



The Shape of (Central) Europe 2021



ANNUAL
CONFERENCE
ASPEN INSTITUTE CE

2 December 2021
[AspenInstituteCE.org](https://www.aspeninstitute.org/central-europe)

The Shape of (Central) Europe 2021

Contents

- 04 About Aspen Institute Central Europe**
- 06 Foreword**
Milan Vašina
- 08 Program**
- 10 Speakers**
- 24 What We Have Done Since Last Year's Conference**
- 28 The Future of Civil Service in Central Europe**
Dan Svoboda, Tomáš Karakolev, Jan Indráček
- 44 The Czech Principal: Competencies, Performance and Good Practice**
Karel Gargulák, Štěpán Kment, Václav Korbel
- 62 Defense and Artificial Intelligence**
Tomáš Pojar, Sara Polak
- 74 What the Shape of Central Europe Is According to Aspen Young Leaders**
Andrea Garaiová, Jakub P. Hlávka, Ladislav Frühauf

Aspen Institute Central Europe

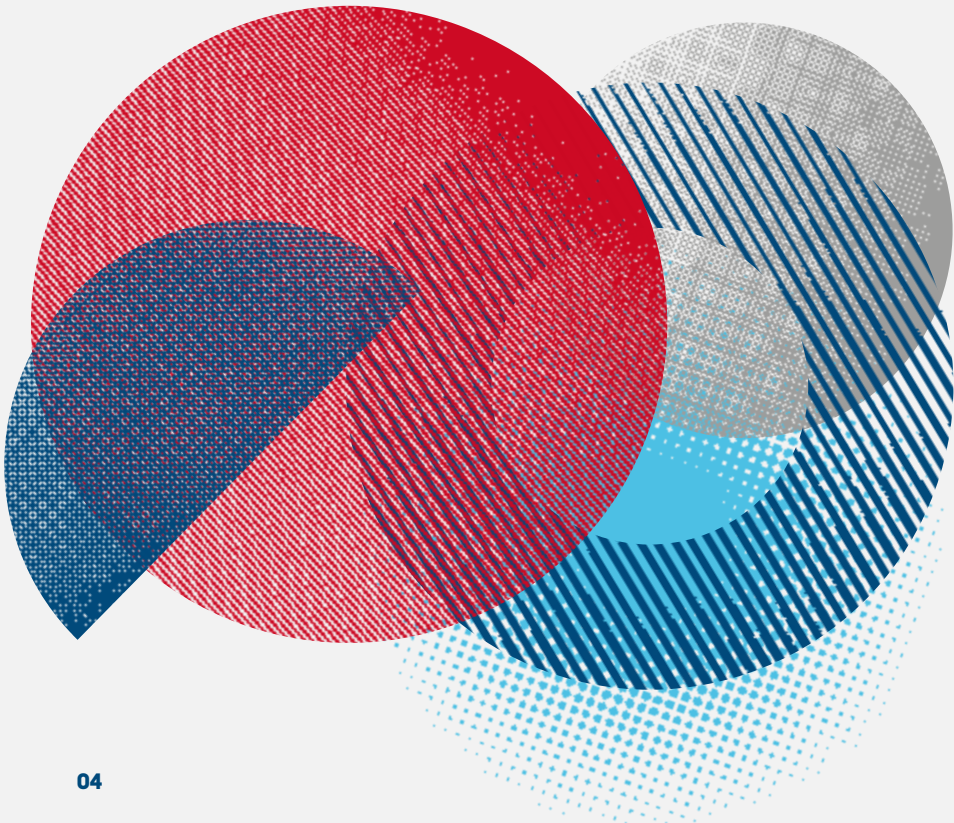
Short Introduction About Aspen Institute CE

Our mission

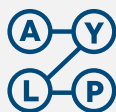
We connect and inspire people who want to improve society.

Who we are

Aspen Institute CE is an independent platform where representatives from politics, business and public institutions as well as personalities from the arts, sports and science meet. With the participation of figures from various disciplines, we organize public conferences, seminars, workshops and professional discussions.



Leaders, celebrities, politicians, the public



Aspen Young Leaders Program

Every year, young people from various disciplines meet in this program to discuss the challenges today's society is facing and the role they play in them. The basic idea of the program is to encourage these promising young people to pause and reflect on the impact of their activities on the world, on society and on the future.

The Shape of (Central) Europe

Annual Conference

Aspen Institute CE holds an annual conference entitled *The Shape of (Central) Europe* at which the results of the year-round work of expert groups – a comprehensive and long-term perspective on political, economic and social developments in the Czech Republic and in Central Europe – are presented. Public figures can formulate new ideas that encourage society and its leaders to engage in self-reflection and comparison, and prompt discussion about other political strategies in Central Europe.



Highlighting topics of public interest

The Aspen Institute CE expert meetings allow for a multifaceted discussion between policymakers and influential business and public figures. They address themes that resonate in politics, but also the impact of innovation and technology on the development of society, democracy, quality of life, change and formation of public opinion and its participation in decision-making. Global issues, transatlantic relations, and the challenges of Europe and the Central European region are discussed.



Aspen Review

Aspen Review is a quarterly magazine in which Aspen Institute CE provides space for a wide range of views on topical issues that resonate in society. The magazine offers analyses, interviews and commentaries by world-renowned professionals as well as Central European public figures, journalists, scientists and academics.

Foreword



Aspen Institute CE has been focusing on its key priorities throughout the year, and these activities will culminate in the annual conference *The Shape of (Central) Europe 2021*. Once again, we organized a series of expert debates and prepared studies which expert teams across various sectors will comment on.

The issue of the future of civil service will be discussed by the former prime ministers of Poland, Slovakia and the Czech Republic. The debate will build on the study entitled *The Future of Civil Service in Central Europe* prepared in cooperation with McKinsey & Company. The topic of the effectiveness of civil service will then be dealt with in a panel of the same name by experts whose discussion will be based on the input from the Aspen Institute CE expert group.

Elementary school principals constitute another key topic. How to build and support quality educational leadership? What is the role of elementary school principals, and what support do they lack? Following a year-round series of debates, we will discuss these issues with experts from the ranks of principals, statutory authorities and government.

In the Artificial Intelligence in the Czech Republic debate series, we demystified the concept of AI and highlighted top Czech experts. How can artificial intelligence be used in connection with defense? As technology will be the driving force behind twenty-first century defense strategies, security experts will debate the link between defense and artificial intelligence at the end of this year's conference.

The work of Aspen Institute CE and the expert groups does not end, however, with the conference. We want to continue focusing on our priorities. The first of these is value-based leadership because, in our opinion, we lack leaders who are able to listen to others, discuss, make decisions and thus move our society forward. Another priority is education, especially the role of school principals and the possibility of further education and upskilling for the general public. And last but not least, there is technology/digitalization and its conceptual grasp. We believe that these topics are crucial to any society and its prosperity.

I would like to express my gratitude to all our partners and sponsors for their cooperation and support. I would also like to extend my thanks to all those who have helped prepare the studies and participated in the round-tables, public debates and otherwise contributed to organizing this year's conference.

Finally, I would like to express my sincere hope that all of us interested in the well-being of our democratic society will be able to maintain our courage, positive energy and humility.



Milan Vašina,
Executive Director of Aspen Institute Central Europe

Program

- 8:30–9:00** **Registration**
- 9:00–9:10** **Opening**
Zuzana Řezníčková, President, Economia Media House
Ivan Hodáč, President, Aspen Institute CE
Milan Vašina, Executive Director, Aspen Institute CE
- 9:10–9:20** **Opening Speech**
Online in English with simultaneous translation in Czech.
Keynote Speaker: **Madeleine Albright**, former Secretary of State of the United States
- 9:20–10:30** **Central Europe / The Future of Civil Service**
The panel will be in English with simultaneous translation in Czech.
Introductory Presentation: **Dan Svoboda**, Managing Partner McKinsey & Company Czech Republic and Slovakia
Speakers: **Marek Belka**, former Prime Minister of Poland
Mikuláš Dzurinda, former Prime Minister of Slovakia
Vladimír Špidla, former Prime Minister of the Czech Republic
- 10:30–10:50** **Coffee Break**
- 10:50–12:00** **Effectiveness of Civil Service**
The panel will be in Czech with simultaneous translation in English.
Introductory Presentation: **Pavel Řehák**, Founder, Direct Group / Vice-chairman of the Board, Aspen Institute CE
Speakers: **Michal Bláha**, Founder, Hlídač Státu
Jakub Drbohlav, Vice Director, Department for Management of Education System at the Ministry of Education, Youth and Sports
Danuše Nerudová, Rector, Mendel University in Brno
Petr Pavel, General (Ret.)
- 12:00–13:00** **Lunch**

- 13:00–14:10** **Education / Educational Leadership**
The panel will be in Czech with simultaneous translation in English.
- Introductory Presentation:* **Daniel Münich**, Advisor to the Aspen Institute CE Expert Group / Executive Director, think-tank IDEA, CERGE-EI
- Speakers:* **Naděžda Eretová**, Editor-in-chief, Řízení školy
Ivo Jupa, Director, National Pedagogical Institute of the Czech Republic
Daniel Prokop, Head of the Aspen Institute CE Expert Group / Founder, PAQ Research
Jiří Vymětal, School Principal, elementary school in Olomouc
Renáta Zajíčková, Member of the Chamber of Deputies / Mayor of Prague 5
- 14:10–14:20** **AI: Opportunities, Challenges and Governance**
Online in English with simultaneous translation in Czech.
- Keynote Speaker:* **Maggie Johnson**, Vice President of Education and University Programs / COO for the Research PA, Google
- 14:20–14:40** **Coffee Break**
- 14:40–14:50** **AI for Defence and Security**
Online in English with simultaneous translation in Czech.
- Keynote Speaker:* **Edward Hunter Christie**, Senior Fellow, PSSI / Lead Consultant for NATO's AI Strategy
- 14:50–16:00** **Security – Innovations / AI in Defence**
The panel will be in Czech with simultaneous translation in English.
- Introductory Presentation:* **Tomáš Pojar**, Head of Aspen Institute CE Expert Group / Vice-President, CEVRO Institute
- Speakers:* **Miroslav Feix**, Commander, Army Cyber and Information Operations Command, Czech Armed Forces
Filip Kulštrunk, Vice-President Defence & Intelligence, SpaceKnow Inc.
Jan Mazal, Department of Military Robotics, University of Defence
Tomáš Pojar, Head of Aspen Institute CE Expert Group / Vice-President, CEVRO Institute
Martin Rehák, CEO & Founder, Resistant AI
Kristina Soukupová, President, DefSec Innovation Hub
- 16:00–16:05** **Final Recommendations**
Pavel Řehák, Founder, Direct Group / Vice-chairman of the Board, Aspen Institute CE
Milan Vašina, Executive Director, Aspen Institute CE
- 19:00** **Gala Dinner** (*invitation only*)

Speakers





MADELEINE ALBRIGHT

Madeleine K. Albright is Chair of Albright Stonebridge Group, part of Dentons Global Advisors, and a professor, author, diplomat and businesswoman who served as the 64th Secretary of State of the United States. Madeleine Albright received the Presidential Medal of Freedom, the nation's highest civilian honor, from President Obama on May 29, 2012. As Secretary of State, she reinforced America's alliances, advocated for democracy and human rights, and promoted American trade, business, labor and environmental standards abroad. She is a Professor in the Practice of Diplomacy at the Georgetown University School of Foreign Service. Madeleine Albright is Chair of Albright Capital Management LLC, an investment advisory firm focused on emerging markets. She also chairs the National Democratic Institute, serves as the president of the Truman Scholarship Foundation and is Honorary Co-Chair of the World Refugee Council. Madeleine Albright is a seven-time New York Times bestselling author.



MAREK BELKA

Marek Belka currently serves as a member of the European Parliament where he is a member of the ECON, FISC, and INTA committees and the delegation for relations with the United States. He was the Prime Minister of Poland from 2004 until 2005 and also held important posts in the public sector from the 1990s. He served as Vice-Prime Minister and Minister of Finance of Poland, United Nations Executive Secretary of the Economic Commission for Europe, Director of the IMF European Department, President of the National Bank of Poland and Chairman of the IMF/World Bank Development Committee. Marek Belka is a Professor of Economics who specializes in monetary policy and applied economics.



EDWARD HUNTER CHRISTIE

Edward Hunter Christie is the founder of AI Policy Consulting and a Senior Fellow with the Prague Security Studies Institute. He served as a NATO official from 2014 to 2020, ending his tenure in the role of Deputy Head of NATO's Innovation Unit. In 2020, he was the lead author of NATO's policy White Papers on Artificial Intelligence and on Autonomous Technologies and was the lead consultant to NATO for the development of the Alliance's Artificial Intelligence Strategy in 2021.



JAKUB DRBOHLAV

Jakub Drbohlav is the Vice Director of the Department for Management of Education system at the Ministry of Education, Youth and Sports, where he strives to help change Czech education and implement a new strategy for educational policy. He studied philosophy in Prague and Paris and subsequently worked as a management consultant in the Prague office of BCG. He has implemented over ten strategic and implementation projects for the most prominent companies within Europe. He has held the current position since the summer of 2020.



MIKULÁŠ DZURINDA

Mikuláš Dzurinda has been the President of the Wilfried Martens Centre for European Studies since 2013. Over the years 1998–2006, he held the post of Prime Minister of Slovakia, having, however, held various positions in the government since first entering politics in 1990. Once he became Prime Minister, Dzurinda introduced far-reaching reforms which enabled Slovakia to begin the process of joining the EU and NATO, which was completed in 2004. Mikuláš Dzurinda is a founding member of the Slovak Democratic and Christian Union – Democratic Party (SDKÚ-DS) and was chair of the party from 2000 to 2012. In 2007, he was awarded the F.A. Hayek International Prize for reforms and fighting against bureaucracy. Apart from his rich political career, Mikuláš Dzurinda is also a marathon runner.



NADĚŽDA ERETOVÁ

Naděžda Eretová is the Editor-in-Chief of the School Management editorial board of the Wolters Kluwer Czech Republic publishing house. She graduated from the Faculty of Education at University of West Bohemia where she studied Czech language and history. She worked at an elementary school for 20 years. She is convinced that the education system will change for the better by focused and systematic pressure on all the stakeholders within the educational process. The ultimate goal for her is to have children who enjoy going to school and prepare them for real life once they leave school. As part of her profession, she is in constant contact with school principals, cooperates with a number of institutions and organizations dedicated to education, and systematically expands the editorial board's portfolio so that it is useful for schools.



MIROSLAV FEIX

Brigadier General Miroslav Feix is the commander of the Cyber and Information Forces of the Army of the Czech Republic. He studied Management Theory at Ground Forces Military College in Vyškov and at the Naval Postgraduate School in Monterey, where he focused on defense analysis, irregular warfare and game theory. He spent most of his career with the Special Forces, for which he created a system of planning and control in operations. He also participated in their transformation into a modern combat force and put a comprehensive capability development system into practice. He gained combat experience on missions in Kosovo and Afghanistan.



MICHALA HERGETOVÁ

Michala Hergetová is a TV reporter and host of business news and events. She graduated from the University of Economics in Prague in 2005 with a major in International Trade and European Integration. She interrupted her studies for a Joint European Studies Program at Staffordshire University in the UK and University of Antwerp in Belgium. Her professional career began with the TV3 channel where she focused on economics and politics. She also worked as PR Director for the National Trade Promotion Agency – CzechTrade. During the floods in 2002, she led the CzechTrade and Radio Impuls Flood Center. She has worked for Czech TV in different positions since 2005 and hosts various events and debates.



IVAN HODÁČ

Ivan Hodáč is the Founder and President of Aspen Institute Central Europe. He completed his education at the University of Copenhagen and the College of Europe in Bruges. He worked as Secretary-General of the European Automobile Manufacturers' Association (ACEA) from 2001 until 2013. He was among other things a member of a special advisory group of experts, which was advising the European Commission in the negotiation of the Transatlantic Trade and Investment Partnership with the United States (TTIP). Before joining ACEA, he worked as Senior Vice-President and Head of the Time Warner Corporate office for Europe and Secretary-General of the trade organization IFMA/IMACE. Ivan Hodáč currently works as senior adviser at Teneo CabinetDN, a leading consultancy on the EU. The Financial Times listed him among the most influential personalities in Brussels politics.



MAGGIE JOHNSON

Maggie Johnson is the Vice President of Education and University Programs for Google and COO for the Research Product Area. She manages all technical education, content development, and

information management programs for Google engineers and operations staff, as well as Google's K12 educational programs in STEM and computer science. She also oversees University Relations, building strategic research partnerships with faculty and labs globally to expand and enhance Google's R&D efforts. As COO for Research, she manages strategy and operations to assure that all the teams have the support and infrastructure they need to do state-of-the-art research for Google.



IVO JUPA

Ivo Jupa currently works as the director of the National Pedagogical Institute of the Czech Republic. Over the course of his rich career, he co-founded and led the AISIS organization focused on education of teachers and equal opportunities for children. He worked as the director of the department at the Ministry of Education, Youth and Sports where he was responsible for the programming and implementation of EU structural funds in education, science and research in the Czech Republic. Ivo Jupa is the founder of CSR Consult (now Innovation Footprint) which focuses on the creation of concepts and projects fulfilling the principles of CSR. As a representative of the Czech Republic, he took part in the Education Committee of the Council of the European Union. He is also the author of the DMS concept, which allows donors to collect donations via mobile phones.



FILIP KULŠTRUNK

Filip Kulštrunk is the Vice President for Defense & Intelligence at SpaceKnow. He graduated from the University of Manchester in England and before returning to the Czech Republic, worked at BAE Systems and EY in England and Sweden. He has been involved with the defense and security industry for 10 years and currently specializes in space technology and artificial intelligence. Under his leadership, SpaceKnow's technologies enable customers to take full advantage of data from both commercial and governmental Earth observation satellites.



