Think Tank Report

A look at the agenda of international think tanks

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Connectivity

What will the post-digital age look like?

Contents

Connective Intelligence Is the New AI

Connectivity, the principle of networks based on digital infrastructure, is one of the most influential trends of our time. It promotes social and economic change and marks a new chapter in the evolution of humanity.

Digital communication technologies are fundamentally changing our lives and creating new patterns of behaviour. This means that connectivity is not just a technological but a social and cultural process, with the needs of citizens in a network society acting as the driving force. Digital technologies and cultures are shaping our lives so profoundly that we are already approaching a "post-digital" age. In 2050, computers and machines will have become so deeply embedded in our lives that we will hardly notice them anymore.

Today, we already live in an era of hyperconnectivity. The internet has become the dominant medium of communication for most people and machines around the world. It is a key tool for industries, organizations, and individuals. But the process of digital transformation poses unexpected challenges for the traditional economy and creates new social, cultural, and economic patterns. Sharing platforms are changing entire industries, traditional business models are giving way to the streaming principle, and new technologies, above all artificial intelligence (AI), shape our living and working environments. Our world is becoming ever more connected and the scene of omnipresent algorithms.

The naïve tech enthusiasm of the 2000s that celebrated the internet as a medium of truth, democracy and knowledge has become a thing of the past. Instead, fear of digital surveillance, cyberbullying and shitstorms has turned social media into a digital pillory, while digital filter bubbles and fake news distort our perception of reality. That's why a central task facing us is to develop and cultivate a more critical, systematic understanding of the digital transformation. This means, in the first instance, that we should not reduce it to technology but instead view it more comprehesively – as *communication* mediated by digital technology. The digital transformation is a *socio-technological* process in which people are playing an increasingly important role, precisely because digital technologies permeate all areas of life.

Connective communication technologies are changing our lives, work and businesses. They reprogram socio-cultural codes and create new habits, lifestyles and business models. A crucial challenge for the future will thus be to develop a new understanding of AI in the sense of *connective intelligence*, i. e. the establishment and expansion of interconnections between social, economic and political innovations.

This special issue of the Think Tank Report addresses the following key questions:

- How will connectivity shape our lives in the coming decades until 2050?
- What developments can already be observed today?
- Which skills and mindsets will be required in the connective society of 2050?

We would like to thank our interview partners:

- Chris Boos Founder arago GmbH
- Nicole Büttner Founder & CEO Merantix Labs
- Prof. Dr. Katharina Hölzle Head of the Research Group IT-Entrepreneurship, Hasso Plattner Institute
- Prof. Dr. Antonio Krüger Managing Director of the German Research Center for Artificial Intelligence (DFKI)

1 The Megatrend of Connectivity

How digital networks and artificial intelligence will shape the society of tomorrow

The connective future will be defined by the alliance between humankind and machines, as humans and machines are more successful working as a team. In 2050, our everyday lives will be shaped by the interaction of artificial and human intelligence. A profound cultural change will have taken hold. Instead of a perfectionist culture that condemns errors, a new flexibility will be required of us, not only tolerating mistakes but welcoming them as a source of innovation. We will learn from and together with machines.

Our vision of the future relationship between humans and machines is profoundly shaped by pop culture, movies and television and often has a dystopian bent. The fear of new technologies that finds expression here is a human constant. Just like the invention of the railway and the automobile once triggered visions of horror, a future where "intelligent" machines dangerously develop a life of their own seems realistic to many today. But there is also a growing awareness that technologies like AI and the trend towards comprehensive automation are opening new opportunities and creating new kinds of jobs and business models. Ecosystemic thinking is the crucial paradigm for the connective network economy.

"Is our society prepared for connectivity? Do we have the resources to maintain our standard of living in 2050?"

Katharina Hölzle

The Connective Network Economy

Business after the digital revolution

The megatrend of connectivity describes the dominant pattern of economic and social change in the 21st century. The connective economy differs from the economy of the 20th century, like electricity differs from mechanics.

This has consequences for knowledge and resources. "We used to operate in one-to-one relationships, but today we are part of many-to-many relationships," says Katharina Hölzle, head of the research group IT-Entrepreneurship at the Hasso Plattner Institute of the University of Potsdam. "The potential for human connections, knowledge, material and immaterial resources is growing and, in many ways, unlimited. The key term to consider here is 'exponential growth'."

In science, connectivity increases the rate at which knowledge is produced at disseminated. "We used to send manuscripts back and forth for weeks on end," recalls Antonio Krüger, Managing Director of the German Research Center for Artificial Intelligence (DFKI). "Today, we can share documents across time zones with the click of a button." And importantly, only global cooperation has made possible the speed at which vaccines against Covid-19 have been developed. "Hardly anybody expected that we would be this fast."

