1 Supporting public service delivery with efficient ICT public procurement

This chapter presents the importance and relevance of ICT procurement in providing effective public services to citizens and businesses and in implementing a national digital government strategy. It also highlights the need for new approaches in ICT procurement and demonstrates good examples from OECD countries on ICT procurement reforms and the use of innovative, flexible approaches for ICT procurement.

1.1. The role of ICT procurement in developing a modern, digital public sector

1.1.1. Economic power of public procurement

Public procurement is a crucial pillar of service delivery for governments, affecting citizens' lives in areas ranging from health services to energy efficiency. The sheer size of public procurement, representing approximately 12% of gross domestic product (GDP) in OECD countries, makes it a key economic activity, ranging from 4.9% in Mexico to 19.5% in the Netherlands. In the **Slovak Republic**, in 2017, this was 13.8%. (OECD, 2019[1]).

The economic weight of public procurement is more pronounced at times of economic recession: therefore, in three-quarters of OECD countries the relative size of public procurement spending in terms of GDP reached a peak in 2009, when economic recession struck most of them. Since then, the relative size of public procurement spending in OECD countries had been slowly decreasing, but remained rather constant over the last few years. However, a new increase in the size of public spending throughout public procurement can be forecast for the next few years as the recently adopted recovery packages to strengthen economies and to mitigate socio-economic damage from the COVID-19 crisis foresee massive public spending and public investments. A considerable part of recovery spending will be carried out through public procurement.

The large volume of public funds associated with procurement procedures creates risks of inefficiency, mismanagement and lack of integrity, but also enables the use of this important policy mechanism for the achievement of broader economic and societal impacts. Well-governed public procurement, on the other hand, plays a major role in fostering public sector efficiency, establishing citizens' trust and in achieving policy goals such as environmental protection, innovation, job creation and the development of small and medium enterprises.

1.1.2. ICT public procurement as a foundation for public sector digitalisation

Public procurement also has a decisive role in public sector modernisation and digitalisation. Specifically, procurement of Information and Communication Technologies (ICT) plays a significant role in this regard. Principle 11 of the **OECD Recommendation of the Council on Digital Government Strategies** (OECD, 2014[2]) underlines the importance of creating an ICT procurement environment and strategy that supports the digital transformation of the public sector.

The Recommendation, that was developed to support governments to drive the digital transformation of the public sector, identifies the existence of a proper ICT procurement framework as one of the fundamental requirements for sound digital government. This framework should include:

- ICT procurement rules that are compatible with current trends in technology and modern methods of ICT deployment[1]
- fostering the development of shared ICT services and resources in a context of distributed responsibilities
- capabilities reinforcement to improve ICT public procurement (Box 1.1.)

> **Box 1.1. OECD Recommendation on Digital Government Strategies**
>
> **The Council**
>
> **IV. RECOMMENDS** that, in implementing the digital government strategies, governments should:
>
> 11. Procure digital technologies based on assessment of existing assets including digital skills, job profiles, technologies, contracts, inter-agency agreements to increase efficiency, support innovation, and best sustain objectives stated in the overall public sector modernisation agenda. Procurement and contracting rules should be updated, as appropriate, to make them compatible with modern ways of developing and deploying digital technology.
>
> Source: OECD (2014) Recommendation of the Council on Digital Government Strategies;
> https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406.

Public procurement, indeed, can play an important role in public service digitalisation, especially if it is used strategically and supported by sound governance frameworks. The **OECD Recommendation on Public Procurement,** adopted by the OECD Council in 2015, which builds on good practices from OECD member countries, provides a comprehensive framework for countries to design their public procurement system in a way that fully supports their national digitalisation efforts (OECD, 2015[3]).

The Recommendation promotes the strategic use of public procurement and provides a framework for the proper allocation of public resources by using public procurement as a governance tool and ensuring greater efficiency of the procurement processes. It contains 12 integrated principles that address the entire procurement cycle and promote a whole-of-government approach while integrating public procurement with other elements of strategic governance such as budgeting, financial management and additional forms of services delivery. (Figure 1.1.)

Figure 1.1. OECD Recommendation on Public Procurement

Source: (OECD, 2015[3])

The Recommendation is the overarching OECD guiding framework that promotes the strategic and holistic use of public procurement. It is a reference for modernising procurement systems and can be applied across all levels of government and state-owned enterprises.

The Recommendation supports a comprehensive and integrated approach to the procurement cycle and reflects the growing interest from governments in transforming public procurement into a strategic policy lever. By helping governments better meet their policy objectives, well governed public procurement contributes directly to greater public trust, enhanced well-being and more prosperous and inclusive societies.

Beyond the need for investing in governance and technology, the Recommendation also highlights the importance of continuous investment in people through capacity building and professionalisation. Dealing with a changing world and addressing new challenges, such as the digital transition, requires effective and efficient staff that possess analytical, regulatory, delivery, co-ordination, and management capacities. This includes having the capacity to develop and implement strategies, including selecting and making investments to achieve policy objectives; ensuring stakeholder engagement; measuring the impact on the basis of reliable data; and achieving results that are compliant with international obligations and for EU members, such as the Slovak Republic, with the policy and regulation on public procurement of the European Union.

1.1.3. Impact of COVID-19 on public sector digitalisation and public procurement

The COVID-19 pandemic demonstrated the importance of well-governed public procurement systems for an effective and swift reply to crisis (OECD, 2020[4]). It has also shown how important digital assets have become to our economies and how networks and connectivity as well as basic and advanced digital skills sustain our economies and societies by allowing work to continue, tracking the spread of the virus and accelerating the search for medicines and vaccines. (OECD, 2020[5])

Countries around the world have put in place specific measures to mitigate the impact of the pandemic. Lock-down measures brought the physical delivery of many public services to a standstill and forced governments to switch to teleworking in several sectors and provide public services such as education or even health services remotely. As a result, governments faced several challenges across the public sector, such as high demand for laptops and digital devices for civil servants, teachers and other professions, or inter-operability issues due to inconsistent rules on video conferencing software for different public organisations that consequently could not talk to one another, to name a few. These challenges required immediate solutions and public procurement played a role in filling the gaps.

