OECD Public Governance Reviews

Digital Transformation Projects in Greece's Public Sector

GOVERNANCE, PROCUREMENT AND IMPLEMENTATION

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BETTER POLICIES FOR BETTER LIVES

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Foreword

Governments across the OECD are looking to digitalise their economies, and thereby enhance public service delivery. Digitalisation is an immense opportunity– offering citizens improved access to services and increased digital effectiveness – for the public sector and citizens alike. Governments need to be well equipped to meet digitalisation's unique challenges and effectively navigate the digital transformation process.

The successful delivery of digitally enabled public services hinges upon government capacities to master the day-to-day operations of digital transformation: planning, procuring, implementing, and monitoring related projects. Bottlenecks in delivery, especially within the procurement process, put governments at risk of failed project implementation, unnecessary costs, and unrealised benefits from digitalisation.

Greece has made digital transformation a top priority in recent years. While advances in political commitment reflect this shift, development of the public sector's institutional capacity to successfully implement and operationalise projects has lagged. Digital and information and communication technology (ICT) procurement presents several distinct challenges, such as: 1) lengthy implementation of procedures, 2) limited market-interaction, 3) lack of focus on quality and agile processes, and, 4) procurement professionals' capabilities.

As Greece anticipates an inflow of public funds from the European Recovery and Resilience Funds (RRF), it is increasingly critical that the government ensures its readiness in managing top-down implementation of digital transformation projects. This report seeks to help the government of Greece strengthen its institutional capabilities for coherent planning, management, procurement, and monitoring of digital government projects. It highlights the role of government-wide co-ordination via Project Management Office (PMO), a key tool to streamline project implementation and agile project delivery.

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Abbreviations and acronyms

AEPP	Public Procurement Review Authority
BPQR	Best-price-quality ratio
CPB	Central Purchasing Body
DGI	Digital Government Index
DGPF	Digital Government Policy Framework
DPS	Dynamic Purchasing System
DTB	Digital Transformation Bible
ESIDIS	Electronic System for Public Procurements
ESIF	European Structural Investment Funds
GDFAS	General Directorate of Financial and Administrative Services, Ministry of Digital Governance
GDPP	General Directorate for Public Procurements, Ministry of Development and Investments
GSDGSP	General Secretary for Digital Governance and Simplification of Procedures, Ministry of Digital Governance
GSIS	General Secretary of Information Systems, Ministry of Digital Governance
GSTP	General Secretary of Telecommunications and Posts, Ministry of Digital Governance
HSPPA	Hellenic Single Public Procurement Authority
KIMDIS	Central Electronic Registry for Public Procurements
KPI	Key Performance Indicator
MAPS	Methodology for Assessing Procurement Systems
MDG	Ministry of Digital Governance
MEAT	Most economically advantageous tender
MVP	Minimum Viable Products
NDS	National Digital Strategy
OGP	Open government data
PCP	Pre-Commercial Procurement
PMO	Project Management Office
PPI	Public Procurement of Innovation
RFP	Request for Proposal

RRF	Recovery and Resilience Facility
RRP	Recovery and Resilience Plan
SPP	Sustainable Public Procurement

Executive summary

Greece has embarked on an ambitious digital transformation of the public sector to achieve a more sustainable, proactive, and people-centred public governance. The Greek government has progressively implemented digitalisation reforms, as well as strategic approaches to the public sector's operations and services to embed digital government policy and culture and seize related opportunities.

In line with OECD recommendations, Greece is working to strengthen the governance for digital government. With the creation of the Ministry for Digital Governance (MDG), bringing all efforts on digital government, economy, and society under the remit of a single entity, the country's public sector has improved its capacity to steer relevant actors across sectors for a coherent digital government transformation.

The MDG's digital strategy, the so-called Digital Transformation Bible (DTB), prioritises digitalisation as a strategic tool, leveraging cross-governmental and cross-sectoral digital technologies and data to boost national prosperity and well-being. The DTB highlights holistic, strategic efforts (including common enablers and sectoral digital transformation projects) to drive the Greek digital government ecosystem into a new era. These advancements have fuelled demand for increased alignment, coherence, and co-ordination to carry out ICT/digital projects. Although these efforts illustrate the political priority given to digital transformation, persistent issues – and new challenges - require continued attention.

Key Findings

- Silo-based operations within and outside the MDG limit progress on reaping the opportunities of the digital transformation for the public sector.
- Past efforts to digitalise government have failed at the procurement stage, thus generating wasteful costs, forgoing benefits, and undermining broader strategic and policy efforts. Greek authorities need to ensure that the implementation and delivery of digital transformation projects is mastered end-to-end.
- Digital reforms require solid foundations to avoid duplication of efforts. This implies continuous co-ordination and dialogue with horizontally competent and sector-specific authorities. Each public authority already collects data on the performance of its functions. Yet the agility to reuse and exchange these data remains insufficient. Moreover, authorities tend to collect the same data for their individual data systems (when they exist) without considering the possibility of data interoperability. This not only creates data redundancy but is also costly for both citizens and the state. The proper design of technical solutions requires careful analysis and understanding of existing administrative and regulatory processes and the identification of opportunities.
- The planning and funding process shows potential for rethinking, securing alignment in funding allocation and using project approval to guarantee coherence in project delivery.

- Public procurement processes pose particular challenges to the implementation of digital transformation projects. The evidence showed lengthy implementation periods constraining agility in delivery, lack of strategic use of advance procurement practices and missed opportunities in centralised procurement for digital technologies.
- Greece could also benefit from enhanced public sector capabilities in terms of understanding user needs, digital talent and skills availability, and procurement competencies. Finally, Greece can benefit from adopting monitoring and evaluation mechanisms, including specific key performance indicators to track progress and outcome realisation.
- The willingness to transform, reflected in recent institutional modifications, and the governance challenges in developing digital and ICT projects, are an opportunity for Greece to embrace strategic approaches to digital government investment. These approaches should consider whole-of-government co-ordination mechanisms and renewed capacities in planning, procuring, implementing, and monitoring initiatives in the public sector to foster agile project delivery.

Key policy recommendations

Strengthening governance for digital government in Greece

- Establish a Project Management Office (PMO) to support the development of a coherent, organic, and structured management of ICT/digital projects.
- Set out clear roles, responsibilities, and mandates for all relevant stakeholders within MDG (from policy setting to project management).
- Promote further co-ordination among relevant authorities involved in digital government, public procurement and public budgeting for digital/ICT project procurement and implementation, including through data interoperability frameworks.

Planning and funding digital investments

- Adopt an ICT portfolio management system for digital/ICT investments, including project approval processes' redesign, and the establishment of clear, transparent prioritisation criteria.
- Integrate ICT portfolio system into the governance of digital government, through existing bodies, which oversee DTB implementation (i.e., Steering Committee and Executive Network).
- Secure coherent funding management of digital projects – to ensure investment decisions remain independent of funding mechanisms.

Procuring and delivering ICT/digital

- Promote the strategic use of public procurement – to increase digital/ICT procurement efficiency and effectiveness.
- Strengthen early market engagement practices to make the most of opportunities, offered by legal frameworks,to engage with market actors during procurement processes' preparation.
- Encourage the use of quality criteria within procurement evaluation (to include functional specifications, rather than simply descriptive and/or technical) to deliver value in ICT products and services procurement processes.
- Foster the use of advanced procurement practices, such as dynamic purchasing systems (DPS) and public procurement of innovation (PPI) to improve standardised goods/tailored solutions purchasing.

- Facilitate access to a supplier-base of start-ups/innovative SMEs (including GovTech communities).

Monitoring and evaluating digital investments

- Define a comprehensive set of key performance indicatorsto assess and monitor digital/ICT projects' development.
- Establish open communication channels with relevant stakeholders, and the wider community, to disseminate digital/ICT projects' performance data.
- Establish a common and standardised methodology to measure user satisfactionto advance systematic and unified evaluation mechanisms that assess users' experience with digital solutions.

Strengthening public sector capabilities

- Strengthen line ministries' capabilities (via digital standards) – to support coherent and aligned implementation of ITC/digital projects: (1) data sharing; (2) agile project management; (3) digital identity; (4) notification systems.
- Promote a user-driven culture throughout the public sector to guide digital transformation projects.
- Encourage training and capacity-building (via agile project management, user research, and user satisfaction measurements).
- Increase capacities to target advanced procurement practices and digital skills (e.g., gap-assessment indicators, pilot promotion)to test specific, scalable approaches.
- Examine the scope for ICT procurement centralisation to benefit from efficiency gains, greater specialisation, and related capacity improvements.

1 Assessment and recommendations

This chapter summarises the key findings and the policy recommendations of this assessment. The first section of the chapter presents the key findings around the current state of digital project development in Greece, identifying potential bottlenecks that could hamper effective implementation. The second section presents the policy recommendations for sound governance for digital transformation projects in the Greek public sector. The third and last section summarises the methodological approach used in this assessment.

Addressing public governance challenges and driving the digitalisation of the public sector are high priorities on the Greek government's agenda. The recently created Ministry of Digital Governance (MDG) concentrates all responsibilities related to digital government and cross-governmental service design and delivery, including the mandate to implement an ambitious digital government strategy to 2025 – the Digital Transformation Bible. However, the advances made in terms of leadership and political commitment to the digital transformation of the Greek public sector have not necessarily been encompassed with the development of institutional capabilities to plan, prioritise, manage, procure and monitor/assess digital government projects in a successful fashion. Such is the case of projects co-financed by the European Structural Investment Funds (ESIF), where in some cases the limited institutional capabilities for sound digital government investments have hindered the successful implementation of projects and have constrained the realisation of final benefits.

In the context of the Greek Recovery and Resilience Plan (RRP), "Greece 2.0" 17.8 billion euros in grants and 12.7 billion euros in loans will be disbursed over the period 2021-26. The plan devotes around 23% of Greece's total allocation to the digital transition (see (European Commission, 2021[1]) and (Hellenic Republic, 2021[2])). For this reason, the Ministry of Digital Governance is looking at strengthening its institutional capabilities for a coherent planning, management, procurement and monitoring of digital government projects. This report presents an assessment of the existing governance, institutional frameworks and functions for the implementation of digital government projects, including the procurement function, identifying key findings and concrete proposals for sound governance arrangements that can help Greece realise the expected benefits from digital government projects and investments in the public sector.

Key findings

Fragmented organisations and processes hinder coherent governance

- Departments and units within and outside the MDG operate under a fragmented approach due to the successive institutional reforms in the past decade. Similarly, their respective roles and mandates are often unclear to key stakeholders involved in the implementation process. This siloed operation reflects how departments and units involved in the life cycle of ICT/digital projects (from planning, to project approval, procurement and implementation) engage in limited collaboration and interaction throughout this process. The institutional culture does not appear to promote co-ordination.
- Governance and ownership of data used in digital projects need to be well defined. Several digital reforms projects sometimes require the same data to be collected multiple times depending on the authority in charge. Better cooperation between data owners (ministries and their departments) can ensure that data is collected systematically and is fit for future use. Designing technical specifications for setting up of new systems is often complex because of a lack of standardised approach to design and operations of data systems. Having guidance and "blueprints" available for regulatory and administrative agencies would help ensure more coherence and consistency. Properly analysing, rethinking, redesigning, consolidating, simplifying regulatory and administrative processes *before* starting the digitization work is also essential.
- When looking at the availability of standards and common practices for ICT/digital projects to secure more coherent and aligned implementation, MDG has not set a concrete and actionable set of guidelines and standards to enable system-wide transformation while promoting coherence and alignment in the development of ICT/digital projects both within and outside MDG.
- The current governance structure of MDG presents a duplication of bodies in charge of procurement of digital projects. While there is duplication of procurement of digital projects within MDG, the level of sophistication of procurement operations seems to varies between responsible entities.

- The Ministry devotes significant time and effort in dealing with the long-tail of small projects, which could be implemented by line Ministries.

Limited planning and approval process for ICT/digital projects

- MDG does not have a comprehensive knowledge management approach to leverage policy goals, technical specifications, and expected timelines to effectively steer the implementation of the Digital Transformation Bible (DTB), prioritise efforts and create synergies between relevant authorities to avoid project duplication and fragmentation as well as shadow IT costs across the public sector.
- The existing approval process to establish the value proposition of ICT/digital projects does not provide strategic information to guide decision-making, prioritisation and progress monitoring. Despite the critical role of the MDG in approving and funding most of ICT/digital projects in the public sector, the Ministry is not leveraging this process to secure digital investments adhere to the priorities and standards for digital government in Greece before allocating funding, nor for medium- or long-term planning purposes.
- The different funding sources to support implementing ICT/digital initiatives, including European and national funds, challenge the coherent planning of digital transformation efforts. According to the evidence collected, there are different procedures and internal responsibilities within MDG depending on the origin of funds, following different approval workflows and legal formalities.

Overly lengthy implementation cycle of digital projects

- A critical success factor for ICT/digital projects is the speed of implementation. In Greece, however, several elements contribute to extended implementation timeframes, including project approval (*relevance attestation*), communication between relevant ministries, and management of the procurement process.
- As part of the assessment, data from the implementation and procurement of digital projects funded by European Structural and Investment Funds (ESIF) over the programming period 2014-2020 was analysed. The data reveals bottlenecks in each stage of the procurement process. On average, the procurement process for ESIF projects takes 686 days, from the project approval to the start of contract implementation. The tender preparation appears lengthy, partly due to the lack of effective co-ordination processes with the project beneficiary.
- A key challenge delaying the procurement process of digital projects lies in frequent legal challenges. Importantly, a significant share of ESIF-approved projects (78%) have not reached the contract signature stage during their expected 2014-2020 programming period.

Lack of strategic procurement practices and agility

- The procurement process is a critical element of the implementation of ICT/digital projects. Due to identified shortcomings in their procurement, digital projects in Greece are at high risk of failure or sub-optimal implementation. These risks include taking a long time from design to implementation, lacking flexibility to respond to changes in user needs, lacking interoperability and adoption of cross-governmental standards, limited incorporation of the latest technologies. Ultimately, weaknesses in the procurement process leading to complex and closed systems with the risk of vendor lock-in and legacy costs.
- Key procurement practices that contribute to a sound process and allow delivering results of ICT/digital project implementation are not sufficiently used, or not fully exploited. In particular, practices for market engagement vary within MDG, but overall do not explore the full possibilities permitted by the existing legal procurement framework, and the related benefits for the procurement of digital transformation projects. Namely, focusing on market engagement entails

gathering a sound understanding of what the market can deliver, thus limiting misunderstandings, discrepancies and mistakes in the procurement process and when managing contracts. In the ICT/digital context, this is of even greater importance given the fast pace of the market.

- By focusing on price-only instead of quality in the award criteria, contracting authorities are often not able to award contracts to high-quality providers that offer value-for-money solutions. Namely, choosing the lowest price increases the risk of poor execution and less advanced technology.
- Overly prescriptive technical specifications are potential causes of sub-optimal execution of digital projects, as such specifications may turn out overly rigid, inflexible and even outdated by the time of the implementation of the contract. In the digital environment, however, it is especially important to allow for agility, modifications and iterations. Thus, a product or service procured based on an overly defined specifications may prove not to be fit-for-purpose.
- Stakeholders within MDG are hesitant about using Dynamic Purchasing Systems (DPS) and advanced procurement practices suitable for digital projects (e.g. public procurement of innovation), given the lack of experience with using these practices, and have an overall risk-averse attitude towards new approaches in procurement.
- The market has been characterised by a small number of large contracts, which are highly attractive to the pool of available suppliers. Such large contracts, however, limit agile implementation and increase the incentives for litigation, as suppliers are aware that only few large opportunities are present on the market.

Supplier eco-system

- The Greek ICT market overall is quite localised and characterised by small and medium-sized enterprises, as most companies do not surpass 250 employees. In some instances, these SMEs represent Greek subsidiaries of international corporations.
- To attract a pool of suppliers capable of delivering the desired digital transformation, the Greek government needs to be considered an attractive client. This is even more important given that the share of the ICT market by the public sector has been relatively small compared to the private sector (although the influx of funds from the Recovery and Resilience Facility (RRF) will likely change this dynamic).
- Several barriers persist to making the public procurement market accessible to suppliers, particularly small, innovative start-ups and SMEs, notably the long duration of procurement cycle, and competition that does not reward the highest quality offer, or innovative solutions. These aspects may deter small and innovative companies from participating in public sector bids.

Monitoring results

- There is no comprehensive monitoring and assessment policy for digital transformation initiatives in the public sector, including measuring the procurement function’s impact. Currently, the systematic use of monitoring tools in MDG, including key performance indicators, is limited and responds to efforts scattered across the different phases of ICT/digital project development and the respective departments/units involved in the process.
- The absence of common and agreed-upon monitoring and assessment mechanisms, with information openly available to the public and relevant stakeholders, limits the awareness of digital transformation efforts within and outside the public sector and the accountability of all involved actors in the implementation of ICT/digital projects.

- Structured monitoring of ICT public procurement is not in place in Greece. Measuring and analysing performance indicators contributes to identifying potential bottlenecks in public procurement processes, which might hinder the smooth implementation of public procurement procedures.

Public sector capabilities

- The Greek public sector requires a cultural shift in developing ICT/digital projects to better understand user needs and embed agility at the core of the development processes. Despite anecdotal cases, Greece's public sector institutions do not conduct user research processes to understand and define the requirements when planning ICT/digital projects. Similarly, there are few civil servants with user research and service design skills and concrete mechanisms to channel user feedback at early development stages.
- The restricted availability of managerial and technical capacities in line ministries to carry out digital transformation projects has created a significant overload in MDG and its dependent units, including Information Society S.A., as they concentrate most of the digital expertise in the public sector and take complete control over the development lifecycle of ICT/digital projects.
- There are limited procurement and digital competencies among public officials to support the development of digital initiatives. There has been limited investment and recruitment of personnel with specific ICT skills over the past several years. As a result, procurement entities are short in specialised personnel that can bridge the divide between expertise in digital technology and procurement competence. Understaffing and the lack of appropriately skilled resources are considered one of their main challenges in the implementation of procurement of digital projects.

Policy recommendations

Strengthen governance for digital government in Greece

- **Establish clear roles and mandates for all relevant stakeholders within MDG**, including policy setting and project management roles within MDG, the functions of departments/units involved in the development of ICT/digital projects, and the role of Information Society S.A. as a strategic partner in the implementation process.
- **Promote co-ordination between relevant authorities involved implementing and procuring ICT/digital projects.** This includes further alignment between relevant digital government, public procurement and public budgeting authorities and actors, including Information Society S.A. The MDG could leverage the Digital Transformation Steering Committee and the Implementation Network for this purpose.
- **Establish a Project Management Office (PMO)** to support the development of a coherent, organic, and structured way to manage ICT/digital projects. For this, MDG needs to revisit and integrate existing procedures for project approval, funding, procurement, implementation, and monitoring to address ICT/digital project development from an end-to-end perspective.

Adopt an ICT portfolio management system for ICT/digital investments and redesign the ICT/digital project approval process

- **Implement an ICT portfolio management system** to guide planning, decision-making, investments and progress monitoring of critical ICT/digital projects in the Greek public sector. This tool can equip the PMO as well as relevant co-ordination bodies with timely and strategic information to guide medium- and long-term decision-making on ICT/digital investments in the public sector.

- **Redesign the ICT/digital project approval process** establishing a single and coherent procedure for all projects regardless of the funding source. Adopting a unified approach would help streamline the interactions between MDG and line ministries, and act as a coherent information source to support strategic decision-making e.g., centralised procurement of ICT/digital goods, redefinition of priorities, and co-ordination between line ministries.
- **Establish clear and transparent criteria to prioritise digital investments** as part of the ICT portfolio system, supporting the PMO's role in identifying the priority projects under the scope of the MDG, Information Society S.A., and line ministries. For this, MDG can leverage the new governance for digital government, including the Digital Transformation Steering Committee and the Digital Transformation Implementation Network, to identify and concert clear criteria for project approval and funding, aligning all relevant actors at early project definition stages.
- **Integrate the ICT portfolio system into the governance of digital government,** empowering relevant units and departments in MDG as well as the strategic functions of the Steering Committee and the Implementation Network with such co-ordination tool to make sure line ministries and related stakeholders are aware of the priorities and challenges for digital investments in Greece.
- **Secure coherent funding management of digital projects.** Under an ICT portfolio management approach, MDG could allocate resources, ensuring that investment decisions are independent of funding mechanisms. In particular, MDG could harmonise the management of all different digital government funding sources, including European funds and national budgets

Promote the strategic use of public procurement and agile procurement practices

- **Promote the strategic use of public procurement** to increase its digital procurements efficiency and effectiveness. In particular, this entails taking a strategic approach to the preparatory phase of procurement of digital projects, i.e., placing a solid emphasis on the importance of needs assessment and early market engagement. A sound preparation of the procurement limits risks of failure, as market capacity and user needs, are well understood. In addition, MDG could promote the use of advanced procurement practices suitable for digital projects.
- **Strengthening early market engagement practices.** MDG could wholly leverage opportunities offered by legal frameworks to engage with market actors during procurement processes, including by creating dedicated platforms that facilitate the exchange with digital technology suppliers.
- **Encourage the use of quality criteria in the procurement evaluation.** Awarding procurement contracts based on quality, including functional specifications, rather than simply descriptive and/or technical, is essential to deliver value for money in the procurement process of ICT products and services. Namely, it ensures that high-quality providers are chosen based on the most relevant characteristics that matter for the specific project and risks of poor execution at the contract stage are minimised.
- **Advance procurement practices such as Dynamic Purchasing Systems (DPS) and Public Procurement of Innovation (PPI).** Digital solutions require procurement processes that are adapted to this purpose. DPS represent a proven tool to enhance the purchasing of standardised ICT goods and services. Public procurement of innovation could serve as a solution to tailor the procurement process to the concrete request, addressing specific needs for which solutions are not yet available on the market. These tools should be part of contracting authorities' toolkit for procuring digital transformation projects.
- **Introduce greater agility in the implementation and procurement processes,** which has shown to be a strong mitigation measure for risks related to the failure of digital projects. This entails developing practical guidance for agile development, including agile project management training and pioneering agile procurement methodologies with Information Society S.A., establishing a competence centre for implementation of digital and agile procurement over the long term.

- **Facilitate access to a supplier base composed of start-ups and innovative SMEs,** including GovTech and CivicTech communities, key to deliver innovative digital transformation projects, i.e. start-ups and innovative SMEs by continuously engaging with these stakeholders, removing specific hurdles, and launching dedicated programmes such as innovation challenges.

Set sound monitoring systems and measure user experience

- **Define a comprehensive set of key performance indicators (KPIs) to assess and monitor ICT/digital project development**. MDG could define a detailed set of indicators to support progress monitoring in line with the expectations, the impact, and adherence to digital government standards. In order to secure the feasibility of this monitoring mechanism, MDG could consider the availability of existing data to construct the KPIs (e.g. the project approval process).
- **Establish open communication channels with relevant stakeholders and the wider community to disseminate ICT/digital project performance data.** MDG could make strategic use of data visualisations and dashboards to share relevant information on the performance of ICT/digital projects, including the availability of open government data (OGD) to support the transparency and accountability of digital investments in the public sector
- **Establish a common and standardised methodology to measure user satisfaction**. Greece could strengthen user satisfaction measurement mechanisms across the public sector to support the goals of the DTB, moving towards a systematic and unified evaluation system that assesses end-users' experience with digital solutions.

Strengthen line ministries' capabilities

- **Leverage digital standards to support coherent and aligned implementation of ICT/digital projects.** The MDG could foster the use of guidelines and standards on (1) data sharing and reuse (2) agile project management, (3) user research, (3) digital identity, (4) notification systems, and (5) digital procurement that public sector institutions can leverage to guide the implementation and procurement of small-scale projects.
- **Promote a user-driven culture throughout the public sector.** MDG could strengthen the public sectors' capacities to understand user needs, including training and capacity building of line ministries in agile project management, user research, and user satisfaction measurement to guide digital transformation projects.
- **Strengthen project management capabilities in line ministries**. For this, the country can encourage training and capacity-building activities on project management, user research, agile development and public procurement at line ministries level to reduce MDG and Information Society S.A. workload with projects that line ministries can eventually implement in a coherent and aligned way.

Build capacity to target advanced procurement practices and ICT skills

- **Increase procurement capacity to strengthen the strategic aspects of the procurement process**, which are vital to ensuring value for money and reducing the risk of digital projects' failure. For starters, this entails assessing gaps with a particular view towards ICT competences. Launching pilot programmes to test specific and scalable practices (e.g. DPS, innovative and agile procurement practices) could also complement capacity-building activities.
- **Design a comprehensive and well-structured capacity-building programme for the procurement staff of MDG and Information Society S.A.** taking into account the different levels of advancement in procurement skills based on a careful assessment. At a minimum, capacity-building activities should cover market engagement, use of quality criteria, and functional

specifications. A more advanced programme should also include project management, negotiation, agile methodologies, modular contracting, as well as innovation procurement.

- **Examine the scope for ICT procurement centralisation** to benefit from efficiency gains, greater specialisation, and related capacity improvements.

Set up a Project Management Office

- To address some of the issues identified in implementing ICT/digital projects, organisational siloes, lengthy delivery process, and lack of monitoring mechanisms, the MDG could develop a Project Management Office (PMO) as part of the new governance structure to support digital transformation projects implementation. Doing so implies addressing current business needs, the organisational culture, and context to secure effective implementation.
- By establishing a PMO, the MDG could streamline ICT/digital projects in Greece. The PMO would act as an executive arm of the strategic decisions and guidelines of the MDG. Securing a successful implementation requires the definition of a clear role for the two bodies:
  - **Ministry of Digital Governance (Strategic level)**: responsible for setting policies reflecting the government's priorities concerning ICT/digital projects. The MDG will also be responsible for redefining the policy decisions and criteria the PMO will act.
  - **Project Management Office (Operation oversight)**: the PMO is responsible for approving digital projects following the criteria established by MDG and for the implementation oversight of all digital projects through the ICT portfolio management system.
- The MDG can develop written guidelines to steer the PMO in each of the different phases of digital projects and leverage digital government standards to secure the alignment of all initiatives.
- Based on the strategic relevance of projects, the PMO could dispatch initiatives to Information Society S.A. or line ministries for their implementation. The PMO could focus on strategic and more complex projects, leaving small-scale and standardised projects to line ministries to implement. The PMO would closely monitor all initiatives, reporting to the MDG on delays or over costs. In all cases, the PMO will provide counselling to line ministries.

Methodological approach

This report assesses current practices of ICT/digital transformation projects by the Ministry of Digital Governance (MDG) in Greece to improve project delivery and ultimately strengthen the ministry's capacity to implement the government's agenda for digital transformation. In particular, this report intends to map the internal processes of MDG as well as to identify potential bottlenecks that could hamper the implementation of digital projects, covering the entire project cycle (preparation and approval, funding, implementation and procurement, monitoring).

The following methods were used in order to analyse current practices of implementation of digital projects in Greece:

- Short questionnaire covering the implementation cycle of digital projects and governance arrangements within MDG
- Data from implementation and procurement of digital projects funded by ESIF (2014-2020)
- Virtual fact-finding interviews with stakeholders of the Ministry of Digital Governance
- Consultations with private sector representatives and beneficiaries of digital projects
- Preliminary validation meeting with the Office of the Secretary General for Digital Governance and Simplification of Administrative Procedures

The OECD met the following stakeholders within the Ministry of Digital Governance in the fact-finding virtual meetings: Office of the Secretary General for Digital Governance and Simplification of Administrative Procedures; Department of Digital Strategy; Information Society S.A.; Department of Procurement and Logistics; Department of Strategy, Planning and Project Management. Follow-up meetings were held with Information Society S.A.

The fact-finding meetings were held over the period May-August 2021.

The report also draws on publicly available literature and documentation.

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2 Digital Government and the development of ICT/digital projects

This chapter analyses and assesses Greece's Digital Government maturity, focusing on developing digital and ICT projects in the public sector. The first section presents the context and rationale for this assessment, presenting the policy frameworks guiding the report, including the OECD Digital Government Policy Framework, the OECD Recommendation on Digital Government Strategies and the OECD Recommendation on Public Procurement. The second section presents the current situation of digital government in Greece and the intersection between public procurement and digital, including recent measurements and national strategies.

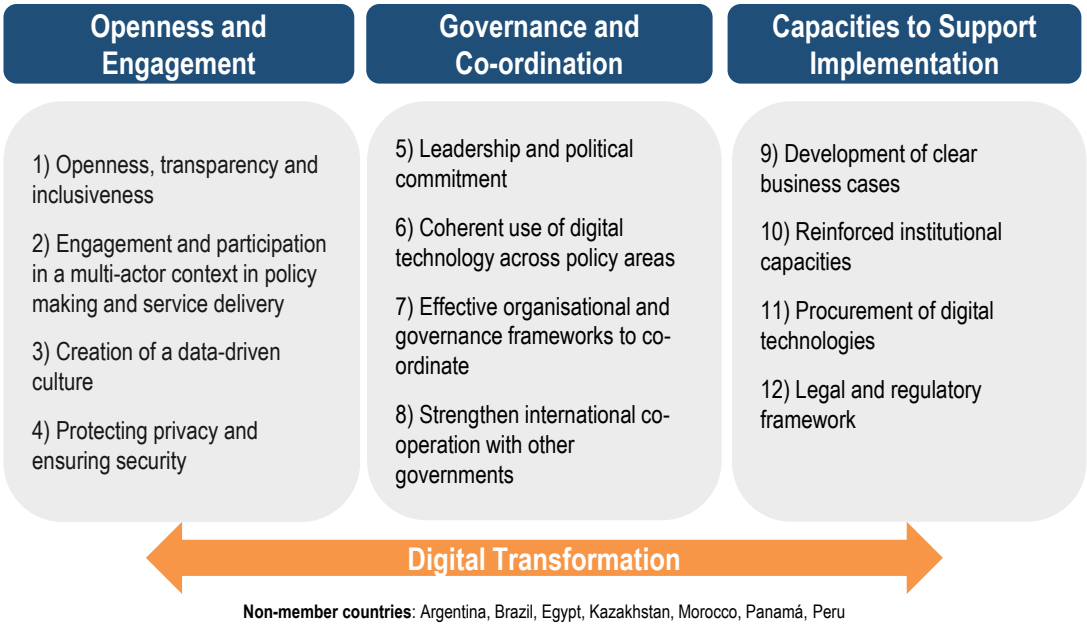
Context and rationale for the project

Towards digital government maturity: OECD Digital Government Policy Framework

Digital tools and data are transforming the way governments operate and deliver, offering new resources and policy options to address public sector challenges, boost internal procedures efficiency and reshape the interactions with citizens. In an early stage of adoption of digital technologies and ICT, governments began digitising analogue process and services without necessarily transforming the procedures that support them. Such an approach faces the limitations of not understanding and addressing the needs of citizens and rather adopting a government-centred and technology-led approach (*e-government*).

Fully realising the digital transformation in governments requires a paradigm shift from e-government to *digital government* (OECD, 2020[1]), meaning digital tools and data as an integrated part of governments' modernisation strategies to create public value and to foster more people-centric, fair and sustainable governments. This paradigm shift is reflected in the OECD Recommendation on Digital Government Strategies (see Figure 2.1) (OECD, 2014[2]).

Figure 2.1. OECD Recommendation of the Council on Digital Government Strategies



Source: OECD (2014[2]).

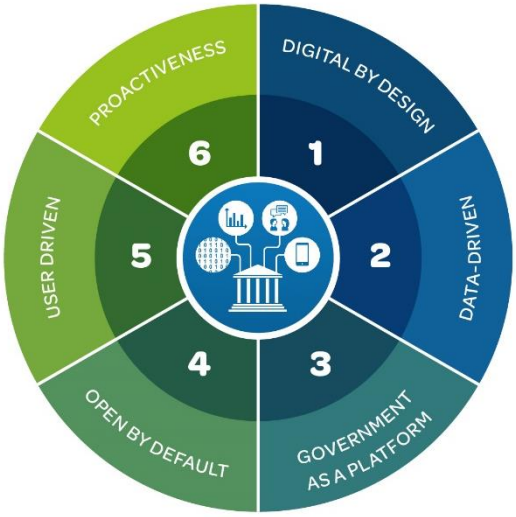
The Recommendation establishes the provisions needed to address transformative digital government strategies under the principles of horizontal integration and increased co-ordination within and outside the public sector. In specific, the Recommendation includes provisions that highlight the strategic relevance of securing leadership and political commitment to the strategy through a combination of efforts aimed at promoting inter-ministerial co-ordination and collaboration (provision 5), and establishing effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government (provision 7). Regarding the strategic approach towards digital government investments, the Recommendation underlines the need to establish a "check and balance" system for governments' decisions on ICT/digital spending to increase the level of accountability and public trust, as well as to support decision-making and improve project management practices that minimise risks

of failures and delays. In addition, the Recommendation (OECD, 2014[2]) stresses the need to reinforce institutional capacities to manage and monitor project implementation (provision 10).

The Recommendation also includes direct provisions on funding and procurement decisions for digital transformation projects. It recommends the use of clear business cases as a strategic tool to assess the value proposition of ICT/digital projects and support funding allocation (provision 9). Additionally, procurement decisions on digital technologies should consider critical components such as digital skills, job profiles, technologies, contracts, and inter-organisational agreements in order to increase efficiency, support innovation and secure benefits realisation (provision 11).

Building on the provisions of the Recommendation, the Secretariat developed the OECD Digital Government Policy Framework (DGPF), a policy instrument to identify the drivers of effective design and implementation of digital transformation efforts in the public sector (see Figure 2.2). The DGPF constitutes the basis for the measurement work of the OECD on digital government and public sector data through the Digital Government Index.

Figure 2.2. OECD Digital Government Policy Framework



Source: (OECD, 2020[1]).

Under the DGPF, mature digital governments are characterised by six dimensions:

- *Digital by Design* – refers to the capacity to govern and leverage digital technologies to rethink and re-engineer public processes, simplify procedures, and create new channels of communication and engagement with public stakeholders.
- *Data-Driven Public Sector* – refers to the capacity to value data as a strategic asset and establish the governance, access, sharing and re-use mechanisms for improved decision-making and service delivery.
- *Government as a Platform* – refers to the capacity to deploy a wide range of platforms, standards and services to help teams focus on user needs in public service design and delivery.
- *Open by Default* – refers to the capacity to make government data and policy-making processes (including algorithms) available to the public, within the limits of existing legislation and in balance with national and public interest.

