OECD Digital Government Studies

Digital Government Review of Sweden

TOWARDS A DATA-DRIVEN PUBLIC SECTOR

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Please cite this publication as:
OECD (2019), *Digital Government Review of Sweden: Towards a Data-driven Public Sector*, OECD Digital Government Studies, OECD Publishing, Paris, *https://doi.org/10.1787/4daf932b-en*.

ISBN 978-92-64-45055-4 (print)
ISBN 978-92-64-58487-7 (pdf)

OECD Digital Government Studies
ISSN 2413-1954 (print)
ISSN 2413-1962 (online)

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Foreword

The *OECD Digital Government Review of Sweden* assesses the achievements, opportunities and challenges in developing a data-driven public sector in Sweden. This Review was prepared at the request of the Swedish Ministry of Finance, and benefited from the strong support of the Swedish Minister of Public Administration.

The Review presents the government's efforts to enable the right institutional, organisational and cultural environment to maximise the value of data as a tool to address policy challenges and improve public service delivery. It identifies opportunities and provides advice to the Swedish government on how to move from political ambition and policy goals to coherent policy implementation and impact.

The Review contributes to – and benefits from – the OECD Going Digital project, an OECD-wide initiative assessing the impact of the digital revolution across policy areas.

Sweden participates actively in OECD fora such as the OECD Working Party of Senior Digital Government Officials (E-Leaders) and the OECD Expert Group on Open Government Data. Sweden stands out as one of the leading countries in e-government and citizens' connectivity. As a result of long-standing efforts to enhance public sector productivity and public service delivery through digitalisation, today Swedish citizens benefit from integrated and multi-channel public services. This helps facilitate and streamline government-citizen interactions.

Looking forward, and to build on the progress achieved, the Review recommends that Sweden should invest more in digital openness and user engagement as tools for better policy making, public service delivery and well-being. It also identifies the need to fine-tune institutional, policy and regulatory arrangements for digital government, data governance and open government data. A stronger governance model should also include enhanced enforcement capacity of the co-ordinating body (the Agency for Digital Government), and strengthened co-ordination and collaboration across actors to facilitate coherent policy implementation.

A data-driven public sector, openness, collaboration and co-ordination are core elements of the OECD *Recommendation of the Council on Digital Government Strategies* adopted by the OECD Council in 2014. Sweden's well-established culture of public sector transparency is an important strength. It should also be an essential structuring element in building an institutional framework that facilitates the use of data as an asset for business and social innovation. In addition, the public sector's consensus-based culture should facilitate the use of data as a platform for collaboration among different actors. But for that purpose, collective knowledge needs to be better crowdsourced, drawing on collaboration with communities of practice within and outside the public sector.

Acknowledgements

The *OECD Digital Government Review of Sweden* was prepared by the OECD Directorate for Public Governance, under the leadership of Marcos Bonturi.

The Review was produced by the OECD Reform of Public Sector Division, under the supervision of Barbara-Chiara Ubaldi, Acting Head of Division and Head of the Digital Transformation of the Public Sector work.

The Review was drafted by Jacob Arturo Rivera Pérez, Policy Analyst, Digital Government and Open Data Policies, Reform of Public Sector Division, OECD, who also served as the lead co-ordinator for this project. It benefited from the strategic orientation and revisions of Barbara-Chiara Ubaldi. Reginald Dadzie, Junior Consultant, provided data analytical support and contributed with content for Chapter 4. Cecilia Emilsson, Intern, provided desk research support. Raquel Páramo and Javier González provided editorial and administrative support. Jennifer Allain prepared the document for publication.

This project would not have been possible without the support of the Ministry of Finance and the Minister of Public Administration in Sweden, and the valuable support and knowledge provided by the following public officials from OECD countries who acted as peers during the OECD peer review mission to Stockholm in November 2017:

- Ms. Pauline Ferris, National, International and Research Group, Cabinet Office, United Kingdom
- Ms. Eleanor Stewart, Foreign and Commonwealth Office, United Kingdom
- Mr. Oli-Pekka Rissanen, Ministry of Finance, Finland
- Ms. Andrea Barenque, former Deputy Director of Open Data at the National Digital Strategy Co-ordination, Mexico.

The OECD Secretariat would like to acknowledge the invaluable contribution of all public officials in Sweden who provided their comments to the document. The OECD is especially grateful to Magnus Enzell, Senior Adviser at the Unit for Digital Government, Ministry of Finance, and the team within the Unit for Digital Government for the support and close collaboration throughout the whole policy review process.

Finally, the Secretariat is also grateful to the experts from civil society, the private sector, academia and other communities who participated in the workshops organised in the context of this Review and the OECD follow-up missions to Sweden.

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Executive summary

Sweden has achieved a considerable level of digital maturity of its public sector, thanks to previous digitalisation efforts and a culture of transparency and consensus. However, the government needs to acknowledge that what worked before might not necessarily do so in the current context, and the government's efforts to govern, manage, share, open up and use data should act as a means to support broader outcomes and be driven by a whole-of-government approach.

The governance framework needs to support the overall digital transformation and avoid the silo-based and uncoordinated path followed over the past decade. Sweden needs strong institutional leadership of its digital government agenda, backed by the government's political support, as well as mechanisms to foster collaboration among public sector ministries, agencies and all relevant bodies. Enabling the availability of data as a platform to boost collaboration and public sector and civic innovation requires clear leadership and data stewardship across the public sector.

Political willingness and statements alone do not lead to results. The foundations for a digital and data-driven government need to be strengthened to support results-oriented implementation. Streamlining data management, processes and infrastructure, as well as defining data governance models will play a determining role in advancing Sweden's capacity to leverage the use of artificial intelligence (AI) and open government data to develop a data-driven public sector.

If the Swedish government intends to foster data as a platform for enhanced public service delivery, citizen engagement and collaboration among communities of practice, it needs to prioritise cultural changes. Such a cultural shift implies, for instance, the creation of safe spaces to promote digital experimentation and innovation within the public sector, and the government's openness to the vibrant digital innovation ecosystem in the country, its talent and knowledge.

Key policy recommendations

Governance

- **Define clear and strategic institutional leadership for the digital government agenda, backed by the government's political support.** This should fit with existing vertical and horizontal structures for policy implementation to avoid conflicting responsibilities and weak accountability.
- **Use the letters of instruction or direct assignments given by the government to public sector organisations to define clear policy guidelines and enable the coherent implementation of the digital government agenda.** The use of conditioned funding models and financial levers by the Agency for Digital Government (DIGG) can also be explored.

- **Increase the enforcement power of the DIGG and the Expert Group on IT Investments (Ministry of Infrastructure).** This would include expanding the regulatory powers of the DIGG beyond electronic invoice systems, decreasing the budget threshold for project revisions, and attributing powers to pause or cancel ongoing IT projects when benefits are not realised.
- **Conceive and promote the DIGG as a driver of change.** The agency should avoid being trapped in bureaucratic approaches and provide the space for digital innovators to lead its way of working. Incentives for attracting talent should be supported by a conducive cultural context and agile talent-procurement models.
- **Involve all relevant actors within and outside the public sector to assess the results of the 2015-2018 Digital First agenda, and use these insights as a source of knowledge to inform the next digital government agenda.** The open and inclusive development of the digital government agenda would be useful to set government-wide priorities, build recognition and ownership across the public sector, and be clear in terms of expectations and roles.

Co-ordination and collaboration

- **Draw upon the value of existing informal inter-institutional bodies to enable co-ordination and collaboration,** and use them as a driving force to advance the ambitions of the Swedish government for the digitalisation of its public sector.
- **Use the DIGG as a mechanism to enable government as a platform for collaboration, digital experimentation and public sector innovation.** Crowdsourcing public sector intelligence and promoting experimentation can help in advancing the goals of the digital government agenda to the benefit of citizens and communities of practitioners inside and outside the public sector.
- **Fully leverage the value of Sweden's Innovation Agency, Vinnova, as an ally in the promotion of public sector innovation.** Vinnova can help to build bridges between the public sector and external practitioners and to seed-fund innovation projects in the public sector.

Data-driven public sector

Strengthening data governance in the public sector would require to:

- **Develop a data policy for the public sector**. A whole-of-government data policy would help connect all data efforts and elements of the data value chain under one single policy instrument. The development of a data policy should be connected with, and support, the eventual development of an AI strategy for the public sector. A clear and solid data policy can help identify common challenges across public sector organisations in order to define government-wide policy priorities, and enable greater cross-government data integration, interoperability, maturity and stewardship.
- **Consider reinforcing the mandate of the DIGG to emphasise its leading and co-ordination role for the public sector's data policy.** The Swedish government can consider the creation of a position – e.g. chief data officer – in charge of moving forward the broader data policy for the public sector.

- **Develop an institutional leadership model that supports the implementation of the data policy and AI goals across the public sector.** Such an initiative, for instance through the establishment of a network of data stewards, should include both technical and strategic efforts to promote data policy and AI goals.
- **Consider the creation of a steering committee** or task force to support data stewards in advancing their efforts to increase AI uptake in the public sector.
- **Define the needed digital and data skills and develop related job profiles and career paths** to guide a needs assessment, identify gaps, decide on the skills and talent to attract, and retrain personnel.
- **Create a repository and pool of pre-approved external talent** to build a more dynamic and agile procurement process.

Open government data

- **Use ring-fenced funds for open data as an incentive to support relevant initiatives and as an instrument to deliver quick wins,** while building capacities across the broad public sector to ensure sustainability of efforts.
- **Develop an open data strategy setting clear goals, identifying actions and key actors, and defining a timeline for implementation.** The open data strategy should not be conceived as a stand-alone document, but should be linked to broader data and AI efforts in the public sector, and acknowledged as an element of a potential umbrella data policy for the public sector.
- **Develop a national data infrastructure (inclusive of open data)** to move forward data-driven innovation in the country and better collaborate with specific user communities (e.g. the financial and health technology ecosystems).
- **Enable the central open government data portal oppnadata.se** as a platform for multi-stakeholder collaboration and data crowdsourcing.
- **Sustain the efforts aiming to establish HackforSweden** as a platform for engagement and collaboration with the digital ecosystem in Sweden.

Assessment and recommendations

Strengthening the institutional governance for digital government

General context

- Social values in Sweden favour consensus, collaboration, equality, inclusion and a temperate mindset. These values contribute to an organisational culture in the public sector where decision-making processes are characterised by consensus and the avoidance of conflict, and provide an important baseline for fostering collaborative approaches to transform the government into a platform for value co-creation. However, they can also hinder efficient and agile decision making, interfere with the need for clear and solid policy leadership, and create organisational barriers for collaboration.
- The institutional set-up for e-government has ranged from agency-led to council-based governance models since 1980. These changes were implemented in the pursuit of finding an adequate institutional governance model that could drive inter-institutional co-ordination and advance policy goals.
- All efforts to govern digital government more efficiently have been hampered by slow decision-making processes and an overall institutional context characterised by co-ordination bodies with weak powers and by risk-adverse, yet powerful, and independent agencies, which favour silo-based approaches rather than inter-institutional co-ordination, alignment and rationalisation.
- The new Agency for Digital Government (DIGG) established in 2018, initially within the Ministry of Finance and currently under the Ministry for Infrastructure, will play a key role in advancing digital government priorities while steering policy co-ordination and triggering cultural change. Yet, forcing digital and data-driven transformation initiatives to fit into the current organisational doctrine and working culture of the Swedish public sector puts the agility of such initiatives at risk and, as a result, their success.
- It is important to ensure that new developments in terms of governance reforms are accompanied by the right enforcement mechanisms to find new ways to enabling spaces for digital innovation, experimentation and collaboration.

Setting up an efficient institutional model for digital government in Sweden

Leadership

- By the end of 2018, political leadership in terms of the digitalisation agenda (including the digital economy and digital government) were distributed among the Minister for Housing and Digital Development, the Minister for Public Administration (within the Ministry of Finance), and the Minister for Enterprise and Innovation. Although this proved the cross-cutting relevance of the digital

agenda across the government, there is no clear leadership in terms of policy co-ordination implementation, which risks encouraging fragmentation and silo-based approaches.

- The creation of the Agency for Digital Government (DIGG) (in operation since September 2018) can help increase the capacity of the government to act as a driver of change, and steer and support the digital transformation of the Swedish public sector in ways that boost synergies and joined-up approaches. The DIGG could be empowered and equipped with the right soft and hard policy levers and human capital necessary to advance policy goals in terms of IT infrastructure and open data, among others, and to secure linkages among the different policy portfolios spread across different ministries.
- The success of the DIGG will depend on its preparedness, capacity and ability to carry out its policy steering and cohesion role across the whole government rather than being perceived as the operational arm of its parent ministry. It is only under these circumstances that the DIGG will be able to overcome the resistance of agencies to cede a certain amount of their freedom of action, and to navigate – with a collaborative and co-creation approach – the Swedish public sector, using the consensus-based culture as a lever to drive change.
- In April 2019, the creation of the new Ministry for Infrastructure brought together broader digitalisation issues (including digital government) under one single leadership role. This includes the government's decision to move the DIGG from the Ministry of Finance to this new ministry's portfolio.

OECD and peer assessment

- There is no clear leadership for digital government in Sweden.
- There is consensus that clearer and stronger leadership and co-ordination is needed to enable a significant transformation and full evolution towards digital government.
- Leadership supported by the top political level is needed to set and commit to common priorities and ambitions (i.e. define a shared vision), steer the alignment of actions among key actors (i.e. common path of actions), recognise the impacts that might arise from enabling a data economy (e.g. change of for-profit data revenue models), including potentially providing additional funding.
- There is a lack of direction for co-ordinated implementation.
- Different portfolios relevant to the digital agenda are under the responsibility of several ministries. Given the absence of clear leadership for efficient co-ordination leads to a fragmented and blurry strategic leadership and guidance when it comes to digital transformation portfolios, including for digital government.
- The verticality and consensus-based culture of the Swedish public sector represent a bureaucratic and cultural legacy that, in practice, does not favour the institutionalisation of such a leadership role or a real overall transformation that by nature requires horizontality.

- There is a need to balance the existent decentralised and vertical policy implementation model, based on autonomy, with the availability of a clear high-level strategic leadership supporting coherence, horizontality and synergies.

Proposals for action

The Swedish government should consider implementing the following policy actions:

Recommendation 1. Define a clear leadership role for digital government backed by the government and in agreement with the relevant stakeholders to support strategic decisions that are taken in a collaborative fashion (example of the Digital Commissioner in Italy).

- In light of the culture and tradition of the Swedish public sector, the definition of such a centralised leadership role (e.g. chief transformation officer) must be consented, and agreed upon, by all relevant political and institutional players in order to reduce the risk of institutional resistance, and to favour co-operation and support. This implies identifying a cross-cutting leadership role that fits into the Swedish public sector culture (e.g. a *samordnare* or general co-ordinator role) in charge of co-ordinating and monitoring the coherent implementation of the different digitalisation and data-related portfolios.
    - The creation of such a role needs to be understood in the context of existent vertical and horizontal structures (e.g. using the state secretaries' networks) within the Swedish public sector to avoid conflict in terms of accountability and responsibility.
    - This role should focus on a co-ordination function, but should have the right mandate, power and political backing to be able to take the required cross-cutting actions to enable a coherent digital transformation across the Swedish public sector and provide incentives for co-ordinated actions among the political leadership in relevant ministries.
    - Its mandate should also allow it to exert influence over the budgetary process (e.g. submit proposals) so that the budget process can be used as a policy lever to advance coherent digitalisation efforts.
    - The creation of such a role should be backed up by a clear business case demonstrating the value of greater co-ordination, also in terms of missed opportunities in its absence, to advance to transformation of the Swedish public sector to increase performance and public trust.
- Such a leadership role would benefit from working in close collaboration with the leadership of the DIGG, which may act as the operational arm for the digital government policy. However, roles and responsibilities should be clearly defined.
- The profile of this leader will be key to achieve the policy co-ordination objectives. The Swedish government would benefit from appointing a charismatic and visionary leader. This person need to be not only digitally savvy, but should also have a deep understanding of the culture, tradition and of the digital government community of the Swedish public sector and sufficient leverage to negotiate and reach consensus.

Policy levers

- The funding model of the agency is identified in the 2018 Budget Bill (budgetpropositionen) of the Swedish government.
- Ring-fenced funds are included for open data and the national digital infrastructure.
- Empowering the DIGG means finding the right balance between the use of hard and soft policy levers in order to encourage collaboration while ensuring and/or enforcing policy coherence.

OECD and peer assessment

- The culture of consensus is not yet being fully capitalised on. It is considered a challenge in terms of decision making by most actors. Only a few see it as an opportunity for collaboration and value co-creation.
- Regulatory instruments such as the instruction letters are not optimally used by the Ministry of Finance to guide cross-sectoral policy implementation by agencies in line with overarching digital government objectives.
- The use of financial policy levers can help support the digital transformation of the public sector, the coherent implementation of guidelines and standards, and steer public sector digital and data-driven innovation.

Proposals for action

The Swedish government should consider implementing the following policy actions:

Recommendation 2. Use the letters of instruction or direct assignments decided by the government to define clear policy guidelines for public sector agencies in the implementation of the digital government agenda.

- Letters of instruction should be clear in relation to responsibilities and real-world implementation of actions expected of public sector organisations to promote and enforce the implementation of any soft policy instruments (e.g. guidelines and standards) to be developed by the DIGG.

Recommendation 3. Use the funding of the DIGG as a policy lever to align digital government and data initiatives with the strategic objectives set by the overall strategy and the standards and guidelines developed by the DIGG (an example is the Agency for Administrative Modernisation in Portugal).

- Ensuring the sufficient funding of the DIGG will play a key role to enable this body to deliver the expected policy results.
- Use a conditional funding model for priority and strategic digital government and open data projects that require coherent and horizontal actions between public sector organisations. This would help move from strict co-ordination to collaboration.
- The prioritisation of investments at the agency level should also be made in line with broader policy priorities (e.g. artificial intelligence and data governance) and in accordance with guidelines and standards that are currently in place or to be developed by the DIGG. They should also be in line with the needs of existent communities of practice outside the public sector (e.g. Fintech, Healthtech).

- The agency's funding model could also consider financial contributions from other public sector organisations as a means to increase engagement and foster collaboration and accountability. The creation of a common investment fund for the implementation of cross-cutting projects could be considered.

ICT project management

- The Swedish public sector is made up of 350 public sector institutions (according to figures from the National Statistics Office).
- The DIGG will play a leading role in terms of the assessment, monitoring and evaluation of digital projects and ICT investments in the public sector.

OECD and peer assessment

- The organisational culture within the publish sector is highly driven by efficiency, but deficiencies persist in terms of the use of common business case methodologies across public sector institutions, common standards for project management to foster agility, and tools for *ex post* investment evaluations and intervention.
- The Expert Group on Digital Investments will act as an advisory body within the DIGG, but will not have any enforcement powers or policy levers to steer public sector digitalisation.
- Public agencies face challenges for efficiently prioritising, monitoring, and evaluating *ex ante* and *ex post* ICT investments.
- The Expert Group on Digital Investment will provide advice only for those projects with a threshold equal to or superior to SEK 20 million (approximately EUR 2 million).
- Institutional capacities and knowledge for the development of business cases are only available in some major agencies.

Proposals for action

The Swedish government should consider implementing the following policy actions:

Recommendation 4. The DIGG could draw upon Vinnova's expertise on the development of business cases to define and spur the use of a common business case methodology across public sector organisations and to promote digital innovation (one example of the strategic use of common business case methodologies to advance public sector innovation and digital transformation is Denmark).

- Define a business case methodology to be commonly used by public sector organisations.
- The DIGG could leverage Vinnova's expertise and count on its active role in supporting external actors in business development to further develop public sector competencies to produce business cases for digital and innovation projects and reinforce their capacity to apply for Vinnova's funding.

Recommendation 5. Grant more power to the DIGG and the Expert Group on IT Investments (Ministry of Finance).

- Extend the regulatory powers of the DIGG beyond electronic invoice systems (Letter of Instruction, 5 July 2018), a so-called "*föreskriftsrätt*". This would help reduce the proliferation of uncoordinated systems and streamline the current state of the digital and data infrastructure in the country.
- Decrease the financial threshold for project revision and advice (currently roughly EUR 2 million), and make *ex ante* recommendations of mandatory observance for those digital projects considered mission-critical.
- Move from waterfall ICT procurement models to agile ICT commissioning approaches where assessments for ongoing high-priority projects are implemented on a regular and agreed upon basis. This includes granting more power to the Ministry of Finance, under the advice of the DIGG, to pause or cancel ongoing IT projects when their benefits are not realised.

DIGG human capital

- The contribution of the DIGG will draw upon its human capital. This means the capacity of the people to provide not only technical, but also strategic, support to effectively communicate its message at all levels (from technicians to managers and politicians), and deliver policy goals.

OECD and peer assessment

- Questions were raised about whether the location of the DIGG outside of Stockholm (in the city of Sundsvall) was the best way for it to achieve success, and about the underlying process behind this decision.
- The main skills pool desired by the agency might be not located in Sundsvall. The DIGG might find it challenging to gain enough traction to attract the talent needed for success, as Sundsvall might be not recognised as a current tech and innovation hub.
- The location of the DIGG outside of Stockholm will require special efforts to ensure that its mandate, working methods, culture and job profiles are interesting enough to the skilled labour force it wants to attract – and retain.
- It is expected that the DIGG will have a workforce of 50-60 public officials in its first years of operation.

Proposals for action

The Swedish government may consider implementing the following policy actions:

Recommendation 6. Conceiving and promoting the DIGG as a driver of change will help it attract the right talent (an example is the Going Digital Services in the United Kingdom).

- Following a design thinking approach can help to identify the right set of skills needed within the DIGG and ensure that the agency is composed of, and can count on the availability of, multidisciplinary teams with a set of diverse profiles and backgrounds. This can also help promote the inclusion of social groups (e.g. women) and better build on existing Govtech efforts.

- The potential of the DIGG as an agent of change and enabler of digital innovation within the public sector can be used as an incentive to attract the right talent. Attracting people with a data and digital mindset to solve policy challenges can be a first step to increasing their interest in joining the public sector and becoming drivers of change.
- Providing incentives to attract talent should be accompanied by the development of an adequate cultural context and clear career paths and job profiles, and should thus go beyond financial incentives. This would be crucial in light of the geographic location of the DIGG outside of Stockholm, which is seen by many as a potential disincentive to attract talent.
- Enable an agile talent-procuring model to bring external skills on board when needed without requiring burdensome processes. This would also contribute to enhancing private-public collaboration and bringing the external ecosystem closer to public sector change (one example is the GC Talent in Canada).

From communication to inter-institutional collaboration

- In the Budget Bill for 2015, the government decided to fund a four-year programme that later came to be called Digital First (or Digitalt först in Swedish).
- The Digital First agenda is a cross-policy instrument that promotes the digitalisation of the society, business activity and the public sector in Sweden. It addresses digitalisation from different perspectives, from broadband access to digital skills and digitalisation as a tool to fight climate change.
- The Digital First agenda has five core areas of work covering digital government, namely: 1) building a solid digital infrastructure base for digital government; 2) promoting the design of innovative digital solutions through data-driven innovation; 3) improving the organisational culture and capacities for digital government and innovation; 4) strengthening the governance for digital government; and 5) carrying out legal and regulatory reforms to foster the readiness and adaptability of regulatory frameworks and support the implementation of the digital agenda.

OECD and peer assessment

- The development of the digital agenda fell short in relation to grounding a vision for digital government in a well-structured long-term strategy.
- The agenda was not developed and implemented in co-ordination and collaboration will all of the relevant stakeholders from the public sector.
- Digital stewardship is absent. The digital agenda has too many goals and ambitions.
- Public officials are not recognised as key actors of the public sector digital ecosystem.
- The digital government agenda stands as a policy document embedding statements of intent issued by the Ministry of Finance.

- There are too few focused, strategic, co-ordinated and cohesive actions, and limited multi-stakeholder collaboration.
- There is a lack or low level of awareness inside and outside the public sector. There is a lack of clarity in terms of expectations among public officials.

Proposals for action

The Swedish government may consider implementing the following policy actions:

Recommendation 7. Reach out to and involve all relevant actors within and outside the public sector to assess the results of the 2015-2018 Digital First agenda, and use these insights to inform the development of the next digital government strategy for the new government.

- While the digital government strategy should be a sub-element of broader digitalisation efforts, the Swedish government (through the Ministry of Finance and the DIGG) would benefit from developing a dedicated policy lever for digital government, stating clear goals, initiatives, milestones and the relevant actors.
- The strategy, defining the government's vision for digital government, must be recognised at all levels (including from senior leaders across government and agencies), and should be complemented with a plan of action providing a roadmap to engage actors, deliver results and monitor progress.
- The open and inclusive development of the digital government agenda would be useful to set government-wide priorities with a whole-of-government perspective while increasing shared ownership and accountability, therefore making expectations, responsibilities and roles clearer. This would be essential to increase trust both inside and outside of government.
- Consider the implementation of a communication strategy to reach out to stakeholders, but also to inform about policy developments, enable knowledge sharing and set the basis to further link the community of digital practitioners within the public sector.

Inter-institutional co-ordination

- The Prime Minister National Innovation Council, the Digitalisation Council, the eSAM and the SALAR are examples of the current mechanisms for horizontal co-ordination on the digitalisation agenda and, more broadly, the digitalisation of the public sector. Still, in most cases, decisions are not binding, and co-ordination often remains high-level and does not permeate to the managerial, operational and technical level.
- The DIGG will face the challenge of navigating the above-mentioned horizontal co-ordination mechanisms, and using them to advance the digital government agenda efficiently and effectively.

OECD and peer assessment

- The National Innovation Council has a strong focus on business innovation and competitiveness, but only acts as an advisory body with no enforcement powers. Its sustainability is driven by government decision.
- Horizontal co-ordination mechanisms are weak, with no enforcement powers, and mainly advisory roles.
- There is no clear follow-up on implementation once decisions are taken in the context of co-ordination bodies.
- There are not enough focused, strategic, co-ordinated and cohesive actions, and multi-stakeholder collaboration is limited.
- There is the potential to lever the eSAM's voluntary membership of public sector organisations as a basis to advance more structured and efficient collaboration and co-ordination.

Proposals for action

The Swedish government should consider implementing the following policy actions:

Recommendation 8. Draw on the value of the current inter-institutional bodies to reinforce co-ordination and collaboration, and advance the ambitions of the Swedish government with regard to the digitalisation of the public sector.

- Eliminate any duplicative efforts and bodies related to co-ordination to simplify governance structures, and to avoid the proliferation of bodies at the political/policy-making level and fragmented efforts. Streamlining co-ordination mechanisms and efforts could also result from strengthening the mandate of the public sector organisations currently engaged in informal co-ordination, such as the eSAM. The eSAM's 24 agencies could assume a primary role in clustering efforts for more forward-looking, ground-breaking and agile-driven innovative whole-of-government applications by involving the political leadership of key ministries in joint and co-ordinated decisions.

Recommendation 9. Establish a formal body (a committee) that gathers all of the relevant actors, i.e. different ministries and agencies responsible for leading the digital and data portfolios (as in, for example, Denmark, Mexico, Peru and Spain).

- The establishment of such a committee would also support the role of the main digital leader mentioned above who would benefit from best practices across OECD countries (e.g. including Denmark, Mexico and Spain) to include committees that gather several times a year both at the ministerial and agency levels.
- This body should have more than just an advisory role; given its role to support the digitalisation leader on the horizontal agenda, it should be granted some decision-making power.

Recommendation 10. To complement Recommendation 9, the government should facilitate operational and/or more technical co-operation.

- Envisage meetings of the body proposed by Recommendation 9 also at operational and technical levels.
- Tasking the DIGG to develop and implement task forces or working groups at the technical level could help encourage co-ordination and collaboration at all levels and advance coherent policy implementation.

Government as a platform: Collaboration and value co-creation

- The promise of the DIGG and its leadership is greatly centred on the co-ordination role this new body will have in terms of implementing the digital government agenda.
- The main driver behind the creation of the DIGG seems to have been the recognised need for more efficient co-ordination related to digital government across the public sector in Sweden, rather than a real ambition to use this body as a driver, enabler and platform for digital innovation, value co-creation and collaboration.
- The DIGG will face the challenge of going beyond co-ordination responsibilities in order to facilitate and adopt dynamic, agile, multi-stakeholder collaboration approaches; capitalise on the consensus-based culture of the public sector; address cultural challenges; and bring actors from all sectors on board and drive change by enabling spaces that motivate and foster creativity.

OECD and peer assessment

- Key actors, such as Vinnova, are not adequately proactive in the promotion of public sector innovation.
- There is a need to create dynamic spaces (either physical or digital) for risk-controlled experimentation, digital- and data-driven innovation, multi-stakeholder engagement, and problem-solving collaboration.
- Positive cultural aspects include: equality (no hierarchic management models); teamwork mentality; and public officials' high levels of education, networking co-operation and digital skills.
- Innovation is siloed and initiatives are not mainstreamed or shared.
- Negative cultural aspects include: complacency with the *status quo* (lack of urgency), a "focus on facts and not experimentation", avoidance of confrontation and open discussions which triggers slow decision making, a focus on big projects and not on a more incremental mentality.
- Financial stability exerts a negative incentive to change the *status quo* as it does not create the sense of urgency to do more and better in terms of digital government.

Proposals for action

Recommendation 11. Leverage the DIGG to foster government as a platform for collaboration, digital experimentation and public sector innovation.

- The Swedish government can consider the creation of safe spaces where public sector innovators can learn and exchange knowledge, as well as propose, prototype and experiment with new ideas. In the Swedish context this would require focusing on action, implementation and delivery to overcome the risk of lengthy and time-consuming discussions.
- Establish a special fund to be managed by the DIGG to support horizontal projects/initiatives across the public sector. Criteria for the submission and approval of proposals could be, for example, requirements for the projects to be jointly implemented by several institutions or actors, and the application of emerging technologies and data to innovate service delivery and/or policies. This would provide incentives for collaborative work and break down silos.

Recommendation 12. Fully leverage the value of Vinnova as an ally in the promotion and mainstreaming of public sector innovation.

- Leverage Vinnova's role to promote innovation in Sweden as a bridge between the public sector and the broader ecosystem of external practitioners, and to better link the innovation and digitalisation agendas. This would help ensure that its leading role in terms of innovation can also exert a positive influence in regard to digital and data-driven innovation within the public sector.
- Increase the involvement of Vinnova to foster public sector innovation as it could open a window of opportunity to mainstream innovative and data-driven practices and approaches, e.g. by using Vinnova to seed-fund innovation projects in the public sector. This could help counter-balance initial funding challenges that might arise in the early or later stages of the DIGG's operation.
- Promote collaboration between the DIGG and Vinnova to avoid duplication of efforts and move towards integrated, not siloed, digitalisation and innovation initiatives.

Recommendation 13. The DIGG should develop an open online platform for knowledge sharing (following for example Canada's GC Platform).

