Organisation for Economic Co-operation and Development

GOV/SBO(2024)3

Unclassified

English text only

28 February 2024

PUBLIC GOVERNANCE DIRECTORATE
COMMITTEE OF SENIOR BUDGET OFFICIALS

Cancels & replaces the same document of 27 February 2024

Financial Management Information Systems in OECD Countries

24th Annual Meeting of the Working Party on Financial Management and Reporting
7-8 March 2024

This paper takes stock of Financial Management Information Systems (FMIS) practices in OECD countries based on the results of the 2022 OECD Survey on Financial Management and Reporting.

For further information, please contact:
Delphine MORETTI (delphine.moretti@oecd.org)

JT03538241

Table of contents

FIGURES

TABLES

1. Introduction[1]

1. A Financial Management Information System (FMIS) is the Information Technology (IT) system whose components or modules enable a government to implement its financial management functions. FMIS have a long history in government. Going back to the 1960s and 70s, financial transaction processing was amongst the first government functions to be automated. The first generation of FMISs used centralized mainframe computers and databases. From that period, successive generations of information technology (IT) solutions, including commercial enterprise resource planning (ERP) packages, have allowed the integration of wider financial management and business functions and better responsiveness to users' needs.

2. FMIS's design and implementation forms an integral part of any budget reform. On the one hand, upgrades or development of new systems are needed to support implementation of new budget procedures and processes. On the other hand, the planning for future budget reforms should be guided by a comprehensive understanding of the potential that advancements in IT offer.

3. There is a vast literature on the benefits of FMISs for governments' public financial management. These systems play a pivotal role in streamlining processes, bolstering the control mechanisms for governmental financial transactions, and promoting heightened fiscal transparency. Additionally, in today's data-driven era, FMISs offer a structured platform for gathering, processing, and analysing real-time, comprehensive and reliable financial and non-financial data, which contribute further to the three benefits outlined above.

4. Approaches to generating these benefits vary across countries. Governments are tasked with making crucial strategic choices regarding the design and implementation of their FMISs, including:

- Whether to allocate responsibilities for developing a central FMIS for the whole of government to the ministry of finance, or devolving responsibility for FMIS to individual entities.
- How far to integrate financial management functions on a single platform and when to rely on interfaces and data sharing solutions.
- What level of ownership they expect on the system – e.g., whether to use an ERP or a bespoke solution, whether to retain control of the hardware and software or to move to cloud computing.

5. Given the dynamic nature of FMISs, which are in constant flux due to technological progress and shifting governmental requirements, it is imperative for governments to keep abreast of the latest functionalities and trends. A deep comprehension of these developments allows governments to make well-informed choices about future enhancements, drawing on the experiences of their peers. The aim of this report is to furnish such insights, drawing upon the findings from the 2022 OECD Survey on Financial Management and Reporting (the Survey)[2].

[1] This paper was authored by a team comprising Delphine Moretti, Senior Policy Analyst, Anne Keller, Policy Analyst, and Ivor Beazley, formerly Senior Policy Analyst in the Public Management and Budgeting division of the OECD Public Governance Directorate.

[2] The 2022 OECD Survey on Financial Management and Reporting was distributed to all 38 OECD countries, with 34 responses received. Respondents were predominantly senior officials within

6. Against this background, the report is structured as follows:

- Section 2 discusses current practices in OECD countries, including the degree of system centralisation, the integration of financial management functions, as well as technological choices.
- Section 3 discusses factors for future FMIS developments, including the need for FMIS upgrades and opportunities seized by some OECD countries with using recent technological advancements.
- Section 4 concludes with on overview of key findings of the Survey.

2. Current practices in OECD countries

7. Literature generally characterises FMIS types based on two main criteria: (i) system centralisation and (ii) integration of financial management functions. These criteria can be briefly described as follows:

- **System centralisation** pertains to the extent and manner in which various government entities can develop, access and interact with the FMIS. This can be structured in one of two primary ways: either through a centralized FMIS, typically managed by the ministry of finance or a similar central agency, granting access to a select number of other government entities; or alternatively, through a decentralized approach, where the FMIS is managed locally at the individual entity level. This is further discussed in section 2.1.
- **Integration of financial management information functions** refers to the extent and manner to which financial management functions are managed within a single IT platform and shared central database(s), as opposed to operating through separate IT systems that require interfaces and interoperability layers for communication. This is further discussed in section 2.2.

2.1. System centralisation

8. Concerning system centralisation, the Survey asked respondents to classify their FMIS under one of the three following models:

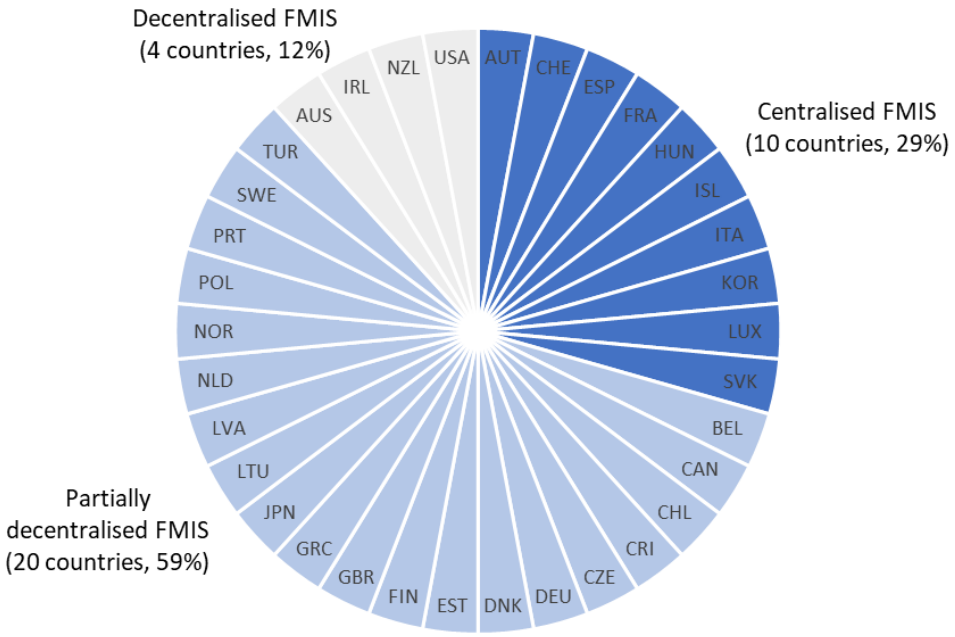
- The **Centralised FMIS model**, in which entities within government are granted access to an FMIS operated by the Ministry of Finance or another central agency, applying common standards, definitions and functionalities.
- The **Partially decentralised FMIS (or "partially centralised FMIS") model**, in which i) certain entities within government are granted access to a centralised FMIS while others are operating a separate FMIS; or ii) only some core financial management functions are managed in a centralised FMIS, while others are managed by entities within government in own IT systems.
- The **Decentralised FMIS model**, in which entities within government are allowed to develop and operate their own FMIS systems, possibly subject to some central government requirements and standards.

accounting and finance departments. Responses draw upon self-reporting from governments, representing the country's own assessment of current practices and procedures in central/federal government as of 30 September 2022.

9. The Survey results (Figure 1) show that:

- Most of the 34 respondents consider that they have a partially decentralised FMIS, with varying degrees of centralised and decentralised approaches.
- Almost one third of OECD countries consider that they operate a centralised FMIS.
- A smaller group of four OECD countries use a decentralised model. In the case of Ireland, a transition from the decentralised to the centralised model is on-going, with some modules of the new FMIS already available to a number of line departments.

Figure 1. FMIS centralisation models in OECD countries, 2022

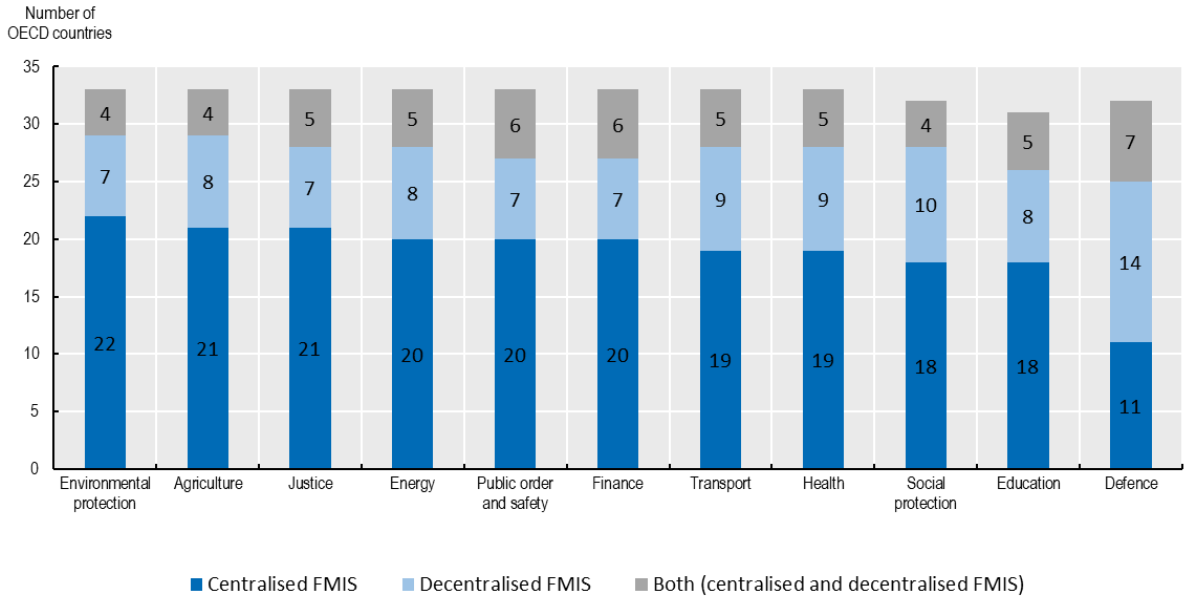


Note: FMIS centralisation classification for core Public Financial Management (PFM) functions. Ireland is in the process of transitioning from a fully decentralised model to a centralised one. Data for Colombia, Israel, Mexico and Slovenia are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q11.

