Sustainable Employment

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Summary:
The globalisation and demographic processes, and the rapid rate of automation defining the new industrial revolution are fundamentally transforming the world of work, and the conditions and circumstances of employment. At the same time, digital transformation is not only changing the workplaces, but it is offering numerous opportunities, creating further scientific knowledge, and previously unknown industries and occupations. Finding answers to these challenges also requires the understanding of labour market trends, and preparing the existing and future workforce for how to adapt to change. Adaptation to the labour market enhances the role of lifelong learning and the accumulation of knowledge capital. It seems therefore appropriate to concentrate the available social and financial resources on education, training and the acquisition of digital skills.

Key words: labour market, automation, fair employment, education, skills, digitalisation, sustainability

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'Only art and science can raise men to the level of God.'
[Ludwig van Beethoven: Letter to a little girl (1812)]

Public policy and competitiveness programmes draw on the principle that the 'future' depends on the ability to adapt to a constantly changing social and economic environment, in particular to new challenges in the era of globalisation or, where appropriate, deglobalisation and digitalisation. Unfortunately, however, these programmes generally fail to present the vision, the interpretative framework, the values underlying decisions, the policy objectives, and the associated institutional strategy and 'roadmap' along which policy makers seek the authority to use community resources, and which will guide decisions and adaptation. The lack of an approach in public sector institutions that focuses on strengthening the 'immunity' of society and public institutions to change, rather than on drawing lessons from the past and dealing with the consequences is even more problematic. Also, there is a complete lack of accountability with regard to performance and synergies, and the rational and effective use of community resources in a targeted manner, as well as the measurement and backtesting of the results achieved in respect of the objectives set.

In my view, however, no public policy programme can bring profound and sustainable change if it does not rely on tradition and core community values, if the values it represents are not reflected in decisions in a way that is based on identity, therefore lacking credibility, and if the results cannot be measured and backtested in a transparent manner.

It is clear that the globalisation and demographic processes, and the rapid rate of digitalisation and automation that are shaping the new industrial revolution will particularly influence the world of work, and consequently, employment. However, considering the future and long-term sustainability of the Hungarian economy, issues such as the maintenance and sustainability of employment are inevitable not only from an economic point of view, but also from a social and value perspective. In this context we need to understand the trends prevailing in the world of work, as well as their possible consequences.

What will – or should – the labour market of the future look like? What are the community values along which work and employment can be considered sustainable? What are the qualitative indicators that can reflect the sustainability of employment? What should be the relationship between work and technology? What kind of role should the state have in maintaining employment and employability?

Based on the above, this study seeks to make proposals to serve as conceptual pillars in addressing the sustainability challenges of employment faced in the 21st century and ensuring the systemic adaptability and resilience of the labour market, thereby creating lasting, sustainable and quality workplaces.

A HISTORICAL APPROACH TO WORK

The importance of work and employment is illustrated by the fact that the purpose of the economy – including the role and utility of work, the division of labour, the (re) distribution of the goods produced, and the value of work – has been the subject of debate for two thousand years, from Aristotle to Scholastics to moral philosophers.

The significance of work is emphasised in Judeo-Christian culture, too. In the Old

Testament, creation as a divine act itself is seen as work, and the result of God's creative work is man, put in the Garden of Eden to tend and cultivate it, and to bring the earth under his control. However, as a consequence of Adam's sin and expulsion, the cultivation of the 'cursed' land, instead of a life in Paradise, provides livelihood for man only through hard labour (Moses). The New Testament confirms that work is God's creative activity (John Paul II, 1981), and a means of salvation, therefore, from a theological perspective, work is regarded as a service to God.

Even in classical civil economics, the source of wealth for nations is human labour, the value of which is determined by the amount of work invested, as well as by utility, and the subjective value judgement of consumers. According to this, however, work is not a creative activity, but a pursuit aimed at producing the necessary goods in order to meet essential needs.

Although the declaration of the aims and purposes of the International Labour Organisation (ILO, 1944) establishes that labour is not a commodity and is explicitly considered a personal matter, 20th century economic theories analyse and model labour almost exclusively from the perspective of aggregate supply and demand, consumption, costs, labour and value, inflation, productivity and profit, and regard labour as an abstract production factor, the value of which is determined by profit-optimised utility functions.

