5G/6G Worldmap 2030 scenarios

Mobile is Global project team
Aalto University, CKIR Center of Excellence

Aalto University

FOREWORD

This publication is related to scenario work carried out during the spring of 2025 in the joint research project ”Mobile is Global” by Aalto University and ETLA Economic Research. This project examines how geopolitical changes will affect the development and deployment of 5G and 6G technologies. The project focuses especially on Finland’s role and the promotion of strategic autonomy in this area.

The publication describes four possible futures that are driven by ongoing and future changes. They are stories, not predictions, and probabilities should not be calculated for their realisation. The stories take place in April-May 2030 and are based on the choices made by the centres of the geopolitical blocs, i.e. the United States, China and the EU, and their consequences. Russia also plays a significant role in these stories.

The scenarios are built on a quadrant formed by two mutually perpendicular axes. The vertical axis of the quadrant depicts EU’s technological sovereignty (extremes ”low” and ”high”) and the horizontal axis depicts the global political situation (extremes ”war” and ”peace”).

The scenario story ”New Threat Awaits” depicts a future in which Europe is technologically alert and in a strong position, but the world is on the brink of war. ”Europe’s Prometheus”, on the other hand, tells of a future in which Europe is ”doing well”: it has made the right decisions, its technological position is strong, and the world’s conflicts seem to be settling down for the best.

”Frog in a Pot” is a story about a future in which Europe has become a prisoner of its old way of working and is therefore lagging other blocs. ”From bad to worse” describes a situation in which Europe, in a technologically weak position, must respond alone to concrete threats coming from Russia.

Each scenario has its own set of opportunities and threats. The power of scenarios lies in the fact that they allow us to prepare for futures that are unexpected and surprising, and not directly derivable from the current situation. These scenarios invite the reader into the space where the story takes place and give them the opportunity to think about the future described from the point of view of their own organization:

- How well do my organization’s current strategies, operating models, channels, partnerships, products, and services work in each of these scenarios?
- How should my organization act now to improve its chances of success in each scenario in 2030?
- In which scenarios would my organization have the best opportunities to operate?
- Which scenarios would be bad or even harmful to my organization?
- How could my organization improve its opportunities to operate in all scenarios?

September 2025

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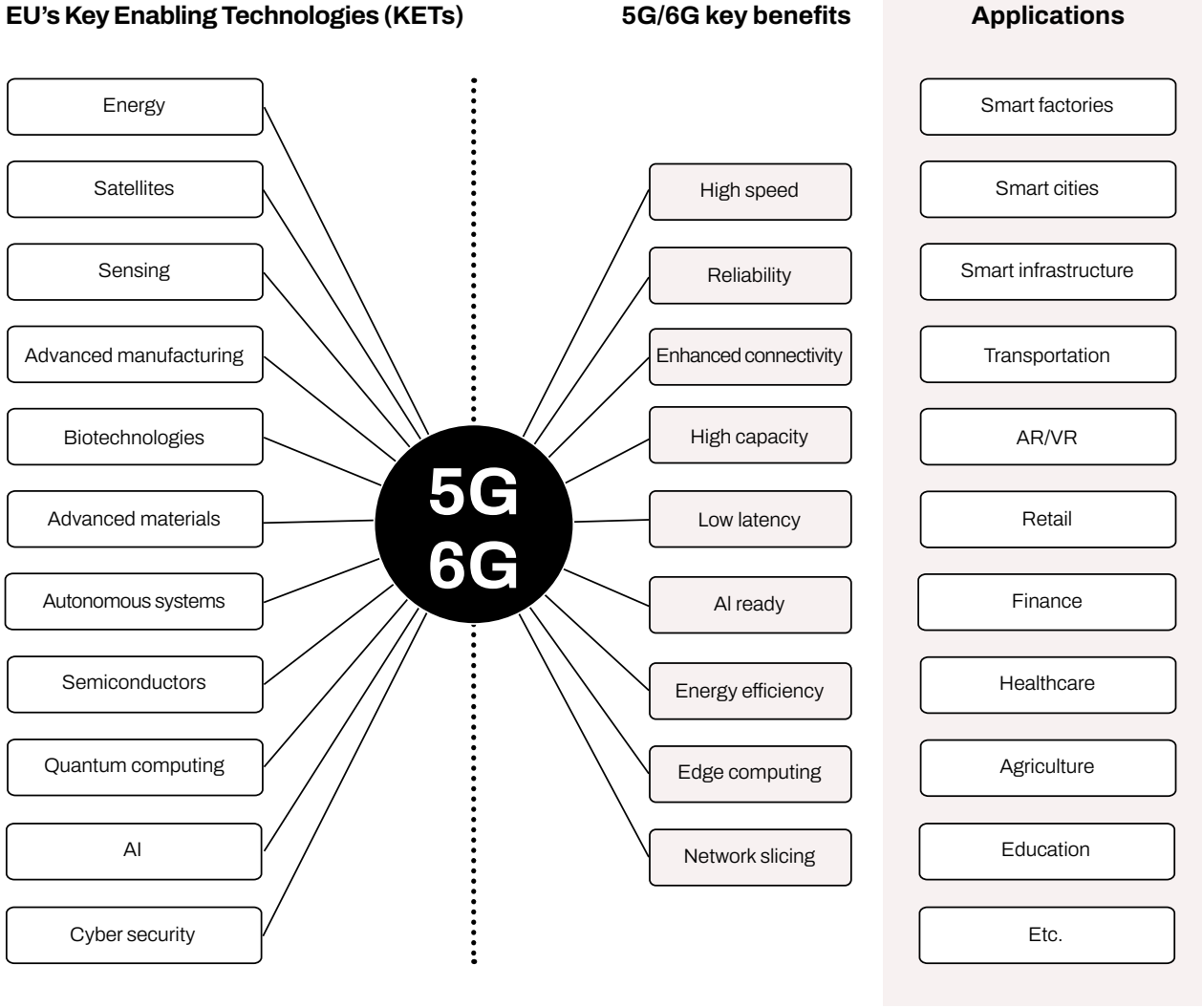
BACKGROUND

EU's Key Enabling Technologies (KETs)
5G and 6G represent connectivity, which EU has defined as one of the key enabling technologies for achieving technological sovereignty. They leverage other key technologies, and the benefits they produce are central value creators across various industries.

Market reviews
The scenario stories are accompanied by market reviews that illustrate the direction and (relative) changes in the 5G/6G industry. An assessment of the mobile network business has been prepared for the years 2024-2034 (year 2024 is the base with value of 100). The estimates have been prepared using publicly available market forecasts as background materials (including sources such as Global Markets Insights and Prime Pixels Marketing). Additionally, an assessment of changes in user numbers across different mobile generations between 2022 and 2034 has been made. These estimates also rely on publicly available market forecasts and reports, with sources including Ericsson and the Global mobile Suppliers Association (GSA).

Production team
This scenario work was led by a project group from Aalto University's CKIR Center of Excellence, which included Timo Ali-Vehmas, Nina Hyvärinen, Ilkka Lakaniemi, Risto Lehtinen, and Denisa Mäki. In the preparation phase, 39 experts and stakeholders from Finland and abroad were interviewed during autumn 2024 and spring 2025. The summary compiled from these expert interviews was used as background material in two workshops (held on April 23, 2025, and May 13, 2025), which had a total of 23 participants. The scenario story writing was contributed to by Denisa Mäki, Roy Nyberg, Kalle Toiskallio, and Tapani Virkkunen from the CKIR Center of Excellence. The facilitator for the scenario work was Risto Lehtinen. The layout of the scenario book was designed by Vivian White Oy.



SCENARIO AXES

Axis #1: Europe's Technological Sovereignty

"HIGH"

- Europe possesses critical and strategic technologies (development, acquisition, and utilization), encompassing the entire chain, including security technologies.
- Europe has credible military capabilities.
- European values are balanced.
- Europe has major anchor enterprises and effective international cooperation.
- Europe is a leading actor in regulation and standardization.
- Europe is capable of commercializing new technologies.
- Europe holds a significant market share in key technologies.
- Europe develops skilled professionals and can retain them.
- Europe has efficient and functional internal markets.
- Europe and European companies have access to global markets.
- Europe hosts the leading R&D ecosystems.

"LOW"

- European expertise is modest compared to international levels, and there is difficulty in retaining skilled professionals.
- Europe lacks resources for developing or even maintaining technological sovereignty.
- Europe is dependent on technologies and professionals from other countries and geopolitical blocs.
- Europe has become a "subcontractor" economy.
- European countries have become divided between the blocs led by China and the USA.
- Standard of living is declining in Europe.
- Innovation is decreasing in Europe.
- European democracy is weakening.
- Influencing through information is significant in Europe.
- In Europe, almost everything is imported (culture, content, platforms, values, etc.).

SCENARIO AXES

Axis #2: Global Political Situation

”WAR”

- There is conflict on the European soil – both technologically and in a traditional sense.
- In frontline countries, martial law is in effect, accompanied by war economy and emergency laws.
- Military technology is a clear focus for the EU (resources, time, R&D investments).
- European professionals are committed or compelled to support the war and war economy.
- General well-being and democracy are suffering.
- Consumer markets are affected negatively.
- The GDP of many EU countries is increasing.
- New innovations and breakthrough technologies emerge, particularly in the field of military technology.
- There is a continuous shortage of key resources (different from peacetime).
- The demand for information is high.
- Subsidiary alliances and partnerships form and dissolve frequently.
- The fate of the Euro is uncertain; barter systems and black markets thrive.
- Civilians flee conflict zones (migration, mass movements).
- There's a threat of use of biological weapons and fear of pandemics.

”PEACE”

- The EU is successful and strengthened.
- The overall operating model is a rules-based world order.
- In Europe, consumer welfare, security, health, and well-being are prioritized.
- Climate protection and greenhouse effect mitigation play a significant role in Europe.
- International cooperation flourishes.
- High-level professionals from around the world move to Europe.
- European internal markets are functional.
- Europe successfully balances well-being and climate actions.
- The European population is aging, and the dependency ratios in countries worsen.
- Technocracy grows stronger, and the role of techno-oligarchs becomes prominent.

Scenario

New Threat Awaits

2025

Global Political Situation

The war between Russia and Ukraine ends in a "forced peace," but tensions between the countries persist.

Russia demands war reparations from Ukraine for infrastructure destroyed during the war.

Aggressions between Israel and Iran escalate into a full-scale war.

Israel occupies the entire Gaza Strip.

Riots occur in the USA against Trump's authoritarian government.

The brain drain from the USA to Europe accelerates.

EU's Technological Sovereignty

Trade negotiations between the EU and the USA conclude with an agreement on asymmetric tariffs (USA 25%, EU 10%).

EU member states agree on a €150 billion joint debt to strengthen defense.

The EU invests €500 million to attract top international researchers.

2026

Global Political Situation

Russia continues aggressive propaganda and hybrid warfare-related terror attacks mainly against Eastern European countries.

Protests in the USA extend beyond major cities.

In the USA, the Republican Party loses its narrow majority in the House of Representatives in the midterm elections.

President Trump accuses the EU of exploiting the USA and threatens the EU with new tariffs.

Trump announces the withdrawal of U.S. troops from Europe.

Ceasefire between Israel and Iran. Forced relocation of Palestinians begins.

EU's Technological Sovereignty

In the EU's joint budget, focus shifts from agriculture and cohesion to defense and technology projects.

The EU decides to continue economic sanctions against Russia.

2027

Global Political Situation

China conducts extensive military exercises in the South China Sea; the USA remains neutral in the conflict. Political protests demanding change occur in major Russian cities. Large riots in southwestern and southern Russia against unemployment and ongoing martial law restrictions. Iran announces continued support for Hamas. Russia, China, and North Korea sign a broad military technology cooperation agreement. The USA demands large territories from Denmark in Greenland and announces the withdrawal of most of its troops from Europe.

EU's Technological Sovereignty

The budget for the next EU framework program (2028–2034) of €120 billion is approved, including significant investments in European AI and semiconductor expertise development. Strategy for key technologies in the EU is established. European AI platform (AIoD, AI on Demand) is successfully implemented. EU's first AI GigaFactory opens in Finland.

The EU challenges U.S. and Chinese tech giants in court over privacy violations. Joint Expeditionary Force (JEF) strengthens as Poland and the Czech Republic become members.

2028

Global Political Situation

Vladimir Putin is elected President of Russia; the opposition criticizes the elections as fraudulent and protests unsuccessfully. Russia demands significant territorial concessions from Poland and Lithuania around the Suwalki corridor.

