

# Procurement Strategies for Digital Identity: Build, Buy, and Beyond

ID4Africa Workshop  
Addis Ababa - May 23rd, 2025

Presented by: **UNDP Office of Procurement,  
Governance Team (OPGT)**

# Agenda

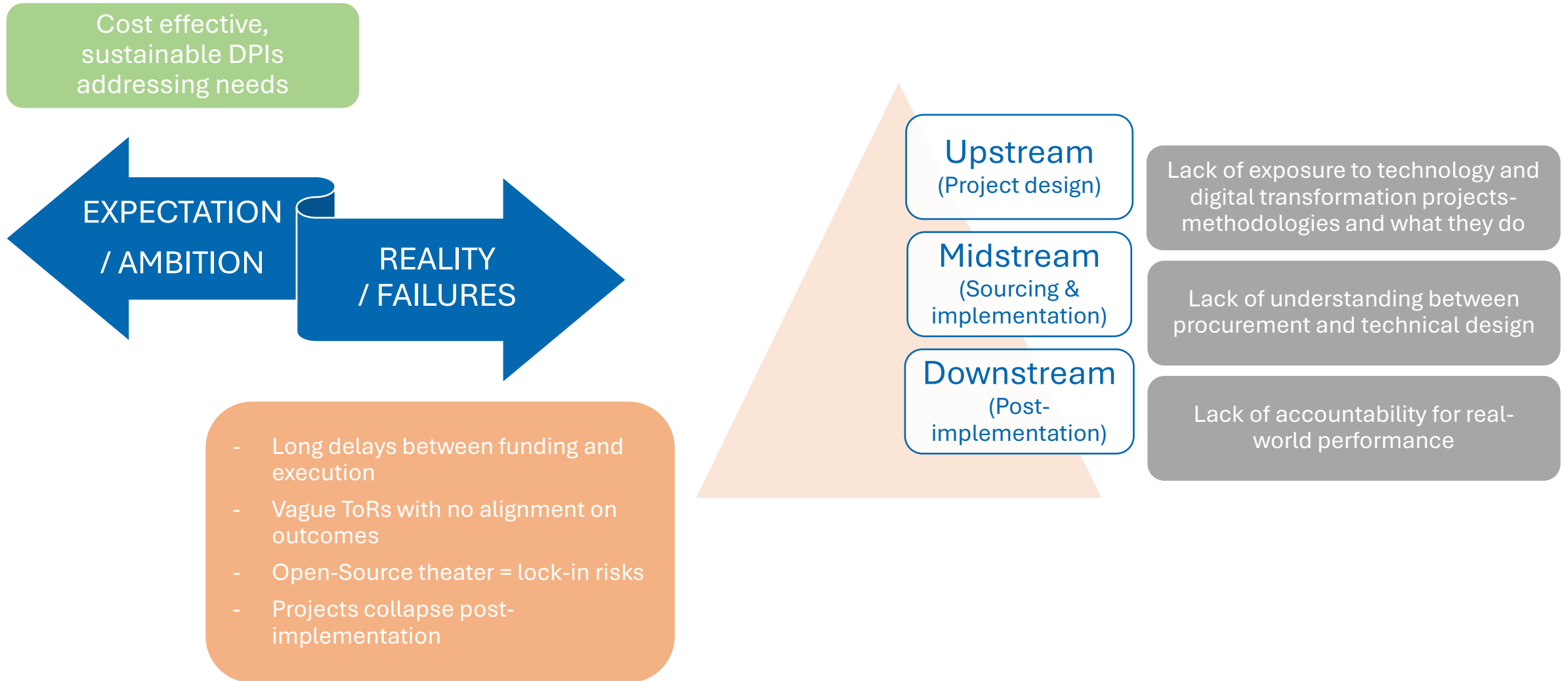


- 1 **Framing the problem, session objectives and UNDP OPGT experience** (15 mins)
- 2 **Strategic procurement/sourcing for Digital Identity** (25 mins)
- 3 **Procurement for sustainable solutions** (25 mins)
- 4 **Innovations and procurement – taking AI as a reference example** (25 mins)
- 5 **Open discussion with the audience: Cross-government collaborations and knowledge sharing** (60 mins)



# **1. Framing the problem, session objectives & UNDP OPGT experience**

# Overall challenges and misperceptions ...on procurement for digital solutions



# How relevant is Procurement in this context?

Procurement-related decisions may **define** key system features and outcomes before implementation

→ Understanding procurement beyond an admin procedure – influencing effectiveness, sustainability, and governance

## Procurement inputs (decision points)

- Scope definition
- Roles and responsibilities
- Lifecycle management planning
- Evaluation criteria
- Delivery model, implementation milestones
- Contract conditions and terms



## Architectural and Institutional consequences

- Modular systems vs. rigid systems
- Ownership (internal design control, open interface) vs. vendor lock-in
- Upgradeability vs. stagnation (high downstream costs, technical debt)
- Extensibility of services vs. cost of change over time

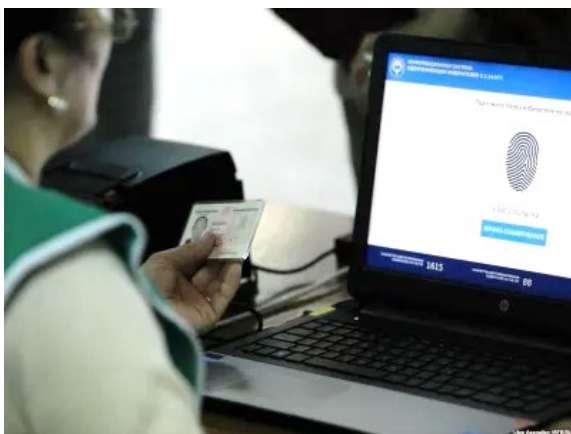
Procurement must be treated as part of system design, NOT AS AN AFTERTHOUGHT!

