**Better Legislation
for Smoother Implementation**

Decision supporting tool on Interoperability

European Commission

This study was carried out by Deloitte for the Legal interoperability action of the ISA[2] programme by:

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List of terms and abbreviations

Abbreviation	Term
CBA	Cost Benefit Analysis
CEF	Connecting Europe Facility
DG	Directorate General
DIGIT	Directorate General for Informatics
EC	European Commission
EIF	European Interoperability Framework
EIRA	European Interoperability Reference Architecture
EU	European Union
GDPR	General Data Protection Regulation
ICT	Information Communication Technologies
IA	Impact Assessment
IoP	Interoperability
ISA[2]	Interoperability Solutions for public Administrations, businesses and citizens
IT	Information Technology
MS	Member State

Term definitions

Term	Definition
Baseline scenario	Starting point (current situation) against which legislative proposals can be compared. Different scenarios can be considered as part of the baseline, given that the current situation might entail variations depending on the context (e.g. different contexts per Member State).
Desired scenario	Ideal scenario in which all the policy objectives would be achieved.
Interoperability solution[1]	Common services and generic tools facilitating cooperation between disparate and diverse organisations, either autonomously funded and developed under the ISA[2] programme or developed in cooperation with other Union initiatives, based on identified requirements of European public administrations.
Interoperability CBA Mechanism	The cost-benefit analysis mechanism developed for measuring the costs and benefits of interoperability actions and solutions at Member States and European institutions' level. Also used as CBA mechanism.
Interoperability initiative	Legal proposal including interoperability requirements.
Interoperability Requirement	Statement of an interoperable need that must be realised by a system. Interoperability requirements can be formulated for all the EIF interoperability views: Legal Interoperability Requirements, Organisational Interoperability Requirements, Semantic Interoperability Requirements, and Technical Interoperability Requirements[2]

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[1]   As defined by the ISA[2] decision: Decision (EU) 2015/2240.
[2]   Definition stems from EIRA v3.0.0 document.

1. Introduction

1.1 Context

The decision supporting tool on interoperability (hereafter the "Tool") is being developed as part of the Legal Interoperability ISA[2] action, previously called Assessment of ICT implications of EU legislations. The objective of this action is to ensure that digital and interoperability aspects are considered in EU policies from their earliest stage.

This Tool builds on the "Interoperability Cost Benefit Analysis (CBA) mechanism", which was developed under the Assessment of ICT implications of EU legislations action and tested under the Legal Interoperability action. It aimed at measuring the costs and benefits of interoperability across interoperability actions and solutions at the level of national public administrations and European institutions. The work performed to test the Interoperability CBA mechanism during the impact assessment (IA) of a policy initiative has highlighted that this mechanism, and the methodology that accompanies it, were very generic and had no specific orientation towards interoperability in the context of a legal proposal. Considering the highly technical nature of IAs and of the policy options and technical scenarios they evaluate, tailored CBA models are usually built on ad hoc basis to accurately reflect and address the specific needs of the assessment.

Upon the design of a new legislation that brings changes to existing digital environments, especially at a trans-European level, policymakers have to choose which would be the most effective and efficient approach for implementation. In this decision they may want to consider, among other aspects, the costs and benefits of including interoperability requirements in the future legal proposal, which will affect the design of the related digital solution.

Hence, the study team further reflected on how to best provide support to policymakers to consider interoperability in policymaking. This Tool identifies a series of **points and questions to guide** them in their policy assessments to consider interoperability and to adopt a methodology that will gradually **facilitate the reuse of evidence** in evaluations and impact assessments.

This Tool can be used at all stages of the policy cycle, but it is particularly relevant when it comes to assessing impacts and designing policies and evaluating them (see the policy cycle below).

Figure 1 – Policy cycle

Lack of interoperability can lead to inefficiencies and unnecessary costs and burdens. Therefore, it is key for policymakers to consider as early as possible in the policy cycle the added value of digital and interoperable solutions.

As part of policy evaluations and fitness checks, five main evaluation criteria are considered in EU policy: Effectiveness, efficiency, coherence, relevance and EU added value[3]. Those criteria can also be assessed ex-ante, for instance as part of impact assessments or feasibility studies. **Although interoperability is relevant for all criteria, this Tool focuses mainly on supporting policymakers in their costs and benefits assessments *ex ante* or *ex post*, which is part of the efficiency criteria.** Going further in the development of this Tool, it would be key to develop it in order to address other criteria as well, in particular coherence and effectiveness.

