

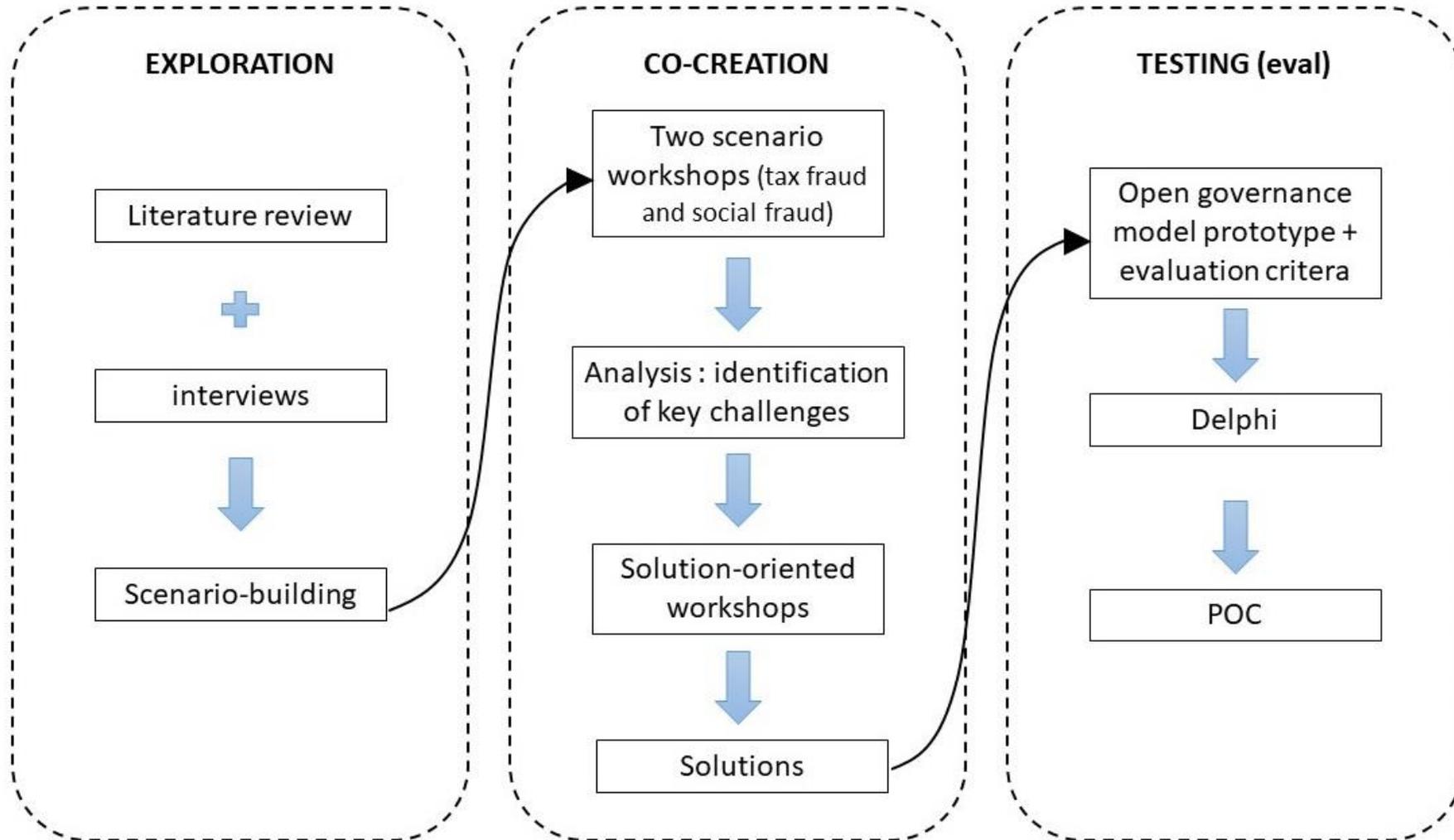
Main results of the living lab process

A step-by-step identification of the main challenges and solutions to the integration of *big data* (BD), *artificial intelligence* (AI), and *blockchain technology* (BCT) in federal policies