The U.S. foreign policy remains unchanged following presidential elections. The USA begins troop withdrawal from Eastern European NATO countries; most freed troops are transferred to U.S. bases in Asia and the Pacific.

EU's Technological Sovereignty

The network of AI GigaFactories based on European AI technology ("EU AI Stack") is completed (5 centers).

AI business turnover in the EU reaches nearly €200 billion annually.

EU and Taiwan agree on cooperation related to semiconductor production and technology.

EU member states agree on a new €200 billion joint debt to strengthen defense. France and Greece join JEF. A robotic unit is established in JEF.

2029

Global Political Situation

Semiconductor markets are thrown into chaos when President Xi Jinping announces in his speech at China's 80th anniversary the aim to "unify China" by 2032.

The USA's 48th president begins their term; the foreign policy line remains unchanged, and U.S.–China confrontation intensifies.

Attempted coup in Russia is thwarted.

Russia proposes a state union with Belarus. Hamas experiences a resurgence.

EU's Technological Sovereignty

The EU launches a European chip production program in relation to Taiwan cooperation.

The use of 5G in the EU rapidly increases due to defense applications.

European LEO and MEO-based IRIS2 satellite network begins commercial operation about a year ahead of schedule.

The first European platform economy company becomes globally leading.

Germany and Italy join JEF.

2030

Global Political Situation

Russia and Belarus launch extensive military exercises and move troops to the eastern borders of the Baltic States.

China conducts navy and marine corps exercises in the Taiwan Strait.

Hamas resumes rocket and drone attacks on Israel from Syria; Israel responds by bombing Hamas bases.

EU's Technological Sovereignty

EU member states agree on a new €100 billion joint debt to strengthen defense.

European companies account for over 35% of EU countries' defense procurements.

AI and autonomous weapon systems are officially included in JEF operations.

ITU publishes a global 6G standard, although it contains multiple implementation options.

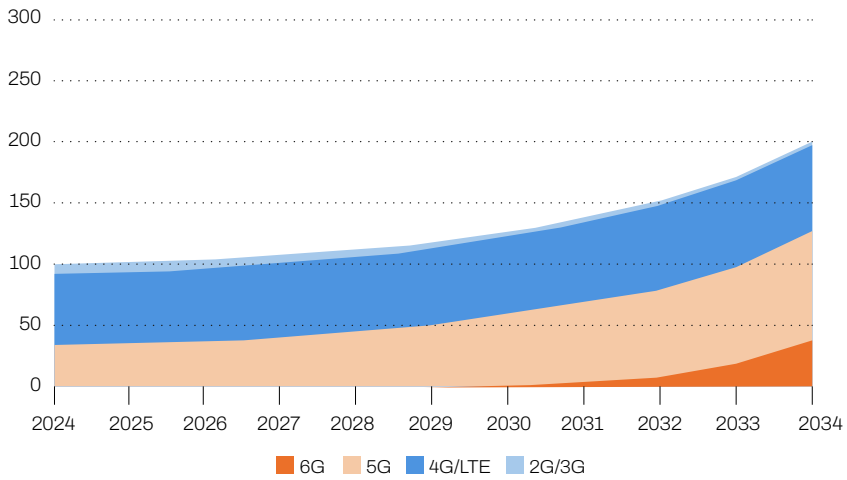
Market Review

Mobile Network Infrastructure Business

The average annual growth of the mobile network business is nearly 9% between 2024 and 2034. In 2024, 4G will hold over 60% of network investment. However, the market for 5G networks is growing significantly faster than that for 4G networks, and 5G is projected to surpass 4G in terms of network investments by 2032. Between 2024 and 2034, the average annual growth rate for the 5G network market is nearly 12%, whereas 4G networks will see a growth rate of less than 4% during the same period.

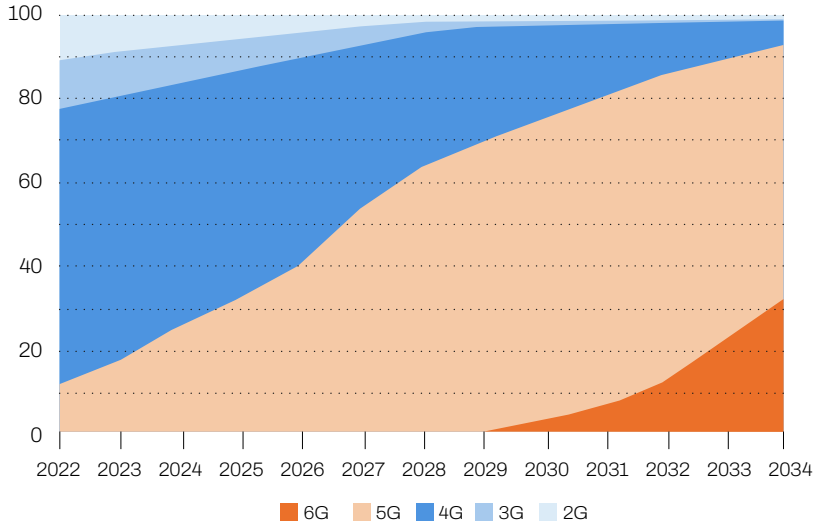
The development of the global 6G standard is advancing as planned with support from European entities. The standard will be published in 2030, but the first commercial test networks will begin construction as early as 2029. Following the publication of the standard, the 6G market growth is expected to be rapid: from 2029 to 2034, the average annual growth rate is projected to exceed 115%.

Business related to 2G and 3G networks primarily consists of maintaining critical connections.



Changes in the number of subscribers

In terms of number of subscribers, 4G is the most popular connection type in 2024, commanding nearly 60% market share, while 5G's share is slightly over 25%. 5G is expected to surpass 4G by 2027 and achieve nearly 75% share by 2031. 6G subscriber numbers will experience strong growth starting in 2031 when commercial 6G networks begin operations. By 2034, the combined subscriber share of 5G and 6G networks will exceed 90% of the total.



Government Palace in Helsinki, meeting of the Foreign and Security Policy Negotiation Committee set by the Finnish government

Thursday, April 25, 2030

State Secretary Virtanen, PMO (Chair of the Negotiation Committee):

Good morning everyone. As usual, the agenda for today's meeting is quite lengthy and we all have tight schedules, so I'll get straight to the point. The first item is a request from the UTVA[1] that was forwarded to you in the meeting invitation. The European Commission has asked member states for insights and comments for the finalization of their short-term plan. Finland's official response will be handled by the EU Ministerial Committee, but since this negotiation committee represents a broad spectrum of the entire administration, a statement has been requested from us as well. I asked each of you to gather the key messages from your respective ministries, and I will prepare a summary from them that you will get to review. But let's go through what matters Finland should raise at the EU level. Let's start with the Ministry of Foreign Affairs. Please go ahead.

Deputy State Secretary Lahtinen, MFA:

Thank you. First, I want to say that we are living in "interesting," meaning uncertain, times, as the recent EU parliamentary elections have shown. Due to the election results, forming the new commission took unusually long, and it still seems that the commission is not entirely unified in its strategy. Fortunately, the EU's bureaucratic machinery has managed to fill in the missing parts.

The main message from the Ministry of Foreign Affairs is that, despite the challenging circumstances of recent years, Finland and Europe have managed to navigate quite well. Of course, challenges remain. The end of the war in Ukraine was a positive development, but the heavy peace formed under U.S. pressure has not eliminated regional tensions. The annexation of Crimea and other territories occupied by Russia was a very high price, but Putin would not have agreed to peace without it. On the other hand, the mineral agreement with the U.S. was a smart move by Zelensky. It ensured U.S. commitment to Ukraine's independence and development without formal security guarantees, which would have been politically difficult during the Trump administration. The agreement has attracted a wealth of American investments into Ukraine's infrastructure and industry. This is a good thing for Ukraine, but the EU must ensure that Ukraine does not become a U.S. colony.

A positive outcome is that the U.S. retreat from Europe and Russia's ongoing posturing have helped the EU find its inner backbone. The EU has now assumed primary responsibility for Ukraine's political and economic integration into Europe. The opportunities are great, but so are the risks. Integrating a country the size of Ukraine into the union is not a simple matter.

The third issue on our list is that, as a border state of the EU, Finland must keep the Russian military and political threat on the agenda in European-level discussions. Another attack on Ukraine remains possible, as the peace agreement is not favorable to Russia in all respects. The joint military exercises and troop movements by Russia and Belarus on the borders of the Baltic countries remind us of the situation before the war in Ukraine. U.S. forces have withdrawn from Europe, replaced by JEF[2] multinational forces. While they might not pose the same military threat as U.S. troops, they still serve as a clear message to Russia about European unity. Geopolitically, the U.S. is now clearly focused on Asia, as the confrontation with China has intensified and threatens to escalate, even though China has not yet taken active steps to annex Taiwan to mainland China.

In summary, from the Ministry of Foreign Affairs, the EU is in a difficult situation, but it should continue to avoid unilateral commitments to either camp. The EU should support and build a cooperative system based on agreements and international law.

[1]UTVA = Ministerial Committee on Foreign and Security Policy.
[2]Joint Expeditionary Force (JEF) is a UK-led Northern European multi-national military partnership designed for rapid response and expeditionary operations. It consists of the UK, the Nordic countries (Denmark, Finland, Iceland, Norway, Sweden), the Baltic states (Estonia, Latvia, Lithuania), and the Netherlands.

State Secretary Virtanen, PMO:

Good points. Let's proceed. What issues came up in the Ministry of Finance?

State Secretary Koskinen, MoF:

Firstly, we want to emphasize that, in the big economic picture, Russia is currently and will remain weak in nearly all areas. Although its GDP appears to have grown each year, this is due to changes in statistical methods and investments in the war industry. Moreover, the figures presented by Russia are not reliable. Russia lacks substantial industrial output, with its export revenues primarily coming from gas and oil — unprocessed raw materials. Additionally, the state oil fund collected during prosperous years, before the Ukraine war, is now empty. Not all sanctions have been lifted, but damage to Russia's reputation from the Ukraine war restricts its international cooperation even more. Russia's main trading partner is China, but for China, Russia acts primarily as a supplier of cheap raw materials and a market for Chinese industrial products, a space free from international competition. This is not an equal partnership; China sets the pace and uses Russia to disrupt Western unity. We don't foresee an economic rise for Russia in the long term either, as many top-tier professionals fled the country during the Ukraine war.

The ongoing war economy brutally impacts the everyday lives of ordinary people, causing internal unrest. State-paid pensions and other benefits are decreasing, unemployment is rising, returning veterans terrorize their neighbors, economic blockades empty store shelves, and inflation is increasing living costs. President Putin's administration continues to spread propaganda about external enemies and orchestrate terror attacks across Europe, but the system's internal collapse poses the greatest threat to Russia.

While Lahtinen already mentioned Russia's military and political threat, Finland, as an EU border state and Russia's neighbor, should highlight that Russia is not as significant a threat to a unified Europe as it was previously. There was a joke circulating on social media during the Ukraine war asking why a 500-million-inhabitant Europe needed help from a 300-million-inhabitant USA to thwart a 140-million-inhabitant Russia, which couldn't even occupy a 40-million-inhabitant Ukraine. The EU has over three times the population of Russia and its economy is ten times larger. The EU is looking forward, investing in research and innovations that create futures and enhance its technological lead. Outside the arms industry, Russia focuses on raw materials and low-value-added mass production, enriching a small elite while worsening the living conditions of the remaining population.

The flip side of this is that the customs and trade war and the EU's significant investments in defense development and Ukraine's integration in recent years have indebted member states further, complicating economic stabilization even more. If the current tense situation continues, the financial situation of EU companies and citizens could also become difficult. Europe's worst enemy comes from within the union — internal bickering, disunity, and distrust. The MoF's main message is that the Commission must find ways to reduce the dissatisfaction highlighted in EU elections across many member states. Additionally, the Commission and member states must act more actively to enhance productivity in key sectors and attract skilled professionals to Europe.

State Secretary Virtanen, PMO:

Thank you. Next, let's hear from the Ministry of Defense.

Permanent Secretary Pulkkinen, MoD:

To begin, I agree with the Ministry of Finance's views: the EU must keep a clear head and continue in the positive direction it has established. The threat from Russia must not be forgotten, but it shouldn't be exaggerated either. The first point on the Ministry of Defense's list is that over the past five years, the EU has not only found its back-

bone but also reached a consensus on a common enemy. Practically, this is evident in the formation of a defense union in Europe, with the JEF countries at its core, surrounded by the European members of NATO. The Ministry of Defense believes this union has functioned well and it should be further developed and strengthened. Through it, tasks and responsibilities have been shared among member states, and joint forces have been deployed to the Baltics and to the borders of Poland and Romania facing Ukraine. Due to this cooperation, the movement of Russia's shadow fleet in the Baltic Sea has been restricted, and the Danish straits can be entirely closed if necessary. It is often said that the Baltic Sea is now a JEF and NATO Sea.