1.2 Document objectives

Building on the findings and recommendations of D05.01 and D05.02 of SC n°36, the objective of this Tool is to provide a light instrument that supports policymakers in considering interoperability in their decisions when developing digital policies. The specific objectives of this Tool are twofold. At the forefront, it provides a series of questions for policymakers to consider interoperability aspects in particular in their assessment of costs and benefits. It also aims to set the basis for a reflexion on the reusability of evidence in such assessments (see Figure 2).

Figure 2 – Tool's objectives
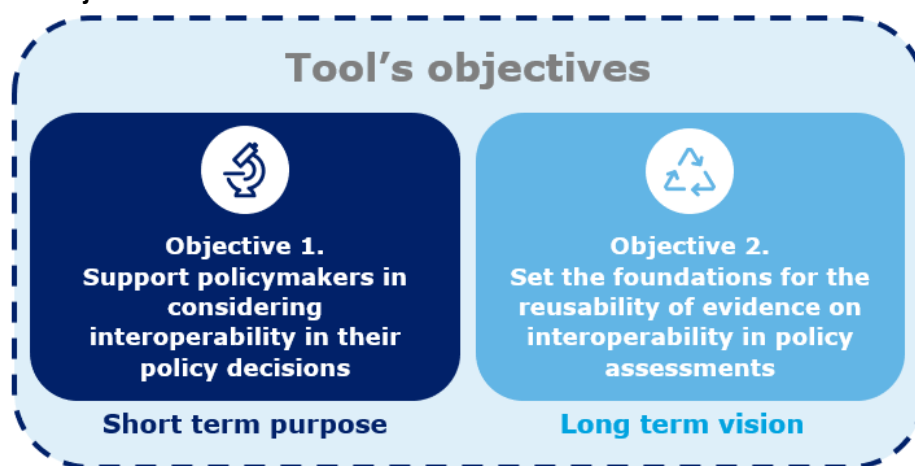
As part of the assessment of the previous CBA Mechanism, three main assessment criteria were considered, i.e. whether the tool was fit for purpose, whether its usability was effective and efficient and whether it was supporting the users in an objective manner. The same three criteria are also kept in mind for the design of the present Tool.

1.3 Approach

Building on the findings from the CBA mechanism and from literature on costs and benefits assessments, as well as different tools from the Better Regulation Guidelines and other relevant studies, the study team identified a number of questions that are relevant to guide policymakers across their policy design journeys. An iterative approach to the design of this Tool was followed.

1.4 Target audience

This Tool is addressed mainly to policymakers who need to develop policies taking into account digital and interoperability aspects or who want to design seamless digital policies. As policymakers are the main actors involved in designing legislative acts, this Tool supports them in their decisions on the *interoperability requirements* to include in the various legislative options of the legislative proposals.

Although this Tool is centred around the methodologies outlined in the Better Regulation Guidelines, it can be of inspiration for policymakers at every levels of governments, being EU, national or local.

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[3] Tool # 47, Evaluation criteria and questions: https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-47_en_0.pdf

2. Decision-supporting tool on interoperability

Interoperability is defined in the European Interoperability Framework (EIF) as the "ability of organisations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organisations, through the business processes they support, by means of the exchange of data between their ICT systems"[4]. The lack of interoperability between systems, organisations or countries can be costly and, the other way around, achieving interoperability can mean cost reductions.

In fact, the "cost of inadequate interoperability can be quantified by comparing current business activities and costs with a hypothetical counter factual scenario in which electronic data exchange, management, and access are fluid and seamless"[5] (see figure below).

Figure 3 – Costs of inadequate interoperability
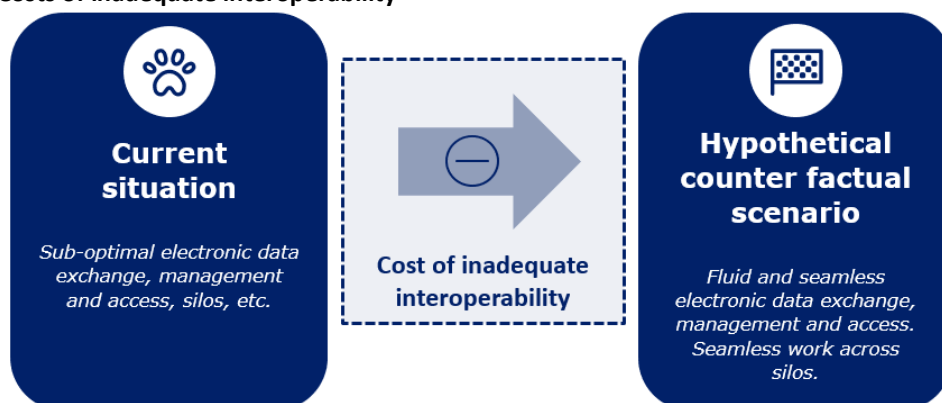
The structure of this Tool follows the usual steps of a costs and benefits assessment. It should be noted that those steps are similar to the ones identified in the ICT Impact Assessment Guidelines[6]. However, the latter contains more steps, as it is built around Impact Assessments, which can often encompass an assessment of costs and benefits. The main high level steps for policymakers to consider as part of this Tool are illustrated below.