- This would help build communities within the public sector, crowdsource collective knowledge from external actors and make the government closer for citizens. This would require changing the organisational culture of public sector organisations and moving from co-ordination to collaboration whenever feasible.

Leveraging data for public sector intelligence and digital innovation

General context

In May 2018, the Swedish government published a political statement highlighting Sweden's goal to become a leader in artificial intelligence (AI). The statement, entitled "National Guidance for Artificial Intelligence" (*Nationell inriktning för artificiell intelligens*), addresses key issues such as the need to develop capacities and skills among citizens to use AI, and the need to spur the benefits of AI in the public sector.

The National Guidance for AI is clear concerning the value of data (including open government data) as a propeller of AI-based business models and digital innovation. It underlines the public sector's advantage in terms of its data assets and the value they can have for AI- and data-driven public sector efficiency.

The political relevance of this guidance complements the Nordic-Baltic Declaration on AI[1] published in May 2018 by the digitalisation ministers from the Nordic and Baltic region. The declaration, issued by the Nordic Council of Ministers for Digitization 2017-2020, also stresses the need of developing skills among stakeholders for the use of AI. Additionally, the declaration argues for the need of enhancing access to data, reducing regulatory burdens and governing the use of AI through the definition of common standards and guidelines.

For Sweden to become a world leader in using AI to "strengthen Swedish welfare and competitiveness", the basics should be set first. The government's willingness to capitalise the value of AI for the public sector calls for an urgent need to prioritise: the design and implementation of a whole-of-government data policy and strategy to be coherently implemented across the public sector; the implementation of efficient and scalable data management models across public sector institutions, inclusive of data-sharing organisational processes and practices, to overcome barriers to data interoperability and integration between public sector institutions.

The relevance of having a clear data policy

- The government's willingness to capitalise on the value of artificial intelligence for the public sector calls for the design and implementation of a data policy for the public sector, the implementation of efficient data management models, and the redevelopment of existing data-sharing organisational processes and practices. If the opportunities offered by the use of AI and government data within the public sector are to be captured, all institutions should own and be aware of this government-wide vision.
- An overall coherent strategic approach to data governance across the public sector could help the government of Sweden implement the data policy and leverage data as a key strategic asset at each stage of the policy cycle.

OECD and peer assessment

- There is a strong desire to move forward open government data. However, data policy efforts are at large limited to the publication of government data in machine-readable and non-proprietary formats, or sectorial data-sharing efforts.
- There is no clear connection between the different steps of the data value chain (data collection, processing, storage, protection, publication and reuse).
- Sweden currently does not have an overarching public sector data policy, nor does it possess a government-wide information and/or data governance model to guide the management, sharing and use of data within and across public sector institutions.
- Some institutions do have a formal public sector data policy and/or strategy in place (e.g. Swedish Environmental Protection Agency, National Land Survey Authority).

Proposals for action

The Swedish government may consider implementing the following policy actions to strengthen data governance in the public sector:

Recommendation 14. Develop a data policy for the public sector (an example is the CONPES in Colombia).

- Develop a whole-of-government data policy for coherent implementation across the public sector, bringing together all of the relevant elements related to the data value chain. This would include data-sharing efforts within the public sector, the publication of open government data with a strategic and problem-solving approach, and data protection.
- The development of a data policy for the public sector should be understood in the context of open data and artificial intelligence ambitions and support the development of an AI strategy for the public sector.
- The data policy can help define government-wide policy priorities (e.g. data catalogues as mechanisms for data sharing within the public sector, open data and data analytics).
- The data policy should inform and guide the deployment of data governance efforts at the organisational level as a means to enable greater cross-government data integration, maturity and stewardship.

Institutional governance

- To develop a sustainable approach towards the governance of public sector data, it will be critical to count on clear leadership and cross-government co-ordination and collaboration.
- By ensuring central leadership and data stewardship across leading agencies, the government can foster and increase efforts, synergies and the implementation of coherent measures in line with central data governance and management guidelines.

OECD and peer assessment

- There is a lack of leadership in terms of a *de facto* government-wide data policy.
- Networks of data stewards across the public sector are inexistent.
- The mandate of the DIGG is clear in terms of open government data.
- The DIGG's current mandate already covers two relevant items of the construction of a data-driven public sector: data infrastructure and open government data. However, other elements of the data value chain are out of the scope of its mandate (data protection, AI).

Proposals for action

The Swedish government should consider implementing the following policy actions to strengthen data governance in the public sector:

Recommendation 15. Reinforce the DIGG's mandate to make evident its leadership and co-ordination role in relation to a government-wide policy for the public sector (e.g. chief data officers in France and the United Kingdom).

- The Swedish government can consider the creation of a role or position in charge moving forward the broader data policy for the public sector (e.g. chief data officer). The responsibilities of this person could be either absorbed by a potential new leadership for digital government (see Recommendation 1), the leadership of the DIGG or shared by a group of leading agencies with more advanced data efforts.

Recommendation 16. Set an institutional governance framework that supports the operation of the data policy and AI goals for the public sector (e.g. data officers in Korea).

- Advancing government-wide efforts in terms of data requires setting a clear network of practitioners across the public sector. The government may require all relevant public sector organisations to appoint an official in charge of dealing with the data-related efforts within their respective organisations. These positions (e.g. data stewards) should be conceived as strategic roles and not be fulfilled by a technical level official.

Managing and sharing data within the Swedish public sector

- Data governance arrangements rely on a legacy of vertical organisational and transactional working methods and operating business models. This stagnates the development of a data-driven public sector and leads to fragmented efforts.
- Capitalising on the value of data for an AI-driven smart public sector requires addressing challenges – such as data fragmentation, discoverability and accessibility – in order to ensure the interoperability systems and organisations, greater data integration, and seamless data access (e.g. through APIs).

OECD and peer assessment

- Initiatives often remain siloed and reflect the lack of data integration in the public sector beyond specific organisations or the access and use of specific data registers (e.g. the National Population Register).
- Some public sector organisations in Sweden provide examples of how Swedish agencies are tackling data-sharing challenges, thus governing how data are accessed and shared, mostly at the sectorial level (e.g. the Swedish Strategy for Environmental Data Management).

Proposals for action

The Swedish government should consider implementing the following policy actions to strengthen data governance in the public sector:

Recommendation 17. Drawing upon the current existent knowledge in terms of data interoperability and sharing at the sectorial level, the DIGG's mandate could consider developing a soft data infrastructure (example Difi's Standards Council and mandatory and recommended standards in Norway).

- For government-wide missions, actions should consider the development of mandatory standards to secure the interoperability of critical datasets across the public sector. For other matters, the DIGG should consider the publication of non-binding recommendations.

Recommendation 18. Promote and scale up the use of APIs within the public sector (example catalogo.conecta.gov.br in Brazil).

- The DIGG would benefit from centralising the current existent APIs for the public sector and publishing a working and open API catalogue. This would help move towards data automation and real-time data sharing in the public sector, reduce human-to-human interaction, and promote machine-to-machine continuous communication.

Scaling up data analytics practices

- While there are some data analytics practices across the public sector, they are not mainstreamed. The recent publication of the National Guidance for Artificial Intelligence provides an opportunity to design an AI strategy to support coherent actions across the entire public sector.

OECD and peer assessment

- The use of artificial intelligence and data analytics is not widespread in the Swedish public sector.
- Sweden, as other OECD countries, is starting to take actions to prepare the ground for the further implementation of government-wide AI initiatives.

- For Sweden to become a world leader in using AI to "strengthen Swedish welfare and competitiveness", the basics should be set first.

Proposals for action

The Swedish government may consider implementing the following policy actions:

Recommendation 19. Create a steering committee or task force for AI in the public sector (e.g. AI taskforce in France).

- This task force would involve all key actors related to data-driven and AI efforts in the public sector to explore how to operationalise and move forward the political ambitions of the Swedish government in terms of data and AI.
- While the activities, findings and recommendations of the AI Task Force would contribute to developing an AI strategy, its primary role would be to underscore and maximise the role of data for the development of new applications and the use of emerging technologies such as AI. Avoiding the development of a technology-centred instrument will be key in this respect.

Recommendation 20. Explore the possibility of using the DIGG's and Vinnova's funding to promote the development of AI initiatives in the public sector with a whole-of-government approach and in line with government-wide priorities.

Breaking down barriers to a data-driven public sector

- Building a data-driven public sector in Sweden will require reconsidering the set of skills and facilitating the establishment of multidisciplinary teams that can contribute to advancing the digital transformation and the achievement of specific policy objectives, including those related to the use of AI and data within the public sector. Just as data (in terms of sharing, publication and reuse) should play a purpose for policy delivery, the development of skills and competencies should be fit for purpose.
- The current legal framework and fee-based model supporting data sharing among public sector organisations are important barriers to data sharing and data-driven initiatives across the Swedish public sector.

OECD and peer assessment

- No specific organisation within the public sector is in charge of developing and implementing a public sector employment policy.
- The Swedish Agency for Government Employers has a supporting role concerning public sector employment, but does not have a particular mission in terms of civil servants' competences and skills development.
- There is no clarity in relation to digital innovation or data-related skills or on how to connect them with the achievement of specific policy objectives.
- The rigid culture of the public sector is not attractive to the external talent needed to support public sector innovation.
- The talent procurement process is not flexible enough. Private-public collaboration often takes too long, and is too cumbersome to engage innovative actors/players,

i.e. slow and burdensome outsourcing/procurement processes may deter start-ups and entrepreneurs from engaging.

- Hiring temporary staff (internal consultants) to deliver on some specific projects is often more expensive in terms of salaries and consultants, perceived as outsiders, do not contribute to a long-term change of the organisational culture
- Ministries and agencies are responsible for overall decisions regarding the skills needed to achieve their own mandate, which results in scattered practices and a lack of a whole-of-government approach.
- For some agencies, charging a fee when sharing government data constitutes a substantial share of their revenues. There is a clear challenge between opening up government data and finding new funding sources and organisational models.
- Addressing these challenges will be crucial to move forward in terms of the implementation of the new 2019 European Open Data and Public Sector Information Directive, which scales up the discussion in terms of the publication of high-value government datasets as open data.

Proposals for action

The Swedish government may consider implementing the following policy actions:

Recommendation 21. Under the leadership of the DIGG, design and implement a training programme to increase digital awareness (for example, the Train the Trainers programme in Mexico).

- Training programmes should target senior, managerial and technical level public officials and cover issues related to data governance, open data, data analytics and AI, and design thinking. The government may consider engaging public libraries, universities and other academic institutions for the implementation of these programmes and their official recognition by education authorities.
- The use of an open knowledge platform for training and capacity building should be favoured whenever feasible in order to increase reach and participation.

Recommendation 22. Develop job descriptions for specific digital and data skills to help public sector organisations decide what skills and talent to attract or procure (e.g. digital, data and technology professions in the United Kingdom).

- It is crucial to link the description and development of skills with specific policy challenges and goals. For instance, by providing case studies on how specific skills have helped Swedish public sector organisations achieve policy goals. This would help put acquired knowledge into real-world implementation while promoting public sector agility and public value co-creation.

Recommendation 23. Create a repository and pool of pre-approved external talent (example GC Talent Cloud in Canada).

- This would help to better look for and procure external talent for work on specific public sector projects and policy challenges without compromising flexibility. This would create a more dynamic talent procurement process that draws upon open and agile approaches to address the current cumbersome talent procurement and hiring process.

Recommendation 24. Accompany public sector organisations in exploring optional funding models and the reorganisation of specific agencies, and identify business cases for greater data openness and reuse in line with the ambitions related to open data included in the AI guidance.

- There is a need to recognise the impacts (e.g. loss of income for public sector organisations) that may arise from enabling a data economy. Efforts to open up government data in specific policy sectors could, however, be prioritised in line with the government's priorities, thus facilitating an incremental transition towards greater data openness.

Open government data in Sweden: From transparency to proactive openness, user engagement and public value co-creation

General context

- Sweden enjoys a long-standing culture of public sector transparency dating back to the 18th century. However, it faces the challenge to advance government openness in order to take a proactive stand in relation to the publication of government data with a strategic and problem-solving approach.
- Results from the 2017 edition of the OECD Open, Useful and Re-usable data (OURdata) Index reflect how Sweden is lagging behind in terms of open government data in comparison to other OECD member and partner countries. It ranks below the OECD average. There is a need to draw upon the value of open government data to build a basis for a data-driven public sector, business and civic innovation in order to move from ambition to action and to place the open data ecosystem at the core of these efforts.
- The 2010 Law on the Re-use of Public Administration Documents stands as the most relevant legal instrument in terms of open data in Sweden. As such, the law implements European regulations (such as the EU Directive on the Re-use of Public Sector Information, known as the PSI Directive) into Swedish law. Yet, the lack of a national strategic vision for open data over recent years has led to a passive state where open data is indeed reactive and the result of extrinsic factors (such as EU regulations), rather than as the result of high-level political will and clear policy goals.
- While the new European Open Data and Public Sector Information Directive (2019) is expected to scale up the discourse in terms of openness by default (open data published free of charge) and automated data sharing through APIs, Sweden will still confront a challenging reality in terms of creating impact from open data, and this beyond the mere adoption of any new EU regulations into national law.

The governance framework for open data in Sweden

- The current model for open government data in Sweden results from the recurring shift of roles and responsibilities related to digital government from the Ministry of Finance to the Ministry of Enterprise and Innovation. The responsibilities on open data were transferred from the National Archives (Riksarkivet) to the DIGG in 2018.

OECD and peer assessment

- Sweden is one of the few OECD member and partner countries that does not have a formal open data policy in place.
- Instability in terms of institutional governance led to a lack of clear and sound leadership, which has resulted in a lack of vision for open data. Leadership for open data is blurry and not strategic.
- The mandate of the National Archives was limited to technical matters, therefore producing policy outputs in terms of data publication.
- There is a lack of a whole-of-government vision for open government data across the broader public sector.
- There is a strong focus on data publication (transparency-driven), not on public value creation.
- Open data is expected to be granted ring-fenced funds as part of the overall funding for the DIGG for 2018-20 (roughly EUR 2 million per year).
- Ring-fenced funds for open data is an opportunity to deliver quick policy results in the short term.
- Open data stands more as a group of – often siloed – open data initiatives developed by a small group of public agencies rather than a whole-of-government effort.

Proposals for action

The Swedish government may consider implementing the following policy actions:

Recommendation 25. Develop an open data strategy setting actions, defining a roadmap, and indicating a timeline and clear policy goals (examples include Poland's Open Public Data Programme 2016-2020 and Ireland's Open Data Strategy 2017-2022).

- The open data strategy should not be a stand-alone document; it should be connected to broader data and AI efforts in the public sector, including becoming a sub-element of a potential umbrella data policy for the public sector.
- Bringing identified public sector open data champions and opening up the open data policy-making process to the external ecosystem would help build ownership while using bottom-up pressure from the ecosystem for the sustainability of the policy in the long term.

Recommendation 26. Define a clear leadership for open data in the public sector and bring the open data ecosystem on board.

- Clearly defining responsibilities would help to provide further clarity in terms of leadership and the strategic value of open data across the broad public sector. This would bring further coherence to government-wide open data efforts and facilitate inter-institutional collaboration.
- It is important to remember that open government data is not a one-person success. Therefore, it is necessary to integrate open data within broader digital government efforts and the mandate of any existent inter-institutional co-ordination bodies. This

would help use these bodies as steering committees, advisory bodies or task forces to inform the decisions of the leadership and the execution of actions by the DIGG.

Recommendation 27. Use the ring-fenced funds for open data to deliver policy results in the short term, but build capacities across the public sector to ensure sustainability of efforts in the long term.

- In the short term, the use of the specific funds granted for open data within the DIGG can be used as a policy lever to achieve quick wins. This nonetheless would require clarity of the DIGG in relation to open data as a driver of data-driven innovation.
- It is also important to acknowledge that the long-term sustainability, maturity and impact of the open data policy requires building intrinsic motivation, knowledge and capacities within public sector organisations. Therefore, the Swedish government could also consider creating a task force in charge of building awareness and knowledge for open data across the public sector and training public officials to ensure the sustainability of those initiatives once led or incubated by the central government (example of the Open Data Squad in Mexico).

Using open data to enable government as a platform for public value co-creation

- Open data can be used to build a bridge in terms of using technology for the achievement of specific policy goals (problem-solving data publication), and satisfying the needs of valuable government data from users (data demand). By balancing data supply and data demand, governments enable a data infrastructure drawing upon the value of data as an asset for business models from the private and social sector. As a result, this data infrastructure enables governments as platforms for public value creation in collaboration with the open data ecosystem.
- The availability and accessibility of open government data is a means to an end. Enabling government as a platform drawing upon the use of data as infrastructure requires the definition and implementation of coherent efforts to spur data reuse. These efforts aim to capitalise on the value of open government data as an input of businesses' and civil organisations' value chains; for instance, to improve businesses' strategic decision making and enable civic auditing by the reuse and analysis of data on public contracting and public officials' declaration of interests.

OECD and peer assessment

- The organisation of the HackforSweden event by the Agency for Employment (Arbetsförmedlingen) stands as one of the most relevant examples in terms of stakeholder engagement in Sweden.
- Examples of some agencies taking the lead to move forward open data efforts across different policy sectors are also evident (e.g. Environmental Protection Agency, University of Agricultural Sciences, Transport Agency).
- The Swedish Association of Local Authorities and Regions has implemented some open data initiatives at the local level in areas such as health, waste management, noise pollution and linked data. Other efforts at the local level exist in Helsingborg, Gothenburg and Linköping, and in the context of the East Sweden Hack Initiative.

- The responsibilities and efforts implemented by the National Archives included the management of the open data portal oppnadata.se, and the development and provision of guidelines, online tutorials, and support for metadata and data publication.
- Government Offices are notoriously driven by transparency (e.g. using freedom of information requests as the main driver to publish data).
- User-driven data publication and user engagement is absent from the mindset of most public bodies.
- Decisions result more from exogenous and extrinsic factors than from the endogenous and intrinsic motivation of the Swedish public sector.
- Data discoverability and availability are fragmented. Data harvesting functions are not clear.
- There is a lack of a strategic goal-oriented mindset for open data (problem-solving mentality).
- Discussions remain technical and are not focused on the value of data as infrastructure and as a strategic asset for the policy cycle.
- Most agencies and the Swedish government fail to connect the publication of open data to the creation of specific public value. This hinders their willingness to explore how to overcome these organisational barriers.
- There is a lack of data stewardship and a strategic vision in most public agencies.
- There is a disconnect between most public sector bodies and the external vibrant tech ecosystem in the country (start-ups, students).

Proposals for action

The Swedish government may consider implementing the following policy actions:

Recommendation 28. Developing a national open government data infrastructure would help to move forward data-driven innovation in Sweden and improve collaboration with specific user communities (e.g. the Fintech or Medtech ecosystems).

- Sweden is moving forward in terms of using specific data taxonomies as drivers of data-driven innovation inside and outside the public sector (e.g. geodata and the work of the development agencies). This shows that the Swedish government is aware of the relevance of using data as a driver of policy outcomes. However, the development of a national open data infrastructure could help to balance data supply (the provision of datasets aligned with national policy goals) with data demand (the sharing of data drawing upon the needs of specific ecosystems in the country).
- The development of the national open data infrastructure would also benefit from consultation and user engagement exercises to identify data demand, not only from their engagement in latter stages of the policy-making process. These exercises should be iterative and continuously inform the priorities of the government in terms of the publication of government data; thus taxonomies should be included as part of the infrastructure.

- A national open data infrastructure could help to bring together ongoing and future open data efforts in the public sector and reduce fragmentation. The development of the infrastructure could be one of the key milestones to be considered as part of a potential open data strategy for Sweden.

Recommendation 29. Consider the inclusion of an open by default principle as part of the freedom of information regulations.

- The culture of public sector transparency in Sweden is leading to inaction and a lack of proactiveness in terms of open government data. Changing such an approach requires taking a harder stance in terms of governance and regulating openness by default as a core principle of open government data efforts.

Recommendation 30. Enable the central open government data portal oppnadata.se as a platform for multi-stakeholder collaboration and data crowdsourcing.

- Changing the understanding of oppnadata.se from being a one-stop-shop portal for open government data to a portal for open data would create benefits in terms of data crowdsourcing and collective knowledge. This would enable the continuous exchange of data and knowledge between communities of practice while opening a window of opportunity for public sector institutions to reuse data produced from external stakeholders.
- This requires drafting memoranda of understanding between public sector organisations and external actors such as civil society organisations and specific communities of practice. This also would imply setting data harvesting models and open APIs tools to enable the federation of open data to the central portal.

Recommendation 31. Sustain the efforts aiming to establish HackforSweden as a platform for engagement and collaboration for value co-creation with the active digital ecosystem in Sweden.

- HackforSweden is maturing as a hub of multi-stakeholder collaboration where multi-faceted actors can bring value and address policy challenges. These efforts should be sustained in order to scale up the business case for open government data efforts in the public sector.
- Showing real-life impact is key in this respect. This would imply moving from one-time awards to problem-solving approaches that deliver sustainable policy results.

Chapter 1. Public trust as a driver for digital government efforts in Sweden

This chapter discusses the overall relevance of moving from a focus on e-government and public sector productivity to one where data use, digital government and public value can help address decreasing levels of public trust in Sweden. It underlines how a strategic focus on data, openness and public engagement will enable the Swedish public sector to use platforms for public value co-creation, experimentation, and data-driven business and social innovation. It also presents a brief overview of the current state of shared components in Sweden.

Introduction

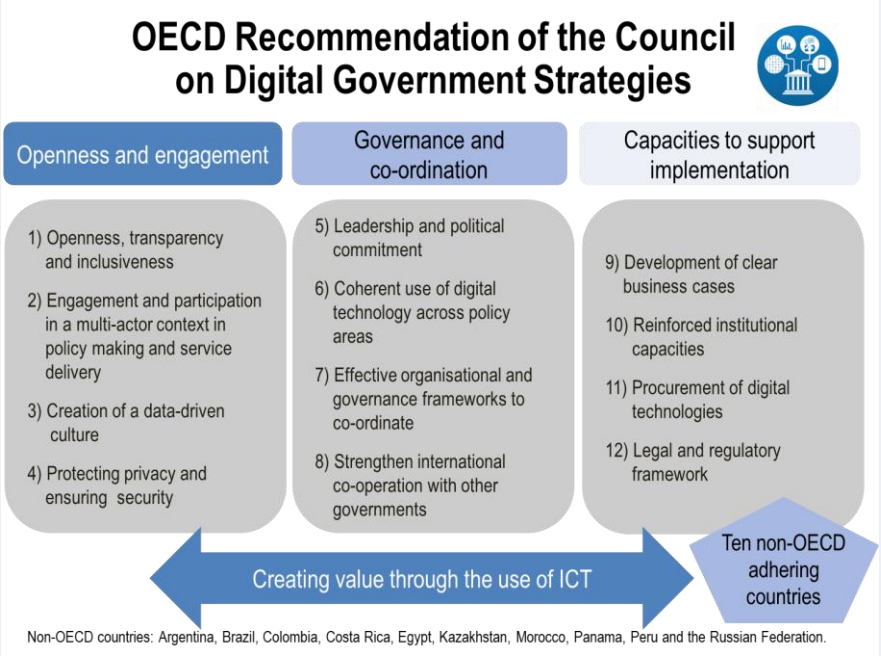
Public trust is at the core of the digital transformation of the public sector, both as a driver and an effect of such a transformation. The 2014 *OECD Recommendation of the Council on Digital Government Strategies* "emphasises the crucial contribution of technology as a strategic driver to create open, innovative, participatory and trustworthy public sectors, to improve social inclusiveness and government accountability, and to bring together government and non-government actors to contribute to national development and long-term sustainable growth" (OECD, 2014) (Box 1.1).

Box 1.1. The *OECD Recommendation of the Council on Digital Government Strategies*, 2014

The purpose of the Recommendation is to help governments adopt more strategic approaches for a use of technology and data that spurs more open, participatory and innovative governments. Key actors responsible for public sector modernisation at all levels of government (from co-ordinating units and line ministries to public sector organisations) will find the Recommendation relevant to establish more effective co-ordination mechanisms, stronger capacities and framework conditions to improve the effectiveness of digital technologies for delivering public value and strengthening citizens' trust. While the level of trust in government largely depends on a country's history and culture, the Recommendation can help governments to use technology to become more agile and resilient and to foster forward-looking public institutions.

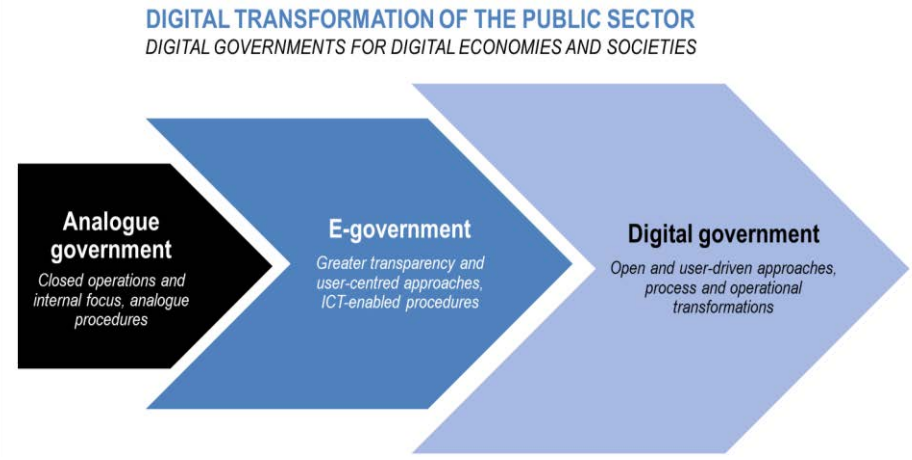
This can increase public trust through better performing and responsive services and policies, and can mobilise public support for ambitious and innovative government policies. In this regard, the principles set out in the Recommendation support a shift in culture within the public sector from a use of technology to support more efficient public sector operations to integrating digital technologies in strategic decision making and placing them at the core of overarching strategies and agendas for public sector reform and modernisation. The Recommendation hence offers guidance for a shared understanding and a common mindset on how to prepare for, and get the most out of, technological change and digital opportunities in a long-term perspective to create public value and mitigate risks related to the quality of public service delivery, public sector efficiency, social inclusion and participation, public trust, and multi-level and multi-actor governance.

Figure 1.1. The 12 principles of the *OECD Recommendation of the Council on Digital Government Strategies*



Source: Based on OECD (2014), *Recommendation of the Council on Digital Government Strategies*, www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm.

Figure 1.2. Digital transformation of the public sector

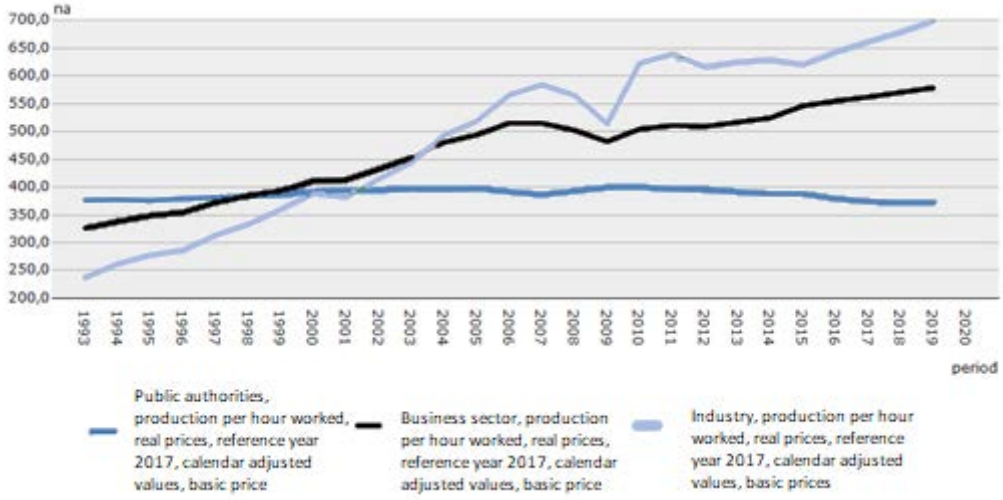


Source: Based on OECD (2014), *Recommendation of the Council on Digital Government Strategies*, www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm.

During the peer review mission to Stockholm in March 2018, the OECD collected views from public sector stakeholders on the need of going beyond a focus on processes, productivity, internal productivity and financial stability to a broader approach where these outputs are only means to an end.

The focus on public sector productivity and efficiency in Sweden (to deliver public services and increase the efficiency of the public sector's processes) has been the main driver behind e-government efforts in the last decades. Such pressure for productivity drove the modernisation of public sector agencies in Sweden. Yet, the data presented in Figure 1.3[1] show that previous or current modernisation measures may no longer be up to the challenge. This is particularly relevant if one compares the productivity advancements in the public sector *vis-à-vis* those in the private sector.

Figure 1.3. Public sector productivity in Sweden



Source: National Institute of Economic Research https://www.konj.se/english.html

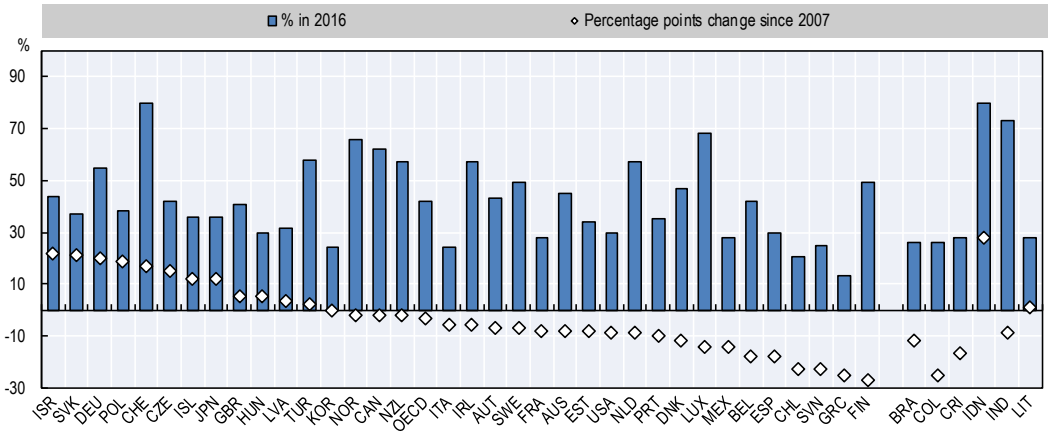
OECD work on trust has presented academic and statistical evidence on how satisfaction with public services affects the levels of public trust. There is, for instance, a "positive correlation between satisfaction with public services and trust in local governments (R^2=0.75) in OECD-EU countries over the period 2008-2015" (OECD, 2017c).

According to data from the Gallup World Poll, the levels of public trust in governments decreased by an average of 2% across OECD countries between 2007 and 2015. This trend has not changed, as data for 2016 show that levels of trust have declined by 3 percentage points since 2007 (OECD, 2017c) (Figure 1.4).