In contrast, this study draws on the principle that work and employment have inevitable moral and socio-political aspects, and that work has a moral value in itself, along with individual self-interest and self-fulfilment, as an activity based on the cooperation of people through division of labour , and as such, it has an essential role in maintaining the communal nature of work, in balancing the individual and communal benefits of work and, ultimately, in creating social peace, solidarity, justice, and community well-being.

LABOUR MARKET TRENDS AND CHALLENGES

Diversification and fragmentation

There is a consensus that technological development, globalisation, digitalisation, automation and robotisation driving the recent industrial revolution (Federal Ministry of Labour and Social Affairs, 2017) are already having a significant effect on labour markets (Rácz, 2018), which are becoming increasingly fragmented and depersonalised, while traditional forms of employment are disappearing partially or entirely, or undergoing transformation. The supply and demand of labour is becoming independent of time and space through the opportunities provided by the platform economy, and the labour market itself is becoming globalised.

The global economy is dominated by previously unknown industries that have emerged in a mere decade or two, without the promise of national economic importance or rapid rise.

In our changing labour market environment the boundaries between private autonomy and work are becoming blurred, with the emergence of new methods of control, and new occupational risks and health effects ('techno-stress', information overload, burn-out, risks of human-robot interactions) that pose a threat to personal autonomy and human dignity.

In connection with the trend-like changes affecting the world of work, in this study the impacts of the sharing economy, digitalisation, automation and green economy, and, in view

of its importance for Hungary, demographic processes are worth considering.

Collaborative (sharing) economy

Collaborative economy, also known as sharing economy or platform economy, is defined by the European Commission as *'a business model where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals'* (European Commission, 2016).

According to the European Commission, the collaborative (sharing) economy, as a new business model based on innovation, can significantly contribute to job creation, competitiveness and growth in the European Union by enabling participants to provide new employment opportunities, new sources of income generation and services, and flexibility in the way they are provided. The collaborative economy can bring additional benefits by means of new services, greater choice and lower prices, encouraging a higher level of sharing and more efficient use of resources, thereby promoting the EU sustainability agenda and the transition to a circular economy.

However, the opinion of the European Economic and Social Committee (EESC, 2017) on the document points out that, given the complexity of integrating collaborative economy into the regulatory environment, the EESC proposes a balanced side-by-side existence of different models in a way that ensures their full development without creating negative externalities in the market, particularly in terms of competition, taxation, and the protection of quality employment.

Likewise, the European Parliament's report on a European Agenda for the collaborative economy (European Parliament, 2017) underlines that the digital revolution has a significant impact on the labour market and is part of a trend currently observed in the overall digitalisation of society, taking place in the collaborative economy. Furthermore, it notes that the collaborative economy offers novel opportunities and new flexible ways back to work for all users, in particular the self-employed, the unemployed and those removed from or otherwise unable to participate in the labour market, thereby facilitating entry into the labour market especially for young people and marginalised groups.

Nevertheless, the report also points out that, in some circumstances, this can lead to unstable employment conditions. On the other hand, labour market flexibility must be accompanied with economic and social security, and the rights of workers – in particular the rights to organise, take collective action and collective bargaining – must be reflected in collaborative services.

Therefore, fair working conditions and adequate legal and social protection must be guaranteed to all workers within a collaborative economy irrespective of their legal status, including the increasing number of self-employed individuals.

Nevertheless, the report acknowledges that the collaborative economy will cause disruption in some sectors, and therefore encourages Member States to develop absorption measures to support training and re-employment opportunities. In connection with this, it should be ensured that all workers have the right skills required by the digital society and economy. For this reason, Member States should make lifelong learning and the development of digital skills accessible to all workers, and collaborative economy businesses, in particular micro and small enterprises, should also be able to participate in lifelong learning and access public and private funds available for training purposes.

The report also emphasises the importance of teleworking and flexible working arrangements in a collaborative economy, proposing to recognise their equal status compared to traditional forms of work.

At the same time, the flexibility of the sharing economy also means that atypical is becoming typical, and alternative forms of work (virtual, platform-based, digital) are becoming dominant in some services, where regulation seeks to create the legal framework for controlled, healthy and safe work as a follow-up only.