- *User-Driven* – refers to the capacity to accord a central role to people's needs and convenience in the shaping of processes, services and policies and to adopt inclusive mechanisms that enable this to happen.
- *Proactiveness* – refers to the capacity to anticipate people's needs and respond to them rapidly, avoiding cumbersome data and service delivery processes.

Adopting a strategic approach for digital government investments

As stated in the **OECD Recommendation on Digital Government Strategies**, governments aiming to be digital require adopting strategic approaches to plan, implement and monitor digital investments (see Box 2.1). With the increased relevance of digital tools and data to transform public sector operations and service design and delivery, governments need to address digital investments under the principles of integration, co-ordination and rationalisation, all with the purpose of maximising benefits realisation. This suggests rethinking and strengthening planning, prioritising, funding and monitoring procedures for digital investments in order to support better aligning between initiatives and address the immediate costs versus the long-term benefits digital projects imply.

Planning and prioritising government digital transformation projects requires sound mechanisms to assess their value proposition, identifying the multi-faceted costs, benefits and risks associated to the implementation and funding of such initiatives. The development of business cases, budget thresholds, portfolio management and project approval systems are examples of policy levers to better plan, prioritise and monitor digital government projects (OECD, 2021[3]). Digital government investment plans require further alignment and co-ordination with broader policies on public budgeting and procurement. Securing improved co-ordination between digital government, public budgeting and public procurement authorities can help synergise efforts towards and effective, long-term and sustainable digital transformation of the public sector.

Box 2.1. OECD Recommendation on Digital Government Strategies: Governance and co-ordination

1. Secure leadership and political commitment to the strategy, through a combination of efforts aimed to promote inter-ministerial co-ordination and collaboration, set priorities and facilitate engagement and co-ordination of relevant agencies across levels of government in pursuing the digital government agenda.
2. Ensure coherent use of digital technologies across policy areas and levels of government
3. Establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government, through:
    a. identifying clear responsibilities to ensure overall co-ordination of the implementation of the digital government strategy;
    b. establishing a system for "check and balances" of governments' decisions on spending on technology to increase the level of accountability and public trust, and to improve decision-making and management to minimise risks of project failures and delays.
4. Strengthen international co-operation with other governments to better serve citizens and businesses across borders, and maximise the benefits that can emerge from early knowledge sharing and co-ordination of digital strategies internationally.

Source: (OECD, 2014[2]).

Public procurement policy framework in the context of digital transformation

Public procurement is an essential tool for the digitalisation of public services, if it is used strategically and supported by a sound governance framework. In fact, the public procurement framework sets the enabling conditions for carrying out state-of-the-art ICT procurement. The 2015 **OECD Recommendation on Public Procurement** provides a comprehensive framework for countries to design their public procurement system in a way that fully supports such ICT procurement and national digitalisation efforts (OECD, 2015[4]). The Recommendation contains 12 integrated principles that address the entire procurement cycle and promote a whole-of-government approach while integrating public procurement with other elements of strategic governance such as budgeting, financial management and additional forms of services delivery (see Figure 2.3).

Figure 2.3. The OECD Recommendation on Public Procurement

Source: (OECD, 2015[4]).

The Recommendation is the overarching OECD guiding framework that promotes the strategic and holistic use of public procurement. The Recommendation supports a comprehensive and integrated approach to the procurement cycle and reflects the growing interest from governments in transforming public procurement into a strategic policy lever. By helping governments better meet their policy objectives, well governed public procurement contributes directly to greater public trust, enhanced well-being and more prosperous and inclusive societies. The Recommendation highlights the need for investing in governance and technology and the importance of continuous investment in people through capacity building and professionalisation. Dealing with a changing world and addressing new challenges, such as the digital transition, requires effective and efficient staff that possess analytical, regulatory, delivery, co-ordination, and management capacities. This includes having the capacity to develop and implement strategies, including selecting and making investments to achieve policy objectives; ensuring stakeholder engagement; measuring the impact on the basis of reliable data; and achieving results. The OECD has recently conducted workshops in the MDG for strengthening technical knowledge related to data collection, organisation and analytics. It has also provided the MDG with recommendations on how to procure and collect data for digitisation activities.

Digitalisation and ICT procurement are fast evolving, bringing about specific challenges for public procurement. New solutions and technological change require that public buyers be up-to-date with developments in the market. Furthermore, technological changes such as apps, cloud computing, the internet of things and artificial intelligence are introducing new uncertainties, thus requiring an approach to procurement that is fit-for-purpose. To this end, it is key to use public procurement as a strategic governance tool, together with an efficient governance framework and whole-of-government co-ordination (OECD, 2022[5]). Instead, contracting authorities often operate with old paradigms when procuring digital projects, focusing on large technology suppliers and taking limited risks on more innovative solutions. For instance, they often rely on large contracts that can be fulfilled only by a small number of large players in the market. However, this approach may limit competition in the market and exclude smaller, more innovative SMEs. Similarly, in many instances, contracting authorities rely on complex requirements that can only be fulfilled by certain suppliers. Another common challenge in ICT procurement refers to "vendor lock-in", meaning that users are bound to the same supplier and technology even past the initial procurement. Excessive customisation can also pose problems in maintaining an ICT system open and sustainable throughout time. These challenges are exacerbated by the fact that public buyers may not have the specific technical and IT skills and may not have effective systems in place to ensure that digital projects fit the needs of final users, i.e. either government entities or citizens (OECD, 2022[5]).

The public procurement framework can support the effective implementation of ICT projects through several key areas. For instance, the policy framework could emphasise the strategic use of public procurement, thereby promoting greater attention to the planning and pre-tender stages. Indeed, market engagement and user-centred approaches in the early stages of the procurement process are key to fully understand user requirements and the market's ability to respond to those requirements. As a result, placing emphasis on the early stage of the procurement process ensures value for money in the subsequent tendering phase.

Furthermore, strategic procurement calls for tender award based on quality, and avoiding overly prescriptive technical specifications to leave room for innovation. The policy and legal framework are thus important for putting in place the legal instruments, such as favouring best-price-quality ratio (BPQR) criteria as well as providing capacity-building for contracting authorities.

The state of digital government in Greece

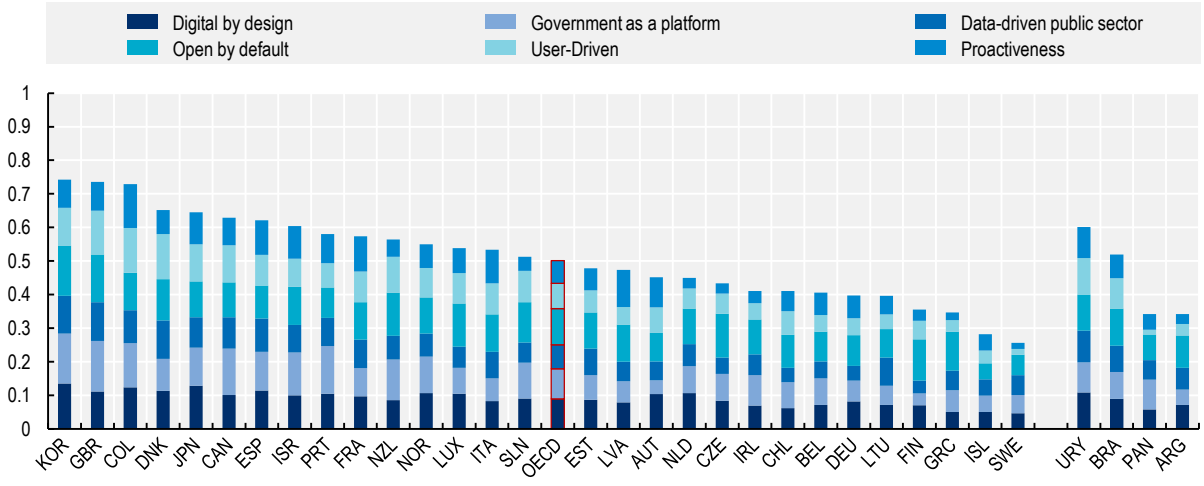
Digital government policies

During the last decade, Greece has undergone a series of institutional reforms that have successively transformed the structure of public administration. Due to the financial crisis in the late 2000s, the Greek government had to rationalise its governance structures to ensure the continuity of service delivery and the resilience of the public sector. Changes in the machinery of government also reached to the digital government functions, transferring the responsibilities and bodies related to digital governance, data and service design and delivery to the dedicated Ministry of Digital Governance in 2019. This institutional arrangement represents a step forward in terms of governance, leadership, and political commitment to the digital transformation of the public sector. Such a revitalised governance for digital government sees a concrete expression in the recently launched Bible of Digital Transformation 2020-25 (Ministry of Digital Governance, 2021[6]), which provides a strategic roadmap for digital transformation efforts in Greece's government, society and economy.

However, these recent developments have not fully enabled Greece to close the existing gap in terms of digital maturity compared to other OECD countries. The results of Greece in the OECD Digital Government Index (DGI) show that there are still several challenges to advance the development of sound digital government reforms that help achieve the digital imperative of more open, participatory, and innovative

public sectors, enabled and transformed by the strategic use of digital tools and data (OECD, 2020[7]). DGI results show also that Greece still presents significant room to achieve digital government maturity. In the first pilot edition of the DGI, Greece ranks 29 out of the 33 OECD, with all dimensions below the OECD average except *open by default* (see Table 2.1). This includes the adoption of project planning, management, and monitoring standards to implement effectively digital transformation projects in the public sector that lead to improved public services and operations around the needs of citizens.

Figure 2.4. OECD Digital Government Index 2019 composite results



Note: Data are not available for Australia, Hungary, Mexico, Poland, Slovakia, Switzerland, the Republic of Türkiye and the United States.
Source: (OECD, 2020[7])

Table 2.1. Digital Government Index 2019: Greece and OECD average results

Dimension	OECD Average Score	Greece	
		Score	Rank
Digital by design	0.55	0.3	32
Data-driven public sector	0.44	0.35	26
Government as platform	0.54	0.39	25
Open by default	0.64	0.69	9
User-driven	0.47	0.21	30
Proactiveness	0.42	0.13	32
Composite score	**0.501**	**0.347**	**29**

Note: Data is not available for Australia, Hungary, Mexico, Poland, Slovakia, Switzerland, the Republic of Türkiye and the United States.
Source: (OECD, 2020[7]).

Harnessing the benefits of the digital transformation in the public sector requires governments that are *digital by design*, establishing sound governance frameworks, leadership and policy levers to secure a coherent implementation. Recent institutional developments in Greece represent a decisive step in this direction, such as the creation of the Hellenic Ministry of Digital Governance and the recent launch of the Digital Transformation Bible (national digital government strategy). Securing a ministerial level institution leading the digital transformation policy in the Greek public sector can facilitate the co-ordination and alignment of initiatives according to the priorities and strategic objectives set for digital government in the country. However, when looking at the DGI dimension results, the progress made on the governance of

digital government has still been insufficient to translate digital government policy goals into concrete actions that support the digital transformation of the Greek government.

The results also show that there is still significant room for improvement regarding the development and use of policy levers to enable system-wide transformation, such as standards and guidelines to deploy an effective implementation of the digital transformation projects (e.g., the priorities stated in the Digital Transformation Bible). Embracing a *government as a platform* and *digital by design* approach implies setting guidelines, tools, standards and common digital components to support an effective and coherent implementation. This also comprises sound mechanisms to plan, prioritise and co-ordinate digital transformation projects within the public sector, establishing the value proposition of projects and their subsequent prioritisation and financing. This gap is especially relevant when it comes to assessing and selecting key digital projects and investments. According to the DGI, Greece lacked concerted models for business cases that lead to identify the value proposition of digital transformation projects, as well as dedicated standards and guidelines to support the management and procurement of ICT/digital projects (OECD, 2020[7]).

Similar challenges are observed in Greece when looking at the fundamentals of *data-driven public sector*, such as national data policies, leading roles and mandate to steer these policies and implementation mechanisms to foster access, sharing and re-use of data (beyond open government data efforts). In this context, Greece has an opportunity to improve the strategic governance and use of data for improved policy making and monitoring of the digital government strategy, for example by developing key performance indicators across the ICT/digital project life-cycle and monitoring mechanisms that foster accountability and compliance across public sector organisations.

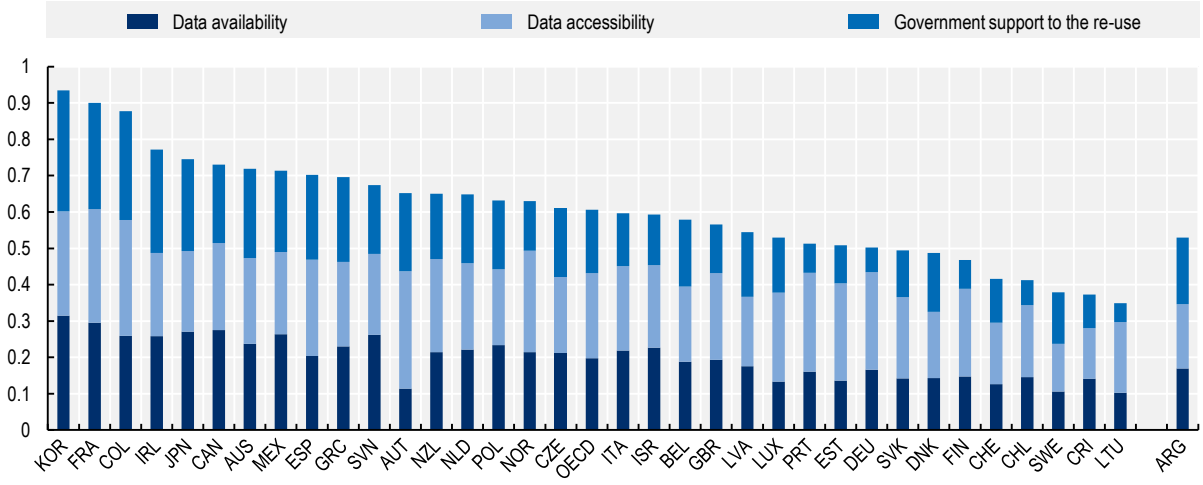
All in all, improved public sector capacities are needed for digital tools and data to enable a coherent digital transformation and lead to the benefits realisation. The recently published Digital Transformation Bible sets the right ground in terms of priorities, expected standards and shared tools, and its effective implementation requires strengthened capabilities to manage and develop such transformative initiatives.

Open government data policies

The results of Greece in the DGI contrasts with the advancements and higher maturity observed in open government data as indicated by the Open, Useful are Re-usable Data (OURdata) Index (OECD, 2020[8]). According to its last edition, Greece presents solid policy foundations for opening up public datasets while requires strengthening efforts to leverage these resources as transformative tools through increased co-operation and collaboration with stakeholders within the data ecosystem. In the 2019 results of the OURdata Index, Greece scored an overall 0.7, ranking 9 out of 32 countries included in the survey. This represents an overall improvement of 0.16 points when comparing with the 2017 edition composite score, reflected in higher results across the three pillars (Lafortune and Ubaldi, 2018[9]).

Across the three pillars of the OURdata Index, Greece has obtained solid results on data availability and accessibility. This includes the national open government data portal as well as the strategic steps taken in the National Strategy for Administrative Reform 2017-2019 with dedicated formal requirements to make these data available in open and online formats. Similarly, the Greek government has promoted further capacity building for availability and reuse of government data through initiatives such as the National Coalition for Digital Skills and Jobs.

Figure 2.5. Open-Useful-Reusable Government Data Index (OURdata), 2019



Note: Data is not available for Hungary, Iceland, the Republic of Türkiye and the United States. Data for Costa Rica was collected from the IDB-OECD Open Government Data Survey 2018. Information on data for Israel: http://dx.doi.org/10.1787/888932315602.
Source: (OECD, 2020[8]).

National digital government strategies

National Digital Strategy 2016-2021

Relevant and sustained efforts have been devoted to advance digital government in Greece in the past years. This has been reflected in the development of two successive digital strategies. First, the National Digital Strategy (NDS) 2016-2021 developed by the former Ministry of Digital Policy, Telecommunications and Information (Ministry of Digital Policy, Telecommunications and Information, 2016[10]). The NDS 2016-2021 covered several priority areas to address the challenges of digitalisation in the Greek public sector, economy and society. In a context of stressed public finances after fiscal and economic crises that hit the Greek economy, the strategy levers ICT and digital tools to achieve a more efficient and effective public administration as well as improved service delivery. Accordingly, the strategy highlighted the need to transform the design and procurement of ICT projects in the public sector as a strategic goal to support reform of public administration in Greece.

Similarly, the NDS provided an overview of the pressing issues faced by the Greek public sector when developing and managing ICT projects. According to the strategy, difficulties to address the procurement of ICT and digital projects and the absence of central planning for ICT projects are key challenges for ICT project development, fostering duplication of efforts and siloed-based progress. The NDS acknowledged the need to shift towards new design and implementation methodologies for ICT/digital projects, promoting flexible implementation methods and the adoption of system-wide standards for higher coherence and horizontal integration. In this context, the NDS specified concrete actions, such as unifying the design and implementation of digital projects; promoting the use of cloud and shared infrastructure, developing common building blocks to support omni-channel service design and delivery,[1] interoperability and public registries (including open government data). All in all, the strategy promoted the development of shared tools and platforms to address horizontal and common problems in the Greek public sector.

Digital Transformation Bible 2021-2025

In 2019, changes in Greece's machinery of government led to the creation of the Ministry of Digital Governance, with the purpose of strengthening the governance for digital government. This included the development of the Digital Transformation Bible (DTB) 2020-2025 (Ministry of Digital Governance, 2021[6]),

a strategic roadmap for digital transformation of Greece's economy, society, and public sector, which serves as a continuation to the efforts stated in the NDS 2016-2021. This document currently serves as the national digital strategy, providing guiding principles and specific actions across a wide range of areas, including cross-governmental projects and dedicated initiatives to transform service design and delivery in policy areas such as health, education, justice, economy, and environment, among others.

The DTB includes a special focus on the implementation phase and specific provisions on the governance framework, with the Ministry of Digital Governance as the leading actor responsible for its implementation. The DTB considers the creation of high-level bodies such as the Digital Transformation Steering Committee, bringing together all general secretariats in government, and its executive arm, the Digital Transformation Executive Network. This institutional arrangement aims to foster collaboration with relevant public sector institutions to secure the timely development of all activities comprised in the strategy. The five-year digital strategy will be updated on an annual basis to adapt its actions to emerging challenges and opportunities, providing the required flexibility for a successful implementation. The DTB builds on the digital government provisions established in the EU Tallinn Declaration on eGovernment (EU, 2017[11]), EU Government Action Plan 2016-2020 (EU, 2016[12]), and the EU Berlin Declaration (EU, 2020[13]), identifying 15 principles framing the overall strategy and its successful implementation.

Box 2.2. Berlin Declaration on Digital Society and Value-based Digital Government

In December 2020, the EU member countries signed the Berlin Declaration on Digital Society and Value-based Digital Government. The Declaration follows up on the success of the Tallinn Declaration on eGovernment, which endorsed the key principles for digital public services in the eGovernment Action Plan 2016-2020. The Berlin Declaration takes the user-centricity principles formulated in the Tallinn Declaration a step further by strengthening the pioneering role of public administrations in driving a value-based digital transformation of European societies

The Declaration acknowledges the public sector as an essential element for the European Single Market and a driving force for new and innovative technological solutions for public services and societal challenges. It emphasises that public authorities at all levels must lead by example to strengthen the tenets of the European Union.

To do so, it sets out 7 key principles with related policy action lines and national and EU level:

5. Validity and respect of fundamental rights and democratic values in the digital sphere;
6. Social participation and digital inclusion to shape the digital world;
7. Empowerment and digital literacy, allowing all citizens to participate in the digital sphere;
8. Trust and security in digital government interactions, allowing everyone to navigate the digital world safely, authenticate and be digitally recognised within the EU conveniently;
9. Digital sovereignty and interoperability, as a key in ensuring the ability of citizens and public administrations to make decisions and act self-determined in the digital world;
10. Human-centred systems and innovative technologies in the public sector, strengthening its pioneering role in the research on secure and trustworthy technology design;
11. A resilient and sustainable digital society, preserving our natural foundations of life in line with the Green Deal and using digital technologies to enhance the sustainability of our health systems.

Source: (EU, 2020[13]).

The Digital Transformation Bible identifies eight crosscutting enablers to facilitate the development and use of digitally-enabled public services. These common building blocks lowering costs of implementation across public sector institutions and providing users with common platforms for different services provided by government:

- The ***digital service delivery platform GOV.GR***, providing a single access point for all digitally-enabled public services in Greece. The development of this centralised service delivery portal comprises the development of other common public digital goods such as digital identity and digital notification systems. Both functions are designed to serve as common means of delivery and communication between users and public services, providing a single point of contact for all public services. Over 1 350 services are provided through this platform and several new services including interoperability with smartphone apps is envisaged.
- The adoption of a data-driven public sector approach, which includes ***the development of base registries as well as interoperability systems*** to secure integrity and availability of data on citizens and legal entities. This builds on the development of a national data strategy in order to establish a data governance framework, further promote data value-creation and the security and personal data protection in accordance with the GDPR and relevant regulations. Under this component, Greece expects to create the Interoperability Centre,[2] an entity responsible for securing the implementation and management of the interoperability framework and its associated infrastructure.
- Further ***promotion of open government data.*** Building on the progress achieved through the NDS 2016-2021, the DTB presents a scalable approach to open up public data based on potential value-added and policy priorities. The DTB sets specific goals and objectives in terms of the strengthening of the open data portal, the development of a thematic data repository and fostering open science in Greece. These approaches intend to leverage value creation through collaboration and reuse of data, for example using APIs.

Based on these enablers, the DTB presents a series of actions, initiatives, and projects around six strategic axes, including connectivity, digital abilities and competencies, digital business transformation, digital services, digital innovation, and the use of emerging technologies, as well as objectives and specific projects around seventeen different policy areas such as education, health, labour and social affairs, justice, culture, sports, environment and energy, finance, transport and energy, tourism, immigration, among others.

Greek public procurement framework and the digitalisation of the procurement function

Procurement of digital projects, as implemented by the Ministry of Digital Governance, is embedded in a wider public procurement framework, defined by an overall structure of rules and regulations, institutions, as well as systems and practices. As such, it is important to lay out the contextual factors, in which procurement of digital project occurs.

Accounting for an estimated 11.4% of GDP in Greece in 2020 (OECD, 2021[14]), public procurement represents a significant share of the Greek economy as well as a pillar of public service delivery. The legal framework for public procurement is regulated by the Law on Public Works, Supply and Service Contracts (L.4412/2016 as amended and in force), which transposes the EU Directives on public procurement. Public procurement is also being increasingly digitalised, i.e. the use of the e-procurement system is expanded to procedures below those mandated by European procurement directives.

Namely, in March 2021, the public procurement law was amended to broadly reform the procurement system.[3] The overarching objectives of this reform are to enhance digitalisation, simplification, and acceleration of procurement procedures, contributing to a comprehensive and unified system that limits exceptions and derogations. In particular, the reform expands the use of e-procurement to a lower

threshold of EUR 30 000 (from previously EUR 60 000), thus increasing transparency and reducing administrative burden.

With respect to digitalisation of public procurement, Greece relies on an e-procurement architecture composed of two main platforms, i.e. KIMDIS (Central Electronic Registry for Public Procurements) and ESIDIS (Electronic System for Public Procurements). While the platforms cover the main functionalities associated to e-procurement, several functionalities, such as contract management are not concluded electronically. Furthermore, the existence of two platforms provides for a fragmented environment. ,. Importantly, the quality of procurement information available through the e-procurement system is sub-optimal particularly as interoperability among KIMDIS and ESIDIS is lacking, and procurement data is not available in open and structured formats (e.g. open government data), thus limiting opportunities for further analysis.

Recent amendments of the legal framework foresee simplifications and exemptions from the procurement framework regarding projects related to digital services and ICT projects. Namely, the threshold for direct awards in this category has been raised to EUR 60 000 from previously EUR 30 000 for all types of contracts, provided that they relate to the implementation of ICT projects having as their subject matter the interoperability of digital services or the modernisation of the digital instruments of the Central Administration.[4]

Over the past decade, public procurement has been at the heart of several reforms initiated in the context of Greece's bailout programme in 2010. This included the creation of the Hellenic Single Public Procurement Authority (HSPPA), i.e. the primary body for public procurement policy, tasked with developing and promoting a national strategy on public procurement, as well as ensuring transparency, efficiency and coherence of the system. Further reforms streamlined the legislative framework into one single piece of legislation, and reformed the pre-judicial and judicial system by creating of the Public Procurement Review Authority (AEPP). Since 2022, the institutional framework for public procurement experienced further changes with the merger of HSPPA and AEPP. Overall, the introduction of a review body has led to improvements in the efficiency of the appeals process. In 2018, the average time for issuing a decision from the day the application was filed was 40 days for requests for review and 8 days for requests for interim measures.

While significant progress has been achieved with successive reforms over the past decade, the Greek public procurement system stills shows important potential for improvements. Procurement practices indicate weaknesses regarding their efficiency and effectiveness, including irregularities and lack of compliance with procurement rules, lengthy procedures, as well as high prevalence of lowest price criterion and single bids. Challenges affecting contracting authorities with procurement of traditional goods and services already are likely to be exacerbated when procuring digital or innovative solutions, which involves additional complexities. For instance, contracting authorities throughout the country have limited awareness of the importance of procurement planning and market engagement (European Commission, 2020[15]). Competition in procurement markets also shows room for improvement, with single bids accounting for 40% of tenders above EU thresholds in 2019 (European Commission, n.d.[16]). Procurement procedure also tend to be very long, accounting for on average 218 days between the receipt of bids and the contract award, compared to 120 days on average in the EU (European Commission, n.d.[16]). Lengthy procurement procedures is a particular challenge in the context of ICT and digital projects, as there is a higher risk of not keeping the pace with technological change.

Integrity is another area, in which the Greek procurement system faces challenges and would benefit from further action, such as strengthening internal control mechanisms of public procurement, as well as continued efforts to enhance the anti-corruption framework (MAPS, forthcoming).

Notes

[1] Includes: unified portal, interoperability infrastructure, authentication, payments, archive of public administration websites and public sector network.

[2] See: https://www.gsis.gr/dimosia-dioikisi/ked.

[3] L. 4782/2011.

[4] Article 188 para 6.

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3 Delivery of ICT/digital projects in the Greek public sector

This chapter analyses and assesses the delivery of digital and ICT projects in the Greek public sector, including the current governance, internal processes and capabilities. The first section presents the governance for developing digital projects, identifying the key stakeholders, the institutional set-up and leadership. The second section summarises the international business and operational process for implementing digital and ICT projects in Greece, including the preparation, approval and funding of investment projects as their implementation. The third section presents an assessment of the workforce, including the digital talent and skills and the procurement capabilities of the public sector staff. The fourth and last section presents the monitoring capacities and evaluation mechanisms to support the delivery of digital projects and secure benefit realisation.

Governance for the development of ICT/digital government projects

Institutional set-up and leadership

Created in July 2019, the Ministry of Digital Governance[1] (MDG) is the leading body for digital government in Greece. MDG and most of its dependent units were created based on the former Ministry of Digital Policy, Telecommunications, and Information (MDPTI), the body responsible for digital government policies between 2016 and 2019. The Ministry was created under the provisions of the Presidential Order 81 (Government of Greece, 2019[1]) which also included the definition of new responsibilities as well as the reorganisation in the machinery of government for the digital policy in Greece – transferring relevant units from the Ministry of Finance, the Ministry of Economy and Development, and the Ministry of Education to MDG. This decision unified all digital transformation policies and relevant authorities under one single ministry.

As a dedicated high-level body for the implementation of the digital strategy, MDG is also empowered at legislative and financial levels. Within its regulatory responsibilities, MDG can make concrete proposals for the adoption of decrees, including joint decrees with other ministers, and the issuance of individual regulatory acts.

In terms of the organisational structure and competencies related to the development of digital government projects (including procurement functions), several entities are involved in their delivery, both within the Ministry of Digital Governance and across government. In fact, in many instances, the Ministry of Digital Governance serves as the buyer on behalf of government entities. Within the Ministry itself, various departments are part of the architecture for delivering digital projects, ranging from the strategic leadership to the operational implementation and follow-up (see Figure 3.1).

Figure 3.1. MDG departments involved in the development of ICT/digital projects

Source: Own elaboration based on interviews with the Ministry of Digital Governance.

Within the Ministry, the main actors involved in the development of ICT/digital projects, including procurement functions, are the following:

- *General Secretary for Digital Governance and Simplification of Procedures (GSDGSP)*: It is responsible for the coherent design, co-ordination and monitoring of initiatives on digital transformation in alignment with the Digital Transformation Bible. In addition, its goal is to design and implement horizontal policies and actions to promote digital transformation. Its mandate also includes the rationalisation and digitalisation of interactions between citizens and the State.
  - *Directorate of Digital Strategy:* It supports the implementation and monitors the execution of the Digital Transformation Bible. It assesses the pertinence and relevance of projects to be compiled in the Bible, and as such it is in charge of managing a dedicated approval process of digital projects across government. In addition, it aims to promote inclusiveness for all citizens within the digital environment.
  - *Directorate of Sectoral Public Sector Projects*: The operational objective includes ensuring the coherence and efficiencies of digital projects by government entities. It is responsible for drafting standards and documentation of relevant ICT projects.
- *General Secretary of Information Systems (GSIS)*: Overall, this General Secretary manages existing Information Systems across the Greek government (e.g. Government Cloud). With respect to the development and procurement of digital projects, it manages and monitors digital projects procured internally.
- *General Directorate of Financial and Administrative Services (GDFAS)*: This Directorate has overall responsibilities for financial and administrative services in the Ministry.
  - *Directorate of Procurement and Logistics*: It carries out the tendering process for digital projects for internal and external clients.
  - *Directorate of Financial Management:* It is responsible for the budgeting and financial approval of digital projects.
- *General Secretary of Telecommunications and Posts (GSTP)*: Responsibilities around cybersecurity are relevant in the context of digital project implementation.
- *Information Society S.A.*: An independent entity controlled by the Ministry of Digital Governance, which acts as the implementation arm of the Ministry to liaise with public sector organisation for the design, procurement and implementation of large scale digital projects on behalf of the Ministry and entities across the Greek public administration.

In addition to the departments above, an Intermediate Body situated within the Ministry of Digital Governance co-ordinates funding from the European Structural and Investment Funds (ESIF) for digital projects. The structure of ESIF to support digital transformation projects has evolved over time (see Box 3.1).

Box 3.1. ESIF programming and digital transformation

European Structural and Investment Funds (ESIF) play a key role in Greece's digital transformation, as they provide a large share of the funding available for such projects. As such, the structure of the ESIF management is an important element to consider in the overall governance and implementation of digital transformation projects.

The governance structure of ESIF related to digital transformation has varied over the years. Over the programming period 2007-2013, a dedicated Operational Programme (OP) called "Digital Convergence" was set up to finance ICT investment with a budget envelope of EUR 1.075 billion.

In 2014-2020, the decision was made to reduce the overall number of OPs and related fragmentation of projects. Thus, ICT investment was managed throughout several Managing Authorities and OPs. With the creation of the Ministry of Digital Governance in 2019, an Intermediate Body (IB) was set up to co-ordinate funds related to digital transformation co-ordinated by the Ministry.

For the new programming period 2021-2027, a dedicated Managing Authority for ICT will be set up within the Ministry of Digital Governance. It is expected that this set-up will facilitate the funding and implementation of digital projects.

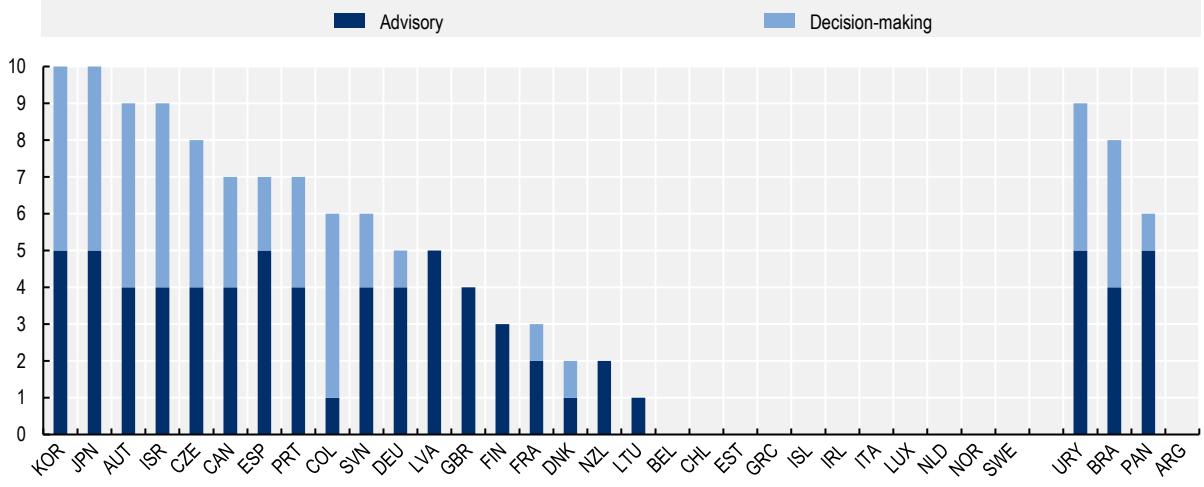
Source: (European Commission, n.d.[2]); Interviews with the Ministry of Digital Governance.

Co-ordination and collaboration within and outside the Ministry of Digital Governance

The recent changes in the machinery of government for digital government in Greece are posing challenges to secure alignment and co-ordination across the project life cycle for digital projects (from planning to monitoring) between the relevant departments and units within MDG as well as with key external actors of the digital government ecosystem. Several departments were consolidated without rethinking and streamlining inherited functions. As a result, units remain working under a siloed-based approach given the challenges to set clear institutional roles within MDG and to co-ordination and streamline internal processes. In the absence of such roles, duplication of functions and misalignment when addressing different projects or funding sources are observed. Interviewees indicated a demand for more coherent and aligned process within MDG when addressing the design, planning and approval of digital government projects, in specific concerning the different funding sources (either national or at EU level) and the procedures to rationalise these resources to the beneficiaries.

