The Bigger Picture
How globalization, digitalization and demographic change challenge the world

Thieß Petersen and Falk Steiner

The megatrend report "The Bigger Picture" examines the central interactions between the megatrends of globalization, digitalization and demographic change and their effects on people's employment and income opportunities. This has direct consequences for individual participation in social life and social cohesion - and thus for the need for political action.

I. Megatrends - What are they about?

A megatrend describes a long-lasting process of social, economic and political change that has a considerable impact on many areas of life, such as the working world, consumer and leisure behavior, health, education, cultural identity and political participation. The report "The Bigger Picture" focuses on globalization, digitalization and demographic change as the most prominent drivers of global change. Individually and together, however, they also influence other - no less important - mega topics such as climate change.

Trends of this kind change the lives of everyone worldwide, but have different effects on different effects on different regions and different groups of people.

Demographic change describes the change in population size and structure. This change has three causes: the birth rate, life expectancy and global migration.

Digitalization refers to the worldwide spread of information and communication technologies. This is associated with networking and acceleration tendencies, which cause considerable changes in the political, social, cultural and economic structures of societies.

Globalization is considered the worldwide increasing economic, political, social and cultural interdependence of countries and people. Economic globalization affects the international division of labor and cross-border trade in goods, services, capital, labor, technologies and knowledge.

II. Fundamental interactions

The demographic structure of a country is the starting point for the analysis of the interactions between the three megatrends. It shapes a country's integration into the international division of labor. For example, developed industrialized countries such as Germany, which have relatively few workers by international standards, specialize in products that require little labor but a lot of capital and technology to manufacture.

The relative shortage of labor is an incentive for companies in developed industrial countries to develop labor-saving technologies and thus promote digitalization. The effect is that the costs of international trade and the relocation of individual production steps to low-wage countries are reduced, leading to an increase in economic globalization. Digitalization is thus becoming the driver of economic globalization.

Conversely, the higher competitive pressure caused by globalization in turn increases the pressure to be able to survive in international competition through further technological progress and an acceleration of digitalization. Economic globalization is thus a driver of digitalization (see Fig. 1).

III. Megatrends and prosperity

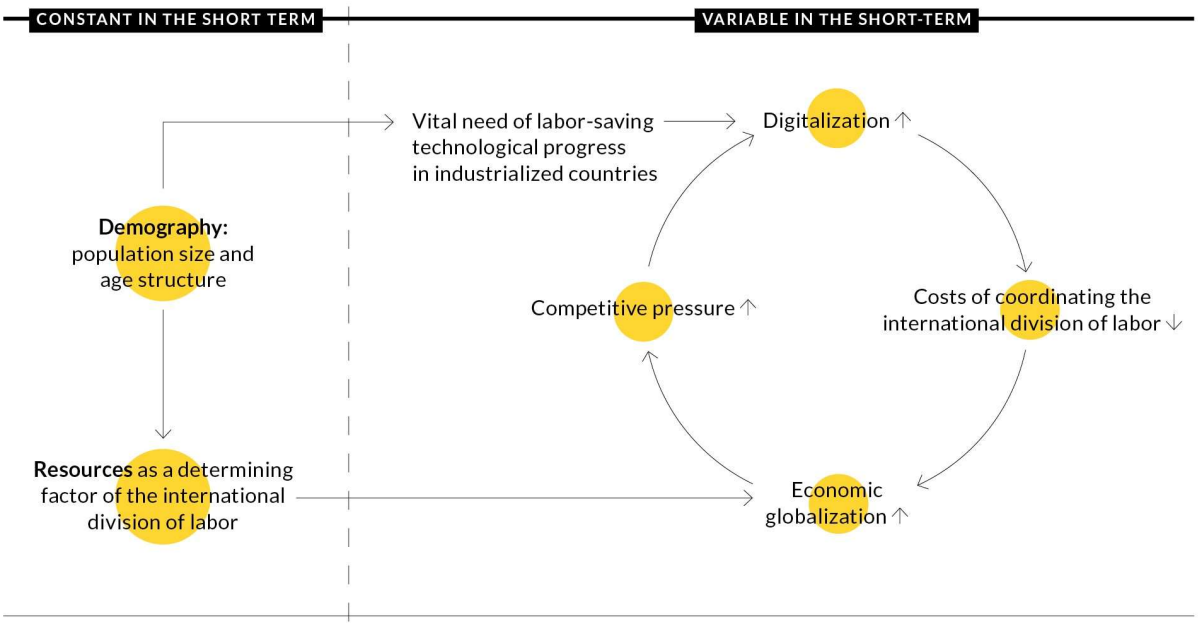
As a positive effect, it should be noted that economic globalization and technological progress have increased material prosperity in all participating economies so far, as measured by gross domestic product (GDP).