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Closing ceremony: 16/05/2022

Introduction: the living lab process



I. Exploration phase: identifying scenarios for thinking the possible futures of digital governance



Building the scenarios:

- Broad literature review on the driving forces of change regarding the use of new technologies in the public sector
- 65 interviews with key stakeholders:
 - Public actors : CBSS; CTIF; INAMI; etc.
 - Private actors : Banks; Startups; Tech companies; etc.
 - Academics
- Eight-stage matrix approach

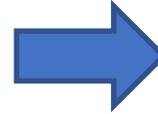
II. Co-creation phase: collectively identifying key challenges and solutions for the integration of new technologies in federal services



Identifying challenges: scenario-workshops

- Two workshops (tax & social fraud)
- Scenarios as a catalyst for discussions
- June 2021, at BOSA, with plenary and subgroup discussions
- 2 x 9 participants: key public and private stakeholders
- Thematic analysis

10 key challenges for the integration of new technologies (grouped in three categories)



Identifying solutions: solution-oriented workshop

- One solution-oriented workshop
- Based on the 10 challenges
- September 2021, at BOSA, with plenary and subgroup discussions
- 18 participants
- Thematic analysis

11 solutions to the key challenges presented in the previous workshops (grouped in three categories)

A. Citizens' trust and acceptability

Challenges

How to generate an acceptance of the new anti-fraud tools?

How to preserve citizens' trust regarding data use and analysis?

How to balance effectiveness in the fight against fraud with the need for transparency in the analysis process?

How to ensure the explainability of data analysis processes?

Solutions

Developing new technical solutions for a fairer use of data

Making communicational and pedagogical efforts to justify policies and societal choices

Humanizing interactions with citizens

B. Articulation of data use with regulations

Challenges

How to address the interpretation and implementation issues of the GDPR?

How to articulate the complexity of legislations with the adoption of new IT tools in the fight against fraud?

Solutions

Re-thinking laws and regulations by actively integrating IT tools and data use in reflections

Re-thinking public procurement processes and requirements

Formalizing and streamlining DPOs' decision-making processes

C. Resources and data expertise within administrations

Challenges

How to address recruitment issues and the lack of internal expertise (data & AI)?

How to limit dependence on external (private) IT systems providers?

How to organize a digital governance in a context where financial resources are lacking?

How to address the lack of coordination between administrations?

