3 Making room for agility: Recommendations for the Slovak Republic

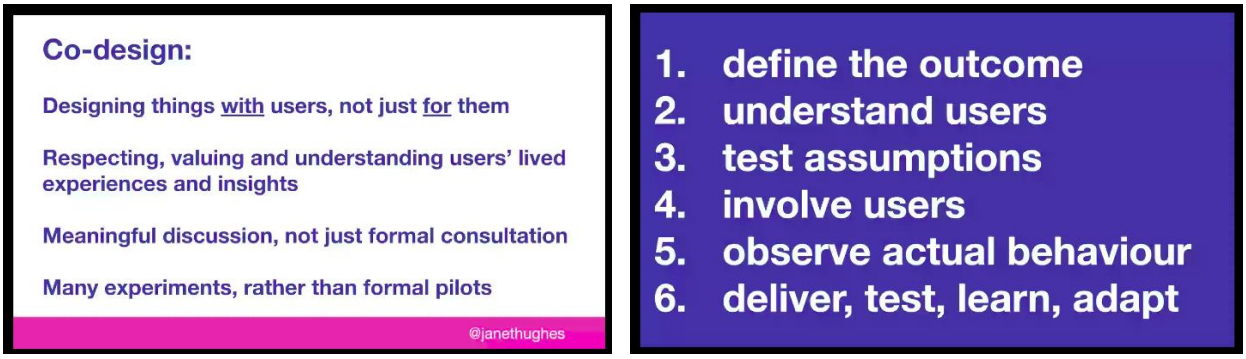
This section highlights the opportunities for improving the current governance structure and practices of ICT procurement in the Slovak Republic building on the identified strengths in the current system. It presents key actions that the Slovak Republic could pursue to modernise the purchasing practices and approaches used for ICT procurement. The section presents a set of actions, such as developing a national strategy for ICT procurement, creating communities of practise, fostering collaboration between procurement specialists and the ICT sector, creating room for the agility, experimentation and the strategic use of public procurement. The section also includes examples how other OECD countries have implemented similar actions. These cases might provide inspiration for further actions adapted to the Slovak Republic's own unique context.

3.1. Bringing agility into ICT public procurement practices

3.1.1. Complex problems need agile solutions

Complex problems have lots of unknowns and potential for things to happen that cannot be predicted. They require adaptive action[1] through co-design: designing things with users (not just for them); respecting, valuing and understanding users' lived experiences and insights; meaningful discussions (not just formal consultation); and many experiments (OECD, 2020[1]). This follows 6 interconnected co-design principles and approaches: (1) define the outcome; (2) understand users; (3) test assumptions; (4) involve users; (5) observe actual behaviour; (6) deliver, test, learn, adapt. (Figure 3.1)

Figure 3.1. Co-design: the six interconnected principles and approaches



Source: Slides from a presentation by Janet Hughes, during the 'Public Sector Leadership in a Time of Digital Transformation' virtual conference, 10 February 2021, delivered by the UK Government Digital Service (GDS) for 14 European countries, including The Slovak Republic

3.1.2. What does agile mean and where does it come from?

Agile is the ability to create and respond to change. It is a way of dealing with, and ultimately succeeding in an uncertain and turbulent environment. The Agile Manifesto[2] (*Manifesto for Agile Software Development*) was published in 2001. The authors of the Agile Manifesto chose "Agile" as the label for their approach because this word represented *adaptability* and *response to change* (Agile Alliance, 2001[2]).

The Manifesto is the end result of several streams of exploration and experimentation that continued throughout the 1990s. There were various practitioners, either people working inside organisations developing software products or consultants helping organisations build software, who thought that they should come up with new ideas for software development as the majority of software failed to actually be useful to real people or were built over budget with missed deadlines.[3]

During the 1980s in particular, the growing demands and expectations of the marketplace swamped the ability of the software development industry to build software as it was needed. In addition, the widely-held belief that development teams could predict customer needs far in advance – sometimes many years in advance – turned out to be incorrect. So even when working software was delivered, it often did not meet the needs of customers[4]. Analysis and experimentation conducted during the 1990's suggested that the so-called waterfall development process was largely responsible for this climate of failure.

The Agile Manifesto outlined a framework for a different approach to the problem. The (then) new agile approach featured:

- outreach to potential users of software,

- decomposition of large software projects into much smaller projects that were much less difficult and risky, and
- empowerment of development teams to respond to evolving requirements.

Agile software development is an umbrella term for a set of frameworks and practices based on the four core values (Figure 3.2) and 12 principles expressed in the Agile Manifesto (Agile Alliance, 2001[2]).

Figure 3.2. Definition of the Agile Software Development Approach

Individuals and interactions	Over	*Processes and tools*
Working software	Over	*Comprehensive documentation*
Customer collaboration	Over	*Contract negotiation*
Responding to change	Over	*Following a plan*
While there is value in the items on the right, we value the items on the left more.		

Source: The Manifesto for Agile Software Development, 2001; http://agilemanifesto.org/

Some of the authors of the Agile Manifesto formed the Agile Alliance in late 2001, a non-profit organisation that promotes software development according to the Manifesto's values and principles. In 2011, the Agile Alliance created the *Guide to Agile Practices*[5] (renamed the *Agile Glossary* in 2016[6]), an evolving open-source compendium of the working definitions of agile practices, terms, and elements, along with interpretations and experience guidelines from the worldwide community of agile practitioners.

The question is whether agile principles and approaches can be also applied for (ICT) public procurement by governments, and if yes, how.

3.1.3. Applying agile methods to public procurement

Agile method

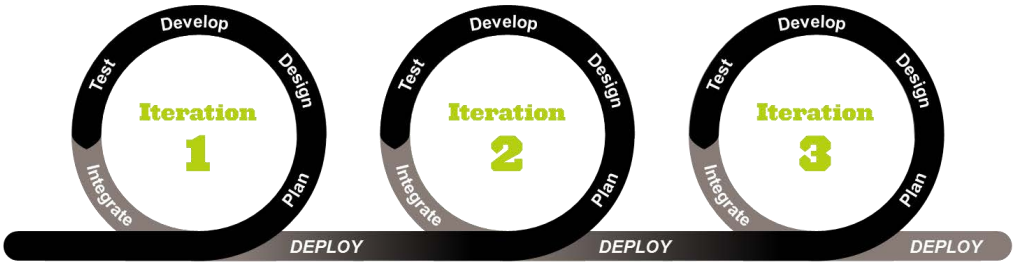
A project delivered using an agile methodology stresses

- collaboration,
- adaptation and flexibility,
- iterative and incremental development and
- reviews.

Agile divides a software or system development project into small cycles, often referred to as “iterations”. During each iteration a team works through a full development cycle including planning, requirements analysis, design, coding, testing and review. Fully tested, working software that is capable of being deployed is delivered at the end of each iteration. Subsequent iterations result in additional software that builds upon or complements the software that has already been delivered. As a result, problems can be identified early and on a relatively smaller scale, and can therefore be resolved quickly. The service only

“goes live” when there is enough feedback to show the service works for the users and meets their needs. There is a continuous ability to improve and to build a service that meets user needs. (Figure 3.3)

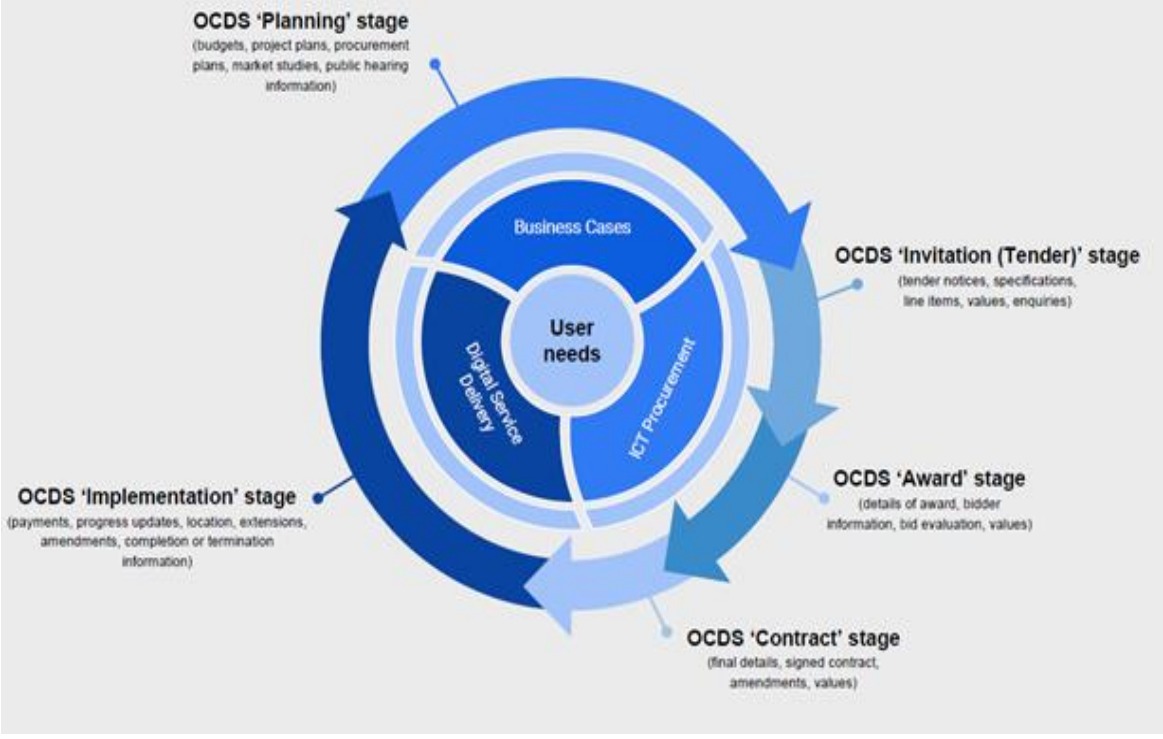
Figure 3.3. Agile method of system development



Source: https://www.claytonutz.com/knowledge/2018/october/agile-contracting-for-australian-government-agencies

The link between user-centred, design-led approaches and incremental (iterative) methods is critically important in agile ICT procurement throughout the full public spending lifecycle. (Figure 3.4)

Figure 3.4. Agile approach to public procurement



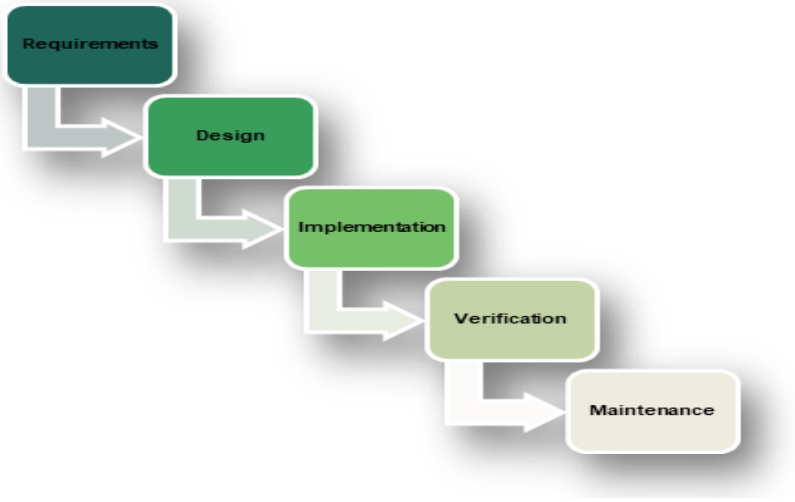
Source: Warren Smith, “ICT commissioning for improved citizen-driven service delivery” (2018)

Agile methods encourage teams to build quickly, test what they have built and iterate their work based on regular feedback. Agile methods were first implemented in small teams, projects and companies, but during the last few years the usage of agile methods has also been scaled up for use in large system development and distributed software development. However, public agencies and governmental organisations have been slow in adopting agile practices, with the exception of some specific high-tech research organisations. (Jouko Nuottila, 2016[3])

Waterfall model

To understand the specificities of applying an *agile approach* to public procurement, it is worth looking at closer the "traditional" waterfall method where the process is sequential. It starts by gathering requirements, making plans and conducting the procurement process. Then, based on the contract, a product is designed and built. The final stage involves testing and releasing the software to the public buyer. It is only at this end stage in the process where feedback is received from potential users. There is only one chance to get each part of the project right, because there is no returning to earlier stages. The waterfall approach is typical for certain areas of engineering design. In software development, it tends to be among the less iterative and flexible approaches, as progress flows in largely one direction ("downwards" like a waterfall).[7] The original waterfall model comprised of five different phases: requirements, design, implementation, verification and maintenance (Figure 3.5) Over time, some variations of the original model emerged, but the logic behind waterfall remained the same: when a phase is completed, its output becomes the input for the next one, which starts immediately after the former.

Figure 3.5. Waterfall model of system/software development



Note: The unmodified "waterfall model". Progress flows from the top to the bottom, like a cascading waterfall. The waterfall model was named after its sequential phases that are arranged in a downward fashion, similar to actual waterfalls, representing the various steps of software development from one end to the other. Each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks.
Source: Peter Kemp / Paul Smith: The Unmodified Waterfall Model

The waterfall model offers numerous advantages (Kienitz:, 2017[4]) for software developers:

- The waterfall model provides a *structured approach*: the model itself progresses linearly through easily understandable and explainable phases;
- The *staged development cycle enforces discipline*: every phase has a defined start and end point, and progress can be conclusively identified (through the use of milestones) by both supplier and client. It ensures that each phase is completed before moving on to the next one.
- This model places *emphasis on documentation* (such as requirements documents and design documents). In less thoroughly designed and documented methodologies, knowledge is lost if team members leave before the project is completed, and it may be difficult for a project to recover from the loss. If a fully working design document is present, new team members or entirely new teams should be able to familiarise themselves by reading the documents.

- Through this model, it is possible to estimate the whole project's cost and effort needed right from the start, in the requirements phase.

Despite the seemingly obvious advantages, the waterfall model has received criticism in recent times. The most prominent criticism revolves around the fact that very often, customers do not really know what they want up-front; rather, what they want emerges out of repeated two-way interactions over the course of the project. In this situation, the waterfall model, with its emphasis on up-front requirement capture and design, is seen as somewhat unrealistic and unsuitable for the vagaries of the real world. Further, given the uncertain nature of customer needs, estimating time and costs with any degree of accuracy (as the model suggests) is often extremely difficult. In general, the model is recommended for use only in projects which are relatively stable and where customer needs can be clearly identified at an early stage.[8]

Another criticism centres upon the model's implicit assumption that designs can be feasibly translated into real products; this sometimes runs into roadblocks when developers actually begin implementation. Often, designs that look feasible on paper turn out to be expensive or difficult in practice, requiring a re-design and hence destroying the clear distinctions between phases of the traditional waterfall model. [9] Some criticisms also centre on the fact that the waterfall model implies a clear division of labour between "designers", "programmers" and "testers"; in reality, such a division of labour in most software firms is neither realistic nor efficient.

Delivery models for ICT development projects in most cases follow a similar sequence of distinct phases, from detailed planning, to design, development, testing and integration, and finally deployment of a fully functioning and finished product. Most standard ICT procurement contracts for software and application development set out what is to be delivered (including functional and non-functional requirements of the system), when it is to be delivered and for how much, as well as risk allocation provisions in the event something goes wrong.

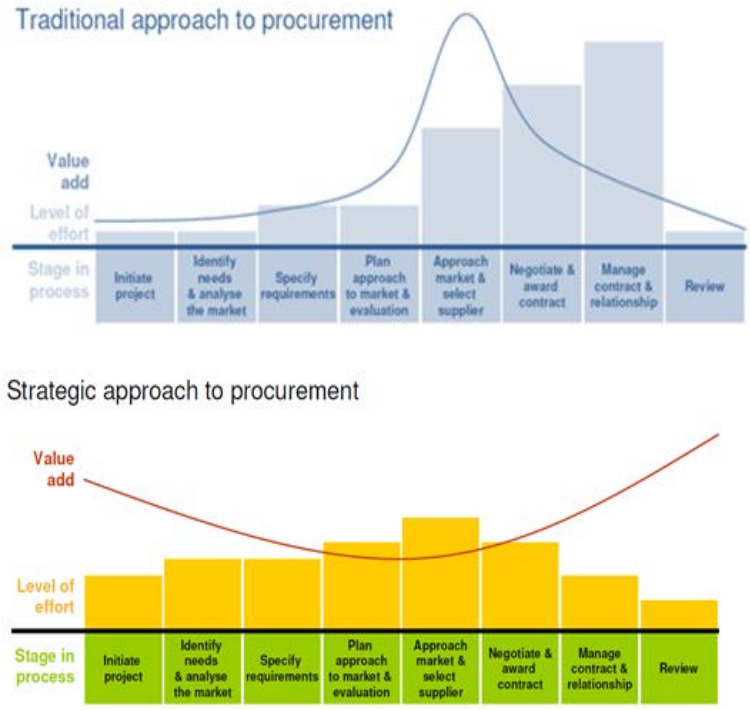
This certainty is intended to minimise risk and reflects the obligation that agencies should use public resources in an efficient, effective, economic and ethical manner. However, when an agency's specific system requirements are not absolutely certain, or are likely to evolve over time, locking these down in a statement of work is more likely to result in the delivery of a solution that does not ultimately meet all of the agency's needs.