JAN MAZAL

Jan Mazal works as the Head of the Department of Informatics and Cyber Operations at the University of Defense. He is an alumnus of the Army College in Vyškov and the Military Academy in Brno. He specializes in military robotics and artificial intelligence, mainly on the automation of operational and tactical processes in the military, battlefield robotization, and automated command and control systems. He is the author and co-author of more than 80 professional publications, the investigator of several scientific projects, demonstrators and application software. On top of this, he has organized many national and international conferences. In his military practice, he has held command and staff positions at the battalion level. In the past, he also served in the foreign missions EUFOR (Bosnia and Herzegovina 2006) and ISAF (Afghanistan 2010).



DANIEL MÜNICH

Daniel Mních received his Ph.D. in economics from CERGE at Charles University. He has served as the Executive Director of the academic think-tank IDEA at CERGE-EI since 2012. Apart from teaching, he focuses on research in the fields of labor economics, economics of education and schooling, policy impact evaluation and R&D assessment. Among other things, he was a member of the National Economic Council of the Czech Government NERV II where he coordinated a chapter on education. He has served for many years as a senior adviser to the European Network of Economists of Education for the EU Commission, and is a leader of the national team in the European project Euromod. He is also a member of the advisory board for policy impact evaluation to the legislative council of the Czech Government.



DANUŠE NERUDOVÁ

Danuše Nerudová is an economist and the President of Mendel University in Brno. In her scholarly work, she has specialized in the issues of European taxes in which she regularly gives lectures not

only in the Czech Republic but also abroad. Her priorities include improving the quality of education, especially in terms of critical thinking and creative problem-solving. She is the chair of the Committee for Fair Pensions and actively speaks about economic issues that are currently resonating in society. She is an advocate of equal opportunities for women in the labor market and, according to Forbes magazine, is one of the 125 most influential women in the Czech Republic.



PETR PAVEL

Petr Pavel is a retired Army General, former Chief of the General Staff of the Czech Army, and Chairman of the NATO Military Committee. For his services, he received many Czech and international military honors. These days, he gives lectures and participates in discussions with citizens. In the spring of 2020, he launched the initiative Stronger Together. Firstly, the initiative aimed at crowd-funding finances for those who stood on the front lines and fought the epidemic and those worst affected by the Covid-19 crisis. Later on, and in cooperation with other experts, he put together a set of recommendations for better crisis management. He currently seeks a thorough review of the Czech crisis management system. He strives to lead by example in active citizenship and volunteering.



TOMÁŠ POJAR

Tomáš Pojar is the Vice-President of the CEVRO Institute, Vice-President of the Czech-Israeli Chamber of Commerce and a security and defense consultant. He studied political science at the Faculty of Social Studies of Charles University and Counter-terrorism Studies and Homeland Security at the Interdisciplinary Center in Israel. In 1995, he began to work for the NGO People in Need, which he led from 1997 to 2005. He joined the Ministry of Foreign Affairs in 2005, where he served as Deputy Minister for Bilateral Relations and First Deputy Minister for Security and EU Affairs as well as bilateral relations with European states. He was Ambassador of the Czech Republic to Israel from 2010 to 2014.



SARA POLAK

Sara Polak is an Oxford-educated archaeologist and cognitive & evolutionary anthropologist who spent the last 8 years working in technology start-ups in London and USA. After almost a decade in the UK, she returned back home. Her core discipline is the popularization of AI and the concept of cloud societies. She founded the Pioneers AI lab at Paralelní Polis, teaches the nationwide free AI course Elements of AI with prg.ai, and works on other projects. She is an AYLP alumna as well as a Bakala Scholar. Her dream is to popularize and digest big, heavy tech topics for the general public as well as to create a cloud society and achieve a new form of global social functioning that does not rely on the concept of a nation state.



DANIEL PROKOP

Daniel Prokop is a sociologist focused on political, social and educational research. He implemented numerous innovations to Czech election surveys and has been recently focusing on research of social problems and educational inequalities. With this intent, he founded the PAQ research agency. He was also a member of the expert group preparing the educational strategy 2030+. He published a successful book on social and educational problems, *Blind Spots (Slepé skvrny)* in 2020. In the past, he worked for the MEDIAN agency for almost 10 years.



MARTIN REHÁK

Martin Rehák is the CEO and founder of Resistant AI, an organization that builds solutions for security of machine learning and statistical techniques applied to credit risk scoring, fraud detection, anti-money laundering and other financial decisions. Prior to his current position, he led Cisco's Cognitive Threat Analytics (CTA) team which was part of the Advanced Threat portfolio and provided advanced threat detection by analysis of network traffic for more than 25 million users worldwide. He was the CEO & Founder of

Cognitive Security, acquired by Cisco in 2013. Martin Rehák holds an engineering degree from École Centrale Paris and a Ph.D. in AI from CTU in Prague.



PAVEL ŘEHÁK

Pavel Řehák studied international relations at the University of Economics in Prague and received an MBA from Northwestern University. In the past, he worked as a consultant for McKinsey & Company for seven years, as an adviser to Česká pojišťovna, which he eventually joined and worked at for seven years, of which three years as CEO. In 2013, Pavel left Česká pojišťovna and founded the investment company Vigo Investments with former colleagues from McKinsey. A year later, together with his partners, he bought the Czech branch of the loss-making Slovenian insurance company Triglav and the Direct pojišťovna brand to establish a completely new Direct pojišťovna. Direct is now the fastest growing insurer and largest Czech-owned player on the market. In 2020, he helped the Czech government cope with the first wave of the Covid-19 pandemic by creating a mathematical model for the spread of the coronavirus disease.



ZUZANA ŘEZNÍČKOVÁ

Zuzana Řezníčková is the Chief Executive Officer of BM Management, which manages the assets of the investor Zdeněk Bakala. She is also the Chair of the Board of Directors of the Economia media house, whose portfolio includes, for example, Hospodářské noviny, Respekt weekly and the news websites iHNed.cz and Aktualne.cz. She chairs the Supervisory Board of the Bakala Foundation. She previously held management positions in ČEZ, MEDIATEL and O2. She also held the position of Vice President for Marketing and Sales at Czech Airlines.



KRISTINA SOUKUPOVÁ

Kristina Soukupová is a long time defense consultant operating at the highest levels with the government and military, across multiple countries, especially in the UK, Switzerland, the Czech Republic and the USA. Her primary area of expertise is advising major international corporate and government clients on defense and security matters, procurement as well as corporate strategies and their implementation. She is also an enthusiastic researcher and academic who focuses on the issues of technology enabled defense/security sector transformation and its impact. Most recently, she established and leads the Defense and Security Innovation Hub, an organization that brings together industry, academia, national and international organizations from the defense and security sectors.



DAN SVOBODA

Dan Svoboda works as Managing Partner at McKinsey & Company Czech Republic and Slovakia. He graduated from Cornell University and received his MBA from Harvard Business School. He has more than eighteen years of experience with strategic consulting, mainly in the area of large companies transformations and growth and operational efficiency improvement. Key managers from the sectors of financial services, telecommunications, energy and heavy industry are among his clients.



VLADIMÍR ŠPIDLA

Vladimír Špidla is the former Prime Minister of the Czech Republic (2002-2004). During his administration, the Czech Republic joined the European Union. In 1996, he was elected to the Chamber of Deputies, where he served as chair of the Social Policy and Health Care Committee. From 2001 to 2004, he was chair of the Czech Social Democratic Party and later served as the European Commissioner for Employment, Social Affairs and Equal Opportunities. Vladimír Špidla was a member of Bohuslav Sobotka's shadow government

as the Minister of the Environment before the 2013 parliamentary elections. Since October 2011, he has been the director of the Social Democratic think-tank Masaryk Democratic Academy. He also served as Director of the Department of Advisers to the Prime Minister. He was awarded the National Order of the Legion for his services to the development of Czech-French relations and support for European integration.



MILAN VAŠINA

Milan Vašina is a graduate of the Faculty of Business and Economics of Mendel University in Brno. He spent most of his professional career in telecommunications. He began as head of marketing communication at Radiomobil, the company that brought the mobile operator Paegas to the Czech market, and remained loyal to his employer for more than two decades. He was the CEO of T-Mobile Slovakia from 2007. Milan served as CEO of T-Mobile Czech Republic from 2011 and CEO of T-Mobile Czech Republic and Slovak Telekom from 2016. Since leaving top management in 2018, he has worked in Rockaway Capital and as an independent consultant. He took up the position of Executive Director of Aspen Institute Central Europe in July 2020.



JIŘÍ VYMĚTAL

Jiří Vymětal has been the principal of the Svatoplukova Elementary School and Preschool in Olomouc since 2017. He studied teaching of the Czech language and history at the University of Ostrava and teaching of civics at Palacký University in Olomouc. He is the co-author of several publications on global development education, the textbook *Ethical Education* and the travelogue *Cesta polem hvězd*. Jiří Vymětal was awarded the Teacher of the Year award for Olomouc in 2015 and the Principal of the Year 2018-2019.



RENÁTA ZAJÍČKOVÁ

Renáta Zajíčková is the mayor of Prague 5 and since 2021 has also been a member of the Parliament of the Czech Republic. She studied the Czech language, social sciences and school management at the Faculty of Education at Charles University in Prague. In 2005, she decided to use the years of experience in Czech education and established her own private secondary school, focusing on students' personal development and international relations. She later handed over the management of the school to her son and entered local politics.



What We Have Done Since Last Year's Conference

We have addressed the topics of the annual conference The Shape of (Central) Europe throughout the year. Despite the ongoing Covid-19 restrictions, we successfully continued our work, holding public online debates and expert roundtables, bringing together experts from various fields to discuss today's important topics.

AI in the Czech Republic Debate Series

This year, we have taken up the topic of artificial intelligence (AI) in the Czech Republic with a series of online public debates organized in cooperation with prg.ai and hosted by **Sara Polak**. We launched the series with the debate *AI in the Czech Republic: Better Than You Think!* In the course of the discussion, top experts in the field tried to demystify the concept of AI and raise awareness of its benefits for the general public. The follow-up debate in April was entitled *AI in the Czech Republic: How To Fund It?*. It dealt with the issue of funding in the Czech Republic. The series concluded with a June discussion *AI in the Czech Republic: What About European Regulations?* which focused on new AI regulations in the European Union. According to our experts, the regulation needs to be approached very carefully and cautiously. Despite good intentions, it can slow down the deployment of modern technologies in Europe and reduce the competitiveness of local businesses and startups. In the year-round series, experts on artificial intelligence from business, academia and the state sector discussed the need for a multidisciplinary approach to AI, the need for technological education of the general public or the question of how to ensure favorable conditions for world-class talents in the Czech Republic. The third part of the virtual conference *Moonshot by Aspen CE on the Future of Digitalization and AI* concluded this topic in September.

In March, speakers from the government, business and academia also took part in an expert round table on cyber security. Its aim was to analyze the current situation affected by the global pandemic, formulate a set of recommendations for stakeholders which could help them adapt to new measures and face the cyber security challenges in the new post-Covid reality.

Elementary School Principals

In the field of education, we have focused on elementary school principals and pedagogical leadership. In March, we introduced the topic with a virtual interactive conference *Moonshot by Aspen CE* entitled *The Future of Education*. Leaders across various fields debated pedagogical leadership and upskilling and agreed that it is no longer possible to educate and train students for only one specific job as happened in the past.

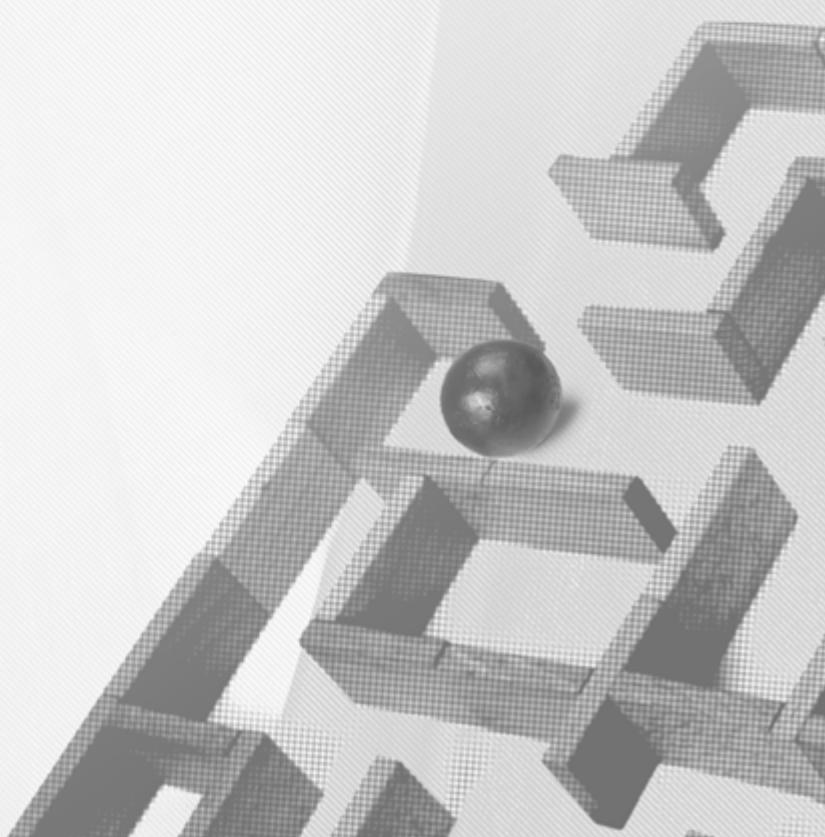
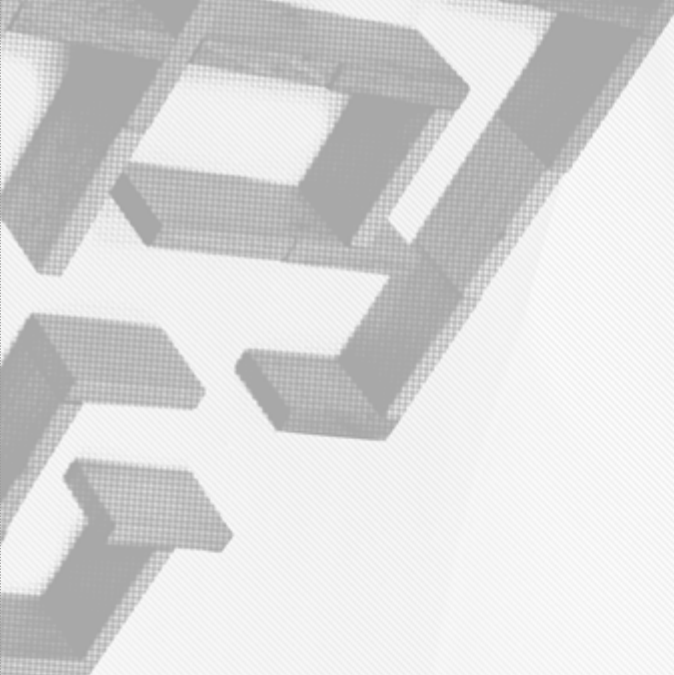
In the following months, we continued to focus on the role of elementary school principals in a series of expert online debates hosted by **Tomáš Feřtek**, EDUin's professional consultant. The series was organized in cooperation with the editorial board of *Řízení školy* magazine and the National Pedagogical Institute of the Czech Republic (NPICR). The April discussion *Elementary School Principals: Captains of Czech Education?* considered diverse ways to improve the position of principals in the Czech education system and the important relationship between statutory authorities and school management. The follow-up June debate *Elementary School Principals: How to Prepare for the Role of Principal?* focused on the education of principals. During the September debate *Elementary School Principals: What do Principals Need to Know?*, we discussed the competency model of the school principal, the mentoring of principals or the personality qualities required for the profession. Throughout the year, representatives of school principals, statutory authorities, civil service and business reflected on the need for systemic change, the lack of training for this demanding and important profession as well as opportunities to educate and support principals or the role of statutory authorities and appropriate legislative changes. We also debated education live at panel discussions at the 61st Zlín Film Festival for Children and Youth, which preceded the annual conference and focused on mapping the needs of school principals in the Zlín region.

Effectiveness of Civil Service

The second part of the virtual conference *Moonshot by Aspen CE: The Future of Civil Service* focused on the topic of leadership and talent development in civil service and the ability of civil service to deliver. Experts across disciplines discussed possible ways to make the civil service more attractive, especially for young talents, as well as the need to increase the

efficiency of state administration. Speakers pointed to the shortcomings of the civil service in targeted and systematic action and to the need for greater flexibility, cooperation across different institutions and improvement of a pro-client approach. On the occasion of the conference, an exclusive public opinion survey by NMS Market Research, that focused on the perception of civil service, and discussion material from the consulting company McKinsey & Company was also presented.

In March, under the auspices of Aspen Institute CE an expert group was created that focuses on the effectiveness of civil service. It is composed of experts in management, human resources and on the transformation of large organizations across the private, non-profit and public sectors. The expert group is preparing a proposal for the implementation of the transformation of the civil service towards a more flexible institution focused on results, which is able to deliver citizen-as-a-client-oriented solutions. The expert group also cooperates with other non-profit organizations, especially with Česko.Digital, Czech Priorities and Reconstruction of the State.