Sweden is no exception to this trend, as levels of public confidence in government decreased by 7% between 2007 and 2016.

Overall, the current levels of public sector productivity and public trust in Sweden might point to the fact that the public sector is failing not only to maintain a high level of public satisfaction with public services, but also to adapt to new challenges, stay relevant and better respond to the evolving needs of citizens.

Figure 1.4. Confidence in national government in 2016 and its change since 2007



Notes: Data on the confidence in national government for Canada, Iceland and the United States in 2016 are based on a sample of around 500 citizens. Data refer to the percentage who answered "yes" to the question: "Do you have confidence in national government?" (data arranged in descending order according to percentage point change between 2007 and 2016). Data for Austria, Finland, Ireland, Norway, Portugal, the Slovak Republic, Slovenia and Switzerland are for 2006 rather than 2007. Data for Iceland and Luxembourg are for 2008 rather than 2007. Information on data for Israel: http://dx.doi.org/10.1787/888932315602.
Source: OECD (2017c), *Government at a Glance 2017*, https://doi.org/10.1787/gov_glance-2017-en, with data from the World Gallup Poll.

The current digitalisation context and the multiplication of technological solutions raise challenges and risks for which governments must prepare. The changing societal expectations that arise from the pervasive presence of new technologies require governments to re-examine their governance approaches and strategies, the way they work, their organisational culture and capabilities to adjust and transform to better deliver public value to citizens. Failure to do so could mean an accelerated loss of trust in government and a perception that the government out of touch with societal and technological trends (OECD, 2014).

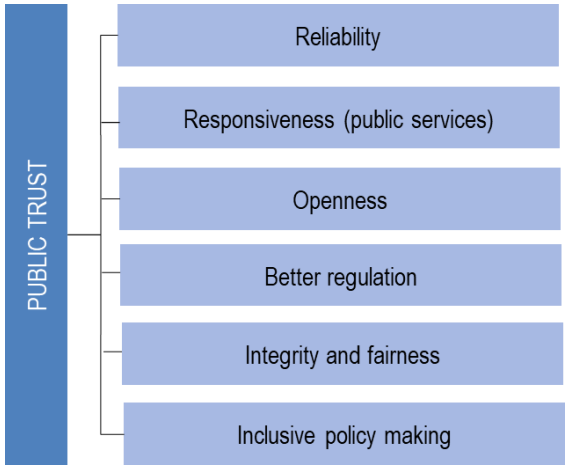
A plethora of factors – including social, economic and political variables – exert influence on levels of public trust. For instance, society's perception of government's capacity to deliver public services that respond to users' needs, and its integrity and responsiveness to emerging policy challenges (see Figure 1.5), can affect the levels of public trust in government. From this perspective, for instance, distrust in government's health services can lead to citizens' resistance to follow health information or advice (OECD, 2017c). Hence, moving from a focus on productivity to a focus on public service delivery, government openness and public engagement can help Sweden to tackle the trust deficit.

OECD work on public trust has identified six areas that can help governments to restore, sustain and/or increase levels of public trust in government (OECD, 2017c):

1. **Reliability:** Governments have an obligation to minimise uncertainty in the economic, social and political environment.
2. **Responsiveness:** Trust in government can depend on citizens' experiences with timely, quality, proactive and efficient public service delivery.
3. **Openness:** Open government and open data policies should be focused on citizen engagement and access to information.

4. **Better regulation:** Proper regulation is important for better justice, fairness, public services and the rule of law. This also includes the agility of governments to adapt their regulatory frameworks to meet the evolution of societies, business activities and technology.
5. **Integrity and fairness:** Public sector integrity is a crucial determinant of trust and is essential if governments want to be recognised as clean, fair and open.
6. **Inclusive policy making:** Understanding how policies are designed can strengthen institutions and promote trust between government and citizens.

Figure 1.5. Six areas for governments to win back trust



Source: based on: OECD (n.d.), "Trust in government" (webpage), www.oecd.org/gov/trust-in-government.htm.

In this light, winning back trust in the Swedish public sector could provide an incentive and be a driver for future digital government efforts. Such efforts could focus on improving user- and data-driven public service, citizen engagement, government openness, and multi-stakeholder collaboration.

Nevertheless, such a change of approach implies moving away from an understanding of digital technologies as mere tools to boost public sector productivity and efficiency. It implies recognising digital technologies as levers to create a new generation of public services and form of stakeholder engagement. More responsive, proactive and inclusive public services will require a shift in mindset to design more open, iterative and innovative approaches for the design and implementation of digital government policies.

Changing the approach could help reinvigorate and create a debate about the terms of the social contract between the Swedish government and its constituents in line with the changing expectations of the digital age.

Enabling governments as platforms: A mechanism for enhanced public service delivery and greater public trust

The 12 overarching principles of the 2014 *Recommendation of the Council on Digital Government Strategies* (see Section 1.1) are clear in terms of the relevance of openness and engagement, sound governance, and coherent policy implementation, as foundational elements of digital governments. This includes, for instance, the need to:

- ensure greater transparency, openness and inclusiveness of government processes and operation (Principle 1)
- encourage engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery (Principle 2)
- construct data-driven public sector organisations that use data as a platform for better public service delivery and public value co-creation (Principle 3)
- address digital security and privacy issues, and include the adoption of effective and appropriate security measures (Principle 4)
- secure leadership, political commitment, and inter-ministerial co-ordination and collaboration (Principle 5)
- ensure that legal and regulatory frameworks allow digital opportunities to be seized (Principle 12).

The 12 principles are the underlying basis of the 6 mutually reinforcing dimensions the OECD has identified as attributes of a digital government (Box 1.2). Altogether, these six dimensions aim to enhance how public services are designed and delivered to societies, spur the inclusiveness of these services in terms of digital rights, underpin trust in government, and contribute to the overall well-being of societies.

Box 1.2. The six dimensions of a digital government

1. From the digitisation of existing processes to **digital by design**: Government approaches "digital" with an understanding of the strategic activities involved with successful and long-lasting transformation. These activities take into account the full potential of digital technologies and data from the outset in order to rethink, re-engineer and simplify government to deliver an efficient, sustainable and citizen-driven public sector, regardless of the channel used by the user.
2. From an information-centred government to a **data-driven** public sector: Government recognises data as a strategic asset and foundational enabler for the public sector to work together and uses data to forecast needs, shape delivery, understand performance and respond to change.
3. From closed processes and data to **open by default**: Government is committed to disclosing data in open formats, collaborating across organisational boundaries and involving those outside of government in line with the principles of transparency, integrity, accountability and participation that underpin digital ways of working and the *Recommendation of the Council on Open Government* (OECD, 2017b).
4. From a government-led to a **user-driven** administration, that is, one that is focused on users' needs and citizens' expectations: Government adopts an approach to delivery characterised by an "open by default" culture and ambitions of "digital by design" to provide ways for citizens and businesses to communicate their needs

and for government to include, and be led by, them when developing policies and public services.

5. From government as a service provider to **government as a platform** for public value co-creation: Government builds supportive ecosystems that support and equip public servants to design effective policy and deliver quality services. That ecosystem enables collaboration with and between citizens, businesses, civil society and others to harness their creativity, knowledge and skills in addressing the challenges facing a country.
6. From reactive to **proactive** policy making and service delivery: Governments reflecting these five dimensions can anticipate, and rapidly respond to, the needs of their citizens before a request is made. They also proactively release data as open data rather than reacting to a request for access to public sector information. Transformed, proactive government allows problems to be addressed from end to end rather than the otherwise piecemeal and reactive digitisation of component parts.

These dimensions highlight how investing in efforts to enable governments as platforms can help improve how public services are designed, co-created and delivered. Enabling public servants across the entire public sector to use common tools and platforms is essential to foster coherent approaches and synergies that lead to standard quality in service delivery and economies of scale.

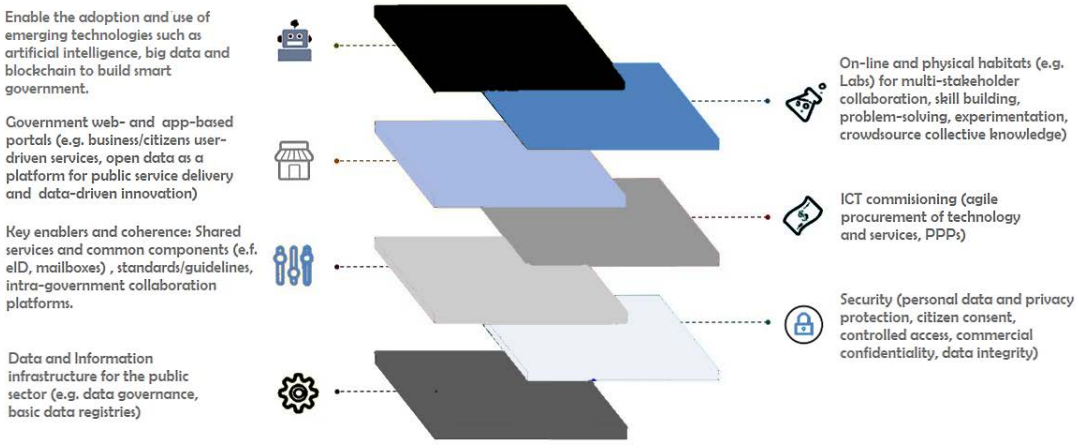
Similarly, providing the space and platforms to engage stakeholders is key to harnessing their creativity and levering their knowledge in the service design and delivery process. This can help close the gap between governments and their constituents, and lead to designing and delivering public services that focus on users' needs and use data as a source of evidence in their design. Thus, services likely better fit changing demands and growing expectations and the whole process underpins government openness and responsiveness towards greater public trust.

Enabling government as a platform can follow different approaches, which are composed of a series of supporting layers (Figure 1.6). These can range from technical efforts to citizen-driven and collaborative methods, for instance, to:

- Construct information and data architectures and infrastructures that provide a platform for public sector intelligence. For instance, by enabling streamlined data-sharing and federation practices in the public sector. A more seamless data-sharing and simpler data integration within the public sector can help to implement core digital government principles such as once-only (i.e. the right of citizens to provide the same information and data to authorities only once).
- Safeguard data privacy by putting in place strong governance frameworks to ensure that data controllers are accountable for management, handling and protection of data, and prevent data mismanagement and unauthorised access.
- Define regulations and common standards, govern and stimulate the development of secured and shared services and of common components that all public sector organisations can use to improve and facilitate public service delivery (e.g. mailboxes, eID, government-citizen payment systems) of equal quality.

- Procure ICT goods and services in a more agile fashion to allow external talent to solve policy challenges in a timely fashion and explore innovative ways of delivering public services.
- Enable the delivery of public services through digital channels to streamline the government-citizen relationship, and using government data as a platform for social and business innovation (see Chapter 5 on open government data).
- Contribute to greater stakeholder engagement (e.g. women, citizens, minorities, businesses) by enabling spaces for collaboration and experimentation supporting public sector innovation with a problem-solving mindset (e.g. policy and datalabs) in order to improve the design or the redesign of user-driven policies and services (e.g. by crowdsourcing ideas and feedback from citizens and from civil servants).
- Leverage data analytics and emerging technologies such as machine learning and artificial intelligence, to build smarter governments which can anticipate citizens' needs to inform policy and service design in advance (see Chapter 2 on data-driven public sector).

Figure 1.6. Government as a platform: The OECD digital government perspective



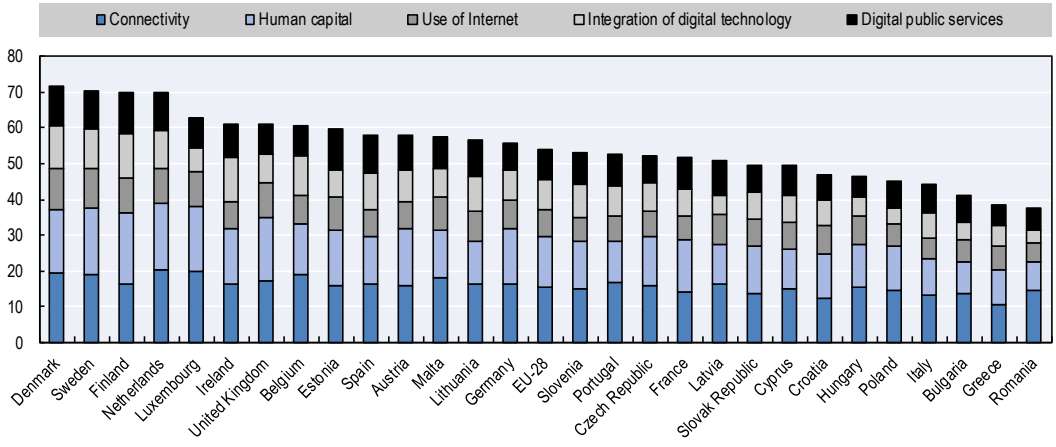
Sources: Author based on information from Brown, A. et al. (2017), "Appraising the impact and role of platform models and government as a platform (GaaP) in UK government public service reform: Towards a platform assessment framework (PAF)", https://doi.org/10.1016/j.giq.2017.03.003; Margetts, H. and A. Naumann (2017), "Government as a platform: What can Estonia show the world?", https://www.politics.ox.ac.uk/materials/publications/16061/government-as-a-platform.pdf; O'Reilly, T. (2011), "Government as a platform", https://doi.org/10.1162/INOV_a_00056; Ubaldi, B. (2013), "Open government data: Towards empirical analysis of open government data initiatives", http://dx.doi.org/10.1787/5k46bj4f03s7-en; UK Government Digital Service (2018), Government as Platform blog, https://governmentasaplatform.blog.gov.uk/about-government-as-a-platform (accessed on 6 April 2018).

Digital maturity and a tradition of public sector transparency and efficiency as a starting point

Sweden is among the most advanced OECD countries in terms of the level of digitalisation of its society and economy. This is illustrated by various international rankings, including The Digital Economy and Society Index 2018 (Figure 1.7) where Sweden ranks second regarding the use of Internet by its citizens, third in terms of the use of the Internet for

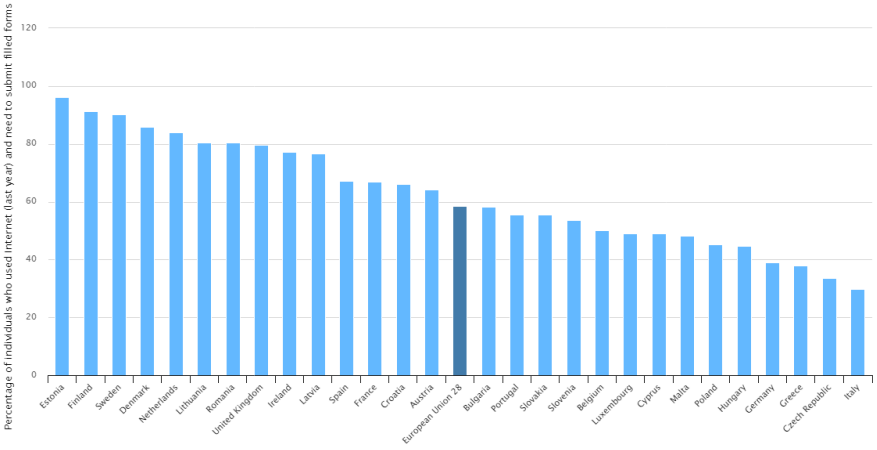
transactional services (including banking and shopping), and third in terms of individuals' "use of the Internet to send filled forms to public authorities" (see Figure 1.8).

Figure 1.7. Sweden's overall ranking in The Digital Economy and Society Index 2018



Source: European Commission (2018), *The Digital Economy and Society Index 2018*, https://ec.europa.eu/digital-single-market/en/desi.

Figure 1.8. Sweden in The Digital Economy and Society Index 2018: Individuals sending filled forms to public authorities, %



Source: European Commission (2018), *The Digital Economy and Society Index 2018*, https://ec.europa.eu/digital-single-market/en/desi.

Sweden has the most digitally savvy citizens in Europe when it comes to familiarity with the Internet and the adoption of this medium in their daily lives. The sound digital skills in Sweden are also reflected in the employment market as demonstrated by a high proportion of ICT specialists as a percentage of all occupations (88%), especially relative to other OECD countries (50%) (OECD, 2017b).

The digital maturity of the Swedish society and administration are complemented by a long-standing tradition of public sector transparency dating back to the 18th century. Sweden's Freedom of the Press Act 1766 is widely considered the oldest piece of freedom of information legislation in the world.

On 30 June 2009, the Public Access to Information and Secrecy Act superseded the provisions of the 1766 Act in terms of the right of citizens to request official documents. These include, for instance, the obligation of public authorities to register official documents and appeals against decisions of authorities (Government Offices of Sweden, 2015). Sweden, as a European Union member country, is also obliged to incorporate EU directives into national laws, such as the EU directives on public sector information.

Sweden has an excellent starting point on which to build on its e-government foundations to develop a solid digital government. However, some important achievements – such as its well-established tradition of public sector transparency – risk becoming a legacy burden if the government fails to act upon them in order to transform and better respond to the needs of a digital economy and society. This would require a paradigm shift in terms of the current *modus operandi* – one that has been successful to realise a well-functioning e-government, but that is not sufficient enough to advance digital government efforts in the country.

A brief overview of the state of common components and shared services in Sweden

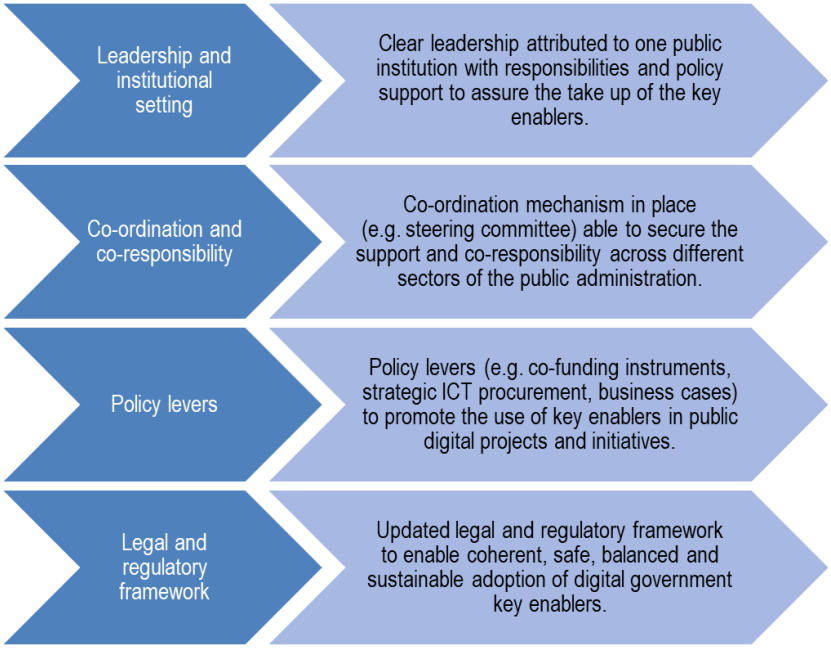
Sweden was an early adopter of e-government practices, with government agencies and some municipalities as the main drivers. The agencies for tax, social security and pensions are examples of institutions that have a large portfolio of advanced digital services. Several of these agencies collaborate around user-centric portals like Verksamt and 1177.

Many digital services use common components like eID, secure messaging and standards for data exchange. However, some policy challenges remain in terms of the current state of common components in the country. This context is paired with the lack of a strong and clear leadership (see Chapter 2), a harder approach to enforce compliance with standards and digital frameworks, stronger regulations, and insufficient central funding for digital government.

These are all crucial aspects that need to be addressed if Sweden is to strengthen the development of key enablers (Figure 1.9); the further integration of systems, data and information; and policy coherence in order to move forward in its evolution towards a fully digital and as such data-driven government (see Chapters 3 and 4).

Additionally, Sweden faces legacy challenges from a cultural, legal and organisational perspective that do not support the uptake of the key enablers (e.g. strong vertical governance structures and lack of coherent policy implementation). These challenges, which are not endemic to Sweden, can hamper the evolution towards digital government, and as such they require immediate and coherent action. This is in line with Recommendation 6 of the *OECD Recommendation of the Council on Digital Government Strategies* which stresses the relevance of ensuring "coherent use of digital technologies across policy areas and levels of government" (OECD, 2014).

Figure 1.9. Strengthening the key enablers



Source: OECD (2018), *OECD Digital Government Review of Brazil*, https://doi.org/10.1787/9789264307636-en.

Information technologies and data infrastructure

The insufficient IT soft infrastructure (e.g. regulations and standards) has led to efforts that are often unstructured and incoherent. The tangled hard IT infrastructure is the result of siloed actions, lack of adequate guidance towards the provision and adoption of common standards, and the development of fragmented IT solutions and digital services implemented by agencies.

The absence of a whole-of-government view of the public sector's IT infrastructure impedes further integration between agencies. In order to overcome this situation, one of the key objectives of the new Agency for Digital Government (DIGG) centres on addressing issues concerning the IT infrastructure in the public sector.

Addressing issues related to the overall availability and consistency of the soft IT and data infrastructure is a priority if Sweden wants to succeed in reinforcing the state of the digital enabling frameworks (e.g. the common interoperability framework; base data registries; shared ICT/data infrastructure; business processes and services; cloud computing; open source software).

Moreover, the development of common components is normally understood from a cost-efficiency perspective, therefore losing the focus on their value as foundations for the development of shared services and a more integrated public service delivery.

The government of Sweden has commissioned[2] the DIGG to co-ordinate a number of agencies to jointly submit proposals to address some of the existing challenges related to IT and data infrastructures, including:

- creating a safe and efficient access to basic data by, *inter alia*, clarifying responsibility for and increasing the standardisation of such data by 30 April 2019

- reinforcing the security and efficiency of electronic information exchanges in the public sector through increased standardisation by 15 August 2019.

Yet, in the context of the high level of self-governance granted to agencies, it will be important to focus on overcoming the existing silo-based approach by balancing actions targeting enforcement and collaboration. This would require developing a clear business case that provides convincing incentives for the development and adoption of common soft and hard components that agencies find appealing enough to prioritise government-wide solutions.

Mailbox

The case of digital government common components and shared services such as mailboxes and eID are also worth paying attention to, in particular from a digital rights perspective (digital communication channels, access to government information and data, cybersecurity and privacy protection, personal data sharing and access consent, connectivity, and transparency of artificial intelligence-based decision making tools [open algorithms]).

The Swedish government developed the *Mina meddelanden* mailbox infrastructure (Swedish for "My messages") to enable digital communication between the government and its citizens. The platform is accessible through digital identification tools (see the following section on eID) and can be used to develop and provide public and private mailbox solutions to citizens.

Although public sector solutions have been developed (namely the *Min myndighetspost* mailbox service of the Swedish Tax Agency) citizens and businesses seem to primarily use mailbox services developed by the private sector. For instance, KIVRA, the biggest supplier of mailbox services in Sweden, provides a mailbox solution to those organisations interested in paying for their mailbox services through an app, and to those citizens and businesses choosing to use their service.

Figures provided by KIVRA to the OECD Secretariat during the peer review mission to Stockholm in November 2017 showed that at that time, 2 million Swedes were using KIVRA's mailbox service. The vast majority of its client/profit base is integrated by private sector organisations, but some major players from the public sector (like the Swedish Tax Agency) are also part of its client base. This provided citizens with the choice of which tool to use.

KIVRA's arrangement with the public sector provides basic services for free but premium options – like online payment functionalities – have a cost. Therefore, despite some exceptions at the municipal level, the Swedish government does not provide any financial compensation to KIVRA for its mailbox services as in most cases the free service is preferred.

KIVRA's business case is mainly based on the provision of its services to private sector organisations, but also on the rationale that choice should be given to citizens and that public sector solutions should not compete with the private sector. Nonetheless, this also raises the question on how effective public agencies have been to develop integrated public services that could interconnect different end services provided to citizens, such as mailboxes, citizens folders or dashboards.

According to KIVRA, while mailbox services have been developed by some Swedish public sector agencies (like the Tax Angecy's *Min myndighetspost*) as an alternative for people who do not want to use a private service for exchanges with the government, the number of people that prefer public solutions is roughly 100 000 vs. the 2 million KIVRA users. Indeed, if citizens are clients of KIVRA, the Swedish government opts in to use KIVRA's platform. Otherwise, traditional postal mail service is the second-best option.

This leads to a certain level of vendor lock-in, where the sustainability of such a practice may put at risk citizens' access to mailbox services to digitally communicate with public sector institutions should this company decide to shut down its services to those agencies not paying for its services. During the OECD mission to Stockholm in November 2017, representatives from KIVRA expressed that the legal and regulatory frameworks needed to ensure the sustainability of the service.

The case of KIVRA provides a clear example of the fact that the Swedish public sector does not seem to be sufficiently agile or fast to build end-to-end and integrated services.

eID

In Sweden, the eID policy states that eID solutions can be provided either by public or private entities (Swedish eID Board, 2018). This has led to a market-driven approach similar to the one observed for mailbox services described in the previous section, i.e. the BankID is the most used eID service in Sweden (see, for instance, Grönlund [2010]; JoinUp [2014]; Söderström [2016]).

BankID[3] was developed by 11 banks to enable interoperability and integration of online and mobile services and to spur eID uptake by citizens. As a result, 7.5 million people use BankID in Sweden to access services provided by private organisations and public agencies at the central and local level (BankID, 2018).

While the success of BankID from a user uptake stance is clear, the view of public sector stakeholders differs in terms of the benefits and risks of such a model.

The success of the uptake of market-driven solutions (e.g. BankID and KIVRA) can be interpreted as a result of the limited agility of the Swedish public sector to develop its own solutions, partially caused by its consensus-based culture. Common solutions, used consistently across the public sector, are critical enablers of coherent approaches and integration which are core to a digital government that is horizontal, integrated and interconnected by nature.

Common digital solutions can be important drivers of more rapid digitalisation of public services across all sectors. Existing market solutions meet growing citizens' expectations in terms of the quality, responsiveness and timeliness in accessing public services. However, the unwillingness of some public sector actors to implement common eID standards and frameworks caused major delays in the implementation of the Swedish public sector eID ecosystem.

Moreover, this context increases the dependence of the Swedish public sector on private solutions due to the lack of efficient and integrated public eID solutions. Stakeholders from across the government appear to be of the opinion that the development of eID solutions is not a priority for the government, leaving room for the private sector to deliver innovative solutions that meet fast-changing user needs. This scenario opens the discussion on the potential negative implication in terms of the government's capacity to maintain control over security matters and the stability of service delivery.

A step forward in this sense, sign of the growing awareness of the government of the potential risks of the current situation, is the establishment of the e-Identification Board.[4] The e-Identification Board co-ordinates and supports e-ID efforts in the public sector to further promote the coherent development of these tools and citizens' uptake. The board is part of the Agency for Digital Government since September 2018.

Notes

1. Data from the Swedish National Institute of Economic Research.

2. Fi2018/02149/DF is a government mandate for some agencies to submit proposals on how to ensure secure and efficient access to basic data. Fi2018/02150/DF is a government mandate for some agencies to submit proposals on how to ensure a secure and efficient exchange of electronic information within the public sector, e.g. through standardisation.

3. For more information see: https://www.bankid.com/en.

4. For more information see: https://www.elegnamnden.se/inenglish.4.4498694515fe27cdbcf13d.html.

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Chapter 2. Strengthening governance for a data-driven and digital government in Sweden

This chapter focuses on analysing institutional governance arrangements to identify windows of opportunity and provide policy recommendations to advance a data-driven public sector in Sweden. It discusses the leadership, policy levers, funding and human capital needed for enabling the Swedish government as a driver of change towards a data-driven public sector transformation.

Introduction

Despite the challenges for agile and co-ordinated decision making in the cultural context described in Chapter 1, the Swedish government has made important efforts in recent decades to find the "right" institutional setting to secure efficient decision making and provide leadership. First for e-government, and now for digital government, the government's attempts shifted from co-ordination-based to agency-specific governance models. These efforts aimed to define an institutional arrangement that could fit within the organisational consensus-based ethos of the public sector. Yet, they also led to a plethora of positive and negative outcomes in terms of efficient design and delivery of policy results, and inter-institutional collaboration.

The new Agency for Digital Government (DIGG) will face the legacy of cultural, organisational and capacity challenges that other, now extinct, public bodies encountered to steer, lead and advance previous e-government agendas. Learning from previous failures will play a key role in terms of the success of the DIGG. This opens a window of opportunity to empower and equip this body with the right mandate, resources and policy levers to enable it to carry out its role.

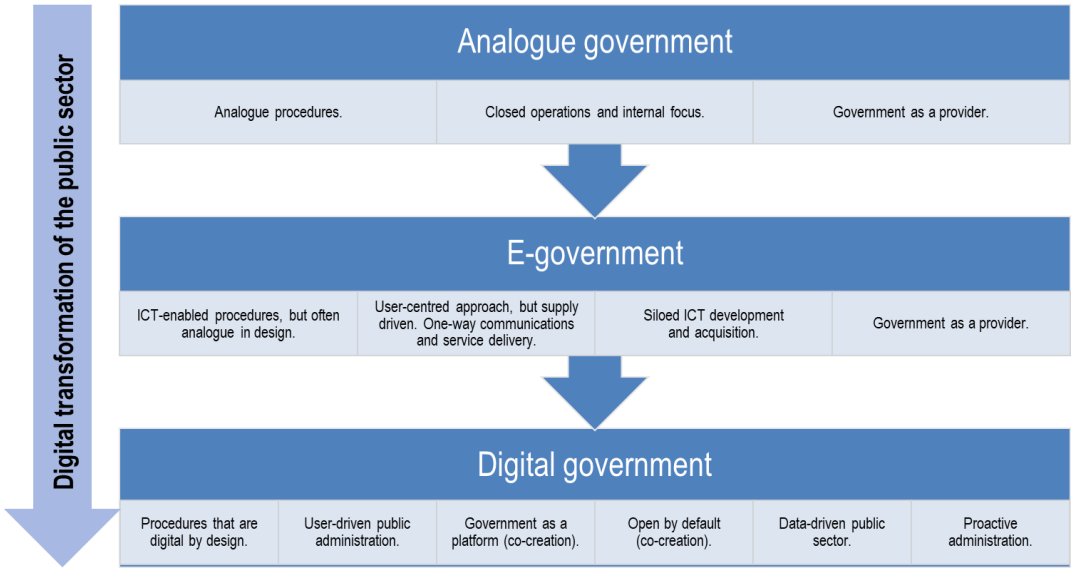
Steering policy and securing cohesive actions, overcoming the resistance of agencies to cede to a certain extent their freedom of action, fostering a collaborative mindset for whole-of-government approaches and joined-up decisions, will be essential for the Swedish public sector to leverage the consensus-based culture to drive change and co-create public value. Enabling the DIGG to support the Swedish public sector in its progress towards these ways of working will help to avoid repeating the mistakes of the past in terms of institutional governance and move towards a full digitalisation.