It may also result in the agency paying for features that it does not require. In many cases, such projects will be delivered late and over-budget, as contract variation processes are deployed to try to capture the agency's changing requirements over time.

3.1.4. Applying agile approaches in the public procurement cycle

Traditional approaches to public procurement typically focus on the tendering stage of the public procurement cycle (see Figure 3.6).

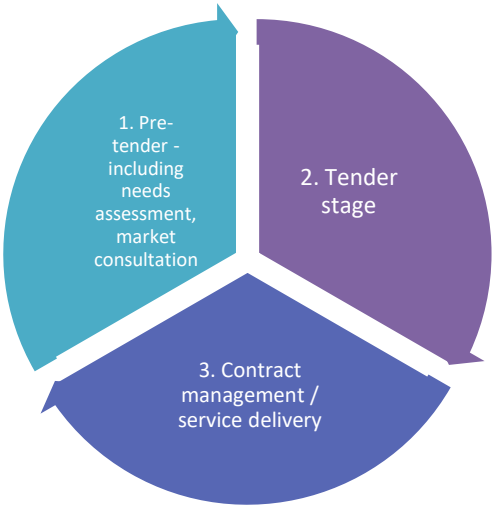
Figure 3.6. Traditional and strategic approaches to procurement



Source: *OECD (2017), Public Procurement in Chile: Policy Options for Efficient and Inclusive Framework Agreements, OECD Public Governance Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264275188-en.*

Due to the necessary formalities at the tender stage of a public procurement procedure (which is generally the most regulated), the greatest opportunities to apply agile methods exist in the pre-tender (preparatory and planning) stage, and post-tender or contract implementation and service delivery stage. (Figure 3.7)

Figure 3.7. The end-to-end public procurement cycle



However, despite the formalities of the regulated tender stage, it is still possible to benefit from an iterative "deliver, test, learn, adapt" approach (*responding to change* over *following a plan* from the Agile Manifesto) to finalise critical elements of a procurement while it is in-flight in the preparatory stage (e.g. requirements, evaluation questions and assessment criteria, terms and conditions).

This is possible as long as at the pre-procurement stage:

- user-centred co-design led and iterative approach has been taken in the development of these critical elements
- an empowered multidisciplinary team (*individuals and interactions* over *processes and tools* from the Agile Manifesto) has been established, comprised of specialists representing:
  - primary procurement users (buyers and suppliers who need to work together collaboratively through the eventual contracts that are awarded) involved throughout the delivery process
  - the full procurement lifecycle (i.e. policy, sourcing, category management, contract management)
  - legal aspects
  - user-centred design (i.e. user research, content design)
  - agile delivery management
- work has been shared as openly as possible (ideally publicly, e.g. via official government blogs)

Doing so will minimise the risk of:

- the needs of primary procurement users not being met, for example:
  - the wrong products, services or capabilities being available to buyers
  - a lack of diversity and capacity in supply, which limits competition (in the case of framework agreements)
  - a form of contract that limits agility, e.g. due to overly prescribed functional and non-functional requirements, deliverables, timescales, outsourcing risk, etc., rather than target outcomes, problems to solve, users' needs to meet, risk sharing, and standards that govern quality of incremental delivery[10], (*working software* over *comprehensive documentation* from the Agile Manifesto)
- the perspectives, biases, assumptions of one public sector profession dominating the design process, at the expense of the other professions who have an interest, and therefore the needs of these secondary procurement users not being met
- material changes being needed during questions and clarifications, while the formal procurement is in-flight
- issues arising at the post-procurement contract implementation and service delivery stage, potentially leading to:
  - adversarial buyer-supplier relationships (*customer collaboration* over *contract negotiation* from the Agile Manifesto)
  - suboptimal social value for money being achieved

Box 3.1 shows a good example of this user-centred co-design, iterative, open, collaborative and multidisciplinary approach at the pre-procurement stage from the United Kingdom. The Government Digital Service (GDS) and the Crown Commercial Service (CCS) have been using the Digital Marketplace GOV.UK blog to publish procurement plans and timetables, draft service categories, service questions, and terms and conditions, in advance of and during the build up to the formal procurements to deliver framework agreements.

Box 3.1. The United Kingdom: user-centred co-design, iterative, open, collaborative and multidisciplinary approach at the pre-procurement stage

The following links relate to communications over a 6-month period in the pre-procurement stage, to support design and delivery of the 9th iteration of UK's cloud services commercial framework 'G-Cloud':

- G-Cloud 9 discovery - where we're going from here (September 2016)
- Listening to our users to help us develop G-Cloud 9 (September 2016)
- G-Cloud 9: we're moving from discovery to alpha (October 2016)
- G-Cloud 9: a provisional timetable (January 2017)
- Help us test the categories for G-Cloud 9 (January 2017)
- What's planned for G-Cloud 9? (February 2017)
- Sharing service questions for G-Cloud 9 (February 2017)
- G-Cloud 9: sharing draft legal documents (March 2017)

Source:https://digitalmarketplace.blog.gov.uk/2016/09/02/g-cloud-9-discovery-where-were-going-from-here/, https://digitalmarketplace.blog.gov.uk/2016/09/19/listening-to-our-users-to-help-us-develop-g-cloud-9/, https://digitalmarketplace.blog.gov.uk/2016/10/20/g-cloud-9-were-moving-from-discovery-to-alpha/, https://digitalmarketplace.blog.gov.uk/2017/01/19/g-cloud-9-a-provisional-timetable/, https://digitalmarketplace.blog.gov.uk/2017/01/31/help-us-test-the-categories-for-g-cloud-9/, https://digitalmarketplace.blog.gov.uk/2017/02/13/whats-planned-for-g-cloud-9/, https://digitalmarketplace.blog.gov.uk/2017/02/16/sharing-service-questions-for-g-cloud-9/, https://digitalmarketplace.blog.gov.uk/2017/03/03/g-cloud-9-sharing-draft-legal-documents/

3.1.5. Does agile approach work for every ICT procurement?

The sequential waterfall approach is necessary to build things like bridges and buildings, however it might be less effective for building and running services when technology changes quickly, like in the ICT sector. Government services especially need to be able to respond quickly to policy changes and the needs of the public (as the recent and still ongoing COVID-19 situation demonstrates).

Using waterfall models, public buyers might run the risk that their service provider spends 18 or 24 months building a service that no longer meets government policy, cannot work with the latest technology and does not meet users' needs.

Agile methods allow the service provider to quickly make changes while it is building the service. On the other hand, it does not mean that every ICT procurement needs to follow an agile methodology. It should be evaluated on a case-by-case basis whether agile method leads to the expected optimal outcome. In some cases the waterfall model might be a more suitable choice and in some other cases a contract that includes both agile and waterfall model elements might result in the best solution.

"Non-agile" (traditional) procurement still has its place, in particular for stable markets with defined products and services (such as off the shelf products and commodity solutions). It can be suited to projects where requirements and scope are fixed, the product itself is firm and stable, and the technology is clearly understood. For those simple and complicated problems where there is little of discrepancy between what the customer needs and what the market provides.

There can be challenges in agile adoption for public buyers or agencies. One of these that many governmental organisations might face is linked with the fact that public agencies must develop IT systems for implementing digital services related to legislation, such as tax legislation, and they need to reflect any changes to the existing legislation. Therefore, the date when a change in a law comes to effect sets a deadline for the project, which might conflict with agile methods (Jouko Nuottila, 2016[3]). However, this

does not mean that agile does not believe in deadlines. Agile focuses on delivering value to the user within the constraints of the available time.

The Agile methodology embraces uncertainty and operates on the expectation of continuously learning and improving in order to prioritise adding value to users. By starting small with phases designed to build understanding through exploration, teams can research, prototype, test and learn about the needs of their users before committing to building a real service, allowing them to fail quickly and correct course in response to what they find. Successfully delivering in this way relies on ensuring that the culture of approaching digital services reflects leadership and vision, understands whole problems, designs services from end-to-end, involves the public and delivers in a multi-disciplinary and collaborative fashion. (OECD, 2021[5])

3.1.6. Agile public procurement practices in OECD countries: practices for small and mega projects

OECD countries are experimenting with and implementing agile contracting practices for small but also for big or mega projects, such as in the United States, where the Health and Human Services Agency in the State of California, after several success stories with smaller projects, decided that the replacement for a 20-year-old Child Welfare Services case management system would be the test bed for agile project management methodology on a major capital investment. The State of California had already looked for a significant project to which it could apply agile project management methodology and develop software more iteratively. Until then, several agencies had already been experimenting with agile on smaller projects in the State of California, but the Child Welfare Services case management system was the first major capital investment where this approach was used. (Box 3.2) The Child Welfare Services relied on the guidance and support of the US Technology Transformation Services' Office of Acquisition that introduced agile contract formats to support the greater uptake of agile approaches in procurement, and issued a guide on agile approaches in public procurement via 18F[11] that is an office of US federal employees within the General Services Administration (GSA) which collaborates with other agencies to fix technical problems, build products, and improve how government serves the public through technology.

Box 3.2. State of California, the United States: rethinking procurement for big projects

In late 2015, the Health and Human Services Agency in California wanted to replace its 20-year-old Child Welfare Services case management system. Hoping to learn from past failures, the agency wanted to break the large project into smaller pieces and deliver value more iteratively, rather than spend years on procurement and development. Breaking up such a huge project meant rethinking procurement. If the project involves multiple vendors, that has implications for systems integration.

The Office of Systems Integration (OSI) of the Health and Human Services Agency sought consulting help on procurement from 18F, a federal office housed within the U.S. General Services Administration, and Code for America, a non-profit that augments local governments' efforts involving technological innovation (OSI). OSI had a 13-year history of bringing in a single vendor to be the systems integrator but decided to play the role of systems integrator itself for this project, which required adding new skill sets.

As a first step, the project team went through all the policies and legislation to identify any obstacles in the regulatory framework. **It turned out that in order to make the major shift to iterative procurements to do agile work, not a single law had to be changed.** But even with legal questions set aside, the state had to create a mechanism to procure faster. California chose to follow 18F's example and create a pool of vendors pre-approved to do agile work who could respond quickly to smaller procurements. In 2016, the state gave vendors a problem to solve using software with examples

of what they wanted them to demonstrate. They had 30 days to reply. More than 20 companies made submissions, and 11 vendors, both big and small, qualified based on the state's criteria.

As work ramps up on the child welfare system, the procurement process has shifted away from language around specific products the agency wants vendors to build and more toward how the agency wants to work. It is a shared ownership, a shared responsibility. It is a gigantic paradigm shift for all parties involved.

The key lessons learnt from the project:

- Don't assume legislation or regulation blocks you
- Spend less time in negotiations on requirements and more on governance and communications. Be clear about roles, responsibilities and communication. Define how long sprints are and what decision-making is allowed at the team level. Decisions need to be made at ground level and cannot get escalated to a steering committee that meets only every two weeks.
- Beware the agile definition gap. Not all vendors can execute on agile, despite what they might say in proposals. Not until you get the team on the ground will you really find out whether they possess those skills or not – or whether their idea of agile and yours are the same.

Source: David Brath: Agile Acquisitions: Rethinking Public-Sector Purchasing, Government Technology, 17 November 2017; https://www.govtech.com/budget-finance/GT-September-2017-Agile-Acquisitions-Rethinking-Public-Sector-Purchasing.html

In Slovenia, where many public services are provided through commercial relationships with external suppliers, it was extremely important to draw on external technical expertise to offsetting capacity constraints and limits on the availability of internal skills, in particular to increase capacity in the short- and medium-term. As early as in 2017, the Ministry of Public Administration (MPA) issued Guidelines on Procuring IT Solutions with advise using the procurement process to prioritise agile solutions and ensure an inclusive approach to testing services (Republic of Slovenia, 2017[6]).

3.2. What needs to be done differently to enable the use of agile development in public procurement?

3.2.1. Governance framework

An agile approach calls for the implementation of more open, inclusive, iterative and cyclical approaches in the procurement of ICT products and services. This means, for instance:

- Bringing on board all of the relevant stakeholders to jointly design projects and define ICT project priorities together;
- Creating marketplaces to facilitate the pooling of suppliers, such as the supplier portals in UK, Australia, New Zealand;
- Monitoring and reporting on early results in an iterative fashion, and
- The revision and redesign of the project implementation process when needed.

Clear ICT procurement frameworks and practices are fundamental for the successful implementation of national digitalisation programmes. Strategic planning of ICT procurement facilitates strategic decision making, efficiency, effectiveness and sustainability of public ICT investments, and helps avoid gaps and overlaps. 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 interoperability or common standards for improved integration and sharing across different sectors and levels of government. (OECD, 2020[7]) (OECD, 2020[8])

OECD countries like the **United Kingdom** are leading a new whole-of-government perspective that places iteration at the core of the ICT procurement cycle. This requires a cross-cutting approach supported by the development of common standards for ICT project development, management and evaluation, and agile monitoring and control.

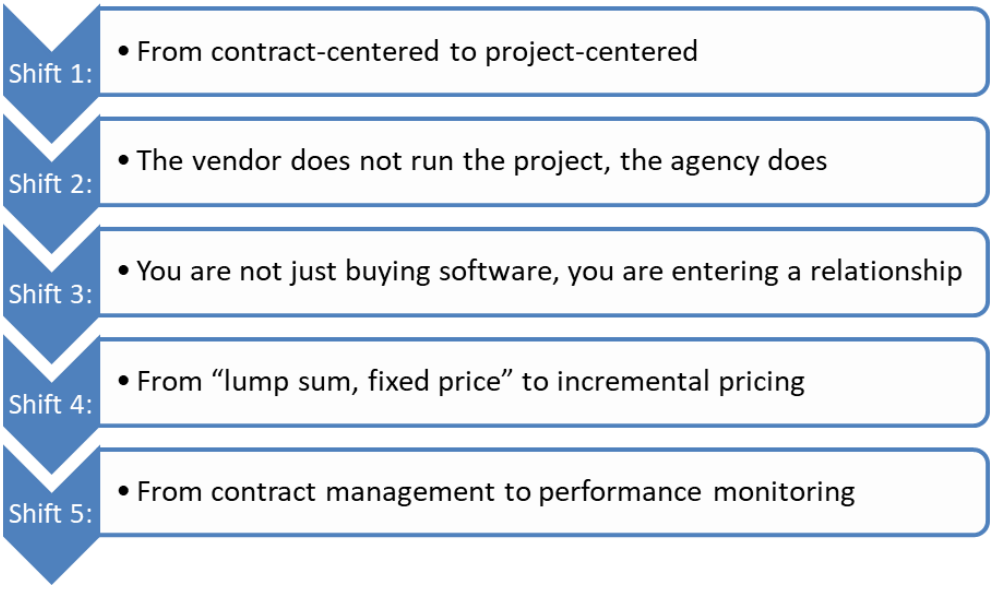
An agile environment relies on new forms of collaboration between the public sector and non-governmental actors, thus acknowledging the benefits of involving all relevant players early in project planning and development as a means to ensure that ICT projects comply with central standards and take into consideration the needs of the end user. The goal is to ensure that public funds are invested in ICT projects that create benefits for the public sector, businesses and citizens and help build a capable and responsive public sector. **New Zealand** and the **United Kingdom** have adopted flexible approaches in terms of supplier selection, establishing marketplaces that help suppliers apply to specific project calls easily, cutting costs across government and creating a more dynamic market environment.