The Future of Civil Service in Central Europe

Dan Svoboda, Tomáš Karakolev, Jan Indráček, McKinsey & Company
Prepared for the Annual Conference of Aspen Institute CE

In this decade, governments in Central Europe will be faced with a broad range of challenges to foster economic prosperity. These may include recovery from the Covid-19 pandemic, decarbonization of large parts of the economy, digitization of public services and automation-induced labor market transformation. Irrespective of political directions and priorities, it is the civil service institutions that will be tasked to implement government policies. An effective and efficient public service can ensure that policies are implemented effectively and public funds are used in a targeted and purposeful manner. International benchmarks demonstrate that civil services in Central Europe (CE)¹ could still improve in several areas, such as setting up mechanisms for delivery of top priorities, setting goals based on outcomes and measuring them, hiring and retaining talent and digitally transforming citizen-facing services and their own way of work.

1) Defined as the Czech Republic, Hungary, Poland and Slovakia throughout this article.

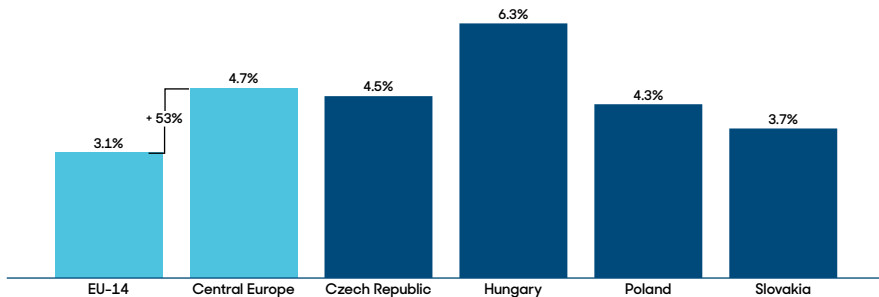
Introduction

This article focuses on how civil services can develop to work more efficiently and towards better citizen outcomes. The case for change rests on four elements:

- 1. Civil service institutions are important for the prosperity of CE countries**, as they affect a significant proportion of national GDP. In CE, total government expenditure averaged 42.9% of GDP.² Out of this, the direct government investment in CE reached 4.7% of GDP in 2019, which is now 50% above the EU-14³ average and will likely grow further as post-Covid recovery programs support infrastructure investments or government digital modernization. While specific policies are decided by policymakers, it is the role of the civil service to ensure they are carried out correctly and effectively. The costs of running the civil services averaged 3.6% of GDP⁴ in CE.

Chart 1: Government investment as a percentage of GDP

Source: OECD



- 2. Civil service institutions are facing new challenges** in their roles as policy designers, implementers, funders and facilitators. Over the next few years, CE countries will likely need to transition to low-carbon economies, digitize their public services,

2) Government at a Glance 2021. *OECD* [online]. 2021 [retrieved on: 2021-10-19]. Available at: https://www.oecd-ilibrary.org/governance/government-at-a-glance-2021_1c258f55-en;jsessionid=dBPafwn3lRqtTulgemQV8XC.ip-10-240-5-183. The figure includes payments into health and social systems, running education and justice systems, driving public investments, and supporting private investments where required to deliver public goods.

3) EU-15 minus UK, i.e., Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Sweden.

4) General government expenditure by function (COFOG). *Eurostat* [online]. 2021 [retrieved on: 2021-10-19]. Available at: https://ec.europa.eu/eurostat/databrowser/view/GOV_10A_EXP_custom_1300362/default/table?lang=en. Spending on general public services minus R&D, foreign economic aid and debt transactions.

reskill more than thirteen million people⁵ to prepare for the future of work, and tackle regional, economic and societal inequalities.

Civil service institutions will also determine how effectively the budgets of *National Recovery and Resilience Plans* (at EUR -57 billion for CE countries) will be deployed.⁶ These plans, drawing in a large part on Recovery and Resilience Facility funding, are the most significant component of the NextGenerationEU program. More than seven times the size of the Marshall Plan (when adjusted to current prices), it represents a historic EU financial commitment. While the resources themselves are allocated by elected officials, it will fall to the respective civil service institutions to deliver the resulting programs. In order to manage the expected level of complexity and coordination, civil service may benefit from building new delivery capabilities.

3. Citizen confidence with governments in CE, according to the Gallup World Poll, is relatively low (37%), compared to that in Western Europe (58%).⁷ Similarly, in 2020, public services such as healthcare, education and judiciary had an average citizen satisfaction rate at 52% in Central Europe, while in Western Europe citizen satisfaction with the government services stands at 71%.⁸

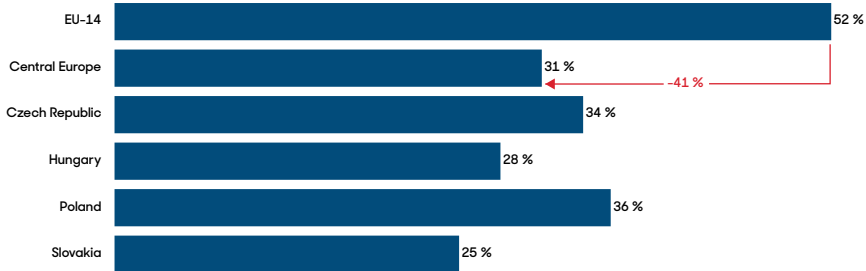
Looking ahead, based on the Eurobarometer survey, less than a third of CE citizens agreed or strongly agreed that their national governments “could be trusted to use the NextGenerationEU funds properly.” This contrasts with 52% in the EU-14 countries.⁹ The skepticism can be explained by the complexity of delivering public sector projects. A survey among three thousand civil servants in 18 countries revealed that 80% of public sector transformations fail to meet their objectives, although 93% of respondents said that objectives of these transformations were realistic.¹⁰

-
- 5) The Rise of Digital Challengers. *McKinsey & Company* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://digitalchallengers.mckinsey.com>. The equivalent of jobs lost due to automated activities; total for the Czech Republic, Hungary, Poland and Slovakia.
 - 6) Recovery Plan for Europe. *European Commission* [online]. [retrieved on: 2021-10-19]. Available at: https://ec.europa.eu/info/strategy/recovery-plan-europe_en#financing-the-eu-long-term-budget-and-nextgenerationeu.
 - 7) Gallup World Poll quoted in OECD. *Government at a Glance 2021* [online]. 2021 [retrieved on: 2021-11-03]. Available at: https://www.oecd-ilibrary.org/governance/government-at-a-glance-2021_1c258f55-en.
 - 8) OECD calculations based on the World Values Survey and European Values Study, 2017-20, quoted in OECD. *Government at a Glance 2021* [online]. 2021 [retrieved on: 2021-11-03]. Available at: https://www.oecd-ilibrary.org/governance/government-at-a-glance-2021_1c258f55-en.
 - 9) State of the European Union. *Eurobarometer* [online]. 2021 [retrieved on: 2021-10-19]. Available at: <https://www.europarl.europa.eu/at-your-service/files/be-heard/eurobarometer/2021/soteu-flash-survey/soteu-2021-report-en.pdf>.
 - 10) ALLAS, Tera, Martin CHECINSKI, Roland DILLON, Richard DOBBS, Solveigh HIERONIMUS and Navjot SINGH. Delivering for Citizens: How to Triple the Success Rate of Government Transformations. *McKinsey & Company* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/delivering-for-citizens-how-to-triple-the-success-rate-of-government-transformations>.

Chart 2: Confidence in government capabilities

Source: OECD Eurobarometer

CE countries have a lower confidence in government capabilities than EU-14 countries. In percent %
Confidence that government can be trusted to use NextGenerationEU funds properly



4. There are many examples of standalone success stories of policy and civil service work across CE. Some of them could be replicated in all government departments. For example:

The Czech Republic: BankID solution, created with a group of Czech banks, allows citizens to use their banking apps to access eGovernment services (e.g., a census application, a Covid-19 pass). Launched in early 2021 and automatically provided to customers of several Czech banks, BankID had hundreds of thousands of active users by August 2021.¹¹

Slovakia: In 2012, the government launched the *ESO Program* for efficient, reliable and open state administration with the aim of reducing the administrative burden on citizens and businesses¹² as well as to save costs.¹³ One-stop shops for services were

11) PEČINKOVÁ, Ivana. Konec čekání ve frontách na úřadech? ‚Zajít‘ se tam dá i virtuálně přes bankovní identitu. *Lidovky.cz* [online]. 29.8.2021 [retrieved on: 2021-10-19]. Available at: https://www.lidovky.cz/byznys/konec-cekani-ve-frontach-na-uradech-zajit-se-tam-da-i-virtualne-pres-bankovni-identitu.A210828_105433_in_ekonomika_rkj.

12) OECD. *Slovak Republic: Developing a Sustainable Strategic Framework for Public Administration Reform* [online]. OECD Publishing, 2014 [retrieved on: 2021-10-19]. Available at: https://read.oecd-ilibrary.org/governance/slovak-republic-developing-a-sustainable-strategic-framework-for-public-administration-reform_9789264212640-en#page50.

13) ESO - Efektívna, Spolahlivá a Otvorená verejná správa. *Ministerstvo vnútra SR* [online]. 2013 [retrieved on: 2021-10-19]. Available at: <https://www.minv.sk/?eso-efektivna-spolahliva-otvorena-verejna-sprava>.

created by integrating the specialized local administration into the central state office.¹⁴ More than 90% of Slovak citizens valued citizen one-stop shops positively.¹⁵

Poland: In 2015, the digital Contact Point (biznes.gov.pl) started integrating services for entrepreneurs. It contributed to Poland being praised by the *Doing Business* report in regulatory reform for entrepreneurs among high-income OECD countries.¹⁶

Hungary: Since 2019, the government has digitized the income tax declaration in a citizen-centric way. For most people, the tax office prefills the application on a neat online platform and only asks people to review and approve (most do not need to make adjustments).¹⁷

Capabilities for Civil Service

Civil services need multiple capabilities to deliver outcomes for citizens, far beyond the traditional focus on policy expertise and running administrative functions. International and academic institutions have developed a range of frameworks for the capabilities required in the modern era that CE governments can draw upon. For example, see Box 1 of the OECD framework.

14) NEMEC, Juraj. Public Administration Reforms in Slovakia: Limited Outcomes (Why?). *ResearchGate* [online]. 2018 [retrieved on: 2021-10-19]. Available at: https://www.researchgate.net/publication/326480303_Public_Administration_Reforms_in_Slovakia_Limited_Outcomes_Why.

15) Out of the sample of 5,000 citizens surveyed. MITRÍK, Karol. Záverečná správa: Implementácia Programu ESO. *Najvyšší kontrolný úrad* [online]. 2017 [retrieved on: 2021-10-19]. Available at: <https://www.nku.gov.sk/documents/10157/265201/96040--110.pdf>.

16) HAMMERSCHMID, Gerhard, M ORAMUS, Stanislaw MAZUR, M MOŹDŹEŃ and Nick THIJS. Public Administration Characteristics and Performance in EU28: Poland. *Publications Office of the European Union* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://op.europa.eu/en/publication-detail/-/publication/4a841d29-9612-11e8-8bc1-01aa75ed71a1/language-en>.

17) See the online form on the Hungarian government website. Available at: <https://onya.nav.gov.hu/#!/login>.

Box 1: OECD framework for capabilities of civil service

Capability areas required for the work of civil servants

1. Policy advice and analysis
2. Service delivery and citizen engagement
3. Commissioning and contracting to ensure third party investment or service delivery
4. Managing networks to address the complex challenges of today.¹⁸

“Professional qualities” that civil services need to deliver what is asked of them

1. Professional values
2. Being future-oriented and evidence-based
3. Being innovative to develop solutions to emerging challenges

The civil service capabilities need to be broad: this is well illustrated by the variety of tasks required from the civil service in response to the Covid-19 pandemic.

- For policy advice and analysis in order to define policies for contact tracing, international travel limitations or bringing children back to schools.
- For service delivery and citizen engagement, in order to clearly communicate pandemic restrictions, and provide seamless experience for citizens booking their vaccination appointments on various channels.
- For commissioning and contracting, in order to handle procurement of respirators, vaccines, or logistical services on a large scale, rapidly and from credible suppliers.
- For managing networks, in order to collaborate with regional and municipal leaders who can help minimize the impact of the pandemic on school operations, provide additional support to children in vulnerable situations, and understand better what support local businesses will need to survive the pandemic.

Civil services work in increasingly complex environments where governments are expected to deliver against new, long-term challenges. Depending on their situation, CE countries could therefore consider implementing some of the following measures in their civil service:

¹⁸ OECD. Skills for a High Performing Civil Service. *OECD Public Governance Reviews* [online]. OECD Publishing, 2017 [retrieved on: 2021-10-19]. Available at: https://read.oecd-ilibrary.org/governance/skills-for-a-high-performing-civil-service_9789264280724-en#page4.

1. Over the short term, **setting up execution-focused Delivery Units to ensure delivery of top government priorities.** Such a temporary measure could help civil service deliver programs before it builds its own capabilities on a large scale. Delivery Units can produce quick wins which create momentum for longer term improvements.
2. **Defining priority areas with their expected outcomes.** Prioritized outcomes help better allocate resources and align civil servants at where the focus should be. Monitoring and a feedback loop drives improvement of the civil service performance over time.
3. **Attracting, retaining and developing talent becomes critical as the complexity of civil service tasks increases.** Our research indicates that high performers may be eight times more effective than their peers in high-complexity roles, such as those in management or software development.¹⁹
4. **Digital transformation and data-driven decision-making.** Work automation, systematic data collection and analysis are transforming most industries. Civil services can draw inspiration from using data in numerous areas. These areas include e.g., improving the quality and speed of the policy-making process, increasing the effectiveness of administrative tasks, or enabling citizen-centricity of government interactions. Additional benefits can include the reduction of risks and costs from the legacy IT systems.

The remainder of the paper looks at benchmarks and examples which are directed at the following areas of government capability.

Setting Up Central Delivery Units to Ensure Delivery of Top Government Priorities

Typical policy processes tend to be slow, governed by time-honored rules and hierarchies. They place a focus on good policy-making rather than effective implementation. Planning and delivering transformations requires, in contrast, a fast and steady pace, a flatter hierarchy with close collaboration between different agencies and roles within them, and the flexibility to solve problems as they arise. Our 2017 survey of civil servants from 18 countries demonstrated that about half of successful transformations (vs. only a fourth of unsuccessful ones) were coordinated by a dedicated central organization team.²⁰

19) KELLER, Scott. Attracting and Retaining the Right Talent. *McKinsey & Company* [online]. 2017 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/attracting-and-retaining-the-right-talent>.

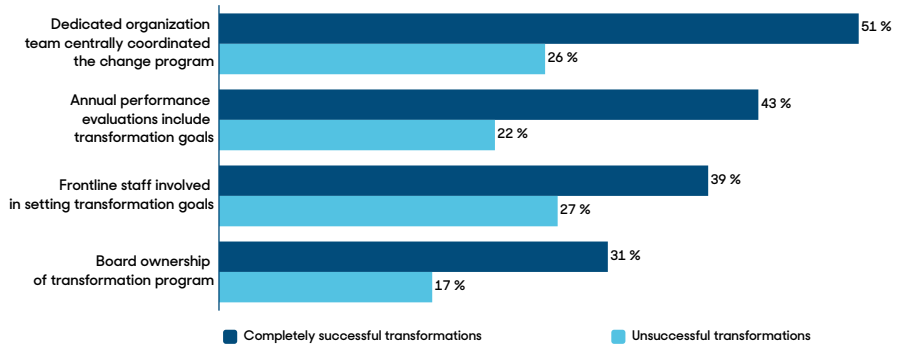
20) ALLAS, Tera, Martin CHECINSKI, Roland DILLON, Richard DOBBS, Solveigh HIERONIMUS and Navjot SINGH. Delivering for Citizens: How to Triple the Success Rate of Government Transformations. *McKinsey & Company* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/delivering-for-citizens-how-to-triple-the-success-rate-of-government-transformations>.

Chart 3: Conditions of successful transformations

Source: McKinsey Center for Government Transformation Survey

Coordination and a regular cadence are essential to successful transformations.

Respondents indicating that action was taken during transformation, weighted % of total respondents



Central European countries may now need to consider setting up such teams as they start gearing up for the delivery of their National Recovery and Resilience programs – and indeed some of them have already taken steps to build such teams.

Whilst there may be more desirable and sustainable solutions, that require organizational changes and hiring talent into individual ministries, Prime Minister level Delivery Units can bring quick wins that allow for the building of momentum and maintaining government and public support for a civil service modernization program.

Such units support the development of plans, help senior leaders prioritize, rigorously measure and report on results, encourage coordination between departments, and work to remove roadblocks in implementation through escalation or use of internal or external expertise. Such units work particularly well when sponsored directly from the center of the government.

Finland may provide an example that is relevant for the Central European countries where priorities need to be driven by government coalitions. Given the long-term issues with prioritization of key priorities, the Finnish government 2015–2019 agreed on a new system of target setting and management. It selected 26 strategic goals, including measurable targets and an implementation plan supported by financing and people resources. Split into five policy areas, biweekly 4-hour strategic meetings were set up where government ministers were expected to participate in helping drive the implementation plan.²¹

21) ROSS, Matt. The Power of Priorities: Goal-setting in Finland and New Zealand. *Global Government Forum* [online]. 2019 [retrieved on: 2021-10-19]. Available at: <https://www.globalgovernmentforum.com/the-power-of-priorities-goal-setting-in-finland-and-new-zealand/>.

Focus on Outcomes and their Measurement

Linking an activity with an outcome is difficult. Even private organizations struggle to establish a clear link between inputs (such as hours of work), outputs (such as revenue) and broader and longer-term outcomes such as value created. Measuring the outcomes and linking them to public service initiatives is even more difficult. Faced with this complexity, public services traditionally resort to focusing on input only, such as the number of workshops organized or the amount of subsidies provided.

Civil services could therefore consider a practical approach to setting their objectives, with establishing outcome-based goals as a first step. 50% of tax returns filed and 20% Net Promoter Score (percentage of satisfied users minus percentage of dissatisfied users) are examples of specific outcome-based goals for a new digital tax return initiative.