# Session objectives

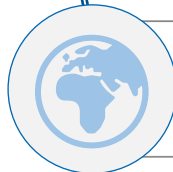


- Clarify current procurement bottlenecks in digital identity
- Explore models: build, buy, and co-develop
- Understand procurement as a strategic enabler in DPIs, not a constraint

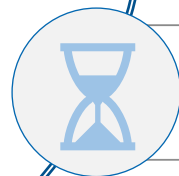
# Where do we come from: UNDP OP Governance Team (OPGT)



Procurement support to **Beneficiaries (Governments)** in  
• **IDENTITY, E-GOVERNANCE, TECHNOLOGY** and **ELECTIONS** projects



Since 2008, supported **80+ countries** worldwide, delivering **USD 660+ M**



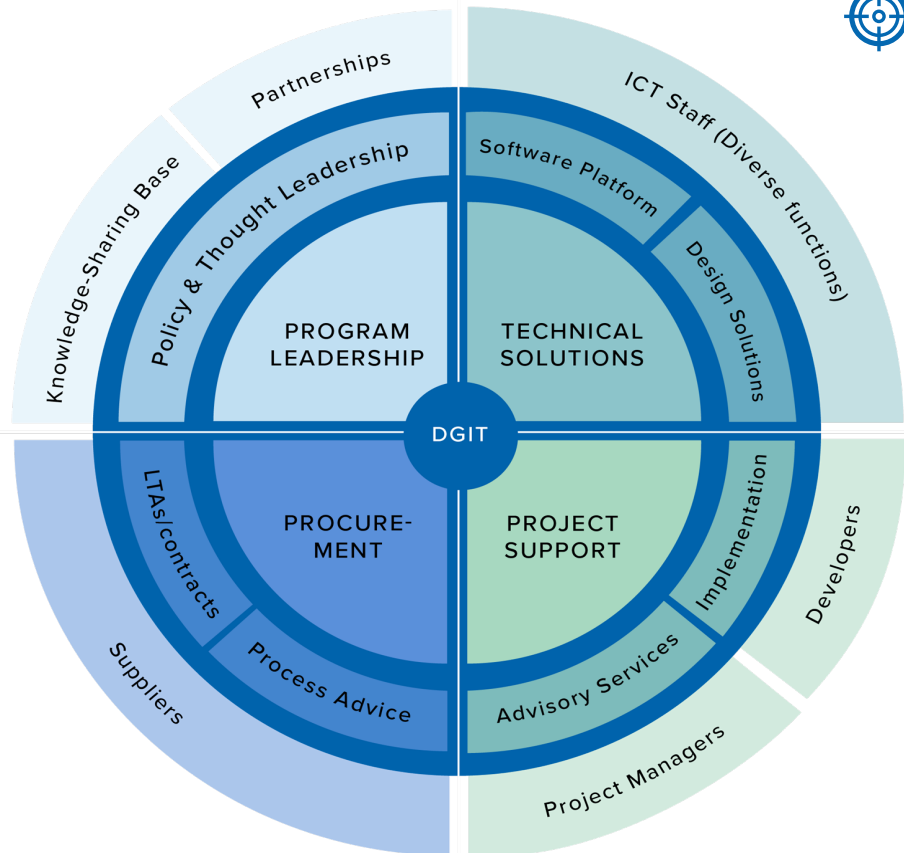
**Complex, urgent & politically sensitive** processes, **International** markets



# A few examples of solutions we procured



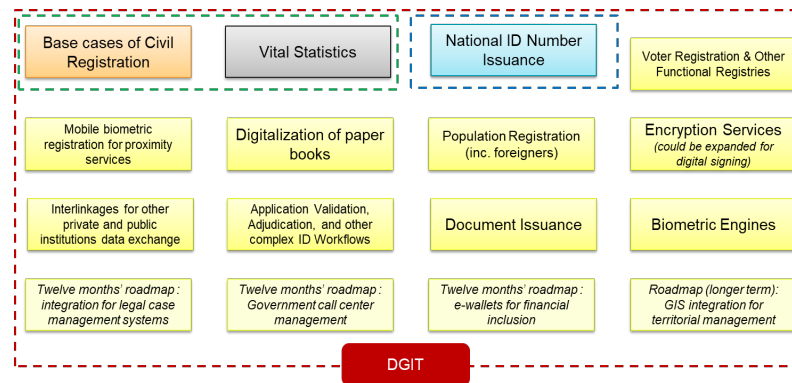
<b>Biometric Solutions</b>	Biometric Registration & Identification Kits	<p>Modular kits, data capture, incl. biometrics, power autonomy, custom-made, integrated solutions + services.</p> <p><b>Examples:</b> Guinea Conakry (2008), Zambia (2009-10 &amp; 2021), Benin (2010), Sierra Leone (2011), Yemen (2013), Malawi (2016-17), Armenia (2016 &amp; 2018), Guinea Bissau (2018), Brazil (2020-21), Honduras (2020 &amp; 2025), Zambia (2021), etc.</p>
	Deduplication and Databases	<p>HW/SW biometric deduplication, visual verification, data management – as a service/module/combination.</p> <p><b>Examples:</b> Afghanistan (2009), Benin (2010-11), Sierra Leone (2012), Nepal (2013-16), Trinidad &amp; Tobago (ongoing).</p>
<b>Systems and HW</b>	Digital Governance and Identity	<p>eID, eGov &amp; services, e-justice, interoperability, etc.</p> <p><b>Examples:</b> Trinidad and Tobago (ongoing), pilots in Guinea Bissau, Vanuatu, Colombia.</p>
	Data Centers	<p>Equipment, installation, technical support, training</p> <p><b>Examples:</b> Sierra Leone (2011 &amp; 2016), CAR (2015), Kyrgyzstan (2015), Libya (2018), Sudan and Senegal (2025).</p>
	HW/SW Systems/Items	<p>Diverse purposes and combinations/requirements.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• E-Voting System for Parliament (Afghanistan, 2018-19)</li> <li>• Results Management System (Bolivia, 2019-20)</li> <li>• Genome Sequencing System (Indonesia, ongoing)</li> </ul>
<b>ID Documents</b>	ID Cards and Smartcards	<p>Pre-personalized and personalized Documents, Equipment for personalization, security features, several technologies: laser, retransfer, ....</p>
	Printing Equipment	<p><b>Examples:</b> Honduras, Colombia, Malawi, CAR, Guinea Bissau, Sierra Leone, etc.</p>



## The DGIT (Digital Governance, Innovation and Transformation) initiative

A formalized, integrated approach for robust, digital Governance, Electoral and Legal Identity Systems involving:

↳ **Corporate capacities + expert knowledge + “tech stack”**



### DGIT tech stack

Open, scalable ID SW components, supporting procurement, from prototyping to customized solutions.