Nicole Büttner, founder and CEO of the AI provider Merantix, thinks that "in a connective world, there will be no more language barriers" and that because "we are no longer alone, everyone can find their community." In the network society we will "continuously vote and express our preferences, economically, socially and politically." According to Büttner, this increases the equality of opportunities. She adds that "we will more easily be able to realize our dreams and be given more opportunities to do so."

In the connective economy, businesses no longer act as isolated units but as nodes within more extensive networks and digital ecosystems. Successful companies are characterised by their open ecosystem and by the ability of their system to learn from and develop in response to the environment. Corporate boundaries become permeable, giving way to a more transparent approach to the exchange with customers, partners and competitors.

Real-time data transfer provides the foundation for future technologies such as extended reality or the revolution of mobility systems. In the middle of the 21st century, autonomous driving and flying will be part of the new, digital, normal.

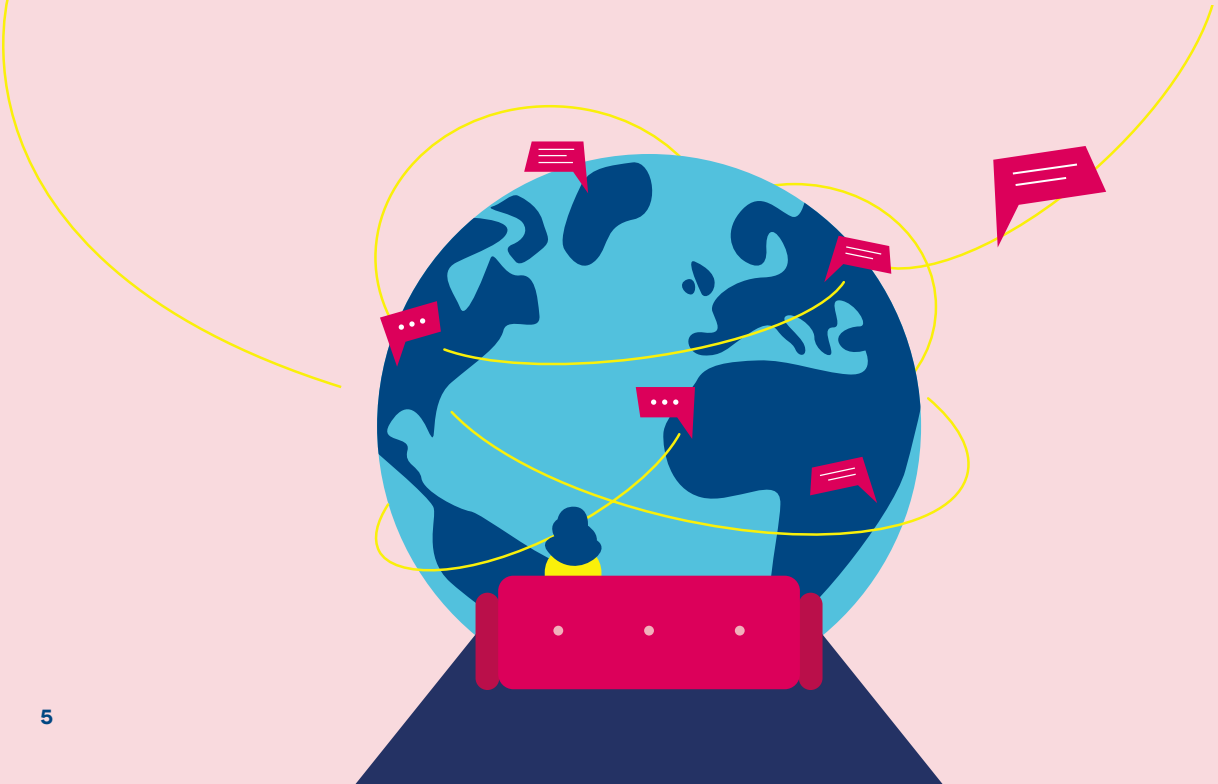
At the same time, the economy of tomorrow will be shaped more than ever by the so-called platform principle. Already in the 2020s, online business models that connect providers and clients on digital marketplaces are on the rise. Trading platforms, search engines, delivery services and mobility services have all become a decisive success factor for the modern-day enterprise. And while the platform economy was initially geared primarily towards private customers, B2B platforms are gaining momentum.

Chris Boos, founder of Arago and member of the Digital Council of the German federal government, warns that this will lead to power shifting away from democratic structures. "Platforms see themselves as successors to nation states. Platforms have a population that they interact with, as well as rules and committees. There is indeed a risk that nation states will be replaced by international companies."

What's clear is that the 'internet of things', which enables devices to be connected in various ways, will lead to a smartification of the world – from the smart city, offering seamless mobility, to smart factories, which manufacture individualised products. The industry 4.0 will see products communicate with machines and people on the basis of partially self-organizing, hyper-connected processes and smart supply chains that interlock seamlessly. The more intelligent the networked machines become, the more successful and efficient these new technologies will be.