3.2.2. Shift in mind-set

For governments to successfully take advantage of what agile can offer in digitalisation, a change in mind-set for procurement officials is required. Individuals and organisations need to change their ways of working when they start to adopt agile practices. In public organisations, there is an established formal mode of operation, which creates a challenging environment for adopting agile methods. Consequently, a public organisation might even need to revisit its underlying organisational values and culture to be able to adopt agile methods successfully. (Jouko Nuottila, 2016[3])

The procurement officials and decision makers at the contracting authorities need to embrace a new way of thinking about their role. The agile process combines design with development and user acceptance. The final design, the final product emerges through a collaborative effort between developers and users. The traditional procurement approach, heavy on functional specifications written up front, is not consistent with the agile approach The new mind-set of procuring for agile involves many major shifts in thinking (John O'Leary, 2017[9])[12]. (Figure 3.8)

Figure 3.8. Mind-set for being agile in public procurement activities – the five most important mind-set shifts



Source: Authors' elaboration based on John O'Leary, William D. Eggers: Going Agile: The new mind-set for procurement officials – How does Agile change the role of the acquisition officer? in: Agile in Government, A playbook from the Deloitte Center for Government Insights, Deloitte Insights, 2017

Capacity building of the staff is identified as one of the key tasks for ensuring the successful adoption of agile methods in public procurement. However, formal training is not enough; people should understand and learn agile values and principles in addition to existing practices to be motivated and committed (K. Conboy, 2011[10]). Incentives, psychological motivators play a significant role, together with abilities to cope with and manage change, in adopting new technologies and methods (Cormican, 2015[11]). Ideally, the capacity building on agile practices in public procurement of digital should be extended beyond procurement professionals to the delivery and corporate functional teams. (OECD, 2021[12])

The 18F guide from the United States defines agile as the follows:

> "Agile is something you are, not something you do. Agile is not a checklist, or a methodology, or a series of rituals. Agile is a way of thinking and a way of attacking problems. Embrace mistakes, learn, and keep trying. Mess up and learn again and again and again. Cut your losses. Fail forward fast. It's okay. You won't get fired. You're learning. That is agile."[13]

3.2.3. The importance of the pre-tender phase and the need for strategic engagement with the ICT industry

Pre-tender stage

Agile approaches require greater investments in the pre-tender stage of the public procurement cycle, in terms of preparing and planning the whole tender to ensure the realisation of benefits in the longer term, and better management of the procurement cycle as a whole. In the pre-tender stage, contracting authorities conduct preliminary market engagement activities, assessing the real needs of the public organisation and users, evaluate the different solutions, and choose among different technological solutions, including justifying the need for the tender.

Timescales can significantly influence procurement outcomes. Too often documents are rushed out or suppliers are given inadequate time to respond to complex requirements. A bit of forward-planning can go a long way to ensuring the procurement itself is done in a timely manner. Once a need has become clear (e.g. through "needs assessment"), even if all the details and budget have not yet been decided, there is scope to start analysing the market and identifying suitable procedures. Consulting other public or private organisations who have procured similar needs can also be a valuable use of time in the run up to a formal procedure being launched.

For ICT goods and services, this stage is even more relevant as foundation for decision-making, given the diversity of technological alternatives and modes of answering to the needs of the beneficiaries and end-users. Answers need to be given to important initial procurement questions such as choice between service versus supply (e.g. lease of computers, software), contract versus framework agreement, duration – all important decisions with impact on the attractiveness of the tender, the competition for the contract, the price of purchase and many other factors.

Strategic stakeholder engagement

Another key feature for agile procurement approaches is the involvement of different players at the different stages of the ICT project development and procurement cycle, including the contract implementation. The OECD Recommendation of the Council on Public Procurement (OECD, 2015[13]) emphasises the importance of involvement of all interested stakeholders in the process. Proactive and adequate disclosure

of information throughout the procurement cycle is critical to support a level playing field for suppliers to compete for government contracts and to support citizens' involvement in the oversight of government operations.

Early market engagement is a strategic and collaborative approach for public buyers to gather valuable market intelligence in relation to the high level aims of large scale investment programs. Government officials can benefit from suppliers' knowledge of markets and trends and understand the capability and capacity of suppliers prior to formulation of a procurement plan and strategy. Both the contracting authority and the ICT suppliers can benefit from early engagement with the market. Benefits include:

- enables government to better plan for and mitigate risks
- ensures a contracting authority will make a fully informed decision and maximises the buying power
- ensures the right supplier is chosen to provide the right service
- provides government the opportunity to realistically gauge expectations of what the market can and cannot contribute to the proposed program – on the other hand, it also allows the contracting authority to manage supplier expectations and confront any preconceptions regarding contracting with the government
- complex, innovative or high-risk programs can be adapted to better utilise ICT industry capacities

Contracting authorities can benefit from suppliers' knowledge of markets and trends, and develop an understanding of the ICT industry capacity available to the public sector to meet planned demand. This understanding can then be incorporated into ICT strategic plans, business cases, procurement plans and forward procurement schedules. Information from the engagement process can be used to develop technology-neutral specifications. However, care should be taken to ensure that the development of procurement options, and the accompanying technical specifications used in procurement documents, is not unduly influenced by the suppliers that have been involved in discussions.

3.2.4. Understanding users' needs: being user-centred and prioritising usability

Developing a deep understanding of the users' (people who are expected to use the product or service in question) needs is a crucial element during the preparatory phase of any public procurement procedure. Users are the most important consideration in seeking to achieve the desired investment outcome. Investments need to be easy to use and have a consistent user experience. Every solution has users, even those that are internal. Even hardware and components supporting a broader solution have a user. Agile approaches in public procurement, including the adoption of more iterative methodologies in the development of digital services could help delivering on users' needs and preferences. Applying agile approaches also means regular and thorough tests of the products and services under development, and users need to be involved in these repeated tests. Putting in place continuous feedback loops therefore is also necessary. (Box 3.3

Box 3.3. "We're listening" – Eliciting and incorporating user needs

In 2015, the technology transformation team in the UK Cabinet Office used Civil Service Live as an opportunity to understand 'the problem with government IT' from the perspective of users across government. They ran a session called "Can Government IT be faster, smarter, better – and cheaper?", designed to showcase changes being put in place for users. The teams used these sessions to ask civil servants from different locations and departments what they see as the problem with government IT. The issues reported were recurrent across the country, from desperately slow printers and computers to an inability to access the internet and ageing mobile phone technology. Some people also mentioned

that new IT systems had actually made their jobs harder, reflecting a failure to speak to users before design, procurement and implementation.

Their recommendations for change directly supported some of the principles of agile IT procurement. Crucially, they said they wanted to be involved in the purchasing process from the beginning to avoid buying the wrong thing. They also expressed their confusion at the government signing long IT contracts, assuming it was for cost reasons but caused bureaucratic delays. Finally, when IT equipment did arrive it was frequently outdated and less easy-to-use than personal laptops, smartphones and so on. Engaging users this way led to an effective technology transformation programme and several other departments followed cabinet's lead. Reflecting insights from these sessions, the technology transformation programme introduced solutions that were faster, more modern, and more adaptable to user needs. Contracts that were more flexible were introduced allowing procurement to be more adaptable to rapidly evolving user needs.

Source: Case Studies, ITC Commissioning Playbook, https://playbook-ict-procurement.herokuapp.com/case-studies/2; https://www.civilservicelive.com/

Beside the concept of "user-centered design", usability is another concept that contracting authorities should apply to ensure that public ICT/digital investments deliver their users. Usability means that a solution is developed to be easy to use. All solutions should be usable, including those that use off-the-shelf products. A product that meets all the business requirements of users, but requires an intensive investment of time to learn, has likely not prioritised usability. A major component of usability is accessibility. (Digital Transformation Agency, Commonwealth of Australia, 2019[14]) For example, in the European Union, in order to improve the functioning of the internal market, the Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies was adopted to approximate the laws, regulations and administrative provisions of the EU Member States relating to the accessibility requirements of the websites and mobile applications of public sector bodies, thereby enabling those websites and mobile applications to be more accessible to users, in particular to persons with disabilities.

3.2.5. Regulatory framework and practical implementation allowing room for innovation

Innovation is essential for delivering better, modern digital products and services, whilst reducing cost. In most OECD countries, the regulatory framework is supportive on using innovative and agile approaches to ICT procurement. However, practice does not always benefit from this flexibility. Overly prescribed solutions are included in tender notices, although over-specification is less likely to meet intended outcomes and does not allow room for innovation. As the traditional waterfall approach inherently leaves less room for flexibility and puts focus on up-front requirement capture and design, is seen as somewhat unsuitable for the capturing the (sometimes uncertain) customers' needs in the public sector. Agile approach offers the flexibility needed to develop sustainable, innovative and tailor-made products and services. Aspects such as incremental and iterative delivery, team work and close cooperation between public body and supplier and user centred design makes agile approach different from the traditional, waterfall approach. Being open to innovation through having an outcome-based approach allows a greater range of solutions to be offered. Digital investments need to be open to innovative solutions from the very start: being outcome-focused and using descriptive requirements early in an investment allow greater range of innovative solutions to be offered. In **Australia**, public buyers are encouraged to be innovative by the Government. (Box 3.4).

Box 3.4. Australia: How to be innovative? – Digital Sourcing Consider First Policy guidance

In Australia, the Digital Transformation Agency developed a guidance to help buyers with ICT procurement. In terms of innovation-friendly ICT procurement, the Guidance suggests the following actions for contracting authorities:

- Start by describing the outcome you are trying to achieve rather than starting with a solution. Avoid specifying activities, tasks or assets when describing your outcome.
- Use an outcome-based approach by focusing on the result of the work to be performed (the '*what*') rather than specifying the way it is to be performed (the '*how*').
- Use descriptive requirements to promote discovery and innovative solutions when describing your desired outcome, such as seeking a 10% increase in user satisfaction or a 5% increase in productivity.
- Avoid prescriptive requirements by not specifying the way in which that outcome is to be achieved, such as rolling-out a specific brand of video platform or AI assistant.
- Instead of focusing on a brand or product, prioritise factors like integration, training, efficiency, effectiveness, ease of use and adaptability of business processes.
- Adapt your business processes to meet innovative commercial solutions, rather than engineering a bespoke solution that fits your existing processes.
- Avoid using custom solutions, which can become expensive and difficult to support and adapt over the life of an investment.

Source: Digital Sourcing Consider First Policy guidance, Digital Transformation Agency, Australia, 2018, https://www.dta.gov.au/help-and-advice/ict-procurement/digital-sourcing-framework-ict-procurement/digital-sourcing-policies/digital-sourcing-consider-first-policy/digital-sourcing-consider-first-policy-guidance

3.2.6. Clear business cases to sustain funding and focused implementation of ICT projects

The success of ICT projects requires among other things a clear business case. The business case informs the investment decision, the procurement strategy and helps ICT projects deliver on expected benefits. The business case as a project management tool is valuable to inform the decision-making process when deciding whether to invest in a particular ICT project or choose between ICT projects. The business case differs in this regard from a simple cost-benefit analysis (CBA), since it also brings strategic goals and non-financial benefits into the decision making process. The business case is also a tool that minimises project risks by breaking down the economy of the project into deliverables and enables users to work with the benefits of the project in a structured approach (Danish Agency for Digitisation, 2018[15]). Successfully benefitting from the business case is not easy, and several key concepts have to be defined and clarified to make sure that the use is comparable and thus enabling decision-makers to have a consistent approach and share knowledge.

The **OECD Recommendation on Digital Government Strategies** calls on governments to develop business cases that articulate *"…the value proposition for all projects above a certain budget threshold to identify the expected economic, social and political benefits to justify public investment and to improve project management"* (OECD, 2014[16]).

The primary benefits of clear business cases include the availability of a consistent framework for comparing investment decisions, a better view of costs, benefits and beneficiaries and a contribution to assessing the efficiency and effectiveness of ICT projects. However, business cases are not used regularly or consistently. As the OECD *2019 Digital Government Index* shows, only just over half of governments have standardised models/methods to develop and present business cases for ex ante measurement of

benefits and costs of digital government projects. Of this proportion, 39% require projects to meet specific criteria (e.g. budget threshold), while models/methods are compulsory for all ICT projects in only 15% of governments. Making the adoption of business case methodology a required policy lever in the early stages of project management would help countries achieve coherence and value proposition of ICT investments, enabling smart and cost-effective investment decisions for public value in line with strategic objectives. (OECD, 2020[7])

However good practices exist. **Denmark** has been a champion in the use of a common Business Case methodology to efficiently plan, strategically align and monitor the implementation of public ICT investments. All central government institutions in Denmark are required by budget regulations to follow specific guidelines set out by the Ministry of Finance when conducting ICT projects. The business case is in this case a tool in an ICT project management framework which is mandatory to use for all central government projects (Danish Agency for Digitisation, 2018[15]).

When every central government institution conducting ICT projects uses the same methodology for expenses to include, it ensures comparable projects.

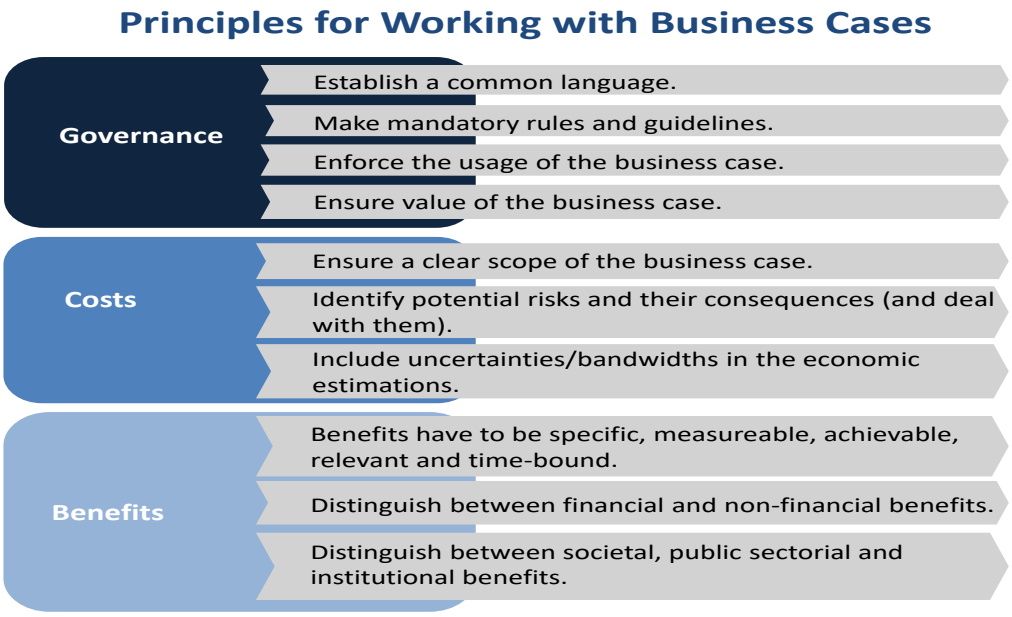
In **Finland,** for example it is recommended that ICT projects between EUR 1-5 million build a business case. If the project costs are above EUR 5 million, it is mandatory to make one.

In **Norway**, it is mandatory for ICT projects below EUR 75 million to follow a best practice project model of their own choice, which involves making a business case. This enables sector agencies to adapt the recommended best practice model to their specific context and needs, rather than being a "once size fits all approach". For projects above EUR 75 million use of business cases and the Ministry of Finance's Quality Assurance Scheme is mandatory.

The **United Kingdom** has developed a comprehensive business case model (HM Treasury, 2018[17]) for systematic project evaluation according to five dimensions: 1. strategic, 2. economic, 3. commercial, 4. financial and 5. management. [14] The economic dimension considers a cost benefit analysis (CBA) or cost effectiveness analysis (CEA) to quantify the social benefits of the initiative. Badged economists (members of the Government Economic Service) carry out such analyses. Introducing economists and financial expertise in these stages can facilitate the interaction and engagement with financial authorities. Additionally, the process considers a financial evaluation whose objective is to evaluate the availability of resources to fund the initiative, including the support and co-ordination with other units within the public sector when external funding is required. This specific step includes an analysis of how the project affects the balance sheet, income and expenses of the institution. The business dimension of this analysis introduces practical considerations that are especially important when planning and evaluating ICT investments.

To increase the knowledge about how different countries work with business cases the OECD has established the OECD Thematic Group on Business Cases which consisted of nine countries, such as Chile, Denmark, Estonia, Finland, the Netherlands, Norway, Portugal, Sweden and the United Kingdom. Clear business cases enable structuring ICT and digital public investments, while ensuring such decisions are supported by a clear rationale and an evident alignment to strategic priorities. The work of the group has led to the identification of 10 principles on business cases, which are fundamental in order to successfully benefit from the use of business cases in central government (Figure 3.9). All principles should be seen as central guidelines, and the implementation should always take into account national context and starting point (Danish Agency for Digitisation, 2018[15]).