Two specific General Secretariats are involved in the development of digital transformation projects within MDG, namely GSDGSP (project definition and approval) and GDFAS (funding and procurement of certain projects). Both secretariats and their respective directorates do not have clear procedures and rationalised roles and responsibilities in the development and procurement of digital government projects. Additionally, existing internal procedures related to project development are not formalised in shared guidelines and standards, which constrains knowledge sharing and co-ordination, fostering discretionary decision-making.

Figure 3.2. Availability and responsibilities of high-level digital government co-ordination bodies



Source: OECD Survey on Digital Government 1.0 (OECD, 2020[3]).

Similar challenges are observed in the interaction between MDG with actors within the digital government ecosystem, namely beneficiaries (public sector organisations for which MDG approves and procures certain projects) and Information Society S.A. When looking at the broader governance of digital government in Greece, to date MDG does not have a cross-government co-ordination instance or body, such as Council of CIOs or similar, in order to have joint decision-making and prioritisation of projects (see Figure 3.2) (OECD, n.d.[4]). Such instance can be an effective way to communicate and set common priorities and efforts in line with the DTB, and serve to channel the needs and concerns of line ministries and agencies for an effective implementation of the strategy.

The DTB acknowledges the relevance of upgrading the governance of digital government in Greece. For this, the DTB includes the creation of two co-ordination bodies in order to steer the implementation of the strategy. First, a Digital Transformation Steering Committee will be created to co-ordinate the implementation of the DTB as well as suggest new projects and priorities in the country. The Steering Committee will include a high-level plenary with General and Special Secretaries of the Government, chaired by the Minister of Digital Government. It remains unclear the level of empowerment of the Committee in terms of advisory or decision-making competencies.

To operationalise the Steering Committee, the DTB states the creation of the Digital Transformation Executive Network. The Network acts as a Council of CIOs in the Greek government in order to co-ordinate the implementation of relevant projects comprised in the DTB, and are the main contact points between ministries and the ministry. However, based on the data collected there is no evidence that these bodies are operational at the time of the review.

When looking at the interactions between MDG and Information Society S.A. to intermediate and support line ministries (beneficiaries) in the planning, implementation, procurement and monitoring digital projects, similar issues are noticed. Given the general limited capabilities at sectoral level to develop digital transformation projects, Information Society S.A. plays a pivotal role in translating the beneficiaries' needs into concrete projects to be planned, implemented and monitored on behalf of the beneficiaries. However, the criteria under which Information Society S.A. takes this role are still unclear, as well as the specific share of projects assigned to this entity and concrete mechanisms to ensure an adequate accountability of its functions.

The limited co-ordination between MDG and line ministries is also observed in the absence of agreed mechanisms to monitor the implementation and impact of digital transformation projects as well as to gather feedback from beneficiaries and line ministries concerning the development of such projects. Given the intermediation role of Information Society S.A., there is a disconnection between MDG and the beneficiaries which does not provide sufficient feedback to the Ministry to assess the pertinence and effectiveness of existing procedures and mechanisms for the successful implementation of digital government projects.

Procurement bodies for digital projects

The current governance structure of the Ministry of Digital Governance presents a duplication of bodies in charge of procurement of digital projects. The Department of Procurement and Logistics is in charge of the tendering process on behalf of entities within the Ministry of Digital Governance, in particular the General Secretariat for Information Systems (see Table 3.1). The end users and the scope of these procurement procedures, however, go beyond the Ministry itself and concern any kind of public policy. For instance, the Department of Procurement and Logistics may run the procurement process for a new storage area network and backup equipment for the government cloud.

In parallel, Information Society S.A. executes procurement of digital projects on behalf of the Ministry of Digital Governance or entities across the Greek government. Originally set up as an independent agency, it maintains an independent status under the leadership of the Ministry. It works on the basis of Memorandums of Understanding (MOUs) with any kind of government entity that wishes to outsource the

development of a digital project (including procurement tasks). This entails the purchase of hardware, software or in the majority of cases integrated systems. There are no pre-defined criteria for determining which digital projects Information Society S.A. will be in charge of. Instead, conversations with stakeholders show that this choice is often motivated politically.

While there are some apparent differences between these two bodies, both operate without a clear distinction in their roles with respect to the procurement of digital projects. Overall, Information Society S.A. can be characterised as the operational arm of the Ministry. The Department of Procurement and Logistics has a broad mandate for all procurement operations of the Ministry. It primarily serves internal clients, but its role has an impact on external entities, too.

As such, there is no clear specialisation in the kinds of digital projects that the two entities engage with. For instance, the two bodies could benefit from pre-defined criteria that determine whether a project falls under the remit of Information Society S.A. or the Department of Procurement and Logistics. This would allow the two bodies to fully specialise and enhance their capacity in a given area. Objective criteria for accepting a digital project would also reduce the discretionary decision-making that affects these entities. Finally, a clearer definition of the roles would allow these bodies to better prioritise their procurement operations, reduce duplications and benefit from enhanced specialised capacity.

While there seems to be duplication of procurement of digital projects within the Ministry of Digital Governance, the level of sophistication of procurement operations seem to vary between these two entities. Namely, Information Society S.A., as a longstanding purchaser of ICT technology, has more experience and capacity, whereas the Department of Procurement and Logistics faces greater challenges with specialised digital competences and more advanced procurement practices suitable to digital projects. The demands placed on the Department of Procurement and Logistics have also expanded rapidly over recent times, as the competences related to digital transformation agenda have been transferred to MDG.

Table 3.1. Institutional clients of the Department of Procurement and Logistics

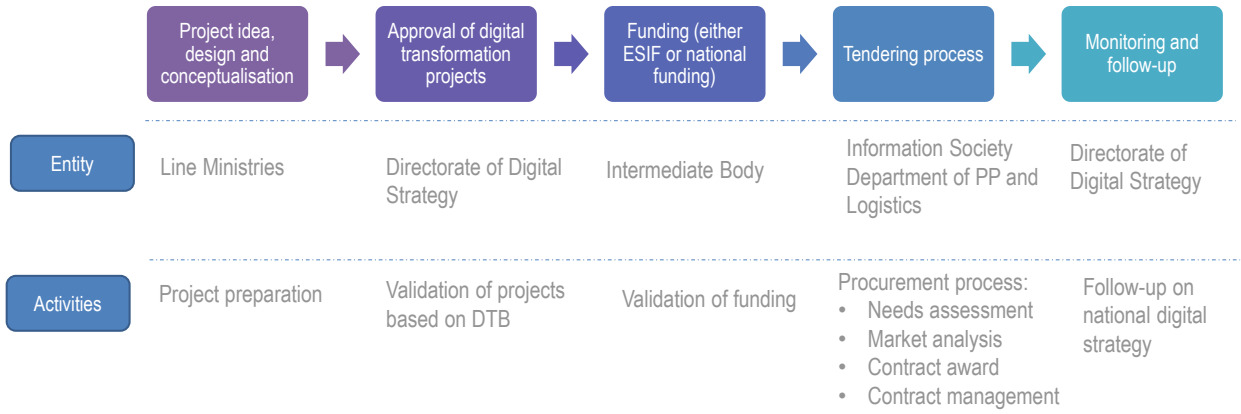
Client	Share of procurement	Policy area
General Secretariat of Information Systems	50% approx.	All public policy
General Secretariat for Digital Governance and Process Simplification	30% approx.	All public policy
General Secretariat of Telecommunications and Post	10% approx.	All public policy
Ministry of Digital Governance	10% approx. approx.	Inner implementation

Source: Data provided by the Ministry of Digital Governance.

Mapping business processes and operations for the implementation of ICT/digital projects

The implementation and delivery of ICT/digital projects broadly consists of five steps, which include the project idea and conceptualisation, the approval mechanism including the alignment with the national ICT strategy, i.e. the DTB, the selection of funding, the tendering process (in case the project is procured) and finally monitoring and follow-up (see Figure 3.3). This section describes these steps, the underlying processes and the activities of responsible entities in greater detail with a view of gathering a clear picture of the functioning of MDG with respect to the delivery digital transformation projects.

Figure 3.3. Main steps in the delivery of digital projects



Source: Own elaboration based on the information provided by the Ministry of Digital Governance.

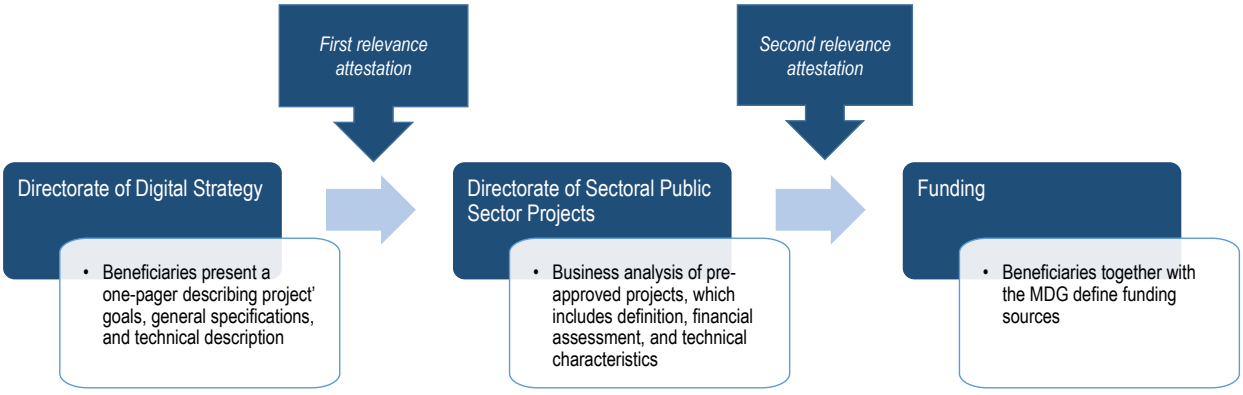
Preparation and approval of digital transformation projects

According to the existing organisational structure and roles, the General Secretariat for Digital Governance and Process Simplification (GSDGSP) has the primary role to prepare, plan, prioritise and fund ICT/digital projects in the Greek public sector. Different units within the GSDGSP, such as the Department of Digital Strategy and the Directorate of Public Sector Projects, are key actors in the process of assessing proposals and setting priorities, as well as have a crucial role in projects' evaluation process.

From a policy perspective, the Digital Transformation Bible (DTB) comprises the key projects and initiatives prioritised on digital government in Greece. The DTB acts as a compendium of around 400 initiatives for the period 2021-2025. The formulation of the DTB, led by MDG, included a consultation process with all line ministries. However, several public sector organisations with a relevant view of the development of digital government in Greece stated that there was limited participation of third parties in the formulation of the Bible.

Additionally, the Directorate of Digital Strategy within MDG, is responsible of conducting a project approval procedure for all ICT initiatives in the public sector regardless of the funding source or implementation body. This process aims to foster the alignment of projects with the DTB (and previously the NDS). According to Law 4727/2020 (Government of the Hellenic Republic, 2020[5]), all public sector organisations have to get approval from the Directorate of Digital Strategy in the form of a *relevance attestation* for all projects. In practice, officials acknowledge that the procedure operates for projects with an estimated budget over the threshold of EUR 60 000. Projects below this budget threshold are exempt from the procedure and are entirely under the responsibility of each public sector organisation. For each project, beneficiaries present a one-pager describing project' goals, general specifications and a technical description. Once received, the Directorate of Digital Strategy has 30 days to issue the *relevance attestation*. In case there is no reply from the Directorate to beneficiaries regarding the assessment of the project, the request is presumed as approved. Nevertheless, it is not possible to ensure that all digital initiatives effectively go through this procedure given the lack of awareness of the new procedures in place, and the existing budget thresholds set for approval.

Figure 3.4. Approval process of digital projects



Source: Own elaboration based on the information provided by the Ministry of Digital Governance.

After the concept approval, the Directorate of Sectoral Public Sector Projects conducts a more detailed business analysis of pre-approved projects which includes definition, financial assessment and technical characteristics. This analysis leads to a second *relevance attestation* that allows initiatives to move to the funding allocation stage within MDG. Stakeholders involved in this process acknowledge that this second approval process does not serve as a mechanism to ensure adherence to cross-governmental standards and principles for the development of digital government in Greece. The definition of value proposition (business cases) and project approval systems can be an effective way to foster alignment and adoption of guidelines and standards that foster policy coherence in the implementation of the DTB. Similarly, they can serve as a method to better assess and mitigate related risks of implementing of digital transformation projects. However, in Greece the approval process does not comprise a project-by-project risk assessment of the initiatives.

Funding of ICT/digital projects

One of the critical responsibilities of MDG is to provide funding to the projects either comprised in the DTB or which have been approved internally by the Ministry. Currently, there are three funding sources for ICT/digital projects in the Greek public sector:

- *European funds:* managed by MDG, this includes the European Structural and Investments Funds (ESIF) (see Box 3.1 and the upcoming Recovery and Resilience Facility (RRF). The ESIF is one of the most relevant funds managed by MDG for ICT-related initiatives.
- *Centralised national budget:* national budget allocated to MDG to fund specific ICT/digital projects which have to be pre-approved internally by the Ministry.
- *Public sector organisations' budget*: national budget allocated to each public sector organisation which can be spent in ICT/digital projects. This includes resources from the Public Investment Programme.

European funds play a critical role to finance Greece's public sector investments, including digital transformation initiatives and most public infrastructure projects. However, the internal criteria under which projects (including the initiatives comprised in the DTB) are funded with EU or national budget are unclear. Different funding sources create separate pathways for ICT/digital projects, i.e. lack of coherence in planning and prioritisation. This becomes evident for projects which are funded with sectoral budget, for which MDG has no clear oversight and may be leading to projects that continue fostering misalignment, fragmentation and lack of coherence in the absence of guiding standards and development principles.

Given the centralised approach for ICT/digital project approval and funding in Greece can be an effective policy lever for digital government in order to create incentives for system-wide transformation and policy coherence, serving to plan, prioritise, rationalise and monitor the effective development of these projects. However, at the moment there is no clear system in place that can empower MDG to accomplish these tasks. There is no comprehensive oversight of all initiatives to secure its alignment with the strategy, although MDG is planning to implement a portfolio management approach to better manage and co-ordinate resources for ICT/digital projects. Some of the stakeholders acknowledge the need to develop a unit responsible for managing and co-ordinating the Public Investment Programme following the experience of the ESIF.

Project implementation (from planning to contract implementation)

Once the project has been approved (i.e. the coherence with the Digital Transformation Bible has been certified) and the funding has been validated, it is ready for implementation and procurement. At this stage, a digital project may be implemented by Information Society S.A. or supported by the Department of Procurement and Logistics during the procurement phase. In alternative, the procurement may be conducted directly by line ministries. Given the lack of internal capacities on project management, procurement and implementation, most ICT/digital projects are supported by Information Society S.A. and MDG's Department of Public Procurement and Logistics to help procure the project and manage the implementation phase. The project implementation consists of several sub-steps, including those related to the procurement process, i.e. the needs analysis, the market analysis, the tendering process and the contract execution. The following analysis focuses on the project implementation as carried out by Information Society S.A. and the Department of Procurement and Logistics.

Needs analysis (including stakeholder involvement, with special attention to the end-users)

The needs analysis should balance the needs of the project owner (the beneficiary, e.g. a Ministry within the Greek government) as well as the potential end-users (e.g. citizens, businesses or civil servants) to procure a solution that corresponds to the needs of these two stakeholder groups. This phase is particularly relevant in the context of ICT procurement, as many decisions (e.g. choice between service or supply, contract versus a framework agreement) are best determined with a clear view of the underlying needs.

Whenever the procurement process of a project is conducted by Information Society S.A., the project beneficiary provides a basic outline of his or her needs at the moment of submitting a proposal to Information Society S.A. In a second step, a project team is established composed of team members from the beneficiary and Information Society. Such project team is tasked with further defining the needs and translate these into a concrete project description and related tender specifications. Depending on the capacity of the beneficiary, the initial description of project needs may be more or less advanced.

In other instances, particularly when the procurement process is managed in house by MDG, ad hoc collaboration mechanisms are set up between the Department of Procurement and Logistics and the beneficiaries within the Ministry of Digital Governance. For instance, departments within the General Secretariat of Information Systems often act as liaison with the procurement officials to help specify needs and formulate technical specifications as well as suggest a Request for Proposals (RfP) using templates by the Ministry of Digital Governance.

Understanding and meeting end-user needs

Digitally mature governments place users at the core of digital transformation processes. They establish continuous and iterative engagement mechanisms with end-users to fully understand and meet their needs instead of making top-down assumptions about their demands and expectations. Such an approach requires a continuous interaction with end-users, which can be an effective way to achieve processes and

services that respond and adapt timely to users, fostering trust in the public sector (OECD, 2020[6]; OECD, 2021[7]).

In the context of project definition and pre-procurement analysis in Greece, limited involvement and interactions with end-users is observed when planning and implementing ICT/digital projects. Although the DTB underlines the relevance of user-driven approaches for service design and delivery and some public sector organisations have involved users through the different phases of project development, the general absence of formal mechanisms to gather and channel user feedback into the design and implementation of ICT/digital projects constrains a wider user-driven culture in Greece (regardless of the public sector organisation responsible for its implementation i.e., MDG or Information Society S.A.).

Experience from the implementation of recent systems has shown that the period between planning and implementation can stretch into many years. The delays can have varied causes including problems with the design of the system to procurement. Procurement processes are long drawn because of multiple reasons including lack of coordination between the authorities, non specification of a clear mandate, lack of technical resources etc. Delays related to procurement often result in the mushrooming of several smaller systems. These ad hoc systems perform one part of the functions envisaged by the original system but in a fragmented fashion. This tends to seriously undermine regulatory reform efforts because of incomplete and incoherent functionalities.Fostering a user-driven approach in ICT/digital projects in Greece calls for an agile culture when designing, procuring and implementing these projects. This requires looking at the mechanisms to test, learn, improve and iterate towards refining the initial requirements and the solution, fostering more meaningful and impactful results (see Box 3.2). From a public procurement perspective, the use of more complex and iterative mechanisms such as competitive dialogues and innovation partnerships can be an effective way to foster agility within the procurement process. Widely promoted by the European Commission, such procurement mechanisms are not widely adopted in the Greek public sector yet as indicated by the Department of Procurement and Logistics at MDG as well as Information Society S.A.

Box 3.2. Agile principles in the procurement of ICT/digital projects

Digital transformation calls for additional efforts to equip the public sector with the pace required to transform services and public sector operations. The fast-pacing nature of digital technologies requires an agile and iterative approach to the development of digital solutions in order to secure outcomes that meet user needs and maximise public value.

To address these challenges, the UK Government Digital Services with the support of the OECD developed the ICT commissioning playbook, focusing on ICT procurement reform and its part in the wider digital transformation of the public sector in countries around the world. Its goal is to show how traditional procurement approaches can evolve towards agile procurement. The playbook presents practical steps and case studies to overcome common problems in the procurement of ICT goods and service:

1. Set the context: define the problem to be solved before designing the solution.
2. Start by understanding user needs: embed a user-centred, design-led, data-driven approach.
3. Design procurements and contracts that meet users' needs: Work with your research team and get to know all of your users.
4. Be agile, iterative and incremental
5. Work as a multidisciplinary team
6. Make things open

7. Build trusting and collaborative relationships, within and outside of government
8. Share what you have with others and reuse what others have
9. Move from specifying solutions to defining outcomes
10. Public Procurement for Public Good: meet functional needs while supporting the public good
11. Operate and deliver

Source: (GDS/OECD, 2019[8]).

Market analysis and market engagement

The second crucial step for preparing a procurement lies in engaging with the market to determine technologies and capabilities of market providers. Having a solid understanding of the market is even more important in the ICT sector, as the technology evolves very fast. Public buyers need to closely engage in order to stay abreast of new trends, be able to draft technical requirements that closely correspond to the both to the beneficiary's needs and end users. Market engagement is especially key to success for non-standard or irregular purchases or for purchases that result in realisation of unique ICT results, and solutions. Both the public buyer (contracting authority) and the potential service provider (bidder) can benefit from market consultations. While the public buyer might obtain a free opinion, reduce the risks of objections and get more information about the subject matter of the contract and the respective market segment, service providers have the opportunity to present their innovative solutions, ideas and better understand the needs of contracting authority. The market consultation should be a two-way open dialogue, instead of a "one-way broadcast".

The approach taken for market analysis and engagement varies depending on whether Information Society S.A. or the Department of Procurement and Logistics are running the procurement procedure. Information Society S.A. typically engages in open, early and targeted channels of communication with the market to understand market capacities, including presentations and demos of new technology and products by potential suppliers. Such exchange of information with the market helps them in being able to localise and assess potential solutions and future developments. It also gives potential suppliers the opportunity to allow public sector requirements to be integrated into their planning (research & development) and lay early groundwork for innovative solutions. Finally, market engagement addresses new potential suppliers in addition to traditional and well-known ones and this also includes SMEs whose focus is not on the public sector.

Furthermore, the Greek public procurement law foresees a formal written stakeholder public deliberation procedure (*δημόσια διαβούλευση*), which takes place before issuing a particular tender, and aims at sharing expectations and inviting comments, suggestions, and new ideas from potential suppliers and market actors (including SMEs, academic institutions, innovators, etc.). This public consultation procedure foresees the publication of a mature version of the RFP (Request for Proposal) on the official National Public Procurement Platform (ESIDIS) site for at least 2 weeks to collect comments by market actors. The received input is formally recorded, analysed, and considered for incorporation in the final version of the tender document.

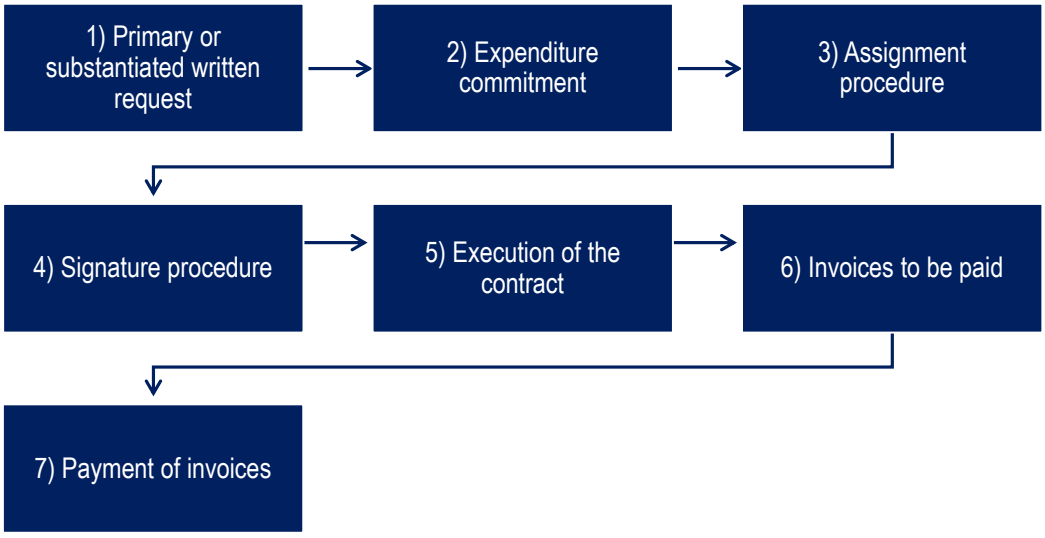
Information Society S.A. carries out this public deliberation procedure on a systematic basis for tenders above a certain threshold. The Department of Procurement and Logistics does not have systematic approach to market analysis and market engagement, but also makes use of the public deliberation procedure.

Tendering process

Once the needs analysis and the market analysis are completed, the formal tender procedure can be launched. The Department of Procurement and Logistics outlined several formal procedural steps for its procurement procedures of digital projects (see Figure 3.5). It should be noted that the formal procedure reflects a narrow understanding of the procurement process that does not take into account the pre-tender stage (i.e. needs analysis and market analysis), as outlined above. However, it is important to formalise also the pre-tender stages to highlight their relevance, in particular in the context of procurement of digital projects.

It appears that the tendering process is largely carried out as open procedures and with limited focus on quality criteria. This is common for public procurement procedures in Greece. In the context of ICT procurement, however, the use of more complex procurement procedures (e.g. competitive dialogue) may be suited in some instances, particularly if the contracting authority is seeking to buy an innovative and/or unique solution that requires an agile approach towards the understanding of the problem, the needs and the basic requirements in order to test, iterate and scale up.

Figure 3.5. Formal procedural steps for the procurement of digital projects by the Department of Procurement and Logistics



Source: Information provided by the Ministry of Digital Governance.

Contract execution

As per Greek legal framework, contract execution for supplies requires the set-up of a Monitoring and Acceptance Committee responsible for supervision, quality control and final acceptance of products and services. In the case of services, such a Committee is optional, and the functions of contract monitoring can be performed by the competent authority. Typically, the Monitoring and Acceptance Committee is composed of the contract beneficiaries, but external experts may also be involved, particularly in the case of complex contracts where the Monitoring and Acceptance Committee may not be able to evaluate the deliverables of the contract.

In the case of digital projects run by Information Society S.A., a multi-disciplinary team is set up to oversee the implementation of the contract, composed of the so-called project management team. Such project management team includes a team leader, end user representatives and domain experts appointed by the project beneficiaries, as well as a Project Manager, ICT Expert, Legal/Contracting Expert and Financial

Expert, appointed by Information Society S.A. There may be additional teams involved in ensuring the successful project completion and exploitation, such as a Business Steering Committee, responsible for overseeing and providing guidance with the business aspects of a project, and domain experts, responsible for the assessment of deliverables.

Contract management of digital projects procured by the Department of Procurement and Logistics is overseen by a dedicated department, i.e. the Department of Tenders and Contracts within the Department of Procurement and Logistics. Annual or ad hoc committees are in charge of monitoring the stages of delivery and assessing the outcome or final product of the project. Ad hoc committees are usually set up for digital works. In addition to these committees, the project management team, which includes the Directorate that runs the project, is tasked with monitoring contract implementation.

Project management

Fostering institutional and human capabilities to effectively manage complex digital transformation projects is essential for successful and timely delivery. In a context of increased need to design projects driven by users' expectations and demands, project management methodologies that balance structured project development with effective mechanisms to understand and address user needs is critical. Countries have advanced in the development and adoption of agile development practices to address the project life cycle from an end-to-end perspective, creating spaces to foster engagement with users and to test, iterate and learn accordingly.

In the context of ICT/digital project management in the Greek public sector, existing culture and practice promote the use of the waterfall project management. In terms of responsibilities for project management in MDG, the Department of Digital Strategy oversees the promotion and adoption of best practices for their dissemination in ICT projects / activities, such as ICT project management methodology "Project Management Methodology (PM2)" elaborated by the European Commission in collaboration with the other relevant services of the Ministry (European Commission, Directorate-General for Informatics, 2021[9]). However, at the time of this study there was no evidence of adoption and use of agile methodologies, for example through the agile extension produced for PM2 (European Commission, Directorate-General for Informatics, 2021[10]).

The limited adoption of agile project management principles and standards is impeding a culture of experimentation, testing and iteration. Such a development approach is critical when addressing the implementation of large and complex digital transformation projects. Similarly, there is a limited culture and room for experimentation practices and the use of proof-of-concept in the design and delivery of digital solutions, reflecting on the challenges to develop institutional capacities for delivery. Embracing a user-driven approach calls for flexibility in product development, promoting scalability, and encouraging continuous learning and improvement.

Systems and data (e-procurement)

The procurement of digital projects is supported by Greece's e-procurement infrastructure, composed of the Electronic System for Public Procurements (ESIDIS) and the Central Electronic Registry for Public Procurements (KIMDIS). KIMDIS functions as the platform to announce tender opportunities as well as the registry for award decision, the contract, amendments (if applicable) and payment orders. In contrast, ESIDIS is the transactional e-procurement platform. The use of ESIDIS is mandatory for all contracts above EUR 30 000 while publication on KIMDIS should occur for all contracts above EUR 2 500. As such, digital transformation projects procured by MDG are carried out via the ESIDIS and KIMDIS platform, both for the publication of procurement opportunities, as well as for tenders above the above-mentioned thresholds. In addition to transparency provided by the e-procurement system, the Department of Procurement and

Logistics publishes information about its tenders on the website of MDG. Similarly, Information Society S.A. uses its website to announce tenders as well as market consultations.

KIMDIS and ESIDIS cover the procurement cycle up to the award of the contract, but the contract management phase is not supported by e-procurement functionalities. Furthermore, information in the Greece e-procurement system is not provided in an "open" format, thereby making it difficult to use for monitoring or analysis purposes.

The ESIDIS also provides some statistical and reporting capabilities to procurement stakeholders. Namely, publishes a short monthly report and an annual report, which includes the basic statistics for goods & service and public works. Data is available since 2017 (Ministry of Economy and Development of Greece, 2019[11]). Furthermore, the annual report, called *ESIDIS Annual Bulletin*, prepared by the General Directorate for Public Procurements (GDPP) within the Ministry of Development and Investments, discloses more information on the procurement procedures published and conducted in ESIDIS (Ministry of Development and Investments of Greece, 2020[12]).

Workforce assessment

Digital talent and skills

A successful digital transformation is sustained and enabled by a digitally competent public workforce. Equipping civil servants with the right skills and capabilities requires promoting a culture of continuous transformation, flexibility and proactiveness. According to the OECD Framework for Digital Talent and Skills (OECD, 2021[13]) (see Box 3.3) setting the organisational conditions for digital talent in the public sector, fostering multi-dimensional skills to achieve mature digital governments as well as taking actions to retain and promote digital capacities of the workforce are three fundamental facets for having competent civil servants in the digital age.

When looking at the development of digital talent in the Greek public sector, in particular related to the implementation and procurement of ICT/digital projects, interviewees acknowledge a limited progress given the absence of concrete policies and initiatives to promote digital skills in the public sector. This includes a limited organisational culture of collaboration and co-operation (fundamental for the implementation of cross-governmental initiatives) fostered by the systematic changes in the governance of machinery of digital government in Greece. Interviewees acknowledge that these changes have not been encompassed with policies to retain and attract digital talent at MDG and more broadly in the public sector. According to the evidence collected, this implied that some institutions and departments have not opened new positions during the last ten years, resulting in the ageing of the workforce and limited public sector capabilities to deliver digital projects. Additionally, it calls for a top-level culture of openness, testing and innovation to create safe spaces to try, learn, improve, iterate and eventually fail. Such a culture is also fundamental when looking at mechanisms to involve and understand user needs (OECD, 2021[13]).

Looking at the digital capabilities across the Greek public sector, a gap is observed between MDG departments, including Information Society S.A., and line ministries and institutions on specific digital skills that are critical for a successful digital transformation e.g., skillsets on project management, technical specification and understanding of digital projects, and user-research and multidisciplinary work to understand and meet user needs. The disparity in digital capacities between MDG and other public sector organisations has contributed to the limited empowerment and ownership that line ministries on the implementation of ICT/digital projects, concentrating these tasks within MDG.

The recently published DTB states digital talent and skills as one of its six strategic axes. However, the DTB focuses largely on digital skills in the society and economy, with only two specific activities directed to civil servants. First, the development of a national framework for digital talent in the Greek public sector following the principles of the European Digital Competence Framework (see Box 3.4). Second, the

incorporation of core digital competencies within civil servant job profiles, and the development of training programmes on digital skills for public servants.

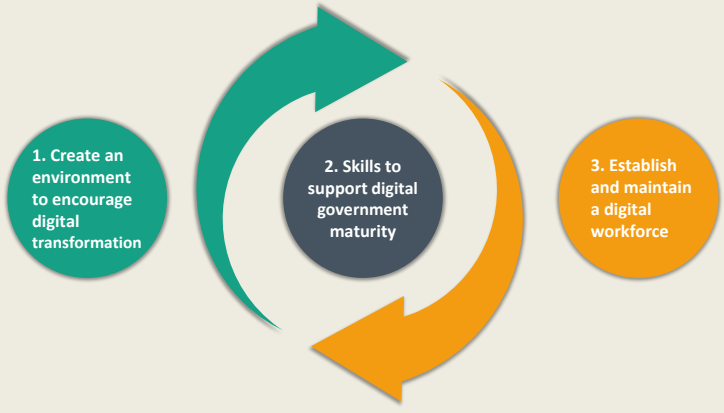
However, a more comprehensive approach could be developed for a skilled and competent digital workforce. The DTB mentions the implementation of training activities to civil servants, but without looking into the broader need to address working practices, culture, attraction and retention of digital skills policies. This may be complemented with activities to promote diversity in digital teams where different professional and academic backgrounds can provide a better understanding of user needs and effective practices to develop digital transformation projects. Similarly, the development of formal and informal training, mentoring programmes and job mobility within government could help counterbalance the existing limited digital talent observed in the Greek public sector, and which is hindering an effective and sustainable transformation.

Box 3.3. The OECD Framework for Digital Talent and Skills in the public sector

The OECD Framework for Digital Talent and Skills in the public sector contributes to the discussion around skills at the individual and team level, reflecting the role of talent and skills in establishing digital government maturity. The framework draws and contributes to an expectation that coherent policy efforts are embedding the talent and skills for digital transformation throughout the public sector and society. The structure of the framework consists of three pillars:

1. **Create an environment to encourage digital transformation:** The context for those working on digital government and the background required to promote digital transformation. It addresses cultural, leadership, and organisational drivers of digital talent and skills.
2. **Skills to support digital Government maturity:** The required skills to keep digital government maturity, covering all public servants, particularly professionals and leadership roles. Within the broader context of 21st-century skills in society, the framework presents four areas of skills to support digital government: user skills, socio-emotional skills, professional skills, and leadership skills.
3. **Establish and maintain a digital workforce:** The practical steps and enabling activities required to establish and maintain a workforce that encompasses the skills to support digital government maturity. This pillar addresses recruitment methods, career planning, workplace mentoring, training, and the private sector's role.

Figure 3.6. OECD Framework for Digital Talent and Skills in the public sector



Source: (OECD, 2021[13]).

Box 3.4 European Digital Competence Framework 2.0 (DigComp 2.0)

Published in 2016 the European Digital Competence Framework 2.0 (DigComp 2.0) is an update of the first edition conceptual reference model released in 2013. DigComp 2.0 identifies the key components of digital competence in 5 areas:

- *Information and data literacy:* To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.
- *Communication and collaboration:* To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.
- *Digital content creation*: To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.
- *Safety:* To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.
- *Problem solving*: To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.

