



DIGITAL AND DATA ARE UNLOCKING PUBLIC SECTOR TRANSFORMATION

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Introduction — The Next Normal of Public Services

Governments globally are embracing digital transformation to deliver efficient, trusted, responsive, inclusive, and convenient services that make bureaucracy invisible for citizens and businesses.

Governments can unlock the value of digital and data by embracing **open innovation**, bringing together a **cultural change** that fosters fluid, innovative, and resilient organizations with **open, agile platforms**, and **automated scalable cloud capabilities**. Those that do so will deliver improved outcomes, such as seamless tax compliance, effective welfare for vulnerable people, safe communities, net-zero economies, sustainable and resilient physical infrastructure, and inclusive growth.

Governments that do not innovate will be saddled with costly, unsecure legacy technology, obsolete processes, and rigid organizations that struggle to respond to the rapid evolution of government missions and elevated expectations of citizen. As stated by the UK National Audit Office *"the public increasingly expects the government to make effective use of technology, so public bodies have little choice but to deliver high-quality digital services."*¹

Key Business Priorities

Governments worldwide are at different stages of evolution in their digital transformation journeys, as clearly indicated by international benchmarks such as the EU e-Government Benchmark² and the UN e-Government Survey³; nonetheless all of them have common strategic goals embedded in their digital transformation road maps:

1. Offering a **digitally immersive experience** to citizens — Beyond putting services online, many governments have reached a level of maturity that enables them to offer an omnichannel experience that joins up the service journey end-to-end and anticipates citizen needs. For instance, to foster a more citizen-centric administration, the Singapore

AT A GLANCE

KEY STATS

Worldwide COVID-19 recovery packages amount to €10 trillion.

WHAT'S IMPORTANT

These critical funds offer public sector leaders a once in a generation opportunity to reimagine public services

KEY TAKEAWAYS

Government executives that want to succeed must embrace the three pillars of open innovation:

- Deploy open, agile, reusable software platforms
- Operate scalable, resilient, and energy efficient hybrid cloud infrastructure
- Drive cultural change built around fluid organizations, visionary leadership, and digital skills

¹ <https://www.nao.org.uk/report/the-challenges-in-implementing-digital-change/>

² <https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark-2020-egovernment-works-people>

³ <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020>

government redoubled efforts, "so that all Government services are digital from end-to-end by 2023."⁴

2. Leveraging **data as a strategic asset** to make evidence-based policy decisions, personalize services, and enhance operational efficiency — Better management, exchange, and use of data across the public sector and in collaboration with the private sector will unleash improved outcomes at all levels of government and for all public service missions. For instance, according to Interpol *"Data is at the heart of international policing. When the right data is in the right hands, it can give law enforcement a comprehensive global picture of crime trends to help them tackle emerging crimes more effectively"*⁵. While Sustainable Mobility for All (SuM4All, the World Bank's multistakeholder partnership) states that *"The transformation towards a sustainable mobility future relies on data. Data provides grounds for decision-making in many urban geographies today, and data-sharing models between private and public sector stakeholders will create value through innovative, and likely real-time, data analysis tomorrow."*⁶
3. **Empowering civil servants** through intelligent process automation and cross-agency collaboration — Productivity and engagement are top priorities for civil service chief executives around the globe. For instance, the European Commission set a vision for a digital workplace initiative that aims to *"...provide staff with the right IT tools, platforms, and services, enabling users to work and collaborate anywhere, anytime with a fit-for-purpose security and optimizing their work experience and productivity. It will be adaptive and flexible to incorporate different type of users, new behaviors and new technologies"*⁷.
4. Increasing **agility, scalability, and environmental sustainability**⁸ of their IT **infrastructures and platforms** by orchestrating fit-for-purpose hybrid multicloud capabilities — Cloud has evolved from a technical solution to reduce the cost of delivering IT infrastructure to a strategic enabler of scalable innovations for governments around the globe. For instance, the New Zealand government recognizes that adopting cloud computing will be a *"foundational building block"* to enable modern and agile public service, support business continuity, and invest in the digital economy.⁹
5. Making **data and digital trusted**, by designing, building, and operating technology capabilities in line with global security and resilience best practices — Cybersecurity is a top priority for the most senior elected officials. For instance, in May 2021, the US White House issued an executive order stating that "The Federal Government must adopt security best practices; advance toward Zero Trust Architecture; accelerate movement to secure cloud services, including Software as a Service (SaaS), Infrastructure as a Service (IaaS), and Platform as a Service (PaaS); centralize and streamline access to cybersecurity data to drive