Charting an effective path to such goals requires cascading the objectives to more granular levels (geographically and hierarchically), assigning them to initiatives and assessing the impact of individual initiatives when multiple factors influence the outcome. Once this measurement system is established, it is possible to prioritize between the initiatives with spending reviews providing transparency to the cost of each objective.

The Polish STRATEG platform measures, for example, public sector outcomes in detail and publishes them online. Updated quarterly, the system tracks indicators related to individual government strategies at various levels of government. Organized by the initiative, geographic region and policy area, the system includes transparent definitions of indicators as well as explanations as to how those indicators support broader social objectives. The data show, for example, overall energy consumption and total greenhouse gas emissions, as well as the more detailed information relevant for energy transition, such as the number of energy prosumers or households with electricity smart meters.²² The openness of data of the Polish Statistical Office has led to receiving the second place globally (beaten only by Singapore) in the *Open Data Inventory* ranking by Open Data Watch.²³

Focus on Civil Service Talent

Modern civil services need a new type of talent with new skill sets to deal with the new types of problems and tasks - this can be achieved through upskilling of officials and through attracting new types of talent into civil service.

22) About the System. *STRATEG* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://strateg.stat.gov.pl/?lang=en-GB#/o-systemie>.

23) Poland Open Data Watch Inventory Profile. *Open Data Watch* [online]. 2021 [retrieved on: 2021-10-19]. Available at: <https://odin.opendatawatch.com/Report/countryProfileUpdated/POL?year=2020>.

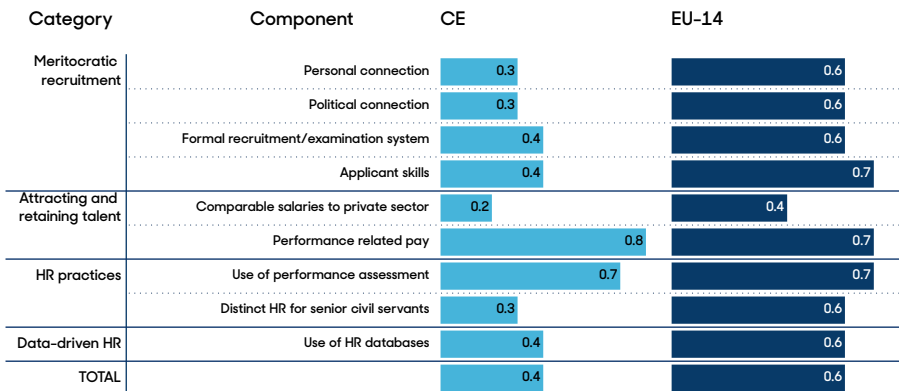
In CE, securing talent is a particularly challenging task. According to the University of Oxford’s *Civil Service Effectiveness Index*, civil services in Central Europe have the potential to grow across a range of HR-related categories.²⁴

Chart 4: Categories of civil service effectiveness

Source: INCISE Database, University of Oxford

Compared to EU-14, CE region has gaps in most of the evaluated categories of civil service effectiveness.

INCISE database score (relative ranking of countries; 1 – highest, 0 – lowest)



CE civil services looking to improve their talent management could therefore take inspiration in three areas of talent management: defining a comprehensive people strategy, introducing modern talent hiring practices and developing leadership capability.

1. Comprehensive talent strategy and critical skill definition with a clear understanding of the gaps vs. current and future skill requirements. Recent research identified 56 foundational skills across 13 skill groups that help citizens thrive in the “future of work” characterized by less clear and changing work tasks. Three of the skill groups focus on digital capabilities, others on cognitive, interpersonal and self-leadership skills (see Chart 5 below).²⁵ In specialized areas, skills mapping can go much deeper. A study on IT talent in Germany found, for example, that businesses looking

24) International Civil Service Effectiveness Index 2019. *University of Oxford* [online]. 2019 [retrieved on: 2021-10-19]. Available at: <https://www.bsg.ox.ac.uk/about/partnerships/international-civil-service-effectiveness-index-2019>.

25) DONDI, Marco, Julia KLIER, Frédéric PANIER and Jörg SCHUBERT. Defining the Skills Citizens Will Need in the Future World of Work. *McKinsey & Company* [online]. 2021 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/defining-the-skills-citizens-will-need-in-the-future-world-of-work>.

to capitalize on emerging tech trends need access to ~4,000 tech skills in addition to many more social and emotional skills.²⁶

Further research and testing will be needed to define the skill groups most required by the civil service as well as to define the approach to their training and evaluation. A framework that includes both the hard and soft skills of civil servants help to define a comprehensive civil service people strategy. Specific hard skills to focus on could include capabilities such as complex project management, public procurement or digital transformation in government.

Chart 5: McKinsey framework on foundational skills

Source: McKinsey & Company

COGNITIVE		INTERPERSONAL	
CRITICAL THINKING <ul style="list-style-type: none"> Structure problem-solving Logical reasoning Understanding biases Seeking relevant information 	PLANNING AND WAYS OF WORKING <ul style="list-style-type: none"> Work-plan development Time management and prioritization Agile thinking 	MOBILIZING SYSTEMS <ul style="list-style-type: none"> Role modeling Win-win negotiations Crafting and inspiring vision Organizational awareness 	DEVELOPING RELATIONSHIPS <ul style="list-style-type: none"> Empathy Inspiring trust Humility Sociability
COMMUNICATION <ul style="list-style-type: none"> Storytelling and public speaking Asking the right questions Synthesizing messages Active listening 	MENTAL FLEXIBILITY <ul style="list-style-type: none"> Creativity and imagination Translating knowledge to different context Adopting a different perspective Adaptability Ability to learn 	TEAMWORK EFFECTIVENESS <ul style="list-style-type: none"> Fostering inclusiveness Motivating different personalities Resolving conflicts 	<ul style="list-style-type: none"> Collaboration Coaching Empowering
SELF-LEADERSHIP		DIGITAL	
SELF-AWARENESS AND SELF-MANAGEMENT <ul style="list-style-type: none"> Understanding own emotions and triggers Self-control and regulation Understanding own strengths 	<ul style="list-style-type: none"> Integrity Self-motivation and wellness Self-confidence 	DIGITAL FLUENCY AND CITIZENSHIP <ul style="list-style-type: none"> Digital literacy Digital learning 	<ul style="list-style-type: none"> Digital collaboration Digital ethics
ENTREPRENEURSHIP <ul style="list-style-type: none"> Courage and risk-taking Driving change and innovation 	<ul style="list-style-type: none"> Energy, passion, and optimism Breaking orthodoxies 	SOFTWARE USE AND DEVELOPMENT <ul style="list-style-type: none"> Programming literacy Data analysis and statistics 	<ul style="list-style-type: none"> Computational and algorithmic thinking
GOALS ACHIEVEMENT <ul style="list-style-type: none"> Ownership and decisiveness Achievement orientation 	<ul style="list-style-type: none"> Grit and persistence Coping with uncertainty Self-development 	UNDERSTANDING DIGITAL SYSTEMS <ul style="list-style-type: none"> Data literacy Smart systems 	<ul style="list-style-type: none"> Cybersecurity literacy Tech translation and enablement

26) DAUB, Matthias, Julia REDA KOUBA, Kate SMAJE and Anna WIESINGER. How Companies Can Win in the Seven Tech-talent Battlegrounds. *McKinsey & Company* [online]. 2020 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/how-companies-can-win-in-the-seven-tech-talent-battlegrounds>.

2. Talent hiring can ensure that people with the right talent become civil servants. Having the right talent is particularly critical for complex technical roles as well as civil service leadership at the top and middle levels. Research indicates that high performers may be eight times more effective than their peers in such high-complexity roles.²⁷

Most OECD countries currently see challenges with hiring data professionals, IT technicians, STEM professionals and senior civil service leaders. Very few find it challenging to seek out traditional roles such as policy advisers or office clerks – or novel roles that only few governments are likely searching for, such as design professionals.

The Fast Stream program in the United Kingdom is an example of a successful proactive civil service recruitment effort. It targets talented recent graduates and young professionals with 15 schemes across the civil service. Each scheme offers 2–4 years of fast-paced, guided work experience with a competitive salary and exposure to top civil service leaders, after which participants could continue their career paths in more senior positions. The prestigious program attracted over 40,000 applications in 2018 (triple the number in 2007) with less than 1,500 admissions.²⁸ In 2020, Fast Stream ranked #1 in the UK in the Times Top 100 Graduate Employer ranking.

3. Developing leadership capability: Senior civil servants and their leadership development have an outsize impact on the functioning of the entire civil service. They set standards of work, ensure meaningful work planning, coach and evaluate more junior officials, and set examples through their role-modelling. Vision and strategy, a results-oriented mindset, networking and collaboration, public value and integrity, and communication competencies are the five areas most frequently included by the OECD countries in their senior civil servant competency frameworks. CE countries might want to evaluate their senior civil servant leadership development frameworks based on what most OECD countries do, and enrich their training and upskilling portfolio appropriately (see Chart 6).

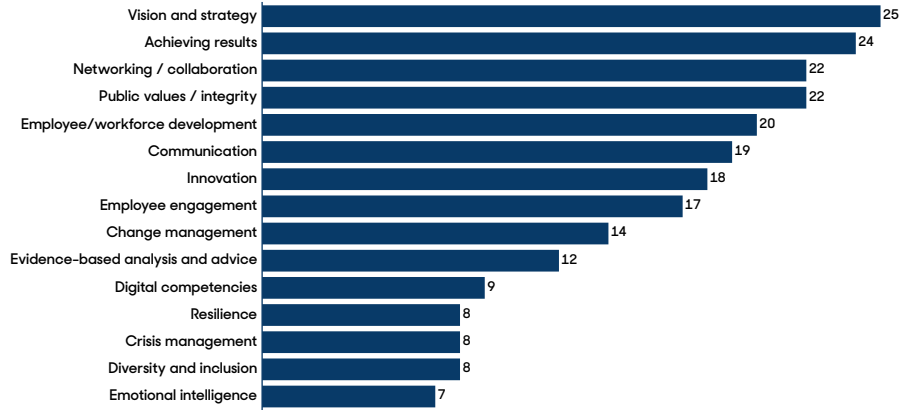
27) KELLER, Scott. Attracting and Retaining the Right Talent. *McKinsey & Company* [online]. 2017 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/business-functions/people-and-organizational-performance/our-insights/attracting-and-retaining-the-right-talent>.

28) Civil Service Fast Stream: Annual Report 2017 and 2018. *UK Parliament* [online]. 2018 [retrieved on: 2021-10-19]. Available at: http://data.parliament.uk/DepositedPapers/Files/DEP2019-0003/Civil_Service_fast_stream_annual_report.pdf.

Chart 6: Competency framework for senior level public servants

Source: OECD

Areas included in the competency framework for senior level public servants, 2020
Number of OECD countries including each area in their SLPS competency framework.



Note: data does not include Chile and Iceland.

We have learned from our interviews with change leaders that the more effective programs take into account individual training needs and employ various learning modes.²⁹ Robust capability programs might therefore include project assignments or rotations between departments, theoretical elements (external and internal training) as well as coaching (regular 360-degree feedback and mentoring).³⁰

Focus on Digital Transformation

Despite an improvement, CE countries still average a lower *Digital Economy and Society Index* (DESI) score than the EU-14 countries. The overall score for Digital Public Services is 20% lower in CE than in EU-14. In particular, it is in the use of pre-filled eGovernment forms where the widest gap between the regions can be seen.

The only instance where the CE score is above the EU-14 average is the result of Poland in the open data category, which scored 8% higher.

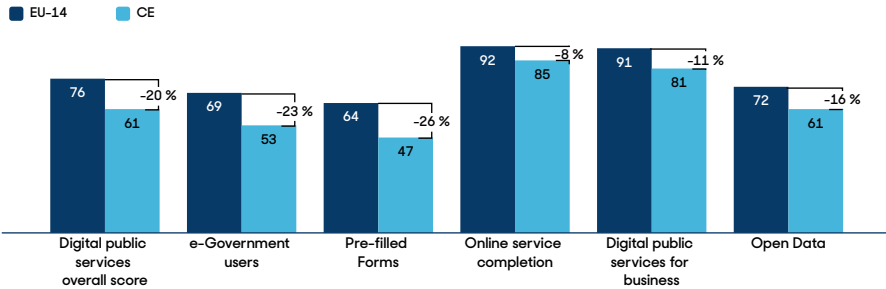
29) ALLAS, Tera, Martin CHECINSKI, Roland DILLON, Richard DOBBS, Solveigh HIERONIMUS and Navjot SINGH. Delivering for Citizens: How to Triple the Success Rate of Government Transformations. *McKinsey & Company* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/delivering-for-citizens-how-to-triple-the-success-rate-of-government-transformations>.

30) For relevant roles, this might include rotation opportunities with the private sector (or at least professionally managed state-owned companies).

Chart 7: DESI score in CE and EU-14

Source: EU DESI Index

CE countries have the lower DESI score, especially as regards the number of eGov users and pre-filled forms.
DESI scores, 2020



The digital transformation in the CE governments already has numerous success stories emerging. They include, for instance:

- Setting up digital government identities for communication with government (that also works with other systems, e.g., BankID)
- Delivering a range of Covid-19 related apps, such as a national vaccination reservation system, a contact tracing app, Covid-19 testing and vaccination passports including reading apps (an example from the Czech Republic includes a new initiative connecting the national Covid-19 passport with one of the most popular event ticketing provider in order to enable event visitors to show their ticket as well as Covid-19 status through a single QR code)
- Simplifying this year's census process through pre-filled forms

In addition to digitizing more and more services, governments may additionally want to combine the app development with a process of simplification and a customer-friendly UX design.

The service developed by the Prague municipal government, which allows citizens to apply for voting outside their home, digitized, for example, an existing paper-based process. Germany in its digitization of child benefits actually went a step further. The process was simplified by allowing citizens to only provide several select data points instead of filling in multi-page forms.³¹

31) Access to Family Allowances Simplified. *The Federal Government* [online]. 2020 [retrieved on: 2021-10-19]. Available at: <https://www.bundesregierung.de/breg-en/news/digitale-familienleistungen-1764194>.

Summary of Possible Actions

The examples above illustrate five possible actions that can help create modern civil services in CE. In every country, the specific shape and applicability of those actions require consideration among ministers and senior civil servants that fully takes local circumstances into account.

- **Make civil service modernization one of the key government priorities.**

Modernization of civil service should be a non-political priority. While government priorities are selected by elected politicians with civil service inputs, civil service alone can ensure that the selected priorities are delivered afterwards. New, more complex capabilities will be needed in this decade, including highly specialized ones such as data collection and analysis, design thinking and IT delivery. Any political party will benefit from the best possible civil service and, thus, from the civil service modernization itself.

- **Set up a temporary high-capability team, e.g. a central government Delivery Unit, which will ensure that top government priorities are delivered.**

Experience from numerous countries shows that top-level focus facilitates delivery of key priorities. A team focused on delivery or priority programs, that will report directly to the Prime Minister or one of the senior ministers, can provide such a focus. Depending on the specific country setup, the team can support planning of strategic priorities, monitor their delivery, support owners as required, and help resolve any problems that emerge during execution. The team can thus provide a temporary solution for top priorities, help produce quick wins and build momentum while more long-term solutions are developed.

- **Ensure that objectives are outcome-oriented and progress monitored.**

To enable the focus and prioritization of civil servants' work, civil services can consider setting up systems to ensure that every department knows and understands the outcome they should achieve. At ministerial or departmental levels, target outcomes (e.g., improved health, workforce upskilling or export increase) are the most relevant. At the team level, practical tasks and outputs are more relevant, but should be cascaded from the overall outcomes.

- **Launch a holistic HR transformation of civil service.**

Civil services will need new skills to resolve the challenges of the 2020s. To prepare, governments can consider launching holistic HR transformations. Initial mapping of the most critical skills can help target specific interventions. These may then include a combination of hiring, training and development programs to develop the required skills. Top talent and leadership ability are particularly important and may deserve specific attention.

- **Ensure that digital transformation of government is coupled with simpler processes that help increase citizen satisfaction.**

Over the past few years, CE governments have digitized multiple services and expanded their eGovernment offerings. As a next step, governments could consider simplifying their design, making them more user-friendly and thus motivating citizens to use digital services more. Digital services also speed up and simplify the interactions between citizens and their governments, help make internal civil service processes more effective, and ultimately lead to higher citizen satisfaction with government services.

The Czech Principal: Competencies, Performance and Good Practice

Karel Gargulák, Štěpán Kment, Václav Korbel, PAQ Research

In the Czech Republic, a binding formulation as to what competencies a school principal ought to have has yet to be made. The competency model piloted by the National Pedagogical Institute has a chance to change this situation. In the quantitative part of our analysis, we describe which competencies Czech principals are (un)confident in as compared to their foreign colleagues. We document that there is a significant link to better academic performance in those schools and their management where their culture is built on mutual cooperation and an understanding of educational goals by all those involved. In case studies from schools, we describe what specific activities lead to the fulfilment of these areas (e.g., the work of competency teams, teacher meetings in smaller, informal groups that include reflection on the teaching process, etc.). Our findings can contribute to further development of professional education of school principals.

Introduction

Scholarly literature and research findings view school principals as one of the key personalities within the education system, with a fundamental impact on the conditions, course and ultimately results of student education.¹

The main objective of this analysis is to map self-evaluation and professional self-perception of elementary school principals in the Czech Republic within selected competencies. In addition, using consolidated data from TALIS (Teaching And Learning International Survey) and PISA (Program for International Student Assessment) surveys, we will explore the non-causal association between these areas and the academic performance of students.

