EMERGING EUROPE

Redesigning public services and supporting digital transformation with automation

LESSONS FROM AND FOR EMERGING EUROPE

WHITE PAPER | 2021

IN PARTNERSHIP WITH

UiPath™

TECH EMERGING EUROPE ADVOCATES

7 Bell Yard
London, WC2A 2JR
United Kingdom

Website: emerging-europe.com
Email: office@emerging-europe.com

ISSN 2399-7605

TABLE OF CONTENTS

FOREWORD

Andrew Wrobel
Founding Partner
Emerging Europe

The Covid-19 pandemic has put both public and private sector organisations through rigorous strategic-resilience tests. For many, it was a rude awakening. Those that had already embarked on a search-for-innovation-and-digital-transformation journey or adopted a futurist mindset, will have gone through these challenging times more smoothly and are now reaping the benefits. As the pace of change accelerates, the fastest and boldest movers are likely to pull further away from the pack.

Across the emerging Europe region, we have these fast and bold movers but also those that are lagging behind. It is now of utmost importance for us to initiate debates about the region's future and encourage both groups to get together, collaborate, exchange ideas and share best practices and build resilience so that the laggards do not fall further behind.

Digital transformation can be more successful through cooperation — across departmental boundaries, across institutional boundaries, across national borders and between the public and private sector, civil society and research organisations.

This white paper looks at the digital transformation of the public sector and the use of automation in redesigning public services and making them future-proof while improving the lives of citizens across the emerging Europe region.

It aims to inspire public sector institutions – at all levels and all across the region – to learn how to achieve digital transformation and increased efficiencies through an automation-first mindset; and empower the representatives of the public sector to learn from each other by sharing stories of automation in action.

EMERGING EUROPE

Does your organisation have a stake in emerging Europe?

Are sustainability and innovation your focus areas?

WE CAN HELP YOU THRIVE

INTELLIGENCE
EXPOSURE
CONNECTION

emerging-europe.com/work-with-us

DIGITAL TRANSFORMATION

Europe’s adoption of and take-up of digital technology is uneven

While the European Union is making great efforts to stimulate the investment and deployment of digital technologies such as automation and artificial intelligence (AI) to improve public service delivery and modernise public administrations, there is a wide disparity of implementation among member states.

In 2019, the European Parliament adopted a report outlining a comprehensive European industrial policy on AI and robotics (see page 29), specifically acknowledging the use of robotic process automation (RPA) — software that connects legacy systems without infrastructure overhaul — and its impact on improving public sector processes.

The EU resolution noted the potential for AI and robotics to help create new business models, transform societies, and digitise the public sector: health, energy, agriculture and transportation specifically.

Digital transformation is one of the six main goals of the European Commission’s political guidelines for 2019-24. The Commission has called on member states to boost private and public investment in AI and adopt an ethics-by-design framework and encouraged them to develop retraining and reskilling programmes to prepare for automation.

The path to be followed

The Covid-19 pandemic has painfully exposed shortcomings in the public sector’s digital capabilities. Public sector modernisation is one of the flagships of the EU’s Recovery and Resilience Facility (RRF), the biggest stimulus package ever financed through the EU budget that will help Europe emerge stronger and more resilient from the current crisis.

Transforming the public sector is an effort that requires action by many actors at various levels. To encourage this, in February 2021 the European Commission’s Joint Research Centre published 12 action points for regulators and policymakers, public sector managers, civil servants and technicians (see page 29).

Policymakers and regulators must remember that to ensure digitally-enabled public sector modernisation contributes to the creation of public value, it needs to be embedded in a political framework. It needs political support. Regulators need to identify drivers and barriers for the use of technology in the public sector and create an enabling legal framework that finds the balance between providing clarity without stifling technological innovation.

Public sector managers need to define and implement a strategy that says why and how this process will be implemented and gives direction while leaving room for agility and experimentation. They also need to invest in people, not only in technology. Finally, they need to be able to manage that change in their organisations in order to yield the transformative potential of digital technology.

Civil servants and technicians should utilise reusable solutions when developing digital innovations in the public sector so as to save time and resources. They should also observe standards that can help the public sector to develop safe, reliable, and interoperable solutions and participate in the creation of such standards. They should also make sure the use of digital technologies is linked to the rest of the organisation and adopt indicators and metrics to measure this alignment.

Modernising the public sector with digital technology is only partially a technical issue and requires dedicated communication and stakeholder engagement to be successful. Also, legal, organisational, technical, and semantic interoperability should be ensured at all levels across departments, organisations, and countries. Finally, innovation also involves taking risks. It is then vital to actively foster a culture of innovation that expects, seeks, and embraces change and accepts failure as part of the journey.

This white paper makes five key recommendations specific for emerging Europe's governments (for detailed recommendations, see page 25).

1. With automation, there is always a return on investment.
2. Automation is not an end in itself but a way to create public value for citizens and businesses.
3. Reusable solutions and use cases will help save time and resources.
4. Awareness and knowledge are essential to maximise impact.
5. Automation is a solution that requires the participation of all sectors.

"Digital technologies are certainly not the only ingredient for innovative public services, but they play an absolutely crucial role. These for example can make the public sector more efficient — this does not necessarily lead to overall budget savings. More commonly, digital tech and automation can free up human resources that can be used for more fulfilling tasks."

Carlos Torrecilla Salinas

Head of the Digital Economy Unit
Joint Research Centre
European Commission

Funds to invest

The strategic plan (2021-24) for the EU research and innovation programme Horizon Europe was adopted in March 2021, with a budget of 95.5 billion euros.

At the core of the EU's recovery plan is the Recovery and Resilience Facility (RRF), amounting to 672.5 billion euros in loans and grants, the biggest stimulus package ever financed through the EU budget. The plan is aimed to make the EU more resilient, overcome the consequences of the pandemic and finance solutions to help member states boost their digital ecosystems.