SW can be adapted to full customization, resulting in a quality-assured, expedited and Beneficiary-owned solution.

DGIT tech stack may support any chosen strategy:

- from purely “make” (in-house development)
- to fully “buy” (out-sourced)



**DGIT implementations & prototypes: Malawi, Guinea Bissau, Honduras, Vanuatu, Colombia, T&T, Namibia...**

# DGIT impact: some use cases

## Malawi (2018-20)

- › **Beneficiary:** National Registration and Identification System (NRIS)
- › **UNDP/DGIT supported with:**
  - › Procurement of data center equipment
  - › DGIT software codes
- › **Successful outcomes:**
  - › Efficient streamlining process of identity verification and authentication for public and private sector
  - › Interoperability between different databases
  - › Enhanced accessibility of citizens to financial services
  - › Increased transparency around public services, especially social protection service
  - › Eliminated ghost “records/ beneficiaries” - estimated savings USD 30 M



## Trinidad and Tobago (ongoing)

- › **Beneficiary:** Ministry of Digital Transformation (GoTT)
- › **UNDP/DGIT is supporting with:**
  - › Proof of concept for e-ID system, based on DGIT tech stack
  - › Scaling up digital infrastructure and entire government digital transformation based on the PoC, ensuring interoperability
  - › Social benefit wallet wireframe & module

## Honduras (2019-22)

- › **Beneficiary:** Civil National Registry (RNP)
- › **UNDP/DGIT supported with:**
  - › Several large procurements (biometric kits, ID cards)
  - › DGIT components back-end solution and data encryption
  - › Population scale biometric deduplication engine – as backup
- › **Successful outcomes:**
  - › Document printing services have been connected to Honduras’ CRVS and ID systems to process the received ID card data at the pre-print step of the process
  - › DGIT SW implementation, with estimated savings approx. USD 2-3 M





## **2. Strategic procurement/sourcing for Digital Identity**

# A key strategic decision: Build vs Buy vs Hybrid model



## Build

Internal development  
(e.g. OSS for PoCs)



## Buy

External, Vendor-  
managed  
developments  
(modular ideally)



## Hybrid model

In-house + external  
development

**Consider future implications:** maintenance, scalability, running costs, adaptability...

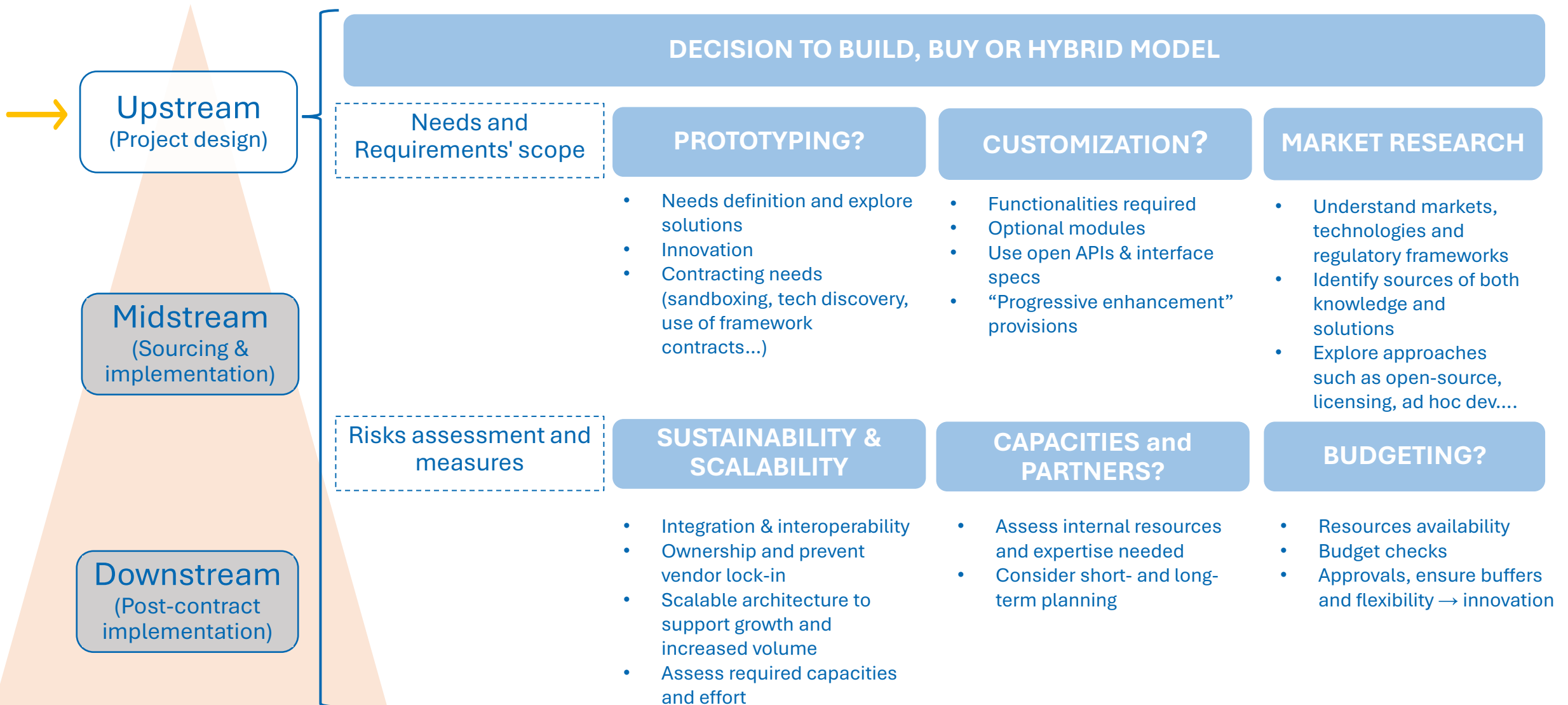
# A key strategic decision: Build vs Buy vs Hybrid model

