate has already warmed by more than one degree, and in Finland by twice that amount. The more the climate heats up, the more likely it is that we will exceed environmental tipping points, resulting in irreversible changes. In Finland, heavy rains, floods and longer heatwaves are becoming more common. Globally, the impacts are more severe, and some areas may become uninhabitable. Variable weather conditions challenge food production and infrastructure. The importance of preparedness and adaptation in societies is becoming more pronounced.

BIODIVERSITY IS DECLINING

A human-driven mass extinction of species is underway. Species extinction is now occurring 100–1,000 times faster than the natural rate. Nature's condition has also deteriorated in Finland, and one ninth of assessed species are threatened. Globally, the loss of biodiversity threatens food production and the well-being of hundreds of millions of people while also causing annual economic losses of hundreds of billions of euros. Biodiversity loss can be slowed down by reducing the pressures on nature and by managing, restoring and protecting habitats.

ACCESS TO NATURAL RESOURCES IS BECOMING INCREASINGLY UNCERTAIN

The consumption of natural resources such as fossil fuels, biomass, metals and minerals has grown significantly, accelerating climate change, biodiversity loss and environmental degradation. Investments in the defence industry, artificial intelligence and data centres, as well as in renewable energy and battery technology, are increasing the need for critical minerals. The uncertainty related to resources can be mitigated by developing substitute materials and by enhancing the recycling and reuse of materials.

SOILS ARE DEGRADING

Soil degradation affects food security and ecosystem services. Globally, 1.7 billion people live in areas where crop yields are declining as a result of soil degradation. In Europe, more than 60 per cent of soils are in poor condition. Climate change exacerbates the situation as extreme weather conditions become more common. The EU Soil Mission aims to improve soil health through measures such as preventing erosion, improving soil structure and increasing the amount of organic carbon stored in soils.

THE STATE OF OCEANS IS WORSENING

Over the past two decades, the pace of ocean warming has doubled. In addition to climate change, the poor state of oceans is exacerbated by acidification, eutrophication, increased plastic pollution and deep-sea mining. Coral reefs have probably already been lost, ocean currents may stall, and glaciers are melting faster than before. Ocean degradation directly threatens the livelihoods and food security of hundreds of millions of people, weakens the oceans' ability to absorb carbon and accelerates biodiversity loss. Climate action, ocean protection and the reduction of nutrient runoff through improved soil health can influence the state of the oceans.

CHINA IS DRIVING THE RISE OF THE "ELECTROSTATE"

China has become the world's first "electrostate", where the economy and society increasingly rely on renewable energy instead of fossil fuels. In 2024, China produced 65 per cent of the world's new solar and wind power. China aims to produce more than half of its electricity from renewables by 2030 and 75 per cent by 2040. This would strengthen China's position as a global leader in clean technology and reshape the global energy economy as a whole.

THE IMPORTANCE OF CIRCULAR ECONOMY IS GROWING

The need for a transition to a circular economy is increasing as the environmental crisis worsens and the demand for natural resources grows. Circular economy is important also for self-sufficiency, security of supply and sustainable food system. In a circular economy existing assets are used as efficiently as possible by keeping products and materials in effective use for as long as possible.
The circular economy does not only encompass recycling but also other new operating models and services in the economy, including sharing, renting, repairing and reuse.

THE DEBATE ABOUT THE ECONOMY'S NEW DIRECTION IS INTENSIFYING AND BECOMING MORE POLARISED

There is growing support for renewing the structures and underlying mindsets of the economy, but there are differing views on the extent of the renewal required. Some companies actively seek ways to increase the positive impacts (handprint) of their operations in addition to minimising harm (footprint), and forerunners are adopting regenerative business models that enhance the vitality of nature and communities. At the same time, economic debates still tend to emphasise the short-term horizon, the preservation of the status quo, productivity and economic growth, while new initiatives are given less attention.

UNDERSTANDING OF THE ECONOMY'S VARIOUS FORMS OF CAPITAL IS EXPANDING

Alongside resource and income flows, increasing attention is being paid to the natural capital that is vital for economic activity, such as natural resources and environmental quality, as well as to human and social capital, including skills and societal trust. Interest is also growing in alternative economic indicators such as ecosystem accounts, the Genuine Progress Indicator and the Happy Planet Index.

THE TRANSFORMATION OF THE ENERGY SYSTEM IS ACCELERATING INNOVATION

The energy sector is undergoing a transformation as technological innovations respond to the challenges of climate change and rising demand. The share of solar and wind power in electricity grids continues to grow. Artificial intelligence and smart converters optimise electricity grid operations, forecast consumption and manage energy sources. Decentralised energy systems and community-owned energy solutions are becoming more common. Innovations can lower the cost of carbon capture and influence the demand for critical minerals needed in batteries and in solar and wind power plants.

