

Post-Covid Scenario Process

The New Global

World Economy, Power Shift
and Global Architectures

**Influence Factors
and factor network**

5. July 2021

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Scenario field: System image

Decision field <i>(For whom and what)</i>	Everyone should be allowed to use the scenarios - both for basic orientation and in concrete strategic decision-making processes.
Scenario field <i>(What's inside)</i>	The scenarios describe possible developments in global (business) environments - economic, political/social, technological and ecological.
Future horizon <i>(When)</i>	The scenarios each describe a future in 2035 (and beyond).
Regional focus <i>(Where)</i>	The scenarios have a global perspective . However, this may also include the development of individual countries or georegions if this is useful and necessary to describe global development.



Influence factors

Geopolitics / Global security

1. Global co-operation / Global governance
2. Competition of political systems
3. Military / armed conflicts
4. Global migration / refugees
5. Non-governmental organizations
6. Cyber security / cyber crime
7. Climate policies
8. Weapon systems and defense industry

Technology

29. Global technological development
30. Tech policies of nations
31. Technology acceptance / Data protection
32. Digital technologies (AI, XR, QC) and digitization
33. Digital and net policies / Surveillance
34. Big Techs / Power and role of global digital platforms
35. Biotechnology
36. Green technologies / Climate protection technologies

Global society

9. Value systems / Individualism and collectivism
10. Global vs. national vs. regional identities
11. Human rights
12. Trust in state, government and public authorities
13. Social balance / Well-being
14. World population / Demographic changes
15. Urbanization / Mega cities
16. Global public and media
17. Education levels

Ecology / Climate

37. Global environmental situation
38. Climate change
39. Recycling / Circular economy
40. Energy resources and systems
41. Raw materials / Efficiency and circular economy
42. Land, agriculture and food
43. Pandemics and health issues

Global economy

18. Global economic development / growth
19. Global middle class
20. Working world
21. Workforce mobility
22. Globalization / World trade / Global supply chains
23. Global financial system / markets
24. Global inequality
25. Global infrastructure development
26. Company structures, values and strategies
27. Global manufacturing processes / Industrialization
28. Consumption patterns / Resource efficiency

Nations, Georegions, Alliances

44. European Union / Europe
45. USA
46. China
47. Western world
48. Geo-strategic rivalry
49. Asianization / Power Shift
50. Global South / Emerging and developing countries



1 Geopolitics / Global security

1 Global co-operation / supranational institutions

- Level of change of supranational governance
- Global political collaboration
- ❖ *General mistrust towards countries with different standards might grow (e.g. hygiene standards that ease zoonosis; data protection rules that hinder some effective pandemic measurements)*
- Number, role and relevance of supranational institutions (United Nations, etc.) / Human rights
 - Number and power of global political key players
 - Authority of global institutions
- Interconnectedness of national politics
- Dealing with different value systems and interests
- ❖ *The expected economic effects will probably cause new alliances among nations, and possible conflicts that can change the world map of alliances.*

2 Competition of political systems

- Development of Western democracies
 - Number and power of Western democracies
 - Inner acceptance of the political system
 - Relevance of populism as well as regressive and authoritarian tendencies (Poland, Hungary, ...)
- Development of authoritarian / totalitarian systems
 - Number and power of authoritarian systems
 - Inner acceptance of authoritarian systems
 - Internal resistance and reform efforts within authoritarian systems
- Degree of co-operation and/or conflicts based on differences between democratic and authoritarian systems
- Interoperability of social and technological systems

3 Military / armed conflicts

- Geopolitical stability and balance
- Number and type of armed interventions
- Development of regional conflicts
- Transnational terrorism
- Level and global relevance of territorial disputes / Degree of recognition of international borders

4 Global migration / refugees

- Development of migration / number of migrants and refugees
- Different reasons for migration
 - Economical development / Poverty
 - Lack of freedom and human rights
 - Armed conflicts
- Countries / conflicts of origin
- Destinations / Role of regional pull factors
- Internally displaced persons
- Role of facilitators for illegal migration

5 Non-governmental organisations

- Organizations which are independent of government involvement are known as non-governmental organizations or non-government organizations. NGOs are usually nonprofit organizations, and many of them are active in humanitarianism or the social sciences.*
- Number and relevance of NGO's
 - in full or partly authoritarian countries
 - in Western democracies
 - Organisation of NGOs
 - Range of political objectives of NGOs
 - Influence of NGOs on policies
 - Support of the population regarding different NGOs
 - Financing of NGOs - Relation towards Lobbyism.