In addition, higher material prosperity is the basis for increased immaterial prosperity for citizens. This improves their opportunities to participate in society (better educational opportunities, larger time budgets for political and social commitment, etc.).

However, the international division of labor and technological progress within an economy also lead to a deterioration in employment and income opportunities for certain groups of people. In developed economies such as the USA and Germany, low-skilled workers in particular can be displaced by competition from low-wage countries.

FIGURE 1:

Stylized connection between demography, digitalization and economic globalization



Source: Own presentation.

BertelsmannStiftung

This also means that the chances of social participation of those affected are impaired - which usually results in social tensions that can lead to political polarization.

IV. Future development

Globalization and digitalization do not follow a natural legal course. Both developments depend on numerous influencing factors, the future characteristics of which cannot be reliably predicted. Above all, however, both phenomena can be shaped socio-politically and can thus be influenced by appropriate interventions.

This even applies to demographic trends: Even though population trends are largely predictable due to a worldwide decline in birth rates and rising life expectancy, regional demographic trends can - at least in part - be controlled by immigration regulations with regard to their size and age structure.

Against this background, the following comments merely describe "corridors" of possible developments:

1. Global prosperity is being redistributed
The global demographic development in itself leads to a redistribution of global prosperity. There is at least a tendency to be expected for wages to approach a global average. The same applies to GDP per capita.

While the emerging countries - especially in Asia - can expect increases in the individual prosperity measured this way, actual declines in income cannot be ruled out in the developed industrial countries.

Despite existing growth, Africa threatens to be left behind even further economically if it does not succeed in creating sufficient jobs for the rapidly growing population. This would mean a further destabilization of the southern hemisphere, the repercussions of which (e.g. increasing migration pressure) would probably overtax Europe politically, economically and socially.

2. Competitiveness of industrialized countries increasingly under pressure
At present, developed economies have their decisive competitive advantages in the production of capital- and technology-intensive products. Even here, however, they are threatened by the loss of international competitiveness. There are two main reasons for this: the technological catch-up of emerging markets (especially in Asia) and demographic developments. While aging of the population in the industrialized countries is exacerbating the shortage of skilled labor there, the number of people of working age will continue to rise in the coming years in many emerging and developing countries.

For the industrialized countries with the most aging societies (Japan and Germany), international competitive pressure is likely to increase particularly because the demographically induced shortage of skilled workers is greatest here. In addition, the ability to innovate threatens to diminish in an aging society. These countries may, therefore, face an even greater loss of international competitiveness than the other industrialized countries - including the associated unemployment and income losses.

3. Digitalization can increase people's prosperity
In principle, the advancing digitalization has the potential to increase people's prosperity. Digital technologies act as a cost-reducing technological advance. The result is an increase in the quantity of goods and services produced and consumed.

At the same time, consumers can buy more products at lower prices (quantitative improvement). In addition, digital platforms and the systematic analysis of large amounts of data allow products to be better adapted to individual customer requirements (qualitative improvement). The technologically induced price reduction ultimately increases the purchasing power of a given income. This further increases consumers' consumption options, even in product areas without any technologically induced price reduction.

In addition, the advancing digitalization can also increase people's prosperity in terms of time: If less working time is needed to produce the goods and services necessary for life, there is more time

for social contacts, social and political commitment and more.

However, digitalization may also encourage the emergence of monopolies. The reasons for this include the network character of many digital goods, high fixed costs and customer loyalty through lock-in effects. The possible monopolization tendencies block the potential of the digital economy to increase prosperity when monopolists exploit their market power to the detriment of consumers and employees.

4. In the long term, technologies can replace more jobs than create them

Of particular social interest in the discussion on the significance of the advancing digitalization is the question of whether robots, computers and artificial intelligence take people's jobs away from them - and thus also their most important source of income.

It can be assumed that human capital in the production processes of highly developed industrial nations (such as Germany) will increasingly be replaced by physical capital and digital technologies in the course of advancing digitalization. In the next ten to 15 years, the associated job losses will still be moderate because digitalization will also have job-creating effects (new activities, creation of the digital infrastructure, etc.).

However, in the long term, i.e. from 2040/2050 onwards, significant job losses are possible - both in manufacturing and in services. This affects above all activities with low qualification requirements, but also increasingly demanding occupations.