In the **Slovak Republic**, public authorities also actively used digital technologies to help the society and economy to cope with the COVID-19 restrictions. The situation required a cooperation with non-profit organisations, suppliers of existing solutions and internal capacities to develop the solutions as soon as possible to be able to deal with COVID-19 situation quickly. The Ministry of Education for example in 2020 launched a dedicated portal[2] to help teachers and schools organise remote classes and online assessments. The portal, co-financed from EU funds, is developed by the high school students interested in IT field. The Slovak Digital Coalition[3] mobilised organisations and companies who offered services for teamwork or video conferencing to schools temporarily for free. Similar to other OECD countries, the Government of the Slovak Republic set up a single-access portal with information about coronavirus and related restrictions targeting various groups from citizens, sick people, travellers, businesses to employers or health workers[4]. The portal was developed by the national company Slovak IT, established in 2020, and enabled to develop digital services quickly within internal resources. Ministry of Health upgraded current e-health applications to offer instructions, relevant information, notifications and additional services related to COVID-19. The Ministry of Economy organised webinars and provided online support to enterprises and self-employed people on how to use EU cohesion funds and national support programmes to cope with

the restrictions. The innovator community organised a 48-hour hackathon[5] to develop new solutions for healthcare providers, cities, the economy and the communities.

1.1.4. Digital recovery after COVID-19

Digitalisation is likely to be one of the prime drivers of economic recovery as is already announced in recovery plans by several countries or for example by the European Union (EU). The EU's recovery plan, the Recovery and Resilience Facility (RRF)[6], framed the support measures for recovery along the twin transition towards climate neutral and resilient digital transformation. RRF aims to mitigate the economic and social impact of the coronavirus pandemic and make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions. In order to get funds from RRF, EU Member States have to prepare recovery and resilience plans that set out a coherent package of reforms and public investment projects.

The EU Member States are expected to design these plans around the green and digital transitions. Each recovery and resilience plan will have to include a minimum of 20% of expenditure to underpin the digital transition. This is a good opportunity for the Slovak Republic to design a national recovery and resilience plan with prioritising the digital transformation of its public administration and building upon all previous digitalisation efforts already implemented in the country. In the Slovak national recovery and resilience plan almost every investment section includes digitalisation reforms. In particular, these reforms are planned in healthcare (telemedicine), education (digital school equipment, internet access and distance learning equipment), transportation (digital dispatching), justice (electronic litigation), police (interconnection of IT systems), and science sectors (digitalisation of industry and services). Moreover, there is an investment section called "Mobile state, fast internet, cyber security" for almost EUR 500 million (8% of the whole plan) solely focusing on ICT. Its main goal is to achieve less time-consuming and more satisfactory communication between citizens and the state. Another objective is to achieve a higher number of users of digital services, aided by an increased broadband coverage of the Slovak Republic with a connection speed of at least 100 MBit/s.[7]

In this framework, the deployment of 5G and very high capacity networks, digital skills, the digitalisation of companies and the public administration are crucial for a robust recovery. The implementation of any recovery funds, however, requires a better use of public procurement to enable innovative solutions to enter the public sector, with a specific focus on innovative digital solutions developed by SMEs and start-ups.

1.2. Challenges of ICT procurement in OECD countries

ICT procurement that successfully supports public sector modernisation and digital transformation is becoming increasingly complex, given the fast-changing nature of technology, the growing expectations of end-users and the emerging challenges related to data ownership and digital security.

Emerging technologies introduce new uncertainties (e.g. dominant standards) and new issues that need to be managed by governments (e.g. exit strategies, transitioning from legacy systems). On the supply side, improved Internet access and increased speed mean that governments have access to cheaper and modular, usually cloud-based, services. (OECD, 2018[6])

In most OECD countries, public procurement of ICT solutions is facing several challenges[8].

There is tendency or trend towards selecting and contracting larger multinational companies that results in reduced opportunities for SMEs. Large companies that offer standardised services are the major providers to public administrations at all levels. The continued use of a relatively small number of generally larger suppliers means smaller suppliers are "locked out" of doing business with the public sector. Procurement procedures and requirements are often too complex, preventing the participation of new players, and in

particular of start-ups and SMEs, in procurement processes. This increases the risk that the potential for smaller suppliers and start-ups to showcase, demonstrate and deliver innovation in how they meet citizens' needs will be lost.

Not only are SMEs 'locked-out', but the high level of dependency on a single service provider for unduly long periods is also a common challenge. The long-held incumbent relationships and contracts with big technology companies means not only the over-dependence on their services but also on their advice.

Many public organisations find themselves unintentionally "locked-in" to particular ICT solutions or ICT systems because the knowledge about how the system works is only available to the provider, and when they need to buy new components or licenses, only a specific supplier can deliver. The vendor lock-in is usually caused by the lack of knowledge on how to draft tender specifications, which are sufficiently flexible, and consequently allowing for future vendor (supplier) turnover. (Box 1.2)

Box 1.2. Vendor lock-in

Vendor lock-in is a phenomenon that takes place when a public authority is unduly dependent on a single supplier, vendor or developer beyond the timeframe of the initial procurement contract, damaging competition for future procurement. This happens in cases such as:

- Long contracts that encourage up-front capital investment to build bespoke tools and that depreciate over a number of years;
- One supplier entrenched over a number of years to provide mission critical systems, using specific brand names of products in procurement documents, and requesting backward compatibility with proprietary systems of which only a few suppliers have knowledge. This implies that the costs to the public authority of migrating to products or systems of another supplier are prohibitively high, even if the alternative option has significant advantages with respect to the existing one.