The Ministry of Defense's stance is that the defense union makes the EU significantly more credible militarily, which is reflected in tightened cooperation with other liberal democracies[3]. Out of necessity, the focus of the economy and investments has shifted towards bolstering the operational capabilities of the defense industry and the basic structures of civil society, but we believe this has been achieved very well. The EU's self-sufficiency has significantly increased across all sectors, and production chains to much of the rest of the world have remained open. Moreover, it's important to note that EU and member states' defense investments target high-tech production and increasingly employ dual-use technologies originally intended for civilian use. These investments elevate the expertise of European companies and research organizations to a new level that benefits the entire society, and they should continue to be safeguarded.In conclusion, our view is that the defense industry has become a permanent and central factor in the union's economy and security. Meanwhile, international free trade and the U.S. defense industry have suffered, with no changes in this trend on the horizon. This has been partially the choice of the USA itself. The EU must also be more self-centered in strengthening its own position in a world of escalating confrontations.

[3]Canada, Japan, South Korea, Australia, and New Zealand.

State Secretary Virtanen, PMO:

Understood. What does the Ministry of Social Affairs and Health want to highlight?

Director Nikkanen, International Affairs Unit, MoSAH:

Firstly, thank you for inviting the Ministry of Social Affairs and Health to this discussion. While we don't have an official member on the committee, the topic is crucial, and we're glad to participate. It's easy to agree with previous speakers about the undeniable external threats beyond the eastern border and in the global economy. However, MoSAH wants to emphasize their impact on people's daily lives.

Firstly, the shift in society's services and business focus toward military preparedness has resulted in both increased unemployment and a growing labor shortage in critical sectors across the EU. Particularly small and medium-sized companies with weak technological expertise have had to reduce their workforce or even shut down.

Secondly, there is an increasing gap among citizens between those who can use new technology and those who cannot. It seems that the erosion of the welfare state, social inequality, and the need for citizen support will continue to intensify, which, if prolonged, will inevitably weaken commitment to defending national and European shared values.

The third point concerns social safety nets. While they have successfully alleviated the difficulties of civil society up to this point, strengthening them will be essential if the tense situation persists. Additionally, if the situation escalates to war, potential loss of life would cause a major psychological distress in member states accustomed to peace.

Social aspects emerged in the European Parliament elections, and we believe the new commission should find new ways to strengthen social cohesion. The commission and member states should continue to uphold international law and the role of the UN as a conflict resolution arena. As Koskinen just mentioned, Europe's worst enemy comes

from within the union; hence, we need stronger European social policies, which are the best means for strengthening internal unity in the long term.

State Secretary Virtanen, PMO:

Thank you for the clear summary. It's natural to continue with the Ministry of Economic Affairs and Employment.

Deputy State Secretary Jokinen, MEAE:

As Lahtinen mentioned in his speech, even amid clear threats, it's important to remember that Europe has been performing well in the global technology race. During President Trump's term, the USA isolated itself from the rest of the world with trade barriers and erratic economic and industrial policies. This compelled the EU to strengthen its technological self-sufficiency. An example is the semiconductor collaboration initiated last year with Taiwan, through which the EU can become at least partially self-sufficient in microchip production.

Regarding today's discussion, MEAE's main message is that Europe now holds the keys to success: critical and strategic technologies, large anchor enterprises, top-tier research, and effective international cooperation with like-minded partner countries. One of the last parliament's major accomplishments is the common R&D strategy that focuses on strong areas of expertise and clear priorities, including streamlined funding models and strong corporate engagement. These are worth maintaining.

As you recall, according to the strategy, European strengths include information and communication networks, data reserves and centers, high-power and quantum computing, artificial intelligence, and microelectronics. It has been exciting to see European companies build on these strengths by combining internationally competitive products with new business ventures. Through mergers, world-class entities that develop and utilize high technologies have emerged in Europe. MEAE believes that in the current world situation, the dual-use potential of technologies has become so important that they should be leveraged throughout society.

During the previous parliament, diverse production structures among member states were effectively transformed into efficient production chains, enhancing companies' innovation capabilities. It appears that Europe is currently experiencing a "renaissance" in manufacturing. This is also worth consolidating. Large European companies have relocated their production operations back to Europe. New factories have been built in Finland; for example, Nokia's new 6G base station factory in Oulu. Thanks to integrated value chains, European companies can now flexibly produce high-tech dual-use products for civilian and military economies.

We especially want to remind the Commission that the first version of the new 6G standard is being published this year, in which Europe — practically Nokia and Ericsson — has played a significant role. This achievement is highlighted by the fact that alternative 6G implementations from China and its allied countries are compatible with the European standard. The USA is currently supporting American companies' Open RAN trials, but discussions have been held about joining a common global standard with them as well.

In the current geopolitical situation, the Commission must ensure that Europe's development is not solely directed by the largest member states and their major corporations. Small member states and companies originating from them have proven to be crucial to Europe's technological sovereignty. The EU's first AI GigaFactory was established in Finland!

State Secretary Virtanen, PMO:

Thank you. We have another guest in this meeting from the Ministry of the Environment. What are your key messages?

Permanent Secretary Korhonen, MoE:

Thank you for the invitation from our side as well. Based on the previous discussions, it's clear that in the areas of technology, security, and the economy, we have truly succeeded in turning challenges into opportunities. However, all of these are threatened by accelerating climate change and the reduction of biodiversity. These trends reinforce each other, and their combined effects emerge with a delay. Our key message is that the EU must practice long-term environmental policy, extending beyond single parliamentary and government terms.

Due to Russia's aggression and global economic uncertainty, climate targets have been pushed into the distant future, but heatwaves, droughts, wildfires, storms, and floods do not respect political decisions. These increasingly complicate everyday life for citizens and the basic functions of society, and they send the costs of retrospective reparations through the roof. There is a risk that the number of climate refugees arriving from outside the union could increase drastically in the coming years. At the same time, the costs of the union's involvement in repairing damage from hurricanes in developing countries will grow. This should also be seen as an opportunity because environmental care is considered one of the most important values by EU citizens across national boundaries. Even amid signs of division, investing in the environment is a key method for strengthening European unity. It also enhances European expertise, technological sovereignty, and business opportunities, especially in energy production and securing society's basic functions. In the growing investments in defense and security, there should be a cross-cutting focus on developing technologies and practices aimed at mitigating climate change and conserving biodiversity.

Furthermore, the EU must continue international negotiations to mitigate climate change and preserve biodiversity with like-minded countries, even though traditional security politics have divided the world.

State Secretary Virtanen, PMO:

Thank you for these summaries, they provide valuable material for the UTVA. Please send your summaries to me by email today, if you haven't already, so we can ensure everything is accurate. We will work on preparing the presentation for the UTVA. I aim to have the proposal ready for your comments before May Day. Now, moving on to the next item on the agenda...

Material for discussion

Likely Winners:

- Large EU countries, such as Germany and France, and their major corporations.
- Major European telecommunications companies, like Nokia and Ericsson.
- European data and AI companies.
- Companies investing in, producing, and utilizing dual-use technologies.
- Entities investing in their own development despite uncertainty.
- Entities that strengthen their own and others' resilience through their actions.
- Entities that have timely investments in key technologies: telecommunications, AI, cybersecurity, quantum computing, etc.
- Entities involved in preservation of national security.

Likely Losers:

- The treaty-based world order and its entities, such as the UN and international law.
- International free trade.
- Environmental protection and climate change management.
- Cohesion countries and EU expansion.
- The peace movement and development cooperation.
- Privacy protection.
- The welfare state.
- Attempts to balance state finances.
- Entities lacking strong digital resilience.
- Small EU countries, especially in Eastern Europe.
- Mediocre technology companies.
- Russia and its allies.
- The U.S. defense industry.
- The USA and China, which lack access to EU technology markets.
- Individuals unable to adopt new technologies ("technology divide").

Early Signs of Transition to This Scenario:

- Growth of the arms industry and militarization of public opinion.
- Forces opposing China and the United States unite.
- New and surprising alliances emerge, for example among semiconductor manufacturers.
- Cyber-attacks, hybrid warfare, and hybrid influence accelerate in Europe.
- Personal AI agents replace social media services.

How Can the EU Win in This Scenario?

- The EU remains united and invests adequately in skill development, R&D investments, and technological innovations by companies.
- The EU boosts AI adoption in Europe and promotes the adoption of the European technology stack.
- The EU achieves technological independence from the US.
- The EU implements its own LEO/MEO satellite service (IRIS2).
- The EU invests in developing 6G standards and technologies that support the defense sector.
- The EU supports major European telecommunications manufacturers, like Nokia and Ericsson, so they can acquire a strong role in the defense sector as well.
- The EU gains control over key semiconductor components.
- The EU ensures it can obtain loans for developing technological sovereignty in key areas.
- The EU adopts the ”Canadian model” for immigration, selecting entrants based on a point system.

What security guarantees can the EU provide Eastern European countries with?
How does the EU counter Russia's hybrid influence?

Scenario

Europe's Prometheus

2025

Global Political Situation

The war between Russia and Ukraine ends with a ceasefire on terms bearable for Ukraine. The USA withdraws from the negotiations, handing over leadership to the EU and UK.

Prolonged trade negotiations between the USA and China conclude only after U.S. industry appeals to President Trump.

Israel announces that it has achieved its goal of preventing Iran from developing its own nuclear weapons program.

Internal opposition to Prime Minister Netanyahu grows in Israel.

EU's Technological Sovereignty

Trade negotiations between the EU and the USA conclude with reciprocal 25% tariffs. The EU rejects U.S. demands for investments into the USA.

EU countries agree on a €150 billion joint debt to strengthen defense.

2026

Global Political Situation

Peace negotiations for the Ukraine war conclude. Russia demands substantial war reparations from Ukraine, which are denied.
Dissatisfaction with President Putin grows in Russia. Protests organized by the opposition are brutally suppressed.

China and North Korea sign a wide-ranging military technology cooperation agreement.
Tensions between China and Taiwan persist.

The Republican Party in the USA loses its majority in both the Senate and the House of Representatives in the midterm elections.

An international commission is established to address the situation in Gaza; the parties involved have widely differing aims.

EU's Technological Sovereignty

A new fund following the PPP model (Public-Private Partnership) is established within the EU to accelerate financing for R&D projects and the scaling of start-ups.

The EU unveils a pan-European key technology strategy including telecommunications, data usage, HPC/quantum computing, AI, and semiconductors.

2027

Global Political Situation

China and Russia resort to bartering due to the weakening ruble in their mutual trade.

Independence-seeking movements rise in southwestern and southern parts of Russia.

In the USA, a Democrat-majority House of Representatives decides to initiate impeachment proceedings against President Trump.

EU's Technological Sovereignty

The budget for the next EU framework program (2028–2034) exceeds €150 billion, focusing on AI, telecommunications, semiconductors, and quantum computing.

JEF countries announce national investments in smart weapons systems.

Ukraine submits its application for EU membership.

The EU initiates negotiations to forge trade relations with key African countries.

European universities achieve high rankings in all university comparison metrics.

2028

Global Political Situation

In the USA, President Trump resigns before impeachment proceedings, and Vice President JD Vance becomes president.
The internal situation in the USA hinders the country's development of relations with China.
76-year-old Vladimir Putin is elected as President of Russia amid allegations of electoral fraud.
Belarusian President Alyaksandr Lukashenko passes away.

Calls for abolishing the veto power of permanent members of the UN Security Council intensify; Russia is suggested to be replaced by India.
Gina Raimondo is elected as the 49th President of the USA, representing the Democrats.

EU's Technological Sovereignty

A serious data breach is revealed in Microsoft Teams. Tesla applies for creditor protection due to rising production costs.

The EU agrees on the principles of a common foreign policy. The "three-operator model" is approved in the EU; talks on consolidating European telecommunications operators begin.

The EU abandons the consensus principle in decision-making.

2029

Global Political Situation

The USA rejoins the Paris Climate Agreement.

China celebrates its 80th anniversary with grand military parades across the country.

Relations between the USA and China begin to thaw with new trade negotiations aimed at restoring free trade.

EU's Technological Sovereignty

The EU announces preparations for a financing model for defense investments, with member states contributing 2% of GDP to the European Defense Fund.

Germany and France join JEF.

The EU becomes a significant developer and supplier of smart weapons systems.

2030

Global Political Situation

President Putin cancels his participation in the 85th Victory Day celebrations citing health issues.