The second part of the analysis works with two case studies from Trmice Elementary School (“ZŠ Trmice”) and Labyrinth Elementary School in Brno (“ZŠ Labyrinth”). It illustrates the importance of establishing good relations for the achievement of the school’s vision, working collaboration and improvement in teaching.

In our analysis, we assume that the pedagogical and managerial qualities of the principal, which may be defined in professional standards for principals, are the basic prerequisite for successful school management. These standards are piloted by the *Competency Model* for school principals currently being prepared as one of the main outputs from the System of Support for Professional Development of Teachers and Principals (SYPO) project implemented by the National Pedagogical Institute of the Czech Republic (NPICR). We attempt to follow the selected types of competencies described in the model in our analysis.

1) FULLAN, Michael. The Role of the Principal in School Reform. *Occasional Paper Series* [online]. 2000, (6), 19 [retrieved on: 2021-10-15]. Available at: <https://educate.bankstreet.edu/cgi/viewcontent.cgi?article=1254&context=occasional-paper-series>.
FULLAN, Michael. *The Principal: Three Keys to Maximizing Impact*. John Wiley & Sons, 2014. ISBN 978-1-118-58245-9.
BENDIKSON, Linda, Viviane ROBINSON and John HATTIE. Principal Instructional Leadership and Secondary School Performance. *Teaching and Learning* [online]. 2012, (1), 2-8 [retrieved on: 2021-10-15]. Available at: https://www.nzcer.org.nz/system/files/journals/set/downloads/set2012_1_002_0.pdf.
DAY, Christopher and Kenneth LEITHWOOD, ed. *Successful Principal Leadership in Times of Change*. 1. Springer Netherlands, 2007. ISBN 978-1-4020-5516-4.
LEITHWOOD, Kenneth, Karen SEASHORE LOUIS, Stephen ANDERSON and Kyla WAHLSTROM. *How Leadership Influences Student Learning* [online]. The Wallace Foundation, 2004, 90 [retrieved on: 2021-10-15]. Available at: <https://www.wallacefoundation.org/knowledge-center/documents/how-leadership-influences-student-learning.pdf>.

Main Findings and Recommendations Stemming from the Analysis

- Compared to principals in neighboring developed countries, Czech principals suffer from administrative overload and have extensive responsibility for procuring the conditions and course of the education process. This is a consequence of the decentralization of the education system at the turn of the millennium and the subsequent strengthening of the autonomy of schools, which was not, however, accompanied by the establishment of a support system for principals. Principals in Czech schools also claim that they are less engaged in the key pedagogical leadership of their schools than their foreign colleagues.
- In our analysis, we used several methods to monitor three areas of the newly developed and piloted *Competency Model* for school principals, specifically, the sub-area of Strengthening of School Culture, which is part of the Value and Vision-based Leadership area, and the areas of Learning and Education Management and School Staff Management.
- Integrated data from the TALIS and PISA surveys, focusing on selected areas of school principals' competencies, show that the following positively relates (not necessarily causally) to academic results: good relations between teachers and students and mutual trust between teachers, and teachers' understanding of the objectives of the school education program ("SEP").
- A mere 22% of Czech school principals strongly agree that there are good relations and cooperation in their schools, both between the teachers themselves and between teachers and students. In contrast, this is reported by 32% of principals in geographically and culturally close countries and as many as 47% of principals in countries with outstanding academic performance. 66% of Czech principals – in line with principals in reference countries – indicate that they try to create a collaborative environment between teachers and hold them accountable for the academic performance of their students. Less than half believe that teachers understand the objectives of the SEP.
- The case studies further demonstrate that prevention of the isolation of individual teachers and fostering an atmosphere of teacher collaboration across grades (within the grade) and subjects (by interest) is one of the driving forces behind the good results achieved at ZŠ Trmice and ZŠ Labyrinth. The principals of both schools concur that the management must have a clear vision of how the school should function, and such a vision needs to be shared by the entire staff.

- These findings indicate that for the systemic level of education policy, it is essential to adopt a binding competency framework for the profession of principal and the standards for its implementation by drawing on the areas described above. The *Competency Model* under review as an output of one of the projects of the National Pedagogical Institute of the Czech Republic can serve as a solid basis. All of the above needs to be supplemented with a comprehensive and integrated system of professional training and support for school principals.
- Inspiration and the resulting good practice for school principals comes, among other things, from an emphasis on the connection between the management of pedagogical processes and teamwork at schools. It is particularly important to promote a culture of collaboration. In both the schools under exploration, the principals emphasize good relations and feedback on which they build processes between management, teachers, students and parents. The evaluation of students takes place with their participation (self-evaluation, peer evaluation), as does the definition of further learning objectives and continuous feedback in the learning process (formative assessment).
- Principals can support continuing education of teachers at the individual level through interviews and teacher development plans. In a collaborative culture, it is equally common to set development goals at the level of the entire staff room or in “competency teams”. These include teacher collaboration in groups, tandem teaching and collaboration between the teacher and the teacher’s assistant. The key to success is to create an environment in which teachers can provide feedback to one another and discuss pedagogical and didactic issues. For instance, at ZŠ Trmice, traditional tools, such as faculty meetings, have been replaced by teacher meetings in smaller informal groups which include reflection on teaching.

Problems Encountered in the Pursuit of the Profession of Principal in the Czech Republic

The great demands and problems posed by the pursuit of the profession of principal in the Czech Republic are illustrated by a wealth of data from both domestic and international sources and surveys. They can be divided into several areas:

1. Scope of responsibility and overall overload of school principals

- A comparison of data obtained by the PISA survey shows that after the Netherlands, the school principal in the Czech Republic has the **second highest share of responsibility for decisions** in areas such as the organization of education, HR, planning and content of education or allocation of resources, compared to other European countries and their principals.² Compared to the Netherlands, however, and other countries, **this scope of responsibility is not accompanied by a broader support system.**³
- Data obtained by the TALIS survey shows that Czech principals **spend an above-average amount of time on administrative tasks**, specifically, up to 40% of their total workload compared to the average of 29% in 23 European countries. Analyses refer to an “**administrative inferno**” in this regard.⁴
- In contrast, Czech principals devote less work – according to their own assessment – to pedagogical management of their schools.⁵
- The general overload of school principals in the Czech Republic stems more or less from the transformation of the education system administration and from the process of decentralization and strengthening of the autonomy of schools. This combination, coupled with the growing demands and duties and unsystematic or uncoordinated educational policy measures, **results in many principals distrusting the system as a whole.**⁶

2) Indicator D6 Who Makes Key Decisions in Education Systems? *OECD* [online]. 2018, 11.9.2018, 408–421 [retrieved on: 2021-10-15]. Available at: https://www.oecd-ilibrary.org/education/education-at-a-glance-2018/indicator-d6-who-makes-key-decisions-in-education-systems_eag-2018-33-en.

How Decentralised Are Education Systems, and What Does it Mean for Schools? *OECD* [online]. 2018, 23.11.2018, 2018(64) [retrieved on: 2021-10-15]. Available at: https://www.oecd-ilibrary.org/education/how-decentralised-are-education-systems-and-what-does-it-mean-for-schools_e14575d5-en.

3) GARGULÁK, Karel, Václav KORBEL and Daniel PROKOP. Ředitelé škol v ČR: Klíčoví hráči v systému vzdělávání bez dostatečné podpory. *Ředitel naživo* [online]. 2021 [retrieved on: 2021-10-15]. Available at: <https://www.reditelnazivo.cz/files/reditele-skol-v-cr-klicovy-hraci-v-systemu-vzdelavani-bez-dostatecne-podpory.pdf?fbclid=IwAR3qsMc3pysfJN10f7mz9iGsdwejNpFEAHqrmBAsSfPEcghvOsDpnLH8T4A>. VESELY, Arnošt, Jakub FISCHER, Milena JABŮRKOVÁ, Milan POSPÍŠIL, Daniel PROKOP, Radko ŠABLÍK, Iva STUHLÍKOVÁ and Stanislav ŠTECH. Hlavní směry vzdělávací politiky ČR 2030+. *MŠMT* [online]. 2019, 4.11.2019 [retrieved on: 2021-10-15]. Available at: <https://www.msmt.cz/file/51582/display/?lang=1&fbclid=IwAR2X-8L-7Nh3V1p8Y6DYdPmK7LXt9eH0kYZDMGS4ilb3E2lJyNrH-U6l24>.

4) FEDERICOVÁ, Miroslava. *Mezinárodní srovnání ředitelů škol: České administrativní inferno* [online]. IDEA / CERGE-EL, 2019, , 40 [retrieved on: 2021-10-15]. Available at: https://idea.cerge-ei.cz/files/IDEA_Studie_12_2019_Kvalita_reditelu_skol/IDEA_Studie_12_2019_Kvalita_reditelu_skol.html.

5) GARGULÁK, Karel, Václav KORBEL and Daniel PROKOP. Ředitelé škol v ČR: Klíčoví hráči v systému vzdělávání bez dostatečné podpory. *Ředitel naživo* [online]. 2021 [retrieved on: 2021-10-15]. Available at: <https://www.reditelnazivo.cz/files/reditele-skol-v-cr-klicovy-hraci-v-systemu-vzdelavani-bez-dostatecne-podpory.pdf?fbclid=IwAR3qsMc3pysfJN10f7mz9iGsdwejNpFEAHqrmBAsSfPEcghvOsDpnLH8T4A>.

6) TROJAN, Václav and Zuzana SVOBODOVÁ. Subjektivní vnímání proměny role ředitele školy a obtížné prvky výkonu této profese v současné době. *Pedagogická orientace* [online]. 2019, 29(2), 203–222 [retrieved on: 2021-10-15]. Available at: <https://journals.muni.cz/pedor/article/view/12382>.

SEDLÁČEK, Martin. *První učitel. K roli ředitele školy v pedagogickém vedení*. 1. Brno: Masarykova univerzita, 2020. ISBN 978-80-210-9718-6.

2. The absence of quality standards and a professional training system, cooperation and support for school principals

- Despite the long-standing declarative commitments found in the strategic documents of the education policy, **the competency requirements for the position of school principal have not yet been formulated in a binding manner** in the Czech Republic.⁷
- The current legislative framework **does not provide for formal preparation to be undertaken by a prospective principal for the pursuit of his/her profession.**⁸
- The actual statutory qualification minimum, a 100-hour “School Principals Course”, is considered inadequate and focused more on other areas than on the pedagogical management of schools.⁹
- According to Trojan,¹⁰ there is currently no **comprehensive and integrated system of professional education for school principals**. The existing training programs for educators in management positions are not organized to form a comprehensive logical system and are often isolated and unlinked. Moreover, there is currently no clear career ladder for principals (this equally applies to the teaching profession). Furthermore, principals are under no obligation to obtain further education in the area of pedagogical management of schools.¹¹
- As described in the analytical part of the *Strategy for Education Policy of the Czech Republic 2030+*, despite minor initiatives, **the systematic creation of conditions for the cooperation of principals, networking and sharing of inspiring practice examples is still lacking.**¹²
- According to Trojan, **the precarious position of the school principal is also caused by the strong politicization of education.** “In small municipalities in

7) VESELÝ, Arnošt, Jakub FISCHER, Milena JABŮRKOVÁ, Milan POSPÍŠIL, Daniel PROKOP, Radko SÁBLÍK, Iva STUHLÍKOVÁ and Stanislav ŠTECH. Hlavní směry vzdělávací politiky ČR 2030+. *MŠMT*[online]. 2019, 4.11.2019 [retrieved on: 2021-10-15]. Available at: <https://www.msmt.cz/file/51582/display/?lang=1&fbclid=IwAR2X-8L-7Nh3VIVp8Y6DYdpMk7tXt9eH0kYZDMGS4iIb3E2ljyNrH-U6124>.

8) TROJAN, Václav. *Ředitel školy jako základní faktor pedagogického vedení*. 1. Praha: Pedagogická fakulta UK, 2019. ISBN 9788076030329.

9) FEDERICOVÁ, Miroslava. *Mezinárodní srovnání ředitelů škol: České administrativní inferno*[online]. IDEA / CERGE-EI, 2019, 40 [retrieved on: 2021-10-15]. Available at: https://idea.cerge-ei.cz/files/IDEA_Studie_12_2019_Kvalita_reditelu skol/IDEA_Studie_12_2019_Kvalita_reditelu skol.html.

10) TROJAN, Václav. *Ředitel školy jako základní faktor pedagogického vedení*. 1. Praha: Pedagogická fakulta UK, 2019. ISBN 9788076030329.

11) TROJAN, Václav and Zuzana SVOBODOVÁ. Subjektivní vnímání proměny role ředitele školy a obtížné prvky výkonu této profese v současné době. *Pedagogická orientace*[online]. 2019, 29(2), 203-222 [retrieved on: 2021-10-15]. Available at: <https://journals.muni.cz/pedor/articel/view/12382>.

SEDLÁČEK, Martin. *První učitel. K roli ředitele školy v pedagogickém vedení*. 1. Brno: Masarykova univerzita, 2020. ISBN 978-80-210-9718-6.

12) VESELÝ, Arnošt, Jakub FISCHER, Milena JABŮRKOVÁ, Milan POSPÍŠIL, Daniel PROKOP, Radko SÁBLÍK, Iva STUHLÍKOVÁ and Stanislav ŠTECH. Hlavní směry vzdělávací politiky ČR 2030+. *MŠMT*[online]. 2019, 4.11.2019 [retrieved on: 2021-10-15]. Available at: <https://www.msmt.cz/file/51582/display/?lang=1&fbclid=IwAR2X-8L-7Nh3VIVp8Y6DYdpMk7tXt9eH0kYZDMGS4iIb3E2ljyNrH-U6124>.

particular, schools are managed by non-experts, and the assessment of school principals by their founding institutions is random and unsystematic.”¹³

3. Low attractiveness and satisfaction with the profession of principal

- In an international comparison, the above-described facts lead to the **overall lower satisfaction** of Czech school principals **with the pursuit of their own profession**.¹⁴ Having said that, Czech principals are generally fairly satisfied in various categories of their work, with the exception of the aforementioned area of perceived administrative overload.¹⁵
- This is supported by the very **low interest in pursuing the profession of principal**. According to Czech School Inspectorate data, in half of the selection processes for school principals held (48%) in 2018, only a single candidate turned up for the interview.¹⁶
- Federičová also describes that the Czech Republic is in the group of European countries where **principals' salaries are significantly below the average salaries of university-educated staff**.¹⁷ Despite this fact, the situation in recent years – across the entire education sector – **can be described as improving**.¹⁸

SYPO Project Outputs and the Competency Model

The output from the SYPO project, i.e., the *Competency Model* material, contains an inventory of competencies presumed to be necessary for a school principal's work. It is one of the responses to the problems of the profession of principal, described in the previous chapter. All this corresponds to the wording of the current *Strategy for Education Policy of the Czech Republic 2030+*, according to which the principal's competency profile is one of the key measures for strengthening the role of the principal as a leader of the pedagogical process.

13) TROJAN, Václav. *Ředitel školy jako základní faktor pedagogického vedení*. 1. Praha: Pedagogická fakulta UK, 2019, s. 146. ISBN 9788076030329.

14) GARGULÁK, Karel, Václav KORBEL and Daniel PROKOP. Ředitelé škol v ČR: Klíčoví hráči v systému vzdělávání bez dostatečné podpory. *Ředitel naživo* [online]. 2021 [retrieved on: 2021-10-15]. Available at: <https://www.reditelnaživo.cz/files/reditele-skol-v-cr-klicovy-hraci-v-systemu-vzdelavani-bez-dostatecne-podpory.pdf?fbclid=IwAR3qsMc3pysfJN10f7mz9iGsdwejNpfEAHQrmbAsSfPEcghvOsDpnLH8T4A>.

15) SEDLÁČEK, Martin. *První učitel. K roli ředitele školy v pedagogickém vedení*. 1. Brno: Masarykova univerzita, 2020. ISBN 978-80-210-9718-6.

16) ČŠI. *Konkurzy na ředitele škol a školských zařízení v období od 1. 3. 2018 do 31. 7. 2018* [online]. Praha, 2018, 5.9.2018 [retrieved on: 2021-10-15]. Available at: <https://www.csicr.cz/cz/Dokumenty/Tematicke-zpravy/Informace-Konkurzy-na-reditele-skol-a-skolskych-za>.

17) FEDERIČOVÁ, Miroslava. Mezinárodní srovnání ředitelů škol: České administrativní inferno *IDEA/CERGE-EI* [online]. 2019, 40 [retrieved on: 2021-10-15]. Available at: https://idea.cerge-ei.cz/files/IDEA_Studie_12_2019_Kvalita_reditelu_skol/IDEA_Studie_12_2019_Kvalita_reditelu_skol.html.

18) MÜNICH, Daniel and Vladimír SMOLKA. Platy učitelů v roce 2020 a výhled: Usne Česko na vavřínech? *IDEA/CERGE-EI* [online]. August 2021, 32 [retrieved on: 2021-10-15]. Available at: https://idea.cerge-ei.cz/files/IDEA_Studie_7_2021_Platy_ucitelu/IDEA_Studie_7_2021_Platy_ucitelu.html.

The model should become the initial basis for the preparation of principals and, more importantly, “...a tool for (self-)evaluation, education and self-education of principals in order to define what knowledge, skills and personal qualities ought to be honed, in order for principals to attain the expected professionalism.”¹⁹ The *Competency Model* will be further piloted and improved.²⁰

The *Competency Model* works with **three stages of professional development of a school principal**, which describe different levels of development needs:

1. Stage A: Entered the profession (for the prospective principal, for the novice principal).
2. Stage B: Has developed his/her aptitude for the role of principal, knows what to do, and is gathering experience (no longer a novice principal, but not yet very experienced).
3. Stage C: Experience and self-reflection have given him/her insight and perspective, shares and collaborates with and supports those around him/her (an experienced principal who can be a master in his/her field).