Nevertheless, a number of surveys and studies also draw attention to the rapid rise of digital platform work and its 'side-effect' on a wide range of services with the result that the collaborative and personal nature of work is disappearing, with inevitable social, moral and psychological consequences.

Automation and robotisation

According to a study by the Organisation for Economic Co-operation and Development (OECD, 2019), 14 percent of jobs in OECD countries could disappear over the next 15-20 years due to automation, and 32 percent will be radically transformed as a result of partial automation. The documentary titled American Factory (Bognar S., Reichert J, 2019) also suggests that by 2030, 375 million people will have to find completely new jobs around the world because of automation. Moreover, according to a study by the McKinsey Global Institute (McKinsey Global Institute, 2019), by 2030, 21 percent of men and 20 percent of women will have to find a new job instead of the current one, and a total of 40 to 160 million women will have to change jobs and retrain in order to find a better paying job or to keep the previous one.

A report on automation processes in Hungary (McKinsey&Company, 2018) suggests that, based on a moderate scenario, automation will have a significant impact on 1 million jobs by 2030. What is more, with the currently available technologies 49 percent of working hours could be automated in Hungary, which is in line with the global average. A key conclusion of the report is that automation can help implement the long-term efficiency-enhancing measures that are essential to increase competitiveness and maintain growth in Hungary, as automation can be a solution to labour shortage while increasing productivity as well.

As for the data on the estimation of actual labour market impacts, historical experience shows that technological developments tend to have a significant effect, and therefore are likely to continue to influence jobs in some 'traditional' industries and services sectors in the future as well. Overall, each development itself creates new scientific knowledge and industries (artificial intelligence, data science, data analysis, neural networks, robotics, machine learning) with new problems to be solved, which will require additional workforce. This is supported by the fact that, as in the case of new and emerging industries, almost a fifth of the current jobs and occupations did not even exist four decades ago (Lin, 2011).

Nevertheless, the rate of automation is likely to be inconsistent. Its dynamics will be greatly influenced by social, technological and infrastructural preparedness, and the attitudes and digital competences of businesses, decision makers and workers, which can provide sufficient time for a well-paced transition, and the opportunity to enjoy the resulting economic benefits.

The changes will affect a wide range of intellectual and physical workers and occupations, with the rise of automation mostly influencing low and medium-skilled

jobs and middle-income earners. Only a small portion of the highest skilled jobs can be automated, and as much as 60–80 percent of certain subtasks in the manufacturing, public administration, commerce and transport sectors could be affected. On the other hand, customer service, call-centre and warehouse jobs in almost all sectors can be almost fully automated (McKinsey&Company, 2018). As an additional benefit, automation in labour market and recruitment processes can promote gender equality, merit principles and freedom from prejudice through objectivity.

Demographic processes

Economic processes, and employment in particular, are fundamentally influenced by demographic trends. In this respect, there is a duality in the world. While the global population is dynamically growing – between 1960 and 2040 by 1 billion people every 12–14 years (UN, 2019)[2] – with more than half of the population growth concentrated in eight countries (the Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and Tanzania), and while Africa's working-age population will double by 2050, fertility in the developed countries is declining. Across the continents, Europe is the only one where both the population and the number of working-age individuals will decline: the proportion of the population aged 65 and over is expected to increase from 19 percent in 2020 to 28 percent in 2050. This will result in a persistent labour shortage due to a strong decline in Europe's working-age population. It will obviously have a significant impact on growth prospects, increase health and social spending, and is likely to influence the demand for health care and elderly care services, as well as consumption and savings. The increase in life expectancy will also increase the value of years spent in good health.

In demographic terms, Hungary's relative position is among the best in Europe, with the total fertility rate increasing since 2011, to reach 1.59 in 2021 (Hungarian Central Statistical Office/KSH, 2022)[3], and the percentage of working-age population expected to remain one of the highest in the EU in 2030 (*Figure 1*). At the same time, both employment policy makers and businesses will have to find sustainable solutions to the structural economic challenges caused by demographic trends (Matolcsy-Palotai, 2019), as the number of working-age people in Hungary is expected to decline by 570,000 by 2030[4].