6 Cyber security / cyber crime

- Cyber crime
- Cyber security
 - for public authorities
 - for companies
- Use of artificial intelligence for cyber crime
- Cyber resilience

7 Climate policies

- Ambition of climate targets
 - Relation to prosperity requirements / goals
 - Differentiation / spread of national climate targets
- Supranational climate policies
 - International climate agreements
 - Measures to achieve the Paris climate goals
 - Degree of support for / Solidarity with developing countries in the implementation of climate targets
- Role of individual countries (USA, China, EU etc.) and/or industries (Energy, Automotive etc.) regarding climate policies
- Public perception of climate targets

8 Weapon systems and defense industry

- Weapon systems
 - Nuclear weapons
 - Lethal autonomous weapons
 - Hypersonic weapons
 - Directed energy weapons
- Attack and defense systems
- Arms control
- Arms imports and exports

9

Value systems / Individualism and collectivism

- Development of value system
 - Homogeneity / heterogeneity of value systems
 - Development of value systems in specific countries / regions
- Level of Individualism / Collectivism
- ❖ *We need to discuss new definitions of personal freedom vs. the greater good of society*
- Relevance of religion
- Level of tolerance
- Significance of material wealth / Consumerist lifestyles
- Development of an online society / relevance of social media
- ❖ *The global feeling of vulnerability together with rising inequality is a pot of gunpowder. Environmental changes might be just the spark that makes this explode. The interactions of the global „pandemic trauma“ and the economic after effects need to be studied and alleviated*

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Global vs. national vs. regional identities

- Global awareness regarding common problems and possible solutions (e.g. climate, development, justice)
- Global connectedness
- Development and role of global tourism
- Interest in and knowledge about other countries
- Emergence of global consciousness
 - One-World-Thinking
 - Development of a global identity ("globalism")
- Strength and relevance of national identities
- Relevance of sub-national and regional identities
 - Importance of separatist movements (Catalunia, Scotland, etc.)
- Overall relevance of geographically based or origin based identities (in opposite to interest-based identities)
- Level of conflicts between global, national and regional authorities / identities
- Relevance of borders and geoclusters

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Human rights

- Development of fundamental human rights
 - globally
 - in specific countries
- Western absolutist ideology vs. Chinese relativist approach

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Trust in state, government and public authorities

- Trust in public decision making
 - in specific regions (USA, Europe, China, etc.)
 - in government / politics
 - in public institutions / administration
 - in parliamentary institutions
- Recognition of public authorities
- Willingness and ability of public institutions to make (consensual) decisions

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Social balance / Well-being

- Social balance within societies
 - ❖ *Increasing gap in wealth between poor and rich will ignite many social disturbances that can manifest into crime and civil unrest.*
- Social security systems
- Subjective well-being
- Sense of justice
- Wealth distribution within societies
 - Proportion of population living below the national poverty line
 - Proportion of population covered by social protection floors/systems
 - Proportion of population living in households with access to basic services
- Upward mobility

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World population / Demographic changes

- Overall world population
- Growth rates in different countries and world regions
- Change of age structures in different countries and world regions / demographic changes
- Birth and death rates
- Political measures to control / manage demographic development
- Lifetime changes

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Urbanization / Mega cities

- Level of Urbanization (Share of people living in urban regions)
- Global development of mega cities
- Role and power of cities (e.g. in relation to nation states)
- Perception of cities by their inhabitants
 - positive / negative
 - progressive / "necessary evil"
- Economical relevance of urban areas
- Supply of urban areas / dependence on traditional agriculture vs. urban farming
- Role of urban areas in environmental pollution / protection

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Global public and media

- Freedom of reporting
- Role of science and facts in shaping public opinion
- Global "media wars" / Ways of influencing public opinion
 - Deepfake technologies

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Education levels

- Education levels
 - globally
 - in different countries / geo-regions
- Access to education / restrictions for certain groups
- Degree of education in the direction of critical thinking
- Degree of political influence on the content of education
- Life-long learning / Degree / speed of knowledge obsolescence
- Education was an important topic during the pandemic. Current deficiencies or changes in education for the next generation might have a large influence on how this generation thinks about globalization, climate change and social behavior in general. I have no idea how this will play out, but one should be prepared for this to have an effect
- The role of science might change for the better or the worse
- Data Literacy

3 World Economy (1)

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Global economic development / growth