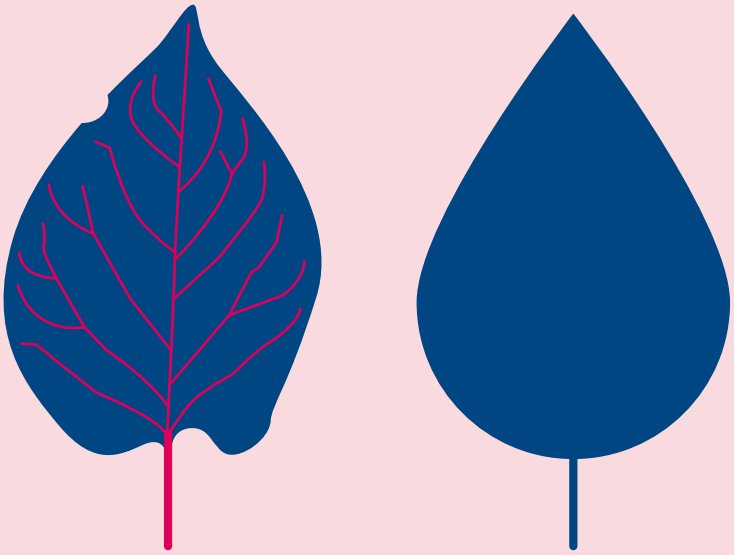
Katharina Hölzle from the Hasso Plattner Institute at the University of Potsdam argues that this will make personal and professional development pivotal. "Anyone who works at Volkswagen will have to program production that is driven by the Internet of Things. Companies must learn that customers and the product no longer 'belong' to them. We all have to learn what it means to share and to see ourselves as part of a network." What does she think we must ask ourselves about the future? "Whether we have the skills to make use of connectivity for our personal, social and economic benefit."

This question is all the more pressing since the megatrend of connectivity also expands the economic power of the individual. The internet transforms consumers into prosumers – and turns e-commerce into social commerce. This profound socio-economic change finds expression not least in the sharing economy, which is being driven by a new network mentality. Utility and access are becoming more important than property and possession. The new social forces emerging from social networks continue to make the economic system more democratic and to promote critical awareness in consumers. Likes, shares, ratings, but also hate speech and so-called 'shitstorms' have long since become the new normal for both individuals and companies. In the future, a digital presence will be even more relevant for the reputation of organizations and brands.



Complexity Needs Simplexity

Finding one's way in the digital labyrinth



The increase in complexity due to various interconnected devices creates a growing need for interfaces that meet the principle of simplexity: Interfaces that ensure simple and intuitive access to complex technological applications – such as virtual assistants using natural language processing that work more intuitively than keyboard and mouse.

But the harmonious interaction between man and machine increasingly requires connectivity as well. "As human tasks change, humans will act more as regulators and require greater flexibility," says the managing director of DFKI, Antonio Krüger. Cooperation with machines will be more intensive too. "In 2050, mixed forms of interaction will be normal. We will work in hybrid teams." Chris Boos sees the interaction between man and machine as a win-win situation: "Without people, machines cannot do anything. A machine has no knowledge, no self-awareness and no goal. Machines only work with the input that people generate. The people are the trainers of the machines."

2050 will see intelligent machines communicating in all areas of life. The basis for this is the concept of human-machine interaction: intuitively designed information technology at the interface between humans and computers. The goal is the productive, reciprocal supplementation of the "super skills" of humans and machines. Computers are unsurpassed when it comes to arithmetic and pattern recognition – but only people can think, feel, grasp contexts and be creative. As innovative technologies support our human potential, they are of benefit to all actors involved. The "personal computer" becomes a cultural achievement.

Interview

Hans-Christian Boos

Nicole Büttner

Podcast

Prof. Dr.
Katharina Hölzle

Prof. Dr.
Antonio Krüger

A New Culture of Innovation

Learning to fail with connective intelligence

In the age of connective intelligence, innovation must be thought of more holistically – economically, socially and individually. Merantix-founder Büttner calls for a new culture of innovation, always keeping in mind the question "What do we want to use innovations for?". She sees the idea of the Green New Deal as a positive example: "Innovations need goals such as sustainability, inclusion, health or medical care. Goals that inspire and encourage us to act."

It is important to recognize that the digital transformation is not only about technological innovations but is driven by social resonance. Increased connectedness makes basic human needs such as trust and security even more critical for business models and the design of products and services. Innovations can neither be prescribed nor planned – but one thing is clear: they depend on creativity and collaboration.

One of the guiding principles of the connective society is the concept of "creative failure." This means going beyond AI, understood as merely artificial intelligence – what we need is connective intelligence, enabling innovation based on creative relationships and networks. Ultimately, we arrive at a vision of an inclusive and open society. Countries and regions with a healthy culture of innovation and mistakes will prevail, as they seek to find a balance between individuality and diversity and promote human curiosity – with direct consequences for politics and society. "In a more diverse world, we have to organise solidarity differently," says Nicole Büttner. "In a diverse society, individual differences like male or female, white or black will no longer play a role."