Figure 3.9. A framework for ICT business cases



Source: Agency for Digitalisation (2018) Report from the OECD Thematic Group on Business Cases, unpublished

Building on this work and especially on the report from the OECD Thematic Group on Business Cases presented by Denmark at the E-Leaders Meeting in October 2018, the Digital Transformation Agency of Australia and the OECD E-Leaders Working Group developed jointly the Business Case Playbook[15]. The purpose of the Playbook is to help countries develop business cases which support investment decisions in digital transformation and ICT. The Playbook explores what works, and what does not. The Playbook is based on the experience of Australia, and other OECD members, including Canada, Denmark, Estonia, and the United Kingdom. The Playbook covers the foundational concepts of a business case required to present a compelling argument for a digital or ICT investment. Each Play explores a core component of business case development, supported by helpful links.

Engaging stakeholders in the process of designing business cases is essential in order to promote joint ownership, distribution of benefits and a better understanding of users' needs. Publishing forward-looking plans openly, can support not only increased transparency but also early market engagement. The **UK** has published guidance on setting up a commercial, digital and technology spend controls forward-looking pipelines, including templates[16].

In the **Slovak Republic**, there is no specific standardised model of business cases for investment in digital technologies. The Value for Money Unit within the Ministry of Finance developed a Methodology on Developing and analysing business cases.

3.2.7. Considering the whole-of-life or life cycle cost

A low initial cost does not necessarily mean a solution will represent value for money. Costs incurred after the initial purchase can often change the whole-of-life cost. This means a solution with a low initial cost could have a high whole-of-life cost. Considering whole-of-life or life cycle cost (LCC) is a key component of assessing value for money. LCC looks beyond the initial purchase price of a solution to other cost elements such as maintenance costs, transition out costs, licensing costs (where applicable), the cost of additional features added after the initial investment, consumable costs and disposal costs. Technology costs, such as architecture, administration, integration, support and training should be also considered.

With regard to ICT goods and services, several OECD countries developed supporting tools for the calculation of LCC or total cost of ownership (TCO). In **Denmark,** the Ministry of Environment and the Environmental Protection Agency developed TCO tools for several products and services, such as computers (laptops, desktop computers, tablets, thin clients), displays (computer displays, information displays), multi-function devices (printers, copy machines, scanners, fax), projectors, servers, storage, Large Network Equipment, Small Network Equipment[17]. In **Germany**, the Federal Environmental Agency developed product-group specific excel tools[18] that provide assistance in the calculation of life cycle costs of computers, multi-functional devices, monitors, computing centres and other products. The Calculation Tools of the Berliner Energieagentur for the products groups of vehicles, household devices and IT can be used without any comprehensive prior knowledge. It enables a fast access to calculating life cycle costs. The life cycle cost tool picker[19], which has been available on the website of the Competence Center for Innovative Procurement (Kompetenzzentrums innovative Beschaffung, KOINNO) since September 2016, supports the needs-based selection of a life cycle cost calculation tool.

LCC in ICT procurement is extremely flexible; sensitive to changes in user needs, user behaviour, and a rapidly evolving industry. Contracting authorities are encouraged to think in terms of functional units, defined by quantitative and qualitative aspects (meaning performance characteristics delivered by ICT goods, networks and services), and product systems (ICT networks and services can be seen as logical structures, which are physically made up of ICT goods, including hardware and software). The LCC tool developed by the **European Commission,** the EU GPP Criteria for Computers and Monitors[20] incorporated this logic in advising public procurers to define their needs in terms of functional units and not in relation to ICT goods (not computers, but capacity to process data, exchange information, serve a certain number of users, etc.).

3.2.8. Designing a contract for agile delivery

Contract for waterfall or agile delivery?

The contract has always been a cornerstone of public procurement: the contract that defines the relationship between the contracting authority and a supplier, reflecting precisely the conditions, obligations that were covered by the tender documentation and the competition during the tender process. A well-written contract, including detailed specifications, is critical to a successful engagement and delivery. A contract, signed after a successful tender procedure, covers every detail: prices, delivery, and system performance. Contracting authorities rely on contractual safeguards to minimise risk to taxpayers, e.g. non-performance clauses. Strict definitions clarify what counts as non-performance in terms of time, cost, and scope. Agile, however, cannot operate well with many constraints and the standard contract terms and conditions used in a “traditional” ICT design and development contract will not support the delivery of services on the basis of an agile methodology.

The essence of the waterfall software development contract is that the buyer/customer tests whether the software meets its requirements, and if it does so by a certain date the software is accepted. All of the contractual rights and remedies of the buyer/customer, together with its payment obligations, revolve around the software meeting the requirements by a certain date. (Atkinson, 2010[18])

In agile procurement, the final product emerges through a joint effort during the process, therefore contract management is really the key to success. Regular engagement of the “business owner” and end users throughout the process is essential. Hands-on involvement is critical to monitor progress and avoid unpleasant eleventh-hour surprises. (John O’Leary, 2017[9])[21]

Agile development requires modular contracting method

Agile requires modular or phased contracting methods that provide room for iteration and inclusive, cyclical approaches. Modular contracting is a procurement strategy that breaks up large, complex projects into

multiple, tightly-scoped procurements to implement technology systems in successive, interoperable increments. This strategy helps mitigate risk, reduce vendor lock-in, and encourages the delivery of working software to users more rapidly.[22]

Modular contracting reduces vendor lock-in by providing more opportunities for vendor engagement and ensuring more than one vendor will know how the system works. In order to leverage modular contracting to reduce vendor lock-in, governments will also need to think about interoperability of system modules up front. By mandating system interoperability, modular contracting enforces good coding practices and increases the consistency of the software. This enables new vendors to come in if the public buyer decides to reopen the competition.

Instead of setting out detailed specifications, pricing and timeframes for delivery, and provisions for when things go wrong, the main objective of a contract for the delivery of a project using agile methodology is to structure the relationship between the customer and the supplier. As the contract is for the delivery of an outcome, rather than a thing, the contract will need to set out how the project is to be governed, delivered and the responsibilities of both parties in working towards that outcome. Additionally, rather than focussing solely on risk allocation provisions and contractual remedies if a project fails, an agile development contract should focus on the rules of engagement to ensure problem and failure resolution in real time.

Success factors for a well-designed agile contract

Well-designed and well-managed contracts for the delivery of projects using an agile methodology can be effective in ensuring value for money outcomes for public buyers in their procurements of software and application design and other ICT development projects. Success will depend on:

- supplier/service provider experience in delivering projects using agile project methodologies;
- skilled and committed delivery teams within the contracting authority who continuously monitor supplier/service provider performance; and
- early engagement with legal department/team and other internal and external stakeholders who have familiarity with contracts for the delivery of agile projects.

One of the key roles the contracting authority can play is to make sure that the contract is being monitored. A “trust and verify” approach can protect taxpayers and lead to working software. But it makes new demands and requires a new skill set for contracting authorities.

Designing a contract well for agile delivery means primarily that the contract is designed in a way that ensures that the parties understand the expectations of the relationship in an agile context. For this reason, a contract for agile delivery should include specific provisions and clear requirements relating to:

- **key roles** and **key personnel** including the roles and responsibilities of key staff members at the contracting authority (such as a product owner), development teams, and agile “coaches”
- **key processes and governance requirements** including for the development process, various meetings to support the process, testing requirements and timeframes; and
- **key documentation and tools** including the project objectives and target outcomes, development items (such as a product backlog), tracking tools, and management information to support decision making.

While the specific provisions and terminology will vary depending on the specific agile methodology used, establishing the processes and expectations around these three key areas is critical in drafting an appropriate contract to support the effective implementation of a project based on agile delivery methodology. In addition to agile-specific provisions, a contract for delivery of a project using an agile methodology may also require reconsideration of and changes to standard contract clauses, including with respect to:

- warranties;
- intellectual property rights;
- liability;
- termination;
- dispute resolution; and
- change control processes.

Assessing and actively managing risks

Many different risk assessment techniques are used as part of project management in the public sector. The best ones tend to emphasise that risk should be managed by the party best able to do this, rather than a default position such as 'the supplier takes all risks.' Honest, accurate and regularly updated appraisals of risk make it less likely that an innovative, agile procurement approach will fail – but only if they are communicated and acted upon. One way to do this is by having a "project steering group", which is able to handle both informal and formal communication, so that risks can be dealt with as they arise as well as through an initial strategy. Many (but not all) risks can be managed by choice of procurement procedure, intellectual property strategy and contract terms.

Agreement on an intellectual property strategy

Several ICT procurement projects involve an investment in making new ideas a reality, both by the contracting authority and the supplier(s) or service provider(s) involved. Each will want to recoup its investment, and this often takes the form of asserting intellectual property rights (IPR). In order to capture the benefits of innovative details solutions which are most important to it, without paying unnecessarily for rights and options which will not be used, the contracting authority should develop a strategy on IPR which takes into account the likely future applications of the product or service it is purchasing. For example, if a new design for recycling bins is developed as part of a waste management contract, does it make sense for the authority to purchase or licence this, and what about rights to the design of vehicles, which empty the bins? Issues to consider in answering such questions include the future ability of the authority to change service providers, and whether the design could also be licensed to other users of the service. In some cases sharing of information without the actual transfer of intellectual property rights will be sufficient to realise these objectives (European Commission, 2015[19]).

Pricing issues

There are a number of different pricing models for the delivery of agile projects. Commercial terms need to be structured in a way that appropriately rewards the supplier for its efforts, while ensuring protections are in place for the contracting authority. Contracting authorities and supplier approaches to pricing an agile project are likely to be very different. While contracting authorities will naturally want the certainty that comes with a fixed price, this can erode the benefits of an agile delivery model by parties seeking to mitigate their risk by setting out rigid specifications, payment and change processes. Suppliers on the other hand, are likely to want time and materials pricing to reflect the inherently uncertain scope of a project delivered using an agile methodology. However, a pure time and materials engagement creates disincentives for the supplier to develop realistic estimates and then to adhere to them.

3.3. Moving towards more innovative and agile purchasing approaches in the Slovak Republic

The digitalisation of the public sector means that a wide range of ICT systems are now as critical to society and the economy as, for example, electricity or transport infrastructure. Society and economy can only function if the ICT systems that support the work of the healthcare services, the education system, the tax authorities, the police or the public transport companies just to name a few, are actually fit for purpose.

Effective ICT is crucial when it comes to creating a better and more coherent public sector. Efficient and effective ICT is a prerequisite for the work carried out by public sector employees and for the quality of service provided by the public sector each day to citizens and the business alike. It is a part of the foundation on which the modern welfare state rests. This means that central government authorities bear a great deal of the responsibility for the national ICT portfolio functioning effectively and with a high level of information security.

ICT systems must be user-friendly, coherent, and secure and ICT projects must stay on track. As OECD country examples show, building a co-ordinated governance structure for managing and implementing ICT procurements and moving towards innovative and agile purchasing approaches contribute to achieving efficiency in government ICT expenditure and support the successful implementation of the national digitalisation agenda.

Building on the strengths identified in this Report, there are opportunities for the Slovak Republic to improve its current frameworks and practices for ICT procurement and to ensure that new technologies can be deployed quickly to improve public service delivery and implement national digitalisation. Recommended actions for the Slovak government for consideration are:

1. Develop a **national strategy for ICT procurement** applicable across the whole public sector
2. **Improve the governance structure for ICT projects**
3. Promote **better engagement between the ICT sector and Government**
4. Support the agile agenda through **capacity-building**
5. Expand **centralisation of ICT procurement** for aggregating the demand of several ICT products and services
6. **Encourage joint procurements** (joint developments) **of IT solutions** and the **re-use and sharing of digital solutions** across the administration
7. **Reinforcing the adoption of existing common standards**, assuming them as clear criteria to guide the public administration's purchasing processes

3.3.1. Develop a national strategy for ICT procurement applicable across the whole public sector

One of the main findings of the Report is that contracting authorities are not supported by a clear, whole-of-government ICT procurement strategy and thus they have limited guidance on how to align their ICT spending to meet the Government's digital transformation agenda. The lack of a whole-of-government strategy also results in the lack of clarity in industry about the types of solutions they should provide to the government.

A national ICT procurement strategy that defines the strategic direction of the government's main ICT procurement can be a powerful way of co-ordinating ICT investments across contracting authorities and government. Having a national ICT procurement strategy in place also ensures that ICT projects are co-ordinated across the different levels of public administration. A strategic, uniform and standardised

approach to ICT procurement helps governments to overcome “agency thinking” approaches that usually fail to prioritise interoperability or common standards and sharing across different sectors and levels of government.

The national ICT procurement strategy should:

1. Promote coherent and aligned approaches and processes to ICT procurement.
2. Promote the strategic use of public procurement, including the promotion of quality-based selection of the tenders.
3. Demonstrate political leadership for more innovative, agile and iterative approaches and cultivate a more open culture towards new ways of purchasing ICT goods and services.
4. Promote competition in ICT procurement by increasing the chances of small specialised firms (including start-ups) to have access to ICT contracts in their area of expertise.
5. Encourage transparent and effective stakeholder participation throughout the whole public procurement cycle, with special focus on involving users of final goods and services, different levels of governments affected by the project and private sector or non-for profit service providers to ensure buy-in and distribution of realised benefits.
6. Stimulate understanding and collaboration among technical experts, policy specialists and procurement officials, in order to move beyond the current practice where procurements are conducted without a strong focus on outcomes.
7. Emphasise the importance of the preparatory phase of ICT procurement and promote a more strategic approach to users’ involvement, needs assessment, early market engagement and development of business cases.

On the other hand, strategic planning of ICT procurement could be addressed in a government-wide public procurement strategy or national digital government strategy. Furthermore, the national strategy for ICT procurement should be aligned with or be an integral element of the national digital government transformation strategy, preferably modelled on the 'Six Dimensions of a Digital Government' from the OECD Digital Government Policy Framework (OECD, 2020[8]). The OECD Digital Government Policy Framework consists of six dimensions that comprise a digital government:

1. Digital by design
2. Data-driven public sector
3. Government as a platform
4. Open by default
5. User-driven
6. Proactiveness.

In line with the national strategy, individual contracting authorities should develop their own institutional ICT strategy and long-term plans that will define the strategic direction of the contracting authorities’ main ICT investments and the actions required to ensure that all ICT systems fit within this strategy and within the national ICT (procurement) strategy. ICT procurement decisions taken within the context of an institutional strategy are likely to result in purchases that meet the needs of the contracting authority as a whole, rather than only those of individual departments. This is particularly relevant when migrating to new systems or solutions where the move is most cost-effective if undertaken on a large scale. The development of ICT procurement strategies can also lead to further rationalisation of ICT infrastructure in departments, limiting duplication and promoting sharing and reuse of services while allowing flexibility.

There are several good examples from OECD countries for comprehensive ICT purchasing strategies adopted in recent years.

In **Denmark**, the Government adopted a strategy in 2017, with the title of *"A solid ICT foundation – Strategy for ICT management in central government*"[23], with the aim of creating a solid foundation for ICT systems and defining common objectives for central government organisations on how to manage their ICT portfolios.

In **Ireland,** the *Public Service ICT Strategy*[24] includes a special chapter on ICT Procurement. The ICT Strategy includes several key areas, such as Delivery of services via a government private cloud, Common applications delivery, Networks and telecommunications, ICT Support and ICT Procurement. The Office of Government Procurement (OGP) has been tasked to deliver the commercial implementation of the Public Service ICT Strategy through the development and delivery of sourcing strategies aimed to reduce the fixed ICT cost base. These strategies intend to leverage the considerable buying power of the Public Service and include, where possible, aggregation of spend, standardisation of specifications and on-going analysis/renegotiation of current ICT contracts.

In 2017, the **United Kingdom** published its government transformation strategy[25] and digital strategy[26]. Both consistently referenced the need for taking user-centred, design-led, data-driven and open approaches to public procurement, building on the Digital Marketplace to embed these approaches more widely across the whole marketplace for public sector procurement. Local Government Association (LGA) in the UK issued the 'National technological and digital procurement category strategy[27] in July 2017, which reinforces the importance of standards and assurance approaches, Digital Marketplace.

The Digital Transformation Strategy 2018-2025[28] in **Australia** rationalises ICT spending and dictates a number of principles to be observed while not being too prescriptive to leave room for agencies' needs. The Roadmap accompanying the Strategy describes a rolling two-year window of the implementation work.

3.3.2. Improve the governance structure for ICT projects

The review of the current ICT public procurement practices showed that the co-ordination between different government institutions that have some role and mandate in both developing and implementing the national digital agenda and conducting ICT procurement is not sufficient and efficient. Co-operation between different levels of government is also missing. As a result, individual contracting authorities' purchasing decisions focus on agency-specific solutions rather than whole-of-government solutions, increasing the risk of duplication. Due to a lack of proper co-ordination mechanisms, there are no real examples for sharing and re-using of already existing ICT solutions in the public sector. As the spend review highlighted, there are only a very limited number of joint ICT procurements. There is also limited co-ordination and exchanges with external stakeholders, such as ICT business associations, other relevant interest groups, although some good examples do exist. A well-established governance structure for ICT procurement could successfully support the implementation of the Government's digital goals.