The 2014 *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014) (hereinafter, the "Recommendation") provides a set of 12 strategic principles that OECD member and partner countries may consider in order to design and implement sound digital government policies and strategies (see Chapter 1) towards the digital transformation of the public sector, from analogue to digital governments (Figure 2.1).

The Recommendation, an OECD legal instrument, provides specific principles on the relevance of designing and setting sound governance models to lead and co-ordinate the implementation of digital government policies (Box 2.1). These provisions relate to the need of securing clear policy leadership, political support, stakeholder engagement, policy coherence (including embedding digital government as an element of broader policies), and monitoring and evaluating policy results and investments on information and communication technologies. Other relevant principles (such as Principle 3 on a data-driven public sector and Principle 1 on government openness and inclusiveness are also discussed throughout this document).

This chapter explores the current context in Sweden *vis-à-vis* the aforementioned principles. It focuses on analysing institutional governance arrangements to identify windows of opportunity and provide policy recommendations to advance a data-driven public sector in Sweden.

Figure 2.1. The digital transformation of the public sector



Source: OECD (2018), *Open Government Data in Mexico: The Way Forward*, https://doi.org/10.1787/9789264297944-en.

Box 2.1. *OECD Recommendation of the Council on Digital Government Strategies*: Governance and co-ordination

The [OECD] Council […] RECOMMENDS that, in developing their digital government strategies, governments should:

[Principle] 5. 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.

[Principle] 6. Ensure coherent use of digital technologies across policy areas and levels of government, by:

1. engaging relevant stakeholders and other levels of government to provide input to the development of the digital government strategy
2. integrating the digital government strategy in overall public administration reforms
3. identifying the complementarity, alignment and mutual reinforcement between the digital government strategy and other relevant sector strategies
4. providing the institution formally responsible for digital government co-ordination with the mechanisms to align overall strategic choices on investments in digital technologies with technological deployment in various policy areas.

[Principle] 7. Establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government, through:

1. identifying clear responsibilities to ensure overall co-ordination of the implementation of the digital government strategy
2. establishing a system for "checks and balances" of government's 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.

Source: OECD (2014), *Recommendation of the Council on Digital Government Strategies*, www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf.

Tracing the governance path for digital government in Sweden

Previous OECD work provides evidence on how different governance models delivered – or failed to deliver – policy results in Sweden. For instance, in the case of the Swedish Administrative Development Agency (Verva) – a central e-government policy co-ordination agency created in 2006 and abolished in 2008 – the agency didn't fully achieve its co-ordination mandate in the face of organisational, cultural and capacity barriers (OECD, 2013) (Box 2.2).

Box 2.2. The case of the Swedish Administrative Development Agency

The Swedish Administrative Development Agency (Verva) was established in 2006 as one of the government's central advisory agencies. Verva's remit was to co-ordinate the development of central government in Sweden, while driving and promoting the country's e-government development. Despite tangible achievements such as the creation of an access gate to all government e-services for citizens – the "Sverige.se" portal – Verva did not fully achieve its objectives.

A lack of co-ordination was observed at all levels (organisational, financial and legal), leading, among other drawbacks, to the partitioned and duplicated development of the public sector's e-services. Verva was abolished in 2008, along with the central e-services portal.

As a response, e-government policy was subjected to a wide ranging review, which was expressed in the publication in January 2008 of the "Action Plan for e-Government". The central aims of the action plan were to rationalise policy governance, make the Swedish administration the "world's simplest administration" and take public services delivery to a higher level than that of mere provider-customer interaction.

This investigation led to the subsequent decision to establish the e-Government Delegation (E-Delegationen in Swedish).

Source: OECD (2013), *Value for Money in Government: Sweden 2013*, http://dx.doi.org/10.1787/9789264200685-en.

These barriers included, for instance, the unwillingness of large and established agencies to let Verva steer their internal strategic choices. Verva was a relatively small agency whose primary role was to provide guidance; it did not have a clear and solid mandate to steer,

co-ordinate and manage the e-government policy. The decision to dismantle Verva in 2008 and establish the E-Delegation was also part of a broader political initiative to strengthen the government's capacity to evaluate the results of e-government initiatives.

For instance, in 2008, the Swedish government commissioned an internal investigation (SOU 2008:22[1]) to assess its long-term needs of tacit support across different public sector organisations, including the Swedish Financial Supervisory Authority, the State Treasury and Verva. The underlying rationale was the need to assess and increase the government's capacity to act as the driving force behind public administration reform, particularly in the context of transformational reforms such as e-government.

The investigation concluded that Verva was tasked with the difficult mission of co-ordinating e-government initiatives in a public sector led by strong public agencies, which resulted in Verva's inefficient use of considerable public resources that did not deliver the expected results. Additionally, it was not possible to expect an agency the size of Verva to play a decisive role in the development of e-government. As a result, the focus was moved from centralisation to co-ordination and federation, placing major public sector actors like the Swedish Tax Agency and the Social Insurance Agency as the backbone and champions of policy developments. Combining a greater management role for government with a "federative" approach where public sector organisations could play a key role was judged to be more realistic.

As an effort to address these challenges, the Swedish government explored and pursued the implementation of consensus-based governance models such as the E-Delegation (which evolved into the eSAM; see Section 3.3 in Chapter 3).

"The E-Delegation was set up by [the Swedish] government within the Ministry of Finance (and later moved to the Ministry of Enterprise) for a limited time to boost and streamline e-government efforts" across public agencies. This included the co-ordination of "IT-based development projects of government agencies and specific IT standardisation issues", and the assessment of "their impact on citizens, the business sector and public administration employees. The E-Delegation [had] a staff of eight" (OECD, 2013).

Yet, the E-Delegation lacked the leverage to play a relevant role in the context of the agency-oriented Swedish public sector. Its mandate was limited to advisory and non-binding roles, without strong decision-making power so that it was slow to take decisions and was too rigid (e.g. in terms of recommending frameworks, standards and guidelines). While it could navigate in the given context sufficiently enough to produce some of the current common digital enablers for the public sector, the consensus-oriented design of the E-Delegation hampered faster development and delivery of policy results.

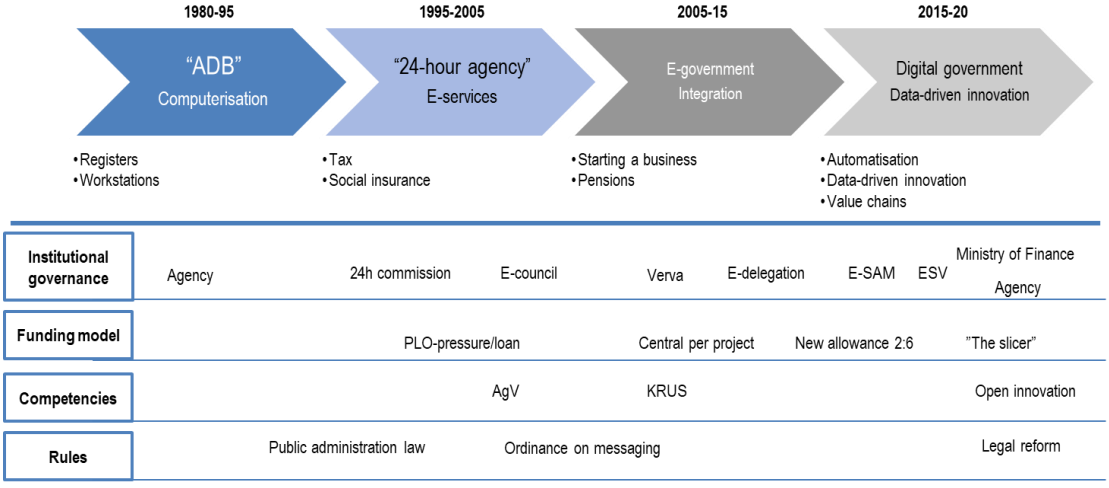
In terms of implementation, the E-Delegation failed to propose harder policy levers to the government. This hindered its capacity to take coherent action in terms of deploying common enablers across the broader public sector, e.g. through laws and regulations or central funding. From its conception, the E-Delegation faced a problem of design.

The Swedish Agency for Public Management carried out an evaluation of the E-Delegation in 2014 (Statskontoret, 2014), concluding that it had successfully functioned as a supportive body to other agencies by supplying technical guidelines and frameworks, but that it was less successful in supporting the government in the coherent implementation of the e-government policy.

At the same time, the evaluation noted that the government offices (e.g. ministries) had shortcomings in co-ordinating the e-government policy. There was a lack of resources at the Ministry of Enterprise (seat of the E-Delegation) and the planned policy co-ordination failed when in 2011 the smaller initial group of state secretaries in charge of e-government was replaced by a larger group intended to bring about the overarching digital agenda for Sweden.

The undefined nature of the allocation of responsibilities and accountability resulted in an unclear organisation and weak implementation of the mandate, and in insufficient constructive collaboration between the E-Delegation and the government offices at the level of the political leadership. These critical factors resulted in the E-Delegation providing a governance model that was less efficient than originally intended.

Figure 2.2. Governance for e-government and digital government in Sweden



Source: Information provided by the Swedish Ministry of Finance.

The E-Delegation was dismantled in 2016, and the funds were transferred to the central government budget in order to strengthen the capacity of the government offices (e.g. ministries) to prepare necessary government decisions and build capacity to lead the digital transformation of the public sector. This implied a shift from a delegated model to one focused on the stronger role of the government as a driver of change. This model benefited from the reallocation of financial resources from the E-Delegation to the government. The same year, responsibility for digital government was transferred from the Minister of Digitalisation back to the Minister of Public Administration.

One noteworthy particularity is the division of responsibilities in terms of public sector information and open government data (see Chapter 5) that has taken place since 2011.

In 2011, responsibility for e-government policy was moved from the Minister of Public Administration to the Minister of Digitalisation. However, responsibility for the more legally related PSI-related questions remained with the Minister of Public Administration, while the promotion of open data was moved to the Minister of Digitalisation. In 2016, the responsibility for PSI and open data was joined-up again under the responsibility of the Minister of Public Administration.

Establishing a new institutional governance for digital government

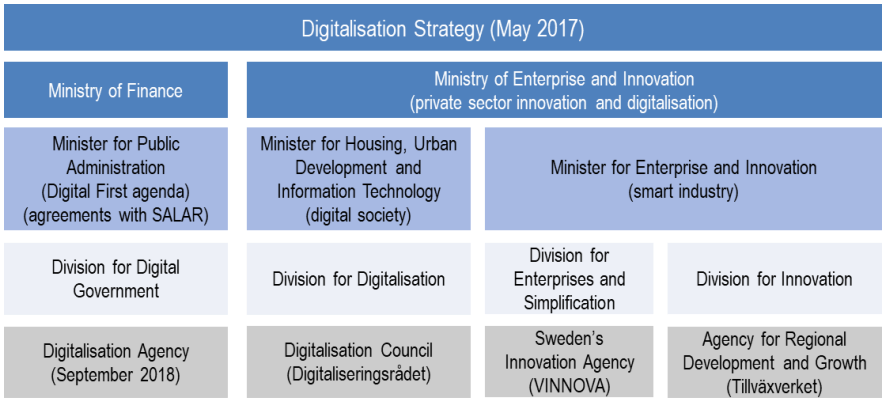
The current institutional model for digital government in Sweden is therefore the result of the division of policy co-ordinating roles in the context of the broader Swedish digital agenda.

By 2018, co-ordination of the overall digital agenda for the country was a cross-sectoral responsibility with a (still) complex governance model (Figure 2.3). Political leadership in terms of digitalisation was distributed among the then Ministers for Housing and Digital Development, the Minister for Public Administration, and the Minister for Enterprise and Innovation, which grants the digitalisation agenda with political support.

On the one hand, co-ordination of the digital government programme was the responsibility of the Ministry of Finance, specifically the Minister for Public Administration, supported by the Division for Digital Government. As a result, digital government was located under the public administration policy umbrella.

On the other hand, the Minister for Housing and Digitalisation at the Ministry of Enterprise and Innovation was responsible for the overall digital economy and digital society agendas, which includes industrial and business innovation.

Figure 2.3. The Swedish digital agenda: Key ministries for cross-sectoral responsibility for digitalisation policy, 2017



Following a 2016 assessment on the co-ordination of the digital government agenda, the Swedish government decided it would benefit from the creation of a new digitalisation authority within the Ministry of Finance.[2] In 2017, the government decided to create the Agency for Digital Government (DIGG) by September 2018 with responsibility for supporting the government towards the implementation of a more cohesive and co-ordinated approach to the digitalisation of the Swedish public sector.

The DIGG became operational on 1 September 2018. It is the result of a political initiative from the Minister of Public Administration and is in charge of supporting the implementation of the digital government policy in Sweden, and identifying and capitalising on the opportunities brought about by the digital era for the public sector to better respond to the demands of the Swedish population.

This institutional setting follows examples observed in other OECD countries where policy co-ordination roles are attached to agency-led governance models (e.g. Denmark, Italy and Portugal), while others have opted for co-ordination units within ministries or centre of government units/bodies (e.g. Canada, Mexico and the United States) (Table 2.1).

Table 2.1. Units or bodies leading the work on digital government: Selected OECD countries and Uruguay

Country	Unit	Location
Canada	Chief Information Officer Branch	Treasury Board of Canada Secretariat
Denmark	Agency for Digitalisation	Ministry of Finance
Estonia	Undersecretary of State Information Systems	Ministry of Economic Affairs and Communications
Korea	National Information Society Agency	Ministry of Interior and Ministry of Science and ICT
Mexico	Digital Government Unit	Ministry of Public Administration, with the support of the Coordination of the National Digital Strategy at the Office of the President
New Zealand	Government Chief Digital Officer	Department of Internal Affairs
Portugal	Agency for Administrative Modernisation	Presidency of the Council of Ministers
Spain	Direction of Information and Communication Technologies	Ministry of the Presidency
United Kingdom	Government Digital Service	Cabinet Office
United States	Office of e-Government and Information Technology (Chief Information Officer)	Office of Management and Budget, White House
Uruguay	Agency for Electronic Government and Knowledge and Information Society (AGESIC)	Office of the President

Source: Based on OECD (2016), *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, http://dx.doi.org/10.1787/9789264258013-en.

Even though the establishment of agencies is often seen as a solution to secure the level of co-ordination, horizontality and agility required for digital government, previous OECD work assessing institutional governance models for digital government found evidence that successful steering and co-ordination of policy design, co-ordination and implementation is not linked to specific governance structures.

Instead, success is related to the mandate, powers and resources allocated to the entity in charge of digital government. Specific characteristics of the public sector and the overall government structure and context (e.g. organisational culture, high-level political support, governance evolution, unitarian vs. federal models), may require alternative governance models to enable the leading role and empowerment of these bodies (e.g. mandate, financial levers and financial autonomy, capacity to regulate) (OECD, 2016).

In April 2019, the creation of the new Ministry for Infrastructure brought together broader digitalisation issues (including digital government) under one single leadership role, including moving the DIGG from the Ministry of Finance to the Ministry for Infrastructure.

Getting it right: Setting up an efficient institutional model for digital government in Sweden

When the peer review mission for this Review took place in 2017, the creation of the DIGG was at the core of the political decisions in Sweden and therefore attracted considerable attention in the discussion with the OECD Secretariat.

Expectations on the new digital government agency were high among public sector stakeholders in Sweden, and two specific aspects created some concerns.

The first relates to the fact that there is a long history of strong public sector agencies across the Swedish public administration with significant independence and operational mandates. This has at times contributed to silo-based approaches and has not necessarily supported strategic coherence across the public sector or cleat and a strong whole-of-government leadership.

Second, as discussed above, the agency-led model is not new to Sweden, and has been experimented with before (see previous section), with unsatisfactory results due to the lack of a strong mandate and of adequate policy levers. It is also not clear how open and participatory the design process for the new agency was nor to what extent the inputs of public sector organisations concerning their needs were taken into account.

The OECD peer review team concluded and agreed on the need to ensure that all efforts invested in putting the DIGG to work must bring public sector institutions and champions on board to ensure ownership and buy-in.

Given its responsibilities (see Box 2.3), the challenge will be to leverage the potential role of the new agency beyond its co-ordination responsibilities as a real driver of the digital and data-driven public sector transformation.

The Swedish government has the advantage of establishing an agency building on lessons learnt from the past. This is a golden opportunity to design an agency that is well equipped in terms of mandate, power and resources. This implies providing the agency with the necessary resources – including the human capital that Verva seemed to have fallen short of – and empowering tools, such as the right soft and hard policy levers to drive forward the digital government agenda. Also, a new approach might be needed in order to leverage the DIGG's role as an enabler and platform for digital innovation and public value co-creation within the public sector. Previous attempts to address governance challenges did not go beyond the mere improvement of inter-agency IT-centred co-ordination.

OECD work on e-government, digital government and open government data (see OECD [2018]; [2017a]; [2016]; [2003]) has explored and assessed how a sound governance framework (which includes institutional and organisational set-up, legal and regulatory basis, policies, policy levers) is an underlying requirement to advance successfully digital government and open data policies, and contribute to policy sustainability in the long term. The OECD *Recommendation of the Council on Digital Government Strategies* (as highlighted above) has reinforced this key message. As a result of this analytical and normative work, the following common characteristics of sound institutional governance models for digital government can be identified:

- **Strong leadership** (e.g. the right level of authority to provide a clear vision for digital government; reach, convene and engage stakeholders; address resistance to change, and increase public sector organisations' buy-in and ownership; and move towards collaboration and value co-creation).
- **Mandate and empowerment** (e.g. soft and hard policy levers).
- **Financial autonomy and funding mechanisms** (e.g. funding mechanisms to support strategic digital projects and secure alignment of these projects with the overall digital government policy guidelines).
- **Human capital** (e.g. capacities to steer and provide guidance, establish partnerships with key actors, promote skills and competency development across the public sector, attract adequate talent, promote the strategic use of digital technologies and key enablers).

Box 2.3. Sweden: Main responsibilities of the Agency for Digital Government

The Swedish government has tasked the Agency for Digital Government (DIGG) with the following responsibilities (Swedish Government, 2018):[3]

- Co-ordinate, develop and provide a national digital infrastructure for the public sector, and promote its use. For instance, through the standardisation of information exchange within the public sector for efficiency and innovation.
- Help the government develop policies for digitalisation and IT within the public sector, and to work for a more digitalised public sector.
- Manage public eID and e-Signature infrastructure and tools.
- Provide and administer electoral systems in accordance with the Electoral e-ID Systems.
- Responsible for the Swedish connection points (nodes) for cross-border identification.
- Promote the use of the government-wide infrastructure for secure electronic mail.
- Co-ordinate issues of common standards, formats, specifications and similar requirements for the public administration's electronic information exchange.
- Promote electronic procurement processes in public administration.
- Participate in and promote national and international standardisation work within its field of activity.
- Promote open and data-driven innovation as well as the availability of open data and reutilisation of public administration documents.
- Promote the user-friendly development of common digital services.
- Encourage that information and services provided digitally by the public administration are available to all persons regardless of their abilities.
- Support the public administration in the case of digital investments of major or strategic nature.
- Fulfill the co-operation obligations that apply to Sweden as a member state in accordance with Article 12 of the eIDAS Regulation.
- Conduct the work on digitising the public administration in a manner that ensures the protection of security sensitive activities and information security in general as well as the protection of personal integrity.
- Adopt responsibilities currently under the mandate of other public bodies such as the Swedish Tax Agency, the Swedish Financial Authority, the Expert Group on Digital Investments, the National Archives, the Swedish Agency for Growth, and the National Post and Telecom Agency.

Leadership

There is a gap in terms of clear leadership for digital government in Sweden. This may result not only from the constantly evolving structure of responsibility observed in terms of institutional arrangements over the past years, but also due to the high level of organisational autonomy – that prioritises verticality – and the consensus-based culture of the Swedish public sector – which may not favour the institutionalisation of such a leadership role.

As mentioned earlier, the Ministry of Entrepreneurship and the Ministry of Finance shared institutional responsibilities in terms of digital policy design (e.g. infrastructure, private sector innovation and digital government). Yet, the OECD found evidence that the strategic leadership for digital government and open data is not clear regarding the definition and co-ordination of the digitalisation of the public sector, and more specifically of the digital government agenda. This results in the lack of direction for policy implementation.

Some OECD countries have created positions such as chief information officers or chief digital transformation officers, with the objective of addressing leadership and co-ordination gaps (OECD, 2017a). In Sweden, key stakeholders agreed on the need to balance the existent decentralised and vertical policy implementation model with a clear high-level strategic leadership to support and steer co-ordination, collaboration and coherency. This is essential to spur the levels of integration and horizontality required by a public sector that needs to be increasingly connected and synergetic if Sweden is to maintain the same levels of productivity and efficiency in the digital government era.

The establishment of a clear leadership role for digital government requires consensus and agreement from all the relevant political and institutional players in order to reduce the risk of institutional resistance and favour co-operation and support. The creation of such a leadership role is also to be understood in terms of how it would fit existent accountability structures within the public sector.

Leveraging a mix of soft and hard policy levers

As highlighted above, mandate, powers and resources are all equally important ingredients for the successful governance for digital government. Therefore, the establishment of the leadership role with a clear mandate should be complemented by the provision of adequate enabling policy tools (e.g. hard and soft policy levers). They should empower the leader to govern the digital government agenda and support the coherent implementation of digital government efforts across different policy areas and levels of government. These levers range from the use of common standards and guidelines and reward-based systems to incentivising intrinsic motivation (soft policy levers), to the adoption of hard policy levers, such as legal instruments and conditioned funding (OECD, 2017b).

Sweden's culture of consensus and the tradition of using regulatory instruments such as letters of instruction provide an ideal starting point. The culture of consensus provides an opportunity to foster greater collaboration and public value co-creation, particularly if collaborative efforts can be geared towards, and linked to, the achievement of common and shared goals. A more value- and result-oriented collaborative approach, together with the availability of the adequate collaboration spaces for value co-creation and experimentation, should drive policy decisions and implementation driven by data and lead to a system of knowledge and engagement that can spur more efficient system thinking.

Yet, in the Swedish context, the empowerment of the new agency requires finding the right balance between the use of hard and soft policy levers in order to motivate collaboration while ensuring and/or enforcing policy coherence. The DIGG could use hard policy levers already available in the Swedish public sector while being inspired by best practices across OECD member and non-member countries (see Box 2.4).

The government can use regulatory instruments such as the letters of instruction to guide cross-sectoral policy implementation by agencies (like the DIGG) in line with the digital government objectives.

For instance, in Uruguay**,** the Agency for Electronic Government and Knowledge and Information Society is the governing body of digital government with both executive and regulatory powers. The agency is located within the Office of the President and reports directly to the President through the Pro-Secretary of the Presidency. It issues regulations and administrative decisions in the field of its competence and has a dedicated fund to provide technical and financial support for ICT projects in the public sector. While having the power to impose sanctions, this tool is rarely used as it is perceived as inadequate or harmful in general terms for healthy governance and collaboration dynamics (OECD, 2016[5]).

Funding as a policy lever

Securing regular funding for policy co-ordination bodies contributes to developing a governance framework that safeguards policy sustainability. In addition, it also opens a window of opportunity to use funding as a policy lever to foster the alignment of digital government initiatives with overarching policy guidelines, objectives and standards.

The 2018 Budget Bill (*budgetpropositionen*)[4] included the establishment of the DIGG and its funding model as one of the projects of high strategic relevance. The Swedish government allocated a budget of SEK 102 million (roughly EUR 10.2 million) under the 2018 Budget Bill for 2018, EUR 8.6 million for 2019 and EUR 8.71 million for 2020 (Figure 2.4A).

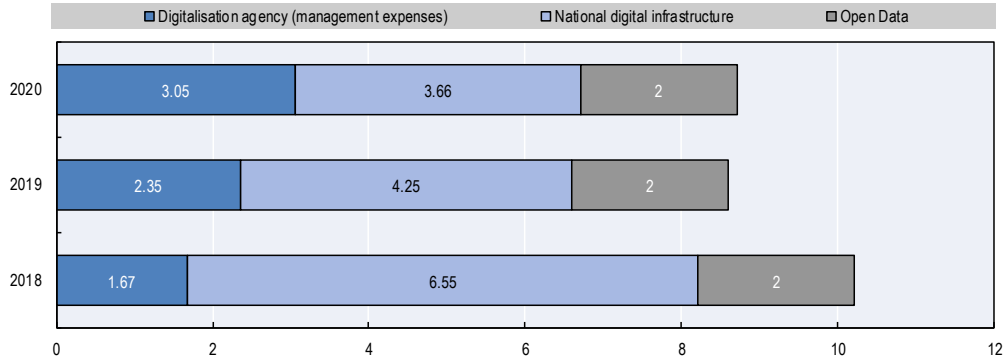
According to the provisions of the bill, these funds are expected to cover the agency's management expenses necessary to co-ordinate and support inter-agency digitalisation efforts (increasing from 16% to 35% of the total budget for 2018-20). The budget also included ring-fenced funds for: the development of the national digital infrastructure (ranging from 64% to 45% of the total budget for 2018-20); and advancing the open data policy (roughly 20% of the total budget for 2018-20) (Swedish Government, 2017).

The funding model described above represents an important policy lever to support the digital transformation of the public sector in line with practices observed in other OECD countries (Box 2.4).

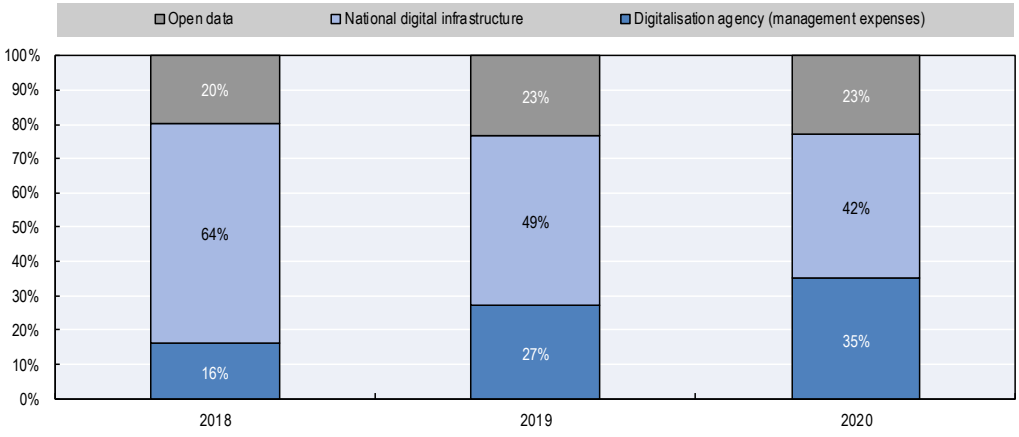
The allocation of a specific budget for the development of the digital infrastructure and open data can help tackle challenges related to IT infrastructure legacy challenges and increase control over high-risk and strategic ICT projects. For instance, aligning agencies' efforts in relation to the updating of strategic IT infrastructure for the public sector, overcoming challenges in the use of common building blocks (eID, soft infrastructure) (see Chapter 1), establishing data governance (see Chapter 3) and fostering open data (see Chapter 4).

Figure 2.4. Funding model for new digitalisation agency

A. Million EUR



B. Budget category as a percentage of total budget per year



Note: Original figures in Swedish crowns.
Source: Based on data provided by the Swedish Government (2017), *Budgetpropositionen för 2018* (*2018 Budget Bill*) (in Swedish), www.regeringen.se/rattsdokument/proposition/2017/09/prop.-2017181 (accessed on 26 March 2018).

Box 2.4. Levers for digital government co-ordination across OECD member and partner countries

Portugal

In Portugal, the Agency for Administrative Modernisation has substantive powers in terms of allocation of financial resources and approval of ICT projects. It manages the administrative modernisation financing programme which is composed of EU Structural Funds and national resources. This gives the agency important leverage to ensure implementation, as approval of funding for digital government projects through this programme is conditioned on compliance with existing guidelines.

Similarly, every ICT project of EUR 10 000 or more must be approved by the operational e-government network that is chaired by the Agency for Administrative Modernisation, which verifies compliance with guidelines,

the non-duplication of efforts, and compares the prices and budgets with previous projects in order to ensure the best value for money.

Norway

In Norway, the co-ordination of digital government policies and public sector reform is the responsibility of the Ministry of Local Government and Modernisation with the support of the Agency for Public Management and eGovernment (Difi), an internal body within the Ministry of Local Government and Modernisation.

The ministry exerts its digital government co-ordination role through different mechanisms, including a Digitalisation Memorandum (Digitaliseringsrundskrivet), which is distributed to all ministries in Norway (including the Office of the Prime Minister). The memorandum provides a set of strategic actions to be implemented by ministries in line with the objectives of the national digital government policy. Once published, it is the ministries' responsibility to ensure the implementation of these directives within the policy area under their responsibility.

The 2016 Memorandum required public sector institutions to follow specific policy guidelines related to digital by design and user-driven services, digital mailboxes, electronic invoicing, and open government data. The Memorandum also recommended the use of cloud-based solutions and private provision of digital solutions.

Ministries and agencies are required to use a best practice project management model for projects with a total cost of more than NOK 10 million in order to ensure the cost-efficiency of ICT projects. In this line, the Memorandum recommends the use of Difi's "Project Wizard" project management platform.[1] The Agency for Financial Management's guidelines for cost-benefit analysis and benefits realisation have been embedded within the framework of Difi's platform.

The Memorandum also recommends seeking advice from the Digitalisation Council in order to improve the benefits and reduce the costs for ICT projects with a total cost equal to or higher than NOK 10 million. The Memorandum also defined Difi's co-financing mechanism as an effort to reinforce Difi's capacity to better pursue a systemic quality management approach for ICT projects. The agency is now empowered to provide an additional budget (up to 50%) for ICT projects with a total cost ranging from NOK 5 million to NOK 50 million, but Difi's co-funding is limited to a maximum financial contribution of NOK 15 million.

1. www.prosjektveiviseren.no.
Source: Adapted from OECD (2017a), *Digital Government Review of Norway: Boosting the Digital Transformation of the Public Sector*, http://dx.doi.org/10.1787/9789264279742-en.

Efficient results demand good financial planning, spending and implementation. Challenges also remain in Sweden terms of the efficient prioritisation, monitoring, and *ex ante* and *ex post* evaluation of ICT investments by public agencies, as well as in relation to the role the new agency will play in this regard.

The Agency for Digital Government is expected to take a leading role in terms of the assessment, monitoring and evaluation of digital projects and ICT investments in the public sector. This poses a challenge, as information gathered during the OECD mission to Stockholm point to the fact that while the organisational culture within the public sector is highly driven by efficiency, there are important deficiencies in terms of use of common business case methodologies across public sector institutions (e.g. only major agencies like the Tax Agency and the Employment Agency are good at developing cost-benefit analysis), common standards for project management, tools for *ex post* investment evaluation and measures to correct potential failing projects (e.g. when a project fails, only the leading agency can decide to cancel it).