EU's Technological Sovereignty

Ukraine's EU membership application is approved following substantial reductions in the country's internal corruption.

Tariffs between the USA and EU are restored to pre-Trump levels for his second term.

ITU publishes the global 6G standard.

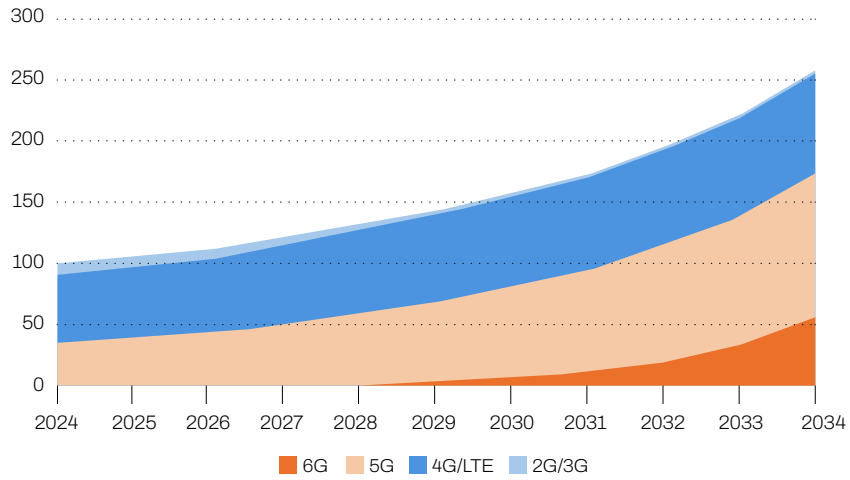
The EU announces the development of a common space defense system.

Market Review

Mobile Network Infrastructure Business

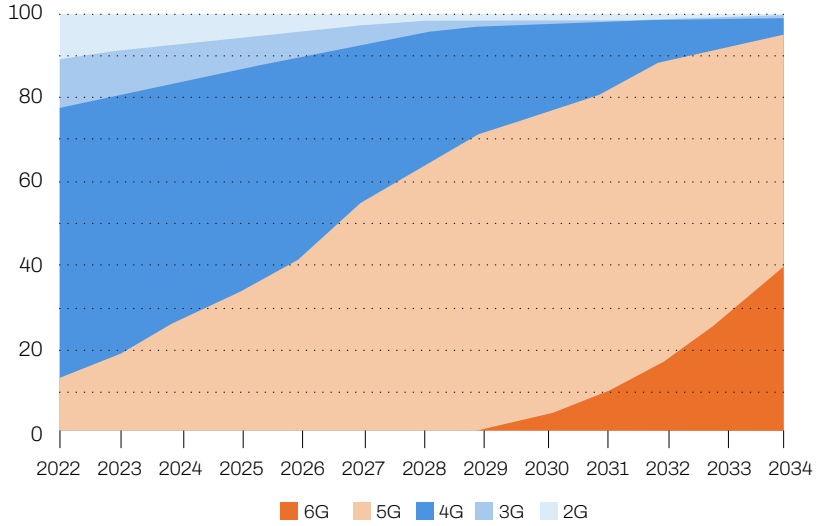
The average annual growth of the mobile network business is approximately 10% from 2024 to 2034. In this scenario, the market for 5G networks grows significantly faster than that for 4G networks. 5G is expected to surpass 4G in terms of network investments by 2031. Between 2024 and 2034, the average annual growth rate for 5G network markets is over 13%, while 4G networks will experience a growth rate of around 4% during the same period.

The development of the global 6G standard is progressing so well that the construction of the first commercial test networks can begin ahead of schedule, as early as 2028. After the standard is published, the 6G market will expand rapidly: from 2028 to 2034, the average annual growth rate is expected to nearly reach 100%.



Changes in the number of subscribers

In terms of user numbers, 5G is set to clearly surpass 4G by 2027. The share of users using 5G will be highest during 2030–2031, reaching around 73%, after which it will begin to decline due to the strong growth in 6G user numbers. By 2034, the combined share of 5G and 6G network users will be approximately 95% of the total user base.



This article from the Finnish ”Uusi juttu” (”New story”) website offers an investigative journalist’s perspective on the changes occurring in the European technological and geopolitical landscape.

The original article was published on April 23, 2030, and republished on April 30, 2030, in English on the Financial Times Europe’s premium news site. This platform is backed by the British Financial Times, which was acquired by a consortium of Europe’s largest newspapers in 2029, resulting in a change to a more European name and perspective.

New European Giant Challenges the USA and China

In January, the Directorate-General for Competition (DG-COMP) of the European Commission decided to approve the merger between NokiaSat and Ericsson. The companies had initiated discussions over a year ago, and they released a joint statement yesterday declaring that the merger is the best way to ensure the future of the European alternative in the telecom world. The merger process is expected to be completed by the end of 2033.

Thomas Saueressig, currently serving as the Chairman of NokiaSat's board, has already been appointed to lead the merger process. He is also anticipated to become the CEO of the new giant company, which will combine Ericsson's strengths in 5G/6G radio networks with NokiaSat's expertise in satellite networks, data center capabilities, and private LTE/5G/6G networks used particularly by industrial companies. From an external European perspective, the merger of these two major companies from neighboring northern countries with a long shared history is quite natural. According to **Carola Boeden**, a researcher at the German Ifo Institute, this is a "marriage of convenience" as the companies would hardly have survived alone in global competition against American and Chinese giants.

The name of the new company will be revealed soon, but "NokiaSat & Son" has been used as a working title in previous speculations.

The goal? To provide the world with a genuine European alternative to the American and Chinese giants.

From Consensus to Majority Decisions within the Coalition of Willing Nations.

This merger is also a recent example of the dramatic cultural shift that the EU has rapidly adopted. The new parliament that was inaugurated last year has moved largely from consensus-based decision-making to majority decisions, in accordance with decisions and guidelines made in the previous term. The focus of decision-making has shifted towards Northern, Western, and Central mainland Europe, alongside the Nordic countries and Ireland, while Southern European countries have distanced themselves from the more pro-EU northern parts.

The main reason for this change were the "troublemaker countries", like Slovakia and Hungary, whose demands for consensus slowed and diluted EU's decision-making. As significant net beneficiaries, they do not wish to leave the Union but use it to advance national and domestic political goals, such as access to cheap energy from Russia. The EU has also reduced integration activities related to Turkey and other countries in the neighborhood program, as their democratic development has not progressed and corruption has not decreased. For example, CINEA[4] raised the self-financing share for transport infrastructure projects from 25% to 75% in neighborhood program countries, which has essentially halted transport construction projects in Turkey.

The decision-making countries of the EU now form a so-called coalition of willing nations, whose operating model is borrowed directly from the Joint Expeditionary Force (JEF), which has been engaged in close defense cooperation. Established by the UK in 2012, JEF initially included the Nordic countries, Baltic countries, and the Netherlands. In 2029, France and Germany also joined. This development, clearly pushing the EU toward a federal model, is precisely what far-right populist parties have warned against, as Polish MEP **Jacek Saryusz-Wolski** often points out.

Support for populists began to significantly decline during the previous parliamentary term. Based on recent EU elections, their support currently stands at only around 4-5% across nearly all member states. In parliament, they hold 48 seats, representing about 6.6% support. Advocates of a closer union argue that the new approach has made the EU stronger and quicker in decision-making, despite strong dissenting voices from the south and east. All member states are heard, but in many matters a simple "northern majority" is sufficient for making decisions.

The North drives tighter integration, South and East hesitate.

[4] *European Climate, Infrastructure and Environment Executive Agency (CINEA)*

European Leading Companies Enter the International Market.

Another change approved during the previous term in the EU's operational model is that small national companies are no longer shielded from "supranational" corporations; instead, they are even encouraged to become subcontractors to leading European firms. For instance, the European defense industry has long operated as a large consortium, with collective strength sufficient for global competition. Through subcontracting, it generates significant revenue at the national level as well.

A similar change was achieved last year after lengthy negotiations also in the telecommunications sector. The fragmented European telecom operator landscape yielded primarily for economic reasons to the "three-operator model," which entailed dramatic and partially top-down consolidation. This enables subscriber numbers per company and group to become large enough to make significant network and other investments financially feasible. Regional operators divide Europe's 830 million subscribers, roughly multiplying previous operator-specific subscriber numbers by a hundredfold.

The aforementioned NokiaSat & Son is the European answer to the increasingly competitive international data communications market, which has long been dominated by North American companies. In radio networks, China has similarly held a strong role. The relatively swift approval of NokiaSat and Ericsson's merger by the EU was a defensive move to ensure Ericsson remained a European company. According to the CEOs of the merging companies, the world needs effective and flexible ecosystems involving global network equipment manufacturers, telecom operators, and small companies supported throughout their development stages – with the development, software, services, and solutions all in play. The generous R&D funding promised by the EU likely influenced the merger decision as well.

The CEOs assert that NokiaSat & Son's strategy will be based on global leadership in key telecom and data communication sectors. In addition to telecommunications and data operators and data centers, the company identifies defense industries as critical verticals. According to the company, its communication expertise, which is resilient to disruptions, is also applicable to other sectors such as the gaming industry and smart cities.

A flexible ecosystem merges technologies – Europe is seriously targeting a global leadership position.

Ecosystems Bring Speed and Flexibility.

In recent years, NokiaSat has acquired so many start-up companies related to satellite communications that it added a satellite-specific suffix to its traditional name in 2028. It has been made clear to these start-ups from the outset that their primary customers are European defense administrations and the European defense industry, with other customer groups being secondary. Thomas Saueressig does not directly admit it, but this ecosystem model has clearly been copied from the USA. Solutions are required to have dual-use capability, meaning they must be applicable for civilian purposes, including uses intended for ordinary people and businesses.

With the development of JEF, the EU has also started using a consortium model familiar from commercial markets in the military sector. The consortium partners are national armies, into which member states have invested significantly in recent years. Additionally, the EU has built a common command center that coordinates troop activities at the EU level. The USA is part of the consortium through NATO, but due to reductions made during the Trump administration, its role is significantly smaller than before. President Gina Raimondo has not been inclined to shift the US military focus back to Europe. The official reason given is that Russia is so militarily weak that it poses no threat to Western Europe.

There has been discussion within the EU about a 2% "defense tax" from member states, the revenue from which would be directed toward EU-level defense investments. If implemented, member states could choose to reduce their national defense investments to just 3% of GDP. In addition to the common command system, rumors suggest that the EU's shopping list includes the procurement of a fleet of Eurofighter Typhoon multirole aircraft from Airbus in the very near future. The defense tax is not universally supported. As a result of the discussion, Serbia has already announced that it is no longer interested in EU membership.

At the same time, the EU develops a common military command system, considers a defense tax and prepares new strategic investments. Europe arms itself – but on its own terms.

Satellite, 6G, and Digital Services Are Coming.

Benoist Grossman, the leader of France Digitale, Europe's largest startup association, notes that within their network many European startups already have concepts that integrate 5G, 6G, and satellite connections. These are being explored and piloted within ecosystems that broadly cover value chains and implementation chains. Grossman praises the EU for enabling European startups to secure scaling phase funding through the European Investment Fund (EIF). The Commission has also encouraged national banks and private investors to support small businesses in product development and marketing for longer periods than before. Nonetheless, funding must be competitive to ensure the viability of financed companies.

According to **Thorsten Langheim**, Head of Development at Europe's largest telecom consortium DVOT-BT, alongside communication solutions, the top priorities are various resilience-enhancing solutions, new AR/VR/XR solutions, and digital twins. Ideally, the dual-use nature of technology also supports the emergence of consumer markets. An example is the recent emphasis by Brigadier General **Tom Bateson**, Commander of the UK Standing Joint Force Headquarters, on 3D holograms. In addition to military applications, they could also be used in industrial maintenance and service operations as well as in the gaming industry.

AR/VR/XR solutions, digital twins and 3D holograms make their way to the industry, games and everyday life. European technology is dual-use – and on purpose.

Geopolitical Overview.

From a European perspective, the situation appears relatively calm. There is a growing awareness of resilience, with Switzerland's comprehensive civilian defense readiness being actively copied throughout European member states. The top changes include the 2025 ceasefire between Russia and Ukraine and the 2026 peace treaty. Russia gained mineral-rich areas in Eastern Ukraine through the treaty, but Ukraine retained its independence. Additionally, Ukraine secured a promise from the EU for expedited processing of its membership application, and NATO's door remains open. President Zelensky's lithium agreement with the USA, very favorable to the USA, proved more valuable than gold as a security guarantee, ensuring U.S. interest in maintaining Ukraine's independence. Crimea remains a frozen conflict but is effectively under Russian influence, despite the EU's non-recognition.