A specific allocation of at least 20 per cent of RRF funds into projects fostering digital transition is central to this objective as digitally-enabled public sector modernisation is one of seven flagship areas for investment and reform.

Europe's Digital Decade aims to channel cohesion funds and other EU funding streams to digital reform. The plan centres on four main pillars with specific targets for 2030: skills, infrastructure, business and government.

Milestones were also set for the digital transformation of businesses: by 2030, 75 per cent of EU companies should use cloud computing services, big data and AI; 90 per cent of SMEs should reach basic digital intensity, and the number of European unicorns should be doubled.

The Commission also set up an inventory for concrete projects (see page 29) using emerging technologies in public procurement, including RPA solutions such as procurement modernisation, automated processing of purchase invoices and maintaining the supplier register or automation of the responsibility determination process before awarding contracts.

Results to date

A European Commission report, Exploring Digital Government Transformation in the EU (see page 29), notes that the evolution of IT in the public sector has taken place in four different phases. During the last twenty years it has moved from eGovernment 1.0 — the initial applications of World Wide Web technology in the public sector — to eGovernment 4.0, a transformed citizen-driven government that uses cognitive systems and advanced analytics.

There are already examples of AI-powered automation projects in the public sector that help improve resiliency, reduce inaccuracy, improve employee and citizen experience, service delivery, and internal productivity.

RPA is already being applied, for example, in central governments (tax calculations, anti-fraud checks, licensing applications processing), local governments (permit applications, incident reporting, case management, and contract administration); policing (fixed penalty processing, intelligence reporting, crime reporting, firearms licence processing and replacing the need for officers to double key the same information into different systems), health (coding, diagnostics, discharge processing, outpatient clinic outcomes, cashing up) and education (managing admissions and enrolments, student timetabling and estates utilisation, student finance management, course assessment data handling, alumni database maintenance), among other government functions.

Opportunities for progress

Results from the EU's latest Digital Economy and Society Index (DESI) report from December 2020 (see page 29) indicate substantial differences in the delivery of digital public services, with frontrunners including Estonia, Spain and Denmark, and laggards including Croatia, Greece and Romania.

In DESI 2020, the top performers are Estonia, Spain, Denmark, Finland and Latvia, all of which have scores greater than 85 on a scale rising to 100. On the other hand, Romania, Greece, Croatia, Slovakia and Hungary all score less than 60 and significantly below the EU average of 72.2.

"We have known about the potential of digital technologies for innovating public services for several years, but it is the experience of the Covid pandemic and the hardships during the lockdowns that made digitalising public services a necessity and pushed it to the top of the policy agenda."

Carlos Torrecilla Salinas

Head of the Digital Economy Unit
Joint Research Centre
European Commission

The two leaders in DESI's digital public services dimension, Estonia and Spain, show how important prioritising investment and regulations in the public sector is. Estonia began building its digital society through an e-governance system to provide public services online as early as 1997. The country now plans more proactive government services and the widespread use of automation and AI solutions in the public sector.

In DESI 2017, Spain ranked sixth in the digital public services dimension. Now, the country boasts the second position due mainly to its well-timed implementation of a digital-by-default strategy throughout its central public administration and its level of connectivity.

DESI uses several key indicators to gauge relative performance in the development of digital public services:

· **e-government** users which measures the percentage of internet users who submit forms to the public administration online;

· **pre-filled forms** which looks at the extent to which data that is already known to the public administration is pre-filled in forms presented to the user'

· **online service completion** refers to the extent to which the various steps needed for dealing with public administration can be done completely online;

· **open data** is defined as the presence at the national level of policies on open data and licensing norms; and the extent of coordination at the national level to provide guidelines to national, local and regional administrations; and set up coordinated approaches towards data publication;

· **user centricity** includes the following three key elements of online service provision: Online availability, Usability and Mobile-friendliness;

· the **digital public services for businesses** indicator measures the degree to which public services for businesses are interoperable and work cross-border.

The following sections of the white paper will provide examples of how automation in the public sector can help countries increase their DESI score and case studies describing specific solutions implemented by governments across the emerging Europe region.

"Using digital technologies in public services is not an end in itself, but a way to create public value for our citizens and businesses. [...] We need to make sure the use of digital tech in the public sector is transformative, impactful but also ethical and democratic. [... It] is a task for the whole public sector that requires effort to create, enable regulations and policies, agile public management, and the right skills and knowledge for citizens."

Carlos Torrecilla Salinas

Head of the Digital Economy Unit
Joint Research Centre
European Commission

ROBOTIC PROCESS AUTOMATION
What, why and how

Robotic process automation is a low- to no-code Commercial Off the Shelf (COTS) technology that refers to a software "robot" which replicates the actions of a human user — captures data from digital systems and manipulate applications, interprets it, triggers responses and communicates with other systems but much quicker and more error-free.

Software robots can work around the clock and can be operational in minutes to cope with a huge workload. This is used to perform repetitive, time-intensive, rule-based tasks on computer applications, and frees up time for employees and allows them to focus their attention on more creative, complex and fulfilling tasks.

All of this has the cumulative effect of enhancing productivity. People in desk-based jobs can now have a virtual "robot" assisting them with their working tasks, allowing them to work in a more efficient manner.

These virtual robots, or virtual assistants, deployed by RPA help employees increase their productivity. They work alongside them and assist them in their daily repetitive and time-intensive activities. Just like traditional automation has been used in manufacturing to improve efficiency and output, boost quality and increase safety, RPA ideally matches the requirements of office- or home-based work.

More complex processes might require integration with artificial intelligence. Such solutions will allow the RPA software to interact with data in a variety of complex processes, bring additional accuracy and efficiency to automation projects and become more flexible when

completing processes. In other words, AI acts as the brain and RPA as a muscle. These two, AI and RPA, do not replace one another but work together.