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[4] European Commission, New European Interoperability Framework, Promoting seamless services and data flows for European public administrations: https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf, p.5

[5] Software Interoperability Problems Take Big Toll On Construction And Building, Information Week: https://www.informationweek.com/software-interoperability-problems-take-big-toll-on-construction-and-building-/d/d-id/1027020

[6] European Commission, ICT Impact Assessment (europa.eu)

Figure 4 – High level steps of a costs and benefits assessment, mapped to the ICT IA Guidelines steps
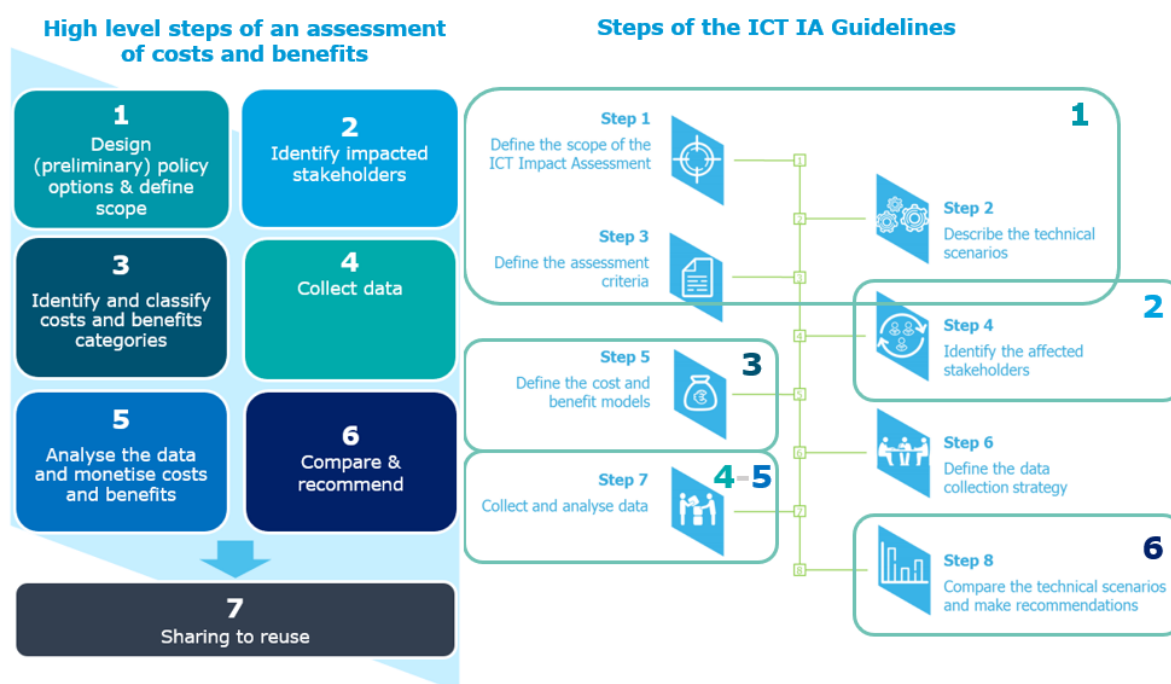
Interoperability can be considered in most of these stages. More detail is provided in the following sections.

2.1 Design (preliminary) policy options and define the scope of the analysis (step 1)

Before assessing the costs and benefits of policy options, policymakers have to identify and design these options. In this regard, Tool #18. The choice of policy instruments states that "the choice of instrument should **take into account the experience obtained from the evaluation of the existing policy framework** as an initiative is often not starting from scratch"[7]. This is also valid when it comes to identifying the impacted stakeholders (step 2), relevant costs and benefits categories (step 3), to identifying relevant sources for data collection (step 4) as well as sharing and reusing the insights from the costs and benefits assessment (step 7).

When developing policy options, "foresight and other forward-looking tools can also complement quantitative modelling with a system thinking and long-term approach through qualitative and participatory methods involving all relevant stakeholders"[8]. Not only such approach allows policymakers to foresee and apprehend future challenges, it also breaks policy silos and therefore increases the chances of a smoother implementation.