The Swedish National Financial Management Authority works closely with the 70 larger agencies to achieve more efficient investments in ICT projects through project monitoring and evaluation. Yet, with a public sector that, according to figures from the National Statistics Office, is composed of 350 public sector organisations, the challenge is not only to provide further guidance, but also to foster a cultural change through the use of common tools and creating capacities to foster – or enforce – an evaluation culture that supports public sector accountability and strategic decision making. Such change management can help reinforce trust in government's capacities to efficiently use public resources to deliver quality services and better value.

A trust agenda driven by efficiency can, for example, be supported by efforts aimed to: achieve systemic change through the use of common tools and mechanisms improving strategic approaches to financial decisions; for example, use of a common business case methodology, and enforcing compliance with digital government policy guidelines and strategic objectives set by the government.

The prioritisation of investments at the agency level should also be aligned with broader policy priorities and with those guidelines and standards currently in place or to be developed by the new agency (Box 2.5).

Box 2.5. Crowdsourcing knowledge in United States: Leading and prioritising investments on strategic IT infrastructure

In 2016, the former Chief Information Officer in the United States proposed guidance for public comment mainly targeting public agencies in the country. The overall goal was to identify and prioritise IT infrastructure requiring an upgrade. This exercise was highly driven by policy goals related to the modernisation of the public sector in balance with the management of cybersecurity risks.

This exercise also aimed to align agencies' efforts and use traditional accountability systems between the Office of Management and Budget and public agencies to inform and prioritise ICT investments. For instance, as part of the yearly exercise where agencies submit the current and future status of technology portfolios (known as enterprise roadmaps), agencies identify areas of opportunity in terms of technology developments and investments.

These inputs were later used by the Office of Management and Budget to develop specific criteria (risks, impact) that agencies could use to identify systems requiring "modernisation, retirement or replacement", inform the

Office of Management and Budget on these needs, and use this information to inform its budgetary planning. By taking this approach, the goal of the Chief Information Officer was to ensure that ICT investments were aligned with those policy priorities of the central government, as well as with its own needs.

This initiative was also in line with the efforts of the central government to identify and protect "Federal information systems, information, and data for which an unauthorized access, use, disclosure, disruption, modification, or destruction could cause a significant impact to the United States' national security interests, foreign relations, economy, or to the public confidence, civil liberties, or public health and safety of the American people" (Office of Management and Budget, 2016) – known as federal high value assets.

Sources: Scott, T. (27 October 2016), "Laying the foundation for a more secure, modern government", blog, https://obamawhitehouse.archives.gov/blog/2016/10/26/laying-foundation-more-secure-modern-government; Office of Management and Budget (2016), "Memorandum for heads of executive agencies" (M-17-09), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2017/m-17-09.pdf.

In the second half of 2017, the Swedish government created an expert group on IT investments as an effort to guide investments on ICT projects, but this body plays an advisory role as it does not count on enforcement powers nor policy levers to steer investments in public sector digitalisation. It is also intended to provide advice only for those projects with a threshold of or superior to SEK 20 million (approximately EUR 2 million). This function is now part of the DIGG.

Human capital

The effective capacity for analysis, preparation and implementation of digital government decisions within the Ministry of Finance increased from 3 to 15 public officials between 2015 and 2017.[5] The DIGG, for its part, is expected to reach a workforce of 70 or more public officials in its first years of operation (Swedish Government, 2018).

For perspective, when launched in 2011, the UK government's Digital Service had a workforce of 173 full-time equivalent (FTE) staff, which increased to 653 in 2015-16, and was expected to reach a peak of 911 staff by 2016-17, as per budgeted FTE figures. Staff numbers were expected to decrease to 780 from its peak by 2019-20 (UK National Audit Office, 2017). In Uruguay, AGENSIC, the agency in charge of the digital agenda, had a staff of roughly 250 employees by March 2016 (AGESIC, 2016). Norway's E-government agency (Difi) has a total of 300 employees distributed between Oslo and the municipality of Leikanger (Difi, 2018).

Additionally, the location of the DIGG outside Stockholm (in the city of Sundsvall) will require special efforts to ensure that its mandate, working methods, culture and job profiles are interesting enough to attract, and retain, a skilled workforce, particularly in light of the thriving digitally related start-up ecosystem in Sweden. The contribution of the agency will be determined by the availability of a workforce of the right size, but also by the talent and skills available among these human resources. They should be able to provide technical and strategic support to effectively communicate key messages at all levels (from technicians to managers and politicians), and deliver policy goals.

In a broader sense, it is necessary to scale up skills and competencies at the individual level in order to build up the overall competences of the agency to enable it to keep up with the promises and high expectations, to fulfil its mandate, and support the accomplishment of the goals of the digital government agenda. Additionally, connecting the demand, or need, for specific skills within the agency with the goals of the digital government agenda will be fundamental to achieve these objectives.

It would be advisable, for instance, to maintain an agile approach to enable the agency to identify what skills are required, build these skills in house or attract them if needed.

For instance, in Chile, the creation of the GovLab (*Laboratorio de Gobierno*, a body originally located within the Chilean Economic Development Agency, Ministry of Economy) followed a design thinking approach to determine the skills needed inside by the Lab in line with the achievement of specific policy goals and its mandate. An *ad hoc* group of consultants and experts in different areas was convened to work specifically on one (the first) project of this body and in order to use this project to identify what core skills and competencies were needed by default within the Lab (OECD, 2017b).

Indeed, such an approach should not be exclusive to the agency, but should be adopted more broadly across the public sector and in line with broader public employment policies and to support the continuous and agile evolution of the workforce in line with the needs of a digitally transformed public sector.

Notes

1. For more information see: https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2008/03/sou-200822.

2. For more information see: www.regeringen.se/pressmeddelanden/2016/12/regeringen-utreder-hur-digitaliseringen-i-den-offentliga-sektorn-kan-starkas-genom-att-samla-ansvaret-hos-en-myndighet.

3. For the original text in Swedish and more information see: www.regeringen.se/pressmeddelanden/2017/12/ny-myndighet-for-digitalisering-av-den-offentliga-sektorn-till-sundsvall.

4. For more information see: www.regeringen.se/4a6e13/contentassets/79f6d27416794f0bb146c792e02b65fc/budgetpropositionen-for-2018-hela-dokumentet-prop.-2017181.pdf.

5. According to figures provided by the Ministry of Finance.

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Chapter 3. Enhancing collaboration for coherent digital government efforts in Sweden

This chapter discusses the importance of building a vision for digital government that is widely shared, owned and recognised. It highlights the need for drawing on the consensus-based culture of the Swedish public sector as a basis to advance and put into action a digital government strategy in Sweden in a coherent fashion. This can help to ground policy objectives and build stakeholder ownership and collaboration. It first discusses the 2015-2018 Digital First agenda. The second section discusses collaboration as means to define and advance future strategic objectives while the third and final section describes transforming government into a platform for value co-creation.

Introduction

The consensus-based culture of the Swedish society is one of its most prominent features. This culture favours agreement, collaboration, equality, inclusion and a temperate mindset in terms of social relationships. More importantly, it drives how decisions are taken: agreement is often sought, contrary to other societies where decision making follows a more hierarchical approach.

This culture influences the work environment and organisational ethos of the Swedish public sector. It impacts how the Swedish government and its public sector co-ordinate public policy, and the high level of autonomy and freedom that agencies have in regard to policy implementation once consensus is achieved and decisions are taken.

Yet, this social and professional tenor provides both opportunities and challenges when it is confronted with the actual need of leading and steering agility and coherency in policy making to secure the levels of speed and integration that the digital age requires.

On the one hand, this consensus-based culture provides a collaborative baseline to discuss and drive change in the Swedish public sector, engage a broader range of actors, and further transform the government into a platform for value co-creation, drawing on previous efforts and results. Nevertheless, it can also hinder efficient and agile decision making, and interfere with the need for stronger leadership to overcome organisational barriers and silo-based decisions to boost joined-up actions.

In line with the principles of the 2014 *OECD Recommendation of the Council on Digital Government Strategies* (see Chapter 2), this chapter highlights the need for drawing upon the culture of the Swedish public sector as a basis to advance and put into action a digital government strategy in Sweden. This can help to ground policy objectives and build stakeholder ownership and collaboration across the public sector.

The 2015-2018 Digital First agenda

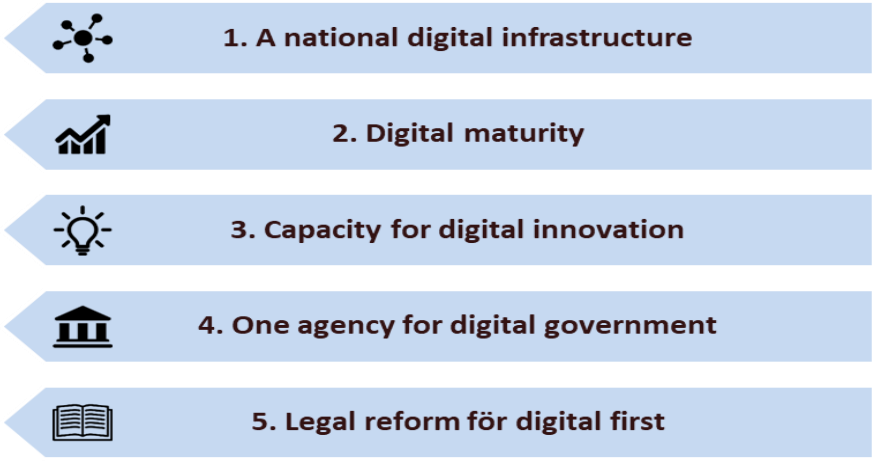
In the budget bill for 2015, the Swedish government decided to fund a four-year programme that later came to be called Digital First (or *Digitalt först* in Swedish), with the purpose of promoting the digitalisation of the society, business activity and the public sector. As a cross-sector policy instrument, the agenda addresses digitalisation from a broader perspective ranging from digital maturity, organisational matters, legal prerequisites and digitalisation as a tool to increase the efficiency in a number of value chains.[1]

The Ministry of Finance defined five core areas of work that were specifically relevant to digital government as part of its specific responsibilities within the framework of the Digital First agenda (Figure 3.1):

1. building a solid digital infrastructure base for digital government (including data registries, eID, standards and e-procurement)
2. promoting the design of innovative digital solutions through data-driven innovation (including open data efforts), the construction of a smart government and the implementation of digital by design approaches in core policy areas (housing and building, food chain, business and environment)
3. improving the organisational culture and capacities of digital government and innovation

4. strengthening the governance of digital government (including the creation of a new digitalisation agency)
5. carrying out legal and regulatory reforms to foster the readiness and adaptability of regulatory frameworks and support the implementation of the digital agenda

Figure 3.1. Digital First agenda: Core areas of action for digital government



Source: Information provided by the Swedish Ministry of Finance.

Yet, despite the intention of the Ministry of Finance to provide a clear and comprehensive vision for digital government under the auspices of its responsibilities in the context of the broader Digital First agenda, evidence from the OECD missions and data collection exercise carried out for this Review indicate that policy goals set by the agenda relevant for digital government were perceived across the public sector more as a generic statement issued by the Ministry of Finance than a vision that is widely shared, owned and recognised. In some instances, certain public sector organisations were not even aware of its existence.

This provides an opportunity to use the potential development of a well-grounded digital government strategy as an engagement tool to build consensus around specific policy objectives, define clear roles to improve accountability and promote stakeholder collaboration in the pursue of policy impact.

Inter-institutional communication and co-ordination to define future strategic objectives

The development of the digital government agenda fell short in grounding a whole-of-government common and shared vision for digital government. Normally this is embedded in a well-structured long-term strategy, developed and implemented in co-ordination and collaboration with all relevant stakeholders from the public sector, and securing the engagement of a broader set of stakeholders from the ecosystem to crowdsource ideas and feedback.

The agenda for digital government appears to have been developed through a process that was not particularly inclusive and open, which may explain the low levels of awareness, clarity and ownership among public officials. Taking into account input from public officials is extremely beneficial to set policy goals that are shared, co-define priorities and co-create the content of the agenda. As a whole, this process would contribute to increasing

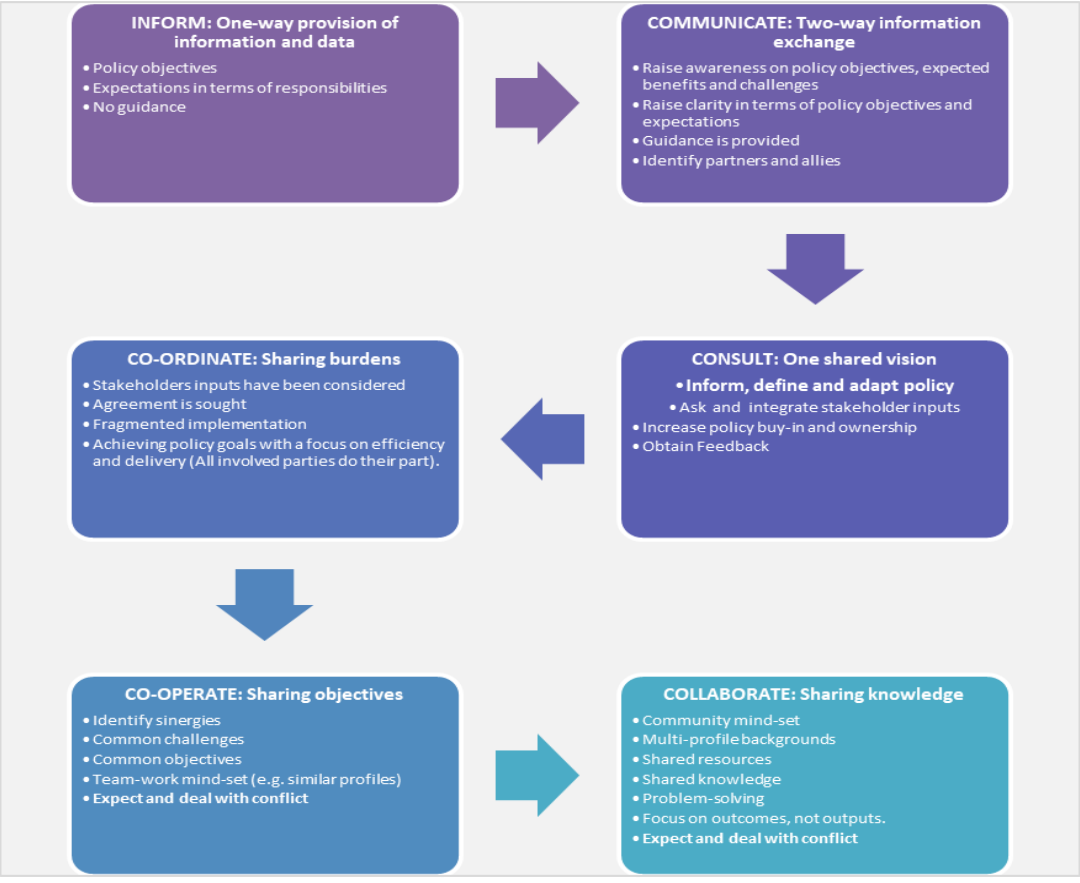
policy ownership among public officials, secure accountability, and reinforce trust across the government and the public sector.

OECD work on digital government has found evidence on how communication strategies (if implemented) are, in many instances, focused on reaching the external ecosystem (e.g. through social media), but internal communication within the public sector is limited to informing public officials on what they are expected to do once goals have been defined. This can lead to a public administrator mindset that focuses on compliance.

Such a scenario hinders the possibility of increasing policy buy-in and moving towards a more collaborative environment by identifying and engaging key partners, allies and champions across the broader public sector, and building communities that can collaborate to define and achieve common objectives, co-design policy solutions, solve policy challenges, and deliver policy outcomes.

Despite the achievements in the e-government domain (e.g. mailbox and eID infrastructure, see Chapter 1), the path towards value co-creation in Sweden is somehow unclear. Sweden, as other OECD member and partner countries, often fails to acknowledge other public officials as part of the digital ecosystem and a valuable source knowledge and public sector collective intelligence.

Figure 3.2. Value co-creation: A conceptual framework



Source: Adapted from OECD (2014), *Open Government in Latin America*, http://dx.doi.org/10.1787/9789264223639-en.

Chapter 2 observed the absence of clear stewardship and leadership associated with the overall digital government agenda in Sweden, which may explain why there are too many goals and ambitions but low levels of awareness and clarity. The absence of a clearly recognised and identifiable digital government strategy with commonly defined and shared goals led to a limited number of strategic, co-ordinated and cohesive actions, and limited multi-stakeholder collaboration.

The fact that the Digital First agenda was perceived more as the result of a political exercise than the outcome of a collaborative effort might also explain the view of many stakeholders who underlined the strong focus of the agenda on processes rather than on outcomes (e.g. public trust).

Finding mechanisms for inter-institutional co-ordination to identify and prioritise policy goals and act upon the achievement of these priorities will be essential in the future to strengthen the basis for digital government actions.

For instance, using and/or setting dynamic channels and platforms to enable inter-institutional communication, consultation and collaboration with the digital ecosystem (see Figure 3.2), from within and outside the public sector, are necessary requirements to enable government openness, inclusive policy making, raise awareness and enable value co-creation. All this can greatly contribute to reinforcing the overall trust in and ownership of the digital government agenda.

The promise of the new digitalisation agency is greatly centred on the co-ordination role this new body will have in terms of implementing the digital government agenda.

Some examples of inter-institutional co-ordination mechanisms exist in the context of digitalisation and digital government in Sweden, namely:

- **The Prime Minister National Innovation Council,** chaired by the Prime Minister and composed of the Ministers of Finance, Education, Enterprise and Foreign Affairs and representatives mainly from the private sector. Yet, the political nature of the council links its continuity to terms of office and the administration's decisions.
- **The Digitalisation Council,** composed of ten representatives from the public sector and companies such as Google, provides advice in terms of digitalisation, proposing and evaluating new projects.
- **The eSAM,** which is made up of 21 general directors from public sector agencies and a representative from the SALAR (see below). Participation is voluntary. Institutions share a secretariat and collaborate around digitalisation objectives to facilitate the relationship between the public sector, citizens and the private sector. In line with the Swedish culture, while joint potential actions in terms of digitalisation are discussed by all members, implementation falls on the level of the individual agency.
- **SALAR,** an organisation for regional governments comprised of representatives from all 21 regions and all municipalities in Sweden. SALAR represents local governments' interests and acts towards the achievement of common local goals.[2]

Even though these are examples of well-grounded inter-institutional co-operation, the capacities of these fora vary in terms of weight and mandate.

On the one hand, while politically relevant, the National Innovation Council has a strong focus on business innovation and competitiveness, without a specific focus on public sector innovation and digital government, and only acts as an advisory body, with no enforcement powers. However, the participation of the Minister of Finance in this body provides an opportunity to scale up the political relevance of digital government and the digitisation of the public sector should this body remain in place after changes of the central administration.

There are some signs of how the relevance of digital government and public sector innovation are gaining traction in the political sphere. For instance, in June 2017, during the Digital North conference (the Nordic-Baltic Ministerial Conference on Digitalisation), the Nordic Council of Ministers issued a Ministerial Declaration setting shared policy priorities in terms of digitisation in the Nordic and Baltic Area. The Declaration[3] set three core objectives, including "strengthening the ability for digital transformation of [Nordic-Baltic] governments and societies, especially by creating a common area for cross-border digital services in the public sector". This specific goal includes cross-border free flow and share of data in the region.

This shows how, albeit slowly, the relevance of digital government is incresing at the highest level of government, thus granting equal relevance to both the digitalisation of the public sector and the digitalisation of the economy.

As a result of the 2017 Ministerial Declaration, the Ministers for Co-operation (with delegated formal authority from their respective Prime Ministers), took a decision to create the Nordic Council of Ministers for Digitalisation for 2017-2020 with the responsibilities for advancing the commitments of the 2017 Declaration. The Minister for Housing, Urban Development and Information Technology (within the Ministry of Enterprise) has been appointed to represent Sweden in this council.

On the other hand, the Digitalisation Council stands as an "external" co-ordinated forum that is not directly in charge of dealing with matters related to digital government. This council replies to the Minister for Housing, Urban Development and Information Technology. However, its mandate is not strong enough to steer digital government efforts.

Even within such a consensus-based culture, achieving the digital transformation requires co-ordinated and focused strategic decisions, securing whole-of-government approaches, coherency and integration across institutions. The consensus-based culture has prioritised discussions, but moving beyond informal collaboration and co-ordination based on dialogue and good intentions is pivotal to address systemic challenges in a co-ordinated and collaborative fashion. It is necessary to define common goals together that require integrated actions and demand a system of shared accountability supported by the use of policy levers (e.g. like funding) to advance such co-ordination.

The eSAM is *de facto* the continuation of the E-Delegation. It therefore inherited some of its problems and challenges (see Section 2.2 in Chapter 2). It appears to be a forum for dialogue and exchange with no co-ordination or enforcement powers. Additionally, it appears that the perception among stakeholders is that the eSAM's focus is still strongly linked to e-government, not to digital government, and it is slow in taking decisions and action. Nevertheless, it is important to acknowledge the motivation of the public bodies to participate in the eSAM, and, as such, its potential key role as part of the governance framework and partner for the agency if it attempts to find a balance between enforcement and intrinsic motivation to engage the various actors. Cases like the eSAM offer a solid

basis for discussing and fostering co-operation, building on the consensus-based approach, but this is insufficient to steer the agile and rapid actions required by the digital age.

Final users and citizens are also absent from these fora, thereby slowing down the adoption of user-driven and open approaches for policy making. Most commonly, practices around users' needs are still grounded on an e-government user-centred approach where those needs are assumed by public sector institutions, but they are not identified and explored together with the service users, who are not placed at the core of problem solving and service design processes. It will be essential to prioritise the use of data and digital tools to engage with the whole ecosystem of actors if the government of Sweden is willing to build on its digital government maturity as a lever to reinforce the levels of trust within its public sector as well as public trust towards the government as a whole.

Government as a platform: Collaboration for value co-creation

The Agency for Digital Government is expected to further increase the capacity of the government to act as a driver of change and contribute to achieving higher levels of collaboration and co-operation towards attaining the goals for digital government (see Section 3.2). These goals include objectives related to the development of a solid digital infrastructure, competencies within the public sector and data-driven innovation.

In light of the above, and the budget allocated to the agency for 2018-20 (including ring-fenced funds for open data and the national digital infrastructure; see Section 2.4.3), the agency will play a crucial role in addressing key policy challenges limiting digital government advancements (see Section 1.1.1), namely to:

- address fragmentation and duplication of efforts at the agency level
- streamline the national digital infrastructure
- enforce the use of common guidelines and standards (soft infrastructure), and stimulate the development of new common components (e.g. mailboxes) (see Chapter 1)
- streamline data-sharing practices building on the data registries and improve public sector data governance and infrastructure (see Chapter 4)
- use open government data to build a data infrastructure for data-driven innovation (see Chapter 5).

Yet, the recognised need for more efficient co-ordination related to digital government across the public sector in Sweden seems to have been the main driver behind the creation of the new agency rather than a real ambition to use such a new body as a driver, enabler and platform for digital innovation, value co-creation and collaboration. The agency's mandate includes, for instance, responsibilities in terms of open data publication, yet the goal of leveraging the new agency as an active player of the open data ecosystem is unclear (see Chapter 5).

While the perception is that the new agency is seen as a driver for greater inter-institutional co-ordination (see Section 3.3), it will be essential for it to create dynamic spaces (either physical or digital) for risk-controlled experimentation, digital- and data-driven innovation, multi-stakeholder engagement, and problem-solving collaboration. The OECD collected evidence on stakeholders' need to "start building a beta version" of a smarter and agile government, and provide a platform where officials could design, experiment and test ideas

in risk-controlled environments. The role of the new agency should be capitalised in this respect.

However, the organisational culture within the Swedish public sector emerged as both as a platform and a barrier for digital and data-driven innovation.

Some aspects of the Swedish public sector culture create a basis that can be used to lever digital innovation. These positive factors are related to equality (no hierarchic management models), teamwork mentality, and public officials' high education levels, networking co-operation and digital skills; and, in some cases, public officials have shown curiosity to experiment with new ways of doing things.

Together with the advancements in terms of e-government (see Chapter 1), these traits provide a sense of the maturity of the Swedish public sector to move towards a digital government. From this perspective, the agency would contribute to putting this capability into action.

Yet, some negative cultural barriers are also evident. These challenges are related to a state of complacency with the *status quo* (lack of urgency), a "focus on facts and not experimentation", and unwritten social codes – e.g. to avoid causing discomfort to others or unpleasant social and work environments (*Dålig stämning* as known in Swedish). These seem to affect open discussions, trigger slow decision making, and support the focus on big projects rather than fostering a more incremental mindset to experiment with small initiatives that can then be matured and scaled up.

Evidence collected by the OECD indicates that this consensus-seeking culture can also lead to restricted discussions, as those who favour a cultural change may not freely express themselves so as not to upset *the status quo*.

On the one hand, as mentioned above, this may result from self-reticence to express one's opinion in order to maintain cordiality and avoid conflict in line with the Swedish social norms. On the other hand, public officials also mentioned that expressing disagreement can result in the actual implementation of soft and "informal corrective measures" by managers (e.g. seclusion from relevant activities and focus on repetitive tasks), therefore leading to resignation of affected public officials. This context creates an organisational culture that punishes creativity and rewards compliance.

In addition, in Sweden, the perceived financial stability exerts a negative incentive to change the *status quo* as it does not create the sense of urgency to use resources to do more and better in terms of digital government. This probably explains, despite some exceptions, the apparent generalised low sense of curiosity across the public sector to experiment and explore opportunities to find new ways to create value through digital and data-driven public sector innovation. Recent OECD work provides evidence of how a vision for data-driven innovation across public sector institutions (e.g. data stewardship) is a key precondition complementing that of the main co-ordination bodies (often within the centre of government) to achieve systemic change and drive digital and data-driven innovation (OECD, 2018).

Additionally, stakeholders also expressed how external factors can hinder data-driven innovation. For instance, they pointed out how the government-media relationship can deter experimentation by public officials due to fear of failure and the resulting media scrutiny and criticism. Stakeholders also did not identify journalists as potential partners.

The role of the new agency has to be understood in light of the above-mentioned cultural context.

This body will face the challenge of going beyond co-ordination responsibilities in order to facilitate and adopt dynamic, agile, multi-stakeholder collaboration approaches and capitalise on the consensus-based culture of the public sector to bring actors from all sectors on board and drive change by enabling safe spaces that motivate creativity instead of punishing it.

The new agency should be designed and conceived as a space to enable the digital transformation of the Swedish public sector in order to tackle the current existing systemic deficit in terms of:

- Pursuing the implementation of open by default and user-driven approaches for policy making across the broader public sector.
- Fostering a data-driven public sector as pivotal for the digital transformation, and digital innovation, e.g. leveraging the role of this new body as a platform and space (e.g. data lab, innovation lab, digital studio) for the design, testing and iteration of digital and data-driven initiatives, and the provision of technical support and guidance for the development of data-driven and digital innovation initiatives.
- Building up competencies and skills for data- and user-driven public bodies, creating people-driven networks, and providing spaces for crowdsourcing and creating collective intelligence to solve policy challenges and contribute to the development of a smarter knowledge-based soft infrastructure.
- Promoting the use of approaches that are innovative, user-driven, collaborative and focused on problem-solving across public sector institutions.
- Steering, guiding and accompanying public sector institutions towards the creation of data-driven public value.
- Identifying key players across all sectors in Sweden, engaging them and setting strategic partnerships and communities to co-create solutions for collective challenges.

The successful establishment of the agency represents an important opportunity for the Swedish government to adjust the existing governance for digital government as needed to achieve a full digital transformation of the Swedish public sector and enabling collaborative spaces where actors from all sectors can exchange ideas, interact and experiment.

For instance, the GCTools Team within the Treasury Board of Canada Secretariat created the GCcollab portal as a closed online collaborative platform hosted by the government of Canada where Canadian public servants (federal, provincial, territorial and municipal), academics, students and other key communities can communicate, exchange ideas, co-create content, collaborate and establish communities around specific topics of common interest. The GCTools Team has also created similar initiatives like the GCconnex (a professional networking platform) and GCpedia (a wiki-based platform for knowledge sharing) that are available for federal public servants only.

The development of these platforms followed an iterative and incremental approach, therefore broadening the scope of collaborative options available to the user and their degree of openness. While GCPedia was developed first, then GCConnex, and most recently, GCCollab, GCPedia allowed for crowdsourcing documents but did not allow discussion forums. GCConnex expanded the collaborative options with blogs, discussion forums, polling and more, but was only open to federal public servants. GCCollab builds

on all the things available to the other tools, but now allows users from outside the federal public service to join.

In some OECD countries, the definition of creative environments inside policy co-ordinating units or key public sector institutions and agencies (either formal or informal) has aimed to enable such collaborative environments, while being used to build a digital innovation ecosystem inside the public sector (Box 3.1).

Box 3.1. Enabling spaces for public sector creativity and capacity building across OECD member and partner countries

Australia

DesignGov was an 18-month pilot (closed in December 2013) of a whole-of-government innovation lab endorsed by the portfolio secretaries of the Australian Public Service (APS) and was run from the Industry Department with support (active or in-kind) from a number of other government agencies. The mission of DesignGov, as set out in its Charter document, was to "inspire creativity, innovation and a more citizen-centric approach through consultation, collaboration and co-design." It was to "build innovation capability in the APS and provide for better outcomes through applied problem solving, including at the interface between the APS, other jurisdictions and providers, and the users of services". It had four streams of activity including: demonstration projects' engagement, education and awareness capability building, methodologies and tools operating framework, governance and reporting.

Chile

The Laboratorio de Gobierno is a multidisciplinary institution of the government of Chile which was set up to implement the President's mandate on public sector innovation. Announced by former President Michelle Bachelet in 2014, the Laboratorio has the mission of developing, facilitating and promoting human-centred innovation processes within public sector institutions. The Laboratorio represents the Chilean government's new approach to solving public challenges which put the citizens right in the centre of public action and transformation processes.

The Laboratorio is administratively part of CORFO, the Chilean Economic Development Agency (under the auspices of the Ministry of Economy), and has a governing board composed of five ministries (including the Ministries of Economy, Finance, Social Development, Interior and Public Security, and the General Secretariat of the Presidency), the National Civil Service Directorate and three members of civil society.

The Laboratorio acts as a learning-by-doing area for civil servants and provides a controlled environment that permits risk-taking and connects a diversity of actors related to public services to co-create and test solutions. The Laboratorio engages in two main streams of activity: 1) innovation projects and ecosystem (these include actions aimed at supporting public sector institutions to seek innovative solutions that improve the services); and 2) innovation capabilities (actions focused on developing the

capabilities of civil servants to initiate and carry out innovation processes within public sector institutions through learning-by-doing experiences).