Solutions

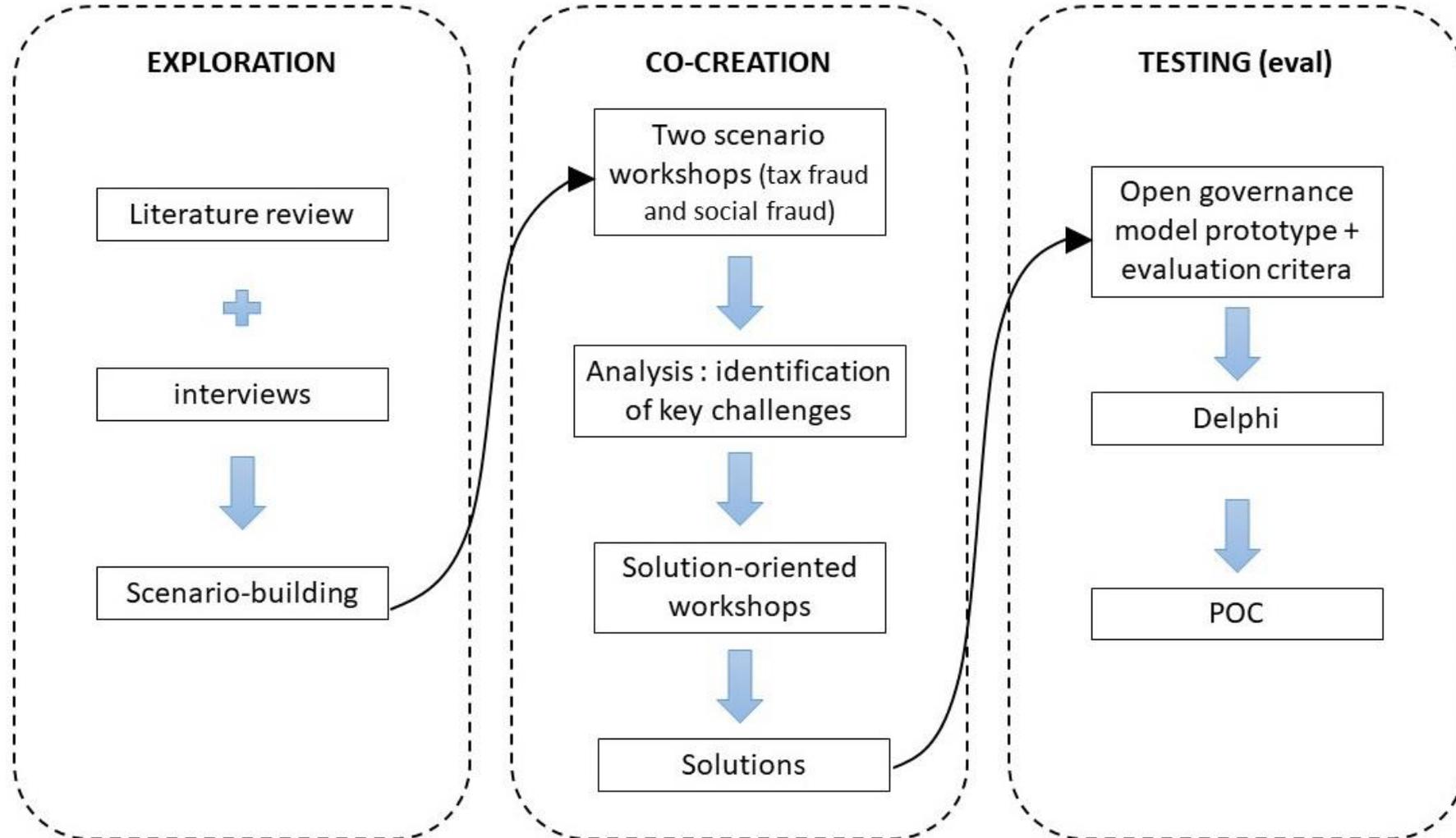
Pooling resources, expertise, and capabilities & redefining and clarifying the role of certain FPSs (e.g., BOSA)

Privileging and supporting EU (or national) external IT contractors

Adopting common evaluation criteria and quality standards (e.g., ISO certification) in administrations

Promoting training and maintaining IT fitness in the public sector

III. Testing phase: building and assessing a governance model prototype



a. A governance model prototype

| Objectives | Design solutions |
|--|--|
| 1. Enhancing citizens' trust by: | <ul style="list-style-type: none"> Improving citizens' ability to control and manage their personal data (e.g., with the use of digital wallets) Favoring a decentralized approach to data management that promotes transparency and protection of personal data |
| 2. Improving the coordination and interoperability between administrations with: | <ul style="list-style-type: none"> The adoption of a data exchange platform that would operate based on common criteria and technical standards The creation of an entity in charge of coordinating, developing, and monitoring digital projects within the administrations |
| 3. Strengthening public actors by: | <ul style="list-style-type: none"> Promoting the internalization of digital skills through the development and technical management of a data exchange platform Promoting the adoption of national or European solutions that meet strict data protection requirements |
| 4. Ensuring that expectations about the design and values of the model are met by: | <ul style="list-style-type: none"> Improving the communication about how the system works Allowing public authorities to take on the role of key regulators in data governance Stimulating private actors to provide administrations with efficient tools without creating additional financial constraints |
| 5. Improving the explainability of advanced analytic processes by: | <ul style="list-style-type: none"> Promoting the adoption of new predictive tools that allow for a better traceability of analyses Improving the reliability of these new tools by conducting pilot experiments in a secure environment |
| 6. Ensuring the overall compatibility of the system with legislation: | <ul style="list-style-type: none"> Promoting the development of a legislation that is more compatible with the digital framework Simplifying the task of privacy actors by adopting solutions and tools developed at the European level |

b. Designing and implementing a Delphi survey

“A social research technique whose aim is to obtain a reliable group opinion using a group of experts”
(Landeta, 2006, p. 468) : consulting and gathering experts’ positions on a set of proposals