Moreover, when formulating policy options, policymakers have to assess the current challenges encountered by stakeholders. When those challenges concern the use of digital solutions, the exchange of data, the use of different systems or of data models, building interoperability can help.

Interoperability actions can be taken in a broad range of contexts. From fully fragmented landscapes to very uniformed ones, in terms of systems, legal frameworks, processes and data models (see figure below)[9].

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[7] Tool # 18, The choice of policy instruments: https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-18_en_0.pdf

[8] Tool # 4, Evidence-based better regulation: https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-4_en_0.pdf

[9] Inspired by Rolf Weber, Legal Interoperability as a Tool for combatting Fragmentation: https://www.cigionline.org/publications/legal-interoperability-tool-combatting-fragmentation

Figure 5 – Fragmentation, interoperability and uniformed landscapes
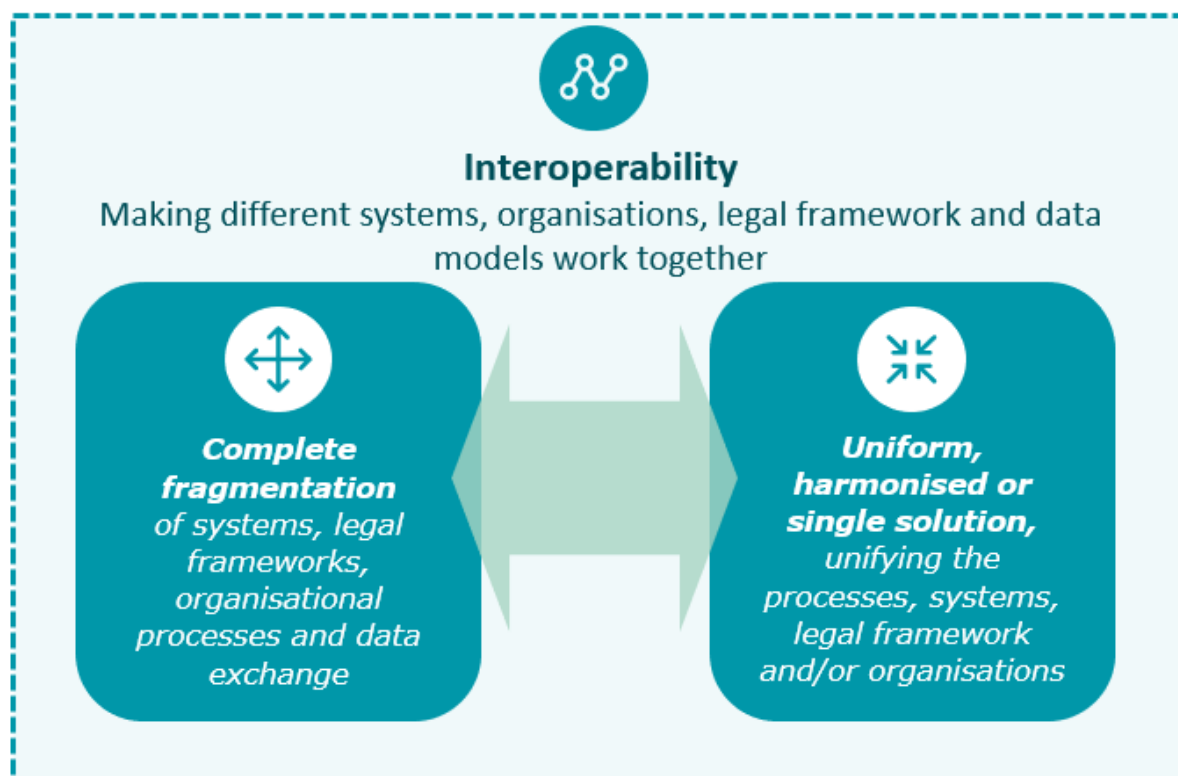
Complete fragmentation refers to a situation in which systems, legal frameworks organisational and data exchange processes are completely fragmented, independent from each other and do not work together, for instance between different countries, regions, entities, etc. At the other end, a uniform, harmonised or single solution refers to a situation in which several entities, countries, regions, etc. work together as one and are fully integrated. Interoperability is located in the range of potential situations in between these two extremes and allow the different countries, regions, entities to keep their own local systems, data models, processes and legal frameworks but to make them work with others' through agreements.