At 77 years old and in poor health, President Putin has attempted to spin Russia's acquisition of Eastern Ukrainian territories as a significant victory in the peace treaty. However, Sergey Kiriyenko, acting as vice president and considered Putin's likely successor, has loudly criticized Putin for "losing lithium" and the costs and hardships caused by the long and exhausting war. The agreement between Ukraine and the USA effectively blocks Russia's entry into the booming global battery industry and ties the country to shrinking and low-margin oil and coal trade. Meanwhile, hyperinflation driven by the war economy weakens the situation for citizens, and gray dollar markets flourish in major Russian cities. Despite this, strong leaders are admired in Russia, prompting Kiriyenko to threaten Europe on Russian television, and the old propaganda machinery is active, just in case.

In the USA, domestic policy dictates foreign policy. President Trump's second-term administration reduced the significance of federal power, greatly elevating the role of states. The rapid price increase of consumer goods stemming from tariff disputes awakened the politically apathetic middle class in the Rust Belt. This was evident in the 2028 presidential elections, contested by Republican JD Vance and Democrat Gina Raimondo. Later, President Raimondo described the extremely dirty election process as particularly burdensome and damaging to the presidential institution.

In Europe, the change of power in the USA is mainly viewed positively. The Democrat-led administration does not follow its predecessor's far-right and conservative Christian agenda but must consider the influence of these ideas, still supported by around 20% of eligible voters. Nonetheless, shared future prospects with the USA seem more secure, and Europe is gaining a foothold in the global management of key technologies with U.S. support. The tariffs imposed by the Trump administration on specific critical products and raw materials have not been fully lifted, but neither have they been implemented entirely. It is clear, however, that if boycotts against U.S. tech giants spread to Europe, the USA might impose stringent targeted tariffs on European services.
In Africa and the Pacific Ocean, a cold and occasionally intensifying war unfolds, as the USA and China are more concerned with each other than Europe, which serves merely as an export market for both entities. Russia disrupts all its border neighbors through cyber-harassment because the fall in oil prices and demand has left it without the money or technical resources for a full-scale war. This has become more of a conversational "weather topic" in Europe.

Epilogue: The Morality of Supporting Warfare.

European morality and a functional regulatory culture are highly valued globally, particularly within the academic and intellectual circles on the East Coast of the USA, from where these ideas spread through students into the workforce and wider society. A morally challenging question is whether it is right for Europe to prosper by supplying advanced cybersecurity systems and weapons outside Europe, especially considering many ongoing conflicts stem from the legacy of European colonialism.

The term "dual-use" technology connected to new advancements and their military applications has perhaps been introduced deliberately to obscure the military aspect. In Russia's neighboring countries, emphasizing cybersecurity has become morally acceptable since it lacks a direct link to traditional warfare. Although there remains significant opposition to militarism in the diverse voices of Europe, the threat of a common enemy has provided additional resources for both traditional and cybersecurity actors, significantly enhancing the resilience and security capabilities of European cities over the past five years.

Another difficult moral question is the shift of warfare to near space. Already, NokiaSat satellites can be used to disrupt competitors' satellites from their orbits. How does this align with the Old Continent's emphasis on dignity and rule-based order? Is warfare increasingly moving to space? Are we only hearing about space warfare in news reports that justify tax increases to astronomical levels?

How does the Old Continent maintain its dignity when its satellites start to disrupt the orbits of satellites from other regions?

The Rise, Roar, and Ruin of MAGA – A Brief Overview.

2025
Donald Trump begins his term as the 47th President of the United States. His administration is marked by trade wars, territorial demands, deportations, and battles against "woke" liberal universities. Accusations of corruption arise involving Qatar (Air Force One), Saudi Arabia (golf tournament), and $TRUMP cryptocurrency. In Ukraine, he halts mineral agreements and military aid, withdrawing from peace negotiations. The Supreme Court rules that deportations of immigrants without trial are illegal.

2026
Trade wars with China and Europe fuel inflation. The dollar plummets. A wave of bankruptcies hits small businesses. Layoffs in the auto industry ensue, and bond interest rates reach record highs. Republicans perform poorly in mid-term elections, particularly MAGA-endorsed candidates.

2027
Economic downturn persists; the dollar weakens, and national debt rises. The U.S. auto industry faces significant challenges due to decreased domestic demand. The percentage of those living on social security reaches a new high. The House of Representatives divides into three factions: Democrats, moderate Republicans, and far-right MAGA. Legislative work slows due to disputes. The Supreme Court intervenes regarding the President's use of executive orders as substitutes for legislation. A rift between Trump and Vice President Vance emerges as Trump suggests his son for the presidency ("TRUMP 2028"). Extreme Christian factions (still holding 20% national support among voters) demand a "more respectable" presidential candidate for Republicans. A third impeachment charge is passed by the Democrat-majority House.

2028
Donald Trump resigns before impeachment proceedings in the Senate could begin; Vice President Vance becomes the 48th President. MAGA revolts against Vance's "too soft approach" cause chaos. In the fall elections, Democrat Gina Raimondo is elected as the 49th President. Democrats maintain their majority in both the Senate and the House. Less than 20% of Republicans now identify as MAGA representatives.

2029
Donald Trump Jr. announces that his father is withdrawing from public life due to advanced dementia.

Material for discussion

Likely Winners:

- Constructive regulation.
- A strong Nordic trade alliance (new Hanseatic League).
- Data-centric cooperative networks with strong anchor companies.
- Global and leading European technology companies, such as Airbus, ASML, Nokia, and Ericsson.

Likely Losers:

- Nationalistic and protectionist trade and industrial policies and the countries attempting to follow them.
- EU cohesion countries.
- EU enlargement processes.
- Mediocre technology companies that take on the role of followers but lack expertise.
- Small, isolated companies that do not want or know how to form alliances.
- Industries, companies, and countries suffering from a skills shortage.
- The US technology sector and monolithic business models (Google, Apple, etc.).
- Russia, due to issues in leadership, industrial structure, and skills deficits.

Sovereignty: **High.**
Political situation: **Peace.**

Early Signs of Transition to This Scenario:

- The EU invests and reallocates its budget to develop its technology stack.
- The EU begins directly supporting leading European innovative companies.
- The EU successfully reforms its GDPR regulation.
- European capital markets emerge.
- Technical and industrial cooperation grow within Europe.
- The EU renews its relationship with the WTO, aiming for equal status with the USA and China.
- Cooperation between the Nordic countries and France intensifies (areas include R&D activities, taxation, and strategic businesses).
- Liberal researchers focused on technology and economy move to Europe.
- The appreciation of consumer markets in the national economy decreases.
- Personal AI agents perform a majority of non-innovative work.
- Lithium is replaced in batteries by a more recyclable material.

How Can the EU Win in This Scenario?

- The EU forms and implements a common European strategy for key technologies.
- The EU invests in education and skills development.
- The EU becomes an innovation leader by sufficiently investing in high-quality R&D activities and European anchor companies.
- The EU evolves into a trade-focused federation.
- The EU ensures European technology leads in critical sectors globally.
- The EU addresses shortcomings in its internal markets and builds functional European capital markets.
- The EU invests in data solutions and services aimed at consumers.
- The EU acquires high-level semiconductor expertise.
- The EU constructs a winning operational model based on trust and an open ecosystem model, supported by the best infrastructure.

How can Europe ensure that the experts and expertise stay in Europe? What is the Member States' position to the strengthening of EU's role?

Scenario

Frog in a Pot

Sovereignty: **Low.**
Political situation: **Peace.**

Frog in a Pot

2025

Global Political Situation

Peace negotiations between Russia and Ukraine are stalling.

The USA accuses Ukraine of being unwilling to make peace and withdraws from the negotiations.

The first round of tariff negotiations between China and the USA concludes with asymmetric tariffs: USA 30%, China 10%, with exceptions in some sectors. The confrontation between Israel and Iran does not escalate into full-scale war.

EU's Technological Sovereignty

As part of trade negotiations with the USA, the EU agrees to lift restrictions on American digital platforms.

The EU imposes additional sanctions on Russia.

EU countries agree on a €150 billion joint debt to strengthen defense.

2026

Global Political Situation

Russia and Ukraine sign a peace treaty. Ukraine loses large areas in the east, and the situation in Crimea remains disputed. Russia demands the lifting of all economic sanctions and the opening of the Suwalki Corridor. The Republican Party retains its majority in the House and Senate during the midterm elections; the MAGA movement remains strong. The USA lifts all economic sanctions on Russia without consulting the EU. The USA and Russia conclude a comprehensive agreement on mineral exploitation. Israeli and Iranian missile and drone attacks gradually cease, without a peace settlement. Israel divides Gaza into sections with "security zones."

EU's Technological Sovereignty

The EU's new budget is heavily focused on cohesion and agriculture. The EU and Ukraine initiate negotiations towards Ukraine's EU membership. The EU's next framework program (2028–2034) reaches no consensus regarding content and budget. Hungary, Slovakia, and Poland demand the EU lift sanctions on Russia and resume energy trade. Chinese electric vehicle manufacturers move assembly to Europe to avoid tariffs.

2027

Global Political Situation

Returning soldiers from the Ukrainian front increase crime and cause internal unrest in Russia.

Russia seeks to influence parliamentary elections in several EU countries.

China and Russia sign a comprehensive technology exchange agreement. Persecution at liberal universities and deportation of foreigners continue in the USA. The USA reduces its role in NATO.

The USA accuses China of breaching the tariff agreement; new trade negotiations begin.

EU's Technological Sovereignty

Negotiations among EU member states for a common additional debt to strengthen defense end without result.

No consensus is reached on joint financing for JEF (Joint Expeditionary Force). Sales of European anchor companies to international investors accelerate. The budget for the EU's next framework program (2028–2034) of €100 billion is approved, lacking significant increases for key technology development.

2028

Global Political Situation

Vladimir Putin does not run in Russia's presidential elections due to health issues; his favored candidate wins overwhelmingly. China conducts multiple large-scale military exercises in the South China Sea and renews its demand for Taiwan to become part of China.

A Democratic candidate is narrowly elected as the President of the USA. The MAGA movement contests the election result, organizing violent protests on January 6, 2029. A serious terrorist attack occurs in Israel, with Iran denying involvement. Hamas resumes rocket attacks on Israel.

EU's Technological Sovereignty

ITU announces that the global 6G standard release is delayed by at least two years.

The EU's cloud infrastructure is built on American technology.

The EU Parliament is unable to agree on abandoning the consensus principle. The position of global tech giants and oligarchs in the EU strengthens.

Poland and the Czech Republic join JEF.

2029

Global Political Situation

China celebrates its extravagant 80th anniversary event, showcasing new weaponry.

The USA initiates a space warfare program.

EU's Technological Sovereignty

Nationalist and populist parties perform well in EU elections; selecting a Commission proves difficult.

The EU and USA begin new tariff negotiations.

2030

Global Political Situation

China, Russia, and North Korea announce a joint program aimed at space warfare.

Taiwan, India, and South Korea begin collaboration on advanced semiconductor manufacturing.

EU's Technological Sovereignty

The EU automotive industry fails to compete with Chinese and Korean electric car manufacturers.

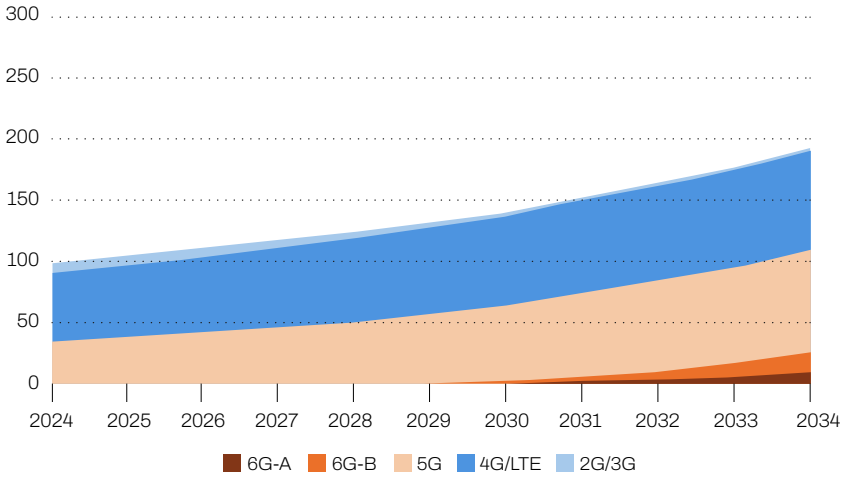
The EU's "Digital Decade 2030" policy program ends, with only a portion of its objectives achieved.