To this end, the Government of the Slovak Republic should:

- Consider establishing a unit in charge of ICT procurement policy at the central government level to ensure coherent and efficient ICT procurement across the public sector in line with the strategic priorities.
- Establish formal or informal co-ordination mechanisms for ICT procurement with the subnational government level to avoid duplication and improve the value for money of ICT investments.

There are various examples for governance structure from OECD countries. Box 3.5 presents different types of governance and organisational frameworks.

Box 3.5. Types of governance structure in digital government

New trends in governance and organisational frameworks start to emerge as governments face new challenges and requirements to complete the digital transformation. Three different approaches can be observed across OECD countries, these are not necessarily mutually exclusive, and often appear combined to some extent:

1. The **Transformation Office Model** creates a new organisation with the mandate to oversee and co-ordinate the use of technology to transform the administration's functioning and the delivery of services. It is staffed with specialised expertise in digital technologies, tools and approaches. It usually has a large emphasis on bringing in people from the tech sector to compensate for the general lack of highly technical skills within most civil services. This approach can see "quick wins" on service quality improvement, but may have difficulties with longer-term structural and cultural change across government given their outsider status and culture. Examples include the **UK's Government Digital Service** and **Australia's Digital Transformation Office**.

2. The **Central co-ordination Model** seeks to create strong government-wide leadership with enforceable levers to set policy and control approval of funding for large ICT investments (e.g. set co-ordination unit with clear mandate, CIO). This may also include the creation of shared services organisations and centralised procurement processes for ICT. This approach has the advantage of creating common standards across government and potentially leveraging economies of scale. However, its focus on big-ticket items can make it slower to react and limit agility in initiating pilot projects to explore new technologies or approaches, given the emphasis on acting at a government-wide scale. Examples include **New Zealand** and **Spain**.

3. The **Decentralised co-ordination Model** provides greater flexibility for individual ministries to pursue projects and test different approaches in using ICT for modernisation. Often there is still a central co-ordination body and a national strategy to guide digital government activities, however, there are fewer mandated requirements on departments and no unifying senior official with ultimate responsibility for the digital agenda. This approach allows greater ability for experimentation and customisation by departments, as well as more opportunities to engage with other levels of government (e.g. regional, local). However, it could lead to uneven implementation and challenges in ensuring that lessons learned are effectively transmitted and operationalised across all government organisations. **Sweden** is an illustrative case of this governance model.

Source: OECD (2017), Benchmarking Digital Government Strategies in MENA Countries, OECD Digital Government Studies, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264268012-en

In **Denmark**, the Government established a National Council for ICT Projects in 2011 after a 2010 comprehensive report identified several shortcomings in governmental IT projects. The task of the Council is to provide guidance to governmental IT projects as well as review all Danish governmental bodies with annual ICT cost above 30 million Danish krones. The 2010 report highlighted that for many years central government in Denmark ran its ICT projects with a high degree of outsourcing. Although this approach has served central government properly thanks to the good working relationship with private providers, central government has slowly handed over ever-greater responsibility for ICT to external consultants and private suppliers with regard to preparing requirements specifications, formulating calls for tenders, the selection of its suppliers and the subsequent implementation of the ICT systems in question. As a result, several central government organisations have lost control and critical knowledge of their ICT projects and systems and are unable to build the important bridge between ICT and their core remits. They have also lost their capability to enter into positive and value-creating collaborations with the private ICT market. The report

therefore highlights the need for professionalising IT efforts. Based on the findings, the Government introduced new governance approaches for government ICT projects. Currently all central government authorities must follow the national ICT systems management model, and all central government organisations must undergo regular reviews of their ICT systems management by the National ICT Council. The Danish Agency for Digitalisation is co-ordinating the implementation of the strategy and providing support to the central government agencies in managing their ICT portfolios. (Box 3.6)

Box 3.6. Denmark: Agency for Digitalisation to ensure the coherence of cross governmental ICT projects

The Agency for Digitalisation, established in 2011, is in charge of the government's digitalisation policies and responsible for the implementation of the government's digital ambitions (80% of all public services are available online). The cross-governmental ICT project model

- contributes to better planning, management and implementation of governmental ICT projects
- is embedded in the Budgetvejledning (Ministry of Finance budget guidelines)
- must be applied to all IT projects in the government sector
- is meant to support day-to-day management of the project
- is generic and must be adjusted to the size and context of the individual project so as to meet the specific management needs of the individual project

Source: www.digst.dk

The cross-governmental ICT project model includes four elements:

1. Division into phases
The five main phases of the model serve their individual purposes and are clearly divided up, which makes it easy to distinguish when a phase begins and when it ends. Each main phase may be divided up into sub phases, if it proves expedient for the management of the project.

2. Principles for phase transitions
The transition from one phase to the next signifies a change in the state of the project. The cross-governmental ICT project model sets clear demands for what is to be documented at phase transitions and who has the responsibility for approving the transition.

3. Products
The products of the model are the documents that are necessary for the project manager during the day-to-day management of the project. The products are also used as the basis for decision-making by the steering committee.

4. Distribution of roles and responsibility
The responsibility for leadership and management of the five phases is placed in various places in the organisation. The model includes a guide on which roles are to be manned when in the course of the project, and what the roles are responsible for.

Source: www.digst.dk

In the **United Kingdom**, the Government Digital Service (GDS), which is part of the Cabinet Office, is focusing on improving government services by simplifying access, improving (opening) government data, and making government more effective and efficient with the introduction of new technologies. GDS supports government digital transformation with digital and technology experts, leads the government's use of data to support data-driven innovation across the public sector, provides best practice guidance and advice for consistent, coherent, high-quality services, sets and enforces standards for digital services, builds and supports common platforms, services, components and tools, helps government choose the right technology, favouring shorter, more flexible relationships with a wider variety of suppliers as well as supports increased use of emerging technologies by the public sector.[29] Digital, data and technology standards and policy, and assurance at the pre-procurement planning and investment appraisal stage, and post-procurement service delivery and implementation stage, rests with GDS. This is mandated for by central government, and used on a voluntary basis by over 200 local government organisations that have signed up to the Local Digital Declaration[30]. Furthermore, GDS published guidance on governance principles for agile service delivery[31], and the recently updated *'Agile digital and IT projects: clarification of business case guidance'* from the UK's National Treasury and Government Finance Function[32].

3.3.3. Better engagement between the ICT sector and public sector

As the Report shows, in The Slovak Republic, there is a need for the public sector to take a strategic and systematic approach to the ICT market, rather than just engaging with it on a short-term and program-by-program basis. A key part of this is to engage with the ICT industry at an early stage of the planning of the ICT investment projects. Therefore, the government should promote better engagement between the ICT sector and the public sector. One way to do so is through developing a forum to capture supplier feedback on procurement issues in a planned, strategic and collaborative way with the aim of improving procurement processes for both suppliers and buyers. (Box 3.7)

Box 3.7. The United Kingdom: techUK

techUK is the trade association which brings together people, companies and organisations to realise the positive outcomes of what digital technology can achieve. With over 800 members (the majority of which are SMEs) across the UK, techUK creates a network for innovation and collaboration across business, government and stakeholders to provide a better future for people, society, the economy and the planet. The fundamental principle of TechUK's engagement is to support those working in the public sector in the procurement process and help develop policy with technical expertise. Their support includes support for innovative market engagement across central and local government. This includes the launch of the NHS Digital–techUK Strategic Partnership, a programme of Concept Viability sessions across government departments, the Public Services 2030 Conference and a wide range of innovative market engagement sessions between the tech industry and local government. Central government departments and the wider public sector should take a broader and strategic approach to communicating with the tech sector on planned procurement activity, and take advantage of the market access provided by techUK.

Source: https://www.techuk.org/

In **New Zealand**, the Digital Marketplace serves the purpose of better engagement with the market. (Box 3.8)

Box 3.8. Digital Marketplace in New Zealand

The Digital Marketplace is administered by the Department of Internal Affairs in New Zealand, the agency that is designated the "ICT functional lead" (the central purchasing body for ICT in New Zealand). The marketplace enables New Zealand and international businesses to offer their products and services directly to the New Zealand government agencies that use them through an online version of a framework agreement. The marketplace facilitates the New Zealand government's procurement process by linking businesses that offer services and sell products with government agencies that wish to buy them.

As 'suppliers', businesses can publish descriptions of their services and products into what are called 'catalogues' on Marketplace. Government agencies browse relevant catalogues when they want to buy specific products or services. For most catalogues, the agency will then engage with the selected supplier, based on what they offer in the catalogue. The exception is the Public Cloud Services catalogue, from which services can be purchased online via Marketplace.

Suppliers' offerings on Marketplace are structured in three tiers:

1. Channels — top tier: The channels are high-level groups of service or product types, like public cloud (SaaS) services, and consultancy and professional services.
2. Catalogues — main categories: Each channel contains a number of what we call 'catalogues'. Catalogues are the main categories in which supplier offerings are organised on Marketplace. Examples are infrastructure managed services, Construction Consultancy Services and ICT professional services.
3. Services: Each catalogue is divided into specific service or product types, such as database management and administration, and cloud transition services.

When a new channel or catalogue is opened for business on Marketplace, an open Notice of Procurement is published on the New Zealand Government Electronic Tenders Service (GETS) website (gets.govt.nz).

Why suppliers use Marketplace

The Marketplace offers the following benefits to businesses that want to work as suppliers to government agencies.

- Buyer agencies can easily access information about your services or products.
- Commercial terms are simplified.
- Marketplace is open to all businesses that meet the specific entry criteria for the channel they want to join.
- Joining Marketplace acts as a primary procurement process, reducing the time and effort you need to spend to engage with government clients.
- You can join at any time, because the whole application process is done online through Marketplace.
- Once you are a supplier, you can add to or change your offerings within your selected Marketplace service without having to apply again.
- You can modify your online catalogue offerings whenever you wish.
- Some catalogues offer a simple online purchasing process that makes these services easily accessible to buyers.
- You can respond quickly to changes in agencies' requirements.

Why agencies use Marketplace

The Marketplace offers the following benefits to government agencies that require services and products.

- Purchasing process is simplified.
- Less time is spent on procurement.
- Costs are reduced.
- Easy to compare services on offer to find what best suits your needs and budget.
- View, compare and select products in one online session.
- Some of the ICT services or products offered on Marketplace have a security rating.

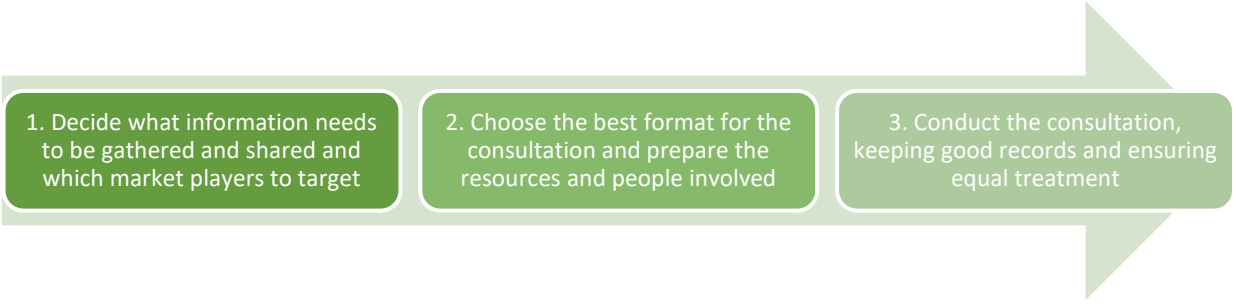
Source: (Department of Internal Affairs, n.d.[20])

Another important tool in this regard is to promote the wider use of early market engagement in the preparatory phase of the public procurement procedures. Market engagement is a key success factor for ICT procurement, especially for non-standard or irregular purchases or for purchases that result in realisation of unique ICT results and solutions. However, contracting authorities need some further practical advice and guidance on how to conduct market analysis and how to engage with the market in a way that respects the principles of transparency, non-discrimination and ensures competition.

Early market engagement with the ICT industry depends on a proactive and constructive approach by contracting authorities and suppliers for its success. Contracting authorities also need to be prepared to receive constructive criticism from potential suppliers and take useful learning from it.

Early market engagement or preliminary market consultation is allowed under the European Union policy and legal framework and as well as under the Slovakian public procurement legislation. According to the Directive 2014/24/EU a contracting authority may engage directly with economic operators as part of a market analysis. The process needs to be planned and managed very carefully so as to avoid the risks of lack of transparency, unequal treatment, or distortion of a subsequent competition. The EU Directive includes provisions in Article 40 related to such direct engagement, using the term "preliminary market consultations": "*Before commencing a procurement procedure, contracting authorities may conduct market consultations with a view to preparing the procurement and informing economic operators of their procurement plans and procurements*." The European Commission published several guiding documents to promote the use of preliminary market consultation and to explain how it can be conducted in a successful way while respecting the principles and rules of the European Union. For example the Guidance for public authorities on Public Procurement of Innovation gives detailed guidance on the objectives and steps of preliminary market consultation (European Commission, 2015[19]) (Figure 3.10).

Figure 3.10. Steps of the preliminary market consultation



Source: (European Commission, 2015[19])

The **Slovak** legislation also provides the possibility of contracting authorities to engage with the market, but this approach is not frequently used as was confirmed during the fact-finding missions. Contracting authorities need methodological support and guidance on how to engage with the market without infringing the principles and rules of public procurement. The **Public Procurement Office** has recently published, as part of the Public Procurement Methodology an infographic for the preparatory market consultation[33] to support both the business sector and the contracting authorities on how to conduct market consultation properly, aligned with the requirements of the legal framework. In its Methodological Document about ICT procurement, the *Working Group on Public Procurement and ICT Contracting*[34] also provides methodological advice to contracting authorities on preliminary market analysis.

Market engagement, however, can (and should) not be limited to the early phases of the procurement process, indeed it can continue during the tendering phase as well as in the post award phase as Table 3.1 shows.

Table 3.1. Market engagement alternatives throughout the public procurement cycle

Pre-tendering	Tendering	Post-tendering
Annual procurement plan	Briefing suppliers who submitted a bid	Debriefing suppliers
Trade shows	Clarification meetings (on site or electronic)	Contract award notice
"Meet the buyer" events		Contract and supplier management
"Show and tell" events		Strategic supplier management
Meeting industry bodies and business chambers		
Meeting with a group of suppliers or with a supplier individually		
Pre-tender briefings to potential suppliers		
Industry workshops		

Source: New Zealand Government Procurement Branch, 2015.

In the **United Kingdom**, the Government Digital Service (GDS, part of the Cabinet Office) has engaged with the market on numerous occasions since the Global Digital Marketplace Programme was first publicly announced in September 2017[35]. In **Ireland**, the Department of Enterprise, Trade & Employment (DETE) developed a guidance on how to effectively and transparently engage with market participants. The *"Buying Innovation: the 10 step guide to smart procurement and SME access to public contracts"*[36] is based on the European Commission's "*Guide on Dealing with Innovative Solutions in Public Procurement – 10 Elements of Good Practice*" and "*Buying Green – A handbook on environmental public procurement*". The publication provides general guidance with clearly identified steps on how to apply the procurement process in a way that enables the procurement of innovation. (Box 3.9)

Box 3.9. Ireland: BUYING INNOVATION – the 10 Step guide to SMART Procurement and SME Access to Public Contract

The guidance sets out the range of actions that should be considered at each step of the procurement process with the aim of stimulating innovation in the economy and better solutions to public service needs.

Engage with the Market prior to Tendering – Find out what the market can provide

This is a critical step in the procurement process as it enables the procurer understand and identify what is available on the market and whether alternative solutions are available. While procurers are

sensitive to the issues of transparency and fairness, engagement with the market prior to tendering can be carried out if it takes place in a structured and open manner.

Consult the market before tendering

Consulting the market before tendering makes it possible to obtain the views of the market before starting the tendering process. If contracting authorities want to achieve broad market coverage, they could formally publish the market consultation. This gives the market the opportunity to better understand the problem to be addressed and to offer optimum solutions. To ensure transparency, any information provided by the contracting authority during this process would need to be circulated to any potential bidder. To allay any concerns of suppliers that sensitive information might be disclosed to other parties, procurers can provide an assurance of confidentiality, stating that this kind of information will not be disclosed. It should be noted, however, that the initial consultation of the market would have to be done under the condition that the seeking or accepting of advice does not have the effect of precluding or distorting competition.