10. For refining the understanding of levels of FMIS centralisation, the Survey also looked at the use of decentralised or centralised models by functions of government and types of government entities. This reveals that:

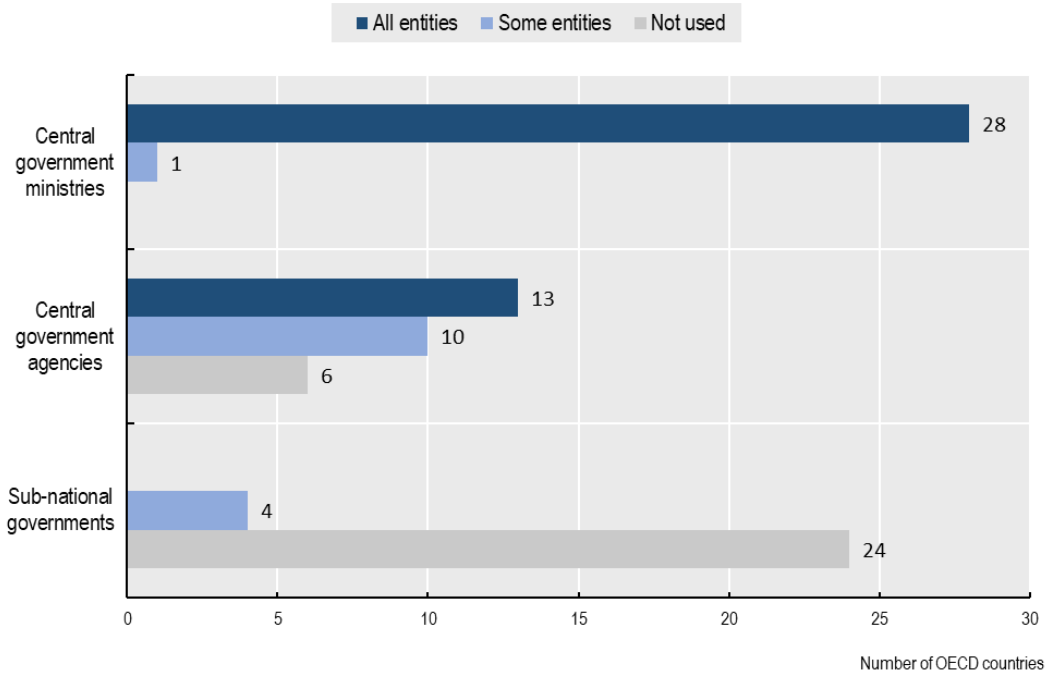
- Use of a centralised FMIS declines sharply outside of line ministries. Less than half of OECD countries are requiring all agencies to use the centralised FMIS. Only four OECD countries report that sub-national governments use the centralised FMIS, and this is also only limited to some entities (Figure 3).
- Defence stands out as the function of central government most likely to operate a decentralised IT system for financial management, likely due to national security concerns (Figure 2).

Figure 2. FMIS centralisation by function of government in OECD countries, 2022



Note: Not all functions of government are applicable to all countries. Data for Chile, Colombia, Israel, Mexico and Slovenia are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q12.

Figure 3. Use of centralised FMIS by types of government entities in OECD countries, 2022



Note: Only referring to available data for countries with a centralised or partially decentralised FMIS (29 OECD countries). Data for Chile, Colombia, Israel, Mexico and Slovenia are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q15.

11. There is no consensus on whether it is best to centralise or decentralise FMIS, and the arguments in favour of each approach are finely balanced in literature, as well as evolving over time. There is however consensus over the fact that a decentralised model requires some level of quality requirements and standards to be set at central level. The Survey results reveal that such quality requirements and standards are common across OECD countries (Table 1). Among the 24 OECD countries that use either a partially decentralised or decentralised FMIS model, reporting and data requirements, the budget classification and chart of accounts, and the basis of accounting are centrally set by at least three-quarters of countries. However, requirements in relation to data management standards are significantly less commonly defined centrally (8 countries, 33%), suggesting this is an area where further efforts will be required in the future.

Table 1. Central requirements and standards for decentralised FMISs in OECD countries, 2022

	Number of OECD countries
Centrally determined basis of accounting	21
Central budget classification	20
Centrally determined minimum financial reporting requirements	20
Central chart of accounts	18
Centrally defined data elements to be provided"	18
Minimum functional requirements	16
Common control and compliance functions	13
Technology standards to enable exchange of data between decentralised and centralised systems	12
Other standardized common data elements and definitions	8
Data management standards	8
No centrally determined requirements and standards	0

Note: Only referring to countries with a partially decentralised or decentralised FMIS (24 OECD countries). In Poland a standardized chart of accounts is mandatory for some entities (e.g., budgetary entities like line ministries). Data for Chile, Colombia, Israel, Mexico and Slovenia are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q18.

2.2. Integration of financial management functions in FMIS

12. Concerning the integration of financial management functions in the FMIS, the Survey asked respondents to classify their FMIS under one of three following categories:

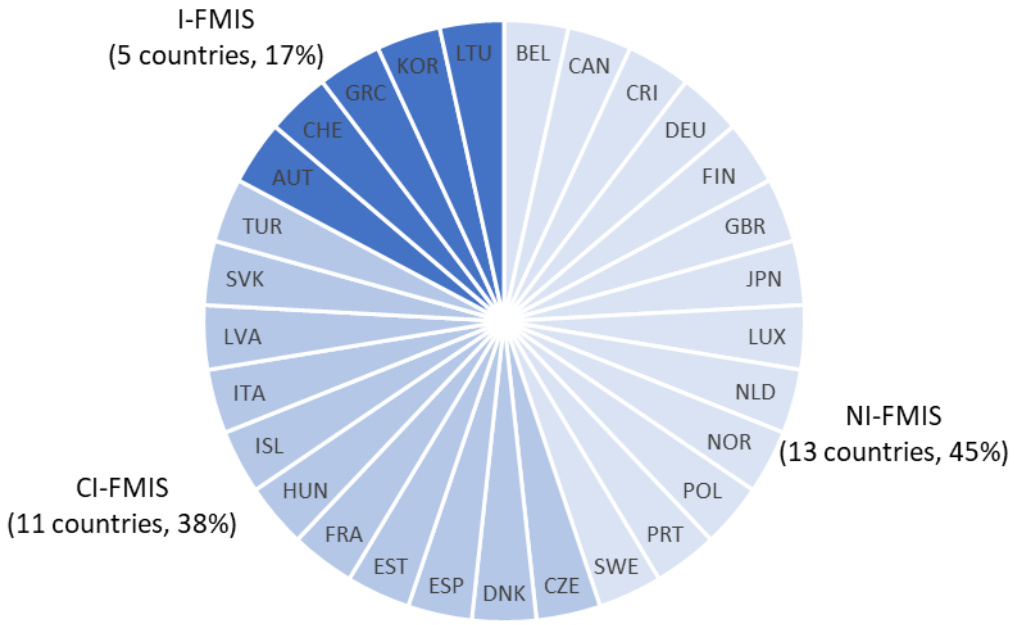
- Non-integrated FMIS, or NI-FMIS: this is the case where financial management functions are supported by multiple IT systems with data exchanges typically supported by interfaces and/or other interoperability layers.
- Core Integrated FMIS, or CI-FMIS: this is the case where so-called core financial management functions are inter-connected, supported by a common IT platform and shared central database(s), but other financial management functions (non-core) are supported by separate IT systems.[3]
- Integrated FMIS, or I-FMIS: this is the case where all or most financial management functions (core and non-core) are inter-connected and share the same IT platform and database(s).

[3] "Core" financial management functions to be inter-connected are generally defined as budget execution, accounting, treasury/cash management and reporting functions (Uña, Allen and Botton, 2019[5]).

13. For those 29 OECD countries that use a centralised or partially decentralised FMIS, the Survey results (Figure 4) show that:

- Close to half of respondents classify their IT system for financial management functions as NI-FMIS (13 OECD countries).
- A significant group of eleven OECD countries classifies their IT system under the CI-FMIS category.
- A small group of five countries classify their IT system under the I-FMIS category.

Figure 4. FMIS integration categories in OECD countries, 2022



Note: FMIS integration classification for core Public Financial Management (PFM) functions. Only showing available data for countries with a centralised or partially decentralised FMIS (29 OECD countries). In countries with a decentralised FMIS model, core functions are not managed at the central level but by individual entities. This approach prevents the integration of financial management information systems for core functions across government. Consequently, all countries with a decentralised FMIS model (Australia, Ireland, New Zealand and the Unites States) indicated to have a NI-FMIS. Data for Chile, Colombia, Israel, Mexico and Slovenia are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q19.

14. Within the large group of countries that use a NI-FMIS (13 countries), the shared and centrally managed system is used for only two financial management functions by more than half of countries. These functions are the release of budget appropriations and the production of budget reporting on cash basis.

15. For OECD countries with either a CI-or I-FMIS (16 countries), the Survey results (Table 2) reveal that the processes or financial transactions that are most often managed in the main central system are the management of budget appropriations, goods and services expenses, grants and transfers expenses, non-tax revenue as well as cash or accrual basis

reporting. The least often integrated functions are procurement and performance management. [4]

16. For the OECD countries that use specifically an I-FMIS (5 countries) the financial management functions that are in all cases integrated in the system are the release of budget appropriations, payments for goods and services, grants and transfers, management of revenue receipts, as well as the production of cash-basis budget documents and outturns. Budget preparation, commitments and cash are also often managed in the I-FMIS (Table 2).

17. The Survey's results also reveal that a few processes remain managed manually by some OECD countries. Budget tagging and performance objectives management is done manually in eight and six OECD countries respectively. Commitments and guarantees are reported manually in four and five OECD countries respectively.

18. Overall, the Survey shows that the management of financial management functions in IT systems remains significantly fragmented, with a significant group of countries qualifying their system as "non-integrated", and within other countries several financial management functions being operated in most cases outside of the main central FMIS.

Table 2. Integration of financial management functions within the main central FMIS in OECD countries, 2022

Budget management

	CI-FMIS Core Integrated FMIS (11 OECD countries)	I-FMIS Integrated FMIS (5 OECD countries)
Multi-year budget baseline	45%	40%
Annual budget preparation	45%	80%
Approved budget/appropriations	82%	100%
Non- financial performance information	27%	40%
Tagging/earmarking	45%	60%

[4] There are differences in the types of financial management functions implemented across countries. For instance, concerning budget preparation management, three countries indicate that multi-year baselines formulation is not a function applicable in their case and ten and eleven countries provide the same answer respectively for tagging of strategic budget initiatives (e.g., on climate, gender or Sustainable Development Goals) and performance objectives management.

Revenue and expenditure management

	CI-FMIS Core Integrated FMIS (11 OECD countries)	I-FMIS Integrated FMIS (5 OECD countries)
Revenue receipts (non-tax)	91%	100%
Cash management	73%	80%
Procurement	36%	80%
Commitments	64%	80%
Payments for goods and services	91%	100%
Payroll	73%	40%
Payment of social benefits	55%	60%
Grants and transfers	91%	100%
External grants management	55%	60%

Financial reports management

	CI-FMIS Core Integrated FMIS (11 OECD countries)	I-FMIS Integrated FMIS (5 OECD countries)
Cash-basis reporting		
Interim budget execution (cash)	82%	100%
Year-end budget execution (cash)	82%	100%
Accruals-basis reporting		
Annual financial statements (accrual)	73%	80%

Note: Only showing available data for countries with a centralised or partially decentralised FMIS (29 OECD countries). Data for Chile, Colombia, Israel, Mexico, Slovenia and the United States are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, selected categoriesin Q22.