"What is the European answer to the network economy? What are our visions and goals for a data-centric future? Where should we use digitisation and AI and where is it best not to?"

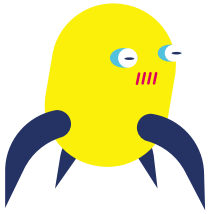
Katharina Hölzle

The AI Strategy and Vision of the EU

In a positive scenario, Europe takes on a new global role as a digital union and common European innovation landscape. "Digital sovereignty made in Europe" will make Europe more independent and competitive compared to China and the USA. In 2020, the EU Commission presented a new digital strategy with the ambitious goal of making digitisation the "norm in our society (…) be it in agriculture or the financial world, in culture or in construction, in the fight against climate change or against terrorism" (cf. von der Leyen 2020).

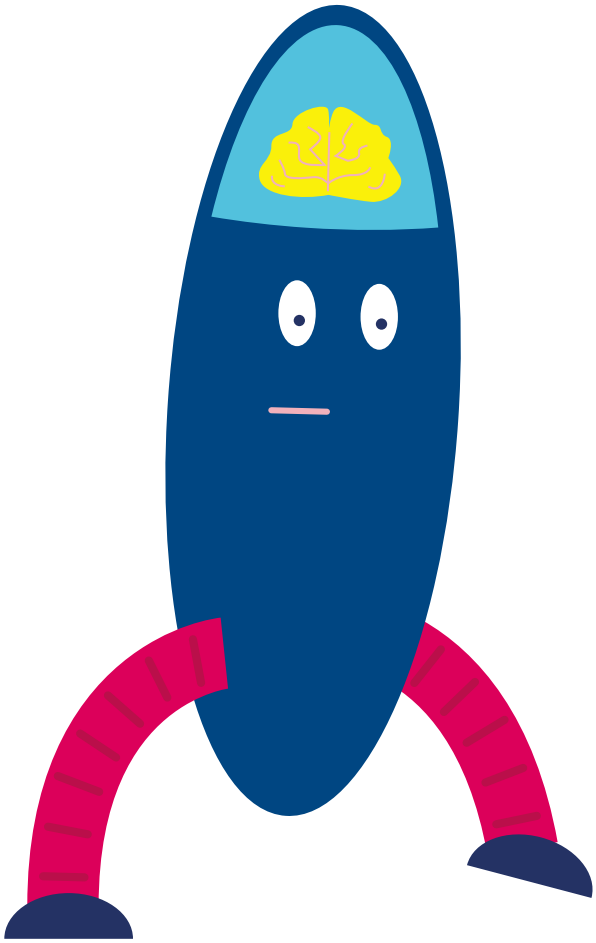
The two key concepts of the European AI strategy are excellence and trust. The focus is on the challenges of better health care, safer and cleaner transport systems, and inexpensive and sustainable energy. Four goals stand at the center of the EU's strategy:

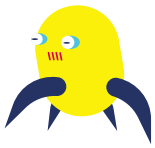
1. **Creating favourable conditions for the development and dissemination of AI**
2. **Building strategic leadership in high impact sectors**
3. **Positioning the EU as the ideal location for successful AI**
4. **Developing AI technologies that serve people**



2 The Connective Society of 2050

What is technologically feasible will not necessarily prove to be useful. Technologies are always connected with cultural techniques and social values. They are entangled in social, political, and ethical frameworks. In the connective society of 2050, the digital and the analogue will merge into one another. Instead of being an end in itself, technology will respond to people's needs and encourage their participation. This new interaction between man and machine will shape our lives in 2050.





A Dystopia — the Superhuman

With the help of huge amounts of data, smart software and superfast computers, Ray Kurzweil, director of engineering at Google, wants to make humans immortal. According to Kurzweil, tiny nano-robots will make the immune system invincible in the future. Diseases will no longer stand a chance. The goal is to "cheat death and attain eternal youth" (cf. Hülswitt 2008). Kurzweil predicts that that computers will surpass humans in almost every field by 2045.

But Kurzweil is not alone with his vision. Historian Yuval Noah Harari also sees an upgrade of humans to godlike superhumans on the horizon, writing that "an economy that is based on constant growth needs limitless projects – such as the pursuit of immortality, happiness and divinity" (Harari 2018, p. 64). But the vision of transhumanism – expanding human possibilities through the use of technology – fails to recognize that the human brain does not function like a computer: a model of the brain does not make a brain.

Moreover, the transhumanist vision of the fusion of humans and machines and the adoption of an ethics calculated by algorithms, is nothing short of dystopian. If we hand over our power to the machines, we will become *homo obsoletus* – that is, superfluous. So even if transhumanism has won over parts of the tech elite, its principles are incompatible with the concept of human dignity – and that is why it's rejected

by the vast majority of people. In 2050, we won't see the dawn of the era of technoid superhumans who upgrade their brains and bodies, using genetic engineering, computers and robotics.