5. Increasing capital and technology intensity changes income distribution

In the past, digitalization has led to relocation of production processes involving many low-skilled workers to emerging and developing countries (offshoring).

The trend towards an increased use of capital and technologies is expected to reduce this form of international division of labor - after all, from an economic point of view it no longer makes sense to outsource production processes, which are characterized worldwide by the fact that human labor in them loses importance, to emerging and developing countries rich in labor. Instead, a tendency towards the relocation of individual production steps or even entire locations to industrialized countries is to be expected (reshoring).

For employees in the industrialized countries, however, this will not result in any serious increases in employment, since production will be relocated back to Germany on the basis of modern technologies that can be controlled by a few highly qualified employees. The capital and technology intensity of production processes thus continues to increase. This also shifts the share of income, i.e. in the developed industrial countries the share of income from labor in total economic income is declining - especially for low-skilled people.

6. Interim conclusion

The expected structural change of the economy means considerable changes for the people in developed economies, which is associated with a high degree of uncertainty. This uncertainty can lead to social tensions and a political polarization that considerably restricts government action. Political inability to act then becomes a breeding ground for self-reinforcing destructive forces: A lack of political responses to social tensions increases the polarization tendencies in all areas of society and thus accelerates the centrifugal forces that cause society to drift apart. Particularly in times of major structural change, a high degree of political capacity is therefore needed to give people the security they need to constructively accompany structural change rather than prevent it.

This is becoming more and more difficult for aging industrial nations, which are losing their international competitiveness in the long term and also have to spend a large part of their public revenues on pensions, nursing care and health care. Without this "social safety net", however, there is a risk of an increase in social tensions, which could lead to increased political polarization. There is already ample empirical evidence that economically-induced dissatisfaction and fears are a breeding ground for populist politicians and parties (see Fig. 2).

FIGURE 2:

Negative economic effects of globalization and technological progress as a breeding ground for populism

Source: Own presentation.

BertelsmannStiftung

V. Five theses and questions on the future of megatrends

With regard to people's opportunities for participation and social cohesion, the relationships between the three megatrends outlined above give rise to five central theses, some of which pose far-reaching challenges. The successful handling of these challenges poses serious questions for the societies concerned.

Thesis 1: Production processes require fewer human resources worldwide

As described above, it can be assumed that the use of capital and technologies will continue worldwide in the future.

In developed industrial countries such as Germany, a growing increase in market income inequality can then be expected, because capital incomes will gain in importance and low-skilled people will continue to have poor employment opportunities in the future. How can aging societies mitigate this income heterogeneity if the government's scope for redistribution decreases due to demographic factors (rising expenditure on pensions, health care and nursing care)?

If the competitive advantages of the labor-intensive emerging markets lose importance, their current business model will also come under pressure. How can these countries, which as a rule have only a weak social security system, react to the associated social tensions?

Thesis 2: The digital economy revolutionizes production and market processes

The advancing digital economy is bringing about fundamental structural changes - in products and services as well as in production processes and consumer relations. Digitalization is primarily an instrument of process optimization: The same or a basically similar product or service is produced or offered faster, more efficiently, more reliably.

The shift towards a data-driven, knowledge-based economic system in which intellectual property plays a key role is a characteristic feature of the digital economy. How can the infrastructure necessary for these business models be created? How can a fair taxation of value added in the area of intellectual property be designed?

The data-based economy is primarily subject to technological and economic restrictions, but also opens up the possibility of unlimited monitoring, moral-free evaluation of data - i.e. a strictly pur-

pose-oriented use independent of values - and socially intolerable consequences. How can this danger be countered socially and in regulations? In the competition between digital systems, can/must/should government ensure that data and algorithms collected and used within their sphere of influence meet social standards?

Thesis 3: Aging industrial countries lose international competitiveness

The aging of the population is accompanied by a growing shortage of skilled workers in the industrialized countries. The increasing demands on social systems (pensions, nursing care and health care) require increasing social contributions, which increases non-wage labor costs. If a larger proportion of the goods and services produced domestically are consumed by the population for age reasons as well - while the international competitiveness of the aging industrialized countries declines at the same time - exports decrease. The share of industrialized countries in the global trade volume is thus becoming smaller.

How can aging industrial nations increase their productivity in order to secure their long-term competitiveness vis-à-vis emerging young economies? How can the Western market economies maintain and expand their standards of a rule-based multilateral trade and investment system internationally if they lose economic strength and hence political influence in systemic competition with emerging economies that represent other standards?