2.3. Technological choices

19. The main technological choice for governments in choosing a software for the management of financial management functions is between buying a commercial off-the-shelf software (COTS), often an ERP with some level of customization to match government requirements, or to develop a bespoke system, which may be done either by a commercial software developer or by an in-house IT department.

20. Each approach choice has its advantages and disadvantages:

- An off-the-shelf product offers a measure of reliability and robust processes, but the detailed processing of transactions will often not be an exact match to government processes, requiring some level of customization. Factors that discourage the use of COTS packages are the cost of the package, recurrent license fees and the costs associated with customization, which constitute major cost elements of a systems implementation project (Hashim, 2014[1]). In general, the more customization the government requires the less value is realized from taking an off-the-shelf product.
- Bespoke products have the advantage of more exactly matching government needs as the software is developed to precisely match the user requirements and can more easily adapt to changing business processes. On the other hand, to work well, governments need to provide very precise specifications of business processes and controls. This can be very costly and time-consuming, requiring extensive expertise in technical aspects, business operations and project management.

21. Another important technological choice is in relation to cloud-based computing. Cloud-based computing allows for the delivery of various services such as storage, servers, databases, networking, software, analytics, and intelligence, through the internet. It offers greater scalability, flexibility, and resilience to FMISs, ensuring systems are both accessible and robust, capable of handling varying workloads with optimal performance. Moreover, their accessibility from anywhere with internet connection supports real-time data processing and access, enhancing the efficiency and timeliness of operations and decision-making.

22. Typical concerns are the security of data, especially in the case of sensitive and confidential information. This includes concerns regarding cyber threats, data breaches and unauthorized access. Other concerns can be the location of data storage and vendor dependency in case applications and data are not easily transferable. Governments have addressed these issues by developing policies, protocols, and framework agreements with cloud service providers.

23. Despite each technological choice having its benefits and challenges, the Survey shows clear key technological trends with:

- COTS being the choice of a majority of respondents for their CI or I-FMIS. It is however interesting that the technology capacity to reflect all relevant business processes within government is among the top-five challenges of IT projects identified by respondents (Figure 8). Another related commonly cited challenge is the performance of the COTS service provider. This suggests that although COTS are largely adopted, they may represent a barrier to greater integration of financial management functions in a CI- or I-FMIS.
- Cloud-based computing being already used by almost a quarter of OECD countries (7 out of 30 countries) and being considered for implementation by more than half of them (17 out of 30 countries) (Figure 9).

3. Where to from here?

3.1. Factors for change

24. Relying on outdated IT systems poses several significant challenges and risks, including:

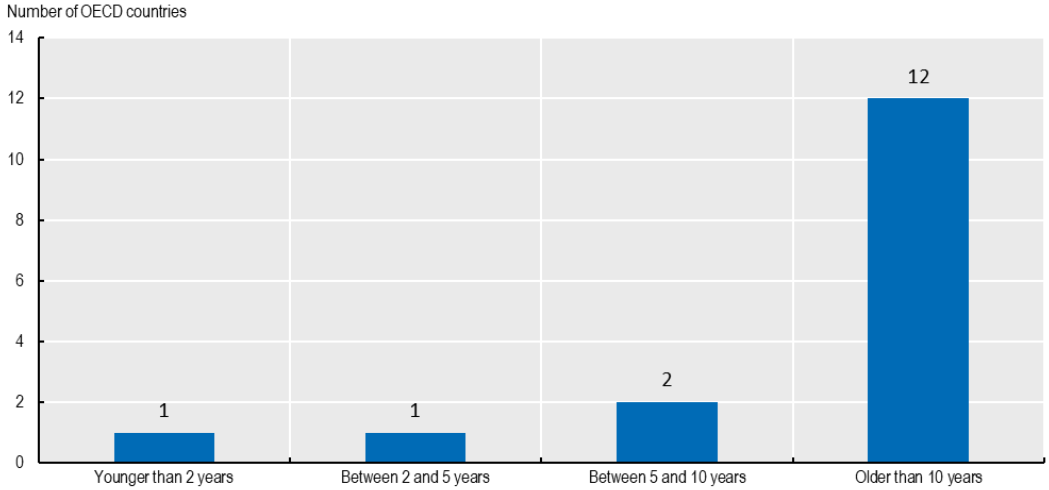
- Lack of efficiency as older systems are typically slower and less efficient, which can hinder employee productivity and operational efficiency. They may also lack the features and capabilities of newer systems, which can limit functionality.
- Difficulty in scaling as outdated systems may not be scalable to meet the growing needs of an organization, limiting its ability to expand or adapt to changing market demands.
- Lack of computability with newer technologies, leading to inefficiencies and limitations in leveraging modern tools and applications.
- Lack of updates and patches for newly discovered security threats, making them more susceptible to cyber-attacks, data breaches, and unauthorized access.
- Increased maintenance costs and lack of support for troubleshooting and repairs.

25. A notable finding of the Survey is that a large majority of OECD countries with integrated financial management systems use systems that are more than 10 years old

(Figure 6) and are possibly exposed to such risks. Therefore, unsurprisingly, a significant number of countries are currently doing or planning an upgrade or replacement of their FMIS (Figure 7).