Source: (Vuorikari R, 2016[14]).

ICT public procurement workforce

Adequate capacity of the public procurement workforce is a key element to ensure a sound procurement system, and is particularly important in the context of procuring digital technologies. Indeed, the OECD Recommendation on Public Procurement calls upon countries to develop a procurement workforce with the capacity to continually deliver value for money efficiently and effectively. (OECD, 2015[15]) (see Box 3.5).

Box 3.5. OECD Recommendation of the Council on Public Procurement: Capacity

IX. The OECD recommends countries to develop a procurement workforce with the capacity to continually deliver value for money efficiently and effectively.

i) Ensure that procurement officials meet high professional standards for knowledge, practical implementation and integrity by providing a dedicated and regularly updated set of tools, for example, sufficient staff in terms of numbers and skills, recognition of public procurement as a specific profession, certification and regular trainings, integrity standards for public procurement officials and the existence of a unit or team analysing public procurement information and monitoring the performance of the public procurement system.

ii) Provide attractive, competitive and merit-based career options for procurement officials, through the provision of clear means of advancement, protection from political interference in the procurement process and the promotion of national and international good practices in career development to enhance the performance of the procurement workforce.

iii) Promote collaborative approaches with knowledge centres such as universities, think tanks or policy centres to improve skills and competences of the procurement workforce. The expertise and pedagogical experience of knowledge centres should be enlisted as a valuable means of expanding procurement knowledge and upholding a two-way channel between theory and practice, capable of boosting application of innovation to public procurement systems.

Source: (OECD, 2015[15]).

Reinforcing the workforce of public procurement demonstrates an opportunity for future improvement in the field of ICT procurement in Greece. As per the information gathered during the OECD fact-finding missions, Information Society S.A. has category specialists that are equipped with technical knowledge on the specific digital goods and services to be procured under the ICT procurement.

The Department of Procurement and Logistics is equipped with personnel dealing with public procurement, but it appears to be less specialised in particular product categories. Importantly, it faces shortages in personnel due to an increased workload that is often difficult to predict in advance. Knowledge of procurement law and market awareness are considered some of the most important skills for the job, but profiles with strong competences in both public procurement and digital technology are limited.

A series of interviews with various stakeholders show that there are no mechanisms or strategies in place to promote the professionalisation of the workforce working on ICT procurement. The assessment of the public procurement workforce has never been carried out in the field of ICT procurement. There are no competency models nor capability-building system aligned with competency models. Such competency models provide a strong tool to understand what kind of gaps are present in the workforce, and devise appropriate strategies to address these gaps (e.g. training strategy, recruitment, etc.).

As a starting point, MDG and Information Society could benefit from carrying out two types of assessments: i) current state of play of professionalisation and ii) competencies of the workforce who is in charge of implementing ICT procurement at the entities including the Ministry of Digital Governance and Information Society S.A. These assessments will contribute to measuring the organisational maturity of these entities in the ICT procurement.

Beyond the assessment of specific competences within MDG, the professionalisation of buyers within a given institution is most effective when embedded in an enabling framework at country level. Such an enabling framework gives adequate recognition to public procurement as a standalone profession, and goes hand in hand with the necessary support tools and structures to support procurement professionalisation, i.e. training academies, workshops, pilot initiatives, etc. To assess such enabling framework, the Methodology for Assessing Procurement Systems (MAPS) with its Supplementary Module on Professionalisation of Public Procurement, is a useful instrument to carry out the assessment of the current state of play of professionalisation in procurement (see Box 3.6).

Box 3.6. MAPS Supplementary Module on Professionalisation of Public Procurement

The Methodology for Assessing Procurement Systems (MAPS) is an international standard and the universal tool to evaluate any public procurement system worldwide. The Supplementary Module on Professionalisation of Public Procurement that allow governments, whether they are central or sub-national, to assess the current state of play of professionalisation of the public procurement workforce. This assessment takes into account professionalisation in following four foundational pillars, based on the MAPS structure:

- Pillar I. Legal, Regulatory, and Policy Framework
- Pillar II. Institutional Framework and Management Capacity
- Pillar III. Public Procurement Operations and Market Practices
- Pillar IV. Accountability, Integrity and Transparency of the Public Procurement System

Source: (MAPS Secretariat, 2021[16]), (OECD, 2017[17]).

The European competency framework for public procurement professionals (ProcurComp^{EU}), launched by the European Commission in December 2020, could be used to carry out the assessment of competencies of the workforce. ProcurComp^{EU} provides practical tools to advance the professionalisation agenda such as the competency matrix including 30 key competencies for public buyers, a self-assessment tool for each competency, and generic training curriculum (See Box 3.7). Greece could use or customise these 30 competencies as a basis for a self-assessment designed to highlight specific gaps in procurement competence. For example, the proficiency descriptions of *C7: Category specific* could be tailored to the case of ICT procurement. These tools of ProcurComp^{EU} are also available in Greek language.

Box 3.7. European competency framework for public procurement professionals (ProcurComp^{EU})

ProcurComp^{EU} is a tool designed by the European Commission to support the professionalisation of public procurement. ProcurComp^{EU} consists of three elements:

- Competency Matrix, which defines 30 procurement-related and soft competences along four proficiency levels;
- Self-Assessment Tool that allows users to set targets for the different competences and assess their proficiency levels against them and identify any gaps;
- Reference Training Curriculum which lists all learning outcomes that public procurement professionals should know and be able to demonstrate after having attended a training for a certain proficiency level.

The Competency Matrix describes 30 competencies (knowledge, skills and attitudes) that public procurement professionals should demonstrate in order to perform their job effectively and efficiently and carry out public procurement procedures that bring value for money. The competences are grouped in two main categories: procurement specific competences, and soft competences. Each competence is described along four proficiency levels based on the breadth of knowledge and skills: Basic, Intermediate, Advanced, and Expert.

The Self-Assessment Tool is composed of several key elements including a self-assessment questionnaire and a calculation tool for computing assessment results.

The Reference Training Curriculum lists all learning outcomes that public procurement professionals should know and be able to demonstrate after having attended a training for a certain proficiency level.

ProcurComp^{EU} is a flexible, voluntary and customisable tool. Getting value from ProcurComp^{EU} does not require using each and every component of the framework, nor does it require the use of each and every competence defined in the ProcurComp^{EU} Competency Matrix.

Source: (European Commission, 2020[18]).

As a result of this proposed workforce assessment, Greece would be able to develop a structured capability-building programme for ICT procurement. Priority should be given to the topics related to competencies which were identified as relative weakness of the ICT procurement workforce in the assessment result. Greece could make reference to international good practices such as the ProcurComp^{EU} Reference Training Curriculum, or other successful training programmes. The European Training Programme developed by the Austrian Federal Procurement Agency (BBG) provides inspiration for a comprehensive programme dedicated to procurement excellence (see Box 3.8).

Box 3.8. Setting a curriculum for procurement excellence: Public Procurement Excellence Programme

The Austrian Federal Procurement Agency (BBG), one of the Central Purchasing Bodies (CPB) in Austria, has collaborated with the Vienna University of Economics and Business (WU) to develop comprehensive training programme for procurement experts from different EU Members and EU partner countries, called Public Procurement Excellence Programme (PPE). The EU-sponsored programme has attracted European and international procurement experts since its first edition in 2019-20. A second edition is scheduled for 2021-22.

This programme offers a unique combination of an academic and a practical approach. The goal is to provide state-of-the art knowledge, tools and methods for modern public procurement, including policy objectives like SME-friendly, green and innovative procurement. PPE 2021 contains the following 32-day modules:

Table 3.2. Modules of Public Procurement Excellence Programme 2021

No	Module	Duration (day)
1	Efficient Tools for Centralised Public Procurement	1
2	Introduction to Public Procurement	1
3	Characteristics of Centralised Public Procurement	1
4	Legal Framework of Public Procurement	1
5	International Organisations and Public Procurement	1
6	Consequences of Corruption in Public Procurement	1
7	Introduction to Innovation Management	1
8	E-Procurement and Digitisation in Public Procurement	1
9	Strategic Purchasing and Supply Chain Management	0.5
10	Business Economics for Public Procurement	2
11	Performance Management	0.5
12	Efficient Tools for Centralised Public Procurement	1

13	Effective Tender & Contract Strategies	2
14	Professional Management of the Tendering Phase	1
15	Project and Process Management	2
16	Importance of Socio-Political Objectives in Public Procurement	0.5
17	Inclusion of SMEs in Public Procurement	1
18	Public Procurement Promoting Innovation	1
19	Sustainable Public Procurement in Practice	1
20	Contract and Supplier Management	1.5
21	Convincing Communication & Presentations	1.5
22	Negotiations in Public Procurement	1.5
23	Establishment of a Sustainable Alumni Network	0.5
24	Focus: Management 4.0	0.5
25	Presentation of Business Projects	0.5
26	Closing Conference & Graduation	0.5

These modules are complemented with additional two modules: Agile Leadership (3 days) and Business project (2 days). The participants can obtain a degree of Certified Public Procurement Expert.

Source: (Austrian Federal Procurement Agency (BBG), 2021[19]).

Monitoring and assessing results

An effective digital transformation requires sound monitoring and evaluation mechanisms to secure benefits realisation, promoting transparency and accountability on investments and expected outcomes. The OECD Recommendation on Digital Government Strategies calls for institutional capacities to monitor progress and assess performance of digital government initiatives as a key mechanisms for institutional learning and feedback for decision-making (OECD, 2014[20]), as seen in Box 3.9.

Box 3.9. OECD Recommendation on Digital Government Strategies: Managing and monitoring project implementation

Reinforce institutional capacities to manage and monitor projects' implementation, by:

I. adopting structured approaches systematically, also for the management of risks, that include increase in the amount of evidence and data captured in the course of project implementation and provision of incentives to augment data use to monitor projects performance;

II. ensuring the availability at any time of a comprehensive picture of on-going digital initiatives to avoid duplication of systems and datasets;

III. establishing evaluation and measurement frameworks for projects' performance at all levels of government, and adopting and uniformly applying standards, guidelines, codes for procurement and compliance with interoperability frameworks, for regular reporting and conditional release of funding;

IV. reinforcing their public sector's digital and project management skills, mobilising collaborations and/or partnerships with private and non-governmental sector actors as necessary;

V. conducting early sharing, testing and evaluation of prototypes with involvement of expected end-users to allow adjustment and successful scaling of projects.

Source: (OECD, 2014[20]).

Establishing and measuring KPIs of ICT/digital projects can also be complemented by formal evaluation mechanisms to understand and assess user experience with digital services, i.e. user satisfaction metrics. An iterative and agile culture for digital transformation in the public sector embrace the measurement of performance, satisfaction and impact as a feedback loop to learn, improve and deliver better results.

Evidence from conversation with stakeholders indicates that MDG does not have a comprehensive approach to monitor and assess the performance and satisfaction of users with ICT/digital projects. Despite references in the DTB to the relevance of measuring and monitoring results, MDG only has internal and/or anecdotal indicators and has not defined a specific set of KPIs across the development and operation of digital transformation projects. Similarly, MDG lacks concrete mechanisms to track, publish and use such performance information to foster compliance and accountability in the development of ICT/digital projects. The general absence of reliable and timely information on performance also contributes to diffusing ownership between the different departments and units taking part in the process, nor to make these and external stakeholders such Information Society S.A. to deliver timely and effectively.

Stakeholders in the Greek public sector acknowledge that user feedback in internal process and service delivery is limited. Similarly to the evidence and results for Greece in the OECD Digital Government Index in 2020 (OECD, n.d.[4]), MDG does not have formal mechanisms to gather user feedback on ICT/digital projects nor to channel this information into the feedback and improvement policies. The absence of such mechanisms impedes to assess the relevance of these projects in the context of increased importance for digital government efforts to be driven by the needs and expectations of users (see Box 3.10 and Box 3.11).

Box 3.10. Chile's citizen satisfaction survey

Since 2015, the Modernisation Secretariat of the Ministry of Finance has focused on increasing the efficiency and efficacy of public institutions as well as citizen satisfaction with public service delivery in Chile. The Secretariat (formerly the Modernisation of the Public Sector Programme) has collaborated with the Inter-American Development Bank (IDB) to fund modernisation projects for key Chilean public institutions, setting specific KPIs in citizen satisfaction to measure the degree of impact and success of the initial ten projects.

In order to assess these projects as well as to facilitate comparative analysis, the Secretariat developed a standardised yet adaptable methodology and survey to capture how satisfied citizens are with the products and services these institutions deliver. Along with providing net and gross satisfaction rates, the survey characterises types of users, channels and products and services. It also determines which specific institutional and/or service delivery attributes have a significant impact on citizens' experience with public services, serving as a powerful tool for high-level officials and policy makers in addressing to what extent service delivery is truly responding to citizens' needs in Chile.

While each Chilean public agency conducts its own citizen satisfaction measurement, a common methodology has been agreed to facilitate comparative and longitudinal analysis while providing strategic insights for service delivery policy making. As of today, and with the endorsement of the Budget Office, the survey has increased its scope, comprising 49 public institutions and covering around 88% of total demand for service delivery in the country (not including health and education services). Institutions are measured every second year, reaching a total of 100 000 surveys conducted to date to capture citizens' perception with face-to-face, digital and/or telephone channels. The methodology, related studies and results in both data visualisations and open data are available at https://satisfaccion.gob.cl.

Source: Own elaboration, adapted from OECD (2020[6]).

Box 3.11. Ireland: Client Satisfaction Survey in procurement by OGP

In 2013, Ireland established the Office of the Government Procurement (OGP) to procure eight categories of common goods and services on behalf of public services, including digital technology. OGP also guides policy and procurement standards, integrating both policy and procurement operations into one office.

The OGP carries out client satisfaction survey regularly. The most recent one was carried out in December 2020, with all users of the OGP service contacted via email. A total sample of 386 responded to the survey from a wide range of clients.

The overall results of the Client Survey were very positive with gains against baseline figures experienced across the vast majority of areas measured. The survey demonstrates high levels of awareness by clients of what OGP does and clarity in how to engage with the organisation. It also shows what OGP services are being most used by clients, identifies the reasons stated why some clients are only using some of the organisation's services, draws out what services drive highest levels of satisfaction, and indicates areas for further improvement. Overall client satisfaction has improved in the two years since the last survey, with the professionalism and responsiveness of staff rated highly. 41% of clients say they would highly recommend the OGP. 83% of clients see the benefits of using OGP services and 90% of respondents who used OGP solutions saying they will do so again.

On the other hand, OGP identified a number of key areas for development, including; further development of the OGP website, communication of expectations on procurement timelines, reducing complexity in procurement processes, communicating the benefits of using OGP arrangements and ensuring future frameworks are targeted to meet needs of, and widely communicated to, potential users.

Source: (Department of Public Expenditure and Reform, 2021[21]).

Furthermore, it is essential to evaluate the effectiveness of procurement procedures by MDG to drive performance improvements. Measuring and analysing performance indicators contributes to identifying potential bottlenecks in public procurement processes, which might hinder the smooth implementation of public procurement procedures. Availability and clarity of data are key elements to calculate performance indicators not only for monitoring the progress of procurement processes but also for making better policy in general. Indeed, the OECD Recommendation on Public Procurement calls upon countries to collect consistent, up-to-date and reliable information on public procurement, and develop indicators to measure performance, effectiveness and savings of the public procurement system to support strategic policy making on public procurement as seen in Box 3.12 (OECD, 2015[15]).

Box 3.12. OECD Recommendation of the Council on Public Procurement: Evaluation

X. RECOMMENDS that Adherents drive performance improvements through **evaluation** of the effectiveness of the public procurement system from individual procurements to the system as a whole, at all levels of government where feasible and appropriate.

To this end, Adherents should:

I. **Assess periodically and consistently the results of the procurement process.** Public procurement systems should collect consistent, up-to-date and reliable information and use data on prior procurements, particularly regarding price and overall costs, in structuring new

needs assessments, as they provide a valuable source of insight and could guide future procurement decisions.

II. **Develop indicators to measure performance, effectiveness and savings of the public procurement system** for benchmarking and to support strategic policy making on public procurement.

Source: (OECD, 2015[15]).

As discussed above, the e-procurement system provides limited data that can be used for monitoring purposes, particularly given that it lacks an 'open' format. In fact, the system does not allow to collect the information related to public procurement in open and machine-readable formats with friendly search functions. Therefore, it is difficult for users to collect the information on ICT procurement from ESIDIS.

Furthermore, based on conversation with stakeholders it emerges that structured monitoring and evaluation system of public procurement has not been in place in the field of ICT procurement in Greece. MDG does not publish the annual report on ICT public procurement, nor sets up performance indicators to measure performance of ICT public procurement. This situation prevents MDG from tracking and evaluating the performance of individual procurement procedures as well as the ICT public procurement system as a whole. Greece has a great opportunity to improve the data availability and set up performance indicators related to ICT procurement. The Ministry of Digital Governance manages the data on individual procurement processes of ICT procurement in ESIF in the EXCEL format in including useful datasets which, however, involve the complexity in interpretation.

Greece could benefit from setting up performance indicators to measure performance of ICT procurement, and publishing the annual report on ICT procurement, under the initiative of MDG. The monthly and annual reports published by the Ministry of Development and Investments as well as the annual report on public procurement published by other countries like Serbia will provide insights not only on developing performance indicators but also on the structure and performance indicators to be included in the annual report of ICT procurement (see Box 3.13).

In addition to regular reporting on ICT procurement activities, MDG is recommended to set up a system of KPIs to track individual procurement procedures. This is particularly important in the context of upcoming projects from the RRF, as MDG will need to have a comprehensive overview of the status of digital transformation projects. Suggestions for specific performance indicators will be discussed in the final section of Chapter 5.

Box 3.13. Annual report on public procurement in the Republic of Serbia

The Public Procurement Office of Serbia issues an Annual Report on Public Procurement in the Republic of Serbia with the purpose of implementing monitoring over the application of public procurement legislation. The report shall be published and submitted to the Government and National Assembly no later than March 31 of each fiscal year, in accordance with Article 180 of the Public Procurement Law (LPP).

The report shows a wide range of information and statistics on public procurement procedures implemented in Serbia in a very concise way. The indicators include: Number of procurement procedures, Procurement volume and its share as a share of GDP, breakdown by sector, breakdown by types of public entities, breakdown by region, largest public entities, breakdown by procurement category (goods, services, and works), breakdown by public procurement procedures (such as open procedure, negotiated procedure without publication of a call for tenders etc.), breakdown of the legal

basis for the application of the negotiated procedure without public announcement calls, breakdown of the legal basis for the application of the exceptions, Number of procurement procedures and procurement volume of framework agreements and their share against the total, five most common categories of framework agreements, Number of procurement procedures and procurement volume of centralised public procurement and their share against the total, five most common categories of centralised public procurement, Number and volume of contracts awarded to SMEs, Number and volume of contracts awarded to female-owned businesses, share of contracts awarded to foreign bidders, share of contract award criteria (lowest price criteria versus MEAT criteria), and share of completed and suspended procurement procedures.

The report also describes the activities of the Public Procurement Office: EU accession process, international co-operation, certification of the public procurement workforce, trainings, help desk, opinions and interpretation of the LPP, irregularities and measures taken to prevent and detect corruption, conflicts of interest and other irregularities.

Source: (Public Procurement Office of the Republic of Serbia, 2021[22]).

Note

[1] See: https://mindigital.gr/.

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4 Challenges in the development and procurement of ICT/digital projects

This chapter presents the challenges identified in developing and procuring digital and ICT projects in the Greek Public sector. It highlights key areas of improvement to achieve greater competency and maturity in the development of ICT and digital projects. The challenges presented include the governance perspective, the planning and funding of digital initiatives, the procurement practices, monitoring and evaluation mechanisms and public sector capabilities.

While Greek authorities have been gathering considerable experience in implementing ICT/digital projects over the past years, challenges often persist, leading to ineffective project implementation that hinders benefits realisation. In particular, large digital projects are at greater risk of failure, as highlighted already by Greek authorities in the National Digital Strategy 2016-2021 (Ministry of Digital Policy Telecommunications and Information, 2016[1]) as well as during the interviews and data gathering process for this review.

Namely, digital projects generally take a long time from the moment of conception and design until they are effectively implemented, are often not flexible enough to respond to changing needs, face challenges to interoperate and adopt cross-governmental standards, do not incorporate the latest technologies, and lead to complex and closed systems with the risk of vendor lock-in and legacy issues that increase maintenance costs, among other challenges. Digital transformation's expected benefits may not be achieved if ICT/digital projects do not adhere to system-wide standards, are not tailored and driven to users' needs, take too long to be implemented, or are complex to manage during and after the implementation and procurement processes (Ministry of Digital Policy Telecommunications and Information, 2016[1]).

This section outlines key areas where the Greek government can achieve greater competency and maturity in order to secure ICT/digital projects' benefits realisation. It comprises reflections and suggestions throughout the project life cycle as well as other key components of the digital government ecosystem in Greece.

Silo-based operations within and outside the Ministry for Digital Governance

As highlighted in the previous chapter, the creation of the Ministry of Digital Governance represents a step forward in terms of the governance of digital government in Greece. Created in 2019, the Ministry is empowered to control all relevant functions for digital government, including policy design, strategic planning, funding management and public procurement for most of the critical and relevant projects. Within this governance model, Information Society S.A. is also under the mandate of MDG and acts as its implementation arm. Information Society plays a critical role to support public sector organisations with limited institutional capacities to implement and deliver, acting as an executive arm supporting the implementation of ICT projects in the public sector.

The reforms undertaken by the Greek administration are in line with the OECD Recommendations for Digital Government Strategies, which calls governments to secure leadership, political commitment and institutional capacities to co-ordinate digital transformation projects and achieve the digital government imperative (OECD, 2014[2]). When looking at the organisational structure and operational model of MDG, evidence collected from various departments and units within and outside the Ministry shows that it operates under a fragmented approach as a consequence of the successive institutional reforms undergone in the past decade. This siloed functioning becomes particularly clear in the ways departments and units involved in the life cycle of ICT/digital projects do not collaborate and interact throughout this process. This also includes the limited awareness of roles and mandates of each department/unit involved in the implementation and procurement of ICT/digital projects within and outside MDG, which constrains a smooth and co-ordinated approach in project assessment, prioritisation, funding and procurement. Further capacity building activities to bring together different areas within MDG are needed to create opportunities for policy dialogue, knowledge transfer and co-ordination beyond the formal procedures for project approval, funding and implementation. Institutional culture and appropriate incentives play an important role in this context, too. Namely, a culture that promotes co-operation between teams and institutions with concrete incentives (e.g. career rewards for co-operative behaviours) can reduce fragmentation and silo-based thinking.

In addition, the Digital Transformation Bible (DTB) includes specific provisions on the governance framework supporting the implementation of the strategy. This comprises setting an inclusive governance model to involve relevant public sector stakeholders in this process, including the Digital Transformation Steering Committee (relevant ministers and state secretaries) and the Digital Transformation Executive Network (institutional CIOs and heads of public sector bodies and organisations that have a key role in the implementation of the DTB).

Accordingly, both co-ordination bodies reflect well-intended efforts to secure effective governance mechanisms for the implementation of the strategic roadmap at top political and execution level. However, overcoming institutional siloes requires clarifying the responsibilities of each body, including the advisory and decision-making roles of both the Committee and the Network to effectively support the implementation of the Bible. Similarly, clear communication of their roles and mandate are needed within and outside the public sector to set expectations, ownership and awareness of the inclusive governance model for digital government in the country.

Limited understanding of end-user needs

An effective digital transformation requires adopting user-driven approaches in the formulation and development of ICT/digital projects. Establishing concrete mechanisms for understanding and meeting user needs increases the pertinence, expected impact and successful implementation of ICT/digital projects throughout the development process, capturing feedback and acting accordingly to shape them around and driven by user needs. In this sense, adopting agile methodology approaches to frame the design and implementation of digital transformation process can help encompass increased engagement with users to collect feedback with the importance of addressing the uncertainties and risks of large and complex projects by using proof of concepts and minimum viable products (MVPs) instead of detailed upfront requirements (Agile Alliance, 2001[3]; Meyer, 2014[4]).

The Greek public sector requires a cultural shift in the development of ICT/digital projects to better understand and place user needs at the core of the development processes. Beyond anecdotal cases, MDG and public sector organisations in Greece do not have institutionalised methods to conduct user research processes that help better understand and define the requirements when planning an ICT/digital project nor as well as concrete mechanisms to channel user feedback at early development stages.

Additionally, evidence collected during the interviews suggests that user research and service design skills are not common abilities among Greek public workforce. Within the OECD, several countries are progressing to setting standards and a culture of user research, such as the case of the US and the development of the Digital Services Playbook (see Box 4.1). The Playbook guides on the driving principles of digital services, including a specific checklist and recommendations on the role of users in the design and delivery of services.

Promoting user research and a culture around user needs implies establishing formal engagement mechanisms with users, where they can channel their needs into the design phase so that solutions provided fully meet their demands and expectations. In addition, the government needs to adapt the process of formulating digital initiatives to ensure that users' input effectively impacts the design of solutions. Successful engagement with users should be continuous and iterative throughout the project development cycle, promoting ongoing exchanges and constant user feedback.

Box 4.1. US Digital Services Playbook

In 2014, The US Digital Services published the US Digital Service Playbook, summarising the driving principles for digital services in thirteen practical steps. The playbook supports the development of digital services nationwide by leveraging successful practices from both the private sector and government to pursue effective digital services. Each of the thirteen plays includes a checklist and a set of critical questions to guide digital services design and delivery. The plays of the playbook are:

1. Understand what people need
2. Address the whole experience, from start to finish
3. Make it simple and intuitive
4. Build the service using agile and iterative practices
5. Structure budgets and contracts to support delivery
6. Assign one leader and hold that person accountable
7. Bring in experienced teams
8. Choose a modern technology stack
9. Deploy in a flexible hosting environment
10. Automate testing and deployments
11. Manage security and privacy through reusable processes
12. Use data to drive decisions
13. Default to open

Source: (US Digital Service, n.d.[5]).

Similarly, the limited adoption of agile project management principles and standards is impeding a culture of experimentation, testing and iteration. Agile development is critical when addressing the risks of implementing large and complex digital transformation projects. Similarly, there is a limited culture and room for experimentation practices and the use of proof-of-concept in the design and delivery of digital solutions, in line with existing gaps on institutional capacities for delivery (see next section). Embracing a user-driven approach calls for flexibility in product development, promoting scalability, and encouraging continuous learning and improvement. The use of agile methodologies can help Greece foster a culture driven around user needs, such as it has been observed in New Zealand and the UK with dedicated guidelines and practices to support adoption of agile methodologies in designing and delivering services (see Box 4.2).

Box 4.2. Guidelines to support agile service design and delivery

Different OECD member countries are developing guidelines and standards to strengthen the use of agile methodologies in service delivery and design. There are different agile management methodologies, such as Scrum or dynamic systems development methods. However, standardisation efforts seek to leverage the guiding principles promoting an incremental approach through a systematic discovery of user needs, experimentation, and iteration.

The Government of **New Zealand** issued in 2019 the Assurance guidance for Agile delivery to support government organisations in applying good practice assurance to agile delivery in government. This guidance extends the All-of-Government Portfolio, Programme, and Project Assurance Framework, which outlines the principles of good assurance in service design and delivery. The Assurance guidance for Agile delivery describes the different roles in agile management, propose advice on a coherent between assurance thinking and agile delivery

In 2017, the Infrastructure and Project Authority (IPA) and the Government Digital Service (GDS) in the **United Kingdom** issued the Assurance and approvals for agile delivery of digital services guidance to support units within government embracing agile methodologies. The direction calls for the use of agile methodologies in the delivery of digital services. It describes the different phases of the agile development lifecycle and requirements to assure digital government standards.

Source: : Own elaboration, adapted from (New Zealand Government, 2019[6]) and (UK Government, 2017[7]).

Need to set a coherent management approach for ICT/digital projects

MDG is currently responsible for the approval, funding allocation and management of most ICT/digital initiatives, along with the support of Information Society S.A. in certain projects. Currently, the development process is fragmented and limitedly co-ordinated within the Ministry. The *relevance attestation* (project approval mechanism) acts as a method to join-up departments/units within MDG but it does not act as a policy lever to effectively support the implementation of the DTB. Instead, interviewees indicated that the process often creates delays in each phase as well as limited internal and external monitoringregarding the progress and status of each project as well as accountability of relevant stakeholders across the project life-cycle.

This process results in the limited information managed by MDG concerning the approval, funding, procurement, management and monitoring/evaluation of projects above EUR 60 000 set as budget threshold to be approved by MDG. Despite collecting general information about goals, technical specifications and expected timelines, MDG does not have a comprehensive knowledge management approach to leverage this information to effectively steer the implementation of the DTB, prioritise efforts and create synergies between relevant authorities to avoid project duplication and fragmentation. Interviewees identified that existing budget thresholds and approval mechanisms are inducing project fragmentation to avoid lengthy procurement processes with MDG and/or Information Society. Such an approach impedes synergies and alignment, producing a silo-based digitalisation of the public sector.

Additionally, the Ministry does not have clear visibility and overview of relevant projects below the budget threshold. The limited information held by MDG regarding these projects impedes the Ministry to take actions to secure efficiency, coherence and co-ordination among relevant line ministries (for example to centralise the procurement of ICT/digital commodities or to co-ordinate public sector institutions with similar needs). This approach may be also fostering project fragmentation and shadow IT in the Greek public sector, with the eventual impact on legacy issues in the medium and long-term.

All these issues have an ultimate impact on the role of MDG within the digital government ecosystem in Greece and its capacity to focus on the key priorities set in the DTB. Considering the comprehensive set of initiatives defined in the strategy, MDG could prioritise and give larger institutional attention to the projects with a systemic impact for the whole-of-government digital transformation in Greece. This includes critical digital transformation enablers, such as interoperability systems, digital identity, or payment platforms.

Instead, the Ministry currently devotes significant time and effort in dealing with the long-tail of small projects which could eventually be implemented by line ministries. While this requires further capacity building at institutional level to de-centralise the implementation of the strategy, MDG would benefit by concentrating efforts and resources in ensuring the right implementation of the objectives set for the public sector in the DTB. For this, the Ministry could make a strategic use of management tools to streamline the ICT/digital project development life cycle in order to support project prioritisation and the level of involvement (strategic, implementation or monitoring) of MDG and line ministries in this process.

Box 4.3. Portfolio Management for ICT initiatives in Denmark

The Agency for Digitalisation develops and maintains the cross-governmental ICT project model and portfolio management of ICT projects and systems. In this role, the Agency's Division for Central Government ICT Management is responsible for standard contracts and advising public authorities to implement large ICT projects in the public sector.

This approach includes the development of a portfolio management system to strengthen governmental ICT projects' planning, management, and implementation. The model supports a responsible and secure management of government ICT systems, promoting national standards alignment while decentralising decision-making. By supporting governmental institutions in assessing their capacities and needs, the model allows for informed decision-making on direction and priorities when developing ICT solutions.

The model analyses six dimensions: Business support, Technical state, Documentation and knowledge, Finances, Contracts and sourcing, and Security. Altogether, the model serves as basis for the formulation of an ICT Action Plan. This plan provides a strategic prioritisation of operation and maintenance activities for all ICT systems. The plan indicates strategic goals, limitations, expected impacts, details on implementation and an overview of all initiatives. This plan is reviewed by the Danish National ICT Council every three years, securing national alignment and coherence at a national level.

Figure 4.1. Model for portfolio management of ICT Systems

Source: Own elaboration, adapted from (Agency for Digitalisation, n.d.[8]).

Several countries have addressed similar issues by implementing a comprehensive ICT portfolio management approach that supports the implementation of digital government strategies. An ICT portfolio management approach can serve as a policy lever to address the development cycle of ICT/digital projects (from approval to monitoring/evaluation) recording relevant information to oversee the extent to which public sector organisations are meeting the objectives and goals set for each project. Additionally, such an approach can provide more granular information at project level in order to set concrete key performance indicators (KPIs) to assess and monitor progress (see Box 4.3 above).

Limited alignment of funding allocation processes

MDG has different funding sources to support the implementation of ICT/digital initiatives, including European and national funds. According to the evidence collected, there are different procedures and internal responsibilities within MDG depending on the funding source, following different approval workflows and legal formalities. Currently, the limited alignment in the way projects are approved and funded is challenging MDG in terms of administrative and policy coherence.

For example, in the case of ESIF funds, ICT/digital projects are handled directly by MDG, which is not the case for the Public Investment Programme or line ministries budgets. These different procedures risk causing inefficient resource allocation by affecting investment decisions based on different criteria and parallel paperwork needed. Stakeholders within MDG acknowledge the need to develop coherent management frameworks that replicate the experience of the ESIF in other funding sources, in particular given the experience with the implementation of the Public Investment Programme or upcoming Resilience and Recovery Funds (RRF).

This coherence can be supported by revisiting and aligning the *relevance attestation* and funding mechanisms, unifying the criteria and procedures to have a coherent approach to approving and prioritising ICT/digital projects in the Greek government. In line with good practices on coherent capital budgeting frameworks, investment assessments and decisions should be independent of specific funding mechanisms (OECD, 2015[9]).

Additionally, and in line with the OECD Recommendation of the Council on Digital Government Strategies, the approval mechanism should include a multi-dimensional value proposition (analysis of the costs and benefits of ICT/digital projects) in the short, medium and long-term. This approach supports the identification of financial, social, environmental or administrative benefits and costs to support planning and prioritisation of initiatives. As outlined previously, the revision of the approval mechanism can be supported by the development of ICT portfolio management in order to have a comprehensive overview of the different stages.

Leveraging project approval to secure coherence in digital investments

MDG holds the critical role of approving and funding most of ICT/digital projects in the public sector. However, to date the Ministry is not leveraging this process to secure that digital investments adhere to the priorities and standards for digital government in Greece prior to allocating funding.

Currently, the DTB sets several priority areas to digitally transform the Greek government, economy and society. Concerning the public sector, the implementation of interoperability frameworks, the national central service delivery portal *gov.gr* and the development of digital skills require solid policy levers for MDG to secure a coherent and aligned approach across public sector organisations. This includes making effective use of budget thresholds and approval processes to enforce the implementation of digital government objectives as well as the needed standards and tools for its implementation. MDG could strategically use this process for public sector organisations to adopt existing and future digital tools and

standards that secure a coherent implementation across the public sector. The evidence collected shows that line ministries acquire ICT goods such as software licenses or basic hardware using this waiver. These kinds of items are often highly standardisable. Therefore the government could benefit from co-ordinated procurement practices to secure the best value for money.