In this respect, labour market adjustment is made particularly difficult because demographic trends can only be influenced in the long term, and more and more European countries are now facing labour shortages, as the major obstacle to economic viability. Depending on local labour market traditions, as well as the labour demand, economic weight and bargaining power of companies, policy makers generally adopt three different approaches to satisfy the labour needs of the economy.

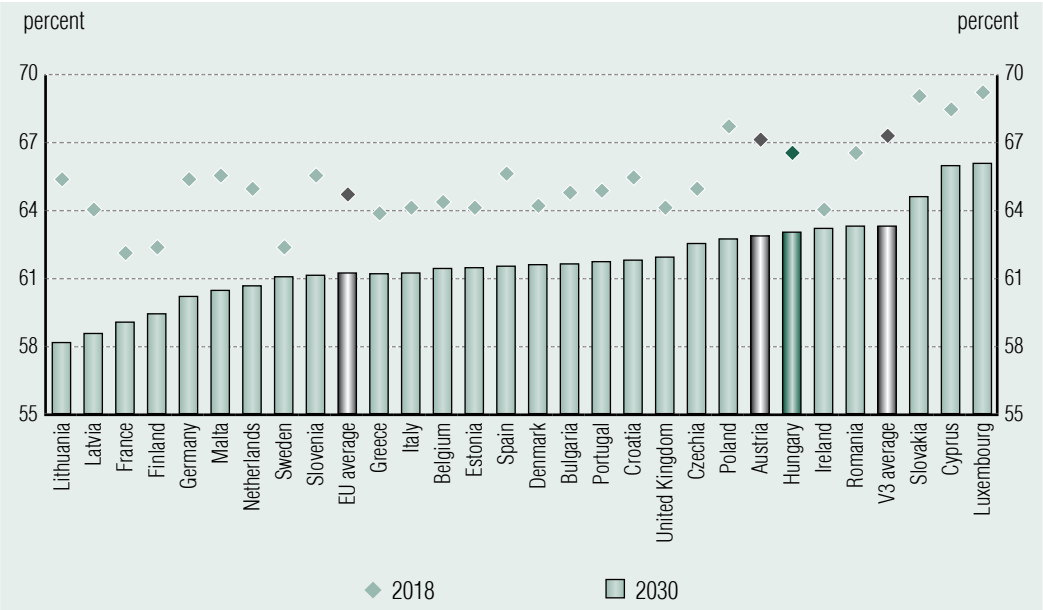
A possible solution is to fill the labour shortage by removing the barriers to settlement for working-age individuals from developing or poor countries. A typical example is Austria, with migration contributing to the growth in working-age population.

Another possible solution is to boost the accumulation of knowledge and productivity through automation, digitalisation and technological change, or even a proactive approach by companies to retrain and upskill existing workforce via training programmes based on university-industry and platform collaboration[5].

This can be effectively complemented with a complex approach integrating employment and social aspects, which includes

Figure 1

SHARE OF WORKING-AGE POPULATION (AGED 15–64); BASELINE PROJECTION



Source: Eurostat, MNB (Central Bank of Hungary)

- a comprehensive family support scheme to promote work and employment, to encourage more births, and to ensure extensive and universal access to childcare,
- encouraging return to the labour market, lifelong learning and the acquisition of digital skills, and
- promoting fair employment through active labour market instruments.

EMPLOYMENT 4.0 – CREATING THE CONDITIONS FOR SYSTEMIC ADAPTABILITY AND RESILIENCE OF THE DOMESTIC LABOUR MARKET

Given the challenges and trends influencing employment in the 21st century, there is a good reason to ask the following questions: How can we meet the labour market expectations of the future? What kind of employment policy and training system could best serve value-based, people-oriented, fair, quality and sustainable employment? What conditions are necessary to ensure the systemic adaptability and resilience of the labour market in a sustainable way, and what should be the role of the state in maintaining employment and employability?

In this paper I will argue that, in answering these questions, the focus should be on the acquisition and accumulation of knowledge capital and human capital (Baksay, Matolcsy, Virág, 2022), on value-creating work, and the possibility of finding fulfilment in work (Kocziszky, 2019), as well as balancing work, life and family, and community goals and values (Second Vatican Council documents, 1995) (Ministry of National Economy, 2014).