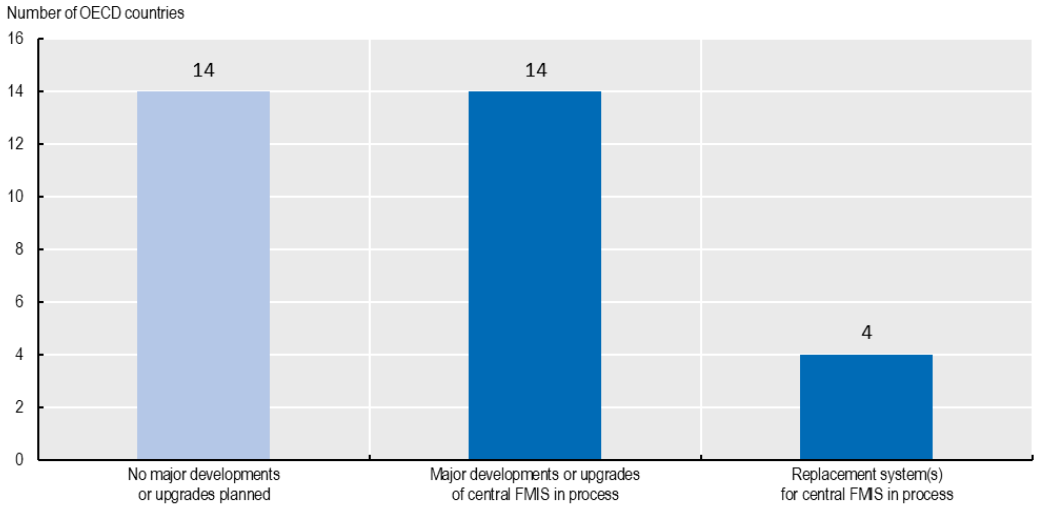
26. Unsurprisingly, the objectives for changes identified by these OECD are matching the challenges and risks outlined above. The most important factors for change are the desire to improve the technical performance of the FMIS and the improvements of capabilities for data analysis. Enhancement of the integration of financial management functions is the third most important factor for change, which can be explained by the fact that close to half of OECD countries use a NI-FMIS (Figure 8).

Figure 5. FMIS lifecycle stage in OECD countries, 2022



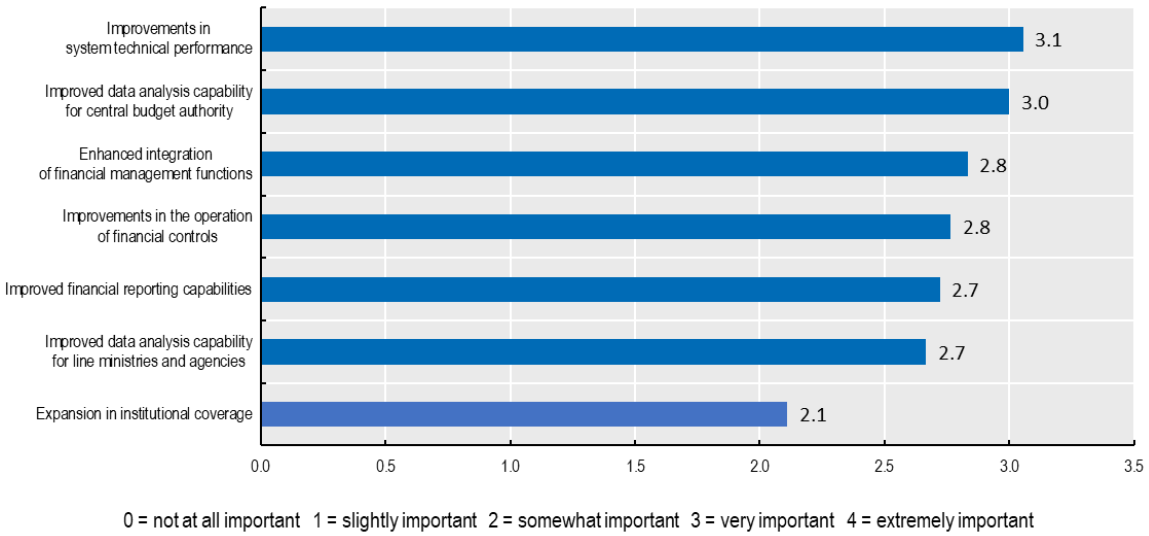
Note: Only referring to countries with an integrated FMIS, either a CI-FMIS or I-FMIS (16 countries). Data for Chile, Colombia, Israel, Mexico and Slovenia are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q21.

Figure 6. FMIS modernization strategy for central FMIS in OECD countries, 2022



Note: Data for Chile, Colombia, Israel, Mexico, Slovenia and the United States are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q23.

Figure 7. Central FMIS - objectives for developments and replacements in OECD countries, 2022



Note: Referring only to countries currently undertaking major developments, upgrades or replacements of their central FMIS (18 countries). Ratings present the average level of importance assigned to each objective by all respondents. Data for Chile, Colombia, Israel, Mexico, Slovenia and the United States are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q24.

3.2. Breaking new technological grounds

27. The improvement of technical performance of FMIS is intrinsically linked to the adoption and integration of new technologies. The Survey's focus on Business Intelligence (BI) tools, Artificial Intelligence (AI), and blockchain reflects a recognition that these advanced technologies are likely to be pivotal in enhancing the technical performance of FMIS, driving efficiency, security, and innovation in financial management (Figure 9).[5]

28. Business Intelligence (BI) tools are software applications used to analyze an organization's raw data. BI tools can enhance FMIS's functionalities by providing sophisticated data visualizations, analytical capabilities, enabling more accurate decision-making. This is the only technology that a large majority of respondents are already implementing or seriously considering implementing, in line with "improvement to data analytics" being identified as key objective for an upgrade or replacement of FMIS.