This is the case of Chile, where the Digital Government Division is co-ordinated with the Budget Office to assess all ICT/digital projects in the public sector in order to assess their adherence to strategic goals and adoption of digital government standards and tools (e.g. cloud first, agile management, digital identity, interoperability). This information is leveraged by the Budget Office to assess all digital initiatives included in the annual budget (See Box 4.4). This process also involves ChileCompra, Chile's public procurement authority, which identifies common ICT/digital needs that can be centralised through collaborative or co-ordinated purchase mechanisms, as currently done with IT hardware, mobile phone plans, software licences and data infrastructure, among others.

Box 4.4. Securing cross-governmental standards in ICT/digital investments: Chile's EVALTIC

In Chile, the Digital Government Division (DGD) and the Budget Office (DIPRES) developed a whole-of-government approach to assess and align all central government ICT/digital projects, both in-house and outsourced, as part of the annual budgeting process. The procedure requires all initiatives to adhere to relevant digital government priorities and standards, such as cloud first, digital identity (ClaveUnica), agile project management, among others.

Line ministries and agencies submit their ICT/digital project proposals through the EVALTIC platform prior to the annual budget discussions, co-ordinating efforts between financial managers, digital experts, and CIOs within each institution.

On an annual basis, digital, technology, and data projects are peer-reviewed by institutional CIOs, providing a binding technical recommendation before the budget allocation decision-making. When needed, the procurement authority (*ChileCompra*) demands a validation and approval code from the EVALTIC platform for opening new purchase orders or tenders of ICT goods or services.

The objectives of EVALTIC process are:

- Increase efficiency in public expenditure by leveraging economies of scale and network effects of digital tools.
- Align public expenditure in ICT with the strategic goals of the Government digital transformation act.
- Increase the quality of ICT projects through standardisation focusing on public value creation and efficiency gains.
- Provide information for evidence-based decision-making on digital transformation.
- Strengthen control mechanism over ICT projects to secure efficiency, enabling timely detection of mismanagement.

Source: Own elaboration, adapted from (División Gobierno Digital, 2021[10]).

Overly lengthy implementation cycle of digital projects

A critical success factor for ICT/digital projects is the speed of implementation. In Greece, however, several elements contribute to extended implementation timeframes, including the project approval (*relevance attestation*), communication between relevant ministries, and management of the procurement process. Evidence indicates that some ICT/digital projects may require several years between the project proposal and contract award activities. Such delays pose challenges to attract suppliers, particularly SMEs that may not have the organisational and financial capacities to engage in overly long processes. At the same time, delayed implementation of procurement processes, particularly if not implemented in a flexible and agile way, risks delivering outdated solutions i.e. the technology may be already outdated, or the needs of end-users may have evolved. This means that solutions may no longer be fit-for-purpose or relevant (e.g. institutional mergers or reorganisations, regulatory changes, technology upgrades to different systems or platforms etc.).

Need to speed up project preparation, approval and selection financing scheme

As a starting point, there is a need to speed up the early preparatory stages of a digital project, which entail early project preparation, the validation on the basis of the DTB, as well as the selection of the appropriate financing schemes. While these steps are broadly understood by stakeholders within MDG and line Ministries, their implementation is often not as streamlined as it could be.

For instance, the approval of digital projects based on the DTB is in essence a simple and fast process, but institutional communication channels between the ministries involved often create delays. Greek authorities could think how to set-up direct communication and validation channels to ensure that the process is not slowed down unnecessarily.

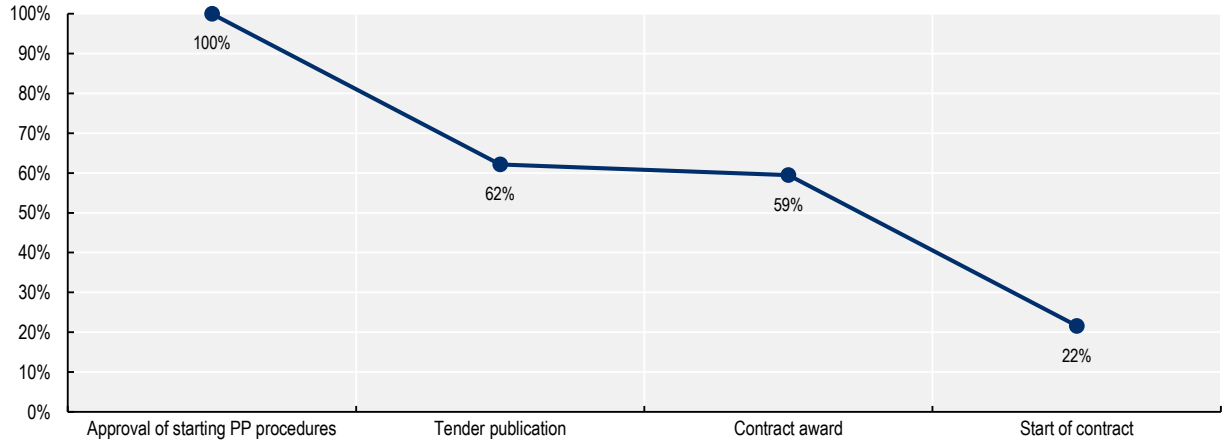
Furthermore, the project preparation may entail a lengthy decision-making and negotiation process to define the responsibilities of the procurement process itself (i.e. whether a line ministry or Information Society S.A. will take over the procurement process) as well as the scope of the procurement project, in case it is executed by Information Society S.A. Limited capacity by the line ministries is linked to the fact that the project preparation is still at early stage when the support of Information Society S.A. is requested, requiring important preparation work as well as lengthy negotiations to establish a Memorandum of Understanding that frames the relationship for the development of ICT/digital projects, including its procurement.

Finally, as discussed above, the selection of the financing scheme is a process that also requires significant time, in particular when ESIF funding is involved, as additional requirements may be connected with EU-funded projects.

Extreme delays in each phase of the procurement process

In addition to the slow implementation of the preparatory phase of digital projects, the procurement process itself is often burdened by extreme delays throughout each of the procurement phases. The project data analysed by the OECD team Figure 4.2 and Figure 4.3) reveals bottlenecks identified in each stage of the procurement process. In addition to delays, many ESIF financed projects do not reach sub-sequent implementation stages after their approval (Figure 4.2). In fact, while all the ICT projects approved under the ESIF programme period 2014-2020 obtained the approval of starting public procurement procedures, only 62% of them reached the stage of tender publication. Out of the projects that publish a tender, only 59% issued a contract award. Ultimately, only 22% of the initially approved projects reached the stage of contract implementation.

Figure 4.2. Share of approved ESIF projects (2014-2020) reaching key implementation stages



Note: 74 ICT projects were approved under the ESIF programme period 2014-2020.
Source: Prepared by the authors based on the statistics provided by the Government of Greece.

Beyond these bottlenecks in implementation, the overall execution of digital projects is severely slowed down. On average, the project procurement process takes 686 days, from the project approval to the start of contract implementation. This data excludes the time needed for actual contract implementation.

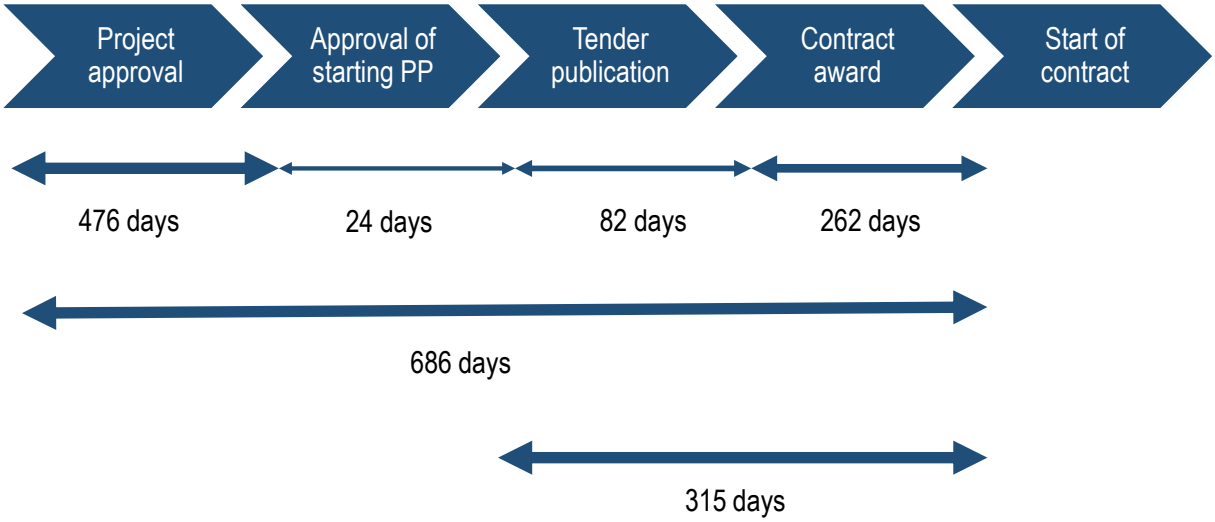
The tender preparation alone is takes significant time, taking on average 476 days from the project approval to the approval of starting procurement procedures. Then, it takes 24 days from the approval of starting procurement procedures to publishing tender, and 82 days from tender publication to issuing contract award. For instance, the tender preparation is lengthy due to the lack of an effective co-ordination processes with the project beneficiary. Lack of personnel as well as limited technical understanding of the subject matter of the contract may also contribute to slow implementation. Reportedly, delays are also linked to the evaluation stage, as evaluation committee's members are not allotted dedicated time for this task, but it is an additional responsibility to their day-to-day work. This limits the incentive for speedy conclusion of the evaluation phase.

A key challenge in the procurement process of digital projects lies in frequent legal challenges. While the Review Body AEPP is relatively speedy in providing a decision, each phase of the procurement may be challenged without deadlines, thus taking up to a year for the process to conclude. If the decision of AEPP is further challenged in court, the process may take several years to conclude. Namely, it took 262 days on average from issuing contract award to starting contract, which could be mainly attributable to the legal challenges on the contract award decision.

Addressing the slow execution times of the remedies system goes well beyond the scope of the Ministry of Digital Governance. Nevertheless, procurement bodies within the Ministry could explore in greater detail whether recurring aspects of the procurement procedure are challenged in court, and identify measures to address these. Greater clarity of the tender documentation and of award criteria could help in limiting legal challenges. Similarly, enhancing the capacity of suppliers in understanding the procurement process may also reduce ambiguity and the related need to make use of the remedies system.

Analysing the duration of each phase of the procurement process gives insight into, it appears that specific bottlenecks and challenges that may emerge during the procurement process. Namely, the data suggest that challenges emerge in defining the detailed concept of ICT items to be procured, as this process takes a long time (476 days) (see Figure 4.3). Beyond the length of this phase, only 62% of the approved projects reach the stage of tender publication, suggesting additional challenges in preparing tender documentation, or other difficulties at this preparatory stage. Specific data or insights into the challenges that approved project face at this stage are not available, e.g. cancellations or other causes.

Figure 4.3. Average duration of ICT procurement under ESIF programme period (2014-2020)



Note: 74 ICT projects were approved under the ESIF programme period 2014-2020. Calculation of dates between each steps is based on data availability.
Source: Prepared by the author based on the statistics provided by the Government of Greece.

In contrast, the process to publish a tender once the approval of starting public procurement procedure has been received is relatively speedy (24 days). In parallel, the vast majority projects that published a tender also issued a contract award: 59% of approved projects issued contract award, compared to 62% of approved projects that published a tender. In addition, the tender process took a comparatively shorter amount of time: 82 days from publishing tender to issuing contract award. As such, there seem the tender process from tender issuance to contract award appears comparatively less challenging in terms of execution and speed. The stage from contract award to start of contract execution also appears fraught with difficulties, as a significant number of projects do not advance to this stage and this stage is very delayed. Specifically only 22% of all the approved projects started its contract implementation, and these 22% projects required 262 days from issuing contract award to starting a contract. This data could evidence the difficulties encountered through the legal challenges, as one of the potential causes for this low progress rate and the long time spent in this stage.

Overall, challenges around lengthy and burdensome procurement processes affect many OECD countries, and some have taken concrete steps to streamline and speed up these processes, such as the UK, as discussed in Box 4.5 below.

Box 4.5. Lean approach to streamline public procurement procedures in the UK

LEAN is a management methodology designed to reduce waste at each step of the process, and increase value from the perspective of the client. While it was originally applied in manufacturing, the principles of LEAN have been applied to streamline the procurement process, notably in the UK. In 2012, the UK Cabinet Office mandated LEAN sourcing principles across the central government with the goal to reduce the time of the procurement process, and reduce administrative burden linked to delays.

This process led to the publication of so-called 'Standard Operating Procedures', which aim at optimising each process of the procurement procedure. Staff dealing with public procurement was encouraged to receive training on how to implement the new Standard Operating Procedure.

Source: (European Commission, n.d.[11]).

Lack of strategic procurement practices to deliver ICT/digital projects

Beyond the speed of procurement processes, the effective implementation of ICT/digital projects requires advanced procurement practices. In the context of the Ministry of Digital Governance, a mixed picture has been observed with the level of advancement of procurement practices suited for digital projects. For instance, Information Society S.A., as a longstanding actor in the field, is more advanced in engaging with the market on a regular basis. In contrast, the Department of Procurement and Logistics covers the full spectrum of products and services, and relies on in-house expertise for the procurement of digital projects.

Limited focus on market engagement in the pre-tender stage

It is important to give enough focus and allocate enough time and resources to the preparatory phase for the success of the tender process. The more time spent in the preparatory phase of the procurement process, the less time will be needed to fix misunderstandings, discrepancies and mistakes in the procurement process and when managing contracts. The preparation entails gathering a sound understanding of what the market can deliver by conducting early market engagement. However, as discussed above, the practices for market engagement vary within MDG, but overall do not exploit the full possibilities permitted by the law, and the related benefits for the procurement of digital transformation projects.

In some instances, contracting authorities lack full understanding of the benefits of market engagement. Often, however, the barrier to conducting market engagement lies in contracting authorities' lack of practical knowledge about how to conduct such market engagement, as well as knowledge of alternative modalities. In particular, contracting authorities fear legal repercussions for interacting with market providers. In contrast, market engagement is foreseen by the EU legal framework, provided the principles of transparency and equal treatment are respected. Thus, it is important for the process to be planned and managed carefully.

Beyond the respect of fundamental principles, the EU Directive leave room of manoeuvre to contracting authorities by providing the following definition of "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*" (Article 40, Directive 2014/24/EU).The use of preliminary market consultations has been transposed into the Greek public procurement framework with Article 47 and 48 of L. 4412/2016. Furthermore, HSPPA has produced a dedicated technical instruction to provide contracting authorities with greater clarity on how to apply preliminary market consultations in accordance with the law (*Technical Instruction 5/2019: Issuance of a Technical Instruction on: "Preliminary market consultations in innovation public procurement" Έκδοση Τεχνικής Οδηγίας με θέμα: «Προκαταρκτικές διαβουλεύσεις της αγοράς στις δημόσιες συμβάσεις καινοτομίας»*).[1]

Market engagement can take several forms, and can also be used throughout the procurement cycle to continuously inform the contracting authority of market developments. Table 4.1 below summarises various forms of market engagement throughout the procurement cycle.

Table 4.1. 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 context of digital transformation projects, it is important to regularly exchange with the industry and keep abreast of technology developments. Several OECD countries are using digital platforms to facilitate market engagement between buyers and suppliers, i.e. so-called digital marketplaces. These platforms allow suppliers to present their products and facilitate the interaction with government buyers. Box 4.6 describes the UK's initiative in this field.

Box 4.6. UK's Digital Marketplace

In 2014, the UK's Government Digital Service (GDS) launched the Digital Marketplace as an online service to facilitate the government's ability to find and procure technology for the public sector. The goals of the Digital Marketplace were twofold: first, introduce a simpler, faster and cost effective method for the government to buy to technology; second, re-define the government's relationship with technology providers.

The Digital Marketplace was also introduced in response to the concentration of the government's IT spending: according to the UK's National Audit Office, in 2009 less than 20 companies accounted for 80% of the UK's GBP 16 billion of annual IT spend.

In contrast, the launch of the Digital Marketplace has transformed the UK's technology market into a highly competitive and diversified market with 5 100 suppliers (92% SMEs) registered on the platform as of 2018. The platform allows a simpler exchange, as suppliers must apply to sell services, and public sector organisations are able to buy products or services. As such, the Digital Marketplace offers an opportunity to support the growth of digital companies.

Furthermore, the Digital Marketplace GOV.UK blog can also be used as a tool to support market engagement and a multidisciplinary approach at the pre-procurement stage. Namely, GDS and the Crown Commercial Service (CCS) published a series of communications over a 6-month period ahead of the 9th iteration of the 'G-Cloud' cloud services commercial framework. This entailed the publication of 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.

Source: (OECD, n.d.[12]) (OECD, 2022[13]).

Regular interaction with the market also provides the opportunity of identifying upcoming and innovation trends, as perceived by market players. Through the Emerging Market Initiative, National Association of State Procurement Officials (NASPO) in the U.S. surveys market players on what they consider to be innovative trends and upcoming needs for the public sector (Box 4.7).

Box 4.7. Emerging Market Initiative in the US: Engaging the market to anticipate needs of governments

The National Association of State Procurement Officials (NASPO) is composed of the U.S. State Chief Procurement Officials. NASPO ValuePoint (NPV) represents the largest procurement cooperative in the US, as it establishes framework agreements that are open for use by state governments and local public entities ("cooperative master agreements"). Traditionally, NPV surveyed the needs of its members and analysed past purchases to identify relevant goods and services for its framework agreements.

In 2020, NASPO turned to the market to gather insights on what future needs of state and local governments could be served through its master agreements. In fact, the private sector invests heavily in researching trends, as well as developing innovative products and technologies. NASPO intended to harness the knowledge and insights of industry, as it often has a broader view of market developments compared to the public sector, and is therefore in a strong position to anticipate market trends.

NASPO used a structured market engagement process to gather ideas from the market and assess their feasibility. The market engagement process consisted of 6 main phases:

- Phase 1 – Submission of ideas by suppliers based on three pieces of information: 1) overview of the concept; 2) whitepaper describing the concept in fuller detail; 3) relevant market information including references to existing contracts that address this concept
- Phase 2 – Collection of submission through cloud-based interface
- Phase 3 – Presentation by selected suppliers on: 1) current market demand; 2) market growth potential; anticipated resources needed to develop the idea into a cooperative master agreement
- Phase 4 - Evaluations of submissions and presentations
- Phase 5 – Issuance of Requests for Information (RFI) to gather a broader perspective of the good/service from industry
- Phase 6 – Approval for the development and release of a cooperative procurement
- As a result of this initiative, several project ideas have turned into master agreements operated by NASPO. These include Citizen Engagement Platforms, Enterprise Content Management, Online Marketplaces.

Source: (OECD-OPSI, 2021[14]).

Understanding beneficiary needs

Some measures are in place to understand beneficiary needs and engage them throughout the project cycle, but these appear not to be sufficiently developed to deliver outcomes in a consistent and satisfactory way. For instance, Information Society S.A. relies on setting up a multi-disciplinary team for each of its projects. Beneficiaries are represented in this team, and are key in contributing to all phases of the project development, including procurement the preparation of technical specifications. Despite this mechanism,

the process appears to be running slowly and there can be challenges in creating a shared understanding between the technical/procurement team and the subject matter experts (i.e. the beneficiary).

In contrast, the Department of Procurement and Logistics does not appear to have a formalised process in place for understanding and engaging beneficiaries; instead, it relies on informal co-operation with the departments. While such a mechanisms may prove effective on an ad-hoc basis and solve short-term issues, they do not substitute for dedicated mechanisms to understand user needs and involve them effectively.

Additionally and as previously outlined, there is room for ICT/digital projects to adopt agile project management approaches that create spaces for increased dialogue and interaction between MDG, Information Society S.A., beneficiaries and end-users. Limiting the definition and development of ICT/digital projects only within the public sector fosters top-down approaches that do not reflect the final needs and expectations of end-users, affecting the pertinence and relevance of final solutions.

No focus on quality award and overly prescriptive technical specifications

Another key aspect of success in the procurement of digital projects is the focus on quality in the award of a contract. In many instances, however, contracting authorities rely on the lowest price instead of awarding contracts to the best price-quality ratio. A common misconception is that market participants are not ready or willing to compete on the basis of quality. Fear of audit is also a frequent cause for relying on the lowest price as evaluation criterion. Not least, the lack of technical skills by procurement practitioners may also limit the use of quality criteria. As such, contracting authorities are not able to award contracts to high-quality providers that offer value-for-money solutions. Instead, choosing the lowest price brings along the risk of poor execution and less advanced technology. Despite a high prevalence of lowest price, the Greek procurement legal framework fully supports contract award based on best-price quality ratio, i.e. taking into account quality dimensions that are related to the subject matter of the contract, as per Article 86 of L. 4412/2016.

In a similar vein, overly prescriptive technical specifications are potential causes of sub-optimal execution of digital projects. In addition, overly prescriptive technical specifications are often the consequences of the almost exclusive use of the lowest price criteria. Importantly, prescriptive specifications do not leave any opportunity for the market to propose innovative solutions. Furthermore, such specifications may turn out overly rigid and inflexible. In the digital environment, however, it is especially important to allow for agility, modifications and iterations. Thus, a product or service procured on the basis of an overly defined specifications may prove not to be fit-for-purpose. Over-specifying details hide further risks and disadvantages. Customised solutions are generally more expensive than standard ‘off-the-shelf’ options. In addition, they are more difficult to be reused. Subsequently, suppliers who develop and manage custom-made systems can retain all the information about the system and make it very difficult to migrate to another supplier or to maintain or upgrade the system in the future. Excessive customisations might also lead to supplier dependence (vendor lock-in as it was already mentioned earlier). Contracting authorities should define the problem to be solved (the expected outcome of the purchase) rather than designing the solution.

Instead, functional specifications offer greater flexibility and room for innovation. When using functional specifications (or functional requirements), the contracting authority only specifies a required performance or outcomes, without providing the technical detail for reaching such a result. While much welcomed by market participants, as reported by private sector stakeholders, the procurement bodies appeared to lack awareness about such types of specifications and do not make use of them in practice. Nonetheless, the use of functional specifications is fully supported by the Greek procurement framework. Namely, Article 54 of L. 4412/2016 specifies that technical specifications shall be formulated, among other methods, “in terms of performance or functional requirements, including environmental characteristics, provided that the parameters are sufficiently precise to allow tenderers to determine the subject-matter of the contract and to allow contracting authorities to award the contract”.

Limited use of advanced procurement practices

Public procurement has been evolving with emerging advanced tools to drive efficiency throughout the public procurement cycle in satisfying the needs of the government and its citizens. Indeed, the OECD Recommendations of the Council on Public Procurement calls upon countries to 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. It also recommends countries to use public procurement as policy lever to pursue broad policy objectives such as stimulating innovation (OECD, 2015[15]).

Currently, Greece uses advanced procurement practices (such as dynamic purchasing systems and public procurement for innovation, including innovation partnerships) in a very limited way in the area of ICT public procurement, regardless of the fact that the Greek Public Procurement Law foresees these advanced procurement tools and schemes since it transposed the EU Directives on public procurement.

Dynamic purchasing system (DPS) is a procurement tool to support agile ICT procurement through a completely electronic system. Namely, under a dynamic purchasing system, new economic operators may apply for participating at any time throughout the life of the dynamic purchasing system, unlike framework agreements in which the participation of new economic operators is not allowed after the framework is set up (OECD SIGMA, 2017[16]). This dynamic feature allows contracting authorities to change suppliers more easily, and economic operators to continuously incorporate advances in technology. The DPS is thus very suitable for repeated purchases of standardised items, where technology developments occur fast. For instance, the European Commission adopted the use of DPS for procuring its cloud services. In addition to staying abreast of technological evolution, the tool significantly shortened lead times by 80% compared to the previously used framework agreements. In fact, even for complex tenders, the time between tender opening and final evaluation could be reduced to 2-3 weeks (Mercell, n.d.[17]).

From the evidence gathered during the fact-finding missions, stakeholders within MDG are still hesitant about the use of DPS, given the lack of experience with using this tool, and an overall risk-averse attitude towards new approaches in procurement, as procurement procedures are typically highly scrutinised at audit. This is despite the fact that DPS is regulated by Article 33 in L. 4412/2016 and the Greek e-procurement system fully supports the implementation of DPS from a technical perspective. To further support the uptake of DPS, HSPPA has recently translated a guide on DPS ("Dynamic Purchasing Systems: Use Guidelines" – "*Δυναμικά συστήματα αγορών Κατευθυντήριες γραμμές χρήσης*") prepared by the European Commission (European Commission, 2021[18]).

Piloting the use of DPS with a limited scope, could be an initial starting point to test the technology, learn from a first iteration and potentially apply the DPS more widely going forward. Procurement officials would need to be supported by sufficient capacity-building to undertake such a pilot with confidence.

DPS in practice

When considering setting up a DPS, it is important to take stock of experiences from countries and organisations that have already undertaken this effort. Namely, in some countries, there is a relatively widespread use of this instrument, which allows drawing lessons learnt and gathering insights on practical aspects related to organisational and management arrangements for running a DPS, benefits accrued to the organisations and suppliers, as well as key success factors. The example from the Danish central purchasing body SKI (*Statens og Kommunernes Indkøbsservice*) provides a detailed example of DPS implementation for standard software (see Box 4.8).

Furthermore, Central Purchasing Bodies across Europe have also implemented DPS in recent years. Their experiences are discussed in detail in Annex A.

Box 4.8. Use of DPS for software by Danish central purchasing body SKI

The Danish central purchasing body SKI (*Statens og Kommunernes Indkøbsservice*) is a limited company owned by the Danish state and Local Government Denmark (KL). While it mainly serves Danish local authorities, its services can be accessed by any public entity in Denmark. It currently manages 45 framework agreements covering a wide range of purchasing categories, such as ICT, travel, vehicles, professional services, food etc. Its procurement activities represent 2.5% of the Danish procurement spend.

SKI also makes use of five DPS for several purchasing categories, and recently introduced a DPS for the purchase of standard software. As reported by the organisation, three main characteristics need to be taken into DPS when thinking about implementing a DPS. For starters, a fast-developing market makes a DPS an attractive instrument. Second, it should be considered whether the market is characterised by few large suppliers or a multitude of small suppliers. And finally, the level of maturity of customers is also relevant in this process, too.

Standard software is defined as software that is prefabricated and commercially available, otherwise known as COTS (Commercial Off The Shelf). The DPS for standard software is divided in two categories: the first category based on price-only award and the second category taking into account best-price quality ratio. For the second category, contracting authorities using the DPS may chose quality criteria based on which to award their specific procurements based on pre-defined options. The contracting authority may decide which of the criteria to use and how to weigh them.

To support the use of the DPS, SKI defined standard terms and documentation. The documentation related to the DPS is available online, including partially in English.[1] It includes the following documents:

- Contract notice
- Tender specifications with the appendices set out below:
  - Appendix A, Letter of commitment template
  - Appendix B, Customer list
  - Appendix C, Subject-matter of the system
  - Appendix D, Overview of functional standard software areas
  - European Single Procurement Document (ESPD)
  - Cover letter (automatically generated in the e-procurement system in connection with upload of application)

In addition to the tender documents listed above, SKI prepared a guide for applicants on how to apply for admission to the DPS, as well a supplier guide on how to submit a tender through the DPS.

The DPS for standard software has so far gathered as many as 235 suppliers (as of April 2022). Despite initial concern that contracting authorities (SKI's clients) would receive too many offers for each of their call-offs, this did not materialise. Instead, contracting authorities were able to benefit from a health rate of competition and a high participation rate of SMEs in the DPS. In fact, requirements for acceptance in the DPS are not overly extensive and thus promote SME participation. Furthermore, client satisfaction with the DPS is high.

The initial set-up and administration of the DPS necessitates investment from a technical and legal perspective. In fact, SKI invited a group of suppliers to participate in the development process. The investment, however, it not dissimilar for the set-up of a framework agreement, which equally requires careful preparation. A learning curve was necessary to deal with the first-time registration of suppliers

into the DPS, which included training and informing both suppliers and customers about the use of a DPS.

In terms of organisational set-up to put in place DPS, SKI does not have specialised unit responsible for DPS but considers it a shared responsibility between the procurement division, the contract management division and the business development division. Specialised skills and personnel dedicated to the DPS also work horizontally in the organisation. Going forward, SKI would like to further improve and digitalise the process of using DPS for its customers, i.e. making the process online as much as possible.

1. https://www.ski.dk/aftaler/se-aftale/?id=02060021.

Source: Information provided by SKI.

Public procurement for innovation

The scheme of public procurement for innovation is another emerging public procurement practice, allowing governments to boost innovation at both the national and local levels. The use of public procurement for innovation is essential in the context of improving digital governance that always requires high-level innovative solutions which might not be available in the market. Strategic use of public procurement for innovation (PPI) is defined as "any kind of public procurement practice (pre-commercial or commercial) that is intended to stimulate innovation through research and development and the market uptake of innovative products and services" (OECD, 2017[19]). It includes schemes such as pre-commercial procurement (PCP), procurement of innovative solutions and Innovation Partnership.

Public procurement for innovation has been promoted by the European Commission since 2007 with the Commission Communication entitled 'Pre-commercial Procurement: Driving innovation to ensure sustainable high quality public services in Europe' (European Commission, 2007[20]). The 2014 Directives have further anchored the concept of public procurement of innovation in the legal framework by introducing the Innovation Partnership as a specific procedure to facilitate innovation procurement in the EU. Other procedures, such as the competitive dialogue or the negotiated procedure, are also suitable to conduct innovation procurement. In this sense, public procurement of innovation is fully aligned with the European legal framework. This is also reflected by the fact that in 2021, the European Commission published a Guidance on Innovation Procurement in order to offer guidance for policymakers and practitioners throughout the European Union on how innovation procurement can improve the economic recovery of the European Union after the COVID-19 crisis with better public investment (European Commission, 2021[21]) (Box 4.9). The relevant procurement methods apply in Greece, too, as defined in L. 4412/2016. Specifically, including competitive dialogue (Article 30, 267), innovation partnership (Article 31, 268), and negotiated procedure with prior call for competition (Article 266). To support the implementation of innovation procurement HSPPA developed dedicated Technical Instructions on Innovation Contracts (*Τεχνική Οδηγία 2/2018, Συμβάσεις καινοτομίας*).

Box 4.9. European Commission: Guidance on Innovation Procurement

The guidance clarifies the concept of innovation procurement and gives concrete examples and practical tools for public buyers to implement procurement strategies that are open to innovators and to help them acquire the new solutions the market can provide.

The guidance covers topics relevant for public buyers in terms of innovation procuremeent, amongst others:

- Engaging with the market (e.g. preliminary market consultation)
- Using lots
- Using standards, open data, open interfaces and open source software
- Functional requirements in technical specifications
- Connection to the innovation ecosystem
- Designing SME-friendly payment schemes
- Intellectual property rights management
- Innovation Partnership, and
- State aid.

The guidance aims to help public buyers throughout the EU navigate the provisions of the 2014 EU directives on public procurement, as it illustrates how to open up public procurement to innovators, including start-ups and innovative small and medium-sized enterprises (SMEs). The guidance also includes technical advice, especially with regard to the management of intellectual property rights (IPR).

The guidance furthermore describes how public procurement procedures can help modernise public services with innovative solutions, and how they can generate economic growth and create jobs. The guidance in this regard is also addressed to policymakers. It covers topics that are necessary for an enabling policy framework for innovation procurement such as,

- clear policy mandate
- setting the level of ambition
- translating ambitions into actions and commitments
- building up capacity
- overcoming risk aversion by creating incentives to innovate

Source: (European Commission, 2021[21]).

Across the OECD, governments are using innovation procurement to address challenges related to digitalising government. This can be done by using a so-called “challenge-driven” approach, whereby the contracting authority formulates its problem as a challenge and invites economic operators to come up with solutions. An example of this is used by Scotland, as described below (Box 4.10).

Box 4.10. Using innovation procurement challenges for digitalising the public sector: CivTech in Scotland

In 2016, Scotland launched its CivTech approach to solve the problems of the public administration by using a challenge-driven approach to drive innovative solutions from the market. In the first stage, interested participants can submit their application. In the next stages, called ‘exploratory’ and “accelerating” respectively, selected teams further work on their solution in co-operation with the challenge owner (the challenge “sponsor”).

The exploratory phase has a duration of three weeks and leads to a refined solution. Participation to this phase is compensated with GBP 3 000 for each team. Only selected teams proceed to the next the accelerating phase, in which they are tasked to develop a prototype of the solution. This phase is compensated with GBP 20 000. Finally, the winning solution can receive a government contract to implement it. Over the course of the implementation of the programme, 26 public sector challenges

have been solved. For instance, NHS Scotland has been able to create a flexible online registration system, and Transport Scotland improved its ability to detect and repair roads wholes through a dedicated app.

Source: (Polish Economic Institute, 2019[22]).

Greece is still behind in the use of this procurement scheme for innovation in the ICT procurement, and overall investment and adoption of ICT-based innovative solutions. Namely, its share of procurement dedicated to innovative ICT amounts to 2.9% of out of total procurement expenditure, compared to the European average of 3.5%. Furthermore, Greece ranked 13th position (low performer) out of 30 European countries in the adoption of ICT-based public procurement for innovative solutions, according to a 2018 benchmarking study carried out by the European Commission on national innovation procurement policy frameworks (European Commission, 2021[23]).

The role of these advanced procurement practices has not been fully recognised yet by the stakeholders in the field of digital procurement in Greece due to the lack of awareness and specific skills. Greece ranked at the 15th position (modest performer) out of the 30 European countries (27 EU Member States plus the UK, Switzerland and Norway) on national innovation procurement policy frameworks, according to the benchmarking study carried out by the European Commission (European Commission, 2021[23]). The study points out the weakness in the absence of various elements to promote the use of public procurement for innovation such as the action plan, spending target, monitoring system, capacity-building and assistance measures.