These proposals draw on the idea that the capacity to work is an inherent human

quality that involves personal relationships between members of the community, and the possibility of living a worthwhile life and creating value, and thereby the expression of self-esteem, the exercise of one's profession, and service to the community (Second Vatican Council documents, 1995). However, I myself believe that *'economics is not a machine ruled by physical laws. It is not the price mechanism of the market, but human reason and will that creates social and economic order. In order to see clearly, it is necessary to learn the unique language of economics and to be able to penetrate its processes, yet not to become enslaved, but to be able to control them'* (Muzslay, 1995).

Along these principles, I find it necessary to define and implement the strategic objectives, priorities and proposals described below.

Accumulation of knowledge capital

The value of information and knowledge has increased in such a way that it is fundamentally changing the functioning of the world, as well as (economic) thinking. What makes a country rich, therefore, is no longer its land, natural resources and population, but the intellectual capital, the talent and the creativity of its people. At the same time, knowledge is a resource that is increasing exponentially, rather than diminishing, as it is used and shared (Matolcsy, 2021).

In the same way as data science and data mining is the new gold, the accumulation of knowledge capital is the basis for convergence, to catch up with the most developed countries (Baksay, Matolcsy, Virág, 2022). Therefore, it seems appropriate to focus the available social and financial resources on two areas, i.e. education and the acquisition of digital literacy and digital skills that are necessary to successfully meet the labour market challenges of the new technological revolution. This targeted universalism (Powell, Menendian, Ake, 2019) can contribute to increasing the efficiency of preparation for and access to work (labour intermediation), to low unemployment, career mobility, and ultimately, to strengthening and widening the currently shrinking middle class in society, thereby reducing economic and social inequalities in a sustainable way.

The Hungarian Government has also set the goal of creating more new, high value-added jobs through competitiveness improvement (Irinyi Plan, Industry 4.0 Industrial Development Strategy, Digital Wellbeing Programme) and digitalisation of the economy, also ensuring a sufficient number of skilled workers to fill these digital jobs (Ministry of National Economy, 2018). Moreover, in order to improve the methodology of industrial and occupational classifications and labour market research, and to ensure the ability of the forecasting systems to effectively identify actual labour market needs for the training systems, new methodological foundations within the framework of the Digital Workforce Programme should be created.

While the set strategic objectives are correct and appropriate, the framework conditions and measures to help future workers to turn their abilities and skills into real competences and value-creating knowledge that can contribute to the development of the economy and society are missing. Hence, I will make proposals for such an action plan at the level of society.

Education and training

Educational revolutions have always been driven by technological progress, the emergence of new industries, and the widening knowledge gap between employers

(companies) and workers' skills. It is clear, therefore, that in a changing labour market environment the approach to education and training, the existing structures, and the knowledge and skills provided must also change.

As a unique feature of the 21st century, the accumulated knowledge, and in particular scientific knowledge is expanding at such a rate that no education and training system can keep up with it. Another challenge is posed by the otherwise understandable and legitimate expectation from the society that the education and training systems should prepare the workers of today for the jobs of tomorrow, and provide future generations with the knowledge and skills they will need (Mulligan, Shaw, 2021). To use a classic example, the educational system should teach people how to fish, rather than give them fish. However, the particular challenge here is to teach fishing by catching fish never seen before.

In my view, the above approach provides some important conclusions.

First, if we consider change (the technological and knowledge revolution) as constant, then we should not adapt to the speed of change, but to change itself.

Second, work should be understood as a problem-solving skill, and education and training should be seen as a preparation for solving problems and filling knowledge gaps by making future workers face new or previously unknown problems from time to time and encouraging them to acquire new skills.

Third, if knowledge capital is the basis for convergence, sustainability and social well-being, it should be accumulated in a way that ensures the widest possible access to knowledge (knowledge sharing). Indeed, the higher the number of people with outstanding problem-solving skills driven by the desire for knowledge, the greater the likelihood of exceptional intellectual achievements, and social and material recognition of knowledge (Baksay, Matolcsy, Virág, 2022).