... balancing outsourcing with internal capacity-building

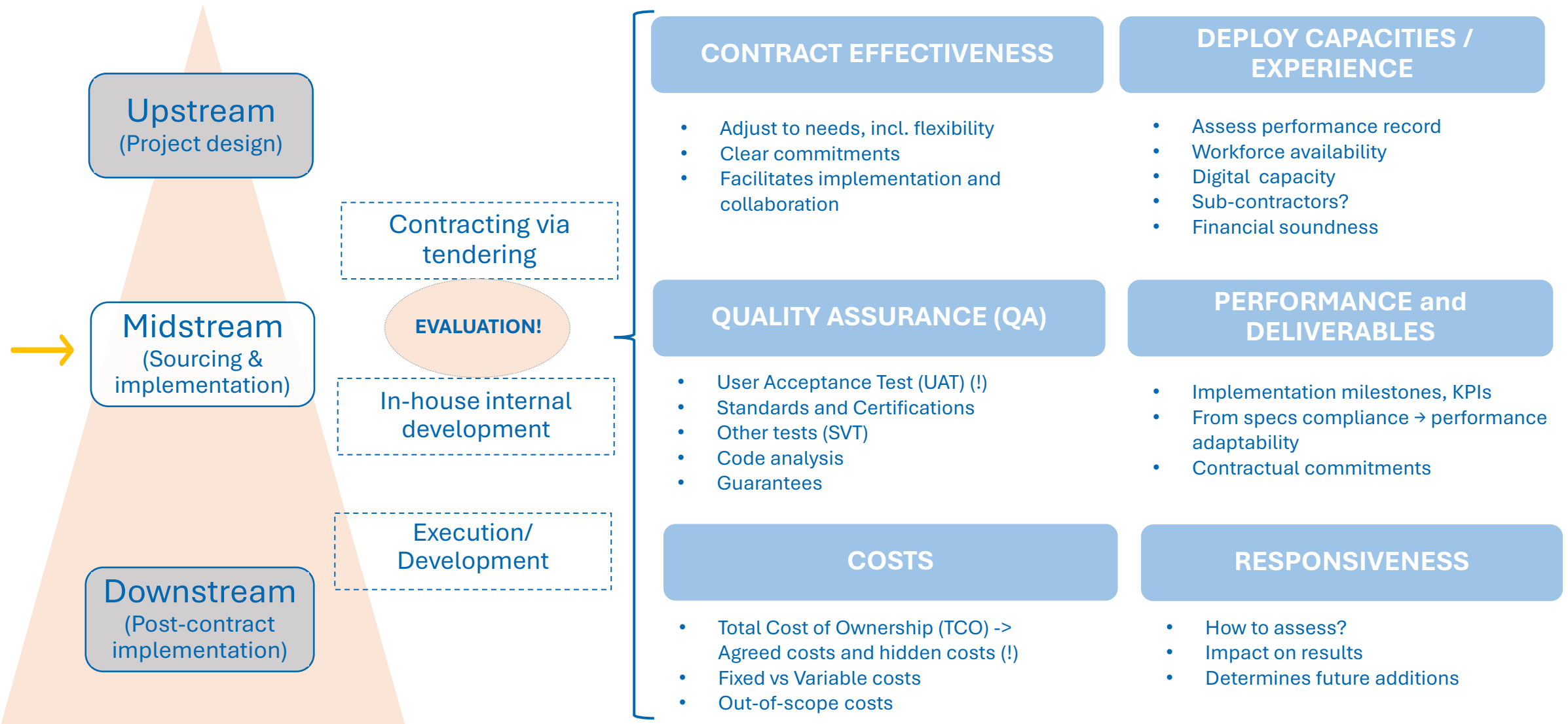


Needs are particular of each case... **NOT a “one size fits all” approach!**

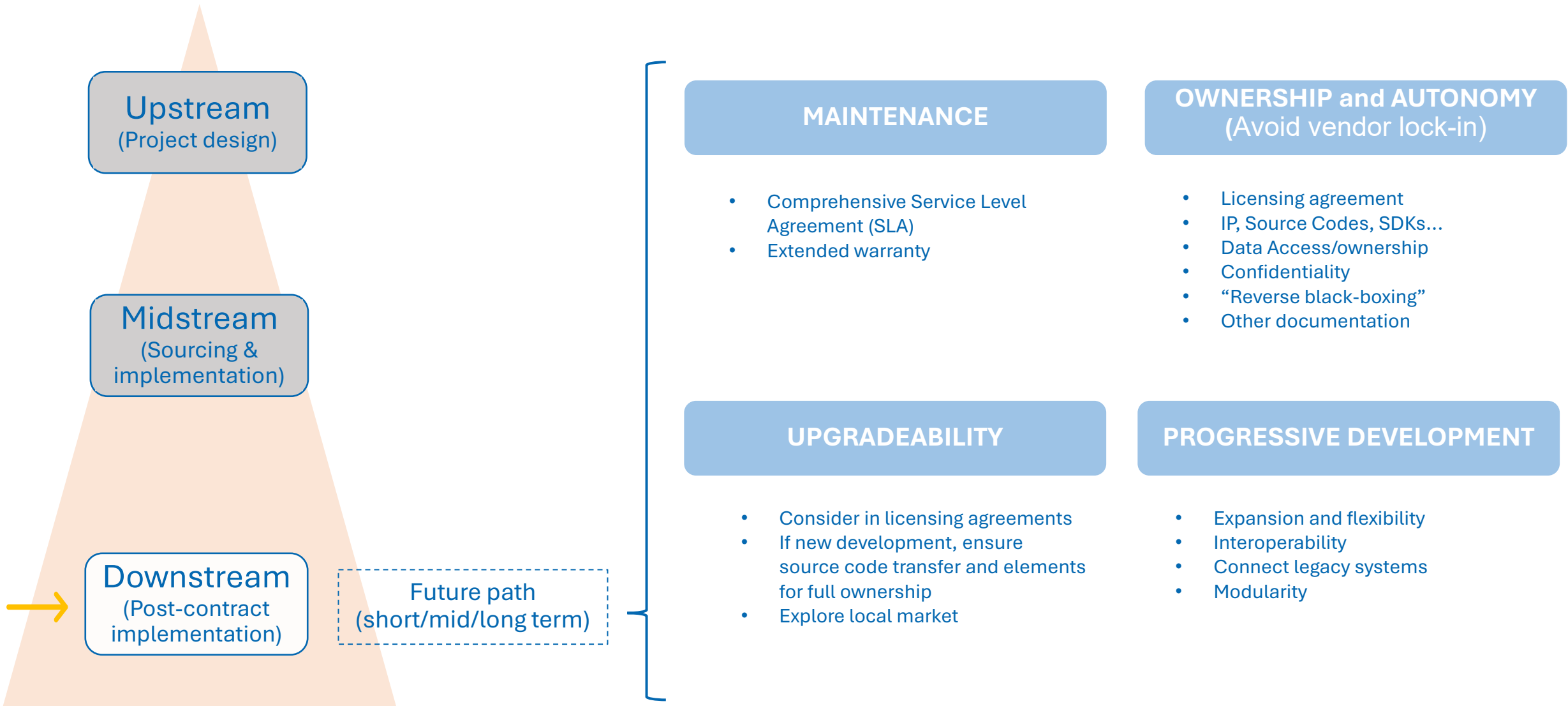
# Structuring strategic sourcing: Other key concepts along the process