How can I find out what the market can provide?

Enterprise Ireland is the government agency responsible for the development and promotion of the indigenous business sector. Enterprise Ireland offers a key national asset of more than 250 market experts across all industrial sectors. They will act as a technical & market resource to assist buyers in their pre-tender research and help identify value for money solutions. They can assist in finding out about new innovative products or service solutions that are being developed and what companies have to offer in your specific area of interest. Trade Associations representing the relevant industry sectors will also be more than happy to assist with queries about what the market can provide.

Let the market propose creative solutions

Buying Innovation is achieved by specifying the functional requirements and/ or desired outcomes, not prescribing the solution. This provides the supplier with the opportunity to propose new or alternative products, processes or services. In most instances, the market is best placed to identify the most appropriate solution. Public procurement officials should make use of the full range of permitted tendering procedures. One such procedure is the design contest, which can be a powerful means of developing and testing new ideas. Contracting authorities can award the contract directly to whoever comes up with the best idea. This makes it attractive for companies to bring their innovative ideas forward. Another such procedure is the Competitive Dialogue which is a dynamic way of conducting a large and complex tender process because it allows contracting authorities to discuss all aspects of the proposed contract with tenderers. This process can secure greater value for money, as tenderers have a better understanding of the buyer's culture and requirements, allowing for future problems to be solved more efficiently. In conducting the dialogue, contracting authorities must ensure equality of treatment and respect for the intellectual property rights of all candidates. When satisfied about the best means of meeting its requirements, the contracting authority must specify them and invite at least three candidates to submit tenders. The most economically advantageous tender (MEAT) will then be selected. Aspects of tenders may be clarified or fine-tuned provided that there is no distortion of competition or discrimination against any tenderer.

Source: Buying Innovation – the 10 Step Guide to SMART Procurement and SME Access to Public Contracts, Department of Enterprise Trade and Innovation, Ireland, https://ogp.gov.ie/buying-innovation-the-10-step-guide-to-smart-procurement-and-sme-access-to-public-contracts/

In **Belgium**, the Centrale de Marchés (CMS, Central Market for Federal Services), the Central Procurement Agency for Federal Services, responsible for awarding and monitoring the framework contracts for federal public services, regularly conducts market consultations in the procurement of ICT

products to help develop relevant environmental requirements. Strong federal consultation on purchasing, which identifies the common needs of the various federal entities, co-ordinates and takes decisions in this area. To this end, a consultation body was created: the CSAF (strategic consultation network for federal purchases), which includes participants from the main federal institutions. [37]

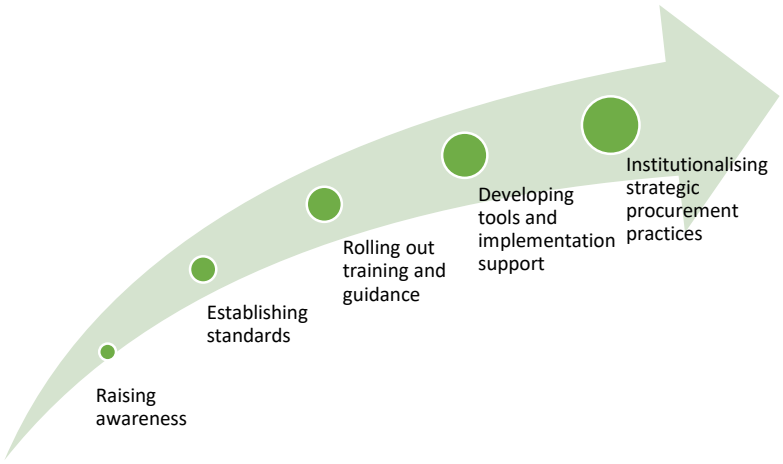
3.3.4. Support the agile agenda through capacity-building

As the Report shows, one main obstacle for the greater uptake of innovative, strategic approaches in ICT public procurement in the Slovak Republic is the lack of confidence and capability on the side of the contracting authorities to take new approaches to ICT procurement. In general, for the time being in The Slovak Republic, public procurement is not seen as a tool to achieve strategic priorities, but is rather perceived as an operational tool for purchasing goods and services at the lowest possible price. Risk averse behaviour can be also experienced on the side of the contracting authorities: innovative, agile approaches are usually considered riskier than well-known, traditional approaches. The organisational culture is not supportive of accepting a certain level of risk associated (or perceived to be associated) with agile methods. This might be also related to the lack of capacity (and in some cases expertise) of using proper risk management strategies to address any potential risks associated with innovative, agile approaches. The almost exclusively legal compliance-oriented strict controls and the fear of legal challenges do not encourage, or in some cases even prevent, the use of quality based criteria in the tender process and the experimentation with new public procurement approaches. This is, however, not a specific ICT procurement related challenge, rather a systemic issue in the Slovak public procurement system.

On the other hand, as meetings with various stakeholders during the fact finding missions confirmed, there are highly motivated staff members who wish to apply agile approaches, however, they do not know how to do so as there are no published good examples and there is only a limited availability and awareness of practical methodologies for public procurers to apply flexible and agile methods in ICT procurement. Therefore, building the capacity of staff members can be identified as one of the key tasks for ensuring the successful adoption of agile methods. However, formal training is not enough; people should learn agile values and principles in addition to practices to be motivated and committed (K. Conboy, 2011[21]).

Contracting authorities need support in improving their professional knowledge in terms of the strategic and innovative use of public procurement, including using quality (MEAT) criteria in evaluation, engaging strategically with the business sector, applying agile methods in public procurement, contract management for agile implementation. Procurement officials need help to engage in pilots on agile approaches without fear. The expectations of what is required from procurement staff have increased over time. Governments must now provide staff with additional training and support in order to embrace and implement strategic procurement. As shown in Figure 3.11, there has been an evolution of practices to build the skills of procurement staff in relation to strategic procurement.

Figure 3.11. Evolution of capability-building practices in OECD countries



Source: (OECD, 2019[22])

The Slovak Government should develop and implement capacity building strategies to build skills and competencies of government staff who are involved in procurement of ICT solutions, including civil servants involved in the control of the public procurement procedures. Capacity building can include several actions, such as

a) Developing operational tools on applying agile methods (such as guidelines, templates for contracts)
b) Creating a national competency centre or a dedicated knowledge sharing platform to share capability
c) Creating safe spaces for experimentation to introduce flexible and agile approaches in ICT procurement process through implementing pilot ICT projects using agile approaches and then communicating their results widely as well as developing communities of practice in order to facilitate connections and the exchange of knowledge

a) Developing operational tools on applying agile methods

Contracting authorities can benefit a lot from guidelines, model contracts or templates that are publicly available and regularly updated. There are several good examples from OECD countries on how to support contracting authorities with operational tools in ICT procurement. For example in **Italy**, the Agency for Digital Italy (*Agenzia per l'Italia Digitale)* issued guidelines[38] on the acquisition and reuse of software for public administrations. In **Finland**, where agile methodologies have been used in public procurement since 2010, by the requirement of the State IT director, a model agile agreement is available which was generated by the Ministry of Finance in 2015[39]. In the **United States**, templates for agile blanket purchase agreements (BPAs) were developed by 18F, the innovative digital transformation governmental team. 18F is an office of US federal employees within the General Services Administration (GSA) that collaborates with other agencies to fix technical problems, build products, and improve how government serves the public through technology. It is part of the Technology Transformation Services, which is within the Federal Acquisition Service. In **Ireland**, the Office of Government Procurement issued several guidance notes to support public buyers with delivering public value on digital procurement, and most recently (February 2021) a Procurement Guidance Note on Cloud Services (Box 3.10)

Box 3.10. Guidelines for contracting authorities as well as model contracts and sample contract clauses

Italy: Guidelines issued by the Agency for Digital Italy

In Italy, the *Codice dell'Amministrazione Digitale* defines how a public organisation has to acquire software and their obligations in terms of ensuring software re-use. It also establishes the obligation to release the software developed or purchased with an open license and to publish it in a public repository. To support public organisation with implementing this obligation, the Agency for Digital Italy issued *Guidelines on the acquisition and reuse of software for public administrations* (also published in Gazzetta Ufficiale). The guidelines were developed in close collaboration with the Digital Transformation Team. The guidelines include technical attachments that can be directly included in contracts and specifications related to software development, software modification and maintenance, in order to fulfil the release obligation. The guidelines also include detailed instructions on how to publish software as an open source.

The guidelines emphasise that:

- The administration must always obtain full ownership of the software.
- The software must be published in a public repository (e.g., GitHub, GitLab, BitBucket etc., also on-premise installations providing that they are publicly accessible).
- The software must be covered by one of the licenses approved by the Open Source Initiative (the guidelines suggest some in particular, in order to allow maximum reusability).
- The repository must contain a file named publiccode.yml, which describes the software characteristics and allows populating the Developers Italia catalogue. (The publiccode.yml is a standard originally created in Italy but it is in the process of being adopted internationally.)

Finland: agile model contract issued by the Ministry of Finance

In 2015, the Ministry of Finance published a recommendation on IT procurements (JIT 2015). This Recommendation defines the general terms and conditions of public contracts for the procurement of information and communication technologies and services. In addition to the general terms and conditions of the contract, the recommendation includes a number of specific terms and conditions according to the subject of the procurement. Beyond the General Terms and Conditions, the Recommendation includes several annexes providing model terms and conditions for subscriber application acquisitions under Open Source terms or special terms for subscriber application acquisitions with non-open source. It also includes annexes that provide special conditions for services, for consulting services, for equipment purchases, for online services and for the processing of personal data. Annex 4 specifically focusing on special conditions for agile projects.

The United States: Guide on Agile and templates for agile blanket purchase agreements (BPAs) developed by 18F, an innovative digital transformation team

18F is a team of about 120 designers, software engineers, strategists, and product managers — all federal employees. It has offices in DC, San Francisco, Chicago, and New York, as well as team members working remotely from all over the country. 18F issued a Guide on agile that presents the combined practices of iterative software development, product management, user-centered design, and DevOps. 18F has also developed templates for agile blanket purchase agreements (BPAs). These new contracts and service agreement templates are compatible with agile software development approaches. BPAs work as a competition that requires participating firms to prepare a prototype in an open GitHub60 repository open for everybody to see. This approach allows the contractor to appreciate what competing firms are actually able to deliver. The BPAs can foresee agile development sprints and

iterations, allowing both the contractor and the service provider to progressively define software requirements and functionalities as the projects advances.

Ireland: Office of Government Procurement's Cloud Services Procurement Guidance Note

The Guidance Note has been issued to assist public sector organisations to navigate the complexity associated with contracting for cloud services and to manage the key contractual and commercial differences between traditional ICT contracts and cloud services contracts. Public sector organisations can use the guidance note as a useful, easy-reference toolkit to assist them when preparing tender documentation and service contracts. The detailed information contained in the guidance note will help public sector organisations to avail of the value in cloud services through tendering in an informed manner and in compliance with public procurement regulations. The note builds on existing guidance issued by the Office of the Government Chief Information Officer that recognises the many advantages and benefits associated with the use of cloud computing services and that recommends deployment of cloud solutions for all new and renewed Government systems.

Source: https://docs.italia.it/italia/developers-italia/gl-acquisition-and-reuse-software-for-pa-docs/en/stabile/index.html; https://opensource.org/licenses;https://www.suomidigi.fi/ohjeet-ja-tuki/jhs-suositukset/jhs-166-julkisen-hallinnon-it-hankintojen-yleiset-sopimusehdot-jit-2015 https://agile.18f.gov/; https://ogp.gov.ie/wp-content/uploads/OGP-Cloud-Services-Guidance-Note-February-2021.pdf

Good examples in The Slovak Republic also exist. The *Working Group on Public Procurement and ICT Contracting*[40] led by the Ministry of Investments, Regional Development and Informatisation developed a Methodological Document about ICT procurement, covering the most important issues in ICT procurement in the Slovak Republic, and providing methodological advice to contracting authorities on several challenges, such as preventing vendor lock-in, terminating unbalanced contracts from the past, dividing contracts into lots, preliminary market analysis, common availability of goods and services on the market, selection criteria (a tool helping procuring entities to determine whether the procured goods/ services are commonly available) and design contest for procuring software as well as IP rights[41]. The Methodological Document could serve as a good basis for developing further operational tools and guidelines.

b) Creating a national competency centre or a dedicated knowledge sharing platform to share capability

Competence centres can operate as centralised advisory services to support the implementation of strategic ICT public procurement. In a decentralised environment, where new initiatives and approaches must be implemented by huge number of individual contracting authorities, the centralisation of expertise and resources on specific topics can be highly beneficial.

There are several examples in OECD countries for competence centres on public procurement, and specifically for innovation procurement (even if they do not solely focus on ICT procurement). For example, **Germany** set up a dedicated competence centre called the German Competence Centre for Innovation Procurement (Kompetenzzentrum innovative Beschaffung, KOINNO) in 2013 that supports innovation in public procurement. KOINNO's objective is to increase public procurement of innovative goods and services in Germany, and, by doing so, trigger innovation and increased competiveness in the German economy. In order to measure progress towards this objective, KOINNO has targeted a considerable increase in the percentage of procurement procedures for new technologies, products and services. KOINNO provides contracting authorities with training, workshops, networking opportunities, on-call consulting and a website containing best practices, templates and guidance. KOINNO also supports contracting authorities in obtaining funding from the EU's Horizon 2020 fund for research and innovation. Given that KOINNO operates on periodic mandates from the German government in the form of a memorandum of understanding, the centre must continue to demonstrate value in order to have its commission renewed periodically. KOINNO's work also targets businesses in order to encourage the

adoption of innovative practices and to ensure SMEs understand and participate in unique tender procedures like pre-commercial procurement. (OECD, 2019[22])

However, Germany is not the only country in the European Union that established a competency centre, there are several other countries, such as Austria, the Netherlands, Spain and Sweden, just to name a few. There is even a network for these competency centres, the **European Network of National Competence Centres for Innovation Procurement.** The Network is operating within the framework of an EU funded project, the Procure2Innovate project[42] which aims to improve institutional support for public procurers of ICT and other sectors that implement innovation procurement. The project supports competency centres for innovation procurement in 10 European Union countries: five are already established (in Austria, Germany, the Netherlands, Spain and Sweden); while five new ones will be established in the near future (in Estonia, Greece, Ireland, Italy and Portugal). According to the definition used by the Network, a competency centre on innovation procurement is an organisation/organisational structure that has been assigned the task by its government and has a mandate according to national law to encourage wider use of pre-commercial procurement (PCP) and public procurement of innovation (PPI) that includes providing practical and/or financial assistance to public procurers in the preparation and/or implementation of PCP and PPI across all sectors of public interest.

There are three organisational models used in practice for national competency centres of innovation procurement in the European Union[43]. The first model is located within the central purchasing body. The second model is an institution that is either under the direct authority of another government institution or has been integrated into an existing agency. The final model is a competency centre that has been contracted out to a non-profit organisation. In practice, most competency centres mix two or even three approaches together. The most extreme being **Finland** where it is a “virtual competence centre” combining initiatives and expertise from eight institutions. The **Netherlands** are also a unique case where the competency centre on innovation procurement is part of a larger competency centre for public procurement, which in turn is aligned with the Ministry of Economic Affairs. In contrast, **Germany, Ireland, Italy** and **Austria** apply the typology in its purest form.

Beyond competency centres dedicated to public procurement, Digital Academies can be also relevant sources of the digital skills development. The benefits of agile are throughout the public procurement cycle and the insight for procurement professionals will be richer from learning alongside colleagues from all professions (the multi-disciplinary model) and not just in the context of agile in procurement. To support the development of digital skills in public sector, the OECD published the OECD Framework for Digital Talent and Skills in the Public Sector discusses this approach (OECD, 2021[12]). This is a three-pillar framework for equipping the public sector (whether national or local) with the skills to achieve digital government maturity:

- Pillar 1 covers the importance of the context for those working on digital government and discusses the environment required to encourage digital transformation.
- Pillar 2 addresses the skills to support digital government maturity, covering all public servants, particular professionals and those in leadership roles.
- Pillar 3 considers the practical steps and enabling activities required to establish and maintain a workforce that encompasses the skills to support digital government maturity.