The founder of arago, Chris Boos, warns of another dystopia, resulting from the "rule of feelings instead of facts" and a "thoroughly emotionalized society." The more we act based on instinct, the easier we are to manipulate. "We have to turn this dystopia into a utopia and make use of the connectivity of things and people in the service of common goals."

"The idea of human superfluity is part of the eternal human inferiority complex. We don't trust ourselves with anything that cannot be mechanised. In doing so, we forget those factors that will forever distinguish us from robots: pain, mortality, love, creativity and true empiricism."

Matthias Horx

A Utopia — the Connective Human

Machine learning enables computers to recognize patterns and regularities in large amounts of data, optimise solutions to problems and thereby increase the efficiency of the entire economy. They can learn and provide many answers – but are limited when it comes to identifying unknown problems. When confronted with a data-free space, they are lost. If humans don't define the problem to be solved, these machines cannot be innovative. In uncertain and surprising circumstances, AI reaches its limits. That's where autonomous human thinking beats autonomous machine systems.

AI will therefore neither create a new "superintelligence" nor will it lead to a superiority of machine intelligence over human intelligence. In contrast to *homo obsoletus*, *homo connectus* will only create machines that increase its freedom and possibilities. AI is already present in many areas of our daily lives – from home appliances and fitness bracelets to messengers and chatbots – and it will be ubiquitous in 2050, paving the way for a "protopian" future: a progressive utopia of the connective society, in which we are able to freely and consciously shape our lives using intelligent technologies.

In this society, we will define satisfaction and happiness less in terms of consumption but more in terms of our participation in shaping the environment and social progress. In the connective economy, we won't primarily buy products and services, but will increasingly invest in relationships and stories. Our focus will be not on the satisfaction of material needs but on developing our talents and ideas. "We will live in cities that are designed according to people's needs and not according to the needs of logistics companies," predicts Antonio Krüger.

Professions that mediate between things and people (and between people and things) as "connectors" and "intermediaries" will shape how we will work in the future. The uniqueness of humans will then, more than ever, consist in their ability to generate knowledge in a critical process and to allow others to participate in it. Technologies can promote and facilitate this fundamental human competence. A new era of the Enlightenment will begin. The scepticism towards "intelligent" technology, which still prevailed at the beginning of the 21st century, will give way to a critical curiosity in which old and new questions are (re-)posed.

What distinguishes humans from machines is above all the ability to ask good questions. Good questions generate new spaces for thought, open up possibilities and can neither be predicted nor answered immediately. Questions like:

1. How can we use digital systems and technologies to live smarter, healthier and more meaningful lives?

2. How can data improve our cities, social systems and democratic processes?

3. When do we (finally) stop confusing ourselves with machines?

Medicine as Networked Individuality

The potential of a connective society is enormous, especially for the health sector. Medicine is becoming more precise, reliable and patient-oriented through digitisation and artificial intelligence. The medical ethicist Eric Topol speaks of a "science of individuality", driven by trends in demography and digitization (cf. Kaulen 2020). We are thus facing a turning point in medicine. Every person will be able to be measured in real time.

For Topol, we are faced with the question of "whether this development leads to a dehumanization of medicine or to the opposite" (cf. ibid.). In a positive scenario, we will no longer spend hours in different doctor's offices and clinics, where we receive contradicting diagnoses and too many medications. With the help of diagnostic tests, we will find out more quickly what makes us sick and receive the right therapy.

Six Key Skills for 2050

These skills are essential in dealing with connective complexity and will shape the life of "Generation Connected" in 2050.

1 Cyberhumanism encompasses a multitude of complex skills in dealing with AI and sensitive data. Cognitive skills are just as important as motor, social and emotional skills.

2 Knowledge navigation describes the ability to differentiate between different forms of knowledge and to relate them to one another. This "knowledge of knowledge" is essential for maintaining an overview in hyperconnected environments.

3 Multi-logic brings together linear and non-linear thinking strategies. This merging of emotion, intuition, knowledge, and creativity helps in successfully navigating through digital information flows.

4 Trust mediation is essentially the situational production of trust, focusing on empathy and resonance and without fear of contradictions and ambiguity. The goal is to find shared solutions using feedback loops.