The growing interconnectedness of RPA with Artificial Intelligence and Machine Learning (ML) has created the latest software-based automation concept and trend of Intelligent Automation (IA). IA's power of connecting capabilities only makes the future of the technologies even brighter to solve many issues plaguing society.

Currently, RPA is used in almost every industry, from banking to insurance to manufacturing to healthcare as well as in the public sector where automation has significant potential for supporting cost reduction, meeting citizen expectations and boosting productivity. RPA is considered to be sufficiently developed, resilient, scalable and reliable to be used in large government organisations.

The Covid-19 pandemic has accelerated RPA use and adoption, creating a new reality. In this context, RPA gained even greater traction and became a baseline solution which is now embedded in institutions' "modus operandi".

According to the IDC Covid-19 Tech Index (see page 29), 40 per cent of global enterprises are increasing their demand for automation directly as a result of the pandemic.

RPA is bound to drive the post-Covid recovery, also in the public sector wherewith the economic downturn, public sector institutions have seen a surge in workload. It is the size of potential to deliver.

For most organisations, the long-term cost benefits outweigh the initial investment in RPA. Public institutions can reduce training costs, free up IT resources and ease software migration.

According to a National Association of State Chief Information Officers (NASCIO) report (see page 29), RPA is especially useful in government customer service and can save agencies 40 to 70 per cent on labour costs.

"Effectively, any action that a person can do on a computer using a mouse or keyboard can be accomplished by a "robot". RPA cannot think, see, nor understand. But it enables rapid, highly accurate processing."

Pascal Bornet,
Ian Barkin and Jochen Wirtz

Intelligent Automation: Welcome to the World of Hyperautomation

The Federal RPA Community of Practice (see page 29) says that the impact of wide-scale RPA adoption is massive. If agencies deployed RPA to save all civilian employees just 20 hours a year, that would equate to roughly three billion US dollars in capacity created.

According to the Economist Intelligence Unit (see page 29), the main benefits from automation will continue to grow and unfold: sustained productivity growth, reduced human error, can work in the cloud or with legacy systems, has infinite scaling ability, enabled fast and accurate processing, is self-developed and easily implementable, improves the reliability of processes and output, enhances customer experience and increases revenues.

A VIEW FROM EMERGING EUROPE
Challenges and opportunities

In a targeted survey, Emerging Europe asked 54 senior public service representatives within the region about the perspectives of automation and challenges in its implementation in the public sector.

Respondents were asked to choose the areas where automation would help governments to achieve efficiencies at scale, the technologies that are most likely to be useful in driving change in public sector process automation, and the biggest challenges that governments in emerging Europe face, slowing down the automation application process.

57 per cent of respondents believe that automation may help governments achieve efficiency in applications and processing, another 41 per cent think that it could be applicable to citizen and business services.

Despite the fact that automation in procurement alone was chosen only by one respondent, three respondents could not choose just one option as they believe that automation would benefit at least four areas – application and processing, citizen and business services, procurement, and finance.

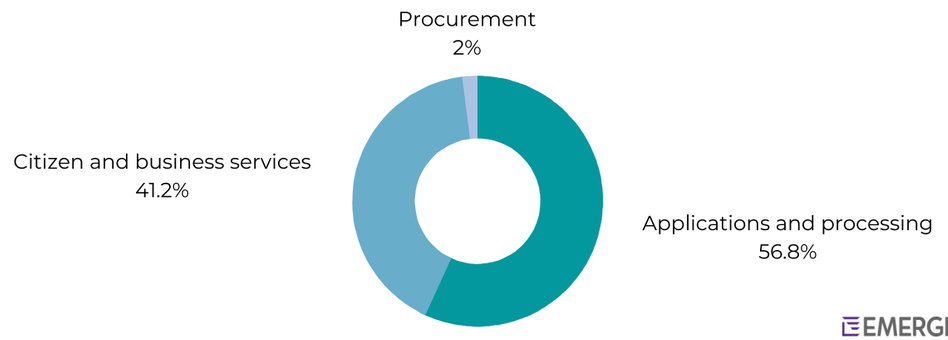
On the other hand, public service representatives are sceptical about the perspective of automation implementation in human resources.

Two-thirds of all respondents believe that robotic process automation for routine tasks would be the most useful in the public sector, while 59 per cent think that machine learning may benefit public services at this stage.

Other options were not popular, as smart workflows were considered as potentially useful only by 17 per cent, while the use of cognitive agents was chosen by less than two per cent.

The implementation of automation is an innovative and challenging process. Almost half

Chart 1. Areas in which automation would help governments achieve efficiencies at scale



of the respondents indicated that there is a lack of skills among public service workers that slows down the deployment of technological advancement. Almost 43 per cent believe that there is a lack of strategy and knowledge about how to get started with automation.

Finally, 35 per cent believe that the public sector does not recognise the benefits of automation at this stage. In addition, slightly more than a quarter of respondents assume that the development and implementation of automation is associated with high costs, which may deter public institutions.

Chart 2. Technologies that are most likely to be useful in driving change in public sector process automation