And fourth, in the age of technological revolutions, learning and work are two sides of the same coin that cannot be separated from each other. Consequently, education and training structures should be designed in a way to provide a wide range of opportunities for hands-on experience. At the same time, workplaces must invest in their employees and become places for knowledge sharing and for developing skills (Mulligan, Shaw, 2021).

In the light of this, it is the openness to understanding the world, keeping up the desire for knowledge, and the knowledge acquired that will lead to individual and social well-being in a sustainable way. And as the knowledge that can be acquired is infinite (Matolcsy, 2021), lifelong learning is the key to a valuable life and happiness.

So what are the cornerstones of education and training that will provide a solid foundation for training the workers of the future, while meeting the labour market needs of the fourth industrial revolution?

Mathematics and natural sciences

I am convinced that abstract thinking and intuition will be highly valued and essential in the labour market. Mathematics is based on abstract thinking, as *'it promotes basic habits of thought, such as the ability to distinguish between the essential and the inessential, and the ability to reach logical conclusions'* (Aharoni, 2015). At the same time, mathematics also relies heavily on intuition, experimentation, and making not-so-obvious connections when faced with unfamiliar problems.

Therefore, in addition to being indispensable for professions requiring scientific or economic knowledge and providing a conceptual framework for understanding technological innovation, automation and artificial intelligence and for

solving structured problems, mathematics is also the kind of approach and mindset that encourages lifelong learning, while using its principles will enable future generations to fill knowledge gaps (Lovász, 2013) and to face and adapt to change.

Development of skills and competences, career orientation and talent management

Looking at the relationship between public education and higher education, as well as between vocational, adult and higher education and training, one of the key questions is whether public education should prepare for higher education, i.e. whether the expectations of public education should be determined by higher education aspects, or whether the role of public education should be to provide general access to education, along with basic skills and competences, and all possible further learning opportunities, including direct entry into the labour market. Public education systems are naturally expected to ensure a connection between public education – including secondary education – and higher education. However, the strength of this connection depends very much on tradition, social expectations, the social prestige of college and university degrees, and even the proportion of public funding for higher education. It also means that there is no 'best practice' that could be adapted to the domestic context without alteration. Nevertheless, there are some principles whose enforcement could significantly contribute to improving the efficiency of public education and to transferring knowledge that creates value, thereby promoting the further education of future generations, as well as their labour market adaptability and resilience.

In public education, therefore, it is appropriate to introduce methods (Ministry of National Economy, 2014) that

- make early school leaving predictable and preventable;
- focus on literacy and reading comprehension, and the practical use of acquired mathematical and scientific knowledge and skills;
- require the active involvement of both students and teachers in knowledge transfer, promote creativity, recognise and make room for multiple approaches, errors and experimentation (Baksay, Matolcsy, Virág, 2022);
- take into account the differences in children's intellectual development, and provide opportunities for deeper learning, and time to catch up;
- support practical experience, team work, language learning, arts, and healthy lifestyles;
- ensure digitalisation in public education, and the development of digital literacy and skills (Molnár, Pap, 2018).

The methods that best help and stimulate students to understand and decide what they want to learn are the ones that require creativity and active participation. This provides them with the opportunity to test their skills, to experiment, to familiarise themselves with the world of work, to understand the importance of cooperation, team work and 'entrepreneurship' (Baksay, Matolcsy, Virág, 2022).

All this requires methodological support and additional funding to encourage the deepening of basic skills (reading, writing, arithmetic and reading comprehension) in public education after the first four grades by introducing, where appropriate, a preparatory year to help transition into secondary education, and after the tenth grade, as a general measure, a career-orientation year, where students can try themselves in small groups in a guided and creative way, reinforcing and building on the knowledge they have acquired.

There is also need for centrally organised talent management with mentoring and grants for teachers and students in public education. Without this, talented students will have little opportunity to emerge and to develop their natural abilities and skills to a higher level. This is a kind of 'luxury' that the much more populous and wealthy countries cannot afford either.

In my view, therefore, the primary task of public education should be to stimulate interest and boost motivation and commitment to learning, to help acquire basic skills (reading, writing, arithmetic, reading comprehension, foreign languages), to encourage analytical thinking and learning, and to promote a healthy work culture and attitude, as well as career orientation. At this point, however, it is worth considering some deeply-rooted perceptions of public education, which also put the role of vocational, adult and higher education and training into a different perspective.