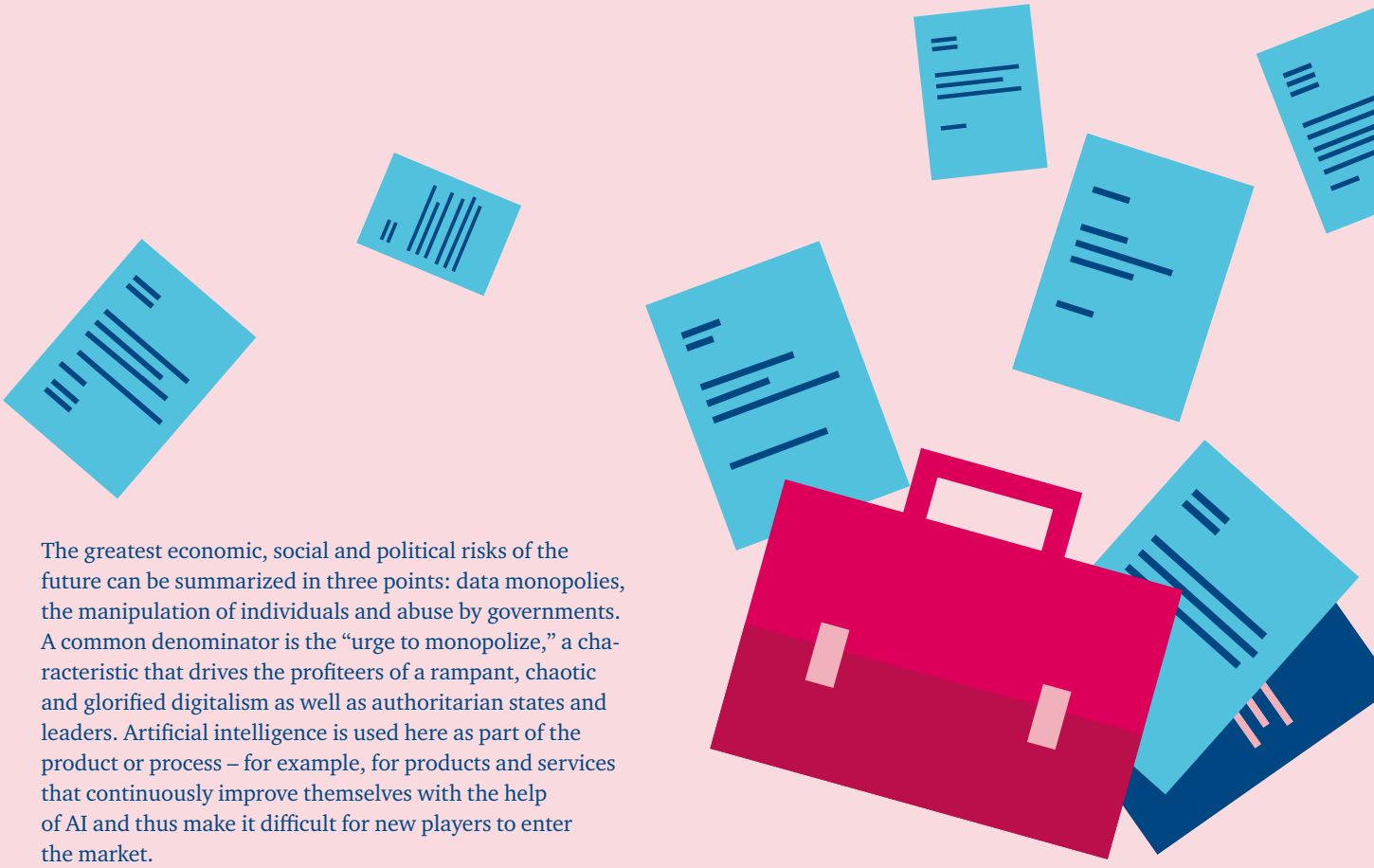
5 Pattern seismography consists primarily in a sense for the dynamics of communicative contexts. The merging of analogue and digital worlds plays a central role in understanding newly developing patterns.

6 Cybern-ethics is a form of cybernetics that emphasizes ethical values and promotes an open, flexible culture. It is based on a holistic perspective on society and its systemic interconnections.

3 Connective Chaos?

Political and social aspects of governance, communication and interaction of future societies

How will technologies like artificial intelligence change society and individuals? Pessimists envision dystopian scenarios in which AI rules as a benevolent dictator. The struggle between liberal democracy and repressive authoritarianism will shape the 21st century in the sphere of technology as well. Authoritarian regimes turn into digital dictatorships and liberal political systems become digital democracies. The question is: will western societies continue to disintegrate into digital subcultures and filter bubbles or will they be able to transform themselves into inclusive, connective societies?



The greatest economic, social and political risks of the future can be summarized in three points: data monopolies, the manipulation of individuals and abuse by governments. A common denominator is the "urge to monopolize," a characteristic that drives the profiteers of a rampant, chaotic and glorified digitalism as well as authoritarian states and leaders. Artificial intelligence is used here as part of the product or process – for example, for products and services that continuously improve themselves with the help of AI and thus make it difficult for new players to enter the market.

“The connective world is n-dimensional. However, many organizations such as political parties and companies continue to live in a two- or at most three-dimensional world.”

Nicole Büttner

Merantix founder Büttner also sees a potential for increasing social polarisation due to the rapid growth of connectivity and communication. “There is a danger of society devolving into into tribes and identity politics.” The polarisation of society, however, is not caused by connectivity but by the feeling that society is not moving in the same direction. That is why DFKI director Krüger demands that “we should use connectivity in order to advance the common goals that are important to all of us.”