The areas covered by the *Competency Model* of the school principal are divided into six main areas which are further subdivided. Each sub-area describes the expected product of the principal’s activities in the aforesaid A–C stages. The following chapters – quantitative analysis and case studies – are devoted to the first three areas mentioned.

19) FRYČ, Jindřich, Zuzana MATUŠKOVÁ, Pavla KATZOVÁ, et al. *Strategie vzdělávací politiky České republiky do roku 2030+* [online]. MŠMT, 2020 [retrieved on: 2021-10-17]. ISSN 978-80-87601-47-1. Available at: https://www.msmt.cz/uploads/Brozura_S2030_online_CZ.pdf.

20) *Kompetenční model* (to be published). Národní pedagogický institut, 2021.

Table 1: Division of the SYPO Competency Model of the school principal into areas and sub-areas

Source: NPI ČR, 2021

Value and vision-based leadership	Management of school staff	Self-leadership and management	Management of learning and education	Management of the school as a legal entity	Communication and work with information
School development concept	School curriculum	Team collaboration	Management functions and style	Self-management and time management	Work with information
School culture	Management of pedagogical process	Communication as a people leadership/management tool	Data-based management and decisions	Health and quality of relationships (wellbeing)	World and foreign language
Equal opportunities	School self-evaluation	Motivation and development of staff	HR activities		Presentation skills
Safe and healthy school	Academic performance		Collaboration with partners, networking		Digital literacy
Ethical management			Legal and economic aspects of management		

The Connection Between Principals' Competencies and Academic Performance

Two parts of the *Competency Model* under review, specifically, the Strengthening of the School Culture sub-area included in the Value and Vision-based Leadership area, and the Management of Learning and Education area – are surveyed among elementary school principals in the TALIS 2018 international survey. We are thus able to compare how Czech principals evaluate themselves in these two areas compared to their foreign colleagues. Although the TALIS survey and the SYPO *Competency Model* do not stress exactly the same competencies, the general areas of interest do overlap. We have defined two country groups for the purpose of comparison with the Czech Republic:

- **geographically and culturally close countries:** Slovakia, Austria and Hungary;
- **countries with above-average academic performance according to international surveys:** Denmark, Estonia, Finland, England, the Netherlands, Slovenia, Sweden.

Self-evaluation of Principals

In our analysis, we compare the competencies under review in the relevant areas or sub-areas of the *Competency Model* of school principals using self-reported questions from the TALIS 2018 survey of principals; as regards composite indicators, we calculate the average percentage for all the questions. We have defined the areas expertly so as to come as close as possible to the SYPO *Competency Model*, while conforming to the TALIS survey batteries. The first area of the SYPO competency framework is measured using two groups of questions. The second area of the SYPO framework is measured by means of four groups of questions and one separate question:

1. Value and Vision-based Leadership and the sub-area of Strengthening of the School Culture

- **School environment** – engagement in school affairs (teachers, students, parents), the principle of joint responsibility for the functioning of the school, atmosphere of mutual support and collaboration, shared commitment to learning and teaching, supporting staff in the implementation of new ideas.
- **Collaboration** – teachers and students getting on (relations), teachers getting on among themselves (relations).

2. Management of Learning and Education

- **School Education Program (SEP)** – the teachers understand the objectives of the school education program.
- **Feedback for teachers** – monitoring of the teaching process and provision of feedback based on the observations made.
- **Education process conditions** – conditions for collaboration between teachers and creation of new teaching processes, effort to make teachers responsible for their own development and the performance of their students.
- **Assessment of teachers at school** – internal (school principal, management), other protagonists (mentors, teachers who do not hold management posts, individuals or bodies outside the school).

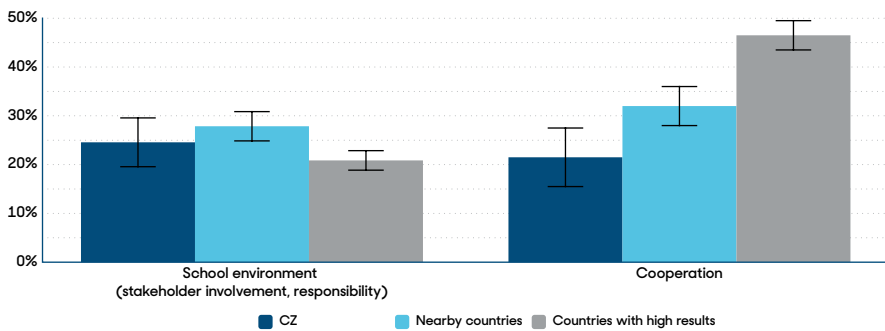
We always compare those principals who perceive themselves in a positive manner, or, as regards assessment, those who use the relevant tools (see the comments under the individual charts). Higher values denote the better self-perceived (self)evaluation of the principals.

Czech principals report, to an extent similar to that reported by foreign principals (20–30%), striving to open the school environment to the participation of various personages,

and to strengthen the atmosphere of mutual support and cooperation. This means that they provide room to anyone who wants to be involved in decision-making at the school and give teachers responsibility for the pedagogical process. Principals in the Czech Republic declare, however, that **there is a lower level of collaboration within the school. Only around 20% of principals report that teachers get on well with students and among themselves. In close countries, the figure is 32%, and in high-performing countries 47% (a statistically significant difference).**

Chart 1: Strengthening school culture (this falls under Value and Vision-based Leadership)

Source: TALIS 2018, battery 26.

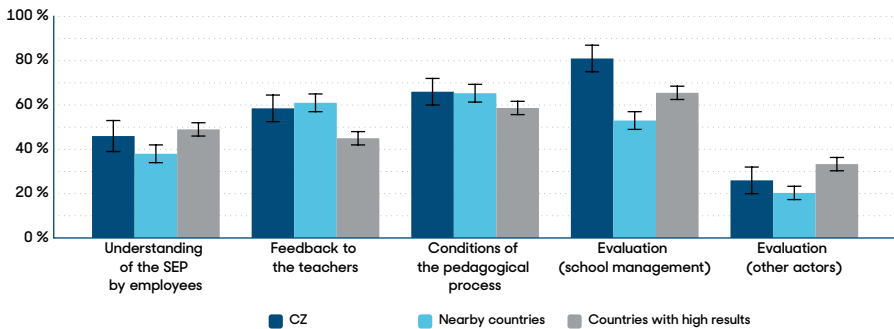


The chart shows the average percentage of principals who responded "Strongly agree". The sections show a 95% confidence interval (confidence interval indicates where the value may lie with a 95% confidence as it was estimated with uncertainty from a selected sample). The value given for the reference countries is an unweighted average.

66% of Czech principals, the same as those in reference countries, report that they create a collaborative environment among teachers and make them responsible for academic performance. **Less than half believe that teachers understand the SEP's objectives.** On the other hand, Czech principals report more frequently that they provide their teachers with feedback at least once a year and that they assess teachers. They utilize external bodies (mentors, founding institutions) for school assessment to a slightly lesser degree than in high-performing countries. The difference, however, is quite small.

Chart 2: Management of Learning and Education

Source: TALIS 2018, battery 22 (Conditions, Feedback), 23 (Assessment), 27 (SEP)



The chart displays the average percentage of principals who answered "Often"/"Agree moderately" or "Very often"/"To a large extent" (SEP, Feedback, Conditions) and who answered at least "Once a year" (assessment). The figure shown for the groups of reference countries is an unweighted average.

Overall, judging by the answers provided in both areas of the *Competency Model* under review, Czech principals do not differ significantly from their foreign colleagues. They differ slightly only in that fewer of them report good relations between teachers themselves and between teachers and students. In contrast, they report more frequently that they assess their teachers and provide feedback to them. Self-reporting answers do not, however, always necessarily have to reflect reality. Particularly those principals who are not often confronted with quality school management and competency framework concepts may tend to overestimate in their answers.

The Connection Between Competency Areas and Academic Performance

The aim of quality school management for principals is its ultimate impact on academic performance. Long-term observation of principals and subsequent evaluation would be required to determine the effects of the individual areas of the *Competency Model* on such performance; data of this kind is not available in the Czech Republic at this time.

The TALIS–PISA link of 2018 data at least allows for the exploration of the connection between academic performance and perceived competencies of principals at a particular moment in time. Although we are unable to determine the effect of competencies on performance, we can point out areas which strongly relate (correlate) to performance.

The data couples the academic performance of Czech students from PISA testing with the TALIS principal questionnaires in 2018. For our analysis, we use data obtained from 3,933 15-year old students from 182 elementary and secondary schools in the Czech Republic with 182 principals. We use the same areas of perceived competencies as defined

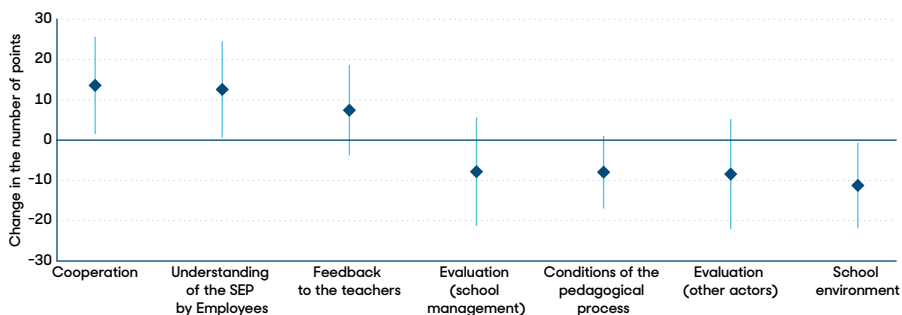
above. Using factor analysis, we create a single factor from each area in order to capture a latent variable which defines the relevant area.

Chart 3 shows the relationship (correlation) between the areas of principals' competencies and academic performance, where we examine the impact of characteristics of students (gender, grade, socio-economic status), the principal (gender, age, experience as principal) and the school (number of students, size of seat, public versus private).

Of the seven areas, three display a positive association – collaboration, SEP understood by employees and feedback for teachers; the first two associations are statistically significant. Higher self-evaluation of principals with a standard deviation (from the median to the 66th percentile) is associated with academic performance which is 10–15 points higher. In contrast, assessment of teachers by the management or external personages, the conditions of the pedagogical process and the school environment have a negative association, although the school environment itself relates to academic performance in a statistically significant manner.

Chart 3: Connection between competency framework areas and academic performance

Source: TALIS–PISA link 2018 (15-year old students of elementary and secondary schools)



The chart shows regression coefficients (diamonds) and a 95% confidence interval (sections) for the Czech Republic. The value indicates how much higher/lower the school's average score is when the principal's assessment in a particular area is increased by a standard deviation. We examine the impact of characteristics of students (gender, grade, socio-economic status), the principal (gender, age, experience as principal) and the school (number of students, size of seat, public versus private). Standard errors are clustered at the school level.

What might these results suggest? **Positive associations are found in areas related to shared awareness of learning objectives (understanding of the SEP), school culture and interpersonal relationships.** These are elements often associated with the

functioning of the school as a learning organization.²¹ If teachers are able to collaborate and learn from one another (plan, reflect on the teaching process), have a clear and shared understanding of learning goals, and if they are able to give and receive quality feedback, better results follow.

The negative associations of other areas with performance may mean that these areas are not as essential to school development. These results have to be approached with caution. There are several other explanations that may play a role and that we cannot refute due to the nature of the data. They would merit, however, further analysis in future evaluations. One of these explanations is that the actual implementation might matter more than the formal principles and conditions.

In questions pertaining to the conditions of the pedagogical process and the school environment, principals typically assess whether they are taking steps to establish a quality school environment. They often do not address, however, whether they successfully employ the processes to improve the functioning of the school with an impact on the course of the students' education and academic performance (to refer to only one, mention should be made of the not infrequent formalistic approach to the self-evaluation process). This does not mean that the areas in question are irrelevant. The mere presence of processes is a necessary, but not sufficient, condition. Their meaningfulness and the quality of their implementation is of key importance.

The importance of individual areas of principals' competencies may vary in different types of schools. While our sample does not permit a detailed analysis, we observe different associations for small and large schools, for instance. Schools with fewer students (up to 250) exhibit a positive association between performance and school environment support, while in larger schools (over 500 students), the association between the school environment and performance is negative, but positive with the SEP grasp. Collaboration is important at schools with various student numbers. There are also minor differences in the importance of individual areas in larger and smaller municipalities. This suggests that although the principals' competency framework (*Competency Model*) may operate as an umbrella for the entire education system, it needs to be utilized in harmony with the relevant school's context. Large numbers of staff have a greater need for uniform vision and education goals, so that every educator knows the direction followed by the school and the expectations placed on him. In contrast, there is more individuality in smaller schools

21) DVOŘÁK, Dominik. Pedagogické vedení školy: hledání zdrojů a obsahu pojmu. *Orbis scholae* [online]. 2011, 5(3), 9–25 [retrieved on: 2021-10-17]. Available at: <https://karolinum.cz/casopis/orbis-scholae/rocnik-5/cislo-3/clanek-5231>.
FULLAN, Michael. *The Principal: Three Keys to Maximizing Impact*. John Wiley & Sons, 2014. ISBN 978-1-118-58245-9.

and what is important is the definition of the principles of the school environment, i.e., the school's culture and climate.

These results indicate that a school culture built on mutual collaboration and grasp of the education goals by all the protagonists within the school may be important for efficient management of the school, with a significant association with better academic performance on the students' part.

Good Practice Examples

In the qualitative part, we conducted structured interviews with two principals of successful inclusive elementary schools (one private, one public), in order to describe their activities and views as good practice examples validating the *Competency Model* of school principals.

Following the quantitative analysis, we once again examined the Learning and Education Management part. Furthermore, we posed questions relating to the School Staff Management area (for the topics, see Tab. 1). As the individual sub-areas are interconnected by definition, both interviews also spontaneously yielded statements relating to the Value and Vision-based Leadership area. For convenience, we present the outputs separately, area by area, although they collectively comprise the functional ecosystem of every school.

The online interviews were conducted in September 2021 with:

- **Břetislav Svozil**, principal of the private Laboratorní škola Labyrinth v Brně (“ZŠ Labyrinth”). A relatively new, innovative school partner with Masaryk University, it emphasizes students' personal responsibility for their education. Some 220 students attend the school.
- **Marie Gottfriedová**, principal of Základní škola Trmice u Ústí nad Labem. The school became more widely known thanks to the quality inclusion of students in its catchment area or its collaboration with Babington College in the UK. Some 320 students attend the school.

Value and Vision-based Leadership

Both principals manage their schools with a clear vision, according to which both schools are open to joint education, are student-oriented and build on quality relations. School management is driven by their strong belief as to how a school should function. They believe that **a clear, shared vision is essential**.

I think that for work to be efficient, you need to start off by thinking about where the school works, with what children, in what overall context. Quite logically – and this is part of the competency model – you first need to clarify your vision – what the school is like now, what we want it to be, with what students we are currently working and where we want to get them. (Gottfriedová)

New staff members are presumed to be already familiar with the vision when they join the school and are interested in implementing it. Marie Gottfriedová adds that **nobody should be excluded from the discussion of the school’s direction**: this goes even for temporary assistants of the teachers, administrative staff, such as the janitor, or the cafeteria staff. In their answers, both principals repeatedly returned to the principles on which their schools are built and which serve as a fixed point for them.

Part of the vision is always a little hazy. What is important is for people within and around Labyrinth to know the direction we are taking. And – knock on wood – I can confirm that we are managing to avoid veering off course. So it is about working with people so that we can both fulfill our common vision and work with the team. When the team keeps growing, we have to try hard to keep it all together. (Svozil)

Learning and Education Management

There is naturally a close relationship between the school’s vision and its school education program. SEP offers both schools a platform for discussion on the materialization of their ideas. The Covid-19 pandemic and distance learning made both the Trmice and Brno principals **update the SEP**. In Trmice, the school’s goal is to reduce the amount of material taught and to introduce core material that can be grasped by all the children. In Brno, the SEP is reflected on by the school council and an emphasis is placed on the utilization of disposable lessons for elective subjects.

Both schools work with the notion of competencies. While in Trmice, competencies (understood as skills) are synonymous with the importance of the activity component of education, Principal Svozil set up the organization structure of the school using competency teams (understood as a combination of soft skills and knowledge according to OECD). These serve as a **“middle link inside the school”** – they enable teachers of various grades to meet based on their interests and propose amendments to the SEP. Grade assemblies and evaluation for inspiration and for unification of academic results are also set up.

Competency teams have their budgets and do not have to discuss its parts with me. They take care of matters ranging from material to human resources – what we need, whether we have it within the team or need to approach another institution or outside experts. (...) Our teachers have reduced working hours so as to be able to jointly plan, plan at grade level, and assess the teaching process. (Svozil)

During the analysis of the interviews, **a strong link between the management of pedagogical processes and team collaboration emerged.** The principals of both schools stress good relations and feedback on which they build the processes between the management, teachers, students and parents. Principal Gottfriedová was satisfied with the transformation of traditional faculty meetings into smaller group meetings conducted in a pleasant atmosphere – “complete with a pie” par for the course, in order to eliminate the stress experienced by the teachers on account of meetings.

We now meet in logically organized groups – junior elementary school teachers and middle school teachers. We discuss all kinds of things in those groups: how to work with the children, how to evaluate them, anything concerning the education process. The meetings are a fountain of inspiration and cooperation. We foster an awareness that no man is an island, that our experience is similar, we can find inspiration in the successes of others. Human conversation about our work, joys and sorrows in a trusting and open spirit. (Gottfriedová)

Formative evaluation is entrenched in both schools. In the laboratory school, children record **learning evidence and goals in special diaries on a weekly basis** starting from the first grade. This involves shared responsibility of the student and the educator. The school in Trmice also evaluates individual progress in the children’s competencies once every two weeks. A 3-track concept – fast and gifted learners, regular students and students requiring support – is a long-standing concept applied in the teaching process and in evaluations. Principal Gottfriedová adds that the spirit of streaming is actively communicated to the children and the children are happy with it. The children in her school also **evaluate their teachers annually**, and this gives the management the students’ perspective on the education process.