- Global economic development
 - ❖ *Large political financing programs enable growth of the global economy through new business models and business sectors (green hydrogen, etc.) as well as through comprehensive infrastructure projects*
 - ❖ *The downturn of GDP has and will continue to affect many countries worldwide*
- Distribution of economic growth
 - Economic development in different sectors
 - Economic development in different regions
- Measures of economic development / alternatives to GNP
- Stability of economic development
 - ❖ *The shifts in global and/or local demand and supply throughout the pandemic will have tremendous influence on price fluctuations, and thus economic instabilities*
- Unemployment rates
- Changes in industry structures
 - ❖ *Many existing businesses have been affected such as entertainment, culinary and sports. Effect expected to continue*
 - ❖ *Smaller businesses will not be able to overcome losses*

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Global middle class

- Growth of global middle class
 - Continuous growth vs. shrinking due to COVID19
 - ❖ *From 2011 to 2019, the global middle-class population increased from 899 million to 1.34 billion, or by 54 million people annually, on average. The pandemic is estimated to have erased a year of growth, leaving the global middle-class population nearly unchanged from 2019 to 2020*
 - ❖ *Poverty in many countries is expected to rise*
- Lifestyles and consumption habits of global middle class
- Role of global middle class for development of countries / geo regions and for world economy

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Working world

- Development of employment relationships
- Importance / development of paid / unpaid labor
- Labour markets
 - in developed / in emerging countries
 - in urban / rural areas
- Unemployment
- Employee rights / freedom and influence of employee representatives
- Share of wage income (in relation to financial income)
- Substitution / Augmentation of human work by machines
- Use of wearables / Augmented humans / Exoskeletons
- Change of the role of humans and machines in working processes

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Workforce mobility

- Global distribution of workforce
- Overall (physical) workforce mobility
 - Within countries
 - Beyond national borders
- Reduction of workforce mobility by remote work
- Digital workforce mobility (e.g. call center in different geo-regions)
 - ❖ *The restrictions on free movement can affect regional unions and national interests can rise above regional union interests, which can ignite conflicts within alliances and regional unions.*
 - ❖ *Restrictions on free global and regional movement can have many effects in terms of economic, societal and geo political terms.*

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Globalization / World trade / Global supply chains

- Intensity and growth of world trade
- Average distance traversed by international flows
- Globalization of supply chains
 - ❖ *Globalization in supply chains has become visible as a new weak link in the chain. Vulnerability cannot be fixed by simple means. More regional structures would be an important complement, but there is little incentive to invest in them.*
 - ❖ *Countries who can afford it might strive for more independence in their supply chains, or at least better control (both of which favors local production)*
- Foreign direct investments (FDI)
- Security of global trade routes
- Share and relevance of domestic market orientation (buy local, produce local)
- Global logistics / goods transport

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Global financial system / markets

- Stability of currencies
 - Crypto currencies
- Number and degree of financial crisis
- Debts
- Development of stock prices
- Effects of the financial on the real economy
 - Arbitrage strategies
 - Tax havens

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Global inequality

- Global level of polarization “rich vs. poor”
 - Development of the prosperity gap
 - ❖ *Global inequality will need much more consideration, esp. under the recent impression of vaccinations and virus mutations*
 - ❖ *The whole world will have to recover from economic damage, which will increase social inequality within and between countries*

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Global infrastructure development

- Development of the infrastructure (Globally and in specific countries / regions)
 - Transport (Streets, Airports, Harbours, Rail networks)
 - Energy (Power generation and supply)
 - Water (Irrigation, drinking water and waste water)
 - Communication (Broadcast and cellular towers, satellites, fiber optic and copper cables)
- Specific infrastructure initiatives
 - Chinese silk road
- Use of infrastructure investments to gain global influence
- Development / Security of critical infrastructure

3 World Economy (2)

26 Company structures, values and strategies

- Consolidation process within specific industries
 - Role of Small / Medium-sizes enterprises (SMEs)
- ❖ *The homes of large tech companies (US and China) will be the big corporate winners of this pandemic. The homes of many small corporates rather than few big ones will feel even more of the aftermath*
- Role of multi-national companies
- Relation between companies and public authorities
 - Influence of Chinese enterprises by the Communist Party
 - Influence of large companies on the public in Western countries
- Corporate ethics
- Handling of human rights issues by companies
 - Role of companies regarding sustainability
 - Development of trade unions / Employee representation / Social partnership