⁴ <https://www.smartnation.gov.sg/whats-new/speeches/smart-nation-addendum-2020>

⁵ <https://www.interpol.int/How-we-work/Criminal-intelligence-analysis/Insight>

⁶ https://www.sum4all.org/data/files/tors_data_sharing_march01_website.pdf

⁷ <https://ec.europa.eu/info/sites/default/files/digitalworkplacestrategy2017.pdf>

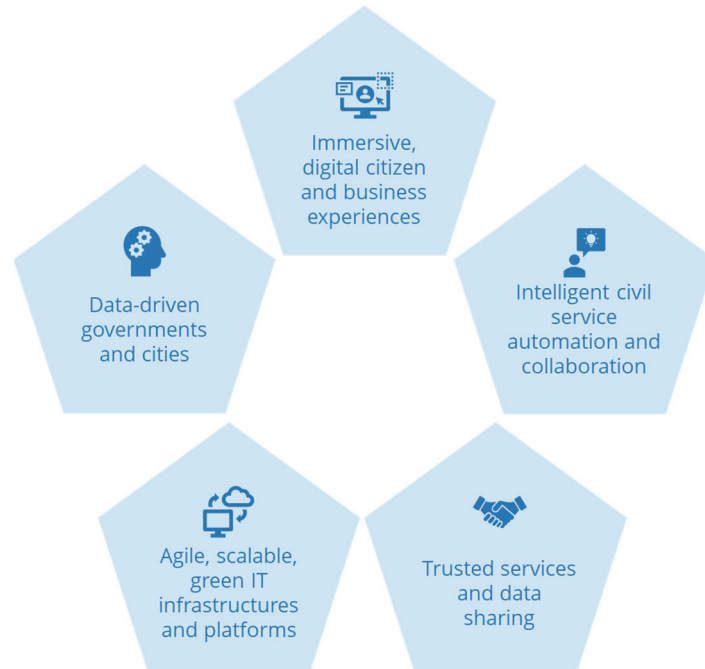
⁸ <https://digital-strategy.ec.europa.eu/en/library/energy-efficient-cloud-computing-technologies-and-policies-eco-friendly-cloud-market>

⁹ <https://www.digital.govt.nz/digital-government/programmes-and-projects/cloud-programme/about-the-cloud-programme/>

analytics for identifying and managing cybersecurity risks; and invest in both technology and personnel to match these modernization goals."¹⁰

FIGURE 1

The Five Priorities of Government Digital Transformation



Source: IDC 2011

Trends

The COVID-19 crisis acted as an accelerator of hybrid working, digital self-service, and cloud computing. But most importantly it prompted government executives to embrace data and digital as a permanent enabler of transformation. In fact, according to IDC surveys, already in May 2020, over 70% of government executives around the globe expected that work-from-home would be added to (or expanded in) their HR policies and over 50% expected that digital self-service for citizens would be expanded, making these permanent changes in the way public administrations deliver services, manage their operations, and empower civil servants to work.

Worldwide pandemic recovery packages amount to €10 trillion¹¹. These critical funds offer public sector leaders a once in a generation opportunity to reimagine public services to make societies more inclusive, infrastructure more efficient and resilient to shocks, cities more livable and prosperous, and mobility more convenient, affordable, and safe.

¹⁰ <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/12/executive-order-on-improving-the-nations-cybersecurity/>

¹¹

<https://www.mckinsey.com/~media/McKinsey/Industries/Public%20Sector/Our%20Insights/The%2010%20trillion%20dollar%20rescue%20How%20governments%20can%20deliver%20impact/The-10-trillion-dollar-rescue-How-governments-can-deliver-impact-vF.pdf>

- In Europe, one of the flagship areas for investment and reforms of the NextGenerationEU funds is the modernization and digitalization of public administration¹².
- In Asia, the Malaysian 2020 short-term recovery plan (Penjana) earmarked the Digitalization of Government Services as one of its 40 key initiatives¹³.
- In Latin America, the Colombian Ministry of Technology and Communications is driving a coordinated effort that aims to make digital the norm across all levels of government¹⁴.
- In the US, the Biden administration is allocating more than \$1 trillion to federal government technology modernization and cybersecurity¹⁵.