School Staff Management

The team collaboration described above is applied in teacher development as well. Principal Gottfriedová described how the ability to work together leads to the school's improvement, for instance, in the close **collaboration between the teachers and their assistants**, or in tandem teaching. Tandem teaching was collectively chosen in the preparation week as one of the three 'accents', i.e., education priorities – challenges – for the entire school year. School-wide seminars are based on them.

One of Labyrinth school's goals is to **prevent teacher isolation**. Meetings are school-wide, at grade and competency team levels. As a result, the teacher is part of several 'networks'. Principal Svozil believes that added value and fulfillment of the other interests of the teachers can be achieved by expanding the competency teams from without:

A psychologist, sociologist, people from the business sphere are added to the teams. It is about interaction and the scope of the team. We strive to have the teachers teach what they feel good about, what helps them grow, and not where they lack confidence. We are into relationship-oriented leadership and we are therefore interested in the personal interests of the individual teachers. (Svozil)

Both schools practice teacher development and communication at the **principal – teacher** level. Principal Gottfriedová uses one on one interviews with the teachers, although they are time-consuming, in order to understand not only pedagogical needs, but also human and mental ones. Her teacher plans and the actual evaluation of the functioning of the faculty are based on them.

A great degree of honesty relates to good interpersonal relations. The quality of a one on one interview (principal and teacher) stands and falls with a good climate at the school. It can easily become a formal affair, but we know how to go deep, and it is a source of great progress. (Gottfriedová)

Defense and Artificial Intelligence

Tomáš Pojar, Head of Aspen Institute CE Expert Group / Vice-President of CEVRO Institute

This text was written in collaboration with **Sara Polak** and with the assistance of experts from the Ministry of Defense of the Czech Republic, Military Intelligence and National Cyber and Information Security Agency.

Technologies will be the driving force of defense strategies of the twenty-first century. Whoever is able to better combine science and research with business and defense investments will have a significant edge in the protection of their own wealth and freedom in the upcoming decades.

Introduction

Competition between states and civilizations will increasingly take place in the field of technologies. In order to protect the critical infrastructure, modern societies will become more dependent on a symbiosis of state institutions, private companies and science facilities. Modernization, and the vulnerability of entire societies it entails, will depend on mastering emerging disruptive technologies (EDTs), including artificial intelligence (AI), which is slowly becoming an integral part of the modernization of developed countries' armies, and thus also of the rivalry between superpowers.

The bipolar world of the Cold War and the subsequent three decades characterized by the dominance of the United States is now transforming into a more chaotic multipolar world. In light of the growing instability of the world, and the key players' investment in new technologies, there is no doubt that any credible defense of Europe will have to include capabilities based on artificial intelligence. Not only the defense of states themselves, but also the defense of individuals in the digital space, is important. The defense of individuals is often independent of states and has become a problem we ought to address in parallel. The United States and China, in particular, are making long-term, robust and systematic investments into the utilization of modern, disruptive technologies. Russia and a number of other countries strive to follow the same direction in armaments. NATO and the European Union are

therefore also beginning to focus systematically on the utilization of AI. Europe definitely cannot be said, however, to be a world leader in this respect.

The Czech army has long been underfunded and, despite some minor improvement, we are still among the worst performers in NATO in terms of defense spending, although we have increased spending from 1% to 1.42% of GDP in 2020 in recent years. The good news is that we are finally managing to spend the recommended 20% of expenditure on investment. The bad news, however, is that we are far from meeting the criterion of 2% of defense spending on military research and development. We are not even at a quarter. The bare minimum is spent on projects related to EDTs or AI.

“For decades, Nato allies have been leading when it comes to technology, but that’s not obvious any more.”¹ NATO Secretary General Jens Stoltenberg

Artificial intelligence is the ability of machines to perform tasks based on mathematical operations and statistics so as to speed up, refine and automate the relevant processes. This system does not have the ability to operate like a human ‘at its discretion’. Artificial intelligence is therefore completely dependent on external parameters and data. According to NATO, it is one of the “emerging disruptive technologies” that have the potential to significantly transform the security environment and the balance of power in coming years. This will also allow traditionally weaker actors to promote their interests more easily at the expense of the unprepared. A good example of the use of AI is the area of proliferation of disinformation and cyberattacks. Advanced algorithms using machine learning allow for much more effective forms of political and criminal manipulation, at a minimal acquisition cost. The growing speed of dissemination of information thus dismantles another major barrier to its widespread utilization. Our ability to verify the veracity of information will therefore be increasingly frequently challenged by the ever-growing sophistication of methods of deception and manipulation. In line with this, the security aspect of AI utilization has been emphasized with growing frequency of late, in addition to its clearly revolutionary potential for the civilian sphere of life — be it in transportation, medicine, finance or marketing. It is also important to put an emphasis on educating society, which ought to be able to recognize disinformation and prevent its dissemination.

AI itself has the potential to work not only across technologies, but logically also across operating domains. Just like communications systems or the internal combustion

1) WARRELL, Helen. Nato Allies Need to Speed Up AI Defence Co-operation. *Financial Times* [online]. 2021, 8.6.2021 [retrieved on: 2021-10-19]. Available at: <https://www.ft.com/content/61c1945c-d153-4d58-b9c5-dffd99a6919e>.

engine, AI is becoming an indispensable component of ground, air, naval and space forces. It can naturally also create new or refine existing forms of hostile promotion of interests in cyberspace. Equally so, AI enables us to build more effective defenses. Defense and offense are two sides of the same coin. Ultimately, whoever has the stronger will and innovates more successfully will have a better chance of success.

There are significant pitfalls in a deeper integration of AI into military capabilities, especially at the strategic level: AI could indeed qualitatively transform the deterrence capability in both its forms. The “deterrence by punishment” would be transformed by increasing the offensive capabilities of strategic (including non-nuclear) weapons, for instance, in the areas of target identification and maneuvering. Machine learning could thus be used to detect a force hiding ballistic missiles, distinguish mock-ups from real carriers, and track the movement of mobile launchers. Most importantly, however, nuclear submarines hiding deep under the sea — a key element of safe second strike capability and an indispensable pillar of strategic stability between superpowers — could be detected.

AI offers an equally important implication in the second variation of deterrence, “deterrence by denial”. Increased effectiveness of anti-missile systems could give the relevant state a false sense of security from a retaliatory strike, thus providing an excuse for its own action and subsequent conflict escalation. The involvement of artificial intelligence methods is also expected to significantly reduce decision-making time. The speed of interaction of algorithms will go beyond the cognitive capabilities of humans, which may further result in pressure for greater involvement of autonomous systems that do not require decisions by a human operator. War will therefore become more violent and harder to control.

“Artificial intelligence boosts economic growth. But military use of artificial intelligence could unleash autonomous weapons systems that kill without human control.”² German Federal Foreign Minister Heiko Maas

Visions of intelligent robots dominating the battlefield of the future have been around since the 1970s. Their materialization can be traced back to the beginning of the millennium, especially in the operations conducted by the US, Israeli and now also Turkish armies in the Middle East. The boom in automation and robotization of ‘operational’ processes, accompanied by the deployment of unmanned aerial vehicles, is apparent in Afghanistan,

2) Speech by Federal Foreign Minister Heiko Maas at the virtual conference “Human Rights in the Era of AI: Europe as an International Standard Setter for Artificial Intelligence”. *Federal Foreign Office* [online]. 2021, 20.1.2021 [retrieved on: 2021-10-19]. Available at: <https://www.auswaertiges-amt.de/en/newsroom/news/maas-human-rights-artificial-intelligence/2435928>.

Iraq, Syria, Lebanon and Gaza. It has become apparent just how crucial the degree of technological superiority, which can hardly be compensated for by other means, such as superiority in numbers or a willingness to fight even under aggravated conditions, is. AI will certainly play a key role in the imaginary process of ‘battlefield transformation’. It is important to note, however, that even behind an autonomous weapon system employing AI, there is a human factor responsible for programming the technology.

Fundamental breakthroughs in the use of AI can be dated back to the last decade, particularly in the context of advances in machine learning, sensing, and the miniaturization of powerful computer technology, which made it possible to overcome major obstacles in the areas of robustness, reliability, high-level decision-making, autonomous control, speech and image processing, etc. Current systems can already solve a broad range of complex decisions and optimization tasks faster and better than humans.

For the purposes of armed forces, AI already offers the achievement of information superiority over adversaries, both in ongoing operations and in preparation and training. The MODES project of the Czech Defense Ministry is being developed, for example, in this spirit. It is a modular expert system using machine learning to automatically recognize and classify data from commercial — and in the future, hopefully also Czech — satellites. AI can already be used within the armed forces in logistics, whether for planning deliveries, maintenance, shifts or supply routes. AI also has its place, for example, in the area of “predictive maintenance”, i.e., the sensing of machine sounds and detecting potential defects that will lead to their timely removal, which can substantially reduce the life cycle costs of military equipment.

The computer defeated the world champion in chess, but also in the much more complex game of Go. The human player in cooperation, however, with the computer is unbeatable for the time being. The development of certain military systems is taking precisely this direction. The US, but also the Russian, Chinese or Israeli armed forces are testing cooperation between unmanned aerial vehicles and fighter aircraft. The drone acts as a decoy target, a reconnaissance vehicle or a mobile fuel supply. It can also carry sufficient weaponry to destroy both air and ground targets. The near future belongs to a symbiotic relationship between man and machine, with one compensating for the shortcomings of the other rather than replacing it.

Global Race

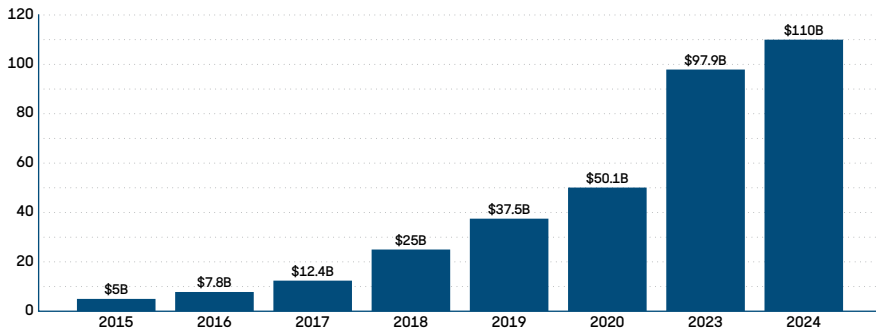
Revenues from systems using cognitive and artificial intelligence around the world will grow from \$5 billion in 2015 to \$110 billion in 2024.³ Global AI and robotics expenditure in

3) Global AI Spending To Surge 120%, Hit \$110 Billion by 2024. *Startupanz.com* [online]. 2020, 21.10.2020 [retrieved on: 2021-10-19]. Available at: <https://startupanz.com/global-artificial-intelligence-spending-surge-120-hit-110bn-2024/>.

the defense industry reached nearly \$40 billion in 2018, with an estimated annual increase of about 5% over the next ten years, to \$61 billion in 2027, a cumulative total of nearly \$50 billion over ten years.⁴

Chart 1: Cognitive and artificial intelligence systems market revenue worldwide from 2015 to 2024 (in billion U.S. dollars)

Source: Statista, IDC Worldwide Artificial Intelligence Systems Spending Guide



The number of scholarly publications published in individual years can serve as one of the indicators of the importance of AI and the focus of research activities in this area: while it has been growing worldwide, China began to dominate it in 2005. The United States ranked second, followed by India, Great Britain, Germany, Japan, France and Canada. China only overtook the U.S., however, in the number of scientific literature citations dedicated to AI in 2020.⁵ As regards research, development and implementation of AI in the military, the U.S. military is still on top, but countries such as Israel, Japan, South Korea and Turkey, as well as China and Russia, do not want to be left behind either.

For China, artificial intelligence has become a central technology through which it intends to wipe out the current military superiority of the United States. According to 2018 data, Beijing already spends almost as much on research and development (\$468 billion) as the U.S. (\$582 billion) in nominal terms.⁶ Quantifying the total amount spent specifically to support AI is difficult because of its spread across many technology areas. According to the

4) AI & Robotics in the Global Defense Industry to Reach \$61 Billion by 2027. *Businesswire* [online]. 12.3.2021 [retrieved on: 2021-10-19]. Available at: <https://www.businesswire.com/news/home/20210312005141/en/AI-Robotics-in-the-Global-Defense-Industry-to-Reach-61-Billion-by-2027---Robotics-Anticipated-to-Account-for-the-Largest-Share-of-Expenditure---ResearchAndMarkets.com>.

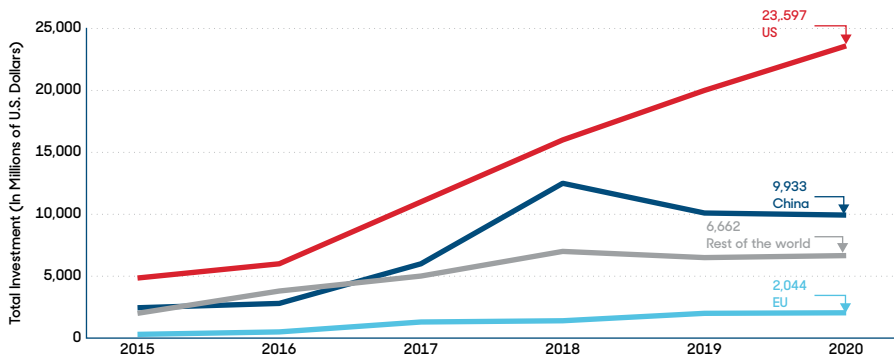
5) ZHANG, Daniel, Saurabh MISHRA, Erik BRYNJOLFSSON, et al. Artificial Intelligence Index Report 2021. *OECD.AI* [online]. Stanford University, 2021 [retrieved on: 2021-10-19]. Available at: <https://pp.wp.oecd.ai/app/uploads/2021/03/2021-AI-Index-Report.pdf>.

6) Is China a Global Leader in Research and Development? *ChinaPower* [online]. 2018 [retrieved on: 2021-10-19]. Available at: <https://chinapower.csis.org/china-research-and-development-rnd/>.

data available, the United States leads over China in this comparison thus far, mainly due to private investor support which exceeds government expenditure.⁷ Private investment into AI in particular increased by 9.3% in 2020 as compared to 2019. China’s latest five-year plan, however, speaks clearly: it views AI support as an integral part of the technology and arms race between the superpowers.

Chart 2: Private Investment in AI by Geographic Area, 2015–20

Source: The AI Index 2021 Annual Report



Russia has naturally long focused on militarizing AI. In 2017, Vladimir Putin declared that whoever becomes the leader in AI will become the master of the world. A year later, the Ministry of Defense published a 10-point plan integrating AI into the core of the Russian military’s modernization through consortia that include government institutions, the academia and industrial companies. Russia views AI mainly as an ‘enabling technology’ for the development of unmanned air, ground, sea and underwater platforms. Another area of interest for Russia is the involvement of AI in command, control and communication systems and, of course, its use in information warfare and intelligence operations. Russia’s progress in the field of EDTs is nonetheless limited by a lack of foreign cooperation, funding (according to the OECD, only about 1% of Russia’s GDP is spent on science and research), and a desire for self-sufficiency in electronic components.

China’s ‘top-down’ model and civil-military cooperation setup allows Beijing to act fast, but such speed will come at the expense of the quality of the outcome. The West, on the other hand, hopes that the emergence of an ecosystem built on competition between

7) ARNOLD, Zachary. What Investment Trends Reveal about the Global AI Landscape. *Brookings* [online]. 2020 [retrieved on: 2021-10-19]. Available at: <https://www.brookings.edu/techstream/what-investment-trends-reveal-about-the-global-ai-landscape/>.

states, private companies, universities and science facilities will bring faster and better results. Such a race certainly cannot be won without robust financial support and efforts to integrate disruptive technologies into the armed forces' armaments and the protection of critical infrastructure systems.

NATO and the European Union

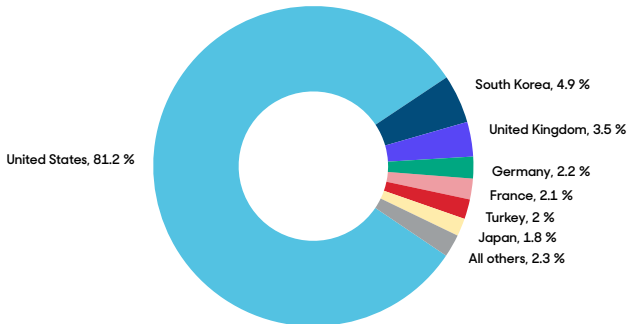
Research and deployment of new technologies in the military — particularly by China and Russia — has forced NATO to reconsider its own strategy and focus its efforts specifically on the development of AI and data processing. Although NATO has been officially addressing the issue in the context of autonomous systems since 2013, AI itself was only included in the priority areas at the 2018 summit. AI and big data are the first technology areas for which a specific implementation strategy is being developed. Once again, the main emphasis is on collaboration between private entities, government and academia, based on the recognition of the private sector's leadership role. The 2021 European AI regulation will also play an important role.