27 Global manufacturing processes / Industrialization

- Level of industrialization in developing countries
- Global manufacturing sites (Degree of global task sharing)
- Sustainable industrialization (Climate neutrality of industrial processes)
- De-industrialization (generally / of specific countries)
- Digitization of industrial processes (Industry 4.0)
- Additive manufacturing / 3D-printing (4D printing)

28 Consumption patterns / Resource efficiency

- Consumption patterns
- Degree of willingness to forego traditional consumption in favor of the environment and sustainability
 - Vegetarian / vegan nutrition
 - Change in mobility patterns / abandonment or reduction of air travel
- Resource efficiency
- Recycling processes / Circular economy
- Extent of waste generation / type of waste disposal
- Packing
- Product durability

4 Technologies

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Global technological development

- Global level of technological innovations
- Technological competitiveness of the main geo-regions (Who is driving the technological development?)
- Speed of innovation lifecycles
 - Evolutionary vs. disruptive technological development
- Distribution of global technology innovations
 - Availability of technological innovations in different regions (e.g. vaccines during COVID19)
- Protectability of innovations / Intellectual property rights
- Areas of global technological innovations
- ❖ *In many areas of the world, wars and corruption prevail. As a result, hardly any innovation is taking place there. Rather, a backward development can be observed. Even existing technologies are not available / usable in such areas. So how can the spread of innovation on a global scale be successfully managed?*

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Tech policies of nations

- Research-, technology- and innovation policies of nations
 - USA / China / Europe
- Technological supremacy / dominance of specific nations / alliances
- Access to technologies / Level of national shielding
- Intensity and character of technology competition

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Technology acceptance / Data protection

- People's attitudes toward (new) technologies
- Understanding of technology / knowledge of (new) technologies and their possible applications
- Degree of data sovereignty of Internet users
 - European Data Protection Regulation (EU GDPR)
- Data protection laws

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Digital technologies (AI, XR, QC) and digitization

- Development / Control of the internet
- Digital infrastructure
- Development of AI; penetration of everyday life and business by AI
- Digitally extended realities (XR) - virtual reality; augmented reality
- Quantum computing
- Machine co-creativity
- Internet of Things / Smart Devices
- Big Data and Augmented Analytics
- Blockchains and distributed ledgers
- Sustainability of digital ecosystems
- Natural language processing (NLP) = technology that allows computers to understand human language
- Voice interfaces and chatbots, robots, Humanoid robots
- Autonomous systems

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Digital and net policies / Surveillance

- Net policies (in democratic / authoritarian systems)
- Freedom of information / content blocking
- Surveillance technologies
- Degree of surveillance
 - of people / every day life / economic and research activities
 - by public authorities
 - by semi-public institutions
 - by private companies

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Big Techs / Power and role of global digital platforms

- Power and role of global platforms
 - Role of BigTechs in global technology development
 - Degree of monopoly-like structures in the business areas of the Big Techs
- Relation of US-Big Techs to the US-government
- Relation of Chinese Big Techs to the Chinese government
- Level of independence of Big Techs from public / political control
- Emergence of further / other global platforms
 - from the US and China
 - from Europe
 - from other countries
- Sealing off regional markets from BigTech influence

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Biotechnology

- Genomics and Gene Editing (CRISPR)
- Regulation genetic engineering
 - (Ban of) germline editing in humans
- Application fields of biotechnology
 - Medicine
 - Agriculture: Genetically modified crops and food
 - Industrial biotechnology (white biotechnology) = application of biotechnology for industrial purposes

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Green technologies

- Green technologies
- ❖ *Environmentally friendly technologies develop very slowly and are difficult to transfer into widespread use.*
- Clean energy production
- Specific green technologies like sunlight transport, plastic roads, plant walls, plant-based packaging, fair electronics

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Global environmental situation

- Pollution
 - Global pollution level
 - Regional pollution levels
- Distribution of waste
 - Development of pollution of the ocean
- Development of biodiversity

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Climate Change

- Global warming driven by human-induced emissions of greenhouse gases
 - Greenhouse gas emissions
 - Level of temperature rise
 - Tipping points and long-term impacts
- Resulting large-scale shifts in weather patterns

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Recycling / Circular economy

- Changing
- Resource / raw material efficiency
- Importance of raw materials / Circular economy as a way out in the face of reduced availability of raw materials/
 - ❖ *Initial successes in the sense of a circular economy can be observed in the chemical industry. Other value chains are attempting similar developments*