Our survey:

- Qualitative survey in 3 languages (NL, FR, EN)
- Both open-ended and close-ended questions assessing key aspects of our proposed model
- Between February and March 2022; Spidel software
- 110 experts; response rate 35 %
- Thematic analysis; simple descriptive statistics

c. Seven key findings from the survey

1. Technical solutions alone (e.g., digital wallet solutions, decentralized approaches) would not support citizen trust

2. The collaboration with private actors appears as a much-needed compromise



3. Working in networks to foster interoperability and mitigate resource limitations

4. Privileging a centralized or a decentralized approach? Or a mix of both?



A word cloud for slide 3. The most prominent words are "Lack Dialogue SILO" and "Legal Weaknesses". Other visible words include "No Common Standards", "Data Fragmentation", "Unstructured Data", "Decentralization OK", "Interoperable", "Short Term View", "No Common Platform", "Access Data", "Incompatibles", "Adm Differences Maturity", "Not Priority", "Adm Different Priorities", "Adm Cooperation", "Decentralized Safer", "Data Semantics", and "Lack Of Will".



A word cloud for slide 4. The most prominent words are "Decentralized Mistrust" and "Decentralization OK". Other visible words include "Mistrust Authority", "Decentralized X Trust", "Communicate Citizen", "Decentralized Safer", "More Transparency And Control", "Bcss OK", "Decentralized Complex", "Not Required", "Centralized And Decentralized", "Decentralized Abstract", "Reflection Data", "Transparency Important", "Digital Divide", "Issue Transparency And Control", and "Wallet Safety".

5. Relying on a “regulatory sandbox” approach might perhaps help in producing a clear, transparent, and adaptive legal framework

6. The central role of federal authorities in data governance & the need to associate civil society representatives to governance choices

SimultaneousLawAndTech
AdaptToolsLegalFramework
GoodIdea
PoliticalWill
ClearLegalFramework
SandboxFeasible
EvolutionNewProblems
DependsContext
DoubtFeasibilitySandbox

ClarifyResponsibilities
LimitPrivate
NotPublic
MoreTransparencyAndControl
AssociateCitizens
PublicSector'sRole
NotJustPublicSector
PoliticalWill
ScopeGovernance
LegalFramework

7. Authorities are already taking steps that are consistent with some of our proposed technical solutions

- Service integrators at the federal & regional levels
- Digital wallets are already being put forward among governmental priorities

Yet :

- Some concerns regarding the technical maturity of XAI; BCT
- Some concerns regarding the general adaptability of technical solutions to future challenges

d. Assessing the model

Eight evaluation criteria:

Overall efficacy; Overall suitability; Feasibility; Stakeholder endorsement; Cognitive aspects; Overall consistency; Overall simplicity; Sustainability

A 65% benchmark:

A given criterion is respected if 65% of participants either agree, or partially agree in their answers to all the questions pertaining to this criterion

All the evaluation criteria were respected:

Overall efficacy (84%); Overall suitability (77%); Feasibility (81%); Stakeholder endorsement (74,5%); Cognitive aspects (78%); Overall consistency (83%); Overall simplicity (69%); Sustainability (81,5%)

Yet, some improvements are possible regarding specific aspects of the model:

Question 1.3 for example: 18 % agree; 59 % partially agree; **21 % disagree**; 3 % no opinion (suitability of a decentralized approach to data management)

IV. To conclude

- The use of scenario-thinking, co-creation techniques, and participatory methods allowed for the collective identification of challenges and possible solutions to the integration of new technologies in federal services
- These results permitted the construction of a governance model prototype
- The validity of the model was successfully assessed
- The qualitative results of our Delphi survey allow us to reflect on some aspects of the proposed model