As a result, digital transformation will be a key pillar for governments worldwide that want to be easy to deal with for citizens and businesses, use taxpayer money wisely, make for a great place to work for civil servants, and be fit for the digital age. In fact, in her State of the Union 2020 Address, by European Commission President von der Leyen said that *"...modern technology has allowed young people to learn remotely and millions to work from home. [It] enabled companies to sell their products, factories to keep running and government to deliver crucial public services from afar. We saw years' worth of digital innovation and transformation in the space of a few weeks."*¹⁶

Considerations

Government executives that want to unlock the power of digital and data to transform policymaking, service delivery, and operations must embrace the three pillars of open innovation:

- Deploy open, agile, reusable software platforms that enable the development and delivery of digital services and share data across silos efficiently, effectively, and quickly. Low code/no code, open-source tools will be important for many government executives that have to integrate new digital capabilities with a myriad of legacy platforms and incrementally migrate to new platforms. For example, in a 2020 IDC survey including 31 government executives across Europe, 45% of respondents stated that "open-source repositories" are the top priority to accelerate application delivery.
- Operate scalable, resilient, and energy efficient hybrid cloud infrastructure that helps automate the delivery and orchestration of those software capabilities by bringing together the rapid innovation enabled by public cloud services and control over data location, data interoperability, and service configuration and management enabled by private cloud. For instance, in the first half of 2021, the Argentinian Secretariat of Public Innovation and the National Office of Information Technologies (ONTI), carried out a consultation to promote

¹² https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

¹³ <https://penjana.treasury.gov.my/pdf/PENJANA-Booklet-En.pdf>

¹⁴ <https://gobiernodigital.mintic.gov.co/portal/Noticias/176256:En-encuentro-con-lideres-TI-Ministerio-TIC-ratifica-su-apuesta-por-la-transformacion-digital-del-Estado-colombiano>

¹⁵ <https://www.nextgov.com/cio-briefing/2021/04/biden-budget-requests-major-investments-federal-technology-and-cybersecurity/173262/>

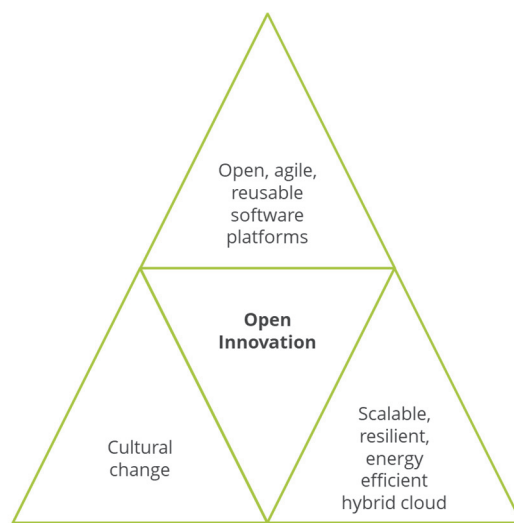
¹⁶ https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_20_1655

proposals, suggestions, and recommendations regarding the development of hybrid cloud to modernize the government IT infrastructure¹⁷.

- Drive cultural change built around fluid organizational structures that enable iterative innovation, visionary leadership that drives towards a common purpose, continuous learning that makes IT and business workers ready to leverage the potential of low code/no code software tools, and a mentality of trust and collaboration both within government and with technology partners. The UAE National Innovation Strategy aims to "*embed a culture of innovation across government entities. It aims to promote the UAE as a global innovation hub, making it a leader of innovation in government services worldwide, and driving innovation in government policies, processes and procedures to increase overall efficiency*"¹⁸.

FIGURE 2

The Three Pillars of Open Innovation in Government



Source: IDC 2021

Challenges

Governments have invested in information technology for decades. But there are still problems, particularly now that data and digital are germane to business transformation. In fact, the UK National Audit Office states that "*Despite 25 years of government strategies and countless attempts to deliver digital business change successfully, our reports show a consistent pattern of underperformance*"¹⁹. Challenges to be addressed include:

- Lack of competence and capability at the senior leadership level. Whether it is because there is only a small number of senior officials that understand all the business, technical, legal, and delivery risks of digital transformation, public sector digital transformation is often ridden by overly ambitious expectations, or lack of vision, or willingness to accept mistakes and learn from them.