By limiting the procurement choices of public authorities to certain vendors and the suppliers of their products, lock-in can reduce the ability of other market participants to compete in contracts for public procurement. This in turn can lead to lower levels of innovation, and higher prices. Lock-in, as well as increasing costs, reduces the available supplier base, excludes new and innovative companies from providing alternative solutions and causes the market to stagnate.

Source: Final Report: Study on best practices for ICT procurement based on standards in order to promote efficiency and reduce lock-in, a study prepared for the European Commission DG Communications Networks, Content & Technology by PWC; 2016

The existence of lock-in and excessive influence of legacy systems can lead public procurers to engage in poor procurement practices that restrict the ability of suppliers to participate in calls for tender. When a public authority is overly dependent on a single vendor for its ICT systems there will be a lack of competition for the provision of these systems and value for money might not be achieved in the long term. Symptoms of possible lock-in include excessive use of specific brand names of products in procurement documents, and requests for backward compatibility with proprietary systems of which only a few suppliers have knowledge.

Furthermore, dependence on a single supplier for an ICT system and its future evolution can lead to problems of business continuity as there is a risk that a supplier can decide to stop supporting all or certain features of the system. It can also lead to missed opportunities for more innovation and efficiency, particularly when the supplier is not capable of keeping the system future-proof. According to a 2016 study[9] by the European Commission, 42% of the 244 monitored organisations admitted to having experienced ICT lock-in. Lock-in negatively affects not only the public buyers, but also the ICT sector[10]. The so-called

"legacy IT" problem, that several OECD governments face, stems from the fact that many of these countries began to digitise their operations several decades ago and these systems are now "aging in place".

Another commonly cited problem with ICT procurement is the tendency to request very specific solutions in order to ensure that what is requested will do exactly what the contracting authority is expected to do. However, over-specifying details hides several risks and disadvantages. Firstly, customised solutions are generally more expensive than standard 'off-the-shelf' options. In addition, they are more difficult to be reused. Subsequently, suppliers who develop and manage custom-made systems can retain all the information about the system and make it very difficult to migrate to another supplier or to maintain or upgrade the system in the future. Excessive customisations might also lead to supplier dependence. Contracting authorities should define the problem to be solved (the outcome of the purchase) rather than designing the solution.

Another common challenge is the risk averse behaviour of public buyers: procurement techniques that favour innovation (like early market engagement, users' involvement, functional requirements, competitive procedures with negotiation or design contests) are rarely used, while the prevalence of traditional procurement criteria and methods inhibit the participation of more innovative and smaller companies. Innovative, agile approaches are usually considered riskier than well-known, traditional approaches. Organisational culture has a bias towards traditional measures and is therefore not supportive of accepting a certain level of risk associated (or perceived to be associated) with innovative and agile methods. Such market inefficiencies particularly hamper the participation of start-ups based in rural areas, which could play an enhanced role, for instance in deploying e-government solutions and e-health services to rural and more remote areas.

There is also a lack of internal expertise within the public administration, and as a result public organisations heavily rely on using external consultants (and private suppliers) to prepare requirements, specifications, formulate calls for tender, and subsequently implement the ICT systems in question. This also means that several governmental organisations are not in a position to enter into positive and value-creation collaborations with the private ICT market. Furthermore, many authorities are also incapable of managing their ICT systems effectively and responsibly, and they do not have the necessary control over their ICT projects. (Ministry of Finance, Denmark, 2017[7])

For large technology projects, it is common for governments to contract a "systems integrator" to coordinate all the work between various subcontractors. Too often, this approach creates the wrong incentives for both the systems integrator and the government and leads to bad results. The systems integrator has an incentive to keep the contract going for as long as possible by producing either custom-built proprietary software or highly-customised commercial off the shelf software and charging for all the many changes required over the 5-8 year build-out period. The agency is incentivised to let the vendor handle it. By outsourcing the key technical decision-making to the systems integrator, the public organisation becomes dependent on the vendor and loses the opportunity of course correction when technical or cost problems arise. Outsourcing risk to a single vendor in reality rarely works. If a vendor fails to deliver, the government has two problems: a system still needs to be developed that meets people's needs (only now with less time, less money, and more scrutiny) *and* there may be lengthy and expensive legal action. (Mark Headd, 2017[8])

Other challenges involved in ICT procurement include:

- the fact that little attention is given to understanding of what citizens (end-users) need from digital and technology products or services, and focusing on overly complex technical specifications rather than outcomes (OECD, 2020[9]);
- the use of brand names, trademarks, patents and proprietary technical specifications when purchasing ICT products restricts the ability to participate in tenders, because only certain vendors or suppliers will be in a position to provide the specific product. It also makes the public authority

too dependent on a single vendor for its ICT systems, potentially reducing competition for the provision of these systems and its likelihood to be further used;

- difficulties in price comparison (e.g. time-billed pricing, target pricing) and benchmarking;
- limited or no interoperability between public sector ICT systems due to the lack of proper co-ordination in the planning of the different systems at the individual public agencies;
- documents that have to be archived for a long period are not stored in a standard format, limited flexibility in arrangements ("one size fits all") and
- privacy issues and data ownership.

Chapter 2 presents the challenges that ICT procurement faces in the Slovak Republic, and most of these challenges are largely similar to the above presented challenges in other OECD countries.

1.3. The need for new approaches in ICT procurement

1.3.1. Overcoming the challenges of ICT procurement by the strategic use of public procurement

Procurement needs a new approach to account for the challenges and potential of digitalisation to create value and new service to citizens. Technological change, such as apps, cloud computing, open source software, social media, internet of things and artificial intelligence, is also changing the nature of ICT projects and how they are delivered. They are becoming less monolithic and more integrated. Using public procurement as a strategic governance tool alongside efficient governance frameworks, whole-of-government co-ordination and strengthened leadership are in the frontline for more efficient ICT procurement that can successfully deliver on the digital agenda.