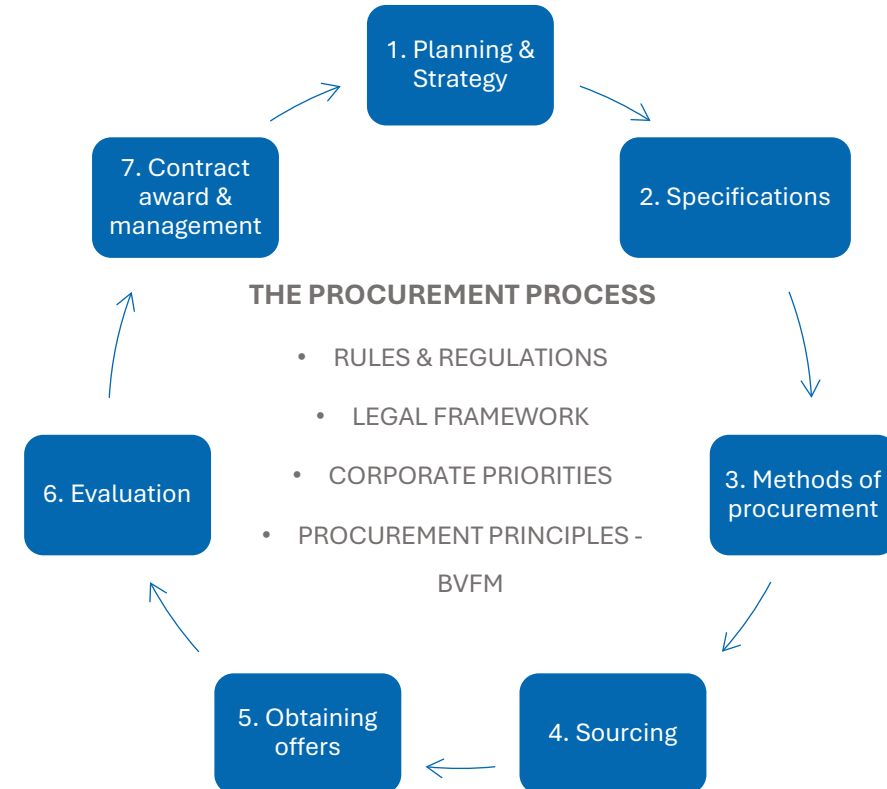
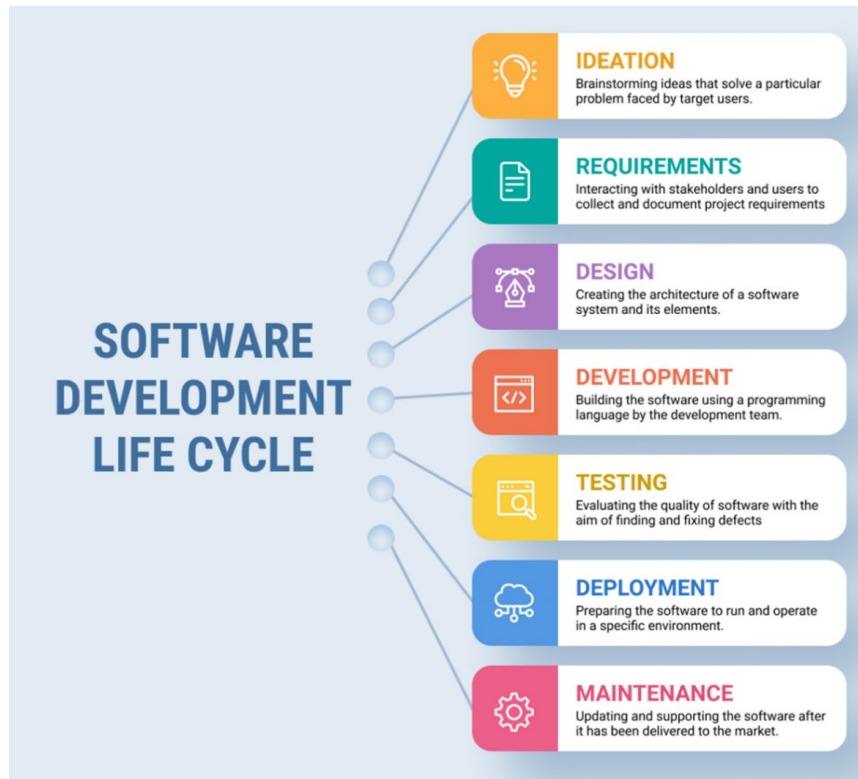
# Structuring strategic sourcing: Other key concepts along the process



# Structuring strategic sourcing: Other key concepts along the process



# Procurement and SDLC as processes



2 different processes, with various stages / actors and certain similarities

Early misalignment → downstream failure!