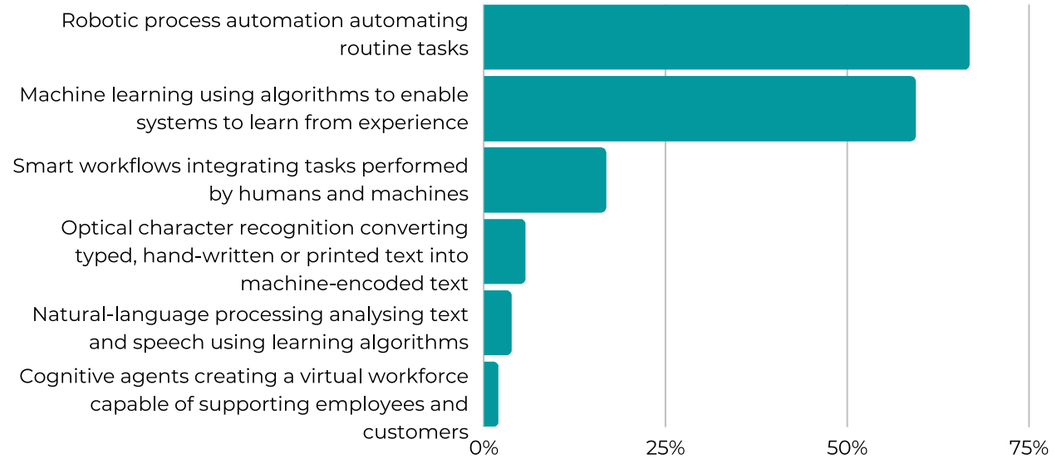
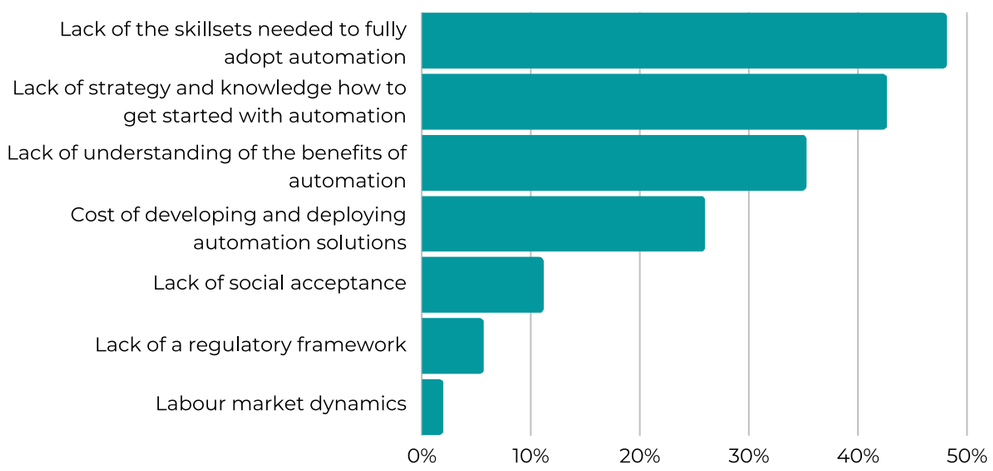


Chart 3. The biggest challenges that governments in emerging Europe face, slowing down the automation application process



SHARING EXPERIENCES

Governments must remember that digitalisation is about making life better

The digitalisation of public services, which has become a key policy issue since the outbreak of the Covid-19 pandemic, must never be about simply cutting costs. The goal must be to make public services more efficient.

The digitalisation of public services helps governments meet public expectations and become more resilient, foresightful and efficient, especially in challenging times such as a global pandemic like Covid-19.

The task is complex, but a tried-and-tested approach can help the public sector move faster and more efficiently. It is therefore critical to exchange experiences and best practices to develop a better future.

With this in mind, Emerging Europe – in partnership with leading robotic process automation firm UiPath – on June 22 organised a major discussion with key public sector automation pioneers from across the emerging Europe region to share their successes, challenges and goals in building a digital nation.

For Carlos Torrecilla-Salinas, the head of the Digital Economy Unit at the European Commission's Joint Research Centre, Covid-19 was a game-changer.

"Suddenly, the need to go to government offices in order to get the paperwork done became perilous for our health," he says.

"This led us to two important conclusions. Firstly, the importance of public services and how difficult our lives are without them, and secondly, the need to rethink how we organise and provide them."

Digitalisation is not an end in itself

According to Torrecilla-Salinas, digitalisation of public services is more than a money-saving exercise. He says that by doing so, governments can free up human resources that can be employed on more essential tasks.

"Above all, it can make public services more efficient," he says, adding that one of the European Commission's key recommendations is that digitalisation should not be an end in itself, but a way of creating more value for citizens and businesses.

"Governments must always remember why they are moving towards digitalisation," he says.

Margareta Chesaru, a public affairs manager at UiPath, agrees, saying that digitalisation is about rethinking the way we work, for the better.

"Automation emulates human actions performed on computers to liberate workers from mundane, repetitive, and less productive tasks, and enables them to better utilise unique qualities that only humans have, such as creativity, abstract thinking, strategising and dealing with ambiguity, communicating, driving innovation and using their passion," she says.

When it comes to leveraging technology, and more specifically, automation, to help drive the economic recovery, enable the digital transition and modernise the public sector, Chesaru says that research carried out by UiPath in Romania suggests that deploying automation in the public sector can drive a much broader range of benefits. "One that is far beyond cost savings," she says.

Marta Arsovska-Tomovska is the director of the public administration reform team at the Office of the Prime Minister of Serbia, a country that made digital transformation a priority long before Covid-19 hit.

She says that Serbia's investment in digitalisation paid off "big time".

"Digitalisation and digital government have become the most talked-about subjects in Serbia," she says, adding that Covid-19 gave Serbs a reason to adopt digital solutions, helping to overcome the reservations that some members of society had previously held.

Arsovska-Tomovska says that Serbia has in recent months been creating 10,000 what she calls "e-citizens" every day, primarily in order to access vaccines. That has created its own challenges, but the foundations the country had already built meant that it was able to deliver.

"Serbia was one of few very countries which right from the start of the Covid-19 vaccination programme offered its citizens a choice of vaccines: they could select the one they want," she says. "But in order to make that happen, we needed to automate the distribution process, to make sure that the right vaccines were in the right place at the right time, and that there was no wastage. And for that we used artificial intelligence."

Communication with public servants is critical

Lăcrămioara Corcheș, general director of Romania's National Agency for Payments and Social Inspection of Romania (ANPIS), says that during the Covid-19 pandemic, Romanians were able to apply digitally for financial support from the government: a first for the country.

"I'm proud that we succeeded in creating this system," she says. "It wasn't easy."