¹⁷ <https://www.argentina.gob.ar/noticias/finalizo-la-consulta-publica-nube-hibrida-en-gobierno>

¹⁸ <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/national-innovation-strategy>

¹⁹ <https://www.nao.org.uk/report/the-challenges-in-implementing-digital-change/>

- Skills gaps in the civil service, as governments worldwide face the tough competition of higher private sector salaries, when developing and retaining talent. For instance, in a 2020 IDC survey including 31 government executives across Europe, 89% of respondents said it will be moderately to highly difficult to acquire required skills such as cloud, automation, AI, and data management.
- Resistance to change among civil servants that are concerned they will be made redundant by technology and prefer to protect their turf, rather than embrace new skills and opportunities to innovate. For instance, in an IDC survey conducted in June 2021 of 39 government executives around Europe, 30% said that "resistance to change" is a top barrier for software innovation.
- Bureaucratic budgetary and procurement processes set up to guarantee transparency and accountability, which very often slow down decision making, prevent co-innovation with global technology partners and SMEs and make it difficult to consume data and digital capabilities as a service.
- Compliance concerns from data protection to digital sovereignty²⁰ to cybersecurity requirements, such as those set by the EU NIS Directive²¹ for critical digital and operation technologies. Governments around the globe find difficult to balance the imperative of security and with the need to speed up innovation.
- Lack of interoperability, which despite national investments and international collaborative programs like ISA2²², still inhibits secure and seamless integration of data and services across departments, levels of government, countries and between the public sector and private sector partners.
- Legacy systems that constrain the ability to allocate budget to innovation. For instance, according to the UK Public Accounts Committee *"HMRC ... spends too much of its IT budget on maintaining its legacy estate and not enough on investment for the future and modernization."*²³

Takeaways

COVID-19 accelerated disruption, magnified uncertainty, and spurred volatility. But, at the same time, it gave governments a prominent role to reshape the next normal of public services and societies.

Government digital transformation will be a key building block of this next normal. Governments that manage to unlock the value of digital and data will deliver improved outcomes, such as seamless tax compliance, effective welfare for vulnerable people, safer communities, net-zero economies, sustainable and resilient physical infrastructure, and inclusive growth.

To deliver these strategic outcomes, governments must address challenges, such as a lack of leadership, the skills gap, resistance to change, and legacy systems. Government executives that

²⁰ [https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI\(2020\)651992](https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2020)651992)

²¹ <https://digital-strategy.ec.europa.eu/en/policies/nis-directive>

²² https://ec.europa.eu/isa2/home_en

²³ <https://publications.parliament.uk/pa/cm5801/cmselect/cmpubacc/690/69008.htm>

want to tackle those challenges and realize the value of digital transformation must improve policymaking, service delivery and operations must embrace the three pillars of open innovation:

- Deploy open, agile, reusable software platforms that enable the development and delivery of digital services and share data across silos in efficiently, effectively, and quickly.
- Operate scalable, resilient, and energy efficient hybrid cloud infrastructure that helps to automate the delivery and orchestration of those software capabilities.
- Drive cultural change built around fluid organizational structures, visionary leadership, continuous learning, and a mentality of trust and collaboration.

Government Digital Transformation in EMEA

European Union institutions are pumping resources into the economy. €750 billion come from the Next Generation EU plan. €1.1 trillion will come from the EU 2021-2027 Multi-Year Framework. Of the Next Generation EU plan, 20% is earmarked for digital investments and the public sector is expected to be one of the main beneficiaries to upgrade connectivity infrastructure, nurture skills for the digital age, and transform public services through data and digital. For instance:

- The Italian Recovery and Resilience Plan²⁴ aims to accelerate the digitalization of the public administration by investing in cloud computing, interoperability among datasets controlled by different administrations, and simplification of digital service enablers such as citizen identity, notifications, and payments.
- The French Recovery and Resilience Plan²⁵ aims to invest in the modernization of identity management to make it easy and secure for citizens and businesses to use digital public services, upgrade the IT infrastructure of the public sector, and implement automation and artificial intelligence to empower civil servants to work more efficiently.
- The German Recovery and Resilience Plan²⁶ aims to deploy a new identity management system that is aligned with the EC plans for a European Digital Identity²⁷, accelerate the implementation of the Online Service Act of 2017²⁸ and modernize government registries to enable secure data sharing and analysis.

Governments in the Middle East have leapfrogged many of the stages of the journey to egovernment that Europe started twenty years ago. Countries like the UAE in artificial

²⁴ <https://www.governo.it/sites/governo.it/files/PNRR.pdf>

²⁵ https://www.economie.gouv.fr/files/files/directions_services/plan-de-relance/PNRR%20Francais.pdf

²⁶ <https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Europa/DARP/deutscher-aufbau-und-resilienzplan.html>

²⁷ https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2663

²⁸ https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/moderne-verwaltung/ozg-umsetzungskonzept.pdf%3F__blob%3DpublicationFile%26v%3D3#:~:text=Das%20im%20Sommer%202017%20in,einem%20Portalverbund%20verkn%C3%BCp%2D%20fen%20m%C3%BCssen.

intelligence²⁹, Bahrain in cloud computing³⁰, and Saudi Arabia more broadly in terms of increasing government productivity through digital³¹, are pushing ambitious innovation agendas that aim to accelerate the transition from oil-centric to innovation-driven economies.