Market Review

Mobile Network Infrastructure Business

The average annual growth of the mobile network business is approximately 6% from 2024 to 2034. The market for 5G networks grows faster than that for 4G networks but will not achieve parity in investment until 2034. Between 2024 and 2034, the average annual growth rate for 5G network markets is around 8%, while 4G networks will see a growth rate of only slightly over 3% during this period.

The development of the global 6G standard faces delays. The first regional version led by China is set for release in 2031, followed by a second version driven by the USA in 2032. European markets are split between these versions. Despite rapid growth in the 6G market following the publication of these standards (nearly 80% per year between 2028 and 2034), market fragmentation causes uncertainty, which undermines profitability and slows investment.



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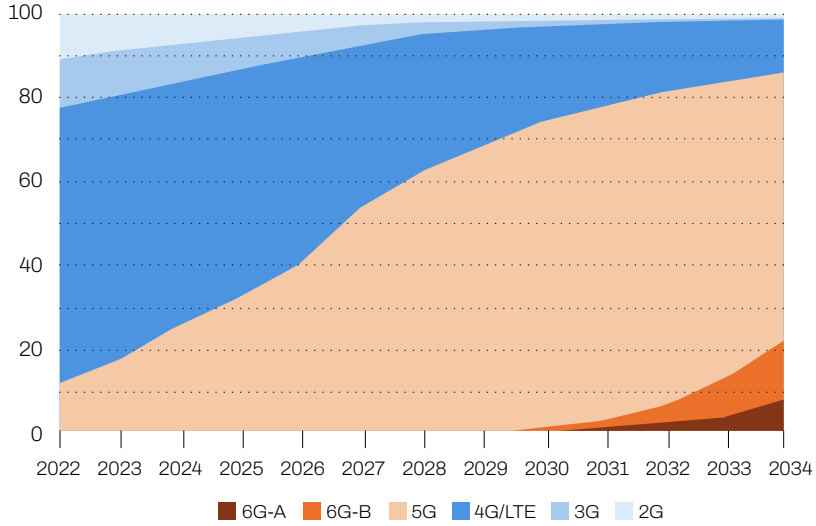
In terms of user numbers, 5G is expected to clearly surpass 4G by 2027. The share of users using 5G will be highest during 2031–2032, reaching about 75%, after which it will begin to decline due to the strong growth in 6G user numbers. By 2034, the combined share of 5G and 6G network users will be approximately 86% of the total user base.



Europe 2035: A Strategic Outlook on European Digital Sovereignty.

Brussels, 24.4.2030 COM(2030) 352 final

BACKGROUND

The Strategic Foresight Report for 2030, prepared by the European Strategic Policy Foresight Office (ESPFO), examines the key intersections in the development of European digital sovereignty, geopolitical changes, and global threats. This foresight report offers an in-depth analysis of how the European Union has navigated the pursuit of digital sovereignty amidst complex technological and geopolitical tensions over the past five years. Based on these observations, the report aims to clarify the potential choices and compromises the EU will likely face in the future. The foresight report utilizes an inclusive foresight process[6] and builds on three previous foresight reports[7].

The Strategic Foresight Report is produced using the EU's SEPAT (v4.1) AI tool[8], which provides comprehensive analysis based on a dataset composed of 1.2 million sources covering politics, economics, and technology. The report examines the key challenges that will define how European society and economy can be developed to meet the challenges of global competition. It also explores how advancing digital sovereignty and strengthening democracy can ultimately provide the EU with means to bolster its global standing.

[6] The inclusive foresight process was initiated with the creation of foresight scenarios, which describe alternative versions of the development of the EU's digital sovereignty by 2035. In each scenario, the stages of sovereignty development were collectively produced using the so-called backcasting technique. This approach allowed for the identification of new alternative practices and structures, as well as addressing the gradual phasing out of unsustainable and incompatible current practices and structures by 2035, which also involved analyzing compromises, bottlenecks, and synergies in different phases of the transition. In the multidisciplinary analysis of various change models, critical areas were identified that enable transitional changes towards digital sovereignty. The foresight process also included consultations with experts and stakeholders, discussions with the Commission's units, agencies, and joint ventures, publishing a call for opinions, as well as discussions with other institutions (including the EU's strategic and policy analysis system) and member states.

[7] In the Strategic Foresight Report of 2029, the focus was on the interaction between the EU's green and digital transition in the new geopolitical context. The 2028 report addressed key trends that affect the EU's open strategic autonomy and freedom of action in the coming decades. The 2027 report analyzed the EU's resilience across the following four dimensions: social and economic, geopolitical, environmental, and digital dimensions.

[8] SEPAT (v4.1) is an AI tool for strategic foresight, policy analysis, and crisis modeling, designed and implemented by the EU. It has been developed through a public-private partnership (PPP).

SUMMARY

KEY STRUCTURAL CHALLENGES (CHAPTER 2)

In recent years, Europe has faced significant structural challenges in its technological infrastructure and geopolitical environment, affecting regional development projects, key operational models, and internal harmonization.

”Digital Decade 2030” Policy Program:

Launched in 2023, this program aimed to advance comprehensive digital transformation across the EU. In a declaration presented in January 2022, the EU committed itself to secure and sustainable digitalization, placing people at the center in line with EU core values and fundamental rights. The program’s purpose has been to provide citizens and businesses with tools for achieving a human-centered, sustainable, and prosperous digital future.

While there has been progress, the program-level goals have only been partially achieved. For instance, by the end of 2029, only 74% of Europe’s population possessed basic digital skills (goal: at least 80%), and usage among businesses for digital cloud services was at 73%, AI at 53%, and big data at 48% (goal: 75%). Rapid internet connections (over 1 Gbit/s) covered only 68% of the population across Europe (goal: 100%). The goal for digitalizing public services was 100% coverage, but actual figures ranged between 78% and 85%. Furthermore, country-specific variations are substantial, complicating the development, harmonization, and large-scale implementation of Europe-level solutions and tools. Among the targets achieved is the world’s first commercially exploitable quantum computer. The LUMI-AI supercomputer and LUMI-IQ quantum computer (512 qubits) was deployed in Finland in 2028.

Smart Networks and Services Joint Undertaking (SNS JU):

Established in 2022 as a key Public-Private Partnership (PPP) to promote the development and deployment of 5G and 6G technologies in Europe. Its goal has been to ensure the emergence of critical mass through joint ventures across Europe and the development of international cooperation. One concrete measure of success has been the early adoption of 6G technologies in Europe by 2030, thereby strengthening Europe’s and European companies’ positions in global 6G competition.
The development of a global 6G standard has been delayed mainly due to geopolitical challenges and the increased workload related to evaluating and harmonizing proposals from different blocks. Despite significant investments, Europe and European companies have not succeeded in achieving and maintaining a leading role in global markets. The European 6G will be introduced in 2030, but initially, it will not be fully compatible with Chinese and American 6G standards. For European companies, market fragmentation implies restricted business potential or significantly increased product development investments.

Effects of the Omnibus Initiative:

Mario Draghi's report[9] on the future of European competitiveness and the regulatory obstacles, published in 2024, initiated discussions on reducing companies' reporting obligations. In February 2025, the Commission released the so-called Omnibus Initiative, which proposed extending the implementation schedule for reporting requirements by two years, increasing the size of companies subject to reporting, simplifying reporting standards, and easing liability rules and obligations related to subcontracting chains.

The initiative's impact on reducing regulation and enhancing innovation and competitiveness was minimal, as member states could not agree on implementation details and timelines, slowing the progression of development projects. The most significant tangible outcome of the initiative is the widespread increase in voluntary sustainability reporting using a lighter VSME standard. Even voluntary reporting is expected to create opportunities for developing business-supporting and stakeholder-serving company reporting.

[9] Mario Draghi: "The future of European competitiveness", 9.9.2024

KEY MARKET CHANGES 2025-2029 (CHAPTER 3)

Sale of European Anchor Companies to International Investors:

Between 2026 and 2029, a notably large number of significant European high-tech anchor companies transitioned to ownership by foreign corporations and private equity investors. Notable examples include Nokia and Ericsson (USA) in telecommunications, ASML (Korea) in semiconductor manufacturing technology, and SAP (USA) in software. The shift in control and headquarters away from Europe has caused uncertainty, particularly in the companies' former home countries and broadly within the European technology community. Beyond significant economic impacts, changes in principal ownership have raised questions about the direction of future development projects and investments, as well as the retention of critical expertise in Europe.

Sale of Promising European Growth and Technology Startup Companies to International Investors:

Throughout the 2000s, innovative European growth companies have mostly ended up under the ownership of foreign investors and large corporations. This trend, which accelerated in the 2020s, primarily stems from the fragmentation and underdevelopment of European capital markets. Due to the absence of EU-level financial markets, growth companies have struggled to secure European capital for funding their expansion. Additionally, the European philosophy of "regulation solves everything" has slowed innovation development and market access, weakening the competitiveness of European businesses compared to the United States and China.

Significant Rise in the Status of Tech-Oligarchs:

Since the 2010s, digital key technologies in areas such as platform economies have concentrated in the hands of a few major corporations. Recent geopolitical tensions have highlighted this concentration, particularly in strained relations between the USA and China, impacting market development and technology policies. The lack of clear technological leadership has hindered effective market development and coordination in Europe, strengthening the position of global and multinational tech-oligarchs from outside Europe. Concurrently, Europe's influence on international markets has declined as

innovations and market shares have shifted to the USA and Asia. This has been evident, for example, in Europe's automotive industry and telecommunications sector.

Crisis in the European Automotive Industry:

Since 2027, European automakers have seen their global market share decline, particularly within Europe, losing ground to innovative and affordable electric cars imported from Korea and China. In response to protective tariffs, some Korean and Chinese manufacturers have relocated production to Europe to circumvent these tariffs. A joint project by European automakers to define a software-based automotive hardware and software architecture failed due to disagreements among manufacturers on setting goals. The downturn in the automotive industry has caused significant economic and employment changes, especially in Germany and France. These countries claim that the union has been unable to adequately support member states reliant on the automotive industry.

Intensification of Cooperation in Northern Europe:

Starting in 2027, the Nordic countries (Finland, Sweden, Norway, and Denmark) began strengthening their mutual cooperation in areas such as digitalization and innovation strategies, helping them maintain competitiveness in global markets. In 2029, Poland, Estonia, and Latvia joined this cooperation, allowing these countries to preserve and even enhance their global competitiveness. The collaboration offers opportunities to leverage regional resources to overcome strategic challenges.

Challenges to EU Unity:

In 2028, indicators of eroding core structures and principles began to surface within the European Union. Internal disagreements, the rise of populism, and the failure to adhere to or fulfill collectively agreed rules and regulatory solutions threatened the union's unity. The Commission's long-prepared proposal to abandon the consensus principle in EU decision-making fell in parliamentary proceedings in fall 2028. Although the union did not yet collapse, internal economic and political tensions increased. In the 2029 parliamentary elections, nationalist and populist groups performed well, which may present further challenges to collective decision-making and especially in the implementation of agreed-upon decisions.

MARKET THREATS 2030-2035 (CHAPTER 4)

Deterioration of European Technological Expertise and Innovation Capacity:

The level of European expertise has been declining compared to China and the United States for several years. Achieving critical mass in excellence is necessary, and if Europe cannot retain its talent, European leading companies and experts will move abroad, where research resources and business growth support are more readily available. Europe's economic future requires strategic changes, including clear technology policy and the strengthening of advanced innovation ecosystems. Analysts warn that "Europe is losing ground," indicating that Europe is lagging in areas such as mobile connectivity and AI development, and is dependent on Chinese and American high-tech.

Continuing Exodus of European Companies:

The sale of high-tech anchor companies abroad shifts critical expertise out of Europe and alters the geographic focus of product development. For instance, the sale of

Nokia and Ericsson to American investor groups weakened Europe's position as a developer and leader in 6G technology. The constraints of European R&D support policy and lack of unified capital markets impede innovation and competitiveness. Success of a handful of individual companies is insufficient to support broader economic development. Geopolitical factors, such as trade wars and bloc formation, impact the development and deployment of new technologies and market growth, emphasizing the need for regional strategy development and cooperation.

Division of Europe into Chinese and American Spheres of Influence:

This division undermines Europe's technological and ideological sovereignty. Geopolitically, power is concentrated in non-European entities, particularly China and the USA. For example, in mobile telecommunications, Chinese companies dominate network construction and operations, especially in Asia and the global South. China's economic influence in Europe will grow if European actors start using Chinese technology and solutions. Meanwhile, large American digital platform and technology companies maintain a strong market foothold. Europe's ability to stay at the forefront of digital development is challenged by significant dependence on Chinese and American technology.