# Informing the process: Approaches to gain knowledge from the industry

...while keeping integrity, fairness, transparency and avoid jeopardizing objectivity and value.



Involvement / Consultation with independent Technical Experts

Attendance to business seminars, trade-fairs, industry associations events, knowledge events

# Informing the process: Importance of using Open standards & interfaces

- Consultations and collaboration with other International Organizations on Standards, Certifications, QA, new technologies, etc.
- Procurement must specify “interop, by design”
- Consider ITU, OpenID, ISO, W3C standards to maintain pluggability



## Responsible supply chains – STANDARDS

- **Type I Eco-Label** incl. areas such as:
  - product energy efficiency
  - restricted/harmful substances
  - Energy Management System
  - Environmental Management System
  - Quality Management System
- Combination of **Eco-Labels/certificates**
  - e.g., ISO 14001, ISO 45001, ISO 50001
  - and/or type III Eco-Labels

An open source-based system that does not implement open standards creates a lock for a government (!)

# Open-Source Markets: Concepts re: vendors and solutions

- **90% of all software is made from open-source components**
- **However:**
  - Governments cannot rely on a “community” to maintain its own systems
  - OSS ≠ sustainable by default & OSS ≠ user-ready or customized
- **Open source is indeed a business model:**
  - Marketing tactics : OSS as the only ethical choice
    - simply shifts business models from product to service (integrators)
    - Proprietary lock-ins masked as Open systems
  - Vendors seek for profitability, long term relations, also OSS Vendors



What matters is the  
Beneficiaries' sustainability!



There's no shortcut around  
Software Development

# Open-Source Markets: Concepts re: vendors and solutions

- Ownership and licenses in the OS business model → different implications

IP	License
Ownership	Conditional use
Full owner rights over system or technology	Legal permission to use IP under defined terms
<p>- <b>Exclusive ownership:</b> Protects ideas and creations. Main forms:</p> <ul style="list-style-type: none"> <li>• <b>Copyright</b></li> <li>• <b>Patent</b></li> <li>• <b>Trademark</b></li> <li>• <b>Trade secret</b></li> </ul> <p>(e.g. logos, algorithms)</p> <p>- <b>Non-exclusive ownership:</b> ownership over the customized system</p>	<p>Types – Strategic overview:</p> <ul style="list-style-type: none"> <li>• <b>Proprietary (non-Open Source)</b> <ul style="list-style-type: none"> <li>• Closed or restricted use</li> <li>• No modification/redistribution</li> <li>• E.g. Windows, Photoshop</li> </ul> </li> <li>• <b>Copyleft (Viral Open Source)</b> <ul style="list-style-type: none"> <li>• Modify allowed, <b>must</b> redistribute under same license</li> <li>• E.g. GPL, AGPL – <b>often incompatible with govt use</b></li> </ul> </li> <li>• <b>Permissive (Open Source) and Public Domain</b> <ul style="list-style-type: none"> <li>• Use/mod/redistribute <b>with minimal or no obligations</b></li> <li>• E.g. MIT, BSD, Apache — <b>GovTech-friendly</b></li> </ul> </li> </ul>

- Bottom line: Expertise is necessary!** (for both building a system out of OS components + maintaining a system in sync with OS branch)

# Vendor engagement as the result of procurement: Considerations in Digital solutions context



## PROCUREMENT PROCESSES



## RELATED ASPECTS at Beneficiary's side

EFFECTIVE COMPETITION

Competitive bidding through either formal or informal methods ↔ Buyer Organization Rules and Regulations

METHOD OF PROCUREMENT

Addressing risks and formalities + Consider Open Competition vs Purchasing Agreement frameworks (e.g. LTAs)

SPECIFICATIONS

Comprehensive, feasible, non-over restrictive

EVALUATION CRITERIA

Appropriate, fair and transparent

CONTRACT

As a fundamental and comprehensive tool - maintain flexibility but also integrity

VENDOR RELATIONSHIPS

Manage contract (KPIs, monitoring,...) and post-contract vendor relationships – penalties/incentives tied to performance, quality and guarantees

NEEDS

EXPECTATIONS

CAPACITY  
BUILDING

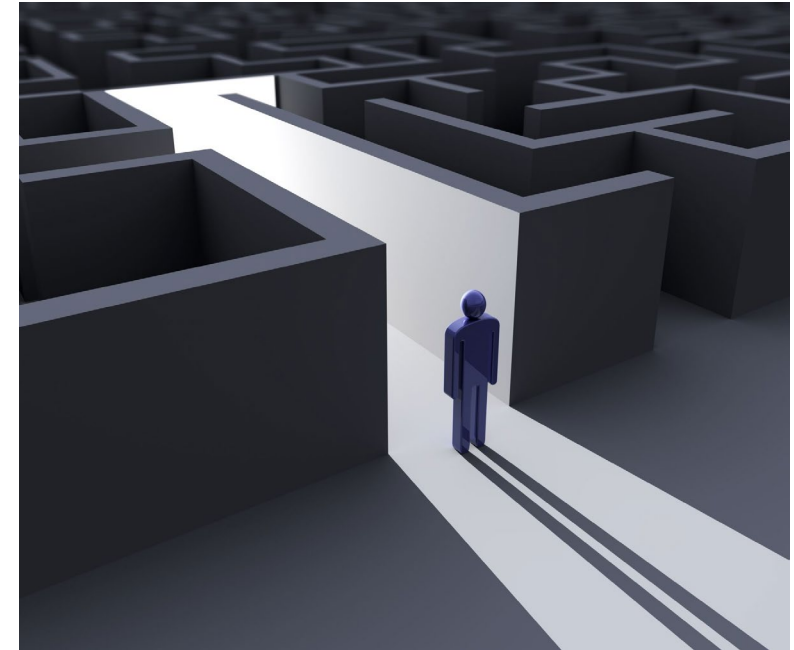
TRANSFER  
OWNERSHIP

BUDGETING/  
RESOURCES  
PLANNING

# Vendor engagement as the result of procurement: Avoid Vendor Locks



- Types of vendor locks – some more evident than others
  - Vendor lock is about **switching costs** – it takes more than having access to source code to avoid vendor lock, there are many strategic components to it
  - Vendor lock can happen at the build phase, but it can also happen at the operate/maintain phase of software
- To avoid vendor lock-in, attention to:
  - **Access to source code**
  - **Licensing types and restrictions**
  - **Intellectual Property rights**
  - **Contractual clauses**
  - **Technical restrictions and solutions architectures**
  - **Proprietary and restricted components**