THE IMPACTS OF DISRUPTIVE TECHNOLOGIES ON DAILY LIFE AND THE ECONOMY ARE INTENSIFYING

Technological development is reshaping society as a whole at an ever-increasing pace. Processes are increasingly automated, production and operations become more decentralised, and human interaction takes place remotely or in virtual environments. The impact of so-called disruptive technologies such as AI, quantum technology and telecommunications technology extends to markets, the value chains in the production of goods and services, institutions and regulation. Foresight supports timely innovation policy, regulation and investment.

AI IS BECOMING EMBEDDED IN NEARLY EVERYTHING

AI is becoming a general-purpose technology, akin to electricity. More decision-making power is delegated to algorithms, highlighting issues of data collection, transparency and accountability. At the same time, the importance of AI literacy becomes increasingly important: for example, we must be able to understand the biases in AI training data and how algorithms operate, as well as be able to identify AI-generated images, audio and text.

TECHNOLOGY IS CHANGING OUR RELATIONSHIP WITH KNOWLEDGE AND LEARNING

While AI applications can support information seeking and learning in many ways, we should also monitor and assess how the use of AI is changing our relationship with knowledge and our understanding of learning. Does faster information acquisition and production also lead to a deeper understanding? Are the AI applications we use transparent, and do we understand how they work and potentially affect our perceptions of the world?

TECHNOLOGY MEDIATION IS RESHAPING THE MEDIA LANDSCAPE

We increasingly watch and listen to media content based on algorithmic recommendations. As media use becomes increasingly digital and AI continues to advance, media consumption will become even more strongly mediated by technology. Various AI-based interfaces will provide us with ever more customised content that combines images, sound and text in new, more immersive ways. At the same time, there is a risk that we will have fewer opportunities to understand how and why our personal media realities are constructed.

SPECIALISED AI MODELS INCREASE PRODUCTIVITY

The next phase of AI development will bring new specialised models and applications to support the renewal of industry and various sectors. The application of sector-specific AI may have substantial effects on improving productivity. Europe has an opportunity to become a frontrunner, especially in applied AI. Particularly promising areas include industry, healthcare and public-sector solutions such as legislative automation.

THE COMBINED USE OF TECHNOLOGIES CREATES NEW OPPORTUNITIES

In the global technology race, Finland's strengths include semiconductors, high-performance computing, AI, quantum technologies, telecommunications technologies, space technologies and cybersecurity. In addition to individual technologies, it is essential to understand how they can be combined. For example, AI can help extract more benefit from satellite data.

NEURODATA BECOMES MORE COMMONPLACE

Combining AI with neurodata, which refers to data monitored from the brain and nervous system, will broaden the use of such neurodata. In addition to the treatment of diseases, it could be used to monitor well-being at work, but also to influence people. Neurodata could be used for marketing or political influence, which threatens democracy and privacy and has created the need to protect mental privacy. UNESCO has adopted the first international recommendation on the ethics of neurotechnology. It aims to ensure that neurotechnology promotes human well-being without jeopardising human rights.

VIRTUAL WORLDS MAY BECOME MORE FULLY IMMERSIVE

In the future, more and more people may spend a growing share of their waking hours in various virtual environments. This can have positive effects, for example by enabling more effective and vivid forms of learning, but it may also have negative consequences if virtual realities lead people to withdrawing from the real world and human interaction. There is a need to discuss the "rules of the game" for example identity verification, the enforcement of age limits and cybersecurity.

THE FUSION OF BIOLOGY AND DIGITALISATION COULD SHAKE THE FOUNDATIONS OF THE ECONOMY

Synthetic biology refers to biological systems, cells, cell components or organisms that are designed and built by humans and are not found in nature. Genetic codes are designed on a computer, chemically synthesised into corresponding DNA, and introduced into a cell. Thanks to the advances in various technologies, a breakthrough in synthetic biology now appears to be close. Its effects could be transformative in areas such as food production, healthcare, medicine and vaccine development, industrial manufacturing, and construction.

WILD CARD

WHAT IF THERE WERE ONLY THREE MILLION PEOPLE IN FINLAND?

According to an alternative population projection by Eurostat, Finland is one of the EU countries whose population will decline even when migration is taken into account. Finland's population is forecast to decrease to 4.8 million by 2100 despite immigration, and to 3.4 million without immigration. The corresponding figures for Sweden are 13 million and 8.8 million. What if Finland's population shrank even faster than projected, to three million? How would we reshape society's services? What would this mean in different parts of the country?