However, Greece has been taking initiatives at a country level. The General Directorate for Public Procurements (GDPP) of the Ministry of Development and Investments, as National Central Purchasing Body for goods and general services in Greece, is mandated with setting up within its structural organisation a National Competence Centre on Innovation Procurement in Greece, under the Procure2Innovate project funded by the European Union Horizon 2020 programme. The centre aims at promoting mainstreaming innovation procurement throughout Greek contracting authorities (See Box 4.11) The Ministry of Digital Governance could benefit from getting involved in the process of establishing this competence centre.

Box 4.11. Mandates of the National Competence Centre on Innovation Procurement in Greece

The main goals to be achieved by the Competence Centre for Innovation Procurement in Greece are:

- Promoting and mainstreaming of innovation procurement throughout Greek Public authorities.
- Increasing familiarisation of Greek contracting authorities and entities with innovation procurement procedures facilitating also networking with relevant contracting authorities from other EU countries. In this manner, they will increase knowledge for their sector innovation needs and as a result their participation in EU PCP/PPI procedures.
- Enhancing capacity building of procurers in the field of innovation procurement by designing educational courses in PCP/PPI procedures as well as in IPRs, in co-operation with the National Training School for Public Administration.
- Enabling procurers in Greece to identify public needs that could be tackled through innovative solutions
- Increasing the percentage of contracting authorities implementing PCP/PPI procedures.

- Boosting the participation of economic operators in PCP/PPI procedures and as a result raising their economic activities in procurement markets.
- Using innovation procurement as a springboard for achieving strategic goals in a national or regional economy level by setting horizontal policies in the areas of entrepreneurship, economic, financial and competition policy.
- Facilitating the rapprochement between the demand and the supply (of innovative solutions) sides in Greece.
- Connecting innovation procurement with the Green Public Procurement network (circular economy, green economy) and thus enhancing the achievement of environmental targets.
- Promotion of sectored policies in the area of health, smart cities, defence sector etc.
- Preparing the next programming period for securing financing from European structural funds in order to promote innovation procurement in Greece.
- Connection with universities in order to include courses regarding innovation procurement.
- Opening opportunities to create new calls from EU projects (for innovative goods and services) through demand of contracting authorities due to the development of sectoral clusters of procurers specialised in production of innovative goods or services.
- Providing technical assistance on the implementation through GDPP website and helpdesk.

Source: (Procure2Innovate, n.d.[24]).

In addition, international experiences identified in Poland and Finland show some options to promote the use of advanced practices such as starting by a pilot project, and supporting implementation with a competence centre. Poland has proven experiences in using PPI schemes such as pre-commercial procurement (PCP) and innovation partnership, starting from pilot projects. In particular, Poland has been using PCP to procure innovative solutions to advance the digital agenda. Namely, the National Centre for Research and Development (NCRD) of Poland, the agency in charge of ESIF R&I projects, initiated an e-Pioneer project financed under the ESIF Operational Programme "Digital Poland 2014-2020". This initiative contributed to encouraging a larger pool of interested contractors to participate in the ESIF R&I projects by using PCP (see Box 4.12). Greece could benefit from considering the pilot initiative of this good practice in order to promote and support the use of advanced procurement practices in digital projects.

Box 4.12. Promotion of public procurement for innovation in ICT by National Centre for Research and Development of Poland through pilot projects

In Poland, the new Public Procurement Law (PPL) of 11 September 2019, which entered into force on 1 January 2021, directly links the procurement of innovation with a broader perspective of national policy.

National Centre for Research and Development (NCRD) have experiences in using the scheme of public procurement for innovation in ESIF-funded R&I projects. NCRD is in charge of carrying out tasks in the area of the scientific, technical and innovation policy including financing innovative solutions through R&D programmes. NCRD decided to launch pilot research programmes based on both procurement models: pre-commercial procurement (PCP) and innovation partnership, both of which are adapted to procuring innovative solutions that cannot be specified at the beginning of the procedure, i.e. those that require research and development works.

The first experience of NCRD related to pre-commercial procurement dates back to 2013. It was further developed in 2016 owning to the implementation of the e-Pioneer project, which aims to support talented programmers in solving identified social or economic problems with communication technologies (ICT). This is a joint project of NCRD and the Accelerators selected by NCRD, which uses the PCP model. PCP is not used directly by NCRD, but serves as an obligatory project implementation tool for the Accelerators selected by NCRD. The e-Pioneer project is financed under the ESIF Operational Programme "Digital Poland 2014-2020".

For example, Akcelerator Accelpoint Sp. z o. o., one of the selected accelerators in the e-Pioneer project, developed a Cleanbox to fight against Covid-19 by using the PCP model. Cleanbox is an easy-to-use, modern device with antibacterial and antifungal properties, which eliminates 99.99% of microbes and bacteria, ensuring an additional antibacterial effect for up to 30 days. With its functionalities, the project helps to prevent common infections and answers the growing need for surface disinfection, contributing to the fight against the spread of coronavirus. The MVP (a Minimum Viable Product, or, to put it simply, a demo version of the target product) was created and tests were successfully carried out using the infrastructure of the public partner (Municipal Sport and Recreation Centre in Lublin).

NCRD promoted themselves as an agency which not only finances innovation but also carries out innovative activities itself. It presented new forms of research programme implementation to the market and the potential contractors to encourage a larger pool of interested contractors to participate in the ESIF R&I projects.

With the experience gained so far and the competences built within the organisation, NCRD has been working since 2020 to launch further initiatives based on pre-commercial procurement. By doing so, NCRD aims at ensuring that this instrument is permanently included in its portfolio of support instruments.

Source: (Public Procurement Office of Poland, 2020[25]).

Finland set up a target of public procurement for innovation and established a Competence Centre for Sustainable and Innovative Procurement (KEINO), in order to support the use of innovative public procurement procedures (see Box 4.13).

Box 4.13. Finnish Competence Centre for Sustainable and Innovative Procurement (KEINO)

The Finnish government set a target of public procurement for innovation at 10 % of total procurement, in order to increase competitiveness of the country. In March 2018, the Finnish Competence Centre for Sustainable and Innovative Procurement (KEINO) was established as a joint initiative of eight founding members from both the public and private sector, including the CPBs Hansel and Kuntahankinnat. Additional members of the consortium are Motiva Ltd, the Association of Finnish Local and Regional Authorities (FLRA), VTT Technical Research Centre of Finland Ltd, the Finnish Funding Agency for Innovation Business Finland and the Finnish Environment Institute SYKE. KEINO serves as a network-based competence centre to support innovation procurement in Finland.

KEINO's three main objectives are:

- Increasing the number of innovative public procurement procedures in Finland
- Promoting public procurement as a strategic tool to reach wider societal objectives
- Fostering the dissemination of information and peer learning across contracting authorities

In order to reach these goals, KEINO supports the development of procurement competence in Finland through advisory services, events and networking meetings. It promotes peer learning among procurement professionals and it fosters closer collaboration and international networks on sustainable and innovative procurement topics. In addition, KEINO offers specific capacity building measures to public procurement professionals in the area of innovative procurement, such as issuing guidelines, disseminating best practises and case studies, and providing templates and tools.

Source: (European Commission, 2020[26]).

Contract implementation

The contract implementation stage should not be overlooked, as it represents the stage in which the solution is actually delivered by a supplier. Examples for poor performance are cost overruns, contract modifications, additional works and vendor lock-in.

The feedback gathered from conversations with stakeholders pointed out that there is room for improvement in the contract delivery. Reportedly, suppliers tend to deliver the minimum on required goods and services. While it is not clear to what extent minimum performance by suppliers undermines the overall contract implementation, and whether it affects all contracts equally, it should be noted that contracting authorities have limited awareness about the links between proper tender preparation and supplier performance. Namely, the pre-tender stages such as early market engagement and user involvement allow to have very solid expectations about what the market can deliver and at what price, and therefore limit the risk of poorly drafted tender documentation (from selection criteria, to award criteria, technical specification and even contract clauses). Conversely, well drafted tender documents and contract (contract clauses) mitigate risks for contract underperformance.

Overall, contracting authorities in Greece, however, place limited emphasis on the planning stages of a procurement. As outlined in this report, this phenomenon also applies in the context of procurement of digital projects.

From stakeholder conversation, it emerged that final beneficiaries often lack the skills and capacity to take full ownership of the solutions that has been procured. As such, they may not fully benefit from the gains of digitalisation. Furthermore, there are no comprehensive monitoring processes and reporting mechanisms that would allow beneficiaries to provide feedback, such as a satisfaction survey. Without this kind of feedback loop, it is difficult for procurement bodies to continuously improve their processes and interactions with beneficiaries.

Overly large contracts limit agility

Increasingly, contracting authorities across the OECD have been turning to agile approaches of project development, including procurement functions, and particularly when dealing with digital technology and ICT. At its core, agility refers to the ability to create and respond to change. The concept derives from the Agile Manifesto[2] (*Manifesto for Agile Software Development*) published in 2001 (Agile Alliance, 2001[3]). The “Agile” approach takes its name because this word represents *adaptability* and *response to change.*

In the context of public procurement, applying agile principles refers to using collaboration, working flexibly and allowing for adaptation, proceeding in iterations and reviewing on a continuous basis. As such, the software end product is the result from a collaborative effort between developers and end-users (Deloitte, 2017[27]). In contrast, the common way of procuring ICT goods and services has been the waterfall method, which consists of a structured step-by-step approach through the various phases of conception, initiation,

analysis, design, testing, and implementation. This approach implies involving users at an early development stage to have fully-defined and accepted set of requirements and needs that are not supposed to change in the course of implementation; and at the end of the process when end-users are involved and have the opportunity to provide feedback. This approach leaves no room for interaction and engagement with user on an ongoing basis, and puts pressure on 'getting it right' at the first step because the approach does not foresee the return to an earlier stage. As such, the waterfall model is considered less flexible and effective in software development (OECD, 2022[13]).

Despite a number of benefits of using the waterfall approach for software development, criticism revolves around the fact that the uncertainty around end-user's needs, and the accuracy required of cost estimates at early stages of preparation are often not reflective of realities. Instead, the approach can be useful in the context of well-known technologies and stable user preferences. Data from Poland give insights into the success rates of agile projects versus waterfall projects. Namely, the success rate for agile projects lies at 49% compared to 14% when using waterfall. More importantly, the failure rate for waterfall is much higher (29%) compared to agile (9%), underscoring the strong risk mitigating aspects of an agile approach (Polish Economic Institute, 2019[22]).

Currently, Information Society S.A. makes use of the waterfall approach in the procurement of digital projects. As discussed, this model provides a clear framework for operations, but increases the risks of Information Society S.A. working for several months (or years) on services that no longer meet end-user needs once finalised. Furthermore, contracts for digital and ICT projects tend to be very large, thereby posing a further challenge to a more nimble and agile procurement process. As reported by private sector stakeholders, the size of the Greek public sector ICT market is relatively small compared to its private sector equivalent. Partly due to fiscal constraints of the past decades, the market has been characterised by a small number of large contracts, which are highly attractive to the pool of available suppliers. Such large contracts, however, also increase the incentives for litigation, as suppliers are aware that only few large opportunities are present on the market.

Increasing agility in the procurement process also foresees the breakdown of complex and large projects into smaller and iterative projects. The agile approach thus requires the use of modular contracting as a procurement strategy, i.e. procuring a series of tightly-scoped procurements to implement technology systems in successive and interoperable increments. The benefits of such a strategy include risk mitigation, reduction of vendor lock-in, as well as increased speed of delivery (Mark Headd, 2018[28]). Indeed, with shorter contracts, the risk of failure of the entire project is much reduced, and instead is contained to a small piece of the system. Similarly, planning a successful contract for a timeframe between six and twelve months is an easier undertaking compared to planning for a six-year horizon (Laura Gerhardt, 2019[29]).

Furthermore, these smaller and modular contracts can be accessible to a larger pool of suppliers, including innovative SMEs and start-ups. At the same time, procuring multiple contracts increases the need to procure much faster and requires re-thinking the procurement process through this lens. Shortening the procurement time and breaking up large contracts has been the approach taken in the State of California (Box 4.14).

Box 4.14. State of California, the United States: agility in procurement for big projects

In 2015, California's Health and Human Services Agency sought to replace its outdated Child Welfare Services case management system. The agency intended to change its previous *modus operandi*, i.e. instead of spending years on procurement and development, it would break up the large project into smaller pieces and deliver value more iteratively. However, such an approach required the rethinking the procurement process, including taking into account systems integration if multiple vendors were to be involved.

The Agency and with its Office of Systems Integration (OSI) reached out for support from 18F, a federal office within the U.S. General Services Administration, and Code for America, a non-profit that enhances local governments' efforts on technological innovation. Previously, OSI had a longstanding history of relying on a single vendor to be the systems integrator. For this project, it decided to play the role of systems integrator itself.

The first question mark for the project team was related to the compatibility of an agile procurement practice with the legal framework. Importantly, **the major shift to iterative and agile procurements did not require any legal changes.**

Once that potential hurdle was cleared, California identified the need to procure much faster to ensure the success of a modular and iterative implementation of the procurement process. To do so, it adopted a model used by 18F, which consults of creating and pre-approving a pool of suppliers capable of doing agile work and responding to the small procurements. In a short amount of time, several types of vendors qualified for the procurement process, including smaller suppliers. Gradually, the Office has expanding this new thinking around procurement away from specific products, but towards defining a way of collaborating with suppliers by sharing and co-owning projects.

Source: (Rath, 2017[30]); (OECD, 2022[13]).

Since agile development relies heavily on the interaction and collaboration between end-user, buyer and supplier, the process of contract management becomes a key success factor for the implementation of digital projects. This requires regular engagement throughout the process and a partnership approach to contract delivery. Trust in the relationship with suppliers is also an essential ingredient to the success of agile delivery, given that contractual non-performance cannot be defined as easily in a context where the contract scope is flexible. Often this represents a cultural barrier for public buyers, where typically civil servants rely on heavily detailed contract specifications. To overcome such barriers, the United States Digital Service developed the TechFAR Hub guidelines, which promote a more lenient interpretation of contract rules (Eggers and O'Leary, 2017[31]).

Box 4.15. TechFAR Hub in the United States

TechFAR Hub

The TechFAR Hub is an online platform created by the U.S. Digital Service aimed at bringing together procurement practitioners dedicated to the procurement of digital services. Among other resources, the Hub hosts the TechFAR Handbook. It also includes interactive tools and learning resources dedicated to the execution of digital strategies through contracts.

TechFAR Handbook

The *TechFAR Handbook* is a comprehensive guide for public sector agencies on to conduct how agile procurement processes within the flexibilities provided for by the U.S. Federal Acquisition Regulation (FAR). The TechFAR Handbook provides practical tips, sample language and provisions relevant for agile software development. It was launched in 2014 to support the implementation of the Digital Service Playbook. The Playbook describes 13 "plays" that support the development of effective government digital services.

As part the TechFAR Handbook, the goals for modular contracting and agile software development are outlined:

Shared Goals of Modular Contracting and Agile Software Development

1. Improvement in investment manageability and budgetary feasibility
2. Reduction of overall risk
3. Frequent delivery of usable capabilities that provide value to customers more rapidly
4. Increased flexibility
5. Creation of new opportunities for small businesses
6. Greater visibility into contractor performance

Source: (The U.S. Digital Service, n.d.[32]).

While moving from a waterfall approach to agile and modular contracting certainly requires a learning curve, it would be beneficial for Greek contracting authorities to gradually move towards an agile implementation methodology, especially for those projects where the technology and user needs are bound to evolve over time. As a starting point, Greek authorities could consider piloting such an approach, with a view of potentially scaling it up over time. In parallel, dedicated guidance and support material should be made available. Overall, a key goal of MDG should be to substantially reduce the duration of the procurement process. Applying modular contracting requires designing the development and procurement process in such a way to ensure its speedy execution. Finally, reducing the contract size in favour of multiple small projects would provide key benefits in terms of responsiveness to user needs, as well as limiting the risk of failure of large and expensive digital transformation projects.

Finally, despite potential hesitation from public buyers, using agile approaches in public procurement is not in contradiction with the regular procurement process, and does not require an adaptation of the regulatory framework. Similarly to other procurement practices discussed throughout this report, an agile procurement process also heavily relies on a solid preparation of the tender through needs assessment and early market engagement. In terms of procurement procedure, the regular process applies. All types of procurement procedures can be applied for agile implementation, though complex projects may be more suited for procedures that allow greater flexibility between the contracting authority and the supplier (e.g. competitive dialogue), in particular if the subject matter of the contract is not fully known from the onset. Specific agile elements may be included in the tender specifications and the contract conditions, such as modularity or multistage delivery. Selection criteria can ensure that suppliers have experience in agile working methods, while award criteria can give more weight to relevant aspects such as quality of UX design, or project management capacity. Importantly, contract conditions can be designed to introduce a greater degree of flexibility compared to more standard approaches.

Taking full advantage of the supplier ecosystem

To succeed in the implementation of transformational digital projects, the Greek government needs to rely on a pool of innovative and capable suppliers that are able to deliver quality solutions to the public administration. To this end, the Greek government needs to be considered an attractive client, in particularly given that the share of the ICT market by the public sector has been relatively small compared to the private sector (although the influx of funds from the Recovery and Resilience Facility (RRF) will likely change this dynamic). It needs to ensure a strong track record to increase competition and attract capable and innovative suppliers, especially in the context of an open and dynamic regional market such as the European Union. Speedy procurement procedures and payment processes are part of what constitutes an attractive client. At the same time, several barriers persist to making the public procurement market accessible to suppliers, particularly small, innovative start-ups and SMEs, notably the long duration of

procurement cycle and competition that does not reward the highest quality offer, or innovative solutions. These aspects may deter small and innovative companies from participating in public sector bids, given that a significant amount of liquidity and capital is required to financially sustain a procurement process spanning over several years. Furthermore, as noted by procurement stakeholders, vested interests in the ICT market may also pose a barrier to participation of smaller companies. Namely, large ICT players often have more resources to lobby and engage with Government ICT leaders and politicians. This can contribute to the risk-aversion of smaller businesses who do not have the same financial capacity and access to lobbying resources.

From the buyer's perspective, access to cutting-edge, innovative, start-up supplier eco-system including international companies remains difficult in their operations. The Greek ICT market overall is quite localised and characterised by small and medium-sized enterprises, as most companies do not surpass the 250 employees. In some instances, these SMEs represent Greek subsidiaries of international corporations.

Important work is ongoing to promote the involvement of new and innovative companies in the tendering arena, and is considered one of the priorities of Information Society S.A. Indeed, it has taken part into several activities that support the creation of a vibrant ecosystem of innovative suppliers. Information Society S.A. is also looking into how to harness international experience and expertise, if it is not yet available on the Greek market. Going forward, Information Society S.A. also plans to build an ecosystem for technology matching, further supporting the capacity and maturity of a local ICT ecosystem.

Similarly, the limited institutional capacities to plan, develop, procure and maintain ICT/digital projects increase the strategic relevance of the private sector as critical partners for the implementation of the DTB (Ministry of Digital Governance, 2021[33]). The strategy underlines the role of the GovTech ecosystem to support its implementation, and requires further actions to foster and strengthen this ecosystem to take this expected role.

Reaping opportunities for centralising digital technology procurement

While digital projects are often custom-made, procuring ICT and digital goods and services also consists purchasing standardised, highly-demanded and off-the-shelf solutions. For such purchases, centralising demand is an effective strategy to generate economies of scale, ensure efficient procurement operations and increased coherence and interoperability of solutions. Indeed, centralisation of procurement operations has proven to lead to significant benefits, such as better prices, lower transaction costs, as well as increased capacity and expertise since such procurements are typically carried out by specialised procurement professionals. In the context of technological change, specialisation and centralisation are necessary to accelerate delivery. Namely, they facilitate alignment on cultural aspects as well as coordination across departments and line ministries that may otherwise hamper the implementation of digital transformation. Over time, knowledge and capability become more pervasive as they spread across government entities. At the same time, centralisation entails risks, if not managed adequately (OECD, 2022[13]). When dealing with multiple clients, there is a risk of repeatedly encountering similar challenges as well as knowledge loss, which slows delivery and stifles innovation. Hence, it is important to ensure a learning effect within the CPB's clients.

Recognising the potential for centralisation of ICT, several OECD countries have already introduced specialised ICT Central Purchasing Bodies (CPBs). For instance, Germany introduced the Central Office for IT Procurement within the Federal Procurement Office of the Federal Ministry of the Interior (Zentralstelle für IT-Beschaffung) in 2017. This entity is the central point of contact for ICT procurement at the federal level. In its initial phase, ZIB was tasked with an advisory function, i.e. supporting users throughout the entire procurement process, from the first notification of a need, through planning and commissioning, including contract management throughout the length of the agreement. Since its creation,

it has moved to an implementation phase, whereby it also carries out tenders for on behalf of contracting authorities (OECD, 2019[34]).

Similarly, Ireland introduced centralised ICT procurement in order to deliver on its Public Service ICT Strategy. This effort is led by the Office of Government Procurement, i.e. Ireland's CPB. Ireland's approach focuses on whole-of-government IT applications that are crosscutting and impact multiple departments, as opposed to technologies that are specific to one ministry, and streamlining applications such as payroll or messaging, while leaving devolved decision-making for agency-specific technologies with the relevant agency.

In the context of MDG, no such centralisation or advisory function of digital technology and ICT needs has been identified. It is unclear to what extent common needs and repetitive needs within MDG are bundled together and procured via dedicated framework agreements by the Department of Procurement and Logistics. To create or strengthen such a function, MDG could also consider co-operating with the central-level CPB in Greece, namely the General Directorate of Public Procurements of the General Secretariat of Commerce and Consumer Protection of the Ministry of Economy, Development and Tourism.

This function can be supported by leveraging existing project approval processes or future efforts to adopt a whole-of-government ICT portfolio management to identify common needs of highly standardised and demanded ICT/digital products or goods. This information, along with other data sources that provide further information on purchasing behaviour, can serve as basis to analyse and conduct centralised procurement exercises.

Need to promote digital talent and skills for improved ICT/digital institutional capabilities

One of the most pressing challenges in the Greek public sector to effectively implement the DTB is the limited institutional capacities to plan, manage, procure and implement ICT/digital projects. The restricted managerial and technical capacities in line ministries to carry out digital transformation projects has created a significant overload in MDG and its dependent units, including Information Society S.A., as they concentrate most of the digital expertise in the public sector and take complete control over the development lifecycle of these projects. As a consequence, line ministries take often a passive role and have limited ownership over the process, preventing a coherent and more decentralised implementation of the DTB.

The DTB includes several provisions on digital skills development to underpin the national digital transformation strategy, including the development of a national digital competence framework. Accordingly, OECD governments as the UK have developed professional capability frameworks to support institutions identifying skills and professional profiles needed to drive transformation (see Box 4.16). However, such an approach may be insufficient to address the existing digital talent and skill challenges. Concrete initiatives are needed to equip line ministries and their workforces with the skills needed to implement the goals set in the DTB. This includes assessing existing competences and developing training programmes to effectively accompany the implementation of the DTB, including the management and procurement of ICT/digital projects.

Interviewees indicated the limited conditions to attract and retain digital talent in the public sector as one of the reasons for constrained institutional capacities to manage ICT/digital projects. As outlined previously, the Greek public sector observes a limited culture for horizontal collaboration and co-operation, which constrains the development of an agile culture to co-ordinate digital transformation projects. Similarly, organisational conditions to foster digital talent and skills are limited to date, including promotion and training schemes as well as attractive employment packages to keep the public workforce abreast of new practices in the ICT/digital domain. Management culture can further exacerbate existing issues of talent

attraction and retention by not properly valuing staff, providing opportunities for career advancement as well as promoting a culture of co-operation necessary for bringing about the transformational changes sought by MDG.

Figure 4.4. Professions involved in a multi-disciplinary service team

Source: (OECD, 2021[35]).

Conversely, institutional and management culture may strengthen positive developments of collaboration, continuous improvement and talent attraction by setting the tone at the top. In this sense, Greece could benefit from promoting multidisciplinary teams in ICT/digital project development, bringing together digital professionals with non-digital backgrounds in designing and delivering digital investments. Merging digital and non-digital expertise can be helpful to create a culture for collaboration and a better understanding of the multiple policy, legal, and financial factors that may determine the scope and impact of digital transformation projects Figure 4.4).

Finally, a comprehensive approach towards equipping public sector organisations with the tools to implement digital transformation projects includes setting guidelines and standards that fosters coherence and alignment of efforts. Guidelines and standards are an effective way to enable system-wide transformation while promoting coherence and alignment in the development of ICT/digital projects both within and outside MDG. As outlined previously, this may include service design and delivery, agile management, and ICT/digital procurement standards and guidelines.

When looking at the availability of standards and common practices for ICT/digital projects, MDG has not set a concrete and actionable set of common tools that help empower service teams to have a more leading role in the development of these projects. This fosters incentives for line ministries to rely on MDG and Information Society S.A. to implement these projects on their behalf and take a less active role as beneficiaries rather than project owners. Further developing a comprehensive set of standards and guidelines for digital transformation in the Greek government can help build capacities across the public sector and reinforce ownership over digital initiatives.

Box 4.16. The UK Digital, data and technology (DDaT) profession capability framework

In March 2017 the UK Government published the digital, data, and technology profession capability framework describing the roles and skills needed in government to support digital transformation efforts. The framework provides a detailed description of the digital, data, and technology roles, listing the skills required for each role seniority. Job roles are grouped in job families (data, IT operations, product and delivery, quality assurance testing (QAT), technical and user-centered), providing specific details on expected skills for each profile.

The framework has helped the UK government develop a shared understanding of the required skills for DDaT roles, facilitating cross-government communities of DDaT professionals, mapping career paths, identifying skills gaps and developing new training programs in Government. The DDaT capability framework supports institutions to:

- learn about what different roles do in government
- understand what skills are needed by professionals in particular jobs
- identify skills that need development to help career progression
- assess skills in preparation for performance reviews
- create effective job adverts
- carry out Human Resources and workforce planning

Source: Own elaboration, adapted from (Central Digital and Data Office, 2019[36]) and (OECD, 2021[35]).

Lack of specific procurement/ICT competences

The implementation of digital projects requires a specific set of procurement and digital competencies. As reported by stakeholders during the fact-finding missions, there has been limited investment and recruitment of personnel with specific ICT skills over the past several years. As a result, procurement entities are short in specialised personnel that can bridge the divide between expertise in digital technology and procurement competence. Such professional profiles would be needed to effectively translate ICT needs into clear procurement documents (i.e. technical specifications, selection criteria, award criteria). As a result, stakeholders consider understaffing and the lack of appropriately skilled resources as one of their main challenges in the implementation of procurement of digital projects.

Importantly, stakeholders within MDG see the potential for training and upskilling existing staff as a means to overcome some of the skills gaps. In fact, the required capabilities are often available in-house throughout the Greek government, but are not organised to ensure knowledge transfer and capacity-building. In parallel, better planning of the project pipeline, and effective prioritisation of projects are also useful tools to manage a growing workload within existing constraints. Initial efforts in prioritisation have proven effective in delivering more effectively on multiple projects.

Across the OECD, countries are increasingly recognising the need for specific skills related to digital and ICT procurement, covering the full procurement cycle as well as agile methodologies. The US for instance, invested heavily in developing dedicated training (Box 4.17).

Box 4.17. Digital IT Acquisition Professional Training (DITAP) in the U.S.

Recognising that the digitalisation of public services often requires IT skills that are difficult to master for public procurement professionals, the United States Digital Service joined forces with the Federal Acquisition Institute (FAI) to set up the Digital Acquisition Professional Training, i.e. a specialised programme that entails training and a certification.

The programme teaches federal procurement professionals how to design procurement processes for IT and digital services that are flexible and innovative. The aim is for participants to become ambassadors for change. Students that complete the programme acquire learning credits and receive a certificate from FAI in FAC-C Core Plus Specialization in Digital Services. After a pilot phase, the training is offered to all professional levels across several agencies.

Source: (European Commission, 2020[37]); (U.S. Digital Service, n.d.[38]).

Limited monitoring and assessment of ICT/digital initiatives

Evidence indicates that MDG does not have a comprehensive monitoring and assessment policy for digital transformation initiatives in the public sector. Despite the DTB indicates the future development of a monitoring system for the activities comprised in the strategy, it does not provide further details about what and how the system will measure digital government progress and performance. Similarly, evidence collected indicates that systematic use of monitoring tools in MDG is limited and responds to efforts scattered across the different phases of ICT/digital project development and the respective departments/units involved in the process. Considering the fragmented approach towards ICT/digital project management within MDG, efforts to improve monitoring should be part of a broader strategic approach for benefits realisation within the Ministry, involving all relevant stakeholders.

Evidence indicates that currently there are no clear indicators to track progress and/or performance of ICT/digital projects. Additionally, KPIs can help create incentives within the public sector if managed in a transparent and open way, fostering accountability of all related stakeholders involved in the process. For example, in Australia some regional governments are using online dashboards to track progress and monitor the implementation of their digital transformation strategies, including progress of ICT/digital projects through data visualisation and open data (see Box 4.18). In line with the progress and existing culture for open government data in the country, MDG can leverage this information and make it available to relevant stakeholders to foster transparency, reinforce accountability and align incentives to pursue the strategic goals set in the DTB.

Additionally, performance data can be an effective way to feed development cycles and take concrete actions in the redefinition of strategic priorities. Considering the steering role of MDG in setting goals and priorities for digital government, having a sound approach to assess the performance of ICT/digital projects as well as to proactively use this information to redefine priorities and set new goals is critical to secure the realisation of intended outcomes.

Similarly, a user-driven approach for digital government calls for improved and standardised ways to assess the experience of end-users with ICT/digital projects. This implies establishing coherent feedback mechanisms for end-users (citizens and businesses) to communicate their experience with a certain service. However, in line with the limited initiatives to understand and meet the needs of end-users, MDG does not have a standardised approach to measure user satisfaction in digital government. Given the nature of some ICT/digital projects (service design and omni-channel delivery) and the priority set in the

DTB for the implementation of the centralised service platform *gov.gr*, MDG would benefit by setting a comprehensive user satisfaction measurement policy.

Currently, the DTB includes a dedicated provision to collect and process user feedback (the *Integrated Citizen Relationship Management System*). In order to improve the assessment of ICT/digital projects, MDG should accelerate its implementation, setting a common methodology for the Greek public sector organisations to assess user satisfaction in line with the limited institutional capacities observed to support the development of ICT/digital projects.

Box 4.18. ICT and digital projects dashboards in Australia

In Australia, the Governments of Queensland and Victoria are using online dashboards to promote transparency and reinforce oversight on the deployment of ICT/digital projects in the public sector. These centralised platforms provide relevant KPIs to support the monitoring of their respective digital strategies, e.g., on departments leading ICT spending, identifying the number of projects and their status, expenditure, and timeframe, flagging cost overruns, and development delays.

Queensland Digital Projects Dashboard

The Digital Projects Dashboard displays presents ICT/digital project data published by each department on the Queensland Government Open Data Portal. The platform provides timely information on the progress of all initiatives carried out by the State Government and the alignment of each project with the digital priorities set by the government. Users can explore the status of digital projects by department, approved expenditure, and digital priority.

The online platform also presents information on ICT tenders, including planned, open and closed tenders. The platforms reuse the data of the procurement platform QTenders, integrating different data sources to foster transparency and openness. The platform has been also used to communicate to small providers about potential opportunities in ICT procurement at the government.

The Victorian Government ICT dashboard

The Victorian Government ICT dashboard covers digital projects over A$1M, providing details on cost, timeframes, phases of development, performance status, and beneficiaries. The dashboard is updated quarterly and is part of the Information Technology Strategy 2016-2020. The initiative was implemented as part of the State Auditor General recommendations in 2015, reflecting the need for monitoring mechanisms to support the implementation of the digital strategy. Through the Digital Strategy and Transformation branch, the Department of Premier and Cabinet (DPC) is responsible for the dashboard based on the information reported by departments and agencies in the State Government.

Source: Own elaboration, adapted from (Queensland Government, 2021[39]) and (Victorian Government, 2021[40]).

Box 4.19. Digital Government Index in Colombia

Colombia's MinTIC developed the Digital Government Index as a measurement tool to support the implementation of the digital government strategy. The measurement provides disaggregated data on the performance of national and territorial entities regarding digital government policy. The Index allows the MinTIC to assess good implementation practices and identify opportunities and gaps. The MinTIC

publishes the index results at a disaggregated level using an interactive platform, and the data is available on the open data platform of the Government of Colombia. The data is collected on an annual basis, using a survey based on the three enablers and five objectives of the digital government strategy:

Enablers:

- Architecture enablers
- Security and Privacy enabler
- Citizen digital services enabler

Objectives:

- Trustworthy and quality digital services
- Safe and efficient internal processes
- Data-driven decision-making
- Citizen empowerment through open government

Source: Own elaboration, adapted from (MinTIC, 2021[41]).

Box 4.20. Comprehensive Impact and Performance Assessment of Government Information Systems in Korea

The Ministry of Interior and Safety in Korea measures the compliance of the performance, operation, and cost efficiency management and impact on users every three years. The Korean Government uses mobile app uptake to assess part of the impact by measuring the number of downloads, the satisfaction levels, latest updates. At an external level, the government used the Digital Government Usage Survey and the National Survey on Digital Divide, to gather information about service usage rate and internet accessibility.

The system considers specific activities in the four different steps on the development of information system projects:

- Planning & budgeting: Establishing impact and performance assessment plan for a project.
- System development: Pre-development project consultation and adjusting and finalising assessment plan.
- Operation and Management: collecting data, measuring indicators, and assessing projects.
- Feedback: Publishing an annual report, evaluating performance management level of government entities, and providing recognition.

After the assessment, systems can be categorised into five different results: to be maintained, to be re-developed, to be improved, to be merged, or to be terminated.

Source: Own elaboration, adapted from (Ministry of Interior and Safety, 2021[42]).

Notes

[1] https://diavgeia.gov.gr/doc/%ce%a8%ce%93%ce%a6%ce%a0%ce%9f%ce%9e%ce%a4%ce%92-%ce%a0%ce%a3%ce%9f?inline=true.

[2] http://agilemanifesto.org/.