Innovative procurement strategies and flexible purchasing approaches, increased collaboration within and outside of government (with suppliers and industry groups) and robust contract management practices can also help the public sector to find the best digital solution (which either already exists in the market or still needs to be developed). For example, public buyers could engage with a wider range of market players, including innovative start-ups, involve other stakeholders (including the end users) as early as possible in the procurement process and then iteratively throughout the delivery of the contract.

Public buyers could also experiment with new purchasing approaches and methods that allow them to partner with the private sector in developing innovative solutions and services, for example by using challenge-based prototyping approaches, whether that is for commercial or pre-commercial (innovation) procurement.

Existing international standards and legal frameworks on public procurement already provide several opportunities for using public procurement in a more strategic way, and for applying more innovative and agile approaches in public procurement practices (such as engaging with the market strategically throughout the whole procurement cycle or developing sustainable functional specifications). However, limited awareness of these opportunities and the lack of practical methodologies for public buyers on how to apply agile methods in ICT procurements (or in procurements in general) still create an obstacle for achieving better outcomes.

For example, the **OECD Recommendation on Public Procurement** (OECD, 2015[3]) emphasises the strategic importance of the preparatory phase of the public procurement procedure and the relevance of understanding the needs of customers and end users. It suggests the involvement of interested stakeholders in the entire public procurement cycle, including the early, preparatory stages of the procurement process. In terms of stakeholder participation, the Recommendation highlights the need for transparent and regular dialogues with suppliers and business associations not only for individual tender

processes, but also when formulating changes to the public procurement system. The business sector should be given the opportunity to participate in public consultation for example about a draft national public procurement strategy or draft legislation, and they should be also informed of the results of the consultation, with explanation on the options chosen. The Recommendation also emphasises the importance of market engagement to develop realistic and effective procurement strategies and tender specifications and provide suppliers, potential bidders with a better understanding of the public buyer's needs.

Engaging suppliers at different stages of the procurement process also helps reduce the information asymmetry between the market and the procuring entity. Suppliers often have more information than the procuring entity regarding their own costs, prices, market trends, products or services, and their substitutes. Early exchanges with suppliers may also maximise participation in the tender procedure, allowing potential bidders the time to prepare their offers. The comprehensive needs assessment, early market engagement and supplier management during the contract execution are also at the heart of flexible, innovative and agile procurement approaches for ICT purchasing. (Box 1.3)

Box 1.3. OECD Recommendation on Public Procurement

The principle on participation

The Council

VI. Recommends that Adherents foster transparent and effective stakeholder participation.

To this end, Adherents should

ii) Engage in transparent and regular dialogues with suppliers and business associations to present public procurement objectives and to assure a correct understanding of markets. Effective communication should be conducted to provide potential vendors with a better understanding of the country's needs, and government buyers with information to develop more realistic and effective tender specifications by better understanding market capabilities. Such interactions should be subject to due fairness, transparency and integrity safeguards, which vary depending on whether an active procurement process is ongoing. Such interactions should also be adapted to ensure that foreign companies participating in tenders receive transparent and effective information.

The principle on efficiency

The Council

VII. Recommends that Adherents develop processes to drive efficiency throughout the public procurement cycle in satisfying the needs of the government and its citizens.

To this end, Adherents should:

ii) Implement sound technical processes to satisfy customer needs efficiently. Adherents should take steps to ensure that procurement outcomes meet the needs of customers, for instance by developing appropriate technical specifications, identifying appropriate award criteria, ensuring adequate technical expertise among proposal evaluators, and ensuring that adequate resources and expertise are available for contract management following the award of a contract.

Source: (OECD, 2015[3])

1.3.2. The role of open standards in ICT procurement

ICT standards play an essential role in achieving inter-operability of new technologies and can bring significant benefits to both industry and consumers. They help ICT markets remain open and allow consumers the widest choice of products. ICT standards can play an important role in preventing reliance on single vendors for products and system components that implement desired technologies by identifying the key element of the technology required and ensuring that its use is not limited to a specific product or service.

Procuring a product from one supplier that is based on standard technology helps to ensure that future purchases are not limited to the original supplier, as others are also able to implement the technology. In the European Union, the **European Commission** identified ICT standards as a key element in creating a level playing field for all technology providers and therefore encourages public authorities to make better use of the full range of relevant standards when procuring ICT products and services (European Commission, 2013[10]). Procuring ICT solutions based on standards that are available for any user increases the potential for inter-operability with other applications that use the same standards and thus achieves 'vendor independence'. Standards determine the key element of a technology and create a level playing field for all ICT suppliers. More suppliers are able to submit offers for invitations to tender for standards-based systems, leading to more competition. The rules on European standardisation[11] allow the European Commission to identify ICT technical specifications – that are not national, European or international standards – required to be eligible for referencing in public procurement. This allows public authorities to make use of the full range of specifications when buying IT hardware, software and services, allowing for more competition in the field and reducing the risk of lock-in to proprietary systems.

Open standards are one of the most powerful tools to open up government. They make it possible for the smallest supplier to compete with the largest. They make data open for any citizen to audit. They unlock the transformative power of open source software. In targeting the vendor lock-in issue in the **United Kingdom**, the Cabinet Office has adopted its first two open data standards under its plan to shift government departments away from proprietary systems. The two standards endorsed by the government's recently established 'Open Standards Board' aim to help organisations be able to reuse public sector information down the track with the introduction of consistent identifiers for things like schools, hospitals or companies in government datasets to ensure meanings stay consistent over time. The new standards are also meant to prevent corruption of text between systems. The UK Government's push for open standards is meant to cut technology costs and level the playing field between open source and proprietary software vendors. One of the primary goals of the Cabinet Office was to use these new standards to help agencies move away from long-term deals with a small number of suppliers. (UK Cabinet Office, 2022[11]).