Good examples for digital skill development, however, exist throughout OECD countries, such as in Slovenia where the Ministry of Public Administration runs "Innovation Training in Public Administration". (Box 3.11)

Box 3.11. Slovenia: Innovation Training in Public Administration

The Ministry of Public Administration runs the "Innovation Training in Public Administration". This training aims to change the approach to workflow, problem solving and designing better solutions through effective communication. The programme is actively changing the administrative culture to implement higher quality state functions and digital services. The programme is performed in person and remotely. Objectives of implementing the programme are:

- raising awareness of the importance of gaining new skills and knowledge in terms of alternative ways of work to enable a more agile and efficient response to the demands of the environment;
- to acquire competence for creative tackling of challenges and designing solutions using different methods and approaches focusing on the user and
- to acquire competence in different ways of communicating (more effective presentation of ideas, results, etc.) and in managing group communication processes

Source: (OECD, 2021[12])

c) Creating safe spaces for experimentation and communities of practice

Creating safe spaces for experimentation to use flexible and agile approaches in ICT procurement process is really important to build not only the capacity but also the confidence of public organisations in going beyond the traditional purchasing approaches. A good tool can be conducting pilot ICT projects using agile approaches and then communicating their results widely.

Similarly developing communities of practice in order to facilitate connections and the exchange of knowledge amongst stakeholders from different parts of government could be a powerful tool as it creates a valuable opportunity to share knowledge and experience, to learn from each other. Experience shows that these kinds of communities have cross-cutting benefits and can clearly help address challenges associated with fragmentation. Around the world, countries are increasingly setting up effective yet often relatively simple networks and communities of practice to help civil servants overcome bureaucratic silos and fragmented government structures. Such communities or networks help advance implementation in a consistent, unified manner. (OECD, 2020[23])

These communities of practice or networks can take a number of different forms; for instance:

- They can be formally structured with governance structures and set processes, or more informal, such as meetup groups
- They can be government-only or open to external parties from civil society and the private sector
- They can be fully virtual, in-person or a combination of the two.

The **UK** government has built a series of communities for civil servants hosted on Google Groups and through Slack Channels on a wide variety of topics, some of which touch on procurement. Furthermore, the UK Crown Commercial Service 'buying digital community'[44], sits alongside all other cross-government digital, data and technology communities of practice. These are central to capability and capacity building efforts.

In the **Netherlands**, the Dutch Professional and Innovative Tendering Network for Government Contracting Authorities (PIANOo)[45] was created in 2005 as a network for public procurers with a goal to disseminate knowledge. Since then the institution's role has expanded. PIANOo now serves as an expertise centre for public procurement, building on a network of 3,500 contracting authorities. These practitioners provide the input for PIANOo's work. PIANOo's approach combines different activities:

- Publications: based on members' questions and concerns, PIANOo publishes guidance documents that can support procurers in their daily work.
- Meetings: PIANOo organises regular forums in which members come together to discuss current challenges and exchange good practices. These meetings are regional, for specific industries or procurement markets, and one overarching annual PIANOo conference.
- Online portal: on the organisation's website, tools, publications and guidance are collected, serving as an "encyclopaedia" for public procurement in the Netherlands, including an innovation procurement toolbox.
- Training: PIANOo provides training on the public procurement legal framework.

Even in **The Slovak Republic**, good examples exist, although not related specifically to ICT procurement but rather to green public procurement (GPP). The Slovak Environmental Agency operates a GPP HelpDesk[46] to provide information on GPP for public buyers.

In **Canada**, GCpedia and GCconnex provide connection points for individuals working in government, with different digital discussion groups focusing on a variety of subjects. **Portugal**'s Common Knowledge Network provides more open collaboration opportunities by inviting non-governmental participants to join the community. (OECD, 2020[23]) (Box 3.12.)

Box 3.12. Canada and Portugal: communities of practice

Canada: GCpedia and Gcconnex

The Government of Canada has developed GCpedia, an open source government-wide wiki for collaboration and knowledge sharing. It allows federal employees to share files and post, comment and edit articles placed on GCpedia by their peers, helping to break down walls between departments that are traditionally siloed. While access is available only to those with a government e-mail address, limiting the possibility for third-party collaboration, the tens of thousands of active users within government are a testament to the collaborative power of the platform.

The Government of Canada also created GCconnex, an open source government-wide internal social media network, designed to help public servants build connections and collaborate. Users are able to connect with other public servants with similar interests or with skills that can help them become more productive in their work. The systems aims to foster a public sector culture of collaboration and to promote the creation of information that is streamlined, relevant, user-driven and integrated.

Portugal: Common Knowledge Network

The Common Knowledge Network is a collaborative network built by the Portuguese government to promote the sharing of best practice and information about modernisation, innovation and the simplification of public administration. Membership of the network is open to public bodies, central and local administrations, private entities and any citizen who wishes to participate. Participation involves presenting and describing a best practice and its results.

The network aims to become a central reference point for the dissemination of good practices and lessons learned. It currently hosts over 500 examples of best practice documented from all levels of government.

The network also serves as a place to conduct debate on public policies and their implementation at local, regional and national levels, as well as for participatory decision making with interest groups or communities of practice. It works to strengthen relationships between the various stakeholders and co-ordinate information sharing. Lastly, the network helps participating government organisations obtain a

common perspective on the activities of public administration, with a view to standardising services and identifying similar quality standards in different services.

Source: Government of Canada (2016), "GCTools: Re-imagined for you", www.canada.ca/en/treasury-board-secretariat/corporate/news/gctools-reimagined.html; Janelle (2009), "GCPedia a success, says Government of Canada CIO", https://techvibes.com/2009/10/06/gcpedia-a-success-says-government-of-canada-cio; GCConnex on GitHub: https://github.com/tbs-sct/gcconnex. www.rcc.gov.pt/Paginas/Home.aspx.

3.3.5. Expanding centralisation of ICT procurement for aggregating the demand of several ICT products and services

In the Slovak Republic, public procurement is relatively centralised in that sense that the majority of public spending happens on the central government level. Specific contracts are handled by contracting authorities at central, regional, and local levels, whilst some contracting authorities are required to purchase commonly available goods, services or works from the Ministry of the Interior (MoI), which acts as the central purchasing body (European Commission, 2014[24]). This remains the case for IT procurement, where 58% of IT spend occurs within the central government. As noted in Table 3.2. Overall spend in IT services the central government purchased over EUR 420 million worth of IT services between 2016 and 2019 (Public Procurement Office, 2019[25]).

Table 3.2. Overall spend in IT services

	Number of contracts	Amount (in EUR)
Central government	102	420 286 185.23
Municipality	21	4 882 159.18
Self-governing region	5	999 378.60
Legal entity	108	173 032 394.46
Associated legal entity	1	64 500.00
Subsidised entity	38	9 792 587.42
Contracting entity	24	110 353 988.03
TOTAL	299	719 411 192.92

Note: This data includes contracts that were announced from 18.04.2016 and for which the result of the tender was published by 31.10.2019.
Source: (Public Procurement Office, 2019[25])

This high level of centralisation in IT services is correlated to the 2030 Strategy for Digital Transformation of The Slovak Republic, the government strategy that defines the policy and particular priorities of The Slovak Republic in the context of currently on-going digital transformation of economy and society under the influence of innovative technologies and global megatrends of the digital era (Office of the Deputy Prime Minister of the Slovak Republic, 2019[26]). One of the opportunity areas identified in this 2030 strategy is the need for centralised reform in order to increase competences and accelerate digital innovation in areas such as public procurement. Indeed, with a government focus on promoting centralisation to achieve digital transformation, it is foreseeable that there will be increased levels of centralisation in IT services.

While there are identified high levels of ICT purchasing occurring at a central level in The Slovak Republic, there does not currently exist an ICT specific Centralised Purchasing Body (CPB). A central purchasing body (CPB) is a contracting authority that: i) acquires goods or services intended for one or more contracting authorities; ii) awards public contracts for works, goods or services intended for one or more contracting authorities; or, iii) concludes framework agreements for works, goods or services intended for

one or more contracting authorities. Centralisation of procurement operations through the creation of such an ICT-focused CPB can lead to significant benefits, including better prices through economies of scale, lower transaction costs and improved capacity and expertise, but if not properly managed, centralisation can also entail risks (OECD, 2015[13]). The creation of an ICT-based CPB is not unknown in the OECD, with countries such as **Germany** beginning to centralise information technology (IT) procurement at the federal level. To support the centralisation efforts Germany created the Central Office for IT Procurement within the Federal Procurement Office of the Federal Ministry of the Interior (Zentralstelle für IT-Beschaffung) in 2017 (see Box 3.13). The ZIB is tasked with defining specific procurement strategies. These strategies range from the aggregation of IT-related procurement needs, to ad-hoc support, to contracting authorities for individual contracts.

Box 3.13. Germany: ICT CPB

Germany created the Central Office for IT Procurement (Zentralstelle für ITBeschaffung, ZIB) within the BeschA and under the auspices of the Federal Ministry of Interior, Building and Community (BMI). The ZIB is tasked with defining specific procurement strategies. These strategies range from the aggregation of IT-related procurement needs, to ad-hoc support, to contracting authorities for individual contracts.

The ZIB advises and supports contracting authorities during the entire procurement process, from the expression of needs to the awarding of the contract and its completion. In implementing this new CPB, German public authorities opted for a gradual approach, minimising the risk of potential disruption. ZIB first absorbed the following tasks from 2017:

- the tendering of framework contracts for hardware, software, information and communication technology, as well as IT services and IT-related services (ICT) in the direct federal administration
- the preparation of an annual framework contract roadmap.

In 2018, the ZIB transitioned to:

- Carry out tenders for the individual planned contracts of federal entities whose estimated value exceeds EUR 135 000
- Come to an agreement with each federal entity on thresholds above which it will undertake the procurement process on behalf of contracting authorities.

Source: (OECD, 2019[22])

Ireland also introduced centralisation for ICT procurement to deliver the commercial implementation of the Public Service ICT Strategy. The Office of Government Procurement (OGP) developed sourcing strategies aimed to reduce the fixed ICT cost base to leverage the considerable buying power of the Public Service. The sourcing strategies include, where possible, aggregation of spend, standardisation of specifications and on-going analysis/renegotiation of current ICT contracts. (Box 3.14)

Box 3.14. Ireland: Centralised and collaborative procurement

Following a public service reform in 2013, the Irish government introduced a centralised public procurement body – the Office of Government Procurement (OGP), part of the Ministry for Public Expenditure and Reform (MPER).

Reform in Ireland has also involved a more dynamic approach that goes beyond cost savings and

enhances efficiency and effectiveness based on five procurement priorities:

- Category management ("teams built around what they are buying rather than who they are serving")
- Centralised approach ("centralised buying with established offices/teams coordinating procurement")
- Holistic approach to policy and operations ("a single, integrated procurement function responsible for policy, sourcing and category management for common categories and support operations")
- Professionalisation of the service/purchasing
- Improved use of systems and data

In 2014, the Education Procurement Service (EPS) was mandated to act as the 'Education Sector Hub'. Following the reform, the EPS expanded from a shared service representing four institutions to a broader network of education and training institutions.

On behalf of OGP, the EPS provides the public sector with shared service procurement for agriculture and veterinary supplies, diagnostics and research equipment, laboratory equipment and library goods and services under the central procurement model. It also presents education and training sector needs to the OGP. Most universities in Ireland are now using at least some of the OGP frameworks, especially for energy and ICT. By the end of 2015, the EPS contributed to public sector procurement savings estimated at about EUR 160 million.

Source: Office of Government Procurement; https://ogp.gov.ie/welcome-from-minister-of-state

In 2018, the Government in **Hungary** also introduced further centralisation in the field of government ICT procurement. A new agency, the **Digital Government Agency** (Digitális Kormányzati Ügynökség Zrt., DKÜ) was set up with the aim of unifying and centralising the government's ICT procurement as well as making public ICT spending more transparent and improving the efficiency of ICT procurement. DKÜ set up a repository of the ICT assets of the government. The relevant public bodies and companies are required to upload their annual IT development and procurement plans to the Centralised IT Public Procurement System (KIBER) by 31 March each year.

The 2015 OECD Recommendation on Public Procurement states: "Adherents should develop and use tools to improve procurement procedures, reduce duplication and achieve greater value for money, including centralised purchasing, framework agreements, e-catalogues, dynamic purchasing, e-auctions, joint procurements and contracts with options" (Principle on efficiency, paragraph VII) (OECD, 2015[13]). Centralisation of purchasing activities has been a major driver of the efficient performance of public procurement systems.

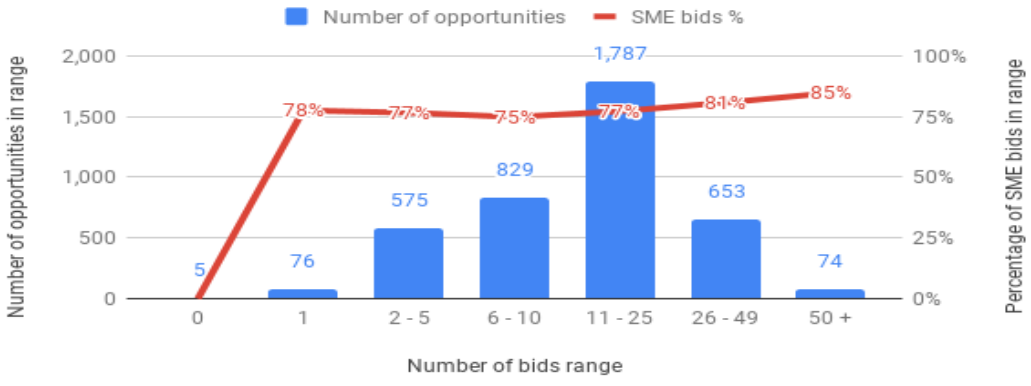
Centralisation of procurement activities and aggregation of needs are observed across an overwhelming majority of OECD countries. CPBs are increasingly established to reap the benefits of aggregated demands and outputs of procurement activities. The benefits of centralised purchasing activities – such as better prices through economies of scale, lower transition costs, and improved capacity and expertise – are widely acknowledged. Another key aspect of centralisation is the use of framework agreements. A framework agreement is an agreement with one or more economic operators for the supply of goods, services and, in some cases, works. Its purpose is to establish the contract conditions to be awarded by one or more contracting authorities during a certain given period, in particular, with regard to maximum price, minimum technical specifications and, where appropriate, the quantities envisaged. Usually the terms of a framework agreement shall not exceed four years (OECD, 2014[27]). The aggregation of demand caused by a framework agreement is a strong tool to enhance efficiency, reduce administrative burden and lower the cost.

Framework agreements designed to meet users' needs (primary users being public sector buyers and suppliers) can also support increased competition and SME participation as several examples, such as the one from the **United Kingdom** shows: the Crown Commercial Service (CCS) 'Digital Outcomes and Specialists' (DOS) framework agreement (available through the Digital Marketplace platform), was launched at the end of April 2016 and by January 2021 had re-opened for new supplier applications 4 times. DOS5 (the current iteration, which went live on 20 January 2021) has 3,340 suppliers (94% SMEs) available to the UK public sector. Since its launch (and as at 28 January 2021) 3,999 contracting opportunities have been published, of which:

- 84% (3,343) received 6 or more bids;
- 45% (1,787) received between 11 and 25 bids;
- 2% (76) received single bid responses.

Participation of SMEs range between 75% and 85% of contracting opportunities. Furthermore 1,078 DOS contracts were awarded that were valued above £122,976[47], which have an average value of £1,684,279, and received an average number of 16 bids per contracting opportunity. This illustrates efficiency and effectiveness gains from time saving, standardisation (consistent terms and conditions, application and enforcement of digital, data and technology standards, centralisation of data capture and reporting, etc.). (Figure 3.12.)

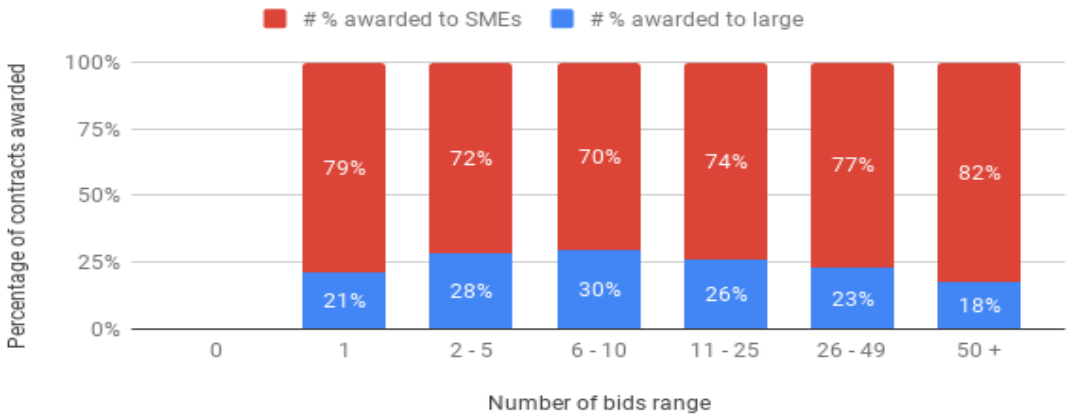
Figure 3.12. Supply opportunities and SME participation per number of bids range (as of 28 January 2021)



Source: https://assets.digitalmarketplace.service.gov.uk/digital-outcomes-and-specialists-5/communications/data/opportunity-data.csv
https://www.digitalmarketplace.service.gov.uk/digital-outcomes-and-specialists/opportunities

Figure 3.13 shows, SMEs have so far been awarded between 70-82% of the 1,910 DOS contracts, which have had award data updated by buyers.