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5 Way forward

This chapter presents the main policy recommendations for Greece to manage digital government investments strategically. The recommendations presented include the governance perspective, the planning and funding of digital initiatives, project procurement and implementation, monitoring and evaluation mechanisms and public sector capabilities. The final section of the chapter presents a summary of the identified challenges and the dedicated recommendations, including a potential timeline for its implementation.

Policy recommendations for action

Strengthening the institutional capacities for the governance of digital investments is key for the Greek government and the MDG to achieve benefits realisation from ICT/digital projects. As identified in this report, despite significant advances at strategic level, including new governance and institutional models and the development of a comprehensive digital transformation strategy for the public sector, there are still several areas of improvement for the MDG and all its related stakeholders. This chapter presents relevant and actionable policy recommendations for Greece to strategically manage digital government investments.

Governance

Strengthen the governance for digital government in Greece

The creation of MDG clearly represents an important development towards a coherent governance for digital government in Greece. Considering the challenges identified in this study and in line with the OECD Recommendations for Digital Government Strategies (OECD, 2014[1]), strengthening the institutional capacities of MDG to effectively implement and deliver the objectives set in the DTB is critical to achieve expected outcomes. Upgrading the institutional capacities of MDG implies revisiting its organisational structure, roles and functions, co-ordination mechanisms among relevant government entities and existing ICT/project development procedures.

Specifically, MDG could consider taking the following actions to establish a fit-for-purpose governance for ICT/digital projects:

- **Establish clear roles and mandates for all relevant stakeholders within MDG**. This includes policy setting and project management roles within MDG, the functions of departments/units involved in the development of ICT/digital projects as well as the role of Information Society S.A. as a strategic partner in the implementation process. Accordingly, these roles would need to be effectively communicated to all stakeholders involved in the development of ICT/digital projects within and outside the public sector.
- **Enhance existing co-ordination mechanisms.** With the DTB identifying the Steering Committee and the Implementation Network as part of the renewed governance set-up, both instances would require clarifying their specific roles in terms of advisory and decision-making responsibilities. Similarly, MDG could leverage the Committee and the Network to oversee the implementation of the strategy as well as new organisational structures to guide the implementation of ICT/digital projects (e.g. as per suggested with a dedicated project management office below).
- **Promote co-ordination between relevant authorities involved in the implementation and procurement of ICT/digital projects.** As the implementation of ICT/digital projects implies funding allocation, procurement of solutions and the involvement of external actors, further alignment could be pursued between relevant digital government, public procurement and public budgeting authorities and actors, including Information Society. This includes looking at ways to align processes as well as concert ways to address issues regarding funding allocation and procurement mechanisms out of the MDG's mandate.

Establish a Project Management Office to streamline and accelerate the execution of ICT/digital projects

MDG needs to set a coherent and streamlined process for the efficient implementation of ICT/digital projects. Setting new institutional capacities for the implementation of the DTB within MDG involves aligning and integrating different phases of the project management life cycle, including prioritisation,

planning, funding, procurement, implementation and monitoring. Accordingly, a dedicated governance model and an organisational structure that oversees ICT/digital project implementation is needed at MDG.

Establishing a Project Management Office (PMO) would support the development of a more coherent, organic and structured way to manage ICT/digital projects. For this, MDG would need to revisit and integrate existing procedures for project approval, funding, procurement, implementation and monitoring with the purpose of addressing ICT/digital project development from an end-to-end perspective. There are multiple modalities to set up a PMO depending on its specific functions as well as considerations when addressing the institutional design. Further details about actions and considerations for setting the PMO are presented in Chapter 6.

Planning and funding

Adopt an ICT portfolio management system for ICT/digital investments

An ICT portfolio management approach allows the management of all digital investments, having a clear overview of projects, roles, priorities and timelines to secure and effective implementation. Considering the needed institutional redesign to establish a PMO, the adoption of an ICT portfolio management system can be a strategic way to support the responsibilities and tasks of the PMO regarding end-to-end project management while identifying and mitigating associated risks. This portfolio can bridge the project approval, implementation, procurement and monitoring facets of ICT/digital project management.

Specifically, MDG could consider taking the following actions to implement an ICT portfolio management system:

- **Leverage the project approval process to systematise information of all ICT/digital projects.** Considering the limited visibility that MDG has over the implementation process of relevant ICT/digital projects, the project approval mechanism could provide detailed information that empower MDG to track progress of initiatives as well as take corrective actions to ensure timely delivery.
- **Establish clear and transparent criteria to prioritise digital investments.** In order to support the role of the PMO, the ICT portfolio can help establish the priority projects under the scope of the MDG, Information Society S.A. and line ministries. Selecting who will be responsible for the implementation and procurement of ICT/digital projects would reflect the extent to which a certain project has a larger cross-governmental impact or requires co-ordination between two or more entities. Similarly, budget allocation, funding sources and final implementation responsibility should be outlined following a well-defined, agreed and transparent criteria.
- **Integrate the ICT portfolio system into the new governance of digital government.** With the Steering Committee and the Execution Network overseeing the implementation of the DTB, the ICT portfolio management system can be a tool to support the functions of both governance bodies and to make sure line ministries and related stakeholders are aware of the priorities and challenges for sound digital investments in Greece.
- **Secure coherent funding management for digital projects.** Different funding sources challenge coherent project management creating disincentives for efficient resource allocation. Under an ICT portfolio management approach, MDG could allocate resources ensuring that investment decisions are independent of funding mechanisms. In particular, MDG could harmonise the management of all different digital government funding sources, including European funds and national budgets.

Redesign the ICT/digital project approval process

Along with the suggested actions to improve the governance for ICT/digital projects, MDG would benefit from redesigning the project approval process, establishing a single and coherent procedure for all projects regardless of the funding source. Establishing a unified approach would help streamline the interactions

between MDG and line ministries, and act as a coherent information source to support strategic decision-making e.g., centralised procurement of ICT/digital goods, redefinition of priorities, and co-ordination between line ministries.

For this, MDG could consider taking the following actions:

- **Redesign the project approval process in a collaborative way.** This implies involving all relevant actors to establish a coherent and agreed approach to pitch, process, prioritise and approve ICT/digital projects, including Information Society S.A., relevant departments/units within MDG and line ministries. The Steering Committee and the Implementation Network could support this process to gather sufficient political backing and operational alignment for its future implementation.
- **Establish a comprehensive value proposition standard.** For the approval process to be effective and support decision-making, it could include the multidimensional factors that determine the eligibility, feasibility and final impact of relevant ICT/digital projects. This includes financial factors as well as other relevant priorities including user satisfaction, environmental impact, administrative efficiency, etc. that help determine the relevance and pertinence of a certain project regardless of the investment needed, funding source or final beneficiary. Similarly, it could consider the potential risks associated to the implementation of each project.
- **Leverage the project approval process to ensure the adoption of key ICT/digital standards.** Given the significant control that MDG has on budget for ICT/digital projects, the approval mechanism can be an effective way to enforce the adoption of relevant standards and principles set in the DTB. This includes specific agile project management practices, standards on usability and user-centricity, user satisfaction measurement, data governance and sharing frameworks, digital identity systems, etc. Considering the priority role the centralised service delivery platform gov.gr has in the DTB, enforcing standards adoption through the approval process can also support a coherent development by line ministries and other relevant actors.
- **Pilot the redesigned approval process.** Changes in MDG organisational practices and culture require fostering incentives and adoption from relevant stakeholders. MDG could implement the redesigned approval process following agile principles of user engagement, iteration, learning and improvement in order to secure a smooth transition. This may include a modular deployment with selected line ministries to secure a safe space for testing and improvement.

Project procurement and implementation

Promote the strategic use of public procurement

MDG would benefit from promoting the strategic use of public procurement to increase the efficiency and effectiveness of its digital procurements, in line with the OECD Recommendation on Public Procurement (OECD, 2015[2]). In particular, this entails taking a strategic approach to the preparatory phase of procurement of digital projects, i.e., placing a solid emphasis on the importance of needs assessment and early market engagement at the early stages. A sound preparation of the procurement limits risks of failure, as market capacity and user needs, are well understood. In addition, MDG could promote the use of advanced procurement practices suitable to digital projects, as detailed below. As outlined in the report, making a strategic use of public procurement does not require changes to the public procurement legal framework.

Specifically, MDG could incorporate the strategic use of public procurement through the following actions:

- **Strengthening early market engagement practices.** MDG could fully exploit the possibilities offered by the legal framework to engage with market actors in preparation of the procurement process, including through the creation of dedicated platforms that facilitate the exchange with digital technology suppliers.
- **Use quality criteria in the procurement evaluation.** Awarding procurement contracts based on quality is essential to deliver value for money in the procurement process. Namely, awarding a premium for quality ensures that high-quality providers are chosen and risks of poor execution at the contract stage are minimised.
- **Express user needs through functional specifications.** In the context of digital technology, it is important to allow flexibility and innovation when procuring a particular good or service. By expressing needs in functional requirements rather than detailing them through prescriptive technical specifications, the market can introduce innovative elements to its offer. With functional specifications, the focus of the procurement process lies in the performance of the solution, rather than fitting a precise description that runs the risk of being quickly outdated.
- **Advance procurement practices such as Dynamic Purchasing Systems (DPS) and Public Procurement of Innovation (PPI).** Digital solution requires procurement processes that are adapted to this purpose. DPS represent a proven tool to enhance the purchasing of standardised ICT goods and services. Public procurement of innovation is an advanced practice that can be tailored to addressing specific needs for which solutions are not yet available on the market. These tools should be part of contracting authorities' toolkit for procuring digital transformation projects.

Initiate the journey towards agile implementation and procurement of ICT/digital projects

Greater agility in the implementation of procurement processes has shown to be a strong mitigation measure for risks related to the failure of digital projects. This entails strengthening the involvement of end-users throughout the development process, diversifying the supplier group, allowing smaller suppliers to participate in the delivery of projects, as well as setting up the overall digital project in a modular way.

The change from a waterfall to an agile implementation is often a longstanding and complex process, requiring a shift in mind-set, as well as an enabling environment, which includes the availability of dedicated training, support structures and guidance. Nonetheless, MDG could initiate the first steps on the journey towards agile with a number of initial steps:

- **Develop practical guidance for agility in procurement**: As a starting point, it is important to provide contracting authorities with practical guidance (good practice examples, case studies, etc.). This effort could be led in co-operation with HSPPA.
- **Pilot agile procurement methodologies with Information Society S.A.**: With its longstanding experience in implementing digital projects, Information Society S.A. is best placed to pioneer agile methodology implementation in Greece. It could start doing so with a small pilot, and based on the experience gradually widen the application of agile towards most of its project portfolio, where most appropriate.
- **Consider the establishment of a competence centre for implementation of digital and agile procurement**: Over the medium-term, MDG in co-operation with a broad range of digital and procurement stakeholders, could reflect on the establishment of a dedicated competence centre for implementation of digital and agile procurement. This centre would service as advisory hub for digital project implementation, providing ad hoc support, expertise and guidance. The competence centre could be linked to or expand on the National Competence Centre on Innovation Procurement.

Facilitate access to a supplier base composed of start-ups and innovative SMEs

The success of public procurement processes also depends on the quality and performance of its counterparts, i.e. economic operators. In addition to striving to be an attractive client by implementing clear and speedy procurement processes, MDG could consider fostering access to a supplier base key to deliver innovative digital transformation projects, i.e. GovTech communities, start-ups and innovative SMEs.

These groups of suppliers often lack awareness about public sector contracts, and may suffer from entry barriers. MDG could take the following action to facilitate access to a key supplier group:

- **Continuous engagement and awareness-raising**: In parallel to market engagement efforts, engagement could also be tailored at identifying the key group of suppliers that can drive innovation in digital transformation.
- **Remove hurdles for accessing procurement contracts**: Typical hurdles for SMEs and smaller suppliers consist in late payment, overly large contract size and requirements for technical capacity that are too strict.
- **Launching innovation challenge programmes**: The creation of programmes has been identified as a successful tool to engage a diverse group of suppliers in solving pressing challenges of the public administration.

Monitoring and evaluation

Setting sound monitoring systems

Improving the management and procurement of ICT/digital projects in the Greek public sector requires tracking progress of relevant projects in a timely and effective way to mitigate risks and take corrective actions to maximise benefits realisation. As outlined previously, MDG does not have a comprehensive approach towards monitoring and assessing the implementation and impact of ICT/digital projects. The suggested actions for the PMO, ICT portfolio management and project approval mechanisms can be leveraged to support a better monitoring of the DTB and other relevant digital projects.

To advance in this direction, MDG could take the following actions:

- **Define a comprehensive set of key performance indicators (KPIs) to monitor and assess the development of ICT/digital projects.** In line with the suggested actions to better establish the value proposition of ICT/digital projects, MDG could define a detailed set of indicators to support monitoring and assessment processes. Keeping in mind the roles and responsibilities of MDG, the PMO, Information Society S.A. and line ministries, the KPIs could be defined considering an adequate monitoring of progress in line with the expectations, the impact, as well as adherence to digital government standards. In order to secure the feasibility of this monitoring mechanism, MDG could consider the availability of existing data to construct the KPIs (e.g. the project approval process).
- **Establish open communication channels to disseminate ICT/digital project performance data with relevant stakeholders and the wider community.** Effective monitoring systems provide visibility to results and performance, creating incentives to foster accountability and compliance of relevant actors. In line with best practices for monitoring digital investments, MDG could make strategic use of data visualisations and dashboards to share relevant information on the performance of ICT/digital projects, including the availability of open government data (OGD) to support the transparency and accountability of digital investments in the public sector.

Measuring user experience

In line with the need to adopt a user-driven approach in the development of ICT/digital projects in Greece, further attention could be given to assessing the experience of users. While not all ICT/digital projects involve end-users (e.g. digital infrastructure), user satisfaction should be measured for the projects intended to deliver direct benefits to citizens and business.

For this, MDG could take the following actions:

- **Establish a common and standardised methodology to measure user satisfaction.** Greece could strengthen user satisfaction measurement mechanisms to support the goals of the DTB, moving towards a systematic and unified evaluation system that assess the experience of end-users with digital solutions.
- **Set formal mechanisms for all involved stakeholders to assess user satisfaction when relevant.** This includes leveraging funding and project approval mechanisms to ensure that all beneficiaries endorse and adhere to the standards set for user satisfaction measurement in Greece.
- **Communicate and visualise user satisfaction data to foster incentives for improved ICT/digital project delivery.** This implies including user satisfaction data in the performance assessment dashboards for ICT/digital projects and making it available in open and reusable ways.

Public sector capabilities

Strengthen line ministries' capabilities

A sustainable digital transformation in the public sector requires a collaborative and co-owned process for all public sector institutions to leverage digital tools and data for improved public governance. Currently, in Greece not all line ministries have the institutional capacities, digital talent and skills needed to have a leading role in the implementation of the DTB, in specific regarding the implementation and procurement of large-scale ICT/digital projects. This requires equipping Greece's public sector organisations with the tools and competencies to effectively implement digital transformation projects and to decentralise the implementation of the DTB. Under this model, MDG and the PMO can have the strategic role of managing cross-governmental complex and large-scale projects, while the long-tail of smaller projects can be implemented by line ministries following the guidelines and standards for digital government set by MDG.

In this line, MDG could take the following actions:

- **Leverage digital standards to support coherent and aligned implementation of ICT/digital projects.** Equipping public sector organisations with the tools and standards to implement digital transformation projects is essential for a sustainable digital transformation process. This includes guidelines and standards on agile project management, user research, usability, digital identity, notification systems, digital procurement, etc., that public sector organisations can leverage to guide the implementation and procurement of small-scale projects. Digital standards also include data access and sharing arrangements (legal, technical and organisational frameworks) fostering data reuse, advancing towards implementing the once-only principle within the public administration.
- **Promote a user-driven culture across the public sector.** MDG could strengthen public sector' capacities to understand user needs, fostering a cultural shift to place users (e.g. citizens, businesses, civil servants) at the core of digital transformation processes. This includes further training and capacity building in agile project management, user research and user satisfaction measurement to guide the implementation of digital transformation projects in Greece, including Information Society S.A. and regulatory authorities. Embracing a user-driven approach implies

assessing administrative and regulatory procedures on a continuous basis. Similarly, MDG could encourage agile and iterative approaches, the introduction of proof of concepts, and minimum viable products (MVPs) in developing digital solutions, with Information Society S.A. serving as safer testing space for cultural change and implementation of best practices.

- **Establish cross-governmental communities of practice.** Several line ministries may be facing similar issues when implementing and procuring ICT/digital projects in Greece. Creating safe spaces for exchange and learning can foster a culture of collaboration and co-operation within the Greek public sector as well as to identify and address similar issues learning from best practices within the government. This could include MDG and Information Society S.A. operational teams.
- **Strengthen project management capabilities in line ministries.** The limited institutional capacities and skills for project management and public procurement of ICT/digital projects is overloading MDG and Information Society S.A. with projects that can eventually be implemented by line ministries in a coherent and aligned way. This requires conducting capacity building activities on project management and public procurement at line ministries level.

Build capacity to target advanced procurement practices and ICT skills

Addressing several of the bottlenecks and challenges related to the implementation of digital projects relies on having the appropriate capacity in terms of digital and procurement skills. Specifically, MDG would benefit from increased procurement capacity to strengthen the strategic aspects of the procurement process, which are key to ensuring value for money and reducing the risk of digital projects' failure. As such, capacity-building can be considered as a pre-condition for the successful implementation of digital projects. Furthermore, MDG could explore the implementation of more advanced procurement practices.

Accordingly, MDG could take the following steps:

- **Assess capacity gaps with a particular view towards ICT competences.** To fill capacity gaps related to procurement and ICT competences, MDG requires full picture of the available competences within its own organisation and Information Society S.A. Available tools such as ProcurComp^{EU} can support such an exercise.
- **Design a comprehensive and well-structured capacity-building programme for the procurement staff of MDG and Information Society S.A.** taking into account the different levels of advancement in procurement skills based on a careful assessment. At a minimum, capacity-building activities should cover market engagement, use of quality criteria, functional specifications. A more advanced programme should also include project management, negotiation, agile methodologies, modular contracting, innovation procurement, green public procurement, socially responsible public procurement.
- **Launch pilot projects to test specific practices, such as the use of DPS for recurring needs of digital solutions and innovation challenges to address specific public sector problems.** Procurement officials should receive adequate training to undertake these activities, e.g. through taking advantage of ongoing initiatives or establishing international co-operation.

Examine the scope for centralisation of ICT public procurement to benefit from efficiency gains and greater specialisation

Centralisation of procurement for standardised needs has long been identified as a solution of increasing the efficiency of the procurement process and deliver greater value for money. The benefits of centralisation derive from greater bargaining power of the contracting authority through aggregation of spending, as well as increased specialisation in expertise and competency. In turn, greater specialisation leads to better performance. Gains from centralisation can be reaped also in the field of ICT, where several OECD countries have introduced dedicated purchasing bodies, as discussed in Chapter 3. MDG together

with a broad group of stakeholders could examine the scope for such centralisation. Data on the types of procurement expenditure to be collected through a monitoring by the new PMO would provide valuable insights on the degree of harmonisation of needs and opportunities for aggregation.

Summary of identified challenges and recommendations

In order to summarise both Chapter 3 and Chapter 4, Table 5.1 lists the main challenges for an adequate development of ICT/digital projects by MDG and relevant stakeholders with the respective recommended policy actions. The summary also gives an indication about a potential timeline for implementation of specific actions: short-term (within 6 months); medium term (between 6 months and 12 months) and long-term (over 12 months).

Table 5.1. Identified challenges and recommendations

Challenges identified	Recommendation	Timeline for implementation
Silo-based operations within the MDG and across the public sector	Strengthen the governance for digital government in Greece	
	• Establish clear roles and mandates for all relevant stakeholders within MDG	Medium-term
	• Enhance existing co-ordination mechanisms	Short-term
	• Promote co-ordination between relevant authorities involved in the implementation and procurement of ICT/digital projects	Medium-term
Limited understanding of user needs	Strengthen line ministries capabilities	
	• Promote a user-driven culture across the public sector.	Medium-term
	• Establish cross-governmental communities of practice.	Short-term
	Measuring user experience	
	• Establish a common and standardised methodology to measure user satisfaction.	Short-term
	• Set formal mechanisms for all involved stakeholders to assess user satisfaction when relevant.	Short-term
	• Communicate and visualise user satisfaction data to foster incentives for improved ICT/digital project delivery	Medium-term
Need to set a coherent management approach for ICT/digital projects	Establish a PMO to streamline and accelerate the execution of digital transformation projects	Medium-term
	Adopt an ICT portfolio management system for ICT/digital investments:	Medium-term
	• Leverage the project approval process to systematise information of all ICT/digital projects.	
	Redesign the ICT/digital project approval process	
	• Redesign the project approval process in a collaborative way	Short-term
	• Establish a comprehensive value proposition standard	Medium-term
	• Leverage the project approval process to ensure the adoption of key ICT/digital standards	Medium-term
	• Pilot the redesigned approval process	Short-term
Limited alignment of funding allocation processes	Adopt an ICT portfolio management system for ICT/digital investments	Medium-term
Leveraging project approval to secure coherence in digital investments	• Adopt an ICT portfolio management system for ICT/digital investments	Medium-term
	• Redesign the ICT/digital project approval process	Short-term
Overly lengthy implementation cycle of digital projects	Establish a PMO to streamline and accelerate the execution of digital transformation projects	Medium-term

Challenges identified	Recommendation	Timeline for implementation
Sub-optimal execution of procurement procedures throughout the procurement cycle	Promote the use of strategic public procurement:	
	• Strengthening early market engagement practices	Short-term
	• Use quality criteria in the procurement evaluation	Short-term
	• Express user needs through functional specifications	Short-term
	• Advance procurement practices such as Dynamic Purchasing Systems (DPS) and Public Procurement of Innovation (PPI).	Medium-term
Large procurement contracts limit agility	Promote the strategic use of public procurement	Short-term
	Initiate the journey towards agile procurement implementation:	
	• Develop practical guidance for agility in procurement	Short-term
	• Pilot agile procurement methodologies with Information Society S.A.	Medium-term
	• Consider the establishment of a competence centre for implementation of digital and agile procurement	Long-term
Limited access to pool of innovative suppliers and SMEs	Facilitate access to supplier base composed of start-ups and innovative SMEs:	
	• Continuous engagement and awareness-raising	Short-term
	• Remove hurdles for accessing procurement contracts	Medium-term
	• Launching innovation challenge programmes	Long-term
Opportunties for centralised procurement	Examine the scope for centralisation of ICT public procurement to benefit from efficiency gains and greater specialisation	Short-term
Promotion of digital talent and skills	Initiate the journey towards agile implementation and procurement of ICT/digital projects	
	• Consider the establishment of a competence centre for implementation of digital and agile procurement	Long-term
	Strengthen line ministries' capabilities:	
	• Promote a user-driven culture across the public sector	Medium-term
	• Establish cross-governmental communities of practice	Short-term
Lack of specific procurement/ICT competences	Build capacity to target advanced procurement practices and ICT skills	
	• Assess capacity gaps with a particular view towards ICT competences.	Short-term
	• Design a comprehensive and well-structured capacity-building programme for the procurement staff of MDG and Information	Medium-term
	• Launch pilot projects to test specific practices, such as the use of DPS for recurring needs of digital solutions and innovation challenges to address specific public sector problems	Short-term
	Initiate the journey towards agile implementation and procurement of ICT/digital projects	
	• Develop practical guidance for agility in procurement	Short-term
	• Pilot agile procurement methodologies with Information Society S.A.	Medium-term
	• Consider the establishment of a competence centre for implementation of digital and agile procurement	Long-term
Limited monitoring and assessment of ICT/digital initiatives	Setting sound monitoring systems:	
	• Define a comprehensive set of key performance indicators (KPIs) to monitor and assess the development of ICT/digital projects	Short-term
	• Establish open communication channels to disseminate ICT/digital project performance data with relevant stakeholders and the wider community	Short-term

Source: Own elaboration.

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6 Project Management Office set-up

This chapter presents the recommendations for setting up a project management office (PMO) to support Greece in developing digital and ICT projects in the public sector. Firstly, the chapter defines the institutional design, roles and priorities of a project management office in the current context of Greece's public sector. The chapter identifies the different institutional parts for effective implementation, detailing the institutional responsibilities and the required competencies to drive transformation. Thirdly, the chapter presents the PMO process describing each step to secure benefit realisation, including specific key performance indicators on digital government and public procurement. Finally, the chapter offers good practices for introducing these institutional reforms in Greece, including short-term and long-term objectives.

Spotlight on PMO's institutional design, roles and priorities

What is a Project Management Office?

The Project Management Institute defines the Project Management Office (PMO) as "an organisational body or entity assigned various responsibilities related to the centralised and co-ordinated management of those projects under its domain. The responsibilities of the PMO can range from providing project management support functions to actually being responsible for the direct management of a project." (Project Management Institute, 2008).

With organisations becoming increasingly complex, and being exposed to pressure to innovate continuously, there is a rise in the number of projects being carried out simultaneously. This required organisations to find new ways to manage such complexity, including the introduction of PMO. The goal of any type of "organisational project management" is not only to deliver projects on time, on budget and within the specific requirements but to create value for the organisation. In this context, strategic alignment emerges as a need to ensure consistency across a portfolio of disparate projects (Aubry, Hobbs and Thuillier, 2007[1]).

Beyond tasks related to co-ordination and strategic alignment, literature suggests that PMOs play an essential role in the management of projects, in particular, in the collaboration and co-ordination of relevant stakeholders. Notably, PMOs allow to exercise management control over the implementation of projects and support a proactive management approach. Furthermore, existing literature identifies several functions related to the PMO, including 1) managing practices, 2) providing administrative support, 3) monitoring and controlling projects, 4) training and consulting, and 5) evaluating, analysing, and choosing projects (Artto et al., 2011[2]). As such, there is significant variation in the role and functions a PMO may fulfil.

The design of a PMO varies depending on contextual factors and organisational needs. For this, the design of a PMO organisational unit should take into account two fundamental aspects, namely the division of tasks and the co-ordination and integration of activities (Artto et al., 2011[2]).

How does it apply in the context of MDG?

As discussed above, the concept of PMO varies across organisations and depending on the purpose it serves. As such, there is no "one-size-fits-all" approach to apply a PMO as part of the governance strategy for the implementation of digital transformation projects. Instead, the PMO should be carefully designed based on critical business needs, the organisational context and environment of MDG and should consider the advantages and disadvantages of various models.

The vision and the operational goals of setting up a PMO should be shared among a wide group of stakeholders to ensure its successful implementation, in particular given that it performs a cross-functional task and it will need to co-operate with several stakeholders across, including those that are external from MDG (e.g. Information Society S.A. and line ministries). The vision and the operational goals should thus inform the operational design of a PMO structure.

Based on the analysis of this report, the rationale for setting up a PMO by MDG is based on the following critical needs, which in turn shape the overall vision and operational goals for the PMO proposal:

- **Overcoming organisational siloes**: This entails collaboration within and outside the MDG, including Information Society S.A. and beneficiaries, the supervision of the implementation and procurement process, and the assignment of the procurement implementation body with specific criteria.
- **Improving the delivery of digital transformation projects: shortening the overall project delivery cycle, notably the public procurement process,** and enhancing the quality of procurement execution with advanced practices.

- **Monitoring and reporting of results:** Following a set of KPIs for individual digital projects and their procurement process, the PMO could have a clear overview of project implementation and regularly report to MDG.
- **Facilitating risk management of project portfolio:** Through close monitoring of implementation, the PMO could perform a risk management function by flagging early on bottlenecks in implementation. Better co-ordination, user interaction, and streamlined processes set up with the PMO constitute risk mitigation measures.
- **Identifying capacity gaps and bottlenecks:** This entails engagement with project stakeholders during the various stages of implementation to identify capacity gaps and bottlenecks.

It is critical to validate these business needs and the related vision for a PMO with MDG leadership and a broader set of stakeholders to ensure alignment between the functions assigned to PMO, its governance structure as well as the resources needed for its operations (i.e., human resources and skills, financial and infrastructure resources).

The following section elaborates on a proposal for a PMO based on the assessment of this report and feedback received by Greek stakeholders. This takes into account the preference for setting a PMO model that builds on existing structures and functions within MDG, allowing the PMO to have a strong monitoring function in order to provide MDG leadership and its related governance bodies (i.e., the Steering Committee and the Execution Network) with up-to-date information regarding the status of project implementation. Again, validation with a wide group of stakeholders is key to align the proposed structure and functions of the PMO with the Greek legal, administrative and institutional context.

Enabling environment

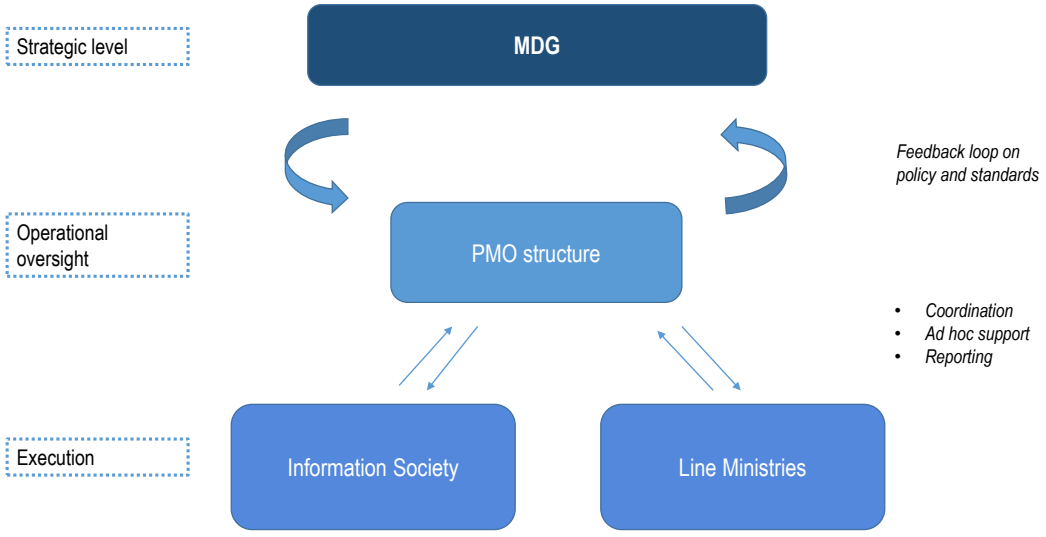
As presented in Chapter 3 of this report, the development of digital projects in Greece presents several challenges. In this line, the adoption of a PMO should not be taken as a silver bullet to solve the stated issues but as a specific tool to streamline the implementation of digital projects. The success of future modifications or reforms regarding the PMO relies on its alignment with the institutional culture and securing a shared vision with all relevant stakeholders. In particular, this entails promoting an institutional culture of co-operation from the top leadership, as the PMO needs to rely on productive working relationships with several parties for its functioning. Finally, a sustainable project management reform calls for political commitment at the highest level to support the transformation process across government.

A successful PMO model should have a clear definition of tasks and responsibilities, identifying the role of each party in the project management process. In practical terms, this implies separating the strategic level task and the policy execution responsibilities. Doing so requires a clear roles' definition regarding the policy design functions within MDG (strategic level) from those implementation functions that will be the responsibility of the PMO (execution level):

- **Ministry of Digital Governance**: The policy setting should reflect the government's priorities concerning ICT/digital projects, reflecting high-level strategic definitions taken ideally with the Steering Committee and the Execution Network. MDG will also be responsible for redefining the approval process, establishing and controlling the ICT portfolio management system and establishing a clear and aligned funding approach for digital projects that mitigates the risks of inconsistency in managing resources. Finally, MDG would also determine the prioritisation criteria, the KPIs for the PMO to implement, and the digital standards needed to guide the implementation of projects.
- **Project Management Office**: the PMO would be responsible for approving digital projects following the criteria established by MDG. In addition, this executive arm would be responsible for the implementation oversight of all digital projects through the ICT portfolio management system, meaning that the PMO would track progress of critical projects and secure co-ordination between

the different stakeholders involved in the implementation and procurement process. In addition, the PMO office would develop a comprehensive monitoring system to report back on eventual delays, over costs, or any other issues regarding digital projects implementation that serves MDG and the Steering Committee to take timely actions. The internal organisation of this PMO should reflect its responsibilities in the project cycle. The PMO could develop specialised functions depending on the nature of ICT/digital projects (see Box 6.1).

Figure 6.1. Interaction between strategic level, operational oversight and execution



Source: Own elaboration.

According to their strategic relevance, the PMO will dispatch projects to Information Society S.A. or line ministries (See *PMO Process*). In this line, MDG could consider the possibility of setting and measuring KPIs for Information Society S.A. to align incentives across the whole project cycle and promote a more coherent and accountable role.

Following digital government principles, MDG could encourage formal and iterative feedback mechanisms between the two bodies, reinforcing co-ordination and communication on the procedures, guiding principles, and standards. Similarly, the system could consider developing continuous feedback from Information Society S.A. and line ministries to gather user inputs and channel them into the policy-setting process.

Box 6.1. Digital investments principles in New Zealand

In New Zealand, the Treasury (Ministry of Finance) is the responsible institution for investment management, while the Government Chief Digital Officer (GCDO) and the Government Chief Data Steward (GCDS) are the functional lead for digital and data. For the budget 2020, the GCDO and the GCDS developed the guiding principles to support line ministries and public sector organisations in planning and developing digital investments.

The goal of these principles was to develop a coherent approach that avoids duplication and secures alignment with the strategic roadmap for digital and data systems. The principles also allow a better understanding of the project impact at a systemic level. Finally, this approach allowed building key components in a sustainable and enduring way.

The principles help assess project proposals in the budget formulation process. The GCDO and GCDS have a counselling role, supporting line ministries in formulating projects to secure alignment across government and identify potential collaborations. There are five categories of principles according to the nature of each project:

1. **Service delivery:** Under this category are all initiatives that affect the delivery of services. The principles prioritise solutions that use open APIs and use innovative and design thinking. These approaches also encourage collaboration with users and the use of prototypes to scale-up successful results.
2. **Information and data services**: This includes initiatives that have a significant data component or include a system that supports data management. The principles follow the Data Investment Framework prioritising initiatives that enable the use of data for decision-making, data reuse, and stewardship of data systems.
3. **Corporate**: This category covers internal government functions such as financial management information, payroll, and procurement systems. In this category, priorities are developing shared tools to support the internal management of public organisations.
4. **Digital foundations and infrastructure**: This includes digital government platforms, digital identity, and system integration, among others. The priorities in this area are projects that involve multiple agencies, key components for digital services, and solutions that use cloud-based infrastructure.
5. **Specialist**: The last category covers tailored systems that need specific requirements. These initiatives are assessed on a case-to-case basis.