Hence, it is key that policymakers **situates the baseline scenario and the desired scenario** in this figure, having in mind the objectives of the policy. It should be noted that none of the above presented scenarios are "ideal scenarios" by default. The best scenario will depend on the potential of the options to achieve the identified policy objectives, considering the assessment criteria[10] in question in the evaluation, impact assessment, fitness check or other type of study. Moreover, before even considering an intervention, policymakers also have to make sure that these have a legal basis and are in line with the principles of subsidiarity and proportionality[11].

In the design of policy options, a few considerations can help policymakers to situate the current situation and the policy options on the above landscape, as well as to develop the right policy instruments. The ICT IA Guidelines contain a number of assessment questions useful for policymakers to design technical scenarios (see Annex A). In addition, a few key examples of considerations are outlined below.

    i.   Is the baseline scenario a fragmented landscape? Is it subject to many actors and influences? Is there room for simplification?

A fragmented business process and organisational structure will tend to create fragmented and inefficient business and management systems. For this reason, it is important to think of the

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[10] The assessment criteria depend on the analysis. Most often, policy options are assessed for their effectiveness and efficiency, but coherence, relevance and EU added value can also be considered. See the Better Regulation Guidelines for more information on each criteria.

[11] Tool # 5: https://ec.europa.eu/info/files/better-regulation-toolbox-5_en

complexity of the environment. If the landscape is fragmented and the aim is to move towards more interoperability, potential instruments could be considered:

a. Simplifying the current landscape by simplifying business processes, reducing the number of actors involved and removing unnecessary burdens

b. Agreeing minimum standards

c. Agreeing on common templates, common methodologies and potentially platforms

d. Developing agreed concept vocabularies

The "one size fits all" (i.e. a uniform approach) "may not capture the variation in compliance costs across economic operators, which introduces inefficiencies and raises overall costs of the policy"[12]. Hence, it is important to think of the **possibility to use common standards.**

However, one needs to be **careful not to impose unnecessary burdens** on stakeholders and must ensure that any new burdens brings an added value.

2.2 Identify impacted stakeholders (step 2)

When assessing costs and benefits linked to interoperability, it is key to follow a **multidisciplinary** approach thus **identify the stakeholders** involved in the digital policy implementation and delivery and to consult them in order to gather their input.

- Which stakeholders are part of the digital policy design and delivery?

In order to assess costs and benefits, it is imperative to identify all impacted stakeholders. This is also key to design an effective consultation strategy (in view of step 4), to identify all relevant costs and benefits categories and to build an accurate and tailored costs and benefits model (step 3) as well as to ensure that the assessment is as comprehensive as possible. Consulting the right stakeholders also allows to evaluate their appetite for the different policy options and their limitations when it comes to implementing the options, which will be crucial to guarantee a smooth implementation.

- What are stakeholders' expectations and limitations when it comes to implementing the different policy options?

When assessing the costs and benefits in particular, it is important to categorise the data per type of stakeholders impacted, yet with simplicity in mind. For instance, the impact will be measured on categories of stakeholders, such as citizens, businesses or industry, competent authorities, public administrations, etc.

2.3 Identify and classify costs and benefits categories (step 3)

Once the likely impact on stakeholders is mapped, costs and benefits categories shall be identified. This includes the costs and benefits as part of the baseline scenario (current situation) and those linked to the policy options. Digitalisation and interoperability have high potential in reducing administrative costs and reducing related burden.

The sections below outline key considerations for policymakers as part of their quantitative analysis and qualitative analysis.

Quantitative analysis

The Cost Benefit Analysis (CBA) is one of the most common methodology used to assess costs and benefits. It is based on the monetisation of values and it can determine an overall impact via a net cost and a net benefit calculation. However, it encompasses a level of risk in its accuracy, especially because of the subjectivity and the assumptions made to put a monetary value on non-monetary items, which can lead to over- or under- estimations. It also depends on the availability of monetary

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[12] Tool # 18: https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-18_en_0.pdf

values. Yet, the exercise of monetising costs and benefits, if done transparently and robustly can provide key insights in understanding the amplitude of impacts of the policy options.

Tool #58[13] is considered of relevance with regards to the typology of costs and benefits. It can serve as complementary means so as to support the identification and categorisation of the various costs/benefits into categories: societal, regulatory, etc. Therefore, it contributes to the definition of measured impacts on the various stakeholders.

A few examples of key questions are outlined below to support policymakers in identifying costs and benefits categories which are linked with interoperability.

A typical costs and benefits structure would be:

    i.   One-off or recurrent costs or benefits
    ii.   Subcategories of costs or benefits based on the specificities of the given analysis.
         a.   IT related costs subcategories include: infrastructure costs, development costs, maintenance costs, support costs, training costs[14] and administrative costs[15].
         b.   Benefits subcategories can include for instance time saving, improved well-being, improved market efficiency, indirect compliance benefits, wider macroeconomic benefits and other non-monetisable benefits.