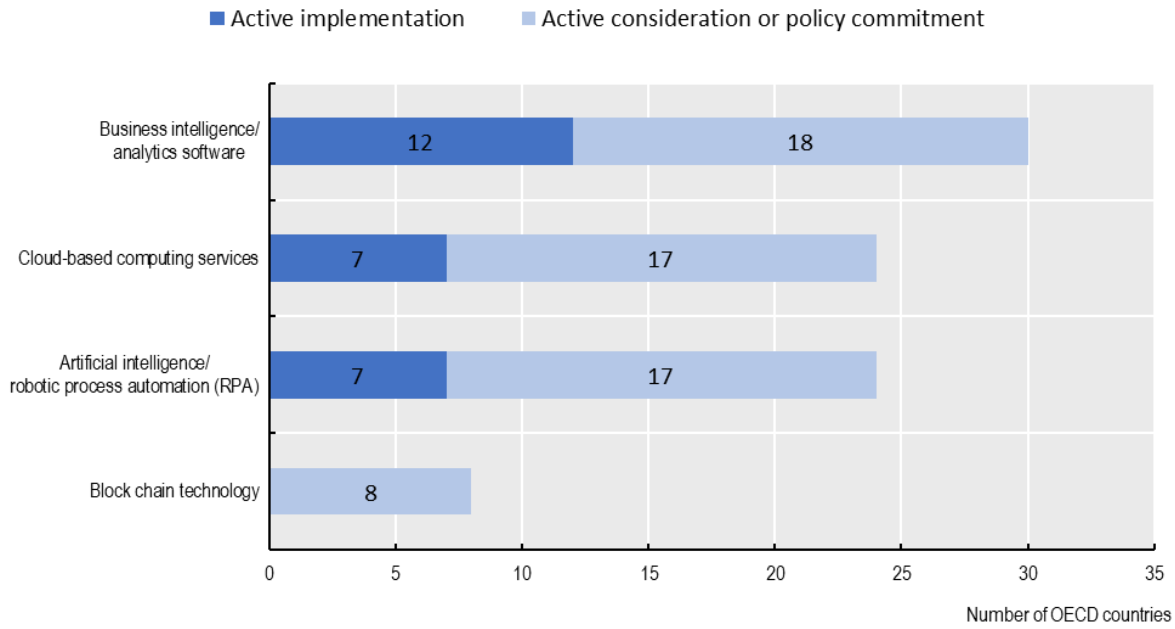
29. Robotic process automation (RPA) and artificial intelligence (AI) introduce automation and cognitive capabilities into FMIS, facilitating more efficient processing, anomaly detection, and predictive analytics, thereby streamlining financial management processes. RPA is increasingly being adopted, possibly due to its direct benefits in efficiency and accuracy of financial controls – a key factor for change according to OECD countries. There is however noticeable caution among countries regarding the implementation of AI involving full end-to-end automation without any human

[5] Cloud computing being arguably a less recent technology is discussed in section 2.3 above.

intervention, due to a variety of factors including perils associated with development of models, data management and governance.

30. Finally, the Survey did not identify any examples of OECD governments making use of the blockchain technology in public financial management. However, a literature review shows keen interest in its long-term potential. For example, the US Government has looked at the use of the blockchain technology in the area of financial management of federal research grants. (JFMIP, the Joint Financial Management Improvement Program, 2023[2])

Figure 8. Government interest in technology developments for financial management in OECD countries, 2022



Note: Data for Chile, Colombia, Israel, Mexico, Slovenia and the United States are not available. For cloud-based computing services, data for Czechia and Iceland are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q26.

3.3. Challenges

31. The Survey asked countries to rate various challenges they might face in developing or replacing their FMIS (Figure 10). Unsurprisingly, the most significant challenge is not in relation to technical developments but in relation to business processes. Indeed, when implementing an FMIS, countries may automate existing processes; streamline existing processes (e.g., by simplification of tasks, or elimination of unnecessary steps); or re-engineer processes (i.e., a radical redesign of processes to respond to changing business and user needs). In the latter case, because of the changes in work practices this requires, governments will likely face resistance and challenges.

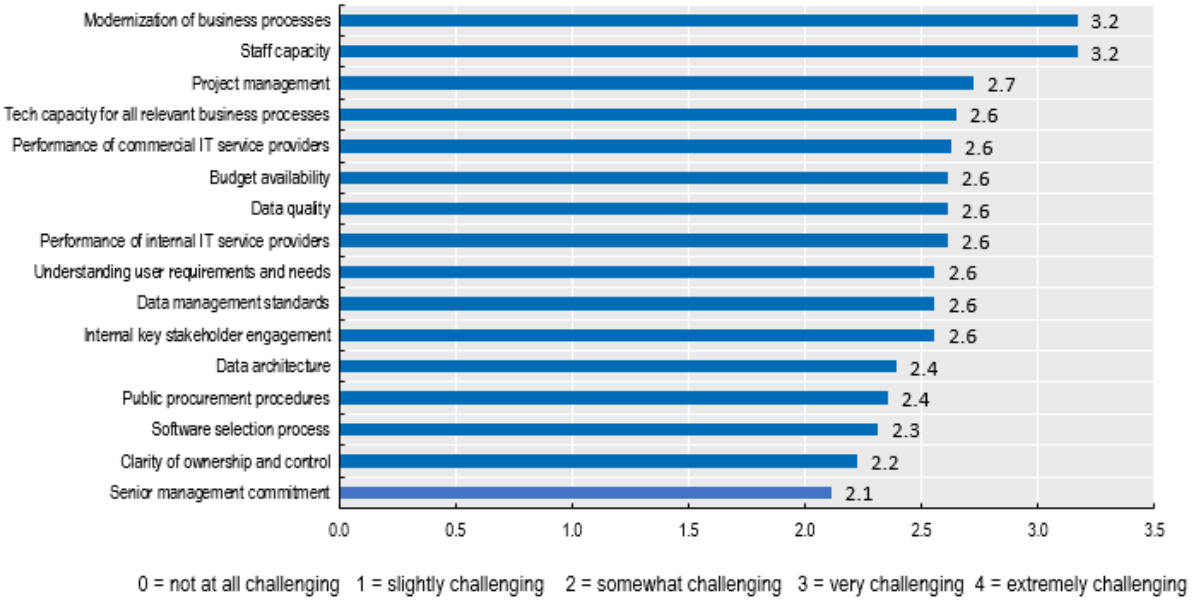
32. The availability of staff with the technical skills and expertise to operate the FMIS was rated as the second most important challenge. Such new skills are required for systems development, operating the new FMIS, and realizing the potential of the new technology. Investment in in-house digital capabilities is needed for all software solutions. Failure to