Offering advice to other governments and institutions looking to implement digital solutions, she circles back to a point made by the European Commission's Carlos Torrecilla-Salinas: make sure you know why you are doing it, and make sure you explain your reasoning to all stakeholders.

"Many think that this is science fiction that cannot be applied in the public sector," she says. "So that's my tip: let them know that the idea is to make their job easier, freeing them up for more creative tasks, not to replace them."

As for automation, her conclusion is simple: "It makes life better, let's use it."

In Poland, mCitizen is an app that will enable people to get rid of all traditional documents, such as national IDs and driving licenses.

"We started the project in 2017, launching the first version of the app, but adoption – along with that of an identification app, Trusted Profiles – was boosted by Covid-19," says Arkadiusz Szczebiot, COO, of MC2Innovations and former Chief Technology Officer at the country's Ministry of Digital Affairs.

"Take-up doubled. We now have 11 million Trusted Profiles in Poland, close to 50 per cent of the active population," he says, adding that the app allows users to login to any public service, and sparing them the often-tedious task of going to a government office.

Return on investment

Szczebiot is also keen to point out that digitalisation and automation offer a guaranteed return on investment, a message perhaps for governments who might be hesitant about the upfront costs.

"Whatever you automate, you will save an enormous amount of money, years of time," he says. "It's important to remember that: there is always a return on investment."

Offering a perspective from the vendor side of the equation, Lukáš Řeha, founder and managing director of Czechia's Techstra, which delivers automation solutions for both the public and private sectors, confirms that the appetite for digitalisation over the past 18 months has been "huge".

Techstra was one of the first companies to implement automation for parts of the Czech public sector, and Řeha says that his firm does not differentiate much between the public and private sector.

"We are industry agnostic, sector agnostic," he says, but adds that there is still "a lack of awareness of the possibilities" of automation in the public sector.

"But to be scared of change is natural," he says.

What's in it for me?

Boris Koprivnikar, CEO of Sincular Consulting, and a former Minister of Public Administration and Deputy Prime Minister of Slovenia, says that he was "blessed" to have been responsible for digitalisation.

Slovenia, like Serbia, already had several digital public services available pre-Covid-19, both for individuals and businesses.

"But Covid-19 has brought home just how crucial digitalisation is," he says.

Awareness, says Koprivnikar, is key to adoption and explains how Slovenia went about raising awareness of the potential of digitalisation.

"We involved NGOs, academia, business and government as equal partners, and from the start set out to make clear exactly what the benefits are," he says, before offering some sound advice to other countries.

"Governments should always approach digitalisation from the point of view of citizens and businesses: What's in it for them? How will citizens benefit? How can we make them see those benefits?

"That must be the starting point."

CHAMPION
CONNECT
COOPERATE

Become part of a worldwide community of 20,000 tech entrepreneurs, leaders, experts and investors — and have a role in making emerging Europe a global tech hub.

TECH EMERGING EUROPE ADVOCATES

Apply to become an advocate

emerging-europe.com/techadvocates

PUBLIC SECTOR
Supporting digital transformation with automation

Multiple challenges that the public sector has faced for quite some time have prevented it from delivering more efficient and transparent services.

Most governments across the emerging Europe region, if not all, have started working towards a digital nation, of which a digital government is an important part. A lot of them have also started to actively acknowledge and recommend the use of AI to improve public services and more effectively serve their citizens. However, numerous challenges have still remained.

In 2019, the Economist Intelligence Unit (see page 29) surveyed over 500 executives to better understand the role of automation in the workplace. 88 per cent of government leaders say automation is a priority for their organisations, yet only 35 per cent say they use automation extensively, compared with a 51 per cent industry average.

The survey also highlights five benefits of automation:
- increased productivity,
- reduced human error,
- improved consistency of output and processes,
- reduced operating expenses,
- freeing up employees to take on higher-level roles.

Chart 4 on page 23 highlights challenges facing public sector institutions today. It also analyses what is at stake for them when they don't work to address those challenges and how automation can help.

Chart 4. The biggest challenges that public sector institutions face across the world (Source: UiPath: The Path to Digital Government White Paper)

Challenges	What's at stake	How automation helps
Antiquated, disconnected systems and processes		
· Legacy technologies and poorly designed integrations create complexity · Processes are manual and often undocumented · Public servants face bottlenecks in daily workflows	· Disengaged employees focused on process, not citizens · Growing backlogs of work and pileups of caseloads · Inability to deliver high-quality citizen experiences	· Connects legacy systems without invasive implementation or infrastructure overhaul · Encourages process optimisation · Sets the stage for future digital transformation through integration of AI and ML models
Increasing demands from citizens and businesses		
· Ageing populations require governments to scale citizen services · Citizens expect on-demand, digital interactions with the public sector · Businesses expect agile services and better interactions with governments	· Inability to provide high-quality services to populations · Citizen frustration and erosion of trust in government · Decline in economic competitiveness, lower GDP, and a shrinking economy	· Clears backlogs at scale · Improves citizen experiences by processing requests in a timely manner
Shifting workforce demographics		
· An ageing workforce requires governments to ensure transfer of knowledge to new generations of workers · Governments struggle to attract talent with relevant digital skills	· Process knowledge loss as employees leave the workforce · Ability to attract top talent with relevant digital skills	· Ensures retention of knowledge by documenting critical processes · Frees employees from mundane tasks and shifts focus to strategic work · Improves public sector employer brand, positioning it as a destination for top talent
Evolving regulations		
· Frequently changing regulations around data privacy and security require governments to be agile to remain in compliance · Governments must comply with citizen data requests in some countries	· Lack of compliance with government regulations · Delays in implementing regulatory frameworks	· Improves accuracy and ensures compliance by leveraging digital robots with an audit trail
Ongoing budget constraints		
· Government agencies must be good stewards of taxpayer money · Budget and/or resource constraints force governments to find creative solutions to deliver high-quality citizen services	· Erosion of citizen trust in government · Inaction: faced with forced constraints, some may entirely avoid digital transformation	· Enables governments to do more with the same (or with less) budget and resources

Experts continue searching for and finding new uses for robotic process automation in the public sector.