Previous evaluations, impact assessment and studies are good starting point to reuse existing costs and benefits categories and data.

- Could costs and benefits data be extracted from the evaluation of the existing policy framework? If so, can they be reused?

- What kind of costs and benefits related to digital or interoperability aspects were previously identified or mentioned by stakeholders? Is it possible to consider them in the current context?

Then, policymakers can go deeper into the definition of costs per category, depending on the required level of granularity for their analysis. Focusing on the above categories in a consistent manner within and across policy studies would allow policymakers to reuse similar estimations across studies more easily.

When diving more in-depth into the different categories trying to **reduce costs**, the following aspects shall be considered:

- As part of the current process (baseline scenario) and of foreseen (policy options') processes, are there duplications of business functions (e.g. several different organisations charged of completing the same function)? Are there steps that involve the manual re-entry of data?

- As part of the current (baseline scenario) and foreseen (policy options) processes for the exchange of data, are there steps that could be simplified by the use of digital or interoperability solutions? (e.g. common portal, common standardised forms, etc.)

- As part of the current (baseline scenario) and foreseen systems (policy options), is there redundancy or reliance on paper-based information management systems? Policymakers shall aim for a flexible use of technology, for instance allowing it to adapt to different

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[13] https://ec.europa.eu/info/files/better-regulation-toolbox-58_en
[14] See the ICT Impact Assessment Guidelines for more details on each categories.
[15] "Administrative costs are costs incurred by enterprises, the voluntary sector, public authorities and citizens in meeting legal obligations to provide information on their activities, either to public authorities or to private parties. This captures a broad range of information including labelling, reporting, registration data as well as monitoring and assessments needed to generate the information. In some cases, the information has to be transferred to public authorities or private parties. In others, it only has to be available for inspection or supplied on request." See Tool #60 for more information on The Standard Cost Model for Estimating Administrative Costs

contexts, but also standardised at the same time to allow coherence in the business processes.

- As part of the identified costs and benefits, can certain costs, e.g. administrative costs, be reduced by simplifying some aspects of the business process or reporting requirements that does not bring added value?

When consulting stakeholders, policymakers shall map existing relevant instruments for example to exploit synergies (e.g. similar compliance monitoring by competent authorities) and to avoid undermining the effectiveness of existing instruments or raising compliance costs[16].

- Are there evidences of costs and benefits related to other policy instruments impacting or impacted by the instruments under development?

As part of these different questions, the time savings for public administrations, businesses and citizens should also be factored-in.

- How much time citizens, public administrations and other impacted stakeholders spend or would spend on the different elements of the process (as part of the baseline scenario and of the policy options)?

Policymakers should also take into account that "in the long run, economic theory suggests that all cost increases are eventually passed on to the final consumers of products and services"[17]. This should also be factored in, when considering the added value of new costs or investments.

The table below identifies examples of costs and benefits categories that policymakers shall consider.

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[16] Tool # 28 The choice of policy instruments
[17] Michael P. Gallaher, Alan C. O'Connor, John L. Dettbarn, Jr., and Linda T. Gilday, Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry—Final Report: https://nvlpubs.nist.gov/nistpubs/gcr/2004/NIST.GCR.04-867.pdf

Table 1 – Indicative examples of costs and benefits categories that can be related to interoperability and their potential for quantification (low, medium or high)

Costs categories and specific types of costs		Benefits categories and specific types of benefits	
One off	*Recurrent costs*	**One-off**	**Recurrent**
Development and design costs (high)	Maintenance costs (high)	Increased revenue (high)	Increased revenue (high)
Creation of standardised tools	Data translation costs	Time saving (medium)	Reduced operational costs (high)
Creation of a new IT solution		Vendor lock-in avoidance (medium)	Time saving (medium)
Training costs (high)	Legacy data issues (maintenance of information)	Removal of redundant hardware, software, and labour costs and improved business	Better data quality (low)
Training for a new solution		efficiency from increased data access	Improved compliance (low)
Infrastructure costs (high)	Support cost (high)	(medium)	Improved security (low)
Costs for setting-up hardware and software of a new solutions	Licensing, training and IT supporting staffing costs for redundant systems		Facilitate reuse, sharing and adoption of solutions (low)
Incompatible software costs (medium)			Foster innovation (low)
	Risk mitigation costs (e.g. cybersecurity, mitigating points of failure, data protection, etc.)		Standardized formats for collecting and analysing data save time and improve the
	Quality control costs (information verification and validation)		quality of cost estimates (low)
			Stakeholder coordination is improved because elements are linked using standardised naming conventions (low)
	Administrative costs (high)		
	Inefficient business process management costs (electronic vs paper)		
	Cost of manual re-entry		
	Coordination (and request for information) costs		
	Others		
	Research and development costs		
	Communication gaps		

Once all the relevant costs and benefits categories and impacted stakeholders are outlined, a tailored costs and benefits model can be built. The tailored model should clearly identify which types of stakeholders are impacted with the different costs and benefits categories. This will allow for a better reuse potential.