In this context, IT expert Hölzle describes two extreme scenarios:
“Scenario one: We have mastered the challenges and have changed ourselves, our society, the economy and the country. A large network of connectivity has emerged. People have the skills they need and have trust in themselves, their environment, society and politics. They can move around in networks, work globally and digitally and live where they want.

Scenario two: People are disappointed, have lost their money and feel like losers. Nation states are making a comeback and are putting up walls. We will live in isolated fortresses, like in the dark ages.”

We need more regulation in order to avoid a negative scenario, says Antonio Krüger. “We have to be clear about the risks and set up rules to regulate behaviour. But we are only just getting started with this type of regulation and, in the end, these rules will need to be enforced as well.”

More than ever, a connective economy needs not only free competition but also order, standards and guidelines – if only to prevent the manipulation of citizens or consumers. In the future, we will delegate many decisions in our daily lives to digital assistants, who will shop for us, organize our trips, and suggest books, friends, and partners. Many people will embrace the perks of such patronizing *nanny tech* and will even be willing to spend money on it.

Preparing for the social consequences of the connective era is therefore becoming a crucial challenge. “We reacted late to previous industrial revolutions and their social consequences,” says Chris Boos. “What’s different about the coming revolution – and an opportunity for us – is the fact that we need the input and experience of everyone.” Solidarity is therefore an issue of utmost importance. “We have to step into the new future together. People need to be reassured that nobody will be left behind.”

It is therefore becoming increasingly important to draw a clear line between technological support and machine-based disempowerment. A set of rules is needed to enforce the principle of neutrality and remove dangerous, manipulative, or criminal assistants. A democratic state that does not use AI to monitor and control its citizens is better able to do so than a digital dictatorship or unbridled digital capitalism. Boos believes this factor is decisive: “The strength of Europe is its people and their experience, its diversity and the way it handles diverging cultures.”

The Connective Society of Europe

Five pillars for a sustainable future

Every society needs to decide what to entrust machines with and act accordingly. We still have a choice: We can develop systems with which states and corporations monitor citizens and consumers – or ones that hold governments and companies to account on behalf of citizens. A promising alternative to the global connective chaos of individual states and subcultures as well as digital surveillance capitalism is the design of a European connective society with five central pillars:

- **Transparently produced AI.** Closed AI systems that act as black boxes are not trustworthy and harbour the risk of machine manipulation. Open standards must ensure the verifiability of algorithms and become a trademark of “AI made in Europe”. Innovations such as the European General Data Protection Regulation (GDPR) have shown that the development of transparent AI is possible and promotes competition.

- **Reforming regulation.** Building on European data policy, the issue of innovative promotion and regulation of the economy is becoming increasingly relevant. Open standards and incentives for sharing data play a crucial role. Instead of monopolistic platforms, Europe believes in an innovative and competitive ecosystem. Not only the owners of technologies should reap the rewards of technology but society as a whole.

- **Rethinking education.** A comprehensive understanding of Big Data in the sense of a reflective and mindful approach to the collection, processing and analysis of large, complex amounts of computer-generated data becomes a basic skill in the connective society, while the promotion of digital skills becomes a social task. AI competence begins as early as elementary school and becomes part of lifelong learning process. An education campaign “AI for everyone!” is needed to get as many citizens as possible interested in

connectivity in an accessible way. Twenty percent of working hours are reserved for personal development and continuing education.

- **Making society more just.** To prevent the financial gains of this system from going only to those who own the technology, a broad debate about the future of work is needed. In the connective society, gainful employment will be fundamental for recognition and appreciation. In the future, creative, social, and strategic skills will count more than ever. To fearlessly try out new things is more than ever the key to success, just as embracing failure is increasingly becoming part of a new culture of learning. Machines can teach us how to learn: to continuously test and experiment, breaking new ground along the way. The more AI and machines take on certain activities, the greater the new freedom for social, democratic and civic engagement, for time with family and friends, and for creativity and education.

- **Establishing ethical and legal guidelines.** The need for information security makes data protection a central issue, for companies and individuals alike. Access to sensitive data is only granted if a sufficient level of trust is guaranteed. Trust and security as well as cultural and social aspects determine digital business models and the design of products and services. Internationally binding regulation of AI at the level of the United Nations and the World Trade Organization as well as a global ethics council for ethical AI standards will ensure compliance with and adherence to general AI rules and principles by 2050. At the European and national level, an authority for AI guidelines will develop common standards for the use of algorithms.

A New Era of Enlightenment

Ultimately, we need to develop a new mindset that is geared towards long-term thinking and the achievement of common goals. “We have to advance the common good,” demands Chris Boos. “Politics, businesses and society need to work together to provide stability. It’s about taking small steps, and making mistakes along the way, too. What’s new might fail. We have to learn to accept failure.”