On the one hand, public education is an institutional structure for transferring basic knowledge and skills, so even the acquired 'general knowledge' cannot be considered complete with secondary schooling, just as a college or university degree does not provide all the skills and competences necessary to fill a specific job (Mulligan-Shaw, 2021). Indeed, the key to labour market adaptability and resilience to technological change in the 21st century is to develop a culture of lifelong learning along with the necessary conditions, and to acquire appropriate skills and competences (practical knowledge, soft skills) that the school system is unable to provide or only to a limited extent (Ministry of National Economy, 2014). Finding work, learning languages and gaining experience abroad after finishing secondary school can boost the effectiveness of higher education, therefore creating the entry and institutional conditions to access higher education in this way (e.g. online learning materials and partial qualifications, such as Udacity Nanodegree programmes, EdX MicroMasters courses, IBM digital sign language training, European Skills Passport, university preparation courses, summer university, etc.) is well worth considering (Ministry of National Economy, 2014).

On the other hand, the choice between secondary educational institutions – grammar school, vocational grammar school, vocational school or technical school – should not be a kind of knowledge-based selection in respect of basic skills, especially since the parallel acquisition of theoretical and practical knowledge and skills requires double effort and performance. While, for example, a job in assembly or industrial manufacturing in the past did not require extensive academic knowledge beyond practical skills, the disappearance of traditional industrial technologies means that industrial and service jobs increasingly rely on materials science, data analysis, programming and parameterisation skills, rather than just physical work (McKinsey & Company, 2018). Therefore, the choice between institutions should not be influenced by differences in knowledge, skills and talent, or even their absence, but it should be guided purely by career orientation aspects, and all forms of education should prepare students to acquire the highest possible level of academic knowledge and practical skills, ensuring that there is no barrier to participation in higher education once the entry requirements are met.

Finally, an 18 year-old cannot be expected to choose a career for life, and higher education must respond to this. Distinguishing between 'undergraduate' and 'graduate' level programmes in the US higher education system, and between bachelor's and master's programmes in Europe, known as the Bologna process, addresses this issue. In response to the labour market trends and to

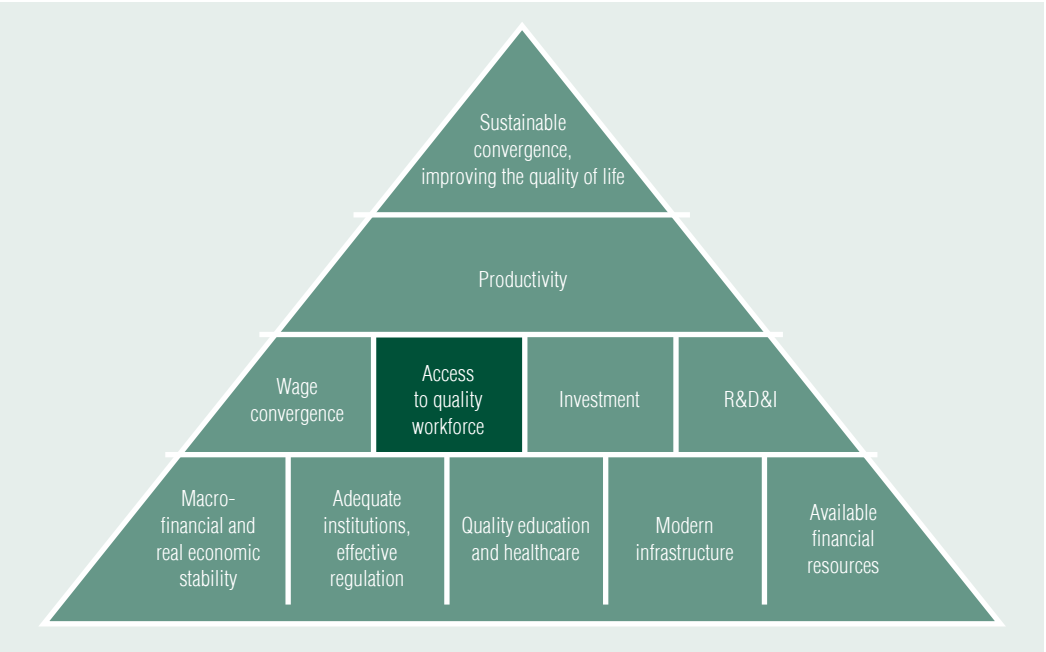
adjust to the needs of higher education in a flexible way, it has been raised (Lovász, 2013) that instead of specialised and compulsory majors courses, future entrepreneurs, decision-makers and managers should be offered elective courses (bachelor level general studies) to provide a broader perspective with less specific knowledge, where, in addition to courses related to their field of specialisation and project work, students are free to choose subjects according to their interests. This would reduce career change, drop-out and degree inflation, while promoting a more efficient use of higher education resources. At the same time, however, adult training arranged by companies or even involving higher education resources should offer partial qualifications (MicroMasters, NanoDegrees, digital sign language) and skills (data security, data analysis, etc.) which can be acquired in a short time mainly online, and which can complement existing qualifications or skills in line with current career opportunities and employer expectations (Mulligan, Shaw, 2021).