anticipate these needs, coupled with sometimes complex hiring and assignment processes in the public sector, can create significant problems.

33. Finally, data-related challenges – quality, architecture and management standards – are also commonly identified. They include:

- Ensuring the accuracy and completeness of data being fed into the FMIS. For instance, legacy systems may have outdated or incompatible data structures, making seamless integration a significant challenge.
- Standardizing data formats, naming conventions, and processing rules to ensure data consistency and accuracy. For instance, different departments or units within an organization might have developed their own data handling practices over time. Establishing a uniform standard across all these units requires coordination and often a significant cultural shift.
- Establishing a clear data governance framework, which is necessary to manage data quality effectively going forward. Data governance refers to the set of policy instruments that secure timely, effective and trustworthy access, sharing and use of data across the public sector (OECD, 2019[3]). This includes "diverse arrangements, including technical, policy, regulatory and institutional provisions, that affect data and their creation, collection, storage, use, protection, access, sharing and deletion, including across policy domains and organisational and national borders" (OECD, 2022[4]).

Figure 9. Central FMIS - development and replacement challenges in OECD countries, 2022



Note: Referring only to countries currently undertaking major developments, upgrades or replacements of their central FMIS (18 countries). Ratings present the average challenge level assigned by all respondents. Data for Chile, Colombia, Israel, Mexico, Slovenia and the United States are not available.
Source: OECD (2022), OECD Financial Management and Reporting Survey, Q25.

4. Conclusion

34. The Survey findings from OECD countries highlight several key trends in the area of Financial Management Information Systems (FMIS):

- The majority of OECD countries use a partially decentralised FMIS approach.
- Within many OECD countries financial management functions are supported by IT systems that have evolved in an ad hoc manner over time. Although budget appropriations, goods and services expenses, grants and transfers expenses, non-tax revenue as well as reporting are often managed in a centrally managed and integrated FMIS, other financial management functions remain significantly fragmented. This partial integration indicates potential areas for improvement in terms of system cohesion, integration and functionality.
- Current FMIS often show inadequate support for newer budgeting aspects, such as performance budgeting, and tagging and earmarking of expenditures. Additionally, there is growing interest in integrating cross-cutting topics such as environmental sustainability, climate, and gender considerations into financial management, which could be a focus for further system enhancement.

35. In addition, a large number of OECD countries with integrated financial management systems rely on legacy IT systems to support their financial management functions. Concurrently, there is a widespread recognition of the need to modernize these systems.

36. The Survey also shows a keen interest in adopting recent technological advances. Some of the principal opportunities identified include:

- The use of data analysis tools to improve management decision-making and forecasting through real-time monitoring and enhanced data processing.
- The use of RPA to reduce human intervention in transaction processing, thereby improving the speed and accuracy of transaction processing.

37. OECD countries have now amassed significant experience from the challenges encountered in previous waves of FMIS rollouts. They have learned valuable lessons in areas such as system integration, user training, and balancing customization with standardization. This accumulated experience has equipped them with better insights and strategies for future reforms.

38. However, incorporating recent technological advances in FMIS will bring new challenges and requires the development by governments of new types of strategies, requiring in particular coordination with the body responsible for the government's digital strategy to ensure that FMIS development is aligned and mutual reinforcing with the digital government strategy, the data governance framework and other digitalization projects.

References

Hashim, A. (2014), *A Handbook on Financial Management Information Systems for Government: A Practitioners Guide for Setting Reform Priorities, Systems Design and Implementation*, Washington DC: World Bank, https://documents1.worldbank.org/curated/en/147241467987856662/pdf/A-handbook-on-financial-management-information-systems-for-government-a-practitioners-guide-for-setting-reform-priorities-systems-design-and-implementation.pdf. [1]

JFMIP, the Joint Financial Management Improvement Program (2023), *https://www.cfo.gov/jfmip/blockchain-initiative/*. [2]

OECD (2022), *Going Digital to Advance Data Governance for Growth and Well-being*, OECD Publishing, Paris, https://doi.org/10.1787/e3d783b0-en. [4]

OECD (2019), *The Path to Becoming a Data-Driven Public Sector*, OECD Digital Government Studies, OECD Publishing, Paris, https://doi.org/10.1787/059814a7-en. [3]

Uña, G., R. Allen and N. Botton (2019), *How to Design a Financial Management Information System—A Modular Approach*, International Monetary Fund. [5]