“For decades, a lot of technological development would happen within the defence sector. Now, it goes the other way around. It's a civilian sector which is leading in the development of artificial intelligence, quantum computing, and many of the new disruptive technologies.” NATO Secretary General Jens Stoltenberg

Cooperation between Member States in sharing experience and achieving standardization and interoperability of advanced systems is also a key aspect. At the last summit, Member States agreed on two key actions that will enable them to support the development of new and existing innovation capabilities and ensure the integration of EDTs into the capabilities of the Alliance: the DIANA initiative and the establishment of the Innovation Fund. Efforts are also underway to systematically integrate AI into military exercises. At the recent Spring Storm joint military exercise involving representatives from France, Denmark, Belgium, Estonia and the UK, AI-based systems were used, for example, to assess the environment and provide tactical information.

Figure 3: Government spending on science and research in the defense sector of OECD countries in 2017

Source: OECD



The United States of America is the undisputed leader in the development of AI-related technologies in the free world: the Pentagon alone plans to invest \$874 million in this area next year. Washington's total investment in AI, including civilian projects, is then expected to reach six billion dollars in 2022.⁸ Even in the EU, the development and implementation of AI, particularly in the industrial sector, is at a relatively good level. There are concerns, however, that Europe will not be able to maintain the pace. The development and implementation of AI in the defense sector in Europe is affected by the long-term lack of defense spending coupled with a still relatively good security situation. It can be seen, however, that countries such as Germany, France, the UK and Italy are striving to make up a certain deficit in this respect. The reality is such that, for instance, as regards software companies with the highest research and development expenditure, only twelve are based in the EU as compared to fifty-eight in the U.S. and fifteen in China. European countries as a whole stand out, however, in terms of the number of AI researchers.⁹

The EU itself views key technologies of the future similarly to NATO. In the area of security, it places an emphasis on the achievement of strategic autonomy and technological self-sufficiency, at least rhetorically. It should be added, however, that strategic autonomy is an empty slogan in light of the long-term underfunding of European armies and the resulting dependency on the United States. Nevertheless, during the recent Portuguese EU Presidency, a conference on EDTs was organized in cooperation with the European

8) HARPER, Jon. Federal AI Spending to Top \$6 Billion. *National Defense Magazine* [online]. 2021 [retrieved on: 2021-10-19]. Available at: [https://www.nationaldefensemagazine.org/articles/2021/2/10/federal-ai-spending-to-top-\\$6-billion](https://www.nationaldefensemagazine.org/articles/2021/2/10/federal-ai-spending-to-top-$6-billion).

9) CASTRO, Daniel and Michael MCLAUGHLIN. Who Is Winning the AI Race: China, the EU, or the United States? – 2021 Update. *Information Technology & Innovation Foundation* [online]. 2021 [retrieved on: 2021-10-19]. Available at: <https://itif.org/publications/2021/01/25/who-winning-ai-race-china-eu-or-united-states-2021-update>.

Defence Agency (EDA). The meeting aimed to promote the idea of increasing funding of innovation in emerging and disruptive technologies and their integration into defense capabilities. The need for synergies at two levels was also declared: between NATO and the EU and between the civilian and defense sectors, in line with the recently presented EU *Action Plan for Synergies Between the Civilian, Space and Defence Industries*.

The Czech Republic

Compared to global leaders, the Czech Republic is rather lagging behind in AI status and development. The 2019 *National Strategy for Artificial Intelligence* ought to help. According to the *AI Readiness Report 2020* compiled by the Oxford Insights think tank, the Czech Republic certainly does not lack vision and was awarded a full score in this category. Overall, the Czech Republic was ranked 32nd, and we are 18th among EU countries, i.e., in the worse half. The fact remains that putting ambitious strategies into practice is not our strong suit — the army could testify to that, and not only with regard to unfulfilled promises in the budgetary area. Nevertheless, the national strategy has been at least partially reflected in the grant mechanisms of the Technology Agency of the Czech Republic (TAČR) or the Grant Agency of the Czech Republic (GAČR).

The entities dedicated to the development of artificial intelligence in the Czech Republic are mostly small and medium-sized enterprises or start-ups. A very interesting use of AI is provided for instance by the Brno-based firm SpaceKnow, which focuses on real-time analysis of satellite images. To ensure the security of cyberspace, AI is also used, for example, by Avast, whose software is able to adapt to the latest threats using machine learning and upgrade its customers' protection in real time. AI is also a core element of a product offered by resistant.ai which uses its system to detect financial fraud and counterfeit documents.

According to Eurostat data, we rank among the top three countries with the highest number of companies using AI for artificial speech synthesis and analysis: in the Czech Republic, this applies to 3% of all companies with more than 10 employees. A broad segment of companies is also working on facial and gesture recognition in CCTV footage. One such company is Eyedea Recognition. Neuron Soundware is engaged in machine sound analysis and predictive maintenance; their customers include giants such as Airbus, Siemens and BMW. Czech companies also have the advanced ability to analyze and classify large amounts of data and offer preliminary conclusions. Companies such as Tovek and Cogniware should be mentioned here. The latter firm is also able to use AI to track the dissemination of information in cyber-space, where it is able to map the progress of a particular narrative, such as disinformation, across websites and social networks.

As regards cooperation between the state and private entities and the creation of a common ecosystem, mention should also be made of university research taking place mainly in Prague and Brno. The main areas of interest are autonomy, cybersecurity, image data recognition and segmentation, speech processing and artificial speech synthesis. In addition to the Academy of Sciences of the Czech Republic, the leading facilities include the Artificial Intelligence Centre (AIC) and the Czech Institute of Informatics, Robotics and Cybernetics (CIIRC) attached to the Czech Technical University. Advanced research is also carried out at Charles University, especially at the Faculty of Mathematics and Physics. Also worthy of note is the Periculum Centre of Excellence at the Faculty of Social Sciences of Charles University, which explores the human-machine interface from a transdisciplinary perspective. Several research groups can be found at the Brno University of Technology, for instance, BUT SPEECH@FIT, which focuses on data mining from speech. Despite these solid individual results, the Czech Republic certainly does not stand out among EU countries in the number of disciplines and courses dedicated to AI according to the current ranking compiled by Stanford University.

The situation within the military is difficult both because of the accumulated internal debt and the resulting need to invest in the renewal of obsolete weapon systems, but also because of the deep-seated Czech caution in introducing new technologies, especially those that have not yet been operationally proven. AI is therefore currently not being systematically implemented into the military through advanced technological systems (such as autonomous and robotic means). The army and the Ministry of Defense have at least defined, however, their intent in addressing the area and supporting its implementation in the *Long-Term Defense Outlook 2035* and the *Army-building Concept 2030*.

Last year, the Pentagon established the AI Partnership for Defense, which, in addition to the U.S., includes Australia, Canada, Denmark, Estonia, France, Finland, Israel, Japan, South Korea, Norway, Sweden and the UK. This year, the Netherlands, Germany and Singapore have joined. Perhaps the best indication of how serious we really are about the whole issue is the fact that the Czech Republic is missing from this group.

Conclusion

Israeli army officials announced that during the May war with Islamist Hamas, the army used AI on a massive scale for the first time. While the experience there has, on the one hand, demonstrated the benefits of involving AI in combat operations, it has also clearly shown the current limitations of its use. While reaction times have been accelerated and strikes intensified, it was still not enough to achieve a clear victory. Nevertheless, the clashes in the Middle East have long demonstrated that the trends manifested there will sooner

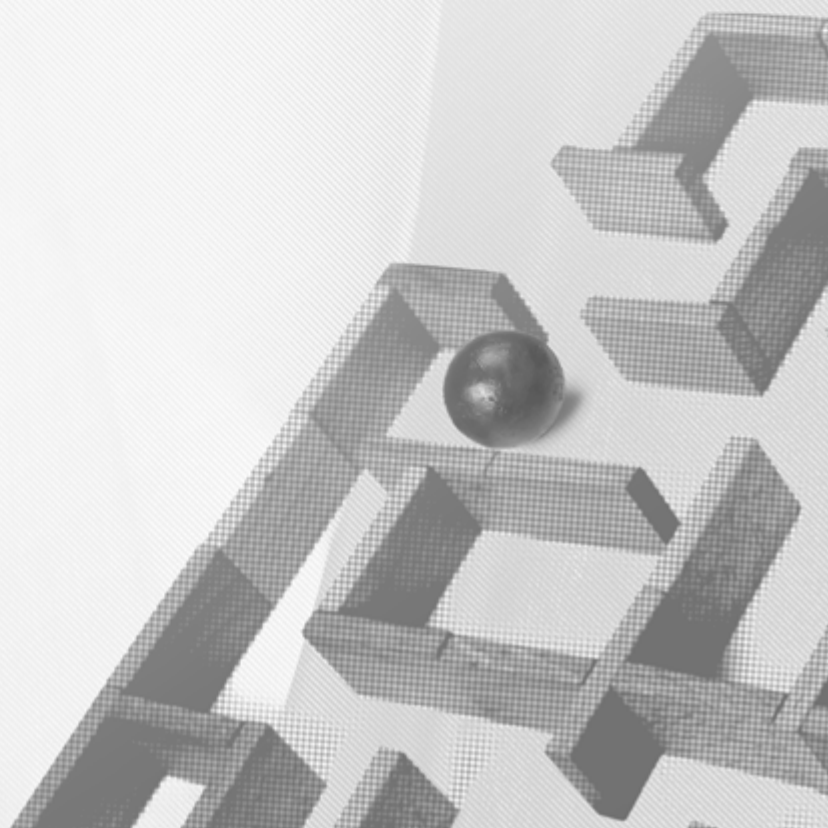
or later affect the rest of the world. The use of AI-based technologies in military operations will be no different.

Automated driving of vehicles in the civilian sector will presumably reach full autonomy within a decade. Similarly, a high proportion of AI can be expected in military applications, and the deployment of AI will be an integral part of any operation carried out by the armies of developed countries. The trends may therefore trigger considerable instability not only in the global economy but also in the defense and security sectors. It is thus high time for AI development to be included among the Czech Republic's current national priorities, including armaments priorities in line with the example set by our richer allies within the alliance.

Given the state budget deficits, pressure for cuts in the defense sector will undoubtedly grow. It would be a fundamental mistake, however, to cut spending on investment and science and research. It is precisely investment in the modernization of the military, coupled with the development of modern technologies and the engagement of domestic research facilities and domestic industry, that is the best formula for preserving security, freedom and employment in the long run, as well as for boosting prosperity and competitiveness.

Recommendations

- 1. Systematically support both civilian and military research in the area of AI.**
- 2. Spend 2% of the GDP on defense, and of that, 20% on investment.**
- 3. Spend 2% of defense expenditure on science and research, including EDTs.**
- 4. Involve the Czech Republic in international initiatives, whether on the basis of the EU, NATO or like-minded countries.**
- 5. Have the courage to introduce new technologies in the armaments area.**
- 6. Support systematic education of the public on options for AI utilization, so as to attain its widespread implementation, in order to help initiate social change.**



Aspen Young Leaders

The Future of Public Service Is Not Digital, It Is Human

Andrea Garaiová, Consultant for the European Bank for Reconstruction and Development / Co-founder of FutureGov Fellowship

Improving the effectiveness of public sector organizations has long held a prominent place on the global development agenda. About a quarter of international aid expenditure is invested each year in building state capability around the world. Empirical evidence on ‘what works’ is often inconclusive, however, making it difficult for public sector leaders to identify, introduce and implement interventions that systematically enhance the capabilities of civil servants.

Yet, it is the public sector organizations and their employees who will to a large extent influence the degree to which we will be able to tackle the defining challenges of this century.

There is a broad acknowledgment among researchers and practitioners alike that politicization of civil service has negative effects on the motivation, performance and integrity of civil servants, and that merit-based recruitment contributes to creating conditions for an effective public sector workforce.

There is much less clarity, however, on the effects of the plethora of management practices that have been tested in public and private sectors around the globe, and how these could be harnessed to improve the effectiveness of public institutions in any given context. So what can a public leader, who desires to build a capable and motivated workforce, do to respond to the challenges of today and tomorrow?

While it is often spoken of as a monolithic structure without much internal diversity, the public sector is composed of numerous institutions, each with its own culture, norms, processes and people. In addition, each public sector worker brings their own preferences, attitudes, needs and behaviors to bear on their service to the citizens.

To take advantage of the human variability in their ranks, institutions should invest in developing solid people analytics systems, which would allow them to regularly capture,

understand and adequately respond to the growth and development needs of their employees. In some parts of Central Europe, employee engagement surveys have begun to be used to inform HR management in public institutions. While this is a positive development, their use is far from widespread. Such efforts will need to be significantly strengthened to enable the design and implementation of responsive management practices that will help public sector employees keep up with the demands of an increasingly complex world.

Much has been written on the advent of digital technology and its potential to transform various sectors of our societies, public service included. While digital technology has the potential to change the way public service is delivered on the outside and organized on the inside, it is the humans working in it who will lead us through this and all the other transformations that await us in the decades to come. Understanding and investing in their capabilities should be our top priority.

Public Sector and Modern Healthcare – An Oxymoron?

Jakub P. Hlávka, Research Assistant Professor of Health Policy and Management, University of Southern California, USA / Co-Founder, Initiative for Effective Healthcare, Czech Republic

Healthcare systems around the world are facing similar pressures, ranging from aging populations to increasing costs of care and shortages of healthcare workers. Reforming healthcare systems, however, comes with challenges linked to the efficiency of the public sector and its ability to deliver results. In countries like the Czech Republic, where the pandemic laid bare the public sector's many inefficiencies, serious doubts exist about its ability to bring about the much needed change. To succeed, any reform will need to avoid the worst of all worlds – more red tape, more expensive care, ever longer wait times and growing inequalities in both access to care and clinical outcomes.

In recent years, we have seen a rapid growth of new companies in healthcare. Start-ups are now emerging all around the continent, offering new smartphone apps to track one's health metrics, improve one's quality of life and even prevent disease through lifestyle interventions. This trend, even if largely positive and truly welcome, cannot substitute for leadership from the public sector – decision-makers in national and regional institutions that oversee the allocation of resources, regulation of the sector and long-term investments.

Several areas of the Czech healthcare system need to be strengthened in the years to come. First, the system needs to start training and educating a generation of leaders who will be equipped to think at the systems level – this will require public investment in programs teaching public health, health economics, policy analysis and evaluation at graduate and doctoral levels (very little training in these fields currently exists in the country). Second, legislative reform that allows for a more rapid introduction of new services, such as digital tools supporting the sharing of information between providers or high-tech tools that allow for rapid diagnosis and treatment, will be needed. Such reforms should make the piloting of new programs and interventions less onerous, evaluation of lessons-learned and scaling up of successful tools faster and more transparent, and the funding of such initiatives available once net benefits are achieved. Third, the collection, analysis and sharing of healthcare data, over which the government now has full control, must be made much more extensive and transparent. This would allow researchers and innovators to identify gaps in access and clinical outcomes and develop new solutions.

Given the rapidly growing need to improve outcomes and efficiency, the Czech healthcare sector deserves the attention of the most senior decision-makers and improved collaboration between public and private stakeholders. Without the leadership of the public sector, however, the space in which innovators operate will continue to present significant obstacles and result in missed opportunities in making the healthcare sector better equipped to deal with its growing challenges.

Informed Policy-making is Crucial for Economic and Social Development

Ladislav Frühauf, Member of the Board of Trustees, Czech Priorities

Public administration is the key to the economic and social development of modern countries. Performance of public administration in the Czech Republic continues, however, to be extremely weak in the international context – for instance, in the 2019 *Global Competitiveness Report* rating, the Czech Republic ranked 99th out of the 141 countries under review in the Public-sector performance category.

Quality public administration requires constant promotion of informed policy-making. This means that all decisions have to be based on the best available evidence – data, fact and rigorous analyses. Such a systematic approach to public policy-making ought to be

the preferred alternative to decisions based on ideology, lobbying, pure intuition or mere impressions. Policies need to be based on findings stemming from professional consensus and data. Policy-making thus becomes ‘informed’: conceptual and sustainable, and the decisions implemented are easier to explain to the public. The introduction of such leadership requires reform which ought to specifically focus on the following areas.

The first level has to do with key decision-making processes in the public policy sector. A new model of strategic management of the public administration needs to be implemented. The process of regulatory impact assessment (RIA) also has to be improved and strengthened. It is also important to modernize the process of public finance management.

Second, informed leadership needs to be implemented at the institutional level as well. A central analytical unit, one of the fundamental pillars of analytical work in many developed countries, currently non-existent in the Czech Republic, needs to be created. It is equally important to enhance analytical capacities across ministries.

The third level of reform steps ought to be the creation of a requisite infrastructure which is crucial to adequate functioning of analytical work in the Czech public administration. Such an infrastructure includes adequate staffing, advanced data work, an extensive catalog of methodologies and tools, as well as the involvement of domestic and foreign experts. The Czech state has to focus especially on staff capacity building, in order to make public administration an attractive and prestigious employer able to recruit and develop talents at all levels.

Systematic development of a positive internal culture within all public administration organizations is also necessary. This is characterized for instance by adaptability, flexibility, experimenting and piloting, an environment of trust and openness, learning and orientation on the client – the citizen.

Foreign experience indicates that this approach makes sense, therefore we need to support and develop it as employees and external partners of the public administration. Let us also demand it as its clients: citizens, business persons, employers and the movers and shakers behind the change in the public space.

Organizer



Co-organizer

HOSPODÁŘSKÉ NOVINY

General partner
of Aspen Institute CE



Partners



VIGO Investments

Main media
partners



Media partners



ANNUAL
CONFERENCE
ASPEN INSTITUTE CE
2021

#AspenAnnual

A large, stylized maze in shades of blue and white, rendered with a halftone dot pattern. A single red ball is positioned on one of the maze's paths. The maze is set against a background of a light blue and white halftone pattern.

THE ASPEN INSTITUTE
CENTRAL EUROPE

HOSPODÁŘSKÉ NOVINY