# 3. Procurement for sustainable solutions

# Sustainability pillars



## Technical - Solution

- How is it built and sourced? Does it allow for expansion, scalability, interoperability...?
- Does it provide sufficient time of ownership?
- On Hardware, does it comply with Ecolabels and pollution reduction policies?
- Is it repairable and components widely available?

## Institutional - Political

- Is it in line with the Governmental priorities and road-maps?
- Does it benefit from political back up? Or is it somehow independent from political changes?
- Did it obtain consensus for future continuity?

## Budgetary

- Does an adequate budget for maintenance and upgradeability exist?
- Is the budget in line with road map for digitalization?

## Capacities

- Are the required capacities considered (internally or externally) sourced in a sustainable manner?
- Is there a plan for further capacity building?
- Is the National infrastructures and level of literacy allowing for the continuity of the solution?

## Usage

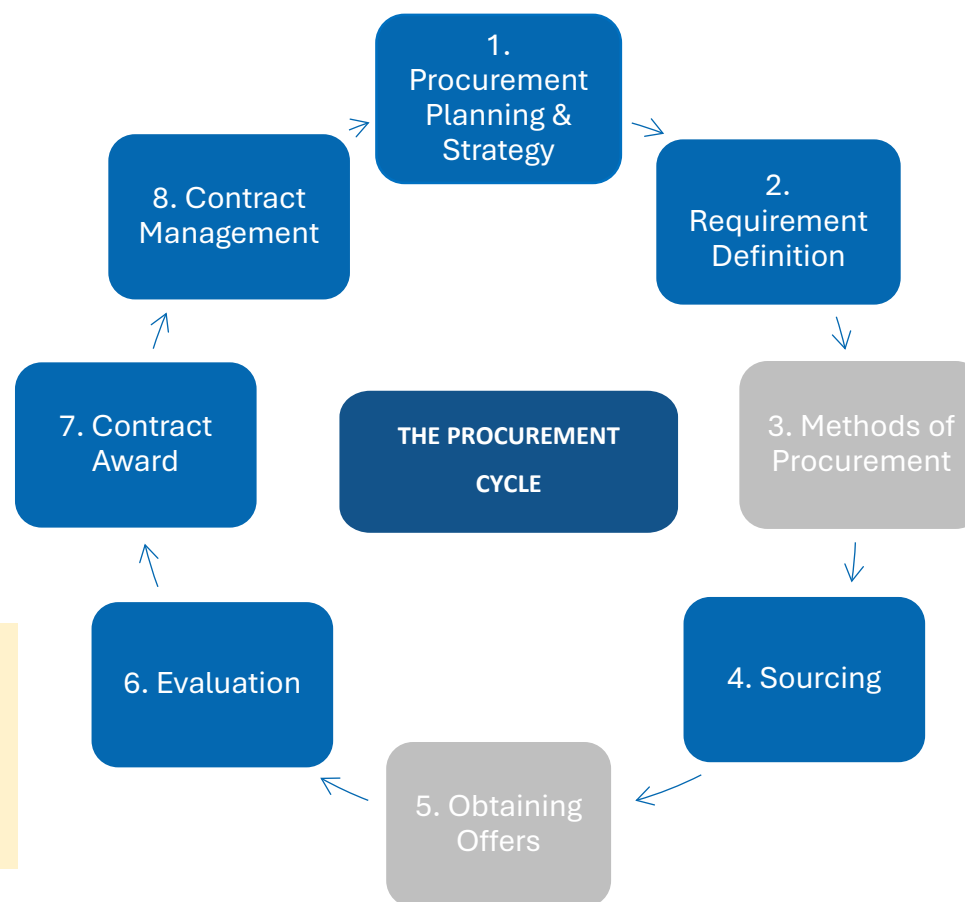
- Is the use and functions in line with the greater plan for Digital Transformation / DPI in the Country?
- Is the solution effectively addressing populations and Government's needs?
- Is its usage economically sustainable?

# Sustainability at the core of the procurement cycle

- Rethinking needs
- Align needs to budget, planning, expectations

- Warranty considerations, SLAs
- Implementation including knowledge transfer
- Environmental and social contract performance clauses
- Monitor sustainability requirements and compliance with standards