In their recent book, *Intelligent Automation: Welcome to the World of Hyperautomation*, Pascal Bornet, Ian Barkin and Jochen Wirtz, provide over 500 use cases of automation, or as they refer to it, hyperautomation. They say that RPA together with artificial intelligence and machine learning can address challenging societal issues:

- managing immigration
- promoting citizen safety and security
- managing stakeholder services and expectations
- improving education
- addressing climate change and ecology
- managing infrastructure
- simplifying tax collection and improving organisational staff morale.

With RPA only just catching on in the public sector, Deloitte says there are a wealth of frontline and support functions opportunities to explore (see page 29). However, the list cannot be exhausted as there are new use cases popping up on a regular basis (see chart 5 below).

Chart 5. Examples of frontline and support functions that can benefit from automation Source: Deloitte)

Frontline functions	Support functions
Central Government – Universal Credit and benefits calculations, tax calculations, anti-fraud checks, licensing applications processing.	**HR –** payroll, benefits management, education and training, recruitment and new joiner processes.
Local Government – revenue collection, permit applications, incident reporting, case management, contract administration.	**IT –** infrastructure / application monitoring, folder and file management, user / directory and release management, network monitoring and desktop support.
Policing – fixed penalty processing, intelligence reporting, crime reporting, firearms license processing and replacing the need for officers to double key the same information into different systems.	**Finance –** reconciliations, claims processing, expense payments, returns management and inventory processing.
Health – coding, diagnostics, discharge processing, outpatient clinic outcomes, cashing up.	
Education – managing admissions and enrolments, student timetabling and estates utilisation, student finance management, course assessment data handling, alumni database maintenance.	

KEY RECOMMENDATIONS
for emerging Europe's governments

1

With automation, there is always a return on investment, either in processing time or cost

Public authorities must also remember that using automation in public services will build resilience and foresight in the public sector and help accelerate economic recovery.

Automation is not an end in itself but a way to create public value for citizens and businesses

2

Public authorities must always plan for automation in alignment with delivering on the mission and improving the services of the organisation. By leveraging automation, they can increase governments' responsiveness, reduce bureaucracy, and empower people.

3

Reusable solutions and use cases will help save time and resources

Public authorities should promote utilising reusable solutions and use cases, creating repositories and standards that can help the public sector develop safe, reliable, interoperable, and scalable solutions. Being transparent about automation projects will help facilitate the transfer of know-how between public authorities and help boost citizens' trust.

Awareness and knowledge are essential to maximise impact

4

Public authorities must broadly communicate the benefits of automation to public servants so they could consider automation as a potential solution. Training and development should always be available to help public servants acquire digital skills and nurture innovation within the organisation.

5

Automation is a solution that requires the participation of all sectors

Public authorities should engage broadly and effectively with non-governmental organisations, academia and businesses, treating them as equal partners. This can be achieved through public consultations and increased multi-stakeholder collaboration.

CASE STUDIES

Emerging Europe's public sector sharing best practices

The examples below show how digital services and automation in the public sector, including robotic process automation (RPA) have been implemented in the emerging Europe region.

Regional Authority of the Moravian-Silesian region (Czechia)

Challenge — In 2018, the Department of Regional Development and Tourism received a large number of applications for boiler replacement grants.

Solutions — The Regional Authority identified over a dozen processes that were seen as time-consuming and with a high error rate. The first two processes were automated within two weeks and another 11 within the next three months.

Now a robot verifies the information provided to the applicants. It sends emails, prepares and prints letters, or verifies in the databases to confirm if an applicant has already submitted applications. It also helps the Authority distribute incoming electronic submissions or anonymise data in the documents.

Results — The Authority estimates to have saved over 8,000 hours of working time.

Agricultural Registers and Information Board (Estonia)

Challenge — The government agency's inspectors had to visit grasslands to perform the EU agricultural subsidy checks physically.

Solution — Satikas is an automated satellite-based information system that detects all mowing on agricultural grasslands across the country. The system also works as a reminder to the farmers who have not yet fulfilled the mowing requirements. Mowing and its range can be observed from sudden changes in the biomass levels in the time series parameters of the satellite data.

The original satellite pictures are converted into several processed data layers. The average value is then calculated for each image and each grassland. Afterwards, a deep learning algorithm is used on the time series for detecting the mowing information. Thus, there is no longer any room for claims that the grassland was mowed a few weeks earlier because the data is continuous.

Results — Currently, inspectors visit only problematic areas. The solution helps save 65,000 euros of personnel costs and an additional 600,000 euros, as only those farmers who have met the requirements are paid.

National Coordination Team for Immunisation (Serbia)

Challenge — The infectious and lethal nature of Covid-19 has propelled its vaccine to be the fastest developed ever. It was important to ensure its rapid distribution.

Solution — Serbia developed software that helped each vaccination roll-out phase three times. Citizens were allowed to choose which vaccine type they wanted to receive and where they wanted to receive them in an attempt to boost immunisation rates and increase trust in the public administration. They had to go to the eGovernment portal and fill out a very short form asking them about their preferences, and the entire process took around a couple of minutes to complete.

The solution also provides real-time monitoring and allows for informed analytics on critical aspects of the operation, such as data on the general population, interest in immunisation and actual consumption. It helps inform the administration if and where to boost public information campaigns — and whether to procure additional doses. Finally, it allows for the remote monitoring of the distribution and storage chains, with checks on them significantly facilitated for medical and storage workers.

Results — Thanks to the artificial intelligence-based platform, Serbia has one of the fastest vaccine roll-outs in Europe.

Parliament of Estonia

Challenge — Verbatim reports of all the sessions of the Parliament are required to be published within one hour. This took a lot of human effort.