Qualitative analysis

Some impacts cannot or can be quantified more difficultly. For instance, when setting up a new single digital solution for several countries that would bring considerable quantitative benefits and costs savings, it could happen that adapting the different business and cultural contexts might involve important impacts that are less easily quantifiable (e.g. environmental, social, political, cultural, difficulties linked to the implementation, etc.). Hence, it is key that policymakers also map qualitative impacts.

Benefits are typically more difficult to quantify, but should be assessed qualitatively. A number of types of benefits are identified in Table 1 as having a "low" or "medium" potential for quantification. These can be assessed as part of the qualitative analysis (e.g. time saving, improved security, fostered innovation, etc.).

As part of the assessment of the coherence criteria, policymakers have to assess whether the policy options or the policy under evaluation is coherent with other EU policies or legislations. Coherence and legal consistency is also key for interoperability. Hence, the following questions are relevant:

- On what other policies or legislations is the policy under assessment having an impact?
- Is the policy under assessment coherent with existing EU legislations?
- Is the policy under assessment imposing contradictory requirements or causing confusion towards stakeholders obligations?
- Would interoperability allow for more coherence?

Beyond legal coherence, coherence between the different layers of interoperability shall also be considered:

- Are the new policy options consistent with the business processes, systems and data models set out in other laws or policies? If the new policy options involve some changes, those shall be mapped and addressed in order to avoid legal uncertainty for stakeholders.

Once all the costs and benefits categories are outlined for all the impacted stakeholders identified in a tailored model, data collection can start.

2.4 Collect data (step 4)

During this step, the policymakers collect data about the costs, benefits and other impacts of their policy options via various stakeholder consultation methods (e.g. surveys, interviews, workshops, focus groups, desk research, etc.). The stakeholder consultation strategy should be designed and carried out in order to reach out to the identified impacted stakeholders and to gather costs and benefits figures on the identified costs and benefits categories.

- Are all the stakeholders involved in the implementation of the policy consulted?

With regards to IT impacts and estimations, policymakers shall consult business architects, domain specific IT experts and service managers who are or are likely to be involved in the implementation of the policy, in order to collect relevant figures.

- Are relevant business architects and IT experts duly consulted?

- Are service managers involved in the implementation of the policy duly consulted?

This will allow policymakers to gather views and figures on the impact of the policy options and increases the chances of a smooth implementation of the policy options.

Reusing information and data gathered through existing monitoring systems and related regulatory reporting flows shall also be considered in this assessment. When designing the latter, policymakers should keep interoperability in mind.

Collecting data for costs and benefits assessments is often challenging and policymakers often encounter data gaps. Hence, this Tool puts forward the idea that a common model and database for the collection of evidence shall be put forward in order to set the basis for reusability in such assessments. For instance, having a common space where all the costs and benefits data could be shared after all EU studies would highly facilitate the data collection process in the long term. This would allow policymakers to consider what has been done before in similar cases, reuse relevant information (such as categories or figures) and then refine based on their specific analysis.

2.5 Analyse the data and monetise costs and benefits (step 5)

Policymakers then analyse and triangulate the collected data in order to fill in the tailored costs and benefits model they built. Costs and benefits should be translated into monetary values.

Again, the consultation of business architects, IT experts and service managers from the specific field will support policymakers in building the right estimations.

Once more, a common framework or database to share the results of costs and benefits analysis would allow policymakers to reuse relevant content more easily. The potential of using technology to ease the process of analysing and triangulating data, as well as monetising costs and benefits coherently across studies shall be further investigated.

2.6 Compare and recommend (step 6)

Once all the data is gathered, processed, analysed and monetised, policymakers are able to compare the policy options together with the baseline scenario. If the analysis goes beyond the efficiency of the options (costs and benefits) and considers other criteria such as effectiveness, coherence, relevance and EU added value, policymakers will have to compare multiple values.