Thesis 4: Developing countries without raw materials will be economically left behind

With the increasing importance of digital technologies in production worldwide, developing countries are losing a decisive competitive advantage: the low price of labor. At the same time, however, there is the possibility that these countries can skip individual technological development phases and thus catch up more quickly with the developed industrial nations.

However, underdeveloped economies that do not have economically valuable raw materials threaten to be further decoupled from the international division of labor and global prosperity. Without capital inflows from abroad, it will not be possible to build the infrastructure necessary to provide the domestic population with adequate jobs and to provide the basic conditions for digitalization. This threatens to cement poverty in large parts of the population.

How can the developed industrial nations help these countries to build the necessary infrastructure and competencies? How can developed industrial nations help these countries improve their democratic governance? How do the developed economies of Europe cope with the expected migratory movements that will occur if no lasting economic improvement is achieved in the dependent developing countries?

Thesis 5: The relationship between government and private responsibility is shifting

The technological, demographic and economic changes outlined above pose considerable challenges for all social actors (employees, companies, the state). This also leads to a reallocation of responsibilities. The aging of society in developed industrial nations, for example, is leading to a growing importance of private old-age provision because the government's room to maneuver is becoming smaller.

At the same time, the growing competitive pressure emanating from emerging economies can also lead the government in Western market economies to take industrial policy measures in certain areas - especially if these market economies are in competition with economies that massively support their economies with subsidies.

In which areas of social security should government responsibility be reduced, where should it be expanded? Under what circumstances do industrial policy interventions by the state make sense? How should open, liberal market economies react if large economies no longer adhere to the rule-based multilateral world trade and investment order, but seal themselves off or create competitive advantages for their industries through subsidies? How should these market economies react when actors of other nations close to the state exert a significant influence on their critical infrastructures? If there is no public space in the digital economy, what is the possibility of applying the rules for shaping a community in it?

VI. Outlook

The relationships outlined between demographic development, advancing digitalization and economic globalization show that this interaction gives rise to both opportunities and risks.

In principle, the international division of labor, which was originally primarily shaped by demographics, and technological progress can improve people's working and living conditions. At the same time, however, demographic change and the advancing digitalization in a globalized world are changing the scarcity conditions in all countries. Changing scarcities cause price changes - and thus also wage and interest rate changes. The result is changes in income. For some regions and groups of people, this means an increase in income, but for others it also means a loss of income.

The socio-political challenge is to find mechanisms that will widely diversify demographic, digitalization and globalization dividends without choking off performance incentives. If this does not succeed, the existing social tensions and political polarizations will increase. The consequences of this would include national isolationist tendencies at the global level and political stagnation at the national level – a development in which there are only losers.

Literature

This Megatrend letter is based on the detailed version of the following publication:

Bertelsmann Stiftung (Ed.) (2019). "The Bigger Picture". Megatrend Report #1. Gütersloh.

The MegatrendBrief is an impulse paper of the Bertelsmann Stiftung's Megatrends program. The Megatrends program examines new global developments in politics, economy and society. Its current focus is on the opportunities, risks and consequences resulting from globalization, digitalization and demographic change. The new format MegatrendBrief explores in particular on the interactions between these megatrends with regard to their effects on equal opportunities in social participation.

Further information on the activities of the Megatrends program:

www.bertelsmann-stiftung.de/mt-en/

www.ethicsofalgorithms.org/

www.bertelsmann-stiftung.de/demographic-change/

www.ged-project.de/

Legal notice

Bertelsmann Stiftung
Carl-Bertelsmann-Straße 256
33311 Gütersloh, Germany
www.bertelsmann-stiftung.de

Andreas Esche
Director
Program Megatrends
Telephone +49 5241 81-81333
andreas.esche@bertelsmann-stiftung.de

Ralph Müller-Eiselt
Director
Program Megatrends
Telephone +49 5241 81-81456
ralph.mueller-eiselt@bertelsmann-stiftung.de

Cover picture: Terry Virts, NASA, National Geographic Image Collection/Alamy Stock Photo

Address | Contact

Dr. Thieß Petersen
Senior Advisor
Program Megatrends
Bertelsmann Stiftung
Telephone +49 5241 81-81218
thiess.petersen@bertelsmann-stiftung.de

Falk Steiner
Senior Expert
Program Megatrends
Bertelsmann Stiftung
Telephone +49 5241 81-81538
falk.steiner@bertelsmann-stiftung.de

www.bertelsmann-stiftung.de