Solution — Speech recognition is one of the areas where artificial intelligence is highly effective. HANS, a support tool, uses speech recognition plus artificial intelligence because speech recognition in Estonian is not perfect yet. To achieve such a high level of accuracy, HANS was trained with 1,500 hours of recordings and transcripts.

Results — HANS reaches accuracy rates of 93 per cent. Humans still correct the rest. Thanks to AI, it gets smarter every day.

The United State Register of Legal Entities, Individual Entrepreneurs and Public Organisations (Ukraine)

Challenge — Registering a new business required an appointment and a large number of various documents to be presented. It took 21 minutes on average to process a single application made in person.

Solution — Now, the application is submitted on the **Diia** e-government website. The applicant needs to fill in ten boxes. Most information is pulled up automatically. It takes about ten minutes to fill in the form and a few seconds to process. The application immediately synchronises with the register of private entrepreneurs.

Results — Around 200,000 payroll accounts have been opened since the service became available via the Diia platform. It is estimated that some 43 years of working time have been saved.

National Employment Office (Serbia)

Challenge — The Covid-19 pandemic has had a significant impact on the labour market, with many jobs suddenly placed at risk of being cut. Young people entering the market were particularly vulnerable.

Solution — The 'My first salary' programme offsets the costs for companies to hire young people with little experience by providing them with a "salary subsidy grant" in place of a traditional salary for a period of nine months. It is based on a digital matchmaking platform that facilitates the connection between unemployed youth and employers by proper service design and using data and artificial intelligence-based recommendation algorithms.

Results — From almost 18,000 applicants, 8,500 managed to secure employment for nine months. Almost 70 per cent of employers have stated that they would be willing to hire the trainees permanently, whilst 90 per cent of them were satisfied with their performance and learning ability during the nine months.

National Agency for Payments and Social Inspection (Romania)

Challenge — Following the Covid-19-imposed lockdown, the Romanian government instated unemployment benefits to support the citizens whose jobs and income have been affected. Within just two weeks of May 2020, the National Agency for Payments and Social Inspection received 110,000 financial support requests and needed ten days to make payments.

Solution — The Agency used a software robot that performed the first processing for four out of the six categories of beneficiaries. First, it verified the accuracy of the application. Then, it extracted the correct data into a database and created individual folders with supporting documents. If the application was incorrect, the robot also notified the applicants and asked for additional documents.

Results — The Agency estimates that the time to process an application was reduced from 20-30 minutes to only 36 seconds.

Statistics Estonia

Challenge — Some 20 years ago, Statistics Estonia received around 1,000 requests for information in a year, mainly over the phone. With emails, the number grew to 2,200. In 2017, an online chat with a consultant increased it to 5,000.

Solution — Statistics Estonia's virtual assistant Iti, available since April 2019, helps users of statistics and data providers. Iti can respond to their most common questions. If Iti does not know the answer, it directs the question to customer support. Iti also helps respondents whose questions relate to using the electronic data submission environment eSTAT and filling in questionnaires.

Result — Iti was trained for a year with questions from online chats, and is getting smarter with every request.

REFERENCES

The resources below were referred to when producing this white paper:

Economist Intelligence Unit (EIU)

The Automation Readiness Index
https://www.automationreadiness.eiu.com/static/download/PDF.pdf

The advance of automation: Business hopes, fears and realities
https://automationfirst.economist.com/wp-content/uploads/2019/06/EIU-UiPath-The-advance-of-automation-briefing-paper.pdf

Centre for Business Civic Engagement, George Mason University (Robotic Process Automation Initiative)

The Promise of Robotic Process Automation for the Public Sector
https://cbce.gmu.edu/wp-content/uploads/2021/06/The-Promise-of-RPA-For-The-Public-Sector.pdf

Deloitte

The new machinery of government Robotic Process Automation in the Public Sector
https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/public-sector/deloitte-nl-Robotic-process-automation-in-the-public-sector.pdf

Emerging Europe

Redesigning public services and supporting digital transformation with automation
https://emerging-europe.com/news/governments-must-remember-that-digitalisation-is-about-making-life-better/

EY

Intelligent automation in the government and public sector
https://assets.ey.com/content/dam/ey-sites/ey-com/en_us/topics/government-and-public-sector/ey-intelligent-automation-in-the-government-and-public-sector.pdf

European Commission

Digital public services in the digital economy and society index
https://digital-strategy.ec.europa.eu/en/policies/desi-digital-public-services

Emerging technologies in public procurement
https://ec.europa.eu/growth/single-market/public-procurement/digital/emerging-technologies_en

Exploring digital government transformation in the EU
https://publications.jrc.ec.europa.eu/repository/handle/JRC118857

The Recovery and Resilience Facility
https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

European Parliament

A comprehensive European industrial policy on artificial intelligence and robotics
https://www.europarl.europa.eu/doceo/document/TA-8-2019-0081_EN.html?

Federal RPA Community of Practice

RPA Programme Playbook
https://digital.gov/pdf/rpa-playbook.pdf

Fedscoop / Statescoop

RPA's expanding role in government
https://cdn.fedscoop.com/robotic-process-automation-in-government-report.pdf

International Data Corporation (IDC)

New IDC COVID-19 Tech Index Points Towards Declines in IT Spending, But Also Pockets of Opportunity for IT Vendors
https://www.idc.com/getdoc.jsp?containerId=prUS46212720

McKinsey & Company

A government blueprint to adapt the ecosystem to automation and the Future of Work
https://www.mckinsey.com/~/media/mckinsey/industries/public%20and%20social%20sector/our%20insights/a%20government%20blueprint%20to%20adapt%20the%20ecosystem%20to%20the%20future%20of%20work/a-government-blueprint-to-adapt-the-ecosystem-february.pdf

Automation in government: Harnessing technology to transform customer experience
https://www.mckinsey.com/industries/public-and-social-sector/our-insights/automation-in-government-harnessing-technology-to-transform-customer-experience

The future of work after COVID-19
https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19