Investing in the future

The aim and moral duty of a community should be to improve the life prospects and develop the talents of future generations. The key to a nation's success is to keep faith in the future, with the promise of prosperity from generation to generation (Mulligan, Shaw, 2021). Ensuring general access to quality education, adopting the approach of 'lifelong learning', and promoting investment in the acquisition of knowledge capital are prerequisites for future competitiveness and sustainability (Baksay, Matolcsy, Virág, 2022). *(Figure 2)*

Figure 2

THE PILLARS OF COMPETITIVENESS AND SUSTAINABILITY



Source: Magyar Nemzeti Bank (Central Bank of Hungary)

Quality education is increasingly costly, and requires greater individual and social sacrifice. At the same time, in addition to moral responsibility for future generations, consideration should be given to the fact that investing into knowledge capital pays off, as the return on investment is several times higher than the costs of education (Mulligan, Shaw, 2021). Many companies have also recognised that the most efficient way to meet workforce needs is to participate in training (dual training programmes, apprenticeships, student employment contracts, etc.), to provide targeted incentives and support to existing employees in order to acquire new skills and competences (e.g. in-house training, funding for training, etc.), and to create conditions that promote work-life balance (parental leave, regular teleworking, pension savings, corporate health package, etc.).

Investing in knowledge capital is therefore in the interests of all players of the economy. However, this shift can only be achieved through human resource development plans based on a broad consensus, in close cooperation, and with joint financing, between the public and private sectors.

This is why the state should make more room for practical experience at all levels of the educational system, recognise on-the-job training through regulation and financial contribution, and support initiatives to encourage comprehensive and extensive training and retraining for employees as part of the corporate culture, with particular focus on the skills necessary for the digital transition (Ministry of National Economy, 2014). In addition, various measures should be taken to ensure that there is no financial barrier to (further) education, talent development and sustainable career pathways.

Employers need to understand that their effectiveness, already in the short term, depends on the availability of sufficient high-quality workforce in the future labour markets (Csath, 2022), and on how quickly and effectively they can adapt to the rapidly changing challenges. For their change management to be successful, they need to invest in both emerging and existing workforce, and become training and knowledge-sharing centres themselves.

Finally, the workers of today and tomorrow need to take a different approach and realise that the technological revolution offers not only challenges but also opportunities, and that adaptation and resilience to these challenges require investment in knowledge capital and lifelong learning, with the acquisition of new skills and competences, in addition to deepening the existing ones.

In conclusion, investing in knowledge capital requires significant effort from the state, as well as from companies and employees. However, it is not a zero-sum game, but a collaborative effort that benefits everyone, and whose 'returns' can be enhanced by the proactivity and effectiveness of the participants. ■

Notes

[1] Kun, 2018

[2] Source: United Nations World Population Prospects 2019, medium variant. History of the Global Environment

[3] Source: Hungarian Central Statistical Office (2022). Main indicators of population and population movements

[4] Source: Eurostat, Hungarian Central Statistical

Office, Central Bank of Hungary (Magyar Nemzeti Bank). Changes in age groups of the Hungarian population between 2018 and 2030, baseline projection

[5] See for example AT&T Workforce 2020, Walmart Live Better U, Walmart Academy

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