Source: Own elaboration, adapted from (New Zealand Government, 2021[3]).

In terms of institutional responsibilities, there should be a clear approach to define and divide tasks between MDG and the PMO to underline the execution role of the PMO - which implements policy decisions and strategies defined by MDG. Table 6.1 presents a potential division of institutional responsibilities related to the implementation of ICT/digital projects. As discussed above, MDG has responsibilities over the strategic decision-making, while the PMO implements concrete business processes. To limit institutional overlaps, the project cycle could be concentrated as much as possible into the PMO, including the initiation approval of digital projects according to the DTB and the redesigned process for this purpose.

Table 6.1. Institutional responsibilities related to the implementation of digital projects

MDG / Steering Committee	PMO
Policy setting (Strategy) • Prioritisation • Funding • Digital standards • KPIs • Capacity building	Project management • Approval • Implementation oversight • Follow up • Co-ordination • Identification of gaps • Monitoring and reporting

Based on the analysis outlined in this report, there are several concrete areas in which MDG can work to ensure that the PMO can be operational starting from its very inception.

- First, MDG needs to ensure that **the approval and funding mechanisms** are coherent, aligned and streamlined. At the implementation stage, the PMO should be able to access a streamlined and coherent process that does not vary depending on the funding source and that provides clear information to approve, prioritise and select funding sources for ICT/digital projects.
- Second, MDG needs to establish **a clear criteria for prioritisation of digital projects** in order to guide the decisions and management over the portfolio of digital transformation projects. At the highest level, this prioritisation exercise could follow the strategic priorities established in the DTB, i.e. identifying those digital projects that are critical and transformative for the digitalisation of the Greek government. The prioritisation exercise could also set who will be responsible for the operational delivery for each project i.e., choice based on pre-defined criteria to identify whether the implementation and execution would fall under the remit of the PMO, Information Society S.A. or line ministries. High priority projects should be followed closely by the PMO, while other projects could be tracked on the basis of KPIs.
- Third, MDG could define digital standards for implementing digital transformation projects (See Box 6.1). These standards could be aligned based on a thematic classification of projects (e.g. projects related to service design and delivery).
- Fourth, the effectiveness of the PMO also depends on the institutional and individual capacities of the unit. A successful implementation requires a multidisciplinary team, ensuring that the PMO has digital, public procurement, and public sector project management experts. The pivotal role of the PMO in the development of digital projects calls for excellence in these strategic functions. Achieving this goal requires developing an enabling environment within the team, strengthening **digital skills** in all roles (see competences in the next section). These efforts could consider reviewing recruitment policies to foster talent attraction and ensure retention and promotion in the medium and long term. Similarly, MDG could promote the constitution of diverse and multidisciplinary teams for the PMO functions. This approach allows a better understanding of the problems and favours user-driven approaches.
- Fifth, MDG is recommended to set up a list of **KPIs** to track progress across the entire project cycle, including the performance of the public procurement process. The PMO will collect data on these KPIs and regularly report to MDG, the Steering Committee and the Execution Network. KPIs could also track the quality of the procurement execution through a dedicated 'Procurement Quality Checklist'. This would allow MDG to collect specific data about the procurement process, and its execution.
- Finally, along with the responsibility of setting up the PMO, MDG could also promote **capacity building**, notably to ensure the use of more advanced procurement practices suitable to digital projects, as discussed earlier in this report. Through continuous monitoring of KPIs, the PMO is well-positioned to identify specific bottlenecks in capacity and will report this information to MDG. Based on the information collected by PMO from the various project owners, MDG will be able to address specific capacity gaps and devise capacity-building strategies. Data from the 'Procurement Quality Checklist' for instance, would give insights into specific areas that need capacity-building (e.g. use of MEAT criteria, agile procurement practices, innovation procurement, etc.)

Required competencies to drive transformation

In line with the fourth area of action for the PMO in the previous section, a correct implementation of this office would require embracing a multidisciplinary approach to foster competencies linked to developing and managing ICT/digital projects. In order to equip public sector institutions to co-lead the implementation

of the DTB and ICT/digital projects, these competencies should also be fostered in all the relevant units of line ministries, ensuring a coherent implementation regardless of the institution executing the project. This list of competencies is not an exhaustive review of the skills required to streamline ICT/digital project development but rather to guide the MDG in defining those necessary skillsets to move towards greater digital maturity:

- **Digital and data**: To ensure the success of a coherent digital transformation, Greece must ensure the development of digital and data skills across the public sector. Successful Digital skills reflected in a shared vision of digital tools and data presented opportunities. In line with the European digital competencies framework (European Commission, 2016[4]). Greece should strengthen information and data literacy, communication, and collaboration through digital and data capacitiesBy promoting cross-government collaboration, Greece can leverage support and knowledge from digital and data champions within public administration, including regulatory, tax and customs authorities fostering data re-use. Likewise, Greece should encourage digital safety awareness, including personal data and privacy concerns; and promote problem-solving skills to help leverage digital technologies and data to transform processes and products in the public sector.
- **Strategic planning**: ICT/digital project management in Greece requires enhancing planning capacities, including a thorough understanding of methodologies to measure value, assess risks and align efforts between different policy objectives, including budgeting, procurement and digital. These functions and in-depth understanding of public administration procedures, including the project approval process.
- **Service design**: Greece must develop skills to identify and understand users' needs in digital services and products to achieve a sustainable transformation based on user-driven solutions. Promoting user understanding in the public sector workforce implies developing methodologies and capabilities to understand internal processes, not as isolated phenomena, but as whole problems, which must be addressed end-to-end. Specific capacities in service design, interaction design, content design, and user research can allow the Greek public sector to leverage user experience to drive transformation and improve the end-to-end experience for beneficiaries.
- **Finance and public budgeting**: To strengthen ICT/digital project formulation, Greece should foster financial competencies of those professionals undertaking ICT/digital project preparation and formulation to ensure that projects correctly reflect the overall costs and benefits, following the existing budgetary frameworks and the different funding options available at a national and European level. Strengthening these skills in digital project formulation can bring efficiency gains by aligning objectives and bridging the gap between budgeting and digital professionals.
- **Legal/regulatory**: teams involved in project development must also include legal and regulatory competencies. These skills can help the government reduce transaction costs in project formulation by anticipating legal restrictions and barriers e.g. by reducing delays related to contract management. Complementing project development teams with legal and regulatory competences will also strengthen the capacity to leverage policy resources at national and European level.
- **Procurement**: To streamline ICT/digital projects, Greece must embark on a strategic approach toward procurement skills. Based on the evidence gathered, procurement skills development should focus on building market engagement capacities and fostering the use of quality criteria and functional specifications.
- **Agile Project Management**: Agile project management involves developing specific competencies to improve project delivery based on iteration and continuous learning. Similarly, it should promote delivery-driven experimentation reflected in minimum viable product approaches. Several specific methodologies exist to standardise agile management processes and facilitate adoption in organisations, including the public sector. The most commonly used methodologies include scrum, kanban, and lean.

- **Assurance**: The process of digital project management in Greece requires improved monitoring and evaluation capabilities, covering the design and delivery of ICT/digital projects. In this line, Greece should develop assurance capabilities to control delivery quality and report gaps concerning standards. These functions should consider mastery of measurement and reporting methodologies, knowledge on testing, and quality control systems in the scope of monitoring and evaluation system framework. Successful implementation also requires that the civil servants responsible for these functions understand the strategic objectives of the monitoring system.

PMO Process description

Step 1: Approval

The PMO's role in digital project management starts at the approval stage. As described in Chapter 2, the project approval process seeks to ensure the alignment of each project with the strategy and key priorities set for digital government in the country. The PMO will be responsible for approving all digital projects following the redesigned mechanism.

Step 2: Defining ownership

Once the projects are approved, the PMO should categorise the projects according to their complexity and strategic relevance for digital government. Projects defined as strategic should be managed directly by the office, while line ministries would manage sectoral projects with the advice of the PMO and the support of digital government guidelines and standards.

The classification criteria is fundamental as projects will follow different paths depending on their categorisation: strategical or sectoral. The definition of these criteria is part of the policy-setting faculties of MDG. To operationalise this categorisation, MDG could develop written guidelines for all stakeholders to understand and follow the criteria and procedures. The criteria could include, among others, the following considerations:

1. **National digital strategy priorities:** the PMO should directly manage those projects defined as priorities in the national digital strategy, bridging the long-term vision with the delivery of specific and concrete outcomes (e.g. digital talent and skills programmes).
2. **Key shared enablers**: some digital projects can systematically transform the functioning of the public sector, enabling the development of new capabilities. These priorities should include the development of building blocks for service design and delivery (e.g. notification and payment systems) and critical digital infrastructure (e.g. digital identity, data governance and sharing, open government data).
3. **Investment volume:** The investment volume required in a given project can transform into a strategic project due to its visibility and relevance within the portfolio. The PMO can manage projects above a certain budget threshold.
4. **Number of institutions involved:** When a given project involves more than one institution, co-ordination challenges and the need to avoid agency problems may suggest the need for centralised management through the PMO.

While the PMO will directly manage a sub-set of digital projects by the Greek government, it will have a responsibility to assist, monitor and report on all projects to ensure the overall advancement of project implementation.

Step 3: Funding and prioritisation

After the strategic relevance classification, the PMO should allocate funding for each initiative. For this, the office will follow the policy definitions set by MDG. As mentioned in Chapter 3 (Coherent funding management), an effective implementation should ensure that investment decisions are independent of the funding sources. At this stage, the role of the PMO should be fully operational, following the guidelines issued by MDG. Similarly, the PMO is responsible for prioritising projects according to the policies established by the Ministry.

Stage 4: Implementation

With the classification between strategic and sectoral projects defined, and the funding secured, all projects will follow two different streams (see Table 6.2):

- **Strategic Projects (Stream A):** The projects defined as strategic will be managed directly by the PMO (Stream A). In this case, the PMO co-ordinates directly with the beneficiaries, Information Society S.A. and MDG. The PMO should secure user engagement at all stages and safeguard the alignment with the digital standards issued by MDG. Concerning the procurement process, the PMO could provide specific expertise to raise the level of procurement execution. For this purpose, it could use simple tools such as a checklist for quality procurement of digital projects (see Box 6.2).
- **Sectoral Projects (Stream B):** In the case of specific sectoral projects, the beneficiaries will be responsible for the management with close advice of the PMO (Stream B). The PMO can issue practical guidelines to advise line ministries on project management following the digital standards set by MDG and the experience gathered in practice. To enhance efficiency, the office can flag management capacity gaps in line ministries (including the procurement process) for MDG to implement capacity-building activities.

In both streams, the PMO is responsible for gathering and timely reporting on the KPIs defined by MDG. Similarly, the PMO will advise and counsel digital project management procedures, standards, public procurement process, and other relevant information to beneficiaries.

In its inception phase, the PMO could work hand-in-hand with a pool of experts who can support advanced public procurement practices suitable for digital projects, i.e. greater use of early and advanced market engagement, quality criteria, and agile methodologies. These experts would be able to provide ad hoc support to both strategic and sectoral projects. The reporting from the PMO on bottlenecks and gaps would allow MDG to inform the Steering Committee and the Execution Network, assess specific needs and take action further action on capacity building over the medium-term, such as the set-up of a more permanent structure to support capacity building on implementation and procurement of digital projects (e.g. competence centre).

Stage 5: Reporting to MDG

To complete the project cycle, PMO is responsible for reporting back to MDG on the implementation status of digital projects. This milestone allows the Ministry to have a complete overview of project implementation throughout their lifecycle and take appropriate measures to address arising bottlenecks. The PMO should be responsible for reporting on the defined KPI (see Figure 6.2). MDG could benefit from adopting open approaches around the monitoring systems. Building on the recommendations mentioned above, implementing dashboards to report on the progress of the digital project portfolio can help MDG foster transparency while enhancing accountability. The use of open government data (OGD) can help MDG foster the engagement of civil society and the private sector in the oversight of digital government investments.

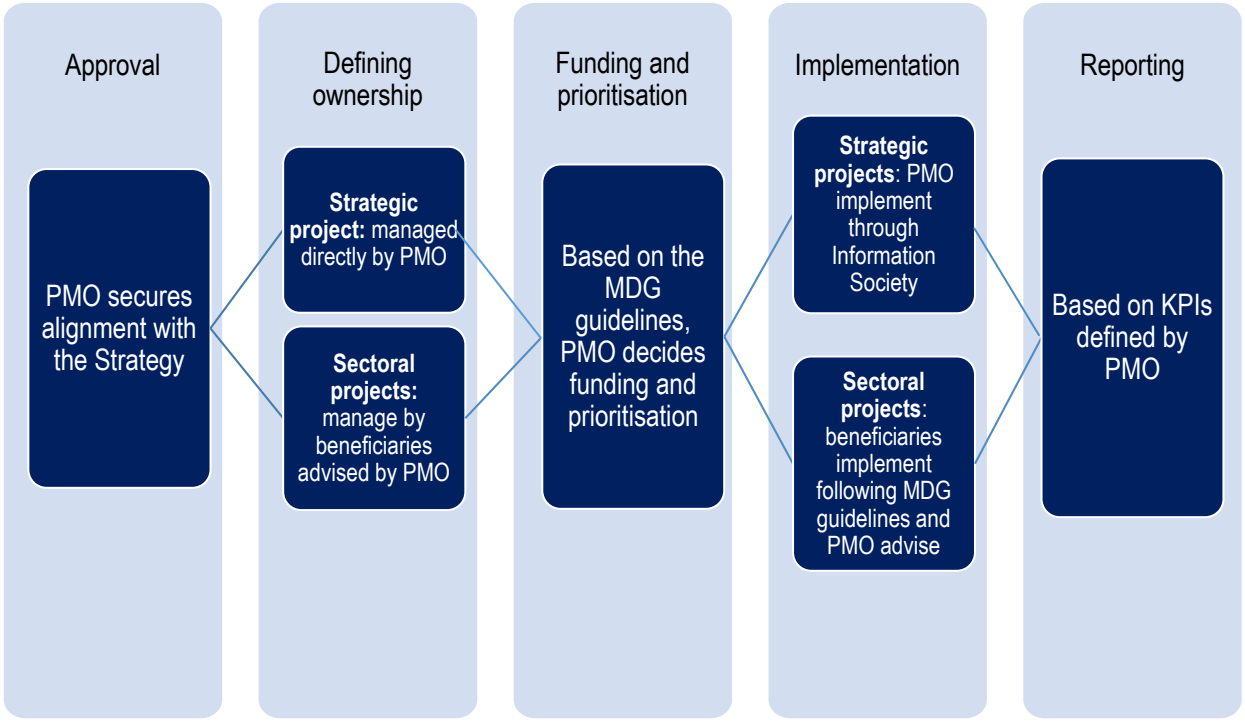
Table 6.2. PMO tasks for strategic and sectoral projects

Strategic projects – Stream A	Sectoral projects – Stream B

• Identification of flagship projects (prioritisation based on MDG criteria)
• Co-ordination with line Ministry requesting the project to define project outline
• Liaison with Information Society S.A. for the delivery and procurement process (checklist of quality digital procurement):
  ○ Securing user engagement
  ○ Market engagement practices
  ○ Advanced procurement practices
• Ad hoc support by pool of experts with focus on quality procurement
• Co-ordination with line Ministry during the implementation of the contract
	• Follow up on project with KPIs
	• Reporting on bottlenecks and gaps
	• Ad hoc support:
	  ○ During the design process
	  ○ During the procurement process
	  ○ During contract implementation

All projects : ○ KPIs and reporting	

Figure 6.2. Project management process description



Source: Own elaboration.

Suggested key performance indicators

When adopting key performance indicators, MDG could consider the feasibility of collecting quality data in a timely manner. The adoption of data governance frameworks can help MDG strengthen the monitoring system by ensuring mechanisms for collaboration between institutions and developing the necessary infrastructure to ensure reliable and quality data. In this regard, Greece could encourage the re-use of data

in monitoring mechanisms to assess digital project development performance and foster open government data publication. Suggested KPIs on digital government and public procurement are presented in Table 6.2 and Table 6.3 respectively.

Table 6.3. Suggested KPIs on digital government

Indicators	Description
1. Project implementation	
• Approval process	Ratio of the time (in days) between a project is presented and finally approved
• Funding allocation	Ratio of the time (in days) in which resources are allocated and transferred to the relevant parties
• Implementation period	Ratio of the effective implementation time (in days) and the expected implementation time (in days)
• End-user involvement	Number of end-users involved in the design and implementation process
• Use of common digital tools	Identification of the digital enablers and common building blocks used by the initiative (For example: digital identity, interoperability frameworks)
2. Government domain	Policy area affected by the initiative (e.g. education, health, taxes, etc.)
3. Number of institutional beneficiaries	Number of institutions benefiting from the initiative.
4. Strategic goals	Identification of the strategic objective (defined in the National Digital Strategy) meet by the investment project.
5. Total budget	Total investment in national currency
6. Expected benefit	Benefit estimation including number of potential users, efficiency gains in terms of money and time savings.
7. Digital uptake	Ratio between the number of user in period t and (t-1).
8. User satisfaction	Set of metrics reflecting the level of satisfaction in users. MDG could develop the guidelines on the different methodologies to apply based on the project, securing data comparability (for example, data infrastructure versus service delivery platforms). User satisfaction should include the following dimensions: • Opportunity: measuring the timeliness of service delivery. • Clarity: measuring the awareness of users in terms of the required steps to complete. • Effectiveness: measuring the perception of the solution' effectiveness regarding the specific need. Fairness: measuring the perception of fair and respectful treatment in service
9. Service continuity	Ratio of the number of hours of discontinued services due to technical difficulties in a given in period t and (t-1). Number of errors (including error that not necessarily lead to service discontinuity)

Source: Own elaboration.

Suggested KPIs on procurement process

Based on the analysis, a key element to track is the length of the procurement process. MDG is recommended to track each phase of the process in a very granular manner to identify the key bottlenecks and take appropriate action.

Another key area to assess performance of the procurement process is related to the overall quality execution of procurement, and in particular the use of advanced practices that are suitable for ICT and digital projects. These indicators could be summarised in a "checklist for quality procurement in digital projects" (see Box 6.2). It is important to convey the message to that the checklist is meant as a support tool for procurement practitioners, and not as a punitive tool. It should allow practitioners to request further support or capacity building in specific areas that they currently may not address, or that they wish to develop further. The checklist could be used for strategic projects managed by PMO in the initial stage, and its use could be gradually expanded to all projects once line ministries enhance their own capacity to procure digital projects.

Table 6.4. Suggested KPIs on procurement process

Indicators	Description
1. Days spent for each process of public procurement	
From approval to call for tender	Approval date of tender, Date of call for tender
From call for tender to the bid submission deadline	Date of call for tender, Bid submission deadline
Difference between the original and actual bid submission deadline	Original submission deadline, Actual submission deadline *Were there any challenges from bidders?
From bid submission deadline to submission of tender evaluation report	Bid submission deadline, Submission date of tender evaluation report
From tender evaluation report to issuance of contract award	Submission date of tender evaluation report, date of contract award notice
From issuance of contract award to signing of contracts	Issuance date of contract award, Signing date of contracts *Were there any challenges from bidders?
From signing of contracts to approval of *ex post* control (if applicable)	Signing date of contracts, Approval date of *ex post* control
From approval of *ex post* control to completion of contracts (if applicable)	Approval date of *ex post* control, completion date of contracts
2. Period spent on procedures of amendments to contracts	Request date of amendments, Approval date of amendments
3. Period spent on payment procedures (from the submission of payment request to the actual payment)	Submission date of payment request, payment date
4. Difference between the estimated value of contract (budget) and actual contract amount	Estimated value of contract, Actual contract amount
5. Share of SMEs that submitted bids / that were awarded contracts	Number of SMEs that submitted bids / that were awarded contracts, total number of procurement procedures and values
6. Share of foreign suppliers that submitted bids / that were awarded contracts	Number of foreign bidders that submitted bids / that were awarded contracts, total number of procurement procedures and values
7. Share of single bid	Number of bids (single bid) submitted per tender
8. Share of the use of public procurement for innovation (PPI)	Number and values of PPI
9. Share of MEAT criteria	Number and values of the use of lowest-price criteria and MEAT criteria
10. Share of irregularities and financial correction	Causes, amounts
11. Share of cancelled bids	Number of cancelled bids, total number of procurement procedures and values
12. Difference between the planned (physical and financial) progress and the actual progress	Planned and actual progress (financial and physical)
13. Use of e-procurement system	Number and values of the use of e-procurement system
14. Use of framework agreements	Number and values of the use of framework agreements
15. Use of DPS	Number and values of the use of DPS

Source: Adapted from (OECD, 2021[5]).

Box 6.2. Checklist for quality procurement of digital projects

For each procurement procedure, PMO could aim at collecting several detailed information about the quality execution of the procurement process, taking into account those dimensions that are most relevant for procurement in the ICT and digital context.

The goal should not be for contracting authorities to respond positively to all questions, rather to raise awareness about tools that are conducive to success in these kinds of procurement processes, as well as to seek for greater support in areas that represent bottlenecks.

Key questions could address these dimensions:

- Have you conducted market engagement? If so, what kind of market engagement did you conduct?
- Have you conducted a needs analysis?
- Has the project been co-designed with users?
- Are final user involved in the definition of your needs and the business case?
- Have you made information on your procurement freely available and easy to access?
- Have you agreed on Intellectual Property Strategy?
- Are you using functional specifications?
- Are you using MEAT criteria?
- Are you using agile methodologies?
- Do you make use of open standards?
- Are you using a modular contracting approach?
- If applicable, are you using a dynamic purchasing system?
- If applicable, are you using public procurement of innovation?
- Did you incorporate “no vendor lock-in” clause in your contract?
- Are you tracking the performance of your suppliers?
- Are you assessing and actively managing risks throughout the whole public procurement cycle?

Good practices for introducing reforms

Successfully introducing organisational reforms in the public sector is a complex task, not only related to the complexities of improving a given status-quo, but also because the success of reforms requires the buy-in of key stakeholders involved. As such, it is important to pay careful attention not only to the content of a given reform, but also to its implementation process.

Several high level principles and good practices can serve as guide for MDG in the process of creating the PMO. In particular, the following apply:

- **Create a vision and share it broadly**: An important starting point is to devise a shared vision for the changes that will be brought about by the reform, i.e. the introduction of the PMO. This can be achieved through wide consultation processes and communication. The goals of the organisational reform should be clear to internal and external stakeholders of MDG.
- **Ensure buy-in through broad consultation**: Concerned stakeholders should have an opportunity to be consulted to secure their buy-in. This could entail the set-up of an inter-institutional working group or advisory group, to bring on board concerned line ministries. Existing structures, such as the Digital Transformation Steering Committee, could be used for consultation purposes. Attention

should be paid also to internal consultation and buy-in, as the PMO would require important co-operation with stakeholders within MDG, too.

- **Define an operational plan for implementation including milestones**: Typically, the operational plan would entail setting up a dedicated working group or task force for creating the PMO and making it operational. In particular, this entails the definition of critical policies and strategies needed for the PMO to run (as discussed above). The resources needed to set up the PMO would need to be identified at this stage, ranging from human resources and skills, legal and governance aspects, as well as technology infrastructure. To ensure smooth operational set-up it is recommended to set up a project management plan with dedicated milestones.
- **Raise awareness and communicate upcoming changes**: Throughout the set-up of the PMO it is important to raise awareness and communicate on a regular basis to prepare concerned stakeholders about upcoming changes. Such change management activities increase trust in the process and thereby increase buy-in.

Introducing reform: next steps to set up the PMO

To successfully implement a PMO model, the MDG could explore establishing a dedicated task force to plan and accompany the implementation of the PMO. A task force would be responsible for implementing this new governance structure, and its main task is streamlining internal processes transformation and the adoption of new practices required to secure agility in the Greek public sector. This task force should be accountable to the leadership of the MDG and should follow clear goals, milestones, and deadlines.

This task force could be created under the following principles:

- **Cross-sectoral:** representing the different stakeholders involved in the design and implementation of ICT/digital solutions, ideally including actors within and outside the MDG.
- **Multidisciplinary**: reflecting the diverse roles involved in the design and implementation of ICT/digital solutions in the public sector, including financial, digital, legal, and procurement expertise.
- **Accountable:** establishing an implementation roadmap that identifies clear responsibilities and deadlines, building ownership over the different tasks.

Due to a natural resistance to change, a transformational process of this magnitude may generate difficulties with the various actors involved. To address these difficulties, this task force must seek endorsement by higher bodies will validate the task force, legitimising its role to stakeholders. Thus, it could be validated by the institutional co-ordination bodies, such as the Steering Committee and the Execution Network, or similar institutions that provide legitimacy to stakeholders. In addition, it is essential to ensure a balanced representation of all relevant actors involved in the development of ICT/digital projects so that the implementation of the transformations reflects the visions of the different parties involved. Based on the evidence collected for this report, the dedicated task force should include the MDG, comprising the Directorate of Digital Strategy, the Directorate of Sectoral Public Sector Projects, and the Department of Procurement and Logistics, as well as Information Society S.A.

As part of its role, the task force could work towards securing a shared vision on the role of the PMO and share it broadly across the public sector, leveraging comprehensive consultation processes and communicating it effectively. To do so, it could organise regular consultation processes with key stakeholders that are impacted by the set-up of the PMO, and involve them closely during the set-up process. Namely, it could involve representatives of and the Hellenic Single Public Procurement Authority (HSPPA), given their role and expertise in public procurement and project development. Finally, the task force could secure a representative sample of beneficiaries of digital transformation projects, including different institutions from the central and sub-national governments. This sample would ensure the representation of all beneficiaries, including large demanders of ICT/digital projects and Greek public

sector institutions. By bringing together the diverse stakeholders involved in digital/ICT projects, the MDG can incentivise alignment while promoting ownership of the novel project management governance.

In operational terms, the task force could focus on both short- and medium-term objectives that would allow to deliver the implementation of the PMO:

- **Short-term objectives:** Determining the resources and capabilities required to set up the PMO successfully, ranging from human resources and skills, legal and governance aspects, and technology infrastructure.
- **Medium-term objectives:** Develop a comprehensive review of the ICT/Digital project approval, prioritisation, and management system, i.e. set-up the business processes that allow the PMO to work. In parallel, the task force could consider devising a capacity-building strategy for addressing major skills gap related to procurement in the context of ICT/digital projects.

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Annex A. DPS implementation

While the efficiency instrument DPS has been part of the EU public procurement Directives since 2004, its use is still uneven among member states and its uptake has been much slower than originally anticipated. In some countries, there is a relatively widespread use of this instrument, while other countries have little or no experience with it. From a legal standpoint, DPS can also be used by an individual contracting authority for its own common purchases. Nevertheless, the benefits of the instrument accrue when there is substantial recurrence of purchases. As such, DPS is well suited to aggregating the demand of several administrations, typically through the work of a central purchasing body (CPB), or a similar entity that carries these functions.

This section explores concrete practices of DPS implementation by five entities in four EU countries (Austria, Denmark, Ireland, and Italy) and Scotland,[1] analysing how DPS have been set up, and what kind of support is made available to users. The main benefits and key success factors of implementing a DPS are also explored.

Table A A.1. Use of DPS in selected organisations

	Austria	Denmark	Ireland	Italy	United Kingdom (Scotland)
Institution	BBG	SKI	OGP	Consip	Collaborative ICT team
Number of DPS in use	1	5	9	23	4
Purchasing categories related to ICT	N/A	Standard software Digital Teaching Aids Audio/Visio Solutions	Wide Area Network (WAN) Connectivity	ICT products and services with 14 sub-categories	Telephony and Communication Services Network Advice Internet of Things Digital and Technology Services
Available templates	Structured excel templates and contract templates (product specific)	Digital platform to support the use of DPS	Modify existing FWA documentation, but plan to create specific DPS templates	Documentation kit including: Model of tender specifications and template for technical specifications for specific contract	Template Terms and Conditions of Contract
Further information and links	DPS on food (BBG)	DPS (SKI)	DPS Guidance Schedule of frameworks and contracts (OGP)	DPS (Consip)	Scottish frameworks and contracts (gov.scot)

Source: OECD Brief Survey on DPS good practices (2022).

The use of DPS has been steadily increasing for some of the organisations analysed, notably the Office of Government Procurement (OGP) in Ireland, the Danish CPB *Staten og Kommunernes Indkøbsservice* (SKI), the Italian CPB Consip, and the Scottish Collaborative ICT team. DPS in Scotland are mostly used for technology-related purchases (Table A A.1 above) and are further planning to expand the portfolio to include software. The Austrian CPB *Bundesbeschaffung GmbH* (BBG) has currently one active DPS in the food purchasing category, while a second DPS related to vending solutions for food and consumer goods is in tendering phase. Out of the organisations surveyed, Consip has the longest experience of using DPS, dating back to 2011. Its DPS cover various purchasing categories such as health, food, services (security), among others. Consip has developed one DPS related to ICT, which contains 14 sub-categories of products[2] and has attracted 2.974 suppliers. It has a value of EUR 1.5 billion and runs for 48 months. The current DPS was a re-launch of a first version set up in 2013.

Organisational set-up

The set-up of the DPS did not require particular institutional changes in the organisations analysed. Rather, the management of DPS is integrated in regular activities as part of strategic and operational procurement. In Scotland, the DPS are managed within specific category teams as part of their overall portfolio of collaborative contracts and frameworks. Some organisations such as SKI bring in specific skills and expertise for the DPS that work horizontally in the organisation.

In terms of resources necessary, stakeholders reported that the main resource impact is in establishing the DPS. This is primarily due to the limited timescale allowed under the procurement regulations for assessing and on-boarding suppliers (10 working days). Furthermore, once a DPS is established, there is a resource requirement to process applications. Administrative effort is also required once a call-off is awarded. Overall, organisations use the same resources (FTEs) as for framework agreements. Over the period 2017-2021, Consip has allocated on average eight FTEs/year to all DPS.

Templates and support

An important aspect of launching a DPS is ensuring support to both contracting authorities and suppliers that will be using it. As such, the organisations surveyed have invested in guidance, templates and similar support tools. For instance, BBG supports contracting authorities as well as economic operators with training material, handbooks, click-instructions as well as with direct personal contact / consulting.

As per EU requirements, tendering activity under DPS is required to be conducted wholly electronically. In Scotland, the on-boarding and tendering process is managed using the electronic tendering platform PCS-Tender. Furthermore, each of the DPS has a buyer guide which contains practical advice and guidance on the operation of the DPS. Template Terms and Conditions of Contract are also made available to buying organisations.

Similarly, SKI has developed a digital platform to support the use of DPS. In addition, it provides guidance to suppliers on how to apply for the DPS. In Italy, Consip also provides ready-made documentation for contracting authorities, such as model documents and templates for technical specifications for a specific contract.

Benefits

DPS provides easy and ready access to public sector procurement opportunities for new suppliers able to offer innovative solutions in the fast-paced technology services sector. Efficiency and simplicity characterise for the use of the instrument, as many steps of the process are standardised. For instance, the DPS platform can be designed in a way to automatically check technical and financial offers, and

simplify analysis of administrative documentation through an electronic platform. As a result, the DPS allows very fast timeframes, especially with regard to the phases of preparation of tender documentation and stipulation.

Nevertheless, the key benefits for using a DPS are related to enlarging the market and increasing competition. In fact, in several instances newly launched DPS have been able to attract a significant and initially overwhelming level of interest in participation, including from new suppliers who had not previously bid for public sector contracts. As a result, the level of competition available under the DPS is typically increased compared to a traditional framework agreement. However, the intensity of the competition will be heavily influenced by the attractiveness of a particular call-off.

With a significantly higher number of suppliers participating to a DPS versus a framework agreement, several organisations were concerned about the risk in a potential increase in the volume of responses received for any given opportunity. This was monitored closely and to date, DPS users did not identify this as an issue, as suppliers self-select to tender only for opportunities relevant to their area of expertise.

From a supplier perspective, DPS also is considered beneficial. It provides the flexibility for suppliers to join and leave (or not compete) the DPS at any time. Potential suppliers are not locked out of the market, as they would be in a traditional framework agreement. If suppliers are not at first successful in applying to the DPS, they are able to amend their application and reapply at any time.

DPS reduces the risk and cost of tendering associated with securing a place on traditional frameworks. As a result of the simplified approach to joining and participating in DPS arrangements this has increased opportunities for Small and Medium Enterprises (SME) in particular. For example of the 440 suppliers participating in the Scottish DPS arrangements 75% are SMEs.

Key success factors

For DPS to be accepted and become standard practice, DPS owners reported that a significant amount of market and stakeholder engagement should be undertaken prior to the creation of the DPS to make buyers and potential suppliers are aware of the benefits, practicalities and challenges of operating and participating in a DPS.

Furthermore, it is important to introduce an efficient and well-structured process (“user-friendly tool”) for the call-offs and awards within the DPS. Efficiency gains should be available for both contracting authorities and economic operators. Communication and training for suppliers and contracting authorities is key. Depending on the level of maturity of the market regarding certain industries or product groups, the engagement and communication needs may vary. Communication efforts also includes promotion of the DPS throughout its lifetime to attract additional suppliers, for instance by publishing information on the specific calls within the DPS so the market sees the potential and attractiveness.

Finally, it is also important to consider the application phase and qualification criteria for a DPS carefully. Namely, it is often expected that economic operators that are selected to participate in DPS maintain a minimum standard of qualification, particularly, if the DPS is launched by a CPB. However, given that the DPS requires the assessment of new applicants within 10 working days, an adjustment of qualification criteria is most likely needed compared to traditional framework agreements. The DPS owner thus needs to strike a balance between setting requirements that can be verified in a short amount of time, and reflect certain standards of qualification.

Notes

[1] In spite of not being part of the EU, the Scottish procurement framework is still fully aligned with the EU 2014 directives, making it a relevant example for this section.

[2] The product enterprise & specialised systems; servers; storage area network equipment; network equipment; storage; integrated systems and converged infrastructures; printing and copying equipment; pc and mobile devices; ICT infrastructures; software; technical assistance and maintenance services; cloud services; video surveillance, access control and intrusion detection; information security.

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