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Energy resources and systems

- Development of primary energy resources (Occurrence, availability, development, prices)
 - Fossil fuels (Oil, gas, coal)
 - Mineral fuels (Uranium)
 - Renewables (Solar energy, wind energy, Tidal energy, Biomass, Geothermal energy)
- Energy mix
 - ❖ *Oil decline and phase out*
 - ❖ *Without nuclear power as a bridging technology, CO2 emissions and climate change seem unstoppable - plague or cholera?*
- Energy power plants
- Electricity prices
- Energy accidents

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Raw materials / Efficiency and circular economy

- Global distribution of (industrial) raw materials
- Free market development vs. artificial / political shortage of raw materials
- Nanotechnology and material science
- Development / exploration of new raw material deposits
 - ❖ *The exploration of further sources of mineral resources is quite successful. This in turn encroaches on previously untouched areas, with corresponding negative and long-term consequences.*
- Resource / raw material efficiency
- Sand shortage

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Land, agriculture and food

- Availability / use of arable land
- World food supply
- Development of hunger and malnutrition
- Innovations in agriculture and food
 - Novel food / artificial food
 - Digitization of agriculture
 - Personalized food
- Obesity / health influence
- Agriculture
 - Prices for food and agricultural raw materials
 - Intensive vs. extensive agriculture

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Pandemics and health issues

- Number and intensity of epidemics / global pandemics
- Robustness of health care systems
- Performance, structure and financing of health care systems
- Effects of any pandemic developments
 - Degree of preventive measures
 - Nature, scope and performance of crisis management
 - Fights and friction over pharmaceutical industry products and health measures

6 Nations, Georegions, Alliances

44 European Union / Europe

- Overall development / Political direction of EU
 - EU institutions
 - Collaboration of EU and member states policies
- Overall level of European integration
 - in specific areas (e.g. Euro, Security, ...)
 - regionally (e.g. "Different integration levels in Europe")
- Perception of Europe / "European idea"
- External relations / Role of Europe in the world
- Economical and technological competitiveness of Europe
- Development of Non-EU-states (e.g. UK, Switzerland)

45 USA

- Status of the USA as dominant global player / hegemon
 - Degree of military dominance
 - Economical power and competitiveness
- Role of USA in world policies - Active vs. withdrawn
 - Active policy (including military actions) vs. withdrawn
 - Rivalry with China
- Internal political development in the US
 - Social and political division
 - Political capacity to act

46 China

- Political development in China
 - Degree of authoritarianism / opportunities for participation
 - Political stability
- Chinas role in the world
 - Military strength (South chinese sea, Taiwan)
 - Economical competitiveness, esp. in high-tech
 - Expansion of the sphere of influence
- ❖ *China is pursuing its goal of world domination through strict, centralized leadership. The military is being steadily upgraded, and the economic dependencies of many countries in the world are being ever strengthened. The rest of the world is hardly a match for this multifaceted claviature*
- Population development

47 Western world

- Consistency of the "Western community of states"
- Relevance of G7-format
- Homogeneity of the appearance of Western states on world political issues
- Values-based vs. power-based approaches
- Attractiveness of western states and ways of life for other countries / georegions
- Power of Western States and Alliances
- Power position of Western states in global organizations (e.g. World Bank)
- Turning away of individual Western states from multilateralism or democratic values

48 Geo-strategic rivalry

- Relation / conflict between USA and China
- Role of 2nd row actors
 - Europe
 - Russia
 - India
- Parallelism of conflicts and cooperation
- Degree of Commitment of Other States to Tie to a Great Power

49 Asianization / Power Shift

- Role of Asia in the world
 - Common political influence
 - Economical shift of power
 - Societal relevance / Adoption and/or dissociation from Western values and lifestyles.
- Besides China and India specific development of other countries/regions
 - East Asian democracies: Japan, Korea
 - South-East-Asia, e.g. Indonesia, Vietnam
 - Australia und New Zealand

50 Global South / Emerging and developing countries

- Political stability of developing countries
- Attractiveness for investors
 - Legal certainty / Level of corruption
 - Growth perspectives
- Cultural identity of geo-regions / countries
- Relation to economic powers (US, China, Europe)
- Development of specific countries / regions
 - Africa
 - Latin America
- ❖ *Africa does not get any stability in its political structures. Poverty and hunger remain unsolved problems. New and large waves of refugees in the direction of Europe can hardly be avoided.*

Influence factor network

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