KEY RECOMMENDATIONS FOR 2030-2035 (CHAPTER 5)

Investment in Strategic Partnerships:

Europe's future is built on strong mutual cooperation, sustainable development, and strategic partnerships. The era of peace and stability following the war between Russia and Ukraine, which ended in 2026, has allowed Europe to focus on promoting societal well-being, health, and improving citizens' quality of life. This has furthered societal development and provided Europe the opportunity to strengthen its identity in technology within a global context. International and regional cooperation offers a chance to create strong networks that support innovations related to high-performance computing, artificial intelligence, and mobile telecommunications.

Creating Technology Identity:

Europe must establish a strong digital expertise identity and supportive infrastructure. Long-term success for Europe requires building a sustainable foundation for well-being and technological innovations. Achieving digital sovereignty demands strategic decisions and investments in the development of key technologies and related skills.

Selection of Focus Areas:

Europe should concentrate on developing 6G technology, artificial intelligence, data networks, high-performance computing, energy infrastructure, and supporting new innovations by ensuring adequate investments in research, education, and infrastructure creation. Ensuring the availability of a highly educated workforce is critical, and attracting international talent supports this goal. Reducing bureaucracy enhances integration and innovation across Europe, creating a competitive advantage and enabling the development of digital infrastructure as an export product.

Creation of Common Capital Markets:

Europe should shift its budget emphasis from agricultural subsidies and cohesion towards innovation and technology support and take steps towards common capital markets. EU-level investments in R&D activities offer a strong foundation for growth and competitiveness development in global markets.

Strengthening Digital Resilience:

Europe must aim for a leading position in mobile telecommunications. It needs a strategy that combines support for innovation, technology development, international partnerships, and resilience strengthening.

Material for discussion

Sovereignty: **Low.**
Political situation: **Peace.**

Likely Winners:

- EU regulation: Its amount increases and interpretation remains unclear.
- EU's development cooperation, agricultural policy, cohesion, and expansion.
- The European Commission.
- National and local regulation.
- Large international law firms and care sector companies.
- Large EU countries, such as Germany and France.
- USA: leading tech companies in the platform economy and their owners (tech oligarchs).
- China: a leading player in manufacturing mobile connections, base stations, vehicles, and industrial automation.

Likely Losers:

- EU's joint development.
- Small EU countries, such as Finland.
- Moldova – likely a target of Russian aggression following Ukraine.
- EU automotive industry.
- Promising European technology companies (sold too early to international investors).
- Companies operating with follower strategies.
- Strengthening of tech oligarchy limits EU's influence.

Sovereignty: **Low.**
Political situation: **Peace.**

Frog in a Pot

Early Signs of Transition to This Scenario:

- European investors seek quick profits by selling promising technology companies outside Europe.
- The EU's most valuable assets move outside the EU (data, network infrastructure, IPR/patents, expertise).
- High-level expertise disappears from Europe.
- European data is exploited by others.
- The EU becomes a user and beneficiary of high technology, not a developer.
- European values and perspectives become increasingly fragmented.
- A complacent attitude prevails in the EU, with a continuing "regulation solves everything" philosophy.
- Europe lacks leadership and a clear leader.
- EU R&D programs remain small and unimpressive (€10 million budget and 50 partners from nearly every EU country).

How Can the EU Win in This Scenario:

- The EU establishes strong relationships with the United States at all levels (EU, member states, companies, and leaders).
- The EU avoids open conflicts with leading countries.
- The EU avoids major internal crises.
- The EU reforms decision-making to be less restrictive on the activities of member states and companies.
- The EU elevates the role of national trade and technology policies in its decision-making.
- The EU redirects its budget towards the development of individual member states.
- European companies develop alternative solutions to problems associated with using technological monoliths.

Can this scenario lead into disintegration of the EU?
How Nordic co-operation is developing in this scenario?


Scenario
From Bad to Worse

2025

Global Political Situation

Russia continues bombings and captures additional territories in Eastern Ukraine during peace negotiations.

The confrontation between Israel and Iran escalates into full-scale war.

EU's Technological Sovereignty

EU member states agree on a €150 billion joint debt for defense acquisitions.

The EU agrees to asymmetric tariffs with the USA: USA 35%, EU 10%.

2026

Global Political Situation

Ukraine agrees to peace under heavy conditions. Russia demands President Zelensky and key ministers be delivered to Russia for war crimes trials.

Russia moves troops to Transnistria and questions the independence of the Baltic states. In the USA, the Republican Party wins mid-term elections, strengthening the MAGA movement.

Taiwan's government allows exports of latest semiconductor technology.
The USA accuses China of exacerbating the situation in Taiwan.

Syria and Israel launch missile attacks against each other; Israel occupies the entire Gaza Strip and forcibly relocates Palestinians.
The USA prevents the adoption of a condemning resolution against Israel at the UN.

EU's Technological Sovereignty

European device manufacturers invest in military applications of 5G technology.

The EU attempts to restrict the operations of US and Chinese tech giants within the EU, with poor results.

2027

Global Political Situation

Russia forcibly opens a land connection to Kaliningrad via the Suwalki Corridor. The EU responds with a formal note and deploys JEF troops to the Baltics.

The USA invites Russia to G8 meetings. NATO warns that Russia is preparing to attack a NATO country by 2029. Democrat-led states in the USA challenge President Trump's immigration policies.
China criticizes Taiwan's semiconductor investments in the USA. The war between Israel and Iran subsides but continues as terrorist attacks.

EU's Technological Sovereignty

The EU Parliament decides to significantly increase the share of defense expenditures in the next budget cycle. EU member states approve a €200 billion joint debt for defense acquisitions.

The budget for the EU's next framework program (2028–2034) is €150 billion, with strong emphasis on developing defense and dual-use technologies. JEF expands with Poland, the Czech Republic, and Greece joining as members. Export from the EU's to the USA decreases by 40%.

2028

Global Political Situation

Russia's sports boycotts end.

Vladimir Putin is elected president with a record-high majority.

The USA elects a Republican candidate as the 48th president with a clear majority.

China occupies Taiwan; Taiwanese semiconductor manufacturers sabotage their production lines.

Israel launches a devastating missile strike on Tehran, claiming it has destroyed Iran's military leadership.

EU's Technological Sovereignty

A separate instrument is established for funding common EU defense expenditures.

Development of a common 6G standard is frozen due to escalating global tensions.

Germany and France join JEF.

Funding for JEF's common command structure is transferred to the EU budget.

2029

Global Political Situation

China showcases its latest military technology, including robotic troops, during its 80th anniversary celebrations.

China's "New Silk Road" initiative aims to carry out infrastructure projects in 140 countries by 2049.

Russia accuses Latvia and Lithuania of border incursions and "aggressions" against Russia and their own Russian-speaking population.

EU's Technological Sovereignty

EU member states approve a €200 billion joint debt for defense acquisitions.

The USA initiates new tariff negotiations with the EU.

2030

Global Political Situation

Russia begins drone attacks in eastern Lithuania; Belarus remains neutral and does not allow its territory to be used.

EU's Technological Sovereignty

JEF forces in the Baltics engage in combat with Russian troops.

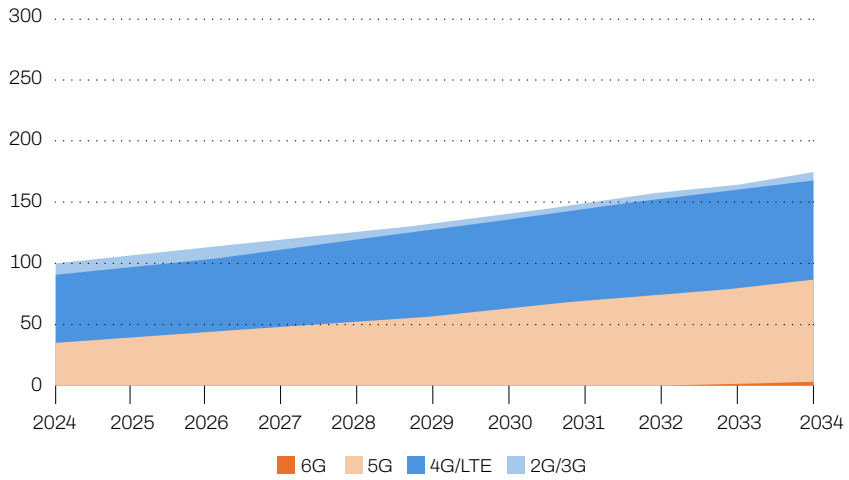
Market review

Mobile Network Infrastructure Business

The uncertain times of this scenario also reflect in the mobile network business, and the average annual growth of the sector remains at 5.5% (2024–2034). However, there are significant regional differences: crisis areas do not invest in new network technologies, while in more peaceful areas, markets develop and grow almost normally.

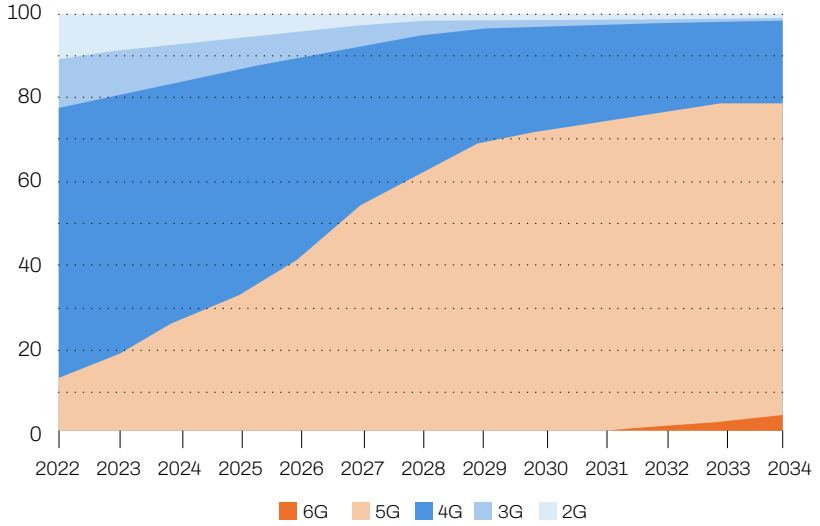
The 5G network market grows faster than the 4G network market and reaches 4G network investments by 2034. During the years 2024–2034, the average annual growth rate of 5G network markets is about 9%. For 4G networks, the growth rate during the same period is about 4%.

Due to the global political situation, the development of a global 6G standard is delayed, and the first preliminary version is released only in 2033. During the evaluation period, the 6G network market consists solely of construction of test networks.



Changes in the number of subscribers

Measured by user numbers, 5G clearly surpasses 4G in 2027. The proportion of 5G users is at its highest in the years 2031–2032 (around 75%), after which it begins to decrease as the number of 6G users rises. In 2034, the combined share of 5G and 6G network users is about 86% of the total number of users.



Venue:

Transcription of “Full Speech” Podcast on Europe’s Situation and Future Paths.

Wednesday, May 8, 2030

FULL SPEECH

EMILIA NEUBAUER - *(EN, Host and Moderator)*

Good evening, everyone! Welcome to this week's broadcast, and thank you for joining us. Today is May 8, 2030, which marks the 85th anniversary of the official end of World War II in Europe with Germany's surrender to Allied forces. It's certainly fitting and timely to discuss the current state of Europe. The 2020s were rather bleak for Europe, and things don't seem to be improving. Today, we'll focus on two critical areas that have sparked genuine pessimism: international politics and technology. Joining me in the studio is someone familiar to our regular listeners, Keith Elliott, esteemed and outspoken historian from Kent University. Welcome!

R ***@rst256:*** *Happy birthday, peace!*

B ***@BullMaster:*** *The tracker says we have already 24 followers. This is a good start.*

M ***@Mork25:*** *This is a really good day for this podcast.*

Q ***@qwerty6:*** *Greetings from Ludza. There is no sign of peace here. Russia has just started a drone attack, so I am following this from a bomb shelter.*

B ***@BullMaster:*** *Is it a big one?*

KEITH ELLIOTT

Q ***@qwerty6:*** *Not a very big one, as the networks are still up and running.*

Q ***@qwerty6:*** *They say most of the drones have been shot down.*

Thank you for having me, Emilia.

EMILIA NEUBAUER

Also joining us is Andreas Schmidt, editor at ”State of the Union,” an online publication that has followed EU and global political currents for years. Welcome, Andreas!

ANDREAS SCHMIDT

Thank you.