1.3.3. Innovative ICT procurement as promoted by the European Commission

The public procurement policy framework of the European Union[12] and especially the 2014 Public Procurement Directives (European Commission, 2014[12]) also promotes the strategic use of public procurement and offers flexible solutions for ICT procurement to EU Member States (such as market consultation, pre-commercial-procurement, competitive dialogue, innovation partnership just to name a few). As the Slovak Republic is a member of the European Union, and has to align its public procurement regulatory framework and practices with the EU public procurement legal and policy framework, the flexible options that the EU framework can offer is of high relevance for this Report.

As public procurers can drive innovation from the demand side, the European Commission encourages the procurement of innovative ICT solutions that can modernise public services faster while creating opportunities for innovative companies to find first customers[13] and gain leadership in new markets[14]. In some cases, public sector challenges can be addressed by innovative solutions that are nearly or already in small quantities on the market and do not need new research and development (R&D). This is when

Public Procurement of Innovative Solutions (PPI) can be used effectively. In other cases, the required improvements are so technologically demanding that there are no near-to-the-market solutions yet and new R&D is needed. Pre-Commercial-Procurement (PCP) can then be used to compare the pros and cons of alternative competing approaches and to de-risk the most promising innovations step-by-step via solution design, prototyping, development and first product testing. PPI and PCP are methods that allow public sector organisations to partner with the private sector in developing innovative solutions and services.

The European Commission has reinforced the policy framework for PCP and PPI[15] as well as offering financial support to EU member states for innovation procurement through the EU research and innovation programmes, such as the Horizon 2020[16]. Currently, however, PCP and PPI are underused in Europe[17], although good practices exist. There are even projects where public buyers from different countries around Europe pooled resources to carry out PCP or PPI procurements together, or coordination and networking projects that prepared the ground for new PCP or PPI procurements in the future.[18] There are examples in the United Kingdom for using challenge-based prototyping approaches, whether that is for commercial or pre-commercial (innovation) procurement include the Government Digital Service (GDS) GovTech Catalyst[19] and CivTech Scotland[20], both of which use the Small Business Research Initiative (SBRI)[21].

The European Commission is also supporting EU Member States to co-operate with each other and to not only share experience on national digitalisation efforts, but share and re-use already available ICT solutions across borders and sectors as public services can be implemented faster and more efficiently and avoid pitfalls by learning from the experiences of other Member States. The EU-wide share and reuse of inter-operable solutions for public administrations could also reduce costs and risks, foster innovation and businesses' use of digital technologies, and ensure digital sovereignty. In addition, using the same solutions and adapting good practices to one's needs often indirectly results in services which are more inter-operable and more open. As in most countries, public procurement processes are characterised by practices that result in public administrations being locked-in both with regard to suppliers and the solutions procured, reducing or even excluding the potential for sharing and re-using the procured solutions. To overcome these obstacles, the European Commission put forward a variety of good practices aimed at promoting the re-use of procured solutions. (Box 1.4.)

Box 1.4. European Union: *Sharing and Reuse Framework for IT solutions*

The **Sharing and Reuse Framework for IT solutions** addresses EU, national, regional and local public administrations that aim at reducing costs, increasing their efficiency and fostering interoperability by reusing, sharing or jointly developing IT solutions that meet common requirements. The framework should be taken into account by decision makers, legal professionals, IT architects, developers and communication experts when:

1. Sharing a tool once it has been developed or sharing the provision of a service
2. Reusing existing tools or using an existing services; and
3. Collaborating in the development of a tool or service.

The framework puts forward 10 key recommendations that public administrations are encouraged to follow in order to promote the sharing and reuse of IT solutions in the public sector.

Central governments can support this process by creating a climate of innovation in their administrations, encouraging staff to take an active role in the process and promoting the use of information and communication technologies. To facilitate this effort, the Sharing and Reuse Framework also includes 19 supporting measures which specifically target central organisations.

Based on the framework, "**sharing of solutions**" refers to making solutions available to others, or developing common solutions. "**Re-use**"' means that public administrations confronted with a specific problem seek to benefit from the work of others by looking at what is available, assessing its usefulness or relevance to the problem at hand, and deciding to use solutions that have proven their value elsewhere. In some cases, the solutions are reused once they have been adapted to specific requirements or linguistic environments.

Source: Guidelines on procuring IT solutions; PwC EU Services, 2015 https://joinup.ec.europa.eu/sites/default/files/document/2015-03/guideline_on_procuring_it_solutions_-_v1_00.pdf

1.3.4. Initiatives in OECD countries to reform ICT procurement

OECD governments are implementing initiatives to revise and update the way of organising their ICT purchases in order to support better the national digital transformation agenda. For example, in **Australia**, an ICT Procurement Taskforce was set up in October 2016 in order to identify existing procurement barriers, look for opportunities to streamline ICT procurement and find ways to make it easier for start-ups and SMEs to compete for government ICT contracts.[22] As a result, the Government introduced a new whole-of-government ICT procurement framework that fits better for the digital age (Box 1.5).

Box 1.5. Australia: simple and fast public services: new policy framework for ICT procurement

In October 2016, the ICT Procurement Taskforce was established as part of the Australian Government's Policy for Better and More Accessible Digital Services. The taskforce was given two clear objectives: 1. make it easier and less expensive for businesses to contract with the Australian Government, and 2. deliver better government services at a lower cost. The taskforce consulted widely across industry and government agencies and released its final report in August 2017.