Only a digitally critical mindset can create new, serious spaces for open and reflective dialogue about how we want to shape our future. It marks the beginning of an enlightenment 2.0, an era of digital emancipation and social networking.

This means that

- **Social media will once again assume truly social functions.**
- **Democratic intelligence and digital sovereignty will finally go hand in hand.**
- **Instead of overestimating machines and underestimating people, humans and machines will interact intelligently with one another.**
- **AI tools for direct networking facilitate and promote social and political mobilisation.**

The prerequisite for this is the knowledge that only people have an emotional, value-based intelligence. This also means that, where a high level of emotional intelligence is required, the use of AI should be avoided.

The connective society requires adaptation, resilience and the ability to deal with complexity. But most importantly, it requires the courage to make mistakes, because only a constructive error culture helps us to master complexity and to regard risks as normal. A reflective and agile approach to increasing connectivity and complexity is the best recipe for mastering future crises. Social complexity will continue to increase and thus put open, liberal societies at an advantage, since they are used to dealing with diversity and plurality. In contrast, authoritarian systems can only cope with a low level of complexity.

The connective society offers the opportunity to shape the future differently. At the core of this neo-humanist vision are three aspects:

- **Connectivity as a solution to global challenges.** Digital innovations increase resilience and make our everyday lives easier. With their help, we can better tackle the major social problems of our time – from the climate crisis and energy transition, from physical and psychological security to the transformation of mobility and care in an aging society.

- **Connectivity as a driver of participation and democracy.** A more democratic and open society, which enables people to participate more in all major developments and decisions, is emerging. These include, for example, discourse platforms with integrated fact checking and tools that pave the way for new forms of direct and local decision-making.

- **Connectivity as an enabler of a new humanism.** The connective society is one in which all members lead healthier, wealthier and happier lives. In neo-humanist era, we can develop our human talents and competencies in a new and better way with the help of technology. Historians will later speak of the "Second Enlightenment": machines did not dehumanize us, but made us aware of what actually defines and drives us.

"Every child is born curious. And then we try very hard to remove its curiosity and replace it with the certainty of acquired knowledge. If we want to be successful, we need to bring back curiosity."

Chris Boos

The more the dissemination of information accelerates and the shorter the innovation cycles, the more education becomes a central question of the future. "In 30 years' time, today's digital natives might be clueless," warns Antonio Krüger, pointing out that the potential of connectivity in the field of education is particularly large. Krüger stresses that "access to education should be as low-threshold as possible and we must use digital tools in schools. We need an avalanche of further development in all areas."

This complements Katharina Hölzle's claim that "networks and ecosystems cannot be planned because they have their own dynamics. We have to learn to deal with uncertainty and ambiguity to see this as an opportunity and not a danger."

4 Connectivity 2050: Five Theses for a Connective Society

1 **The age of post-digitisation begins.**
The foundations of the digital network society have been laid, the analogue and the digital are increasingly merging. The more reflectively we shape our journey into the new post-digital era, the more society will benefit from it in the future.

2 **Organisations are nodes in the network.**
In the era of connectivity, organisations can no longer operate as autonomous units but only as part of various ecosystems. Increasing connectivity and maintaining interfaces and relationships is becoming increasingly important.

3 **Connectivity is a question of culture, trust, participation and security.**
The aim is a culture of innovation that allows change and rewards experimentation. A connective society offers extensive opportunities for inclusion and participation. Four factors are decisive: trust, participation, a strong culture of error and comprehensive security (occupational, cyber and future security).

4 **The future belongs to the alliance between humans and machines.**
The relationship between humankind and technology will determine our future. The new technological possibilities and the integration of smooth interfaces enable optimal teamwork. The focus is always on people.

5 **Connective intelligence creates new ecosystems**
Because of their connective intelligence, humans will continue to be superior to machines in the future. Human intelligence connects the social, economic and political innovation capital of society into new holistic ecosystems of trust and agility.

Literature
Harari, Yuval Noah (2018): Homo Deus: Eine Geschichte von Morgen. München 2018
Hülswitt, Tobias (2008): Werden wir ewig leben, Mister Kurzweil? Interview mit Ray Kurzweil. In: faz.net, 22.2.2008
Kaulen, Hildegard (2020): Sind Algorithmen tatsächlich die besseren Ärzte? In: faz.net, 8.5.2020
Von der Leyen, Ursula (2020): Europas technologische Souveränität. In: handelsblatt.com, 19.2.2020
Zukunftsinstitut (Hg.) (2016): Digitale Erleuchtung. Alles wird gut. Frankfurt am Main
Zukunftsinstitut (Hg.) (2018): Hands-on Digital. Agenda für digitale Kompetenz. Frankfurt am Main
Zukunftsinstitut (Hg.) (2019): Künstliche Intelligenz. Wir wir KI als Zukunftstechnologie produktiv nutzen können. Frankfurt am Main
Zukunftsinstitut (Hg.) (2021): Megatrend Dokumentation. Frankfurt am Main

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