The multi-criteria analysis (MCA) is an approach that can be used to compare policy options based on multiple criteria. It performs comparisons of alternative options and concludes to their ranking, based on a scoring system, providing liable observations to the relevant stakeholders. To add to this, MCA measures qualitative impacts of wide diversity, including factors that cannot be expressed in monetary terms, like economic, social and environmental dimensions. There is a standalone MCA tool on its own in BR Toolbox (Tool #63[18]).

2.7 Sharing to reuse (step 7)

As already stated several times in this Tool, a common approach, model and framework would set the basis for policymakers to reuse evidence, information and figures in their assessments of costs and benefits. Hence, as part of this Tool, policymakers would be advised to share these insights systematically after all studies identifying costs and benefits related to IT. A common platform or space shall be explored in order to make this step easy to implement. This would go a long way in facilitating the reuse of information across policy studies, thereby saving time and ensuring coherence and increasingly robust IT-related costs and benefits assessments in the future.

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[18] Tool # 63: https://ec.europa.eu/info/files/better-regulation-toolbox-63_en

3. Conclusions and next steps

In conclusion, this Tool presents a number of examples of key questions for policymakers to consider interoperability in their decisions when developing digital polices, focusing specifically on assessments of costs and benefits. The purpose of this Tool is to set the foundations for a more elaborated and comprehensive tool to be developed and piloted. This Tool also suggests that a common framework, model and database be developed and piloted in order to experience how policymakers could more easily reuse evidence, costs and benefits categories and figures across different studies.

As part of the way forward, the following recommendations shall be considered:

- Consider testing, getting feedback and seeking for further input in order to further develop this Tool, more specifically to:
    - o complement the current set of questions for each step of the assessment of costs and benefits;
    - o complement with further considerations for policymakers beyond the assessment of costs and benefits (e.g. as part of other criteria such as effectiveness, coherence, relevance and EU added value);

- Consider including the refined legal interoperability principles into this Tool, once their definition is improved;

- Consider further exploring policymakers' needs in order to feed into this Tool, as part of the foreseen co-creation workshops with policymakers;

- Consider further developing, testing and piloting a common model, approach and database for policymakers to reuse categories, evidence and figures across policy studies; and

- Consider further assessing how to use technology to facilitate the analysis and monetisation of costs and benefits and making it coherent across studies.

Annex A. ICT IA Guidelines : Guidelines to describe technical scenarios

ICT Solutions

A. ICT Solutions
A1. Is the use of specific ICT solutions required for the implementation of a technical scenario? A2. Should the technical scenario consider the reuse of existing ICT solutions? A3. Should the technical scenario consider the development of new ICT solutions? A4. Should the technical scenario consider the migration of existing ICT solutions? A5. What are the constraints to implement the technical scenario (e.g. time, legal)?

B. Business processes and information flows
B1. With the implementation of the technical scenario, which of the existing business processes and information flows will be automated, semi-automated, or manual? B2. With the implementation of the technical scenario, which of the new business processes and information flows will be automated, semi-automated, or manual? B3. What are the functional requirements related to the ICT solutions? B4. What are the non-functional requirements related to the ICT solutions (e.g. functional suitability, reliability, performance efficiency, usability, security, compatibility, maintainability, portability)? *In order to have a clear view on the existing and future processes, roles and responsibilities of stakeholders and the related information flows, it is recommended to model these information flows and business processes. This could also include estimating number of transactions, number of users, volume of data exchanged, frequency of data exchanges, etc.*

C. Data management
C1. Which parties are involved in the data exchange? C2. Which party has the ownership of the required data? C3. Is the data required for the technical scenario available? C4. Is there any requirement on data models (e.g. xml schemas)? C5. Is there any requirement on reference data (e.g. codelists, taxonomies, dictionaries, vocabularies)? C6. Is there any requirement with relation to data format (e.g. XML, CSV)? C7. Is there any requirement for converting data from one format to another? C8. Is there any requirement to ensure the confidentiality, integrity, protection and/or authentication of the data involved? C9. Is there any requirement on data storage? C10. Does the technical scenario refer to a national base register? Treat sensitive data with care. *If any technical scenario refers to such a need it is highly possible that special IT measures should be taken to ensure exchange, integrity and confidentiality of this data, such as encryption, secure hosting, limited access, etc.*

D. ICT Specifications/Standards
D1. Does the technical scenario refer to any European, international or national ICT specification(s)/standard(s)?

D2. What ICT specification(s)/ standard(s) could be used for the implementation of the technical scenario?

Standards are specifications widely accepted by users and adopted by several vendors. Standards are critical to the compatibility of hardware, software, and everything in between.

Source: ICT Impact Assessment (europa.eu)

Better Legislation
for Smoother Implementation

European Commission