The taskforce has concluded that there are three significant impediments to improving government ICT procurement across government:

1. Lack of centralised policies, coordination, reporting, oversight and accountability arising from more than 20 years of devolved agency decision-making.
2. Limited capability and the risk adverse nature of the Australian Public Service with a focus on compliance, a fear of failure, poor collaboration and industry engagement.
3. Practices that do not reflect contemporary procurement best practice or support innovative technology choices, with existing systems firmly rooted in the bespoke and waterfall models of the past, and not the agile, consumer technology models of the present.

The Government accepted the 10 recommendations of the ICT Procurement Taskforce and developed a new Digital Sourcing Framework for ICT procurement, a set of principles, policies, tools (such as model contracts templates and the Digital Marketplace) and guidance.

The framework covers many areas falling under the digital umbrella, ranging from policy, data and design, to build and maintenance, and digital marketing. Agencies remain responsible for buying their own digital products and services, but they have to follow the following principles when sourcing digital products and services:

- encourage competition
- be innovative and iterate often

- be structured in a way that lets small and medium enterprises (SMEs) compete fairly to provide components of large ICT projects
- be outcomes-focused
- use open standards and cloud first
- minimise cyber-security risks
- avoid duplication by not building platforms other agencies have already built

Source: https://www.dta.gov.au/help-and-advice/ict-procurement/digital-sourcing-framework-ict-procurement/ict-procurement-taskforce-report/government-response-taskforce-report; https://www.dta.gov.au/help-and-advice/ict-procurement/digital-sourcing-framework-ict-procurement

The **OECD Working Party of Senior Digital Government Officials** (known as E-Leaders) through one of its Thematic Groups and in partnership with the **UK Government Digital Service** had developed a collection of good practices to facilitate ICT procurement reform in OECD and non-OECD countries. As a result, the Working Group developed the **ICT Commissioning Playbook**[23] alongside the below principles:

- opening up data throughout the procurement and contracting lifecycle
- encouraging more modular and agile approaches to contracting
- procurement transparency to help tackle corruption and improve value for money
- stimulating and accessing a more diverse digital and technology supply base
- encouraging more flexible, digital, agile and transparent interactions focused on joint delivery
- sharing and reusing platforms and components, and better practices for delivering successful programmes.

The ICT Commissioning Playbook – in close alignment with the OECD Recommendation on Public Procurement – covers the complete public procurement lifecycle, and includes pieces of practical advice and good practices for the pre-tender stage including business case writing, the tender stage and the contract management phase. The Playbook was presented in 2018 at the OECD E-Leaders Conference[24] and since then has been continuously iterated, based on its use throughout the OECD network of countries and beyond (Box 1.6).


Box 1.6. ICT Commissioning Playbook

The ICT Commissioning Playbook is focusing on ICT procurement reform and its role in the wider digital transformation of the public sector in countries around the world. Its goal is to show how traditional procurement can evolve towards agile procurement. The Playbook sets out how to address the main issues faced by governments and explores what works and what does not work, sharing real life examples.

The Playbook provides a set of actionable guidelines (known as plays) that countries can follow to move towards more agile approaches for ICT procurements. It includes 11 plays, such as

- setting the context,
- starting by understanding users' needs,
- embracing openness and transparency,
- working as a multidisciplinary team,
- building collaborative relationships,

- sharing and reusing solutions that were developed for other parts of the government, and
- public procurement for public good.
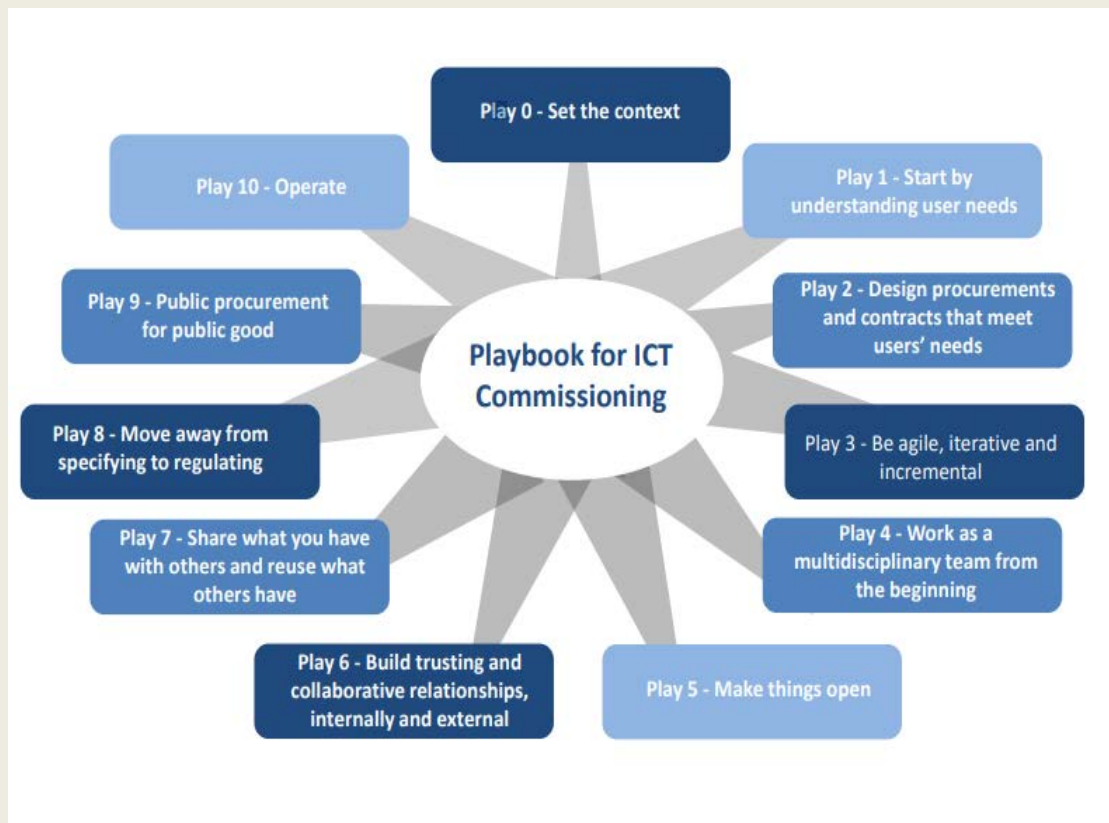
Source: (OECD, 2020[9])

The plays outline ways to overcome common problems, alongside case studies that demonstrate real challenges and successes. The Playbook was developed for procurement professionals in the public sector and is based on the experiences of the UK, with contributions from Australia, Canada, Chile, Finland, Mexico, New Zealand, Portugal, Uruguay and the United States.