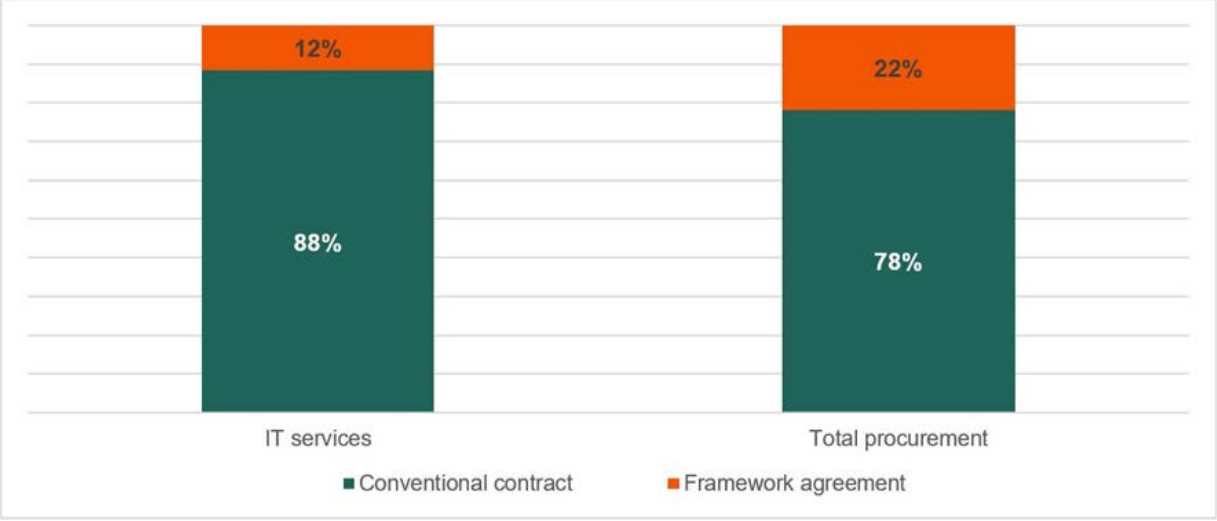
Figure 3.13. Percentage of contracts awarded to SME and large suppliers per number of bids range (as of 28 January 2021)



Source: https://assets.digitalmarketplace.service.gov.uk/digital-outcomes-and-specialists-5/communications/data/opportunity-data.csv https://www.digitalmarketplace.service.gov.uk/digital-outcomes-and-specialists/opportunities

The use of framework agreements are not uncommon for ICT purchasing in The Slovak Republic. For IT services, 12% of purchasing is done via a framework agreement, during the period of 2016 to 2019 (Figure 3.14). Comparing this with the total procurement spend, 22% of spending is done via framework agreement. It is often difficult to establish framework agreements in the field of ICT as the compatibility and usability of a specific IT services are unique to the contracting authority that initially procures the service. There is certainly scope for further consolidation of spending into framework agreements for IT services, especially for contracting authorities to collaborate earlier in the procurement process to ensure that the IT services they procure can be made consistent across government.

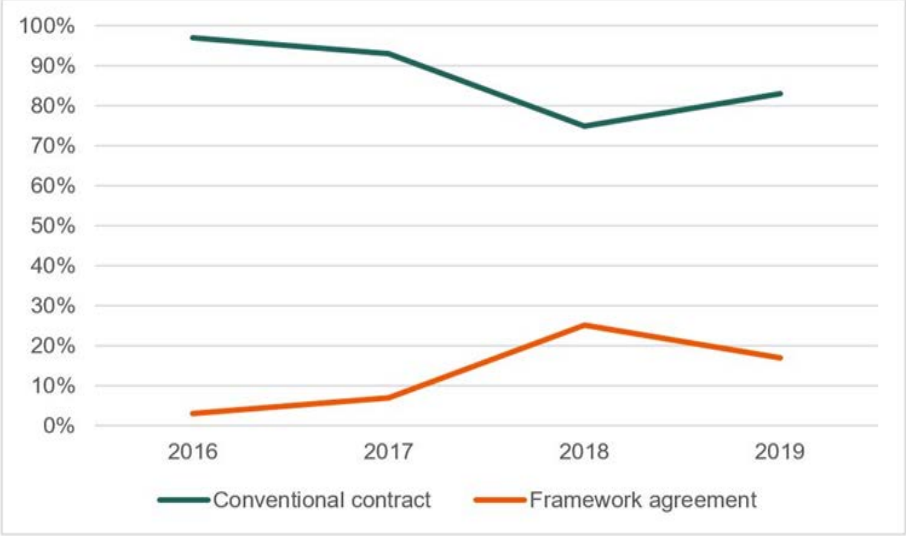
Figure 3.14. Use of conventional contracts versus framework agreements



Note: This data includes contracts that were announced from 18.04.2016 and for which the result of the tender was published by 31.10.2019.
Source: (Public Procurement Office, 2019[25])

When IT services are divided into a year upon year analysis, it does become clear that the use of framework agreements is increasing. As identified in Figure 3.15, in 2018, 25% of IT-related contracts were administered through framework agreements. This figure does however decrease in 2019 to 17%.

Figure 3.15. Use of conventional contracts versus framework agreements in IT services



Note: This data includes contracts that were announced from 18.04.2016 and for which the result of the tender was published by 31.10.2019.
Source: (Public Procurement Office, 2019[25])

The 2015 OECD Recommendation on Public Procurement calls upon Adherents to use information and communication technologies to "*drive cost savings and integrate public procurement and public finance information" and to "employ recent digital technology developments that allow integrated e-procurement solutions covering the public procurement cycle*" (Principle on e-procurement, paragraph VIII, i). E-procurement systems collecting consistent, up-to-date and reliable data on procurement processes can feed into other government information technology (IT) systems through automated data exchanges, reducing risks of mistakes, errors and duplication. Meanwhile, integration with other digital government systems such as digital invoicing is essential to make e-procurement systems fully functional during all phases of the procurement cycle (OECD, 2015[13]).

To this end, as framework agreements are effective at generating efficiencies and savings across government, the PPO should consider the creation of an online portal or platform that would not only provide an online location for ICT framework agreements, but would also be used to aggregate public demand and streamline procurement processes. A number of countries such as the UK and New Zealand have created online platforms that gives government agencies access to innovative products and services, particularly cloud services.

3.3.6. Encourage joint procurements (joint developments) of IT solutions and the re-use and sharing of digital solutions across the administration

National, regional and local public administrations can reduce costs, increase their efficiency and foster interoperability by jointly developing, reusing or sharing IT solutions that meet common requirements. 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.

Public services can be implemented faster and more efficiently by sharing and re-using already available solutions and by learning from the experiences of other public authorities, agencies or even of other countries.

Sharing of solutions refers to making solutions available to others, or developing common solutions, such as:

- Releasing an application under an open source license on a repository
- Providing common IT frameworks and architectures, common list of standards and metadata, guidelines for project management
- The shared development of solutions, based on common requirements, with or without pooling of procurement
- Making shared services available for several public administrations, for example as cloud, or web services.

Re-using already available solutions 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. The use of open source software and collaborative coding has enabled public administrations to leverage the developer community in the continuous improvement of its solutions, thus proving to be a powerful tool to increase procurement's efficiency. Nevertheless, most importantly it provides a space for collaboration by creating the opportunity to reuse solutions, to collectively improve by learning from each other, and to share solutions, knowledge and wisdom.

Public sector for example, develops software. Beyond the immediate need of the public authority, this software, solution represents an asset that could be reused by other public sector agencies. Software reuse means "*Distribution under a licence*", because software is protected by copyright and without the authorisation of the copyright owner; any use (including modification, adaptation, and re-distribution) is copyright infringement. Allowing the reuse of software by third parties is not a unilateral "gift" in the sense of a "deprivation": on the contrary, increasing use and sharing of software has the effect of augmenting its value: more users means more developers, more experts, more potential for improvement, more need and interest for training, more service providers interested to become competent, technical alignment of other initiatives on the published solution (that become a reference), and reduction of cost to make it interoperable. Not all public sector software is aimed for sharing and redistribution: some software is too specific in terms of business needs, or there could be security requirements not implemented. Therefore the decision for sharing / allowing others to reuse and localise the source code is not an obligation and needs to be taken on a case by case basis by the relevant authority (Schmitz, 2013[28]).

Sharing and reusing technology, data, and services (e.g. common platforms, components, design system elements, etc.) is central to the concept of 'Government as a platform' and a foundational element of the **OECD Digital Government Policy Framework: Six dimensions of a Digital Government** (OECD, 2020[8]). We are no longer in the binary 'build' versus 'buy' way of thinking; reuse is a critical decision making factor to achieve value for money and reduce whole life costs.

In almost all countries, there are several technology resources and common government platforms that are available to all government organisations. This help public agencies to reuse government services, information, data and software components instead of developing their own solutions.

In **Italy**, the Codice dell'Amministrazione Digitale obliges public buyers to use collaborative coding, release the software developed or purchased with an open license (one of the licenses approved by the Open Source Initiative) and to publish it in a public repository. As already mentioned in the Report earlier, the Agency for Digital Italy (*Agenzia per l'Italia Digitale)* issued guidelines[48] on the acquisition and reuse of software for public administrations to support public buyers. The administration must always obtain full

ownership of the software. The guidelines include technical attachments that can be directly included in contracts and specifications related to software development, software modification and maintenance, in order to fulfil the release obligation. The guidelines also include detailed instructions on how to publish software as an open source. (Box 3.15)

Box 3.15. Italy: Engagement with the market on the use of open source and collaborative coding

Developers Italia – community of public service developers

Italy has created the "*Developers Italia*", a community of public service developers, a technology platform hosting all the major technological projects in the country. Both institutions in the public administration and/or suppliers can find useful resources to develop their digital services, such as

- *public software catalogue* including all software put into reuse by any public agency together with the open source software developed by third parties for the public administration. All public agencies are required by law (Art. 69 of the Codice dell'Amministrazione Digitale) to share with Developers Italia the software they purchased. Developers Italia then publish it in an open, public repository. *Guidelines on the acquisition and reuse of software for public administrations* issued by the Agency for Digital Italia issues detailed provisions on how to publish software as open source. The third party open source software, such as those which are not put into reuse by the Public Administration but are potentially interesting for the public sector, can be included in the Developers Italia catalogue.
- *API catalogue* that contains a collection of public services accessible throughout interoperability, together with the relative documentation and the OpenAPI descriptions, in order to allow building modern digital public services.

Source: https://developers.italia.it/en/

As Chapter 1 already presented, the **European Commission** is also strongly encouraging EU Member States to share and re-use already available ICT solutions across borders and sectors in an efficient and effective way. The EU-wide sharing and reuse of interoperable solutions for public administrations could reduce costs and risks, foster innovation and businesses' use of digital technologies, and ensure digital sovereignty. A collaborative platform, ***Joinup***[49], was set up to facilitate the sharing and reuse of IT solutions developed for public administrations in EU member states. *Joinup* is a single-access point to almost 2,800 interoperability solutions for public administrations, included in the collections of more than 40 standardisation bodies, public administrations and open source software repositories. The interoperability solutions are described using the Asset Description Metadata Schema. *Joinup* can serve also as an example for setting up a national collaborative platform and catalogue of reusable IT solutions. It provides freely reusable software under an open source licence and some support to help countries set up their own collaborative platform with services similar to those of the Joinup platform.

In its *Sharing and Reuse Framework for IT solutions*[50] (2016), the European Commission put forward a variety of good practices aiming at promoting the re-use of procured solutions. For example, a collection of good examples for contractual clauses for service procurement was developed to propose common clauses for contracts, which public administrations could use during procuring services. Clauses are developed both for contracts related to the: 1. the development of new IT tools that may be re-used and/or shared later, 2. re-use of already available IT tools possibly through customization. (Box 3.16)

Box 3.16. European Union: Standard "Sharing and Re-Using" Clauses for Contracts – Contractual Clauses for Service Procurement

It presents standard clauses for sharing and reuse meeting the following distribution requirements:

- The right to redistribute its own software (when written by or exclusively for the authority)
- Reusing third parties' IPR assets (integrating "received" open source software in the public authority solution)
- Reusing and distributing the documentation (and other "non-software" knowledge elements)
- "No Vendor Lock-in" clause: how to stay free to adopt a new solution and to contract with another provider, as the case may be.

Source: https://joinup.ec.europa.eu/sites/default/files/document/2014-03/Standard%20sharing%20and%20re-using%20clauses%20for%20contracts.pdf

In **The Slovak Republic**, the National Agency for Network and Electronic Services ("NASES") provides **Central Government Portal** available at https://slovensko.sk. Central Government Portal provides central and unified access to information resources and electronic public services. Information (advice, guides, descriptions) users are searching for is usually a part of particular government department website. Central Government Portal focuses on the integration of such information along with electronic public services and provides them to users through a single entry point in an accessible and comprehensive way.

In the **United Kingdom**, the GOV.UK Service Toolkit[51] covers this issue. The portal provides all the information needed to design, build and run services that meet government standards. Besides the list of digital and technology standards, guidance on specific topics, the portal provides also the technologies that can be used when developing governmental solutions, such as:

- GOV.UK Notify – technology to keep the users updated with emails, text messages and letters, cheaply and easily
- GOV.UK Pay – technology to take and process payments - a simple experience for users and easy integration
- GOV.UK Platform as a service – hosting the service on a government cloud platform without having to build and manage your own infrastructure
- GOV.UK Sign in (beta) – technology to sign in to service quickly, easily and securely

3.3.7. Reinforce the adoption of existing common standards, assuming them as clear criteria to guide the public administration's purchasing processes

ICT standards play an essential role in achieving interoperability 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. They can prevent 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.

In the **European Union**, the European Commission identified ICT standards 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[29]). Procuring ICT solutions based on standards that are available for any user increases the potential for interoperability with other applications that use the same standards and thus achieve 'vendor independence'. Standards determine the key element of a technology and create a level

playing field for all ICT suppliers. More suppliers will be able to submit offers to invitations to tender for standards-based systems, leading to more competition and choice.

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 ones. They make data open for any citizen to audit. They unlock the transformative power of open source software. To ensure that purchases are not limited to the original supplier and that they can be further used to deliver trans-governmental services, it is recommended to support solutions that use standards and no proprietary elements.

Public procurements should include only standards that are supported by the market and that are recognised by a formal standardisation organisation, or a technical specification that has been identified by the European Commission or by a national organisation. So long as they are not recognised, they remain "technical specifications" that can also be used in public procurement, but their legal validity may be questioned, and an additional explanation may be necessary. Where openness requirements are justifiable due to interoperability needs of the procuring public authority, openness properties for open standards should be included as well. Furthermore, given that standards and technical specifications can be implemented in different ways, it is important that they provide reference to implementation or conformity tests.

Referencing standards in technical specifications aims at increasing common understanding of procurement documents between buyers and suppliers. It may help to define works, supplies and services, contribute to reducing total costs, ensure equality, increase transparency and makes it easier to develop procurement documents. As public procurement officers are unfamiliar with standards and standardisation, and need guidance on how they should reference standards in procurement documents, under the leadership of the Swedish Standards Institute (SIS), and with the financial support of the European Commission a **Guide for referencing standards in public procurement in Europe**[52] was developed and published in 2018. The Guide aims at providing a better understanding of what standards are and how they can be referenced in public procurement. It also aims at providing ideas on how to reference standards in general, based on the EU procurement legislative framework.

Common, consistent standards that flow throughout the full public spending lifecycle, starting at the pre-procurement planning, investment appraisal stage. In the **United Kingdom**, the Technology Code of Practice[53] is used for this purpose for this, combined with the authority delegated to GDS from the Treasury for assuring spending plans against those standards. This flows into procurement. Furthermore, at the post-tender implementation / service delivery stage, the Service Standard[54] is used combined with the authority to assure incremental delivery on a phased basis.

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