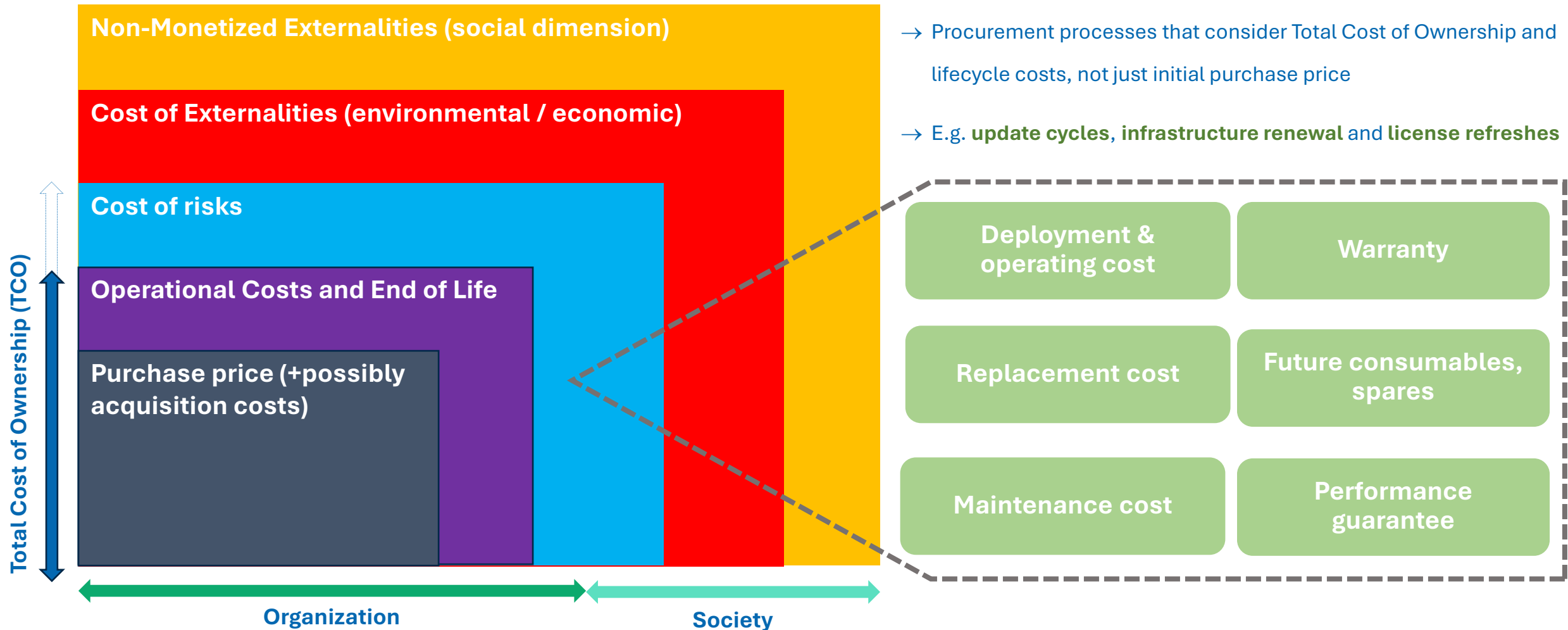
- Environmental specifications
- Eco-label criteria
- Performance and functional requirements



- Total cost of ownership approach
- Environmental and socially-responsible evaluation criteria
- Assess suppliers' environmental and social performance

- Qualification criteria to address relevant market/profiles
- Research market and outreach to the industry ↔ expectations/sustainability options

# Total Cost of Ownership & Lifecycle Costs vs. initial procurement price



# 5-year TCO sample project (summary)

Outline of estimated costs range for mid-sized eID system supported by middle-sized equipped data center (no construction works considered)

Category	Initial CapEx (Build)	Annual OpEx (operate)	5-Year Total TCO
<b>Data Centers &amp; Infrastructure</b>	\$4M-\$8M	\$0.5-\$1.5/year	<b>\$6.5M-\$15.5M</b>
<b>Cybersecurity Systems</b>	\$1M-\$2M	\$0.1M-\$0.5M/year	<b>\$1.5M-\$4.5M</b>
<b>Human Resources</b>	\$2M-\$4M	\$1M-\$2M/year (25-50 staff)	<b>\$7M-\$14M</b>
<b>Software Tools &amp; Updates</b>	\$2M-\$3M	\$0.5M-\$1M/year	<b>\$4.5M-\$8M</b>
<b>Training &amp; Capacity Building</b>	\$1M-\$1.5M	\$0.2M-\$0.4M/year	<b>\$2M-\$3.5M</b>
<b>Total Investment</b>	<b>\$10M-\$18.5M</b>	<b>\$2.3M-\$5.4M/year</b>	<b>\$21.5M-\$45.5M</b>

# Procurement for human capital development

- Ensuring capacities (organizational & staff continuity)
- Knowledge transfer (include skill transfer clauses, training)
- Mandatory gov-CTO/Chief Architect pairing for critical tasks



## Regional approach?

- + sustainability
- + shared capacities/resources among various countries
- + knowledge sharing
- + collective market shaping
- + avoiding duplicate mistakes

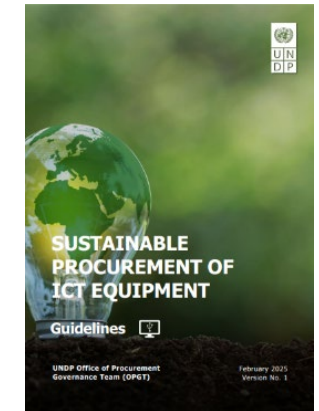


## The Capacity Building contract structure

- ❑ **Dual-track project design:** external delivery + internal clone
- ❑ **Time-based vs milestone-based**
- ❑ **Build-up of in-house capability**

# Sustainable HW and compute criteria

- Ensure adequacy of the solutions (needs and requirements!) and adaptability
  - Remember! use of standards and certifications: from Type I Eco-Labels and ISOs, to SW and Interoperability
- **Longer term solutions:**
  - Design: reusability, recyclability, repairability, upgradeability
  - Integration: future uses & compatibility/interoperability
  - Maintenance



Detailed and unambiguous **SLAs** should be considered as tools to efficiently manage ICT fleet incl. preventive maintenance



# **4. Innovations and procurement - taking AI as a reference example -**

# AI in digital ID solutions – status & challenges

- AI is still very new – unclarity on benefits and risks/costs
- Largely unregulated AI solutions
- Social and Human adoption challenge - operational and absorption capacity
- Infrastructure gaps: for ex. on-prem datacenters aren't ready for AI workloads

- Consider AI-enabled features into procurement requirements:
  - Advanced fraud detection ?
  - Identity verification/deduplication ?
  - Liveness ?
- Define open-ended problem statements (no closed feature specs)
- Clarify when these are experimental



# Role of procurement in sourcing AI/innovative solutions

Procurement:

- serves as a **key decision point re: AI and innovative solutions**, placing public buyers in a crucial role to ensure responsible, strategic acquisition
- faces the challenging role to connect efficiently both tech providers solutions and public sector AI user needs