Mexico

In Mexico, the General Direction of Open Data, a body within the Office of the President, has followed a test-and-experiment model for the development of initiatives using open government data that can be then scaled up and transferred to public sector institutions to reach maturity and become sustainable.

The Office of the President does not receive direct budget allocation from the federal government, therefore this approach has enabled the General Direction of Open Data as *de facto* a datalab that should operate with a restricted budget. As a result, the implementation of agile and flexible models of work have guided the implementation of these efforts in order to reduce losses and risks and maximise impact.

United States

The Innovation Lab of the United States' Office for Personnel and Management aims to build innovative design workforce capabilities. The lab guides its activities with the mission of lead/do/teach, engaging in projects with a variety of government institutions as well as providing customised training courses and information sessions. In terms of evaluating the impact and results of its work and projects, the Innovation Lab looks for concrete results such as cost savings and partnerships formed or numbers of people reached. For example, the lab has a dedicated staff to decide on performance measures for certain projects, in collaboration with project partners. For broader workshops and training courses, the lab also measures customer satisfaction and gains feedback through surveys at the end of classes.

Source: Based on OECD (2017), *Innovation Skills in the Public Sector: Building Capabilities in Chile*, http://dx.doi.org/10.1787/9789264273283-en.

There is an urgent need to capture the missed opportunity to correct a situation in which Swedish public sector agencies, currently playing the role of administrators, could exert and play a more proactive role to foster data-driven and digital public sector innovation. In general terms and despite the availability of some isolated efforts, data-driven and digital innovation is still occasional, siloed and sometimes unknown.

Additionally, due to a risk-averse and compliant organisational ethos, it does not seem to be a natural traction for digital and data-driven innovation. Even Vinnova, a key agency in this regard, seems to be playing more of an administrative and passive role (e.g. managing funds and grants for innovation projects such as labs), rather than seeing itself as a promoter of public sector innovation, e.g. identifying and soliciting champions to create capacities to foster public sector innovation and speed-up innovation procurement processes.

Notes

1. For more information see: www.regeringen.se/regeringens-politik/digitaliseringspolitik/mal-for-digitaliseringspolitik.

2. For more information see: https://skl.se/tjanster/englishpages.411.html.

3. For more information see: https://www.regjeringen.no/contentassets/5ed83530b83c4e4ba85338c29eb50c63/ministerial-declaration.pdf.

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Chapter 4. Leveraging data for public sector intelligence and digital innovation

This chapter discusses how to leverage data for public sector intelligence and digital innovation. It begins by discussing the relevance of data governance in the public sector, addressing issues such as the need for a clear data policy and data stewardship. Other topics include managing and sharing data in the Swedish public sector, scaling up data analytics practices, and breaking down barriers to a more data-driven public sector.

Introduction

In May 2018, the Swedish government published a political statement highlighting Sweden's goal of becoming a leader in artificial intelligence (AI). The statement, entitled "National Guidance for Artificial Intelligence" (*Nationell inriktning för artificiell intelligens*), addresses key issues such as the need to develop capacities and skills among different actors to use AI, and the need to spur the benefits of AI in the public sector. It underlines the importance of AI for education, research and business innovation; and the need of enabling the right context for the adoption and use of AI technologies in different sectors of society, such as small and large businesses, municipalities, counties, and government agencies (Government Offices of Sweden, 2018).

The political relevance of this guidance complements the Nordic-Baltic Declaration on AI[1] published in May 2018 by the digitalisation ministers from the Nordic and Baltic region.[2] The declaration, issued by the Nordic Council of Ministers for Digitization 2017-2020, also stresses the need of developing skills among stakeholders for the use of AI. Additionally, the declaration argues for the need of enhancing access to data, reducing regulatory burdens and governing the use of AI actions, through the definition of common standards and guidelines (Nordic Council, 2018).

The National Guidance for Artificial Intelligence is clear concerning the value of government data as a propeller of AI-based business models and digital innovation. It underlines the public sector's advantage in terms of its data assets and the value they can have for AI- and data-driven public sector efficiency. The importance of making open government data publicly available for external stakeholders' reuse is also considered in the guidance (see Chapter 4).

These statements show that the Swedish government, as those of other OECD countries, has jumped on the AI bandwagon in the hope of pursuing greater digital innovation within the public sector at the central level. Nonetheless, there is a need to move from political statements on overarching policy goals drawing upon the current favourable national and Nordic-Baltic regional political context to set the basis for actual and coherent policy implementation.

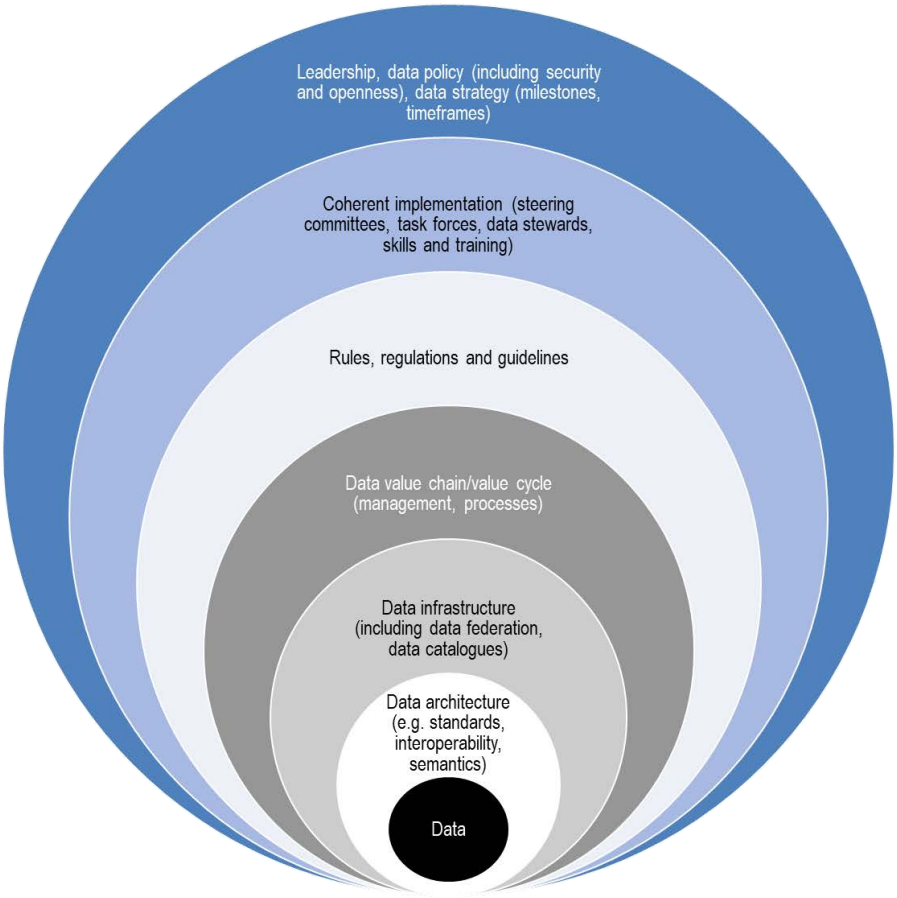
AI-driven business models use data as their fuel. As such, data are fed into advanced computing systems that process them following the underlying algorithms and codes, thereupon putting machine learning to work. For instance, by investing in opening up valuable government data, governments can "support an un-biased environment for AI research and development" (OECD, 2019a).

Within governments, the use of AI implies the need to ensure the availability of sound data governance frameworks (Figure 4.1) that can help secure the protection, standardisation, inter-operability, quality and discoverability of data so that it can be accessed, shared and processed, hence mining data's value as an input for organisational data-driven decision making. Sound data governance frameworks can help AI actors, including governments, to "ensure traceability of the datasets, processes and decisions made during the AI system lifecycle to enable understanding of its outcomes and responses to inquiry, where appropriate" (OECD, 2019a).

Building solid data governance foundations is crucial to enable further AI practices within the Swedish public sector. Efforts to more solidly govern and manage the entire data value should be embedded and connected to open government data practices (see Chapter 5). This is necessary to create an environment that provides the right conditions for the use of

emerging technologies in the public sector and help capitalise on data as a driver of digital innovation in Sweden.

Figure 4.1. Data governance in the public sector



For instance, there are growing opportunities for data reuse to improve government's foresight capacities, its effectiveness to design and deliver services and to monitor performance (Figure 4.2). But advancements depend first on a coherent strategic approach to data governance at the central government level (OECD, forthcoming).[3]

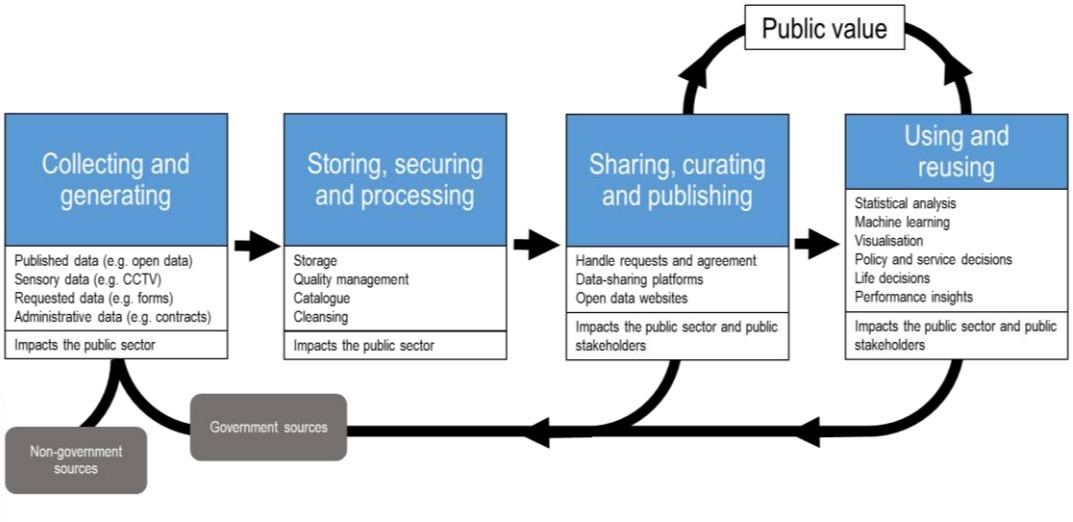
OECD work on digital government observes that elements related to data governance (e.g. data standards, catalogues) have been mainly associated with the development of either data sharing within the public sector or with open data initiatives, but these efforts are often disconnected, and are at large rarely connected to AI plans.

This includes the availability of elements of the data infrastructure, such as streamlined data architecture or data catalogues, as well as softer data governance elements such as training and skills development, rules and regulations for data access and sharing, and data standards. Both hard and soft elements are framed within the components of the overarching governance framework, such as data policies and institutional leadership, and are intended to allow to better govern and manage the overall public sector data value cycle (Figure 4.3).

Figure 4.2. Opportunities of a data-driven public sector

Source: OECD (forthcoming), "A data-driven public sector: Enabling the strategic use of data for productive, inclusive and trustworthy governance".

Figure 4.3. Public sector data value cycle



Source: OECD (forthcoming), "A data-driven public sector: Enabling the strategic use of data for productive, inclusive and trustworthy governance".

For instance, the Australian government committed to reforming its national data governance framework with the development of a new Data Sharing and Release Legislation[4] that will:

- promote better sharing of public sector data
- build trust in the use of public data
- dial up or down appropriate safeguards
- maintain the integrity of the data system
- establish institutional arrangements, including the creation of the National Data Commissioner who "will champion greater data sharing and release by providing consistent leadership and well-defined technical direction for implementing reforms to Australia's data system" (PMC, 2018).

For Sweden to become a world leader in using artificial intelligence to "strengthen Swedish welfare and competitiveness", the basics should be set first. This implies reinforcing data governance in the public sector in order to better manage, share and use data across the whole data value chain.

The relevance of a clear data policy

Some Swedish institutions do have their own formal public sector data policy and/or strategy in place, although most of them focus on publishing institutional data as open data.[5]

For instance, the Swedish Environmental Protection Agency has an internal data policy, but its main focus is still on government data published in open formats and reused by external actors (see Chapter 5), rather than within the public sector.[6]

The Geodata Strategy of the National Land Survey Authority (Lantmäteriet) is another example. The Geodata Strategy is centred on four guidance pillars, namely: 1) geodata openness (e.g. open formats, free data); 2) usability (e.g. interoperability, standardisation); 3) accessibility (e.g. discoverability, APIs); and 4) collaboration (e.g. using geodata for multi-stakeholder problem-solving initiatives) (National Land Survey Authority, 2016).

Both above-mentioned examples show a strong focus on open government data and reflect the general understanding of data-driven public sector across most agencies in Sweden. This mirrors the situation in other OECD countries where data policy efforts are at large limited to the publication of government data in machine-readable and non-proprietary formats (i.e. open data), therefore ruling out the idea of enabling public sector institutions that can better manage, share, publish and use data with a strategic approach.

Results from the survey that was administered for the purpose of this review indicate that Sweden currently neither has a single public sector data policy[7] nor possesses a government-wide information and/or data governance model to guide the management, sharing and use of data within and across public sector institutions.

However, as Sweden, OECD countries are just moving towards an overarching understanding and relevance of reinforcing data governance in the public sector. This includes the development of one data policy (and the supporting underlying institutional governance) that brings coherence and englobes data sharing within the public sector, open government data and the use of external data by public sector institutions.

The United Kingdom's 2017-2020 Government Transformation Strategy stands as an example on how a "data as an asset" approach is embedded within overarching digitalisation efforts in the public sector. The UK strategy (UK GDS, 2017) is an umbrella instrument meant to help build a data-driven public sector, for it comprises specific objectives related to:

- the management and use of data within the public sector (data that are not necessarily open for public access but that have to be shared between public sector organisations)
- government data publication (open government data)
- enhancing public sector competence through data analysis skills.

In Colombia, the Big Data National Policy (known as CONPES 3920) is another example of how OECD member countries are increasingly understanding data policies as overarching instruments to support better data governance (Box 4.1).

Box 4.1. Colombia: The Big Data National Policy

The publication of the CONPES 3920 in April 2018 by the Colombian government (*Política Nacional de Explotación de Datos*) stresses the need of advancing efforts in terms of data governance in the Colombian public sector.

The CONPES 3920 is in line with the OECD work on data-driven public sector, which underlines the relevance of managing the whole data value chain through the definition of a data governance model for the public sector (see Figure 4.1).

Among others, the CONPES 3920 provides an assessment of public sector practices in terms of data interoperability and sharing, open government data, and skills for data analysis. In this line, the CONPES 3920 is structured around 4 key policy objectives and 13 strategic action lines to put the data policy into action. These actions range from matters related to open data (e.g. the development of an open data infrastructure and fostering an open by default approach); data sharing within the public sector and between the private and public sectors (e.g. data interoperability); advanced data analysis for decision making; and the development of capacities for data analysis within the public sector. The CONPES 3920 also provides details on the funding model for the policy, current and expected policy indicators, and implementation and revision timelines.

Source: DNP (2018), *CONPES 3920: Política Nacional de Explotación de Datos (Big Data)*, https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3920.pdf.

An overall vision and a coherent strategic approach to data governance across the public sector could help the government of Sweden to leverage data as a key strategic asset at each stage of the policy cycle. If the opportunities offered by the use of AI and government data within the public sector are to be captured by public sector organisations at the central level, these organisations should own and know about this government-wide vision.

In this light, Sweden can learn from Australia, Colombia and the United Kingdom as the availability of a central data policy can help bring clarity in terms of a data governance model for the public sector, connecting all of the different elements (e.g. data sharing, open data, data protection, AI) in order to move towards a data-driven public sector.

A central open data policy and/or strategy would also help set a government-wide vision, roles and accountability structures, and the path to be followed in terms of policy implementation.

Institutional leadership and collaboration for a data-driven public sector

Developing a sustainable approach towards public sector data governance will require clear leadership, and cross-governmental co-ordination and collaboration.

In Sweden, what seems to be required is a shift in the vision across public sector organisations: from focusing on institutional goals to focusing on joint efforts to the benefit of the public sector, citizens and businesses as a whole. Existing data-sharing initiatives

remain at the agency and sectoral level with no co-ordination across agencies, thus missing out on the opportunity for synergies.

Despite a long tradition of collecting, storing and managing structured datasets, most public sector organisations do not share the same understanding of data as an asset. By ensuring central leadership and data stewardship across leading agencies, the government can foster an increase of efforts, synergies and the implementation of coherent measures in line with central data governance and management guidelines.

Institutional governance arrangements define responsibilities under a clear leadership, allowing for policy steering and accountability. Again, the UK case stands as an example of an OECD country aiming to connect all the dots in terms of data governance in the public sector.

In the United Kingdom, open data once fell under the umbrella of the UK Government Digital Service[8] within the Cabinet Office, which helped advance open data initiatives in the public sector while enhancing institutional co-ordination and collaboration. However, since 1 April 2018, open government data sits in the Department for Digital, Culture, Media and Sport. Such a change of governance model intends to further connect and enhance the coherence of efforts and co-ordination in terms of "data sharing within the public sector, data ethics, open government data and data governance" (UK Parliament, 2018). For instance, the Department for Digital, Culture, Media and Sport is the sponsoring department of the UK Information Commissioner Officer, which helps to co-ordinate inter-institutional efforts in terms of data protection, while maintaining the autonomy of the Information Commissioner Officer.[9]

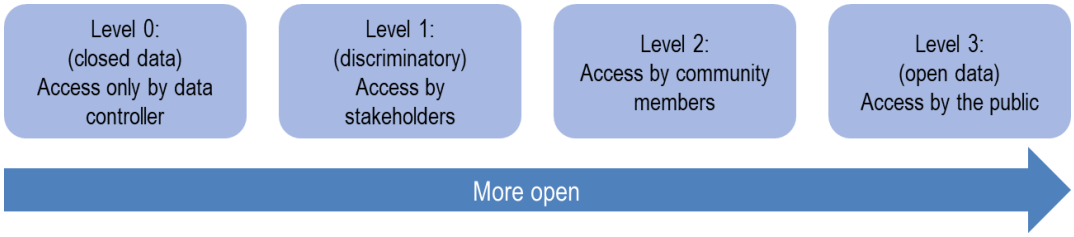
In Sweden, the creation of Agency for Digital Government (DIGG) sends a clear message in relation to its leading role in terms of open government data (see Chapter 5) and IT infrastructure (including data infrastructure). Yet, this governance arrangement requires ensuring the co-ordination of this body with other agencies in Sweden with responsibilities related to data governance, such as the Swedish Data Protection Authority. This would help to further inter-connect all elements related to the data value chain (i.e. data production, data processing, data sharing, data publication, data protection, data reuse) and bring more solidity, structure and coherence to transversal data governance efforts.

The role of the DIGG is, and will remain, decisive to reinforce the construction of a data-driven public sector in Sweden, and to foster a broader understanding across the public sector of the overarching value and nature of data governance practices. But the success of the DIGG will draw on its capacity to play a key role in terms of institutional co-ordination and collaboration, highlighting the need for promoting better co-ordination, steering a coherent policy implementation, and nurturing a data community and institutional fabric of data leaders in the public sector.

Managing and sharing data within the Swedish public sector

Data sharing englobes different levels of openness in terms of who has access to the data and under which circumstances. From this perspective, data access and sharing should "not be considered a 'binary concept' opposing closed to open access to data (open data). It is rather a continuum of different degrees of openness, ranging from internal access and reuse (only by the data holder), to restricted (unilateral and multilateral) external access and sharing, and open access to the public (open data) as the extreme form of data openness" (OECD, 2019b) (Figure 4.4).

Figure 4.4. The degrees of data openness



Source: OECD (2019b), "Enhanced access to and sharing of data".

In terms of data sharing, governing the data value chain implies not only defining the right controls in terms of who accesses the data, especially personal data registers, but also in terms of data quality (Box 4.2).

Capitalising on the value of data for an AI-driven smart public sector requires addressing challenges related to data fragmentation, discoverability and accessibility in order to ensure the interoperability of data, systems and organisations; greater data integration; and seamless data access (e.g. through APIs).

Some public sector organisations in Sweden provide examples of how Swedish agencies are tackling data-sharing challenges and govern how data are accessed and shared, mostly at the sectorial level.

The Swedish government commissioned the so-called development agencies[10] (such as the National Land Survey Authority [Lantmäteriet] and the Swedish Environmental Protection Agency [Naturvardsverket]) to co-ordinate digitalisation efforts within certain value chains with high political attention (smart food chain, smart building-process, smart environmental information and entrepreneurship) also relevant to data management. These efforts are known as the Digital First assignments (as per the Digital First agenda) and include the development of better governance structures, for instance, in terms of data management, sharing and openness, stressing also the relevance to co-ordinate with actors within and outside the public sector.

For instance, the Swedish Strategy for Environmental Data Management, issued by the Swedish Environmental Protection Agency, offers a series of recommendations for all authorities and organisations to jointly manage environmental data so as to leverage it as an asset to improve environmental protection. Institutions signing the strategy commit to follow the recommendations to manage the environmental data they possess.[11] There are currently around 40 signatories, such as the Medical Products Agency and the Swedish Forest Agency.

Such initiatives indicate the importance of central guidelines, standards and recommendations to create a common strategic approach and foster collaboration among key actors to promote the data-driven transformation of the public sector. These initiatives provide a good example of cross-agency data sharing and data integration efforts in the Swedish public sector. However, there is a need to scale up these efforts beyond specific data value chains, assignments or strategies, or the access and use of specific data registers (e.g. the National Population Register). The absence of an overarching policy applicable to data management more broadly limits the replication of these good practices as a norm across the public sector.

Box 4.2. Understanding the complexity of data quality

Data users are often clear on the significance of having access to high-quality data, but often fail to agree on what high "quality data" means in practice. The point is that data quality might mean different things for a different set of users based on their own data needs. Timeliness is a prerequisite for value creation for some (e.g. private sector reusing meteorological data), while accuracy might be much more relevant for others (e.g. actors using open data for anti-corruption).

The concept of data quality can be understood as the potential aggregate of different aspects – core data qualities – that as a whole can contribute to the overall value and usefulness of the data for the final user. While the degree of the relevance of the different core quality aspects may differ for different communities of users, as highlighted above, when present, these core qualities transform data into a raw asset that can be effectively internalised as part of data-driven business models in order to extract their value and contribute to the achievement of specific objectives.

In general terms, good quality data levels can be determined by the sum of the following core qualities:

- Completeness: All data items or data points are available. There are no missing data preventing the analysis or use of the data.
- Comprehensiveness: All data items or data points corresponding to the real-world object, event or situation are included in the dataset, allowing the data to be used for its intended purpose.
- Timeliness (including frequency of updates): The most up-to-date version of the dataset is made available without undue delays. The data therefore accurately represent the current state of the real-world object, situation or event.
- Understandability (including metadata): All relevant information about the data is provided to ensure the users easily understand it. This includes all the relevant metadata that will guarantee users understand the data.
- Accuracy: Data values are correct and represent in a clear form the characteristics of the real-world object, situation or event.
- Consistency: Data do not hold contradictions that would undermine the precision of their analysis and so impede their use.
- Validity: Data are updated to ensure the most-up-to date data are presented.
- Unique: Data items or data points are not repeated within the same dataset.

In the context of the digital transformation of business models, good quality data should also comply with the following characteristics in order to

facilitate more advanced governance and management models for data sharing, integration and consolidation:

- Discoverability (master data, data catalogues): Extent to which data or other types of information can easily be found either on the open government data portal or within the government. Data catalogues are used within government as well to increase data discoverability across ministries and agencies.
- Machine-readability: Information or data that are in a structured format that can be processed by a computer without (or with minimal) human intervention and without loss of semantic meaning. Digital formats are not automatically machine-readable (e.g. text documents in PDF or Word formats are not machine-readable).
- Inter-operability (standards, semantics, common identifiers): A characteristic of a product or system whose interfaces are designed to work with other products or systems. System interoperability corresponds to the use of common formats and software standards across government ministries/agencies. Semantic interoperability corresponds to gathering different information under the same heading.
- Security and data protection (e.g. privacy and data registries): Measures implemented to ensure data privacy and security norms/standards are guaranteed.

When non-public data are released as open data, new data qualities are added to the concept of good quality open data. In fact, these qualities determine open data's unrestricted access and reuse:

- Licensing: Official governmental document that sets the permission regarding the access, download, copy, distribution and use of government data.
- Free: No fees charged for access, copy, download, distribution or use of government data.
- Non-proprietary: Formats that are supported by more than one developer and can be accessed with different software systems. The eXtensible Markup Language (XML) is a popular non-proprietary format for government records. By contrast, proprietary file formats are controlled and supported by just one software developer (Microsoft Word [.doc] format is one example).
- Raw: Data that have not been processed, curated, cleaned, analysed or prepared. Raw data usually refers to chunks of data that are unstructured, uncategorised or unformatted.
- Granular: Level of detail provided by the data. The granularity of data refers to the level of deconstruction of the data, which provides further levels of detail (e.g. hour to minute to second, etc.). The maximum level of granularity implies the maximum level of deconstruction a dataset can reach.

- Disaggregated: Data that can be separated into its component parts. For instance, data can be disaggregated by gender, age, socio-economic group, ethnic group, geographic location and other socio-economic characteristics.
- Inclusive (data visualisations): The extent to which data are made available in a way that all users (technical and non-technical) can understand, analyse and reuse the data. Data visualisation tools allow for data democratisation: data are presented in such a way that the average user (with no skills as such) can also understand it.

Source: Originally published in OECD (2018b), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, http://dx.doi.org/10.1787/9789264305847-en.

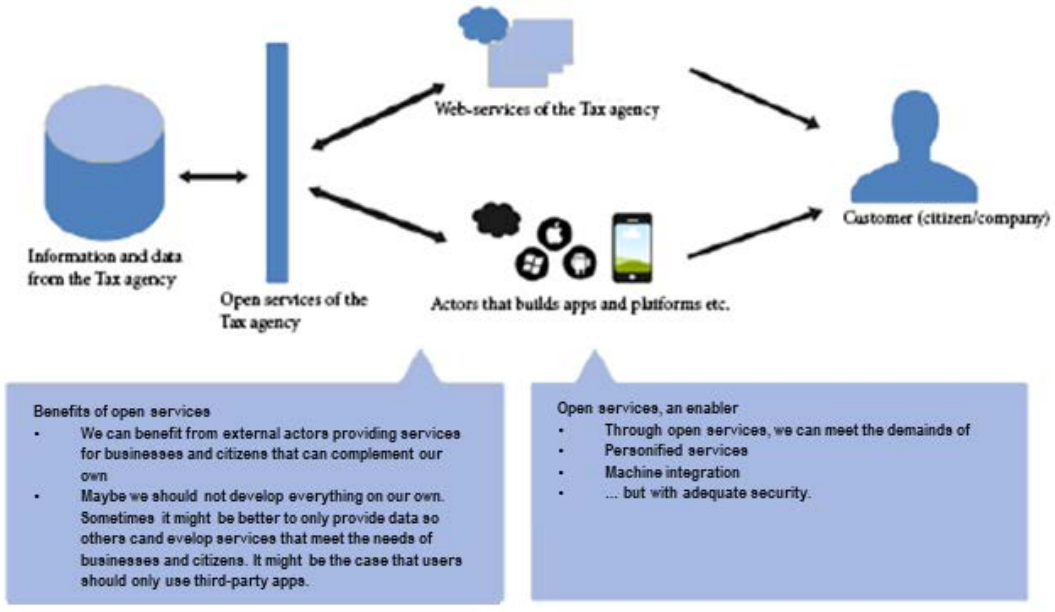
Scaling up data analytics practices

In terms of advanced data analysis, results of the survey administered across the public sector within the framework of this Review[12] indicate that the Ministry of Finance uses data analytics to detect fraud and evasion[13] and the Swedish Pensions Agency uses data analytics for simulation studies assessing how potential policy changes might affect the pension system.[14] Both cases reflect the trend in other OECD countries where the use of technology and data is at the core of the aforementioned areas of work.

The Digital Agenda of the Swedish Tax Agency (Skatteverkets) is another example of how Swedish agencies are addressing digitalisation, including data management. The Swedish Tax Agency's Digital Agenda highlights the value of data as a strategic asset for the activities of the agency as well as the benefits of advancing data analysis to improve services, control operations, and gain insights on users' experiences, needs and behaviours (Swedish Tax Agency, n.d.).

The approach followed by the Swedish Tax Agency is also relevant in terms of enabling government as a platform (see Chapter 1) for digital innovation. The activities of the Swedish Tax Agency also include the publication of open APIs as means to enable open innovation and empower other players to develop tailor-made solutions for different customer groups and through secured communication channels (Figure 4.5), for instance, to integrate services from various agencies, companies and organisations. The DIGG could learn from the Tax Agency's experience, help replicate this initiative across other agencies and further promote the use of APIs for public sector real-time machine-to-machine communication (Box 4.3), which would help overcome existing data silos by following a federated data governance model.

Figure 4.5. Swedish Tax Agency: Open APIs approach



Source: Information provided by the Swedish Tax Agency.

Box 4.3. ConectaGov: The Brazilian Catalogue of Government APIs

Based on the need of improved interoperability, the Brazilian federal government launched the www.conecta.gov.br platform in 2018.

Conecta is an open interoperability platform of the federal government consisting of a catalogue of APIs (application programming interface) which can be used for the integration of public services and the exchange of information and data among the public administration.

The platform enables public sector organisations to connect using APIs and release and consume data in real-time and in a more efficient and effective way.

Some strategic federal digital services already use the platform, namely the central portal of citizens' services called Brasil Cidadão.

Source: OECD (2018a), *Digital Government Review of Brazil: Towards the Digital Transformation of the Public Sector*, https://doi.org/10.1787/9789264307636-en.

The challenge nevertheless remains in terms of how to mainstream efforts across the entire public sector based on a whole-of-government approach.

Results from the survey inform that, for most organisations, data are not used for economic and societal sensing or trendspotting to inform policy agendas.[15] Additionally, data do not seem to have been used to engage stakeholders regarding the delivery of policies and services, or to adapt public services based on data analysis of citizens' needs, preferences and use patterns.[16]

Also, evidence from the OECD mission to Stockholm and from the survey administered for this Review across public sector organisations indicate that at large, few agencies have taken concrete actions to use data to develop new ways of working or to manage the data value cycle accordingly. Given the level of digital maturity of its public sector and the great availability of data and data registries, there is much that Sweden can learn from other countries to advance a culture and practices of data sharing and reuse to drive the efficiency and innovation agendas.

For instance, the Portuguese government launched a national funding programme called "Roadmap to Innovation" (in Portuguese, "Roteiro para a Inovação"), with the aim of spurring data science and the use of artificial intelligence in public administration. This initiative is the result of the work of the Ministry of the Presidency and of Administrative Modernisation; the Ministry of Science, Technology and Higher Education; the Agency for Administrative Modernization; and the Foundation for Science and Technology, within the Initiative Portugal INCoDe.2030. With a budget of EUR 10 million, at the core of this initiative is a call for tenders that is now open to support new data science and AI projects between the public institutions and the scientific community.