Source: "About the playbook", https://playbook-ict-procurement.herokuapp.com; (OECD, 2020[9])

In the **United Kingdom,** building on the work of the OECD Thematic Group on ICT Commissioning, the Digital Buying Guide was evolved from the ICT Commissioning Playbook. In October 2020, the Government Digital Service (GDS) launched its Digital Buying Guide, to support buying digitally with social purpose by presenting modern approaches to public procurement that are fair, open, transparent, effective, multidisciplinary, and focused on users' needs. This work is part of the GDS Global Digital Marketplace Programme, which was set up to help tackle global corruption. (Box 1.7)

Box 1.7. UK: Digital Buying Guide

The Digital Buying Guide provides practical step-by-step guidance and illustrative case studies on the different stages of the public procurement cycle. The guide aligns with the SDGs, as well as with standards and guidelines on corruption prevention and gender-responsive procurement. The guide is sponsored by the UK's Foreign, Commonwealth & Development Office (FCDO) Global Anti-Corruption Programme, the OECD Working Party of Senior Digital Government Officials, and the United for Smart Sustainable Cities (U4SSC) initiative from the United Nations' International Telecommunication Union (ITU). At the time of its launch, the Digital Buying Guide was available in English, Bahasa Indonesia and Spanish, including draft guidance to specifically support public procurement in an emergency. In addition, the guide included case studies from national and local governments in Mexico, UK, Ecuador, Colombia, Dominican Republic and New Zealand.

Source: UK Government Digital Service, https://www.digitalbuyingguide.org/en/

Recent examples show that OECD countries are reforming their ICT procurement frameworks and practices as well as experimenting with agile approaches not only to make ICT procurement work better for digitalisation, but also to reinforce strategic policy goals in public procurement, such as sustainability and circularity. Indeed, ICT procurement has a role to play in delivering social value. Circular procurement provides the opportunity for adapting the typical business-as-usual (produce-consume-dispose) model to a more resource efficient procurement approach that delivers on broader policy goals as well as cost savings, reduced environmental impacts and improving social wellbeing.

The **Netherlands** for example has been taking concrete steps to make its own ICT public procurement more sustainable and to collaborate with the market to develop more circular business models. The *Green Deal on Circular Procurement: Learning through action* (GDCI)[25] was originally a three year project from 2013 to 2016. About 80 pilot projects (including ICT procurements) were implemented under the Green Deal project. The pilots experimented with contracts that would ensure that a product has a long life, retains value, and is returned to the supply chain. As of 2018, there is a follow-up project to upscale the approach with the "Green Deal Circular Procurement 2.0", with eight working groups. One focused specifically on ICT. PIANOo, the Dutch Public Procurement Expertise Centre[26] played an important role in implementing the Dutch GDCI and developed guidance on how to set environmental criteria for different product groups including various types of ICT device. There are examples of various projects that have experimented with circular ICT procurement, and a sector report[27] is looking at how more circular ICT business models might align with public procurement. (Box 1.8)

Box 1.8. Resource Efficient Business Models (REBus): ICT Sector Report

The REBus (Resource Efficient Business Models) project aims to reduce the use of raw materials or extend the lifetime of products by demonstrating the commercial case for European businesses to change their business models. The project is financed by EU Life+. The main goal is to gain knowledge about the potential of circular business models and investigate whether they can deliver the target of 15% savings in resources and costs.

The ICT Sector Report is focusing on the opportunities and learnings from the REBus pilots relating to ICT and electrical equipment (EE). It highlights that the REBus and Green Deal ICT pilots in the Netherlands have demonstrated that encouraging the procurement of more circular ICT items is possible. It delivers on national circular economy goals as well as reducing environmental impacts and

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in some case providing revenue streams. The Green Deal Community of Practice is jointly working towards the alignment of circular procurement of ICT hardware. The community includes state government, provinces, cities, individual departments, agencies, universities and companies. There is also an end-of-life ICT community that addresses data wiping, re-use and recycling. Delivering the wider potential identified by the REBus pilots requires a broader and longer term vision for an ICT sector that is currently driven mainly by volume of sales linked to rapid technical and software innovations. The tender analysis has shown that in order to encourage a shift towards more circular products and service, the current prominence of least cost tendering has to be switched to a *life cycle based approach*, for example through total cost of ownership or Best Price-Quality Ratio.