National Association of State Chief Information Officers NASCIO

Yesterday, today and tomorrow: A resilient and adaptable state IT workforce
https://www.nascio.org/wp-content/uploads/2021/04/NASCIO_ResilientWorkforce_3.2021.pdf

Organisation for Economic Co-operation and Development (OECD)

Digital transformation in the age of Covid-19, Building resilience and bridging divides
https://www.oecd.org/digital/digital-economy-outlook-covid.pdf

UiPath

Taking the robot out of the human: How RPA Will Revolutionise Work, Skills, and Society across the European Union
https://www.uipath.com/resources/automation-whitepapers/rpa-revolutionize-work-skills-society-across-eu

The Path to Digital Government: How Automation Helps Governments Enhance Citizen Services and Improve Agency Productivity
https://www.uipath.com/resources/automation-whitepapers/public-sector-automation-path-to-digital-government

Pascal Bornet, Ian Barkin and Jochen Wirtz, *Intelligent Automation: Welcome to the World of Hyperautomation*, 2020.
https://intelligentautomationbook.com

METHODOLOGY

The white paper *Redesigning public services and supporting digital transformation with automation — Lessons from emerging Europe* is aimed at discussing the current state of development, potential and obstacles in the future development of automation within the public services ecosystem.

In order to get valuable insights from policymakers and public sector representatives, Emerging Europe's researchers developed a questionnaire to evaluate perspectives of automation and define challenges in its implementation in the public sector. It consists of three questions – one single answer and two multiple-choice questions:

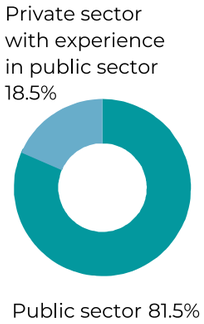
1. In which areas would automation help governments achieve efficiencies at scale? (single answer)
a. Applications and processing;
b. Citizen and business services;
c. Finance;
d. Human resources;
e. Procurement.

2. Which of the six technologies below are most likely to be useful in driving change in public sector process automation? (multiple choice)
a. Cognitive agents creating a virtual workforce capable of supporting employees and customers;
b. Machine learning using algorithms to enable systems to learn from experience;
c. Natural-language processing analysing text and speech using learning algorithms;
d. Optical character recognition converting typed, hand-written or printed text into machine-encoded text;
e. Robotic process automation automating routine tasks;
f. Smart workflows integrating tasks performed by humans and machines.

3. What are the biggest challenges that governments in emerging Europe face, slowing down the automation application process? (multiple choice)
a. Cost of developing and deploying automation solutions;
b. Labour market dynamics;
c. Lack of a regulatory framework;
d. Lack of strategy and knowledge how to get started with automation;
e. Lack of social acceptance;
f. Lack of understanding of the benefits of automation;
g. Lack of the skillsets needed to fully adopt automation.

A total of 54 people took part in the survey. We collected 51 responses to the first question, 83 and 92 responses to the second and the third questions respectively. Three responses were excluded from the responses to the first question due to violation of the single-answer rule. The percentages provided in the result interpretation describe the percentage of respondents who chose the respective option out of the total number of respondents.

All respondents invited to take part in the survey are based in emerging Europe and have extensive experience in public service. More than 80 per cent are currently working in the public sector. We collected opinions of representatives from 16 countries of the region, including countries from all the subregions – South-East Europe, Central Europe, North-East Europe, and Eastern Europe — Poland (15), Romania (8), Slovakia (4), Hungary (4), Czechia (3), Bulgaria (3), Serbia (2), Albania (2), Croatia (2), Lithuania (2), Georgia (2), Latvia (2), Estonia (2), North Macedonia (1), Slovenia (1) and Ukraine (1).



ABBREVIATIONS AND ACRONYMS

Below there is a list of all abbreviations and acronyms used in this whitepaper:

AI — artificial intelligence

ANPIS — National Agency for Payments and Social Inspection

CEO — chief executive officer

COO — chief operating officer

COTS — commercial off the shelf

DESI — Digital Economy and Society Index

EC — European Commission

eID — electronic identification

EIU — Economist Intelligence Unit

EU — European Union

GDP — gross domestic product

HR — human resources

IDC — International Data Corporation

IA — intelligent automation

IT — information technology

ML — machine learning

NASCIO — National Association of State Chief Information Officers NASCIO

NGO — non-governmental organisation

OECD — Organisation for Economic Co-operation and Development

RPA — robotic process automation

RRF — Recovery and Resilience Facility

SME — small and medium-sized enterprise

UK — United Kingdom

ACKNOWLEDGEMENTS

This white paper was prepared by the Emerging Europe Market Intelligence and Editorial Teams.

It was produced in partnership with **UiPath** and **Tech Emerging Europe Advocates**, an Emerging Europe community.

We would like to thank all the participants of the online expert session which took place on June 22, 2021:

- Carlos Torrecilla Salinas, Head of Digital Economy Unit, Joint Research Centre, European Commission

- Margareta Chesaru, Public Affairs Manager, UiPath

- Marta Arsovska-Tomovska, Director of the Public Administration Reform team, Office of the Prime Minister of Serbia

- Lăcrămioara Corcheș, General Director, President, National Agency for Payments and Social Inspection of Romania (ANPIS)

- Boris Koprivnikar, CEO, Sincular Consulting, former Minister of Public Administration and Deputy Prime Minister of Slovenia

- Arkadiusz Szczebiot, COO, MC2Innovations, former Chief Technology Officer, Poland's Ministry of Digital Affairs

- Lukáš Řeha, Founder and Managing Director, Techstra

The online session can be viewed under this link https://emerging-europe.com/webinar-digital-transformation/

We would also like to extend our thanks to external and internal reviewers, as well as to all survey respondents and the national and international organisations and governmental entities that helped us collect the statistics and case studies.

Images: Canva, Bigstock, Unsplash, Mariusz Szachowski.