WILD CARD

WHAT IF THERE WERE EIGHT MILLION PEOPLE IN FINLAND?

In recent years, net immigration to Finland has been at an unprecedentedly high level, at around 40,000 people annually. Experts consider it unlikely that this figure will remain as high in the future. However, if it did, Finland's population would grow to 6.5 million by 2070. But what if Finland pursued a far more ambitious migration strategy based on attracting skilled workers – one that would already increase the country's population to eight million by 2050? MDI has calculated that this would require around 100,000–125,000 immigrants per year. What would our society look and sound like? How would our understanding of "Finnishness" need to evolve?

WILD CARD

WHAT IF A LARGE-SCALE GLOBAL CONFLICT BREAKS OUT?

A global conflict and a large-scale military crisis affecting several nation-states would fundamentally transform the security and international political environment. Its impacts would extend not only to all aspects of human life but also to the economy, technology and the functioning of societies. New forms of warfare such as hybrid influence and cyber operations can undermine the functioning of societies without direct military aggression.

How would a large-scale global conflict manifest itself in Finland, and how would it differ from previous ones? What if, alongside preparing for conflict, we were to invest in peace research, conflict resolution and peacekeeping?

WILD CARD

WHAT IF THE UN WERE RENEWED AS A POWERFUL GLOBAL ACTOR?

The UN will turn 100 in 2045. Global cooperation requires new operating models that are more just, inclusive and effective. The Sustainable Development Goals, climate action, and technological and intergenerational fairness will require close cooperation between states, businesses, civil society and international institutions. Although the UN has also been heavily criticised, it has endured as a key actor in a complex world. As a provider of emergency humanitarian aid and a guardian of nuclear safety, it remains unrivalled.

What if the UN succeeds in reforming itself and gains a stronger role as a global forum and cooperative actor? What kind of world order would emerge if the UN were truly at its centre?

WILD CARD

WHAT IF CLIMATE ENGINEERING BECOMES MORE COMMON?

The impacts of climate change and insufficient emissions reductions have prompted many countries to explore more radical measures to curb warming. These include the release of aerosols into the upper atmosphere to reflect some of the sunlight back into space. The hope is that these technologies could buy time for emissions reductions and help avoid crossing tipping points. The risk is that they cause irreversible damage or become an excuse for delaying emissions reductions.

What if countries were to engage in large-scale climate engineering regardless of the risks? How would the extra time be used, and how would the impacts and costs be distributed?

WILD CARD

WHAT IF HARMFUL SUBSTANCES POISON NATURE AND HEALTH?

One of the planetary boundaries already exceeded concerns chemical pollution, meaning the release of new synthetic chemicals into the environment without adequate safety testing. There are currently hundreds of thousands of chemicals in use, and for many of them, the long-term impacts on the environment and humans are unknown. Large-scale and uncontrolled chemical contamination and exposure may harm nature and human health.

What if harmful substances were to spread across a wide area? What if the harmfulness of a particular substance was only discovered with a delay, once it was already widespread? How would this affect food production, healthcare or relations between countries?

WILD CARD

WHAT IF THE MISUSE OF TECHNOLOGY RESULTS IN A CATASTROPHE?

Technology can be used for good or for harm. In its report, the UN Office for Disaster Risk Reduction (UNDRR) highlights the misuse of biotechnology and AI. The falling costs of genetic engineering have made it easier to create new pathogens. Meanwhile, AI can be used to undermine trust and blur what is actually happening, which may exacerbate conflicts or lead to rash actions.

What if new technology were used to incite large-scale destruction? What if the deployment of technology led to a major disaster? What if technology development and deployment paid more attention to potential misuse?

WILD CARD

WHAT IF ENERGY WERE AVAILABLE IN NEARLY UNLIMITED QUANTITIES?

The demand for energy has risen continuously and is expected to keep rising in the future. At the same time, we must move away from fossil fuels. Yet the development of battery technology, the increase in renewable energy, small modular nuclear reactors, fusion power and new ways of producing energy could together lead to a situation in which abundant energy is available, and its price falls significantly.

What if energy were practically free and easily available everywhere? What kinds of changes would that bring to the economy and society?

WILD CARD

COME UP WITH A WILD CARD OF YOUR OWN THAT WOULD RADICALLY ALTER THE FUTURE

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FEEDBACK ON THE CARDS

How did it go? How did using the cards feel?
Thank you for sharing your feedback – praise or criticism.
Your input helps us develop the cards
and make them even better.

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