The common elements of those plans are very much aligned with the five digital transformation priorities globally. In fact:

- Digitizing government services must go beyond simply making something available online. It means building on the past year's achievements to put citizens at the center. The results of a survey conducted by IDC in 2021 show that 62% of European government executives think using technology to create better engagement with citizens is the top "board" priority. For instance, the UK government has been at the forefront of digital service transformation thanks to the best practices developed and disseminated by the Government Digital Service (GDS), but as Tom Reid, the Chief Executive of GDS said, "There are really good digital services that have been built across government by digital specialist teams in agencies and departments. On the flipside, I think there's a risk that we've declared victory a bit too early. For every amazing digital service that we talk about, like not having a tax disk or renewing your passport [digitally], there are probably 50 or 100 that still require the user to have a printer, visit a post box or use a fax machine. We've identified 4,000 services in central government alone that require downloading a PDF. There's a lot still to do."³²
- The need to break data silos is paramount. According to an IDC survey conducted in 2021 among 142 European governments, 30% of interviewed organizations expect to share more data and insights with the ecosystem in the future³³. The government of Estonia has been at the forefront of integrating data to better serve citizens and implement evidence-based policymaking with its X-Road architecture³⁴, but many other countries are still grappling with the technical and governance silos of government registries. So, for instance, the Italian Recovery and Resilience Plan aims to build a national platform that can deliver and orchestrate APIs to exchange data easily and securely across departments to fully implement the "once-only" principle, a key pillar of the European Commission Digital plans³⁵. Data is a strategic asset not only for national government departments, but for cities too. For instance, the City of Helsinki Digitalization Program states that *"Helsinki wants to become more customer oriented and agile in its operations and to utilize data to create better services and make better decisions."*³⁶

²⁹ <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/federal-governments-strategies-and-plans/uae-strategy-for-artificial-intelligence>

³⁰

https://www.bahrain.bh/wps/portal/!ut/p/a0/hY5BDolwEAC_0gvnrQQJVxIMhsRwMEHshTR1U1dKF2whPl98gcfJzGFAQQ_K642sjsReux-rfDi3Mj-kRdq0p2Mpy6K7VHWVSdIlcEUPzb-ohzu9lkWVoAz7iJ8IPVreZn5H7Qb0iXzyhllcVjKjcOTHkEiDLCYMQdvdGMfrQxie5jWSt4l8RdovNwwwj_XtC28KRlw!/

³¹ <https://www.vision2030.gov.sa/v2030/vrps/ntp/>

³² <https://www.globalgovernmentforum.com/uks-digital-leaders-set-out-goals-on-data-and-skills/>

³³ <https://www.idc.com/getdoc.jsp?containerId=EUR148000421>

³⁴ <https://x-road.global/>

³⁵ <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Once+Only+Principle>

³⁶ <https://digi.hel.fi/english/>

- 32% of European government executives that IDC interviewed at the beginning of 2021 think that the automation of repetitive tasks and workflows will become ubiquitous and 24% think that remote and hybrid working models will be widely accepted practices even after the COVID-19 crisis is over. European governments are reimagining how civil servants work, collaborate, and increase productivity by embedding intelligence into critical business processes, such as verifying SMEs' eligibility for grants, registering citizens for a new welfare program, and investigating fraud. Technology plays a big role, but skills and culture will be paramount to achieve the intended objectives.
- The transition to the cloud is not complete among European governments. Although 34% of European government executives think the shift to cloud-managed and cloud-based services will endure after the pandemic, many of them are only at the first stage of transitioning core business capabilities by re-hosting legacy systems, while there is ample opportunity to fully rearchitect solutions to make them cloud native and take full advantage of the scalability, agility, and innovation of cloud.
- Digital sovereignty is paramount in Europe. Data residency, data protection, and the resilience of the European digital supply chain are top priorities for senior government officials, as clearly indicated by the broad support for the GAIA-X program that aims to develop a federated data infrastructure for Europe that makes secure data exchange a pillar of digital innovation in the public sector and beyond.

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Massimiliano (Max) Claps' research empowers technology suppliers and public sector professionals to embrace disruptive technologies such as artificial intelligence, edge computing, and cloud, to realize the benefits of strategic initiatives such as smart cities and citizen-centric government services. He is also IDC Europe's lead analyst for passenger transportation, advising stakeholders across the transportation ecosystem on topics like mobility as a service and intelligent traffic management. Max has almost 20 years of public sector experience.

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