EMILIA NEUBAUER

We’ll also be incorporating questions and comments from our audience via the chat window, just like we’ve done in previous episodes. So without further ado, let’s dive right in.

To start, I’d like to hear from you both about how the wars over the last ten years have changed people’s lives and future outlooks in Europe. Our starting point can either be 2014 or 2022, regarding Russia’s brutal attack on Ukraine. As we remember that war, or ”special operation,” as Russia liked to call it, ended in 2026. In peace, alongside territorial concessions, Ukraine had to commit to military neutrality. Recently, Russia has shifted its aggression towards Eastern European nations. In the Middle East, Israel and the Palestinians fought from 2023 to 2026, and again since 2029. China took control of Taiwan in 2028, and fighting at the India-Pakistan border occurs almost annually. How has this situation come to pass? Haven’t we learned anything from past wars?

KEITH ELLIOTT

I believe this reflects a broader shift away from the somewhat stable and structured world of two blocs – East and West – where agreed-upon structures and conventions like the strong UN and international law played a part. The new world we're transitioning toward is multipolar. In this world, nationalistic and sometimes unapologetically populist currents challenge established structures and norms, increasing instability. Politics based on national identity reinforces perceptions of internal and external threats. In my view, this largely explains the breakdown of international cooperation.

B ***@BullMaster:*** *Any good questions in mind?*

M ***@Mork25:*** *I would mainly like to understand, why no one has done anything.*

EMILIA NEUBAUER

What do you mean by multipolarity?

KEITH ELLIOTT

Instead of the East and West, we're moving in international relations toward blocs built around major powers. Of course, there's the United States and China. Russia would like to have its own bloc, as would India. It strongly seems that the BRICS countries could form a new and quite significant power bloc.

R ***@rst256:*** *Listen to that jargon!*

Q ***@qwerty6:*** *We have a real threat on-going and not a perception.*

EMILIA NEUBAUER

But how did we get here? Why has there been a move away or desire to move away from the two-bloc system?

ANDREAS SCHMIDT

Several events over recent years have pushed the world in this direction. For instance, the COVID pandemic exposed how challenging global issues can be to tackle. It could have taught us something about collaboration in areas like climate change, but Russia's war in Ukraine has torn the global community apart.

EMILIA NEUBAUER

What do you mean?

ANDREAS SCHMIDT

Well, the European Union should be a community offering a unified response in crises, but it's proven difficult or even impossible. A very significant factor has been the inability of EU countries to

work together and agree on matters like joint defense investments. When the United States turned inward, Europe should've consolidated and presented a united front against Russia, but this hasn't happened. I believe European politicians' lack of vision and boldness is the main reason for this current chaos and inertia.

EMILIA NEUBAUER

So we have a multipolar world, and Europe struggles to act as a unified entity?

Q ***@qwerty6:*** *The only things Russia understands are force and weapons. They think negotiations are a sign of weakness. Why is this not understood in the EU? Or are they just too afraid to say it aloud?*

ANDREAS SCHMIDT

Exactly.

EMILIA NEUBAUER

Understood. Let's bring in a comment via video link from London. Seventh Sense is a think tank that has studied the redistribution of power. David Miller, a political researcher, how does Europe's situation look from London?

DAVID MILLER

Well, it's clear that the EU remains behind in both defense policy and armament despite its attempts. This surprises me, given that Russia's threat has been concretely known since at least 2022.

EMILIA NEUBAUER

Can you predict how things will develop and identify future winners?

@BullMaster: *USA sold Ukraine to Russia mainly because of natural resources. Trump thought that he could get a better deal from Putin than he was getting from Zelensky.*

DAVID MILLER

Several countries have the potential to be winners. One clear winning group is large countries. They have more mass and better resources they can utilize, especially now that international law is treated more as a recommendation. Another group consists of countries recognizing winners early and quickly and flexibly forming strategic alliances and bilateral agreements. Having significant natural resources is beneficial but also makes them attractive targets. And countries with good military capabilities can at least survive. So, there are many potential winners, but that doesn't save Europe as a whole. The EU would be much stronger if its member states could work together.

EMILIA NEUBAUER

Thank you, David. We've heard perspectives on international politics, but our second topic today is technology – more specifically, the long-standing question of European technological sovereignty. Is it there, and in which areas? Joining us via video link is Wilhelm Kurz, CEO of German Kurz Metall GmbH.

WILHELM KURZ

Thank you for inviting me, Emilia.

EMILIA NEUBAUER

Kurz Metall has fared well so far, with contracts to supply parts for European drone manufacturers. But can the EU genuinely compete with America and Asia in developing new technologies and applications?

WILHELM KURZ

I'd say the EU's situation isn't good. We're losing to America and Asia in creating new innovations because our R&D investments are much smaller. But even worse is that we don't know how to turn ideas into marketable products and companies. Without them, we can't generate prosperity for society. In Europe, there are still companies employing people and offering products and services to customers, but the trend is clear: the competitiveness of European companies is declining compared to key competitors. If this trend continues, it'll become increasingly difficult to maintain European welfare states.

H *@HankS: If the situation does not change, Europe will become a national park for welfare society.*

EMILIA NEUBAUER

Do you see Europe rising to a key role in certain technologies?

WILHELM KURZ

Well, it's possible in some countries but not in a coordinated way across Europe. In recent years, the EU has increased R&D investments in the defense sector and related dual-use technologies. Globally, however, the EU can't ascend to become a leading player. This is because its investments are much smaller than those of the United States, China, and India, possibly even Russia. One possibility could be solutions with less technological demand but larger volumes, such as affordable yet sufficiently performant drones, where Ukraine has significant expertise and experience. Unfortunately, in Europe, there's a trend moving away from digital technologies because people are fed up with online harassment and other issues. So the signs aren't good for Europe. Internal cooperation was the EU's core strength, but even that's starting to erode.

EMILIA NEUBAUER

Andreas, do you agree with Wilhelm?

ANDREAS SCHMIDT

T ***@Tormentor:*** *What should Europe do now, when all its options seem to be bad? Is there any way out?*

I agree that the EU has evolved over the last ten years, but the signs I've seen don't promise better times ahead. The fact is, the EU has increased its investments in defense technologies and dual-use products, but I don't see how the EU can close the gap with American and Chinese advances. Firstly, as Wilhelm already noted, despite growth, the level of EU investment still lags behind that of the USA and China. Moreover, these investments, while necessary, divert funds from AI and key technology development—and achieving and maintaining international standards in these areas requires substantial investment. The EU faces difficult decisions in prioritizing issues.

EMILIA NEUBAUER

What's your opinion on David's comments about international relations?

ANDREAS SCHMIDT

Even on that front, Europe suffers from its indecision and inability. There's too much discussion within the EU that leads nowhere. The EU should unite ideas and resources, but it still lacks a common foreign policy. That's a significant problem stemming largely from the EU's consensus principle. Consensus is elusive because some EU countries are sympathetic towards Russia, while others are highly critical. This is tangibly reflected in the peace treaty between Russia and Ukraine. The outcome could have been much better for Ukraine if the EU had been consistent and unified in negotiations. This wasn't the case, and Russia exploited it. The lack of a shared foreign policy is, in my view, the clearest indicator that Europe won't be able to assume a dominant or justified role in global politics.

H ***@HankS:*** *This podcast is an example of discussion that leads nowhere.*

EMILIA NEUBAUER

We've received a question from our online audience: "What should Europe do now?" Based on the discussion so far, Europe seems to have only poor options. Is there a strategy Europe could adopt to win?

KEITH ELLIOTT

Good question, but I'd phrase it differently as "where should Europe invest?" The situation is difficult, and resources – m like time – are limited. Where should Europe invest now to begin correcting the situation? Investments can yield results, but an optimistic investment program could also unite the people and decision-makers at the national level or even across Europe. One option could be investments targeting digital infrastructure. Society is now so dependent on digital systems that such investments would also support much of other development.

WILHELM KURZ

I'm inclined to agree with Keith. Robust digital infrastructure would support manufacturing industries and the defense sector. I'd like to highlight cybersecurity because it's critical, especially in defense. The investment program should also favor European suppliers.

ANDREAS SCHMIDT

I think Keith's proposal is good, too, but I'd expand it to cover dual-use technologies, as together they'd have an even greater impact. Digital network technologies are part of the dual-use category, but it also includes AI, edge computing, and sensors.

DAVID MILLER

The EU has been talking about artificial intelligence for over ten years, but where are the leading European companies? There have been interesting startups in the EU, but they have all been sold to international investors. How can the EU imagine becoming a leading region if it cannot even retain its best companies?

M ***@BullMaster:*** *I am sorry, but those investments should have happened already many years ago.*

EMILIA NEUBAUER

”I would like to bring another perspective into this discussion – a human perspective. Last week, I received an email from a representative of a trade union. They wrote to me, among other things: ’Members of the trade union I represent have given feedback that things are currently progressing too much on the terms of the defense industry and the companies representing it. We are living in very exceptional times, but there is a limit to employees’ endurance. There is a shortage of skilled personnel, and this cannot be endlessly compensated by increasing the workload of employees.’ Do you think this concern is justified? Or should they be satisfied that there is enough work?”

T ***@Tormentor:*** *Good comment from Miller. I have been thinking along the same lines.*

FULL SPEECH

Material for discussion

Sovereignty: **Low.**
Political situation: **War.**

Likely Winners:

- Western Europe, particularly major EU countries like France and Germany.
- Great powers leading geopolitical blocs: USA, China, and Russia.
- China – military-economic support for Europe.
- Black market.
- ”Must-have” products needed by organizations, businesses, and individuals, and their providers.
- Armies and military forces with proper training, equipment, and modern weaponry.
- Providers of physical and cybersecurity services.
- Companies that adapt quickly and flexibly change their operations (early adopters).
- Strategic bilateral agreements.
- Rapid and flexible alliances that strengthen the position and resilience of the parties involved.
- Finland’s mining industry.
- The USA’s defense industry.
- European companies producing defense and dual-use technologies (e.g., Saab).
- State virtualization, as done in Estonia: governance can continue to operate even if the territory is occupied.

Likely Losers:

- The EU’s role suffers – national “MAGA” movements are emerging in several EU countries.
- European innovation and innovating, excluding the arms industry and related sectors.
- European technology industry (Nokia, Ericsson, etc.) – the state of war justifies even the takeover of key companies.
- ”Nice-to-have” goods and services and their providers.
- Higher levels of the needs hierarchy.
- Finland, Finns, and ”Finnishness”, as well as the EU, Europeans, and ”European-ness” (politically, economically, culturally, etc.)
- Eastern Europe: Russian military threat, insufficiency of security guarantees, economic preparedness.
- Civilians in countries that are parties to wars.

Sovereignty: **Low.**
Political situation: **War.**

Early Signs of Transition to This Scenario:

- Forces opposing China and the United States join their forces.
- The EU accepts a poor peace in Ukraine because its own political survival is more important.
- Russia's cyberattacks, hybrid warfare, and influence operations intensify in Europe.
- Growth of the arms industry and militarization of public opinion in Europe.
- A common defense fund is established in Europe.
- The EU invests in the defense industry at the expense of other leading technologies.
- The Nordic countries form a strong Nordics alliance to support their own security.
- The EU is unable to develop its decision-making capabilities; debates continue.
- The EU is not unified and breaks into a loose coalition of states where each protects their own corner.
- The EU lacks a common foreign policy and a strategy for success.
- The EU fragments into internal disputes where supporters of Russia and the USA clash.
- New and surprising alliances are formed, for example among semiconductor manufacturers.
- Europe becomes a continent of subcontractors and colonies – information and expertise collected there are refined and sold to the highest bidder.
- A new nature-oriented, non-digital lifestyle emerges.
- Personal AI agents replace social media services.
- Climate change forces low-lying and dry regions to cooperate, resulting in large migrations and mass movements.

How can the EU Win in This Scenario:

- The EU develops and implements products and solutions based on dual-use technologies.
- The EU and its member states develop their expertise and operations in traditional military technology.
- The EU builds bilateral or trilateral cooperation arrangements, partnerships, and agreements with geopolitical blocs and their leading states.
- Companies, especially in the defense industry, build connections with Chinese and American companies.
- Good relationships with key technology suppliers (USA, China).
- The EU develops crisis management expertise.
- Alongside new military technologies, new survival innovations emerge.
- Member states develop their own survival strategies: the UK or Finland may seek status as US territories, strategic partnerships, developing national unity, etc.
- The EU supports the development of national unity among member states.

How to preserve Europe's unity?

MIG-SCENARIO STORIES

Mobile is Global Project Team, Aalto University, CKIR Center of Excellence