Source: REBus ICT Sector report; https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreportictlessonsoktober2017.pdf

The 2019 OECD Digital Government Index Survey[28] results show that there is still room for countries to improve strategic, uniform and standardised approaches to ICT procurement. The **2019 Digital Government Index** (OECD, 2020[14]) that presented the results of the Survey, highlighted that "g*overnments across OECD member and partner countries have increasingly reported the need to have policy levers – including the pre-evaluation of ICT expenses, business cases and project management models – to ensure a coherent and sustainable digital transformation of the public sector. Since public expenditures on ICT goods and services assume an increasing role in public procurement with the rapid penetration of digital technologies in all sectors of government, these policy tools can support governments to better plan, manage and monitor ICT investments.*"

Having strategic planning methods and formal guidelines in place helps governments to overcome "agency thinking" approaches that usually anchor silo-driven decisions, while often failing to prioritise inter-operability or common standards for improved integration and sharing across different sectors and levels of government. Although 67% of countries reported the existence of formal guidelines for ICT procurement, only 12% report have a dedicated ICT procurement strategy for the public sector at the central/federal level. Instead, the majority of countries (64%) integrate strategic planning of ICT procurement into a government-wide procurement strategy. 67% of countries have adopted a standardised model for ICT project management but only half of these countries have made them mandatory – 27% of them are obligatory for all ICT projects and the other half are required only when projects meet specific criteria (e.g. budget threshold). This suggests room for improvement in leveraging models to guide governments in using these management tools. In the case of ICT projects, countries may benefit from agility and coherence that common management models provide (OECD, 2020[15]).

Chapter 3 of the Report presents further examples for ICT procurement reforms and initiatives from various OECD countries.

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UK Cabinet Office (2022), "Open Standards principles", https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles. [11]

Notes

[1] The **United Kingdom**'s Technology Code of Practice is a good example, and point 9 ('Integrate and adapt technology' - https://www.gov.uk/guidance/integrate-and-adapt-technology) includes guidance on 'Meeting user needs with emerging technologies', and Service Manual guidance 'Choosing technology: an introduction' includes specific guidance on how to make decisions about technology, with techniques like value-chain mapping. **New South Wales** government in Australia also has a guidance 'Choose the right tech' (https://www.digital.nsw.gov.au/digital-design-system/guides/building-service/choose-right-tech) that serves as a good example on how to meet user needs with emerging technologies.

[2] https://www.ucimenadialku.sk/

[3] https://digitalnakoalicia.sk/

[4] https://korona.gov.sk/

[5] https://www.hackthecrisis.sk/

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

[7] https://www.mfsr.sk/sk/media/tlacove-spravy/predstavujeme-dalsie-detaily-planu-obnovy.html

[8] The summary of the main challenges that OECD countries are facing in relation to ICT procurements is based on the following reports, analyses:

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- Guidelines on procuring IT solutions; European Commission, 2015 https://joinup.ec.europa.eu/sites/default/files/document/2015-03/guideline_on_procuring_it_solutions_-_v1_00.pdf

- A Playbook for ICT Commissioning, https://playbook-ict-procurement.herokuapp.com

- Procuring cloud services today – Experiences and lessons learned from the public sector, Procurement Innovation for Cloud Services in Europe - PICSE, 2016, http://picse.eu/sites/default/files/ProcuringCloudServicesToday_March2016_web.pdf and Procurement Barriers Report, PICSE 2014, http://www.picse.eu/sites/default/files/D3%201_Procurement%20Barriers%20Report_V1%202_03%2006%202016_0.pdf

- Digital Service Teams: Challenges and Recommendations for Government; IBM Center for the Business of Government, 2017. https://kops.uni-konstanz.de/bitstream/handle/123456789/39164/Mergel_0-409608.pdf?sequence=3

- Geoff Orazem et al., 'Why Startups Don't Bid on Government Contracts', Boston Consulting Group and Eastern Foundry, 22 August 2017, https://www.bcg.com/en-gb/publications/2017/public-sector-agency-transformationwhy-startups-dont-bid-government-contracts.aspx.

[9] Final Report: Study on best practices for ICT procurement based on standards in order to promote efficiency and reduce lock-in, a study prepared for the European Commission DG Communications Networks, Content & Technology by PWC; 2016.

[10] A survey carried out in 2011 among public procurement officials in the European Union Member States showed that out of the 244 procuring authorities surveyed, at least 40% considered that changing their existing ICT solution would be too costly because it would involve changing many other systems that use the data of the system that they would like to change. Of those surveyed, 25% felt they would not be able to change their ICT solutions for fear that their information would not be transferable.

[11] Article 13 of Regulation 1025/2012

[12] https://ec.europa.eu/growth/single-market/public-procurement_en

[13] According to the European Central Bank (ECB), the lack of first buyers (early adopters) is the number one barrier for company growth, in particular SMEs and startups. ECB survey on "Access to finance in the euro area", November 2014 https://www.ecb.europa.eu/pub/pdf/other/accesstofinancesmallmediumsizedenterprises201411.en.pdf??9bd771cc5f64c8b2f39aef2b19a1%205038

[14] https://ec.europa.eu/digital-single-market/en/policies/ict-innovation

[15] https://ec.europa.eu/digital-single-market/en/news/eu-policy-initiatives-pcp-and-ppi

[16] https://ec.europa.eu/programmes/horizon2020/en

[17] Benchmarking of R&D procurement and Innovation Procurement Investments in countries across Europe, October 10, 2020; https://ec.europa.eu/digital-single-market/en/news/benchmarking-national-innovation-procurement-investments-and-policy-frameworks-across-europe

[18] *Innovation Procurement: The power of the public purse – EU funded projects in the ICT domain*, 2019, European Commission, Directorate-General for Communication Networks, Content and Technology, European Union; The publication provides an overview of projects that are focusing on innovation procurement in the ICT domain funded by the EU's research and innovation funding programs FP7, CIP and Horizon 2020. https://ec.europa.eu/digital-single-market/en/news/innovation-procurement-power-public-purse

[19] https://gds.blog.gov.uk/2020/06/23/how-the-govtech-catalyst-is-helping-to-grow-the-govtech-sector/

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[23] https://playbook-ict-procurement.herokuapp.com/

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[27] REBus ICT Sector report https://www.pianoo.nl/sites/default/files/documents/documents/rebussectorreportictlessonsoktober2017.pdf

[28] Data, information for the Slovak Republic is not included in the Digital Government Index.