In Korea, the central government encourages and supports public sector organisations to identify their own data needs and explore how big data can help address social issues and spur social innovation. In order to better foster a data-driven public sector and increase efficiency, the central government also provides support to standardise big data analysis techniques. The "Public sector big data analysis project" has been supporting a data-driven administration of the central government, local governments and public institutions since 2014. As a result, the government has:

- developed guidelines for the application of big data analysis within the public sector
- introduced the Act on Promotion of Data-driven Public Administration (Data Administration Act) in December 2017 as a means to establish a scientific administrative framework that operates based on data.

The Korean government also created www.bigdata.go.kr as an effort to showcase successful big data practices within the public sector. The government holds big data competitions to encourage public officials to use data analytics for work-related purposes. Article 24 of the Data Administration Act bill also stresses the relevance of selecting, awarding and publicising best practices in order to motivate the development and expansion of public sector AI use cases. This initiative is instrumental to enable mutual learning between public sector organisations that are normally not part of the same sector or that do not necessarily need to collaborate outside of their immediate activity sphere.

In France**,** the Villani Report presents the vision and the strategic approach of the French government regarding AI in view of the significant benefits it can offer to public sector organisations (Box 4.4).

Box 4.4. France: The Villani Report

The Villani Report (published in March 2018), offers a series of recommendations to ensure artificial intelligence (AI) generates the best possible benefits in the French society and economy. Among the different aspects covered, the report discusses the importance of defining a French data policy and creating a French AI ecosystem in order to enable and

promote the application of artificial intelligence in the country. It also indicates that efforts in terms of AI need to focus on four main areas (health, environment, transport and security) while involving the different public and private stakeholders of those respective fields to ensure AI is used to address policy challenges.

The report also addresses the need for strong government leadership to spearhead the impact of artificial intelligence in France with, for example, the creation an inter-ministerial co-ordinator to implement the French strategy on AI. Furthermore, the report advocates for the need to provide training programmes and promote research on artificial intelligence as well as establishing ethics on AI and assessing its impact on the labour market. For example, transparency regarding machine-learning algorithms could be promoted, and testing projects targeting specific groups to assess the potential effects of artificial intelligence could be implemented.

The Villani Report was drafted by the French Task Force on the Artificial Intelligence Strategy for France and Europe, which was created in September 2017 by the French Prime Minister.

The task force was composed of different actors from the academic field, from the French Digital Council, with assistance of the French Secretary of State for Digital Affairs and other government institutions. Its mission began in September 2017 and ended in March 2018, with different hearings, public consultations and surveys that were held.

Source: OECD with information from Villani, C. (2018), "For a meaningful artificial intelligence: Towards a French and European strategy", https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf.

Breaking down barriers to a more data-driven public sector: Skills and fee-based business models

Public sector digital competences

No public sector can fully shift towards a data-driven *modus operandi* without the right set of skills. While shared data infrastructures are key elements of data governance, advancing data-driven efforts requires ensuring the supply of specific skills and competences.

Just as data (in terms of sharing, publication and reuse) should play a part in terms of policy delivery, the development of skills and competencies should be fit for purpose. Scaling up and supporting data-driven decisions and policy making requires hard skills, including technical competences (e.g. data scientists) as well as soft ones.

In Sweden, there is no specific organisation in charge of developing and implementing a public sector employment policy. KRUS, the former agency in charge of public sector skills and competencies, was closed in 2012.

The Swedish Agency for Government Employers (Arbetsgivarverket or SAGE) has a supporting role in terms of public sector employment, providing advice to public sector organisations on labour-related issues (e.g. employer-employee disputes) (SAGE, n.d.). However, it does not have a particular mission in terms of developing competences in the

public sector, and individual ministries and agencies are responsible for the overall decision of what skills to attract and employ based on their own mandate.

Aligning decisions on digital competences under one single vision is challenging in the absence of a single policy and in view of the number of agencies that make up the Swedish public sector (roughly 1 630), leading to a number of decentralised and agency-led initiatives.

The OECD has identified the following challenges in terms of public sector digital capacities:

- The knowledge base, both in terms of awareness at the senior level and the digital skills of public servants, is insufficient to foster a data-driven public sector, obstructing a use of data for improved policy making, service design and delivery as well as organisational management.
- It is not clear which digital innovation or data-related skills are needed or how to connect them with the achievement of specific policy objectives with a problem-solving approach.
- The rigid culture of the public sector is not attractive to external talent: Stakeholders observe that innovators "don't fit into the traditional model" of the public sector. As discussed in Chapter 2, the organisational culture of the Swedish public sector may not favour experimentation and digital innovation, therefore reducing its attractiveness to new talent and lowering its capacity to retain talent. This is particularly relevant in light of the different drivers that trigger innovation and action in the private and public sectors (profit vs. public value).
- There is a need to develop digital talent inside the public sector to balance the availability of talent within the private sector and reliance on the *ad hoc* support the private sector provides. Yet, the talent procurement process is not flexible enough. Private-public collaboration is often time consuming. Slow and burdensome outsourcing/procurement processes (six months on average according to stakeholders) may deter start-ups and entrepreneurs from engaging.
- Low attractiveness of the public sector has led some agencies to resort to temporary recruitment (internal consultants) to deliver on specific projects. This often is more expensive in terms of salaries, creates the risk of vulnerabilities and of consultants being perceived as outsiders. During the workshops organised in Stockholm, public sector officials indicated how this model often leads to long-term contracts *de facto* (e.g. two-year contract cycles are renewed), which become more expensive in the long run. Stakeholders also indicated that in some agencies, consultants account for up to 60% of the total workforce. This reality can have a negative impact on the organisational culture (e.g. consultants drive internal operations but are not involved in strategic decision making) as the opportunity is missed to embed the skilled staff into the fabric of the organisation. Uncertainty concerning the length of contract creates risks in terms of long-term attraction and retention of the right human capital, but it does provide some flexibility and agility to the agency in terms of procuring skills.

Results from the survey carried out within the framework of this Review also confirm some of the above-mentioned findings.

For instance, barriers to a data-driven public sector are not so much technical, but rather cultural, where the culture of data ownership, as opposed to data sharing, undermines

efforts to adopt new approaches to a data-driven public sector. The survey also revealed that for most institutions, the main barriers to the use of data within the agency are insufficient awareness among senior management and policy makers of the benefits of data-driven initiatives and the insufficiently skilled human resources on data management and use.

Even more, in practice, few initiatives have been implemented to increase the understanding of digital skills among public servants, and to develop their capabilities (e.g. few agencies have offered training to public officials on data analytics to develop and stimulate innovative policy making).

Trainings that have generally occurred across public sector institutions have rather focused on personal protection laws and other regulations relating to data protection.[17] Yet, before providing technical training to exploit the value of data, the Swedish government could consider educating its public sector on the importance of data as a key strategic asset (Box 4.5).

Therefore, the need for the government of Sweden to promote awareness and knowledge on the value of data reuse within the whole public sector is a priority so as to overcome what appears to be a context of very limited understanding of the potential value of data across public agencies in Sweden.

Box 4.5. The UK Government Transformation Strategy: People, skills and culture

In the United Kingdom, the Government Transformation Strategy focuses on promoting the establishment of the adequate skills and public sector culture in line with a data-driven public sector. The strategy stresses the importance of creating digitally skilled public servants by establishing digital professions and increasing the number of digital public servants.

In line with the strategy, the UK Government Digital Service (GDS) focuses on the development of a group of public servants with strong expertise in digital, data and technology (DDaT) professions. This is done through the definition of consistent career paths and reward structures for such professions. Furthermore, a specific framework (the Digital, Data and Technology Profession Capability Framework) helps public sector organisations better understand and recruit DDaT professionals.

The GDS also aims to increase the digital skills within the British public sector, through the Data Science Campus and Data Science Accelerator training programmes, which both aim to increase the government's data science capabilities, as well as the application of digital tools and techniques internally within public sector organisations. The project aims to explore how new data sources (including open data and big data) and data science techniques can improve the collective understanding of the United Kingdom's economy, communities and society, and build world-leading expertise across the whole ecosystem. Created to respond to this challenge, the Office for National Statistics Data Science Campus acts as a hub for the whole of the UK public and private sectors to build a new generation of capabilities, tools and technologies to exploit the growth and availability of innovative data sources and to provide rich informed measurement and analyses on the economy, the global environment and wider society. To reach this aim, the Data Science Campus actively promotes collaboration among academia, government and

industry partners to meet the demands and challenges posed by the evolving economy and push the boundaries of data science research within the Office for National Statistics and beyond.[1]

Finally, the GDS works towards promoting a culture in line with the data-driven transformation of the public sector. This is done through awareness-raising initiatives on the value of data as an asset within the public sector. Training sessions are offered to allow public sector leaders to manage digital projects and "digital-age organisations" (Cabinet Office and the Rt Hon Ben Gummer, 2017). The GDS also helps create an environment allowing for the training and experimentation on different digital tools and techniques of non-digital public servants.

1. More information is available at: www.ons.gov.uk/aboutus/whatwedo/datasciencecampus and https://datasciencecampus.ons.gov.uk.
Source: Text originally published in OECD (2018b), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, http://dx.doi.org/10.1787/9789264305847-en with information from Cabinet Office and the Rt Hon Ben Gummer (2017), "Government Transformation Strategy", London, http://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/590199/Government_Transformation_Strategy.pdf.

Theoretical understanding on the benefits of a data-driven public sector for foresight, delivery and performance should be prioritised before providing practical training on means to achieve. Investments will have to be made to improve the organisational culture and capacities for a digital government and, in particular, to move towards a data-driven public sector. Initiatives to increase awareness of the value of government data reuse within the public sector will have to be implemented and the subsequent capabilities to leverage data provided.

Initiatives such as the Skills360 Hackathon, organised by the Swedish Agency for Government Employers with the participation of the so-called development agencies, could be implemented with a particular emphasis on digital skills to build up the knowledge foundation towards a data-driven public sector. Furthermore, such events could also focus on providing practical training on the reuse of government data by civil servants.

Sweden needs to build the right capacities to leverage the use of data across the public sector, but also to address the talent procurement challenge discussed above.

Fees: Moving from closed to open government data

The OECD found evidence on how data are perceived as a product by public sector organisations, rather than an asset for the digital economy that can generate public value if provided free of charge. Interviews during the OECD peer review mission to Stockholm revealed that the business model for some institutions is fee-based. Some agencies, either at the state or local level, charge fees when sharing government data with other public sector institutions and the income from the sale represents a substantial part of their revenues:

- Fees form a substantial part of the budget and financing of the Swedish Mapping, Cadastral and Land Registration Authorities. The National Land Survey Authority has noticeably struggled to release open government data due to its fee-based business model, even though it plays a key role to scale-up data management practices within the framework of the Digital First assignments (see Section 4.4) and it has an open geodata strategy in place (see Section 4.2).

- In other cases, like the Swedish Companies Registration Office (Bolagsverket), public sector organisations do not receive public funding, therefore fees represent an important share of their operational funds. Yet, the Swedish Companies Registration Office, together with the Swedish Tax Agency and the Swedish Central Statistical Office, created and manages the Composite Base Service for Basic Companies Information (SSBTGU), which enables state agencies to access companies' registers at no cost.
- In some cases, these fee-based business models are statutory, thus defined by law. Results from the survey administered for the purpose of this Review indicate that the Ministry of Enterprise and Innovation and the Ministry of Health and Social Affairs charge a fee for some of the data they share with some public institutions. These ministries are required by law to do so.[18]

The above-mentioned cases highlight the struggle between opening up government data and finding new funding sources and organisational working models. Hence, the relevance of carrying out business impact exercises in order to support the clear formulation of open data business case.

The Swedish government conducted some studies to determine the economic impact of opening up geodata. This mirrors the efforts that have taken place in other OECD countries.

For instance, the Danish Agency for Data Supply and Efficiency under the Ministry of Energy, Utilities and Climate launched a report to estimate the economic value of providing access to open geodata. The report, published in March 2017,[19] estimated that the total economic value for society was EUR 470 million for 2016, EUR 335 million of which could be characterised as "production impacts", and EUR 134 million of what could be characterised as "efficiency impacts". Additionally, results indicated that among a total 75 public sector organisations, almost 80% valued the use of geodata for public sector efficiency as somehow important or of great importance (PWC, 2017).

Despite the studies carried out by the Swedish government aimed to articulate and clarify the benefits of opening up geodata, it seems that the business case formulated so far is not motivation enough to change or explore new business models. Evidence from the OECD peer review mission to Stockholm (November 2017) also showed that there has not been any research in regard to how to change the business model for fee-based agency business models.

A change of mindset and culture, accompanied with the right leadership and political support, can help move from a strong emphasis on data ownership towards data sharing and reuse. The case of Mexico's National Statistics Office provides an example of how public sector organisations moved from selling data to openness.

Box 4.6. The case of the National Statistics Office in Mexico: From fee-based data-selling models to data openness by default

In the 1980s, Mexico's National Statistics Office's (INEGI) business model was based on selling data and information. In earlier stages, this meant selling paper-based data and information and then selling digital copies of these data, hence the delivery model changed but not the business model. INEGI had physical access points (*puntos de venta*, PAPs) where citizens could consult the data and information at no cost, but individuals paid a fee

if they needed to reuse the data. This business model was in place until 2012. However, with the arrival of growing Internet access in the early 2000s, physical consultation started to move towards citizens' demand for digitised information.

Growing pressure from users (including from academia and researchers), plus slow and burdensome data access processes led INEGI to carry out cost-benefit studies to assess the benefit of keeping PAPs operational. Additionally, new leadership at the top level brought a new vision that, paired with the arrival of new transparency legislation, led to further pressure for government openness. Moreover, high access costs provided a competitive advantage to major businesses, crowding out small and medium-sized enterprises (data for commercial reuse had a fee three times more expensive than data for personal use).

The new leadership defined a new approach in terms of strategy, which moved from a focus on selling data to a focus on data reuse, therefore focusing on digital and free data and access to information, leading to the following actions from 2011:

- The cost-benefit study concluded that the operational costs of PAPs doubled the actual financial benefit obtained from selling the information and data. As a result, and in line with the only-digital policy, the PAPs were closed.
- In order to reduce operational costs inside the organisation, the leadership followed a resource optimisation policy, instead of a personal reduction policy. As a result, employees were in some cases moved to new roles, to increase their productivity and increase the efficiency of the organisation as a whole.

While the leadership and new policy found internal resistance, high-level political support to government openness, and eventually open data, were determinant to move forward towards greater data provision at no cost. In 2013, the Office of the President in Mexico was already taking forward open data initiatives and by 2015, the new decree on open data formalised the open data policy in the country. INEGI emerged as a key actor of the open data ecosystem contributing not only with data, but also to the development of data governance instruments such as the Technical Norm for Open Data.

This gradual change of mindset led to an increase of data downloads from 4 000 or 5 000 to an average of 100 000 downloads per month, mainly geodata including maps and cartographic data. Users also moved from demanding data to also requesting support in terms of what data analysis tools to use, leading to greater collaboration between INEGI and data users.

Source: Based on phone interviews with Mexico's National Statistics Office carried out for the purpose of this Review.

The fee-based model of some Swedish public sector organisations stands as a main barrier to data sharing and data-driven initiatives across the Swedish public sector, and is opposed to the vision stated in the recent Swedish National Guidance for Artificial Intelligence.

Sweden will have to overcome some important financial and cultural barriers in order to build a data-driven public sector and move towards open government data, especially if this transition implies potential financial losses as a result of adapting new business models to government decisions and policy guidelines. The supporting complementary role of the leadership will play a key role in this regard.

Notes

1. For more information see: www.norden.org/sv/nordiska-ministerraadet/ministerraad/nordiska-ministerraadet-foer-digitalisering-201720132020-mr-digital/deklarationer/ai-in-the-nordic-baltic-region.

2. The Åland Islands, Denmark, Estonia, Finland, the Faroe Islands, Iceland, Latvia, Lithuania, Norway and Sweden.

3. Information is based on OECD (fothcoming).

4. For more information, see: https://www.pmc.gov.au/resource-centre/public-data/issues-paper-data-sharing-release-legislation.

5. Based on data from Question 40 of the Institutional Level Survey for the Digital Government Review of Sweden.

6. Based on information provided by the Swedish Environmental Protection Agency to Question 40 of the Institutional Level Survey for the Digital Government Review of Sweden. More information is also available at: https://www.naturvardsverket.se/upload/miljoarbete-i-samhallet/uppdelat-efter-omrade/oppna-data/policy-naturvardsverkets-datainformation-2017-06-08.pdf.

7. Based on data from Question 85 of the Central Level Survey for the Digital Government Review of Sweden.

8. For more information on the UK Government Digital Service see: https://www.gov.uk/government/organisations/government-digital-service/about.

9. For more information see: https://ico.org.uk/about-the-ico/who-we-are/relationship-with-the-dcms.

10. The Swedish government commissions a number of central agencies to be development agencies (*utvecklingsmyndigheter* in Swedish). The primary responsibility of these agencies is to analyse certain policy areas with a focus on digitalisation in order to identify opportunities for improved co-ordination and digital innovation towards better public service delivery and public sector effectiveness. For more information see: https://www.regeringen.se/49bb11/contentassets/f479a257aa694bf097a3806bbdf6ff19/utgiftsomrade-22-kommunikationer.

11. More information is available at: https://www.naturvardsverket.se/upload/sa-mar-miljon/oppna-data/miljodatastrategi/strategy-for-environmental-data-management-161107-ver-1.02.pdf.

12. Based on data from Questions 44 and 55 of the Institutional Level Survey for the Digital Government Review of Sweden.

13. Based on information provided by the Ministry of Finance to Question 55 of the Institutional Level Survey for the Digital Government Review of Sweden.

14. Based on information provided by the Swedish Pensions Agency to Question 55 of the Institutional Level Survey for the Digital Government Review of Sweden.

15. Based on data from Question 57 of the Institutional Level Survey for the Digital Government Review of Sweden.

16. Based on data from Questions 59 and 60 of the Institutional Level Survey for the Digital Government Review of Sweden.

17. Based on data from Question 64 of the Institutional Level Survey for the Digital Government Review of Sweden.

18. Based on data from Questions 50 and 50a of the Institutional Level Survey for the Digital Government Review of Sweden.

19. For more information, see: https://sdfe.dk/media/2917052/20170317-the-impact-of-the-open-geographical-data-management-summary-version-13-pwc-qrvkvdr.pdf.

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Chapter 5. Opening up government data in Sweden: User engagement and value co-creation

This chapter discusses the importance of opening up government data to drive forward digital innovation inside and outside the public sector. It focuses on the governance framework for open data in Sweden, including the institutional, policy, funding and regulatory frameworks. It uses the results for Sweden in the 2017 editions of the Open, Useful and Re-usable data (OURdata) Index to assess the state of open government data in Sweden and provide policy recommendations to the country in relation to data availability, accessibility and reuse.

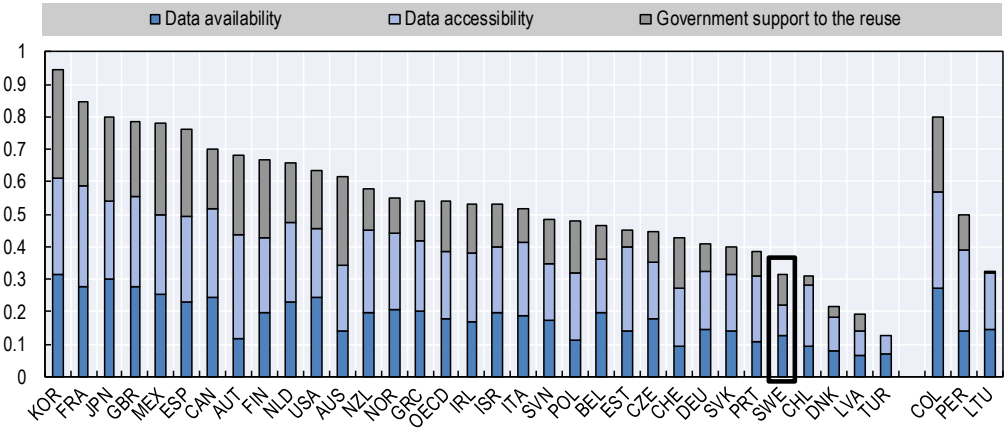
Introduction

Sweden's commitment to move forward digital government in the country, backed up by the creation of the new Agency for Digital Government (DIGG), is proof of its willingness to advance the digital transformation of the public sector. In this context, open government data is one of the DIGG's areas of work (see Chapter 2). The DIGG's objective is to promote data-driven innovation as well as access to and reuse of open data.

Sweden enjoys of a long-standing culture of public sector transparency dating back to the 18th century. However, it faces the challenge to advance government openness in order to take a proactive stand in relation to the publication of government data with a strategic and problem-solving approach.

Results from the 2017 edition of the OECD Open, Useful and Re-usable data (OURdata) Index (Figure 5.1) reflect how Sweden is lagging behind in terms of open government data in comparison to other OECD member and partner countries. Sweden ranks below the OECD average. There is a need to draw upon the value of open government data to build a basis for a data-driven public sector, business and civic innovation in order to move from ambition to action and to place the open data ecosystem at the core of these efforts.

Figure 5.1. 2017 OECD Open, Useful, Reusable Government Data Index (OURdata)



Note: Data for Hungary, Iceland and Luxembourg are not available.
Source: OECD Open Government Data Survey 3.0.

The governance framework for open data in Sweden

Institutional framework

The current model for open government data in Sweden results from the recurring shift of roles and responsibilities related to digital government between the Ministry of Finance (MoF) and the Ministry of Enterprise and Innovation (MoE).

In 2011, responsibility for e-government was moved from the MoF to the MoE. As a result, the promotion of open government data (OGD) (as a driver of business innovation) was also moved to the MoE under the leadership of Vinnova (the Swedish innovation agency).

The responsibilities in terms of public sector information – from a legal and policy-making perspective – were kept within the MoF and those for OGD were moved back to the same

ministry in 2016. Also in 2016, the promotion of open data efforts across the public sector was moved from Vinnova (under the MoE) and integrated into the mandate of the National Archives (Riksarkivet) within the Ministry of Culture.

The mandate of the National Archives relevant to open data was meant to cover the period from 1 July 2016 to 31 December 2018. These responsibilities have now been transferred to the new digitalisation agency, which launched its activities in September 2018.

By taking this decision, Sweden joined a group of other OECD countries with similar governance approaches and/or public sector cultural background. For instance, in Finland, the responsibilities and leadership for open data are under the Ministry of Finance. In Denmark, this role is shared between the Agency of Digitisation within the Ministry of Finance and the Ministry of Business, Industry and Financial Affairs. In other OECD countries such as Australia, France, Mexico, Portugal and the United Kingdom, these responsibilities have been placed within the centre of government (e.g. the Office of the President, Council of Ministers), therefore providing the open data policy with high-level political support (Table 5.1).

In Sweden, the National Archives' mandate was more oriented towards providing technical support with a focus on producing policy outputs in terms of data publication (see Section 5.3) rather than on strategic matters. Also, the instability in terms of institutional governance (see Chapter 2) has led to a lack of clear and sound leadership, which has resulted in the absence of a clear vision for open data.

In interviews with stakeholders, the OECD found evidence that the Ministry of Finance itself did not fully internalise the value of open data despite its discourse on digital innovation and data-driven government. This results in a strong focus on data publication as a targeted policy outcome rather than as a means to solving policy challenges.

While it is necessary to ensure that assistance and capacity building efforts are sustained once the promotion and co-ordination of open data efforts is transferred to the new digitalisation agency, the vacuum in terms of strategic leadership needs to be tackled.

During the OECD mission to Stockholm in November 2017, there was general agreement among public agencies on the need to strengthen institutional leadership to steer efforts in this field, and to develop a consistent and coherent vision of open data's potential value across the administration. These are propitious conditions for open data to flourish in Sweden.

While some OECD countries have tackled this leadership gap by creating chief data officer positions as part of their governance structures, it is not clear how such a one-person governance leadership model would work in Sweden in light of its relatively strong and very independent public agencies and its consensus-based culture. This would require defining a clear line between a strategic role related to the definition of policy and regulatory instruments (e.g. standards, the publication of specific data taxonomies) supporting some common actions and those that would require taking a collaborative approach under a clear inclusive leadership (e.g. a steering committee for open data).

It is also necessary to move co-ordination forward and enable collaboration under the leadership of the new agency and in line with central policy goals. This would require using the consensus-based culture of the public sector and the front-running role of some of the more advanced agencies in terms of data initiatives to facilitate policy ownership and adoption across the broader public sector.

Table 5.1. Location within government of the institution/authority responsible for formulating the open government data strategy/policy

OECD member and partner countries

	Central/federal executive/cabinet office	Central/federal ministry of public administration (or similar)	Central/federal Ministry of Communications and Technology (or similar)
Australia	●	○	○
Austria	●	○	○
Belgium	N/A	N/A	N/A
Canada	○	●	○
Chile	○	●	○
Czech Republic	●	●	○
Denmark	N/A	N/A	N/A
Estonia	○	○	●
Finland	○	●	○
France	●	○	○
Germany	○	●	○
Greece	○	●	○
Ireland	○	●	○
Israel	●	○	●
Italy	○	●	○
Japan	●	○	○
Korea	○	●	○
Latvia	○	○	●
Mexico	●	○	○
Netherlands	○	●	○
New Zealand	○	●	○
Norway	○	●	○
Poland	●	○	○
Portugal	○	●	○
Slovak Republic	N/A	N/A	N/A
Slovenia	○	●	○
Spain	○	●	●
Sweden	○	●	○
Switzerland	○	○	●
Turkey	●	○	○
United Kingdom	●	○	○
Colombia	○	○	●
Lithuania	○	○	●
Peru	●	○	○

Source: OECD Open Government Data Survey 3.0.

The OECD also found evidence of the lack of general knowledge and awareness on what open data is within co-ordination bodies such as the eSAM. The responsibilities, composition and expertise of these bodies and their sub-groups should be reconsidered in terms of their role within the framework of open data policies (Box 5.1).

Box 5.1. Inter-institutional and multi-stakeholder co-ordination bodies for open data across OECD countries

Austria

The "Cooperation OGD Austria" working group is an informal body consisting of representatives from the public sector, academia and citizens' interest groups. The working group was responsible for developing standards and procedure models and identifying good practices in the domains of open data standards, quality, prioritisation and international knowledge sharing. The results of this working group are filed for formal acceptance to the Working Group for the Federal, Municipal, Town and Village Level, which is in charge of working on e-government related standards. The working group issues binding recommendations for all levels of government in Austria.

Ireland

The governance structure for open data in Ireland includes an Open Data Governance Board with representatives from business, academia and civil society. Key stakeholders such as businesses, civil society representatives, researchers, library professionals and other public bodies are invited to the Open Data Governance Board's meetings to discuss open data issues. There is also a Public Bodies Working Group with membership from public bodies and government departments with a keen interest or already working in the open data area. Both groups meet on a regular basis. The Open Data Unit within Ireland's Department of Public Expenditure and Reform co-ordinates the activities of the two group and holds bilateral meetings with individual public bodies.

Korea

The 2016 Open Data Law created the Public Data Strategy Committee to co-ordinate the Korean government's major policies and plans concerning public data and to inspect and evaluate the status of implementation. The committee is jointly chaired by the Prime Minister and an expert in open data designated by the President. The law also established a working committee under the jurisdiction of the Strategy Committee. The working committee assesses agenda items prior to their submission to the Strategy Committee, and works on items delegated by the Strategy Committee. Expert groups may be established under the jurisdiction of the working committee to assist it on delegated topics.

France

The Etalab (the task force in charge of open data within the Office of the Prime Minister) deployed an open data network across all central ministries in France. This network holds monthly meetings to co-ordinate the inter-ministerial open data work and objectives.

United Kingdom

The Government Digital Service Data Steering Group has strategic oversight of the use and management of governments' data, both inside and outside the public sector, and promoting open data and the development of data skills in the public

sector. The Steering Group is a multi-stakeholder group made up of representatives from the central government, local governments and the private sector. The work of the Steering Group was complimented by the Data Leaders Network, which co-ordinates activity at the level of government departments.

Source: OECD (2018a), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, http://dx.doi.org/10.1787/9789264305847-en with data from the OECD Open Government Data Survey 3.0.

Policy funding

While the creation of the new digitalisation agency is expected to help move open data forward in Sweden, the empowerment and policy levers it will have play a key role in this regard (see Chapter 2). Indeed, open data is expected to be granted ring-fenced funds for 2018-20 (roughly EUR 2 million per year). This funding would be both a political and policy statement from the Swedish government in relation to its willingness to renew its vision and commitment for open data.

Recent OECD work on open data (see OECD [2018a] and Table 5.2) shows that this is not a common practice among OECD countries, therefore creating a window of opportunity to use these funds to deliver quick wins in the short and medium term, but also to build a solid culture for open data in the long run.

Policy framework

In Sweden, open data can instead be better understood more as a kludge of – often isolated and silo-driven – open data initiatives developed by a small group of public agencies (see Section 5.3) than a whole-of-government effort.

Results from the OECD Open Government Data Survey 3.0 (2017) showed that, together with four other countries, Sweden is one of the few OECD member and partner countries that does not have a formal open data policy in place. While the acknowledgement of open data as a key element of data-driven innovation in the Digital First agenda helps to address this issue, under the leadership of the new digitalisation agency, the challenge for the Swedish government will be to move from goals to strategic and coherent actions and policy ownership across the broader public sector and the external open data ecosystem.

Some OECD countries have opted for the development of formal strategies and action plans for open data in order to clarify and define a common vision, set a coherent and common path for open data initiatives, and align efforts.

For instance, in Ireland, the Open Data Unit (a body within the Department of Public Expenditure and Reform) developed Ireland's Open Data Strategy 2017-2022 as an effort to align open data efforts across the public sector under one whole-of-government vision and mission for open data. The Irish Open Data Strategy was developed in collaboration with actors from the civil society, academia and the private sector, and is thus an opportunity to also map and further engage with new actors of the open data ecosystem. Additionally, the strategy includes a specific implementation plan highlighting action, roles and timelines, thereby contributing not only to the operationalisation of the open data policy, but also to government accountability.

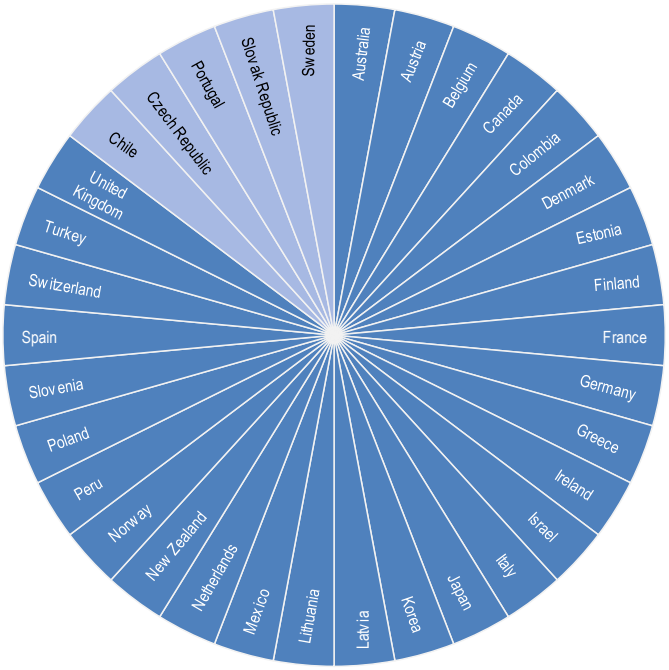
Table 5.2. Open government data policy funding models across OECD member and partner countries

	Government assigns its own line of financing to the open government data (OGD) strategy/policy	Funding from other public sector institutions to fund the OGD policy/strategy but funding is not regular	Government provides funding to other public sector institutions to implement their OGD initiatives	Each public sector institution finances its specific OGD initiatives
Australia	●	○	○	●
Austria	○	○	○	●
Belgium	○	○	○	●
Canada	●	○	○	●
Chile	●	○	○	●
Czech Republic	○	○	○	○
Denmark	○	○	○	○
Estonia	●	○	●	●
Finland	○	○	●	●
France	●	○	○	○
Germany	●	○	○	●
Greece	○	○	○	○
Ireland	●	○	○	●
Israel	●	○	●	●
Italy	●	○	○	●
Japan	●	○	●	●
Korea	●	○	●	●
Latvia	○	○	○	○
Mexico	○	●	○	○
Netherlands	○	○	○	●
New Zealand	●	○	○	○
Norway	●	○	○	●
Poland	○	○	○	●
Portugal	○	○	○	●
Slovak Republic	○	○	●	○
Slovenia	●	○	○	●
Spain	●	○	○	●
Sweden	○	○	○	●
Switzerland	●	○	○	●
Turkey	●	○	○	○
United Kingdom	○	○	○	●
Colombia	●			
Lithuania	●			●
Peru	●			●

● Yes; ○ No.

Sources: OECD (2018a), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, http://dx.doi.org/10.1787/9789264305847-en, with data from OECD (2016), "OECD Open Government Data Survey 3.0", www.oecd.org/gov/2016-OECD-Survey-on-Open-Government-Data-3.0.pdf, Question 22. Countries providing a response to the question: Please indicate how OGD is funded in your country.

Figure 5.2. Availability of open data policies across OECD member and partner countries



Note: Based on information provided by 31 OECD countries and 3 country partners: Colombia, Lithuania and Peru.
Source: OECD Survey on Open Government Data 3.0. (2017): Section 2, Question 1. Countries providing a response to the question: Does the central/federal government currently have a single open government data (OGD) strategy or policy in place?

The Polish Open Public Data Programme is a five-year strategy addressed to governmental public sector bodies and the main instrument for the open data policy. The programme is a diagnosis for open data in the public sector and indicates key tasks that should be followed by public sector bodies to move forward the open data policy, *inter alia*: the publication of specific datasets that should be available through the Polish open data portal (danepubliczne.gov.pl), guidelines on data accessibility (formats, metadata) and the need of setting institutional roles (called open data officers). The United Kingdom 2012 open data white paper provides an earlier example. It sets the business case for open government data efforts in the country underlying ongoing and future actions implemented by the UK government.

Legal and regulatory framework

While access to public sector information as a citizens' right is well anchored in the Swedish public sector ethos, such a positive culture risks becoming a legacy with a negative impact on the overall effort to advance open government data in Sweden. For example, open data is not yet fully conceived as a proactive and dynamic government policy, but rather as the reactive and passive response of the government to the right of citizens to request public sector information.

This is not endemic to Sweden. Across OECD countries, open data is frequently understood as an evolution from or a sub-element of government transparency. Freedom of information acts have been used as the legal basis for open government data across OECD member and partner countries. Results from the OECD Open Government Data Survey 3.0 show that

18 out of 21 OECD member and partner countries report the use of these instruments as the main legal basis for open data (not including Sweden).

The 2010 Law on the Re-use of Public Administration Documents stands as the most relevant legal instrument in terms of open data in Sweden (see Swedish Government [2010]). As such, the law implements European regulations (such as the EU Directive on the Re-use of Public Sector Information, known as the PSI Directive)[1] into Swedish law. Yet, the lack of a national strategic vison for open data over recent years has led to a passive state where open data is indeed reactive and the result of extrinsic factors (such as EU regulations) rather than high-level political will and clear policy goals.

While the new European Open Data and Public Sector Information Directive[2] (2019) is expected to scale up the discourse in terms of openness by default (open data published free of charge) and automated data sharing through APIs, Sweden will still confront a challenging reality in terms of creating impact from open data, and this beyond the mere adoption of any new EU regulations into national law.

Sweden is struggling to balance the need and demand for a stronger government role in terms of digital government and open data with the independent and autonomous role of agencies in terms of policy implementation. The Swedish government faces the challenge of exploring how to use hard levers such as laws and regulations to define mandatory actions to be implemented by agencies while drawing upon the collaborative culture within the Swedish public sector to achieve coherent policy results (see Chapter 2).

A few OECD countries such as France, Germany and Korea have taken steps to regulate open data as part of specific laws on digitalisation, e-government and open data itself (Table 5.3). These efforts have aimed to make a clear distinction between mandatory actions required by law and discretionary ones (e.g. recommendations issued by specific public bodies). Experience in these countries shows that laws also help support the sustainability of the open data policy in the long run.

In other cases like Argentina, Brazil, Mexico and Peru, national governments have opted for the publication of executive and/or presidential decrees as an effort to define and back up mandatory actions.

Open data as a platform for public value co-creation

OECD principles for digital and open governments encourage policy actions aimed to sustain the publication and reuse of open government data.

The 2014 *OECD Recommendation of the Council on Digital Government Strategies* promotes governments' adoption of strategic principles for greater public sector openness, inclusiveness and accountability, and stakeholder engagement and participation as inherent elements of digital government strategies (including open government data). Principle 3 of the Recommendation also highlights the need of balancing the timely publication of accessible government data with managing the risks of data misuse.

Open data can be used to build a bridge between the use of technology and data for the achievement of policy goals, and to contribute to business and civic innovation. Open data enables governments as platforms for public value creation in collaboration with the open data ecosystem.

Table 5.3. Key legal and regulatory instruments on open government data across selected countries

	Argentina[1]	Brazil[2]	France[3]	Germany[4]	Korea[5]	Mexico[6]	Peru[7]	United States[8]
Requires explicitly the publication of open data in a machine-readable format and in open format with their associated metadata	■	■	○	○	○	■	■	●
Demands the publication and update of an open data catalogue for all institutions	■	■	●	○	●	■	▲	●
Provides a taxonomy of datasets to be published in priority	■	■	●	○	○	○	○	○
Mandates a national chief data officer	○	■	■	○	●	○	■	○
Mandates institutional chief data officers within all public sector institutions	○	○	○	○	●	○	○	●
Mandates the appointment of public officials in charge of data publication	○	■	▲	○	●	▲	■	●
Requires the publication of open data plans by public sector institutions	○	■	●	○	●	▲	○	●
Includes requirements on funding of the open data strategy and/or open data initiatives	○	○	○	○	●	■	■	■
Includes requirements to monitor the implementation of open data plans/strategy and/or open data initiatives	■	■	■	●	●	■	■	●
Requires stakeholder engagement to promote the reuse of open government data and/or the creation of an ecosystem of open data users	○	■	○	○	●	▲	■	●

Notes. ● Yes, available in law; ■ Yes, available in a decree; ▲ Yes, available in other instruments (implementation guidelines, recommendations etc.); ○ Not available.
The data presented do not take into consideration freedom of information acts.
1. For Argentina, more information is available at: http://servicios.infoleg.gob.ar/infolegInternet/anexos/215000-219999/218131/norma.htm and http://servicios.infoleg.gob.ar/infolegInternet/anexos/255000-259999/257755/norma.htm.
2. For Brazil, more information is available at: http://planalto.gov.br/ccivil_03/_Ato2015-2018/2016/Decreto/D8777.htm.
3. For France, more information is available at: www.legifrance.gouv.fr/affichTexte.do;jsessionid=AE6CD34C644E37D99FD9D1C23BC3F98E.tplgfr38s_2?cidTexte=JORFTEXT000033202746&categorieLien=id and www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000029463482&categorieLien=id and www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000024072788.
4. For Germany, more information is available at: www.gesetze-im-internet.de/egovg/__12a.html.
5. For Korea, more information is available at: http://law.go.kr/engLsSc.do?menuId=0&subMenu=5&query=%EA%B3%B5%EA%B3%B5%EB%8D%B0%EC%9D%B4%ED%84%B0%EC%9D%98%20%EC%A0%9C%EA%B3%B5%20%EB%B0%8F%20%EC%9D%B4%EC%9A%A9%20%ED%99%9C%EC%84%B1%ED%99%94%EC%97%90%20%EA%B4%80%ED%95%9C%20%EB%B2%95%EB%A5%A0#liBgcolor0.
6. For Mexico, more information is available at: www.dof.gob.mx/nota_detalle.php?codigo=5382838&fecha=20/02/2015 and www.dof.gob.mx/nota_detalle.php?codigo=5397117&fecha=18/06/2015.
7. For Peru, more information is available at: www.minedu.gob.pe/gobierno-abierto/pdf/ds-n-016-2017-pcm.pdf and http://sgp.pcm.gob.pe/wp-content/uploads/2016/10/Guia-Rapida-ADG.pdf
8. For the United States, data refer to the H.R.1770 – OPEN Government Data Act bill. More information available at: www.congress.gov/bill/115th-congress/house-bill/1770/text.
Source: OECD (2018a), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, https://doi.org/10.1787/9789264305847-en.

The OECD OURdata Index benchmarks the definition and implementation of open data policies across OECD member and partner countries. It is composed of three core pillars measuring: 1) the availability of open data (e.g. the definition of an open by default policy and user consultation for data publication); 2) its accessibility (e.g. the publication of accompanying metadata); and 3) governments' support to spur data reuse.

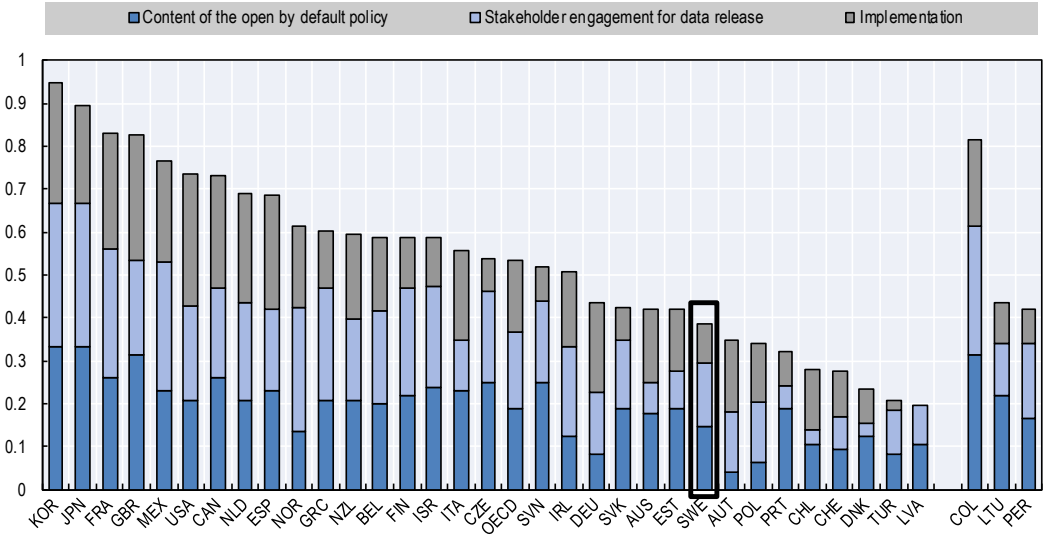
Open government data availability and accessibility in Sweden

Pillars 1 (data availability), 2 (data accessibility) and 3 (data reuse) of the 2017 OECD OURdata Index measure policy actions implemented by countries to advance open data efforts across the broad public sector. Pillars 1 and 2 specifically focus on setting the right context in order to help institutions prepare for data publication and ensure the usefulness of OGD for users.

Results for Pillar 1 of the 2017 OURdata Index (Figure 5.3) indicate that Sweden was lagging behind other OECD countries in terms of:

- the definition of overarching formal requirements for all ministries and agencies to publish and share data
- the implementation of open government data requirements (e.g. timeliness of data sharing, use of open formats) as part of performance indicators of organisations
- encouraging and guiding public sector organisations to carry out consultations with users to inform open data plans and prioritise data publication.

Figure 5.3. OECD OURdata Index: Pillar 1 – Data availability



Source: OECD Open Government Data Survey 3.0.

Proactive data publication and user engagement are absent from the mindset of most public sector organisations. For instance, stakeholders indicated that Government Offices are notoriously driven by a focus on transparency (e.g. using freedom of information requests as the main driver to publish data), thus reflecting their understanding of what open data are.

In terms of data publication through the central open data portal (directly or indirectly), in line with the highly valuable datasets identified in the G8 Open Data Charter, Sweden has failed to pursue the publication of data on company/business registers, meteorological/weather, energy consumption, and health insurance and unemployment benefits. Additionally, data discoverability and availability are fragmented as a result of different access points provided for open government data. In the case of the publication of strategic data assets, decisions result again more from exogenous and extrinsic factors (such as EU directives) than from the endogenous and intrinsic motivation of the Swedish public sector. For instance, the Geodata portal – a good practice resulting from EU directives – could be further connected to central open data efforts.

For Pillar 2 on data accessibility (Figure 5.4), results from the OECD OURdata Index pointed to the following achievements and gaps in terms of policy definition and implementation.

There were no formal requirements in terms of enforcing and/or promoting the publication of government data with an open license, in machine-readable format, with accompanying metadata, and in a disaggregated and timely fashion. Nonetheless, in practice, government data were increasingly made available for public access free of charge and proactively by some leading agencies, under clear licensing conditions and with accompanying metadata.

The Swedish open data portal oppnadata.se stands as a mere data publication platform, missing its value as a tool and platform for multi-stakeholder collaboration and engagement, and for public value co-creation. From this perspective, it serves more as a data access website than as a platform for community exchange, collaboration and knowledge crowdsourcing. The portal lacks basic functions such as feedback sections and forums for discussions, as well as more advanced functions such as providing the possibility for actors of the ecosystem outside of the public sector to upload datasets, register their own organisations as data publishers, and engage in discussions with other users centred on their datasets, such as the case of the French portal data.gouv.fr.

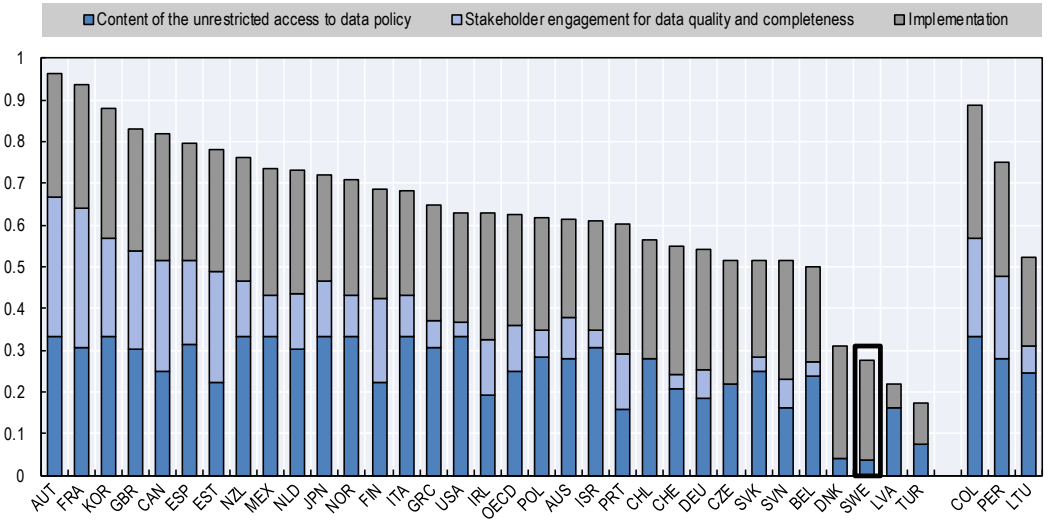
Even though the National Archives has been so far responsible for the management of the open data portal, and has provided for its development, for the formulation of guidelines, online tutorials (e.g. www.vidareutnygjande.se), support with metadata and data publication (e.g. sandbox.oppnadata.se), there is a need to advance open data efforts in Sweden. This implies, for instance, the need for guiding and supporting agencies in their open data journey, particularly when the benefits resulting from opening up government data are not clear for an agency, and the publication of data would mean a transition from fee-based models to free data access.

The absence of such a clear vision and understanding of the value proposition results, as highlighted previously in this chapter, that the goals of open data are limited to publication-oriented purposes rather than being supported by a strategic goal-oriented mindset. Discussions remain technical (e.g. centred on data architecture and infrastructure matters) and are not focused on the value of data as infrastructure and as a strategic asset for the policy cycle.

The mere nature of the for-profit business models of some agencies is used as an excuse to avoid embarking on open data efforts instead of using it as a driver to disrupt organisational models and identify data-driven solutions to reduce costs and contribute to organisational efficiency and improved public service delivery. This funding model arises as a key challenge to be overcome by some public bodies.

Agencies are not fully engaged in opening up data because it can either affect their revenues (e.g. the Mapping Authority opens up some data, but the most valuable data are only available for a fee) (see Chapter 4) or because there is no clarity in terms of the potential risks of opening up government data (e.g. geodata).

Figure 5.4. OECD OURdata Index: Pillar 2 – Data accessibility



Source: OECD Open Government Data Survey 3.0.

Advancing the open data agenda in Sweden should not be the responsibility of one single co-ordinating agency, but a collaborative effort across the public sector. This should be based on a common and jointly defined vision that is translated into a strategy that could frame and direct the actions of the various actors, and the engagement of the whole ecosystem, in data reuse towards the creation of value. This could draw on the Swedish culture and embed a narrative that speaks to the Swedish public sector and the strategic priorities of the government, e.g. around public sector productivity and social innovation.

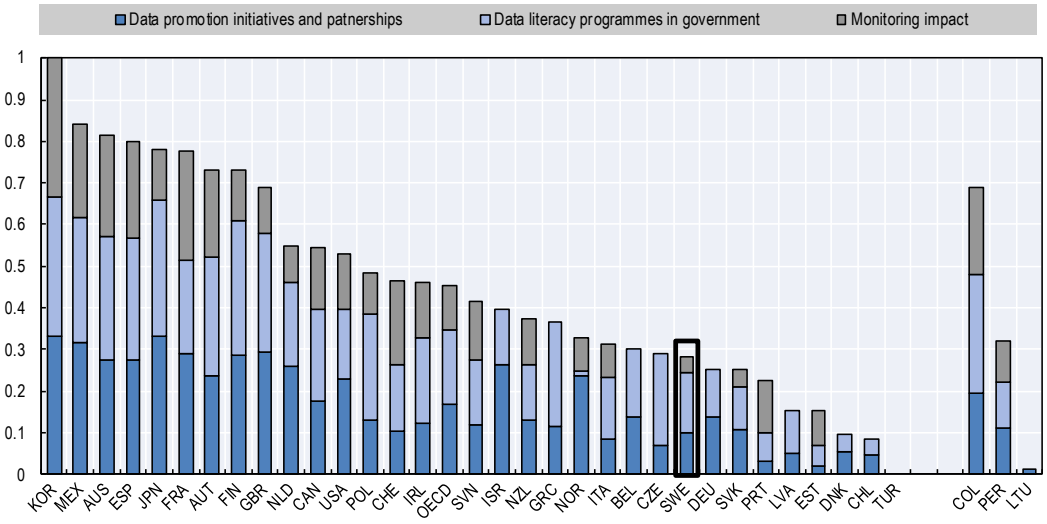
Data reuse in Sweden: Acknowledging the value of the ecosystem

The availability and accessibility of open government data is a means to an end. Enabling government as a platform drawing upon the availability of data as infrastructure requires the definition and implementation of coherent efforts to spur data reuse. These efforts recognise the value of open government data as input to businesses' and civil organisations' value chains. Examples include improving the private sector's strategic decision making and business development, and/or enabling civic auditing by the reuse and analysis of data on public contracting and public officials' declaration of interests.

Pillar 3 of the 2017 OURdata Index (Figure 5.5) measures the efforts implemented by OECD member and partner countries to trigger the reuse of open government data. These actions draw upon the implementation of initiatives to leverage the availability and accessibility of open government data as measured in Pillars 1 and 2 of the OURdata Index.

Results from Pillar 3 of the 2017 OURdata Index point, in general terms, to a disconnection between the public sector and the external vibrant tech ecosystem in Sweden.

Figure 5.5. OECD OURdata Index: Pillar 3 – Data reuse



Source: OECD Open Government Data Survey 3.0.

Pillar 3 of the OURdata Index provides evidence of the following issues in terms of data reuse and stakeholder engagement in Sweden:

- While the government's strategy for a digital co-operative state administration (known as *Med medborgaren i centrum* in Swedish)[3] encourages collaboration with citizens and the publication of open data as a tool to enable the development of third-party public service delivery solutions, there seems to be an implementation gap between what public bodies are expected to do to engage the ecosystem and what they actually do.
- The central government could make more efforts to understand the main barriers in terms of data reuse for businesses and civil society organisations (as in Spain through its infomediary study[4] and the Australian government's Productivity Commission Inquiry Report on Data Availability and Use[5]). Even initiatives to develop partnerships with business incubators to support the reuse of open data by companies and start-ups are out of the scope of the government's activities in Sweden.
- The relevance of the potential benefits of open data for social value does not yet seem to be fully acknowledged; the focus is more on business innovation. For instance, in Finland the results of Open Challenge Finland 2015 were useful to develop a visualisation map to understand the flow of asylum seekers to European countries over time. At the local level, the Service Map of the Helsinki Capital Area provides data about services in the Helsinki capital area. Public municipal services like schools, health stations and day care centres are most thoroughly represented, with detailed data about their accessibility properties.
- Most public sector institutions are rarely or never involved in initiatives aiming to raise awareness of the benefits of open data to businesses and civil society organisations, identify their data needs, or organise multi-stakeholder co-creation events.

- The work of the National Archives has aimed to develop data literacy and increase awareness among public sector institutions in relation to open government data. Yet, open data are not leveraged or embedded by default in policy development processes by public officials.

Most public sector agencies in Sweden are disconnected from the broad open data ecosystem and self-identify as data access gatekeepers and data owners instead of custodians of public data and active actors within the open data ecosystem – a role that is contradictory to the active discussion around private sector and civic innovation and the needed active commitment of the public sector in this regard. When engaged, most public agencies have a strong approach on making data available as a goal as expressed by public sector stakeholders in Sweden. Nevertheless, despite these challenges, open data efforts within the public sector are emerging under the leadership of some public sector champions.

The organisation of the event entitled "HackforSweden" by the Agency for Employment (Arbetsförmedlingen) stands as one of the most relevant examples in terms of stakeholder engagement in Sweden (Box 5.2). The event is organised with the participation of other agencies such as Vinnova, the National Archives, and the Swedish Agency for Economic and Regional Growth (Tillväxtverket). Yet, earlier versions of the event failed to connect policy issues with data-driven solutions and focused more on exploring what data users could or could not do.

Other relevant examples of agencies taking the lead to move forward open data efforts across different policy sectors are also present.

The Swedish Environmental Protection Agency (Naturvardsverket) developed an open up guidance model[6] to support the publication of environmental data in line with its institutional open data policy. This model is also intended to help other agencies to publish open government data. In 2016, the Environmental Protection Agency launched its data management strategy drawing upon its vision on the value of environmental data as a resource for society. The strategy was developed in collaboration with other Swedish public agencies including the Swedish Agency for Marine and Water Management, county administrative boards and the regional water authorities (Environmental Protection Agency, 2016). It stresses the need of making environmental data not only available, but discoverable, accessible, easy to understand, free of charge, and published in a timely fashion while easing inter-agency data management models and data-sharing processes. The strategy follows a collaborative mindset as these efforts aim to facilitate inter-agency collaboration in line with the Digital First goals for environmental data and smarter services.

Another example is provided by the Swedish University of Agricultural Sciences (SLU), whose efforts have focused on opening up forestry data and draw on its value to foster collaboration between different actors from the private, academic and public sectors.[7] The SLU has also started a Forest Data lab to explore the use of advanced 3D visualisation technologies and the use of data for improved scenario-based and data-driven decision making.[8]

Another example of the SLU's initiatives concerns the Swedish LifeWatch initiative led by the Swedish Species Information Centre (ArtDatabanken, a unit within the SLU). The Swedish LifeWatch initiative aims to build a data infrastructure by making all Swedish biodiversity data available in open and standardised formats through interoperable web services, and to develop tools and virtual laboratories for advanced biodiversity and

ecosystem analysis. The Swedish LifeWatch initiative currently provides roughly 67 million Swedish species observation records relating to 35 000 different species from 15 primary databases.[9]

Box 5.2. Hack for Sweden: An example of government agencies taking the lead on open government data-led innovation

Hack for Sweden has the mission to build a community for open data creation to enable sustainable innovation across society. The goal is to stimulate and support government agencies in their ongoing work aimed at making more government data available.

In 2018, as part of the process of increasing the digitalisation of the public sector, the Swedish government focused on open data and data-driven innovation. The idea is that the public sector, academic sector, enterprise and creative organisations from civil society need to interact and collaborate to produce value. The initiative rests on the recognition that the reuse of open data can contribute to increased growth, participation and efficiency. Open and data-driven innovation provide an essential opportunity for increasing the number of people that contribute to the digital welfare of tomorrow's society and together produce social benefits. The Swedish government further argues that where there is social benefit, the public sector should be an active partner. Access to authorities' data, if provided as open data, can lead to a variety of benefits for both society and economy. This includes giving citizens, businesses and civil society the opportunity for increased and more democratic involvement in the authorities' activities, for example in policy design and implementation, but also for transparency in government decisions.

One of the Swedish government's objectives is to advance the use of open data to support innovation and participation, and the Hack for Sweden initiative is considered a key enabler of this virtuous collaboration between the public sector and the broader ecosystem. It aims to regularly engage public authorities throughout the years in actively seeking to enable effective reuse of open data to facilitate the emergence of a data market and to help strengthen people's empowerment and to jointly build digital services. Hackathons to promote competitions in the reuse of data to deliver public value are one of the activities foreseen to promote the role of the government as a platform. This is why the management of the initiative Hack for Sweden is assigned to different public sector organisations in different years.

The latest commission to the Agency for Employment to lead Hack for Sweden includes commissions to engage the broader community and work with innovative procurement, data partnerships, etc. As a result, Hack for Sweden will move forward to start building the Hack for Sweden 365, an innovation-system for data-driven applications, with the participation of private partners, including the big IT companies in Sweden.

Sources: Published in OECD (2018a), *Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact*, http://dx.doi.org/10.1787/9789264305847-en based on information from OECD (2018b), "Key findings", www.oecd.org/gov/digital-government/key-findings-digital-government-review-of-sweden-2018.htm.

The Swedish Transport Agency (Transportstyrelsen) has taken actions to draw upon the value of open data for improved urban mobility (Box 5.3). The agency has also made data available on facilities for dispensing waste from boats resulting on the development of a data-based service for boat owners. This service is intended to help supervise and report the status of the waste facilities in Swedish harbours via an interactive map and a mobile application drawing on constant user interaction.

Box 5.3. The Swedish Transport Agency's Open Traffic Data project

In 2016, through a series of workshops, the Swedish Transport Agency (Transportstyrelsen) launched the Joint forces for Open Traffic Data project with the goal of setting a common vision and shared actions for open transport data involving relevant actors.

The project resulted in the identification of five areas of work (similar to a common data governance model) relevant to move forward industry-wide solutions:

- Datasets and services: The project identified a group of 12 datasets of high value for the development of smart mobility services, including for instance transport stops and stations, routes and schedules, real-time transport disturbance data. This group of datasets also included added-value data from external parties.
- Licensing and terms of reuse, to enable data interoperability and sharing with and between data users at the national and international level and fostering third-party data reuse.
- IT architecture, including the development of a shared national developer portal, a common information model, open standards for transport data interoperability and a centralised national data delivery to third-party actors.
- Institutional governance, specifically an organisation in charge of implementing strategic objectives, developing technical solutions and collaborating with the public transport industry at the regional level.
- Funding, including current and transition period financing sources.

Source: Based on Swedish Transport Agency (2017), "Joint forces for open traffic data: A common vision for Sweden – English abstract", https://samtrafiken.se/wp-content/uploads/2017/04/English-abstract_-Final-report_-Joint-forces-for-open-trafffic-data-a-common-vision-for-Sweden-v-1.0_-English-Abstract-v-1.0.pdf.

The OECD found evidence that there are also open data efforts at the local level. SALAR (the Swedish Association of Local Authorities and Regions) has implemented some open data initiatives at the local level in areas such as health, waste management, noise pollution and linked data.[10] There are other efforts at the local level in Helsingborg, Gothenburg and Linköping, and in the context of the East Sweden Hack Initiative.[11]

However, the current general context for open data in Sweden highlights that both building and maturing an open data community within the public sector and reaching the external open data ecosystem are urgent challenges that need to be addressed.

On the one hand, in terms of the public sector ecosystem, it is necessary to build open data networks made up of public officials with an interest in or already working on open data. For instance, in Australia, the Digital Transformation Agency launched the Data Champion programme as an effort to set the governance for open data across the broader public sector. The programme enabled the establishment of an open data ecosystem within the public sector that could be used not only to promote open data efforts, but also as a basis for knowledge sharing. Yet, this would require setting clear governance for open data across the public sector (e.g. data stewards, data contact points), and the fact that Sweden currently lacks a clear open data policy is a limitation in this respect.

On the other hand, acknowledging the value of the external ecosystem not only as data users, but as partners, is a quintessential element of open data initiatives that lead to value co-creation. These efforts should set the basis for further open government data reuse, multi-stakeholder collaboration, and the design and implementation of problem-solving open data initiatives towards public value co-creation across different policy sectors. Measuring the results and impact of these initiatives would play a key role in this respect.

Notes

1. For more information see: https://ec.europa.eu/digital-single-market/en/european-legislation-reuse-public-sector-information.

2. For more information see: http://europa.eu/rapid/press-release_STATEMENT-19-1935_sv.htm.

3. For more information see: https://www.regeringen.se/informationsmaterial/2015/04/med-medborgaren-i-centrum.

4. For more information see: www.ontsi.red.es/ontsi/es/content/estudio-de-caracterizaci%C3%B3n-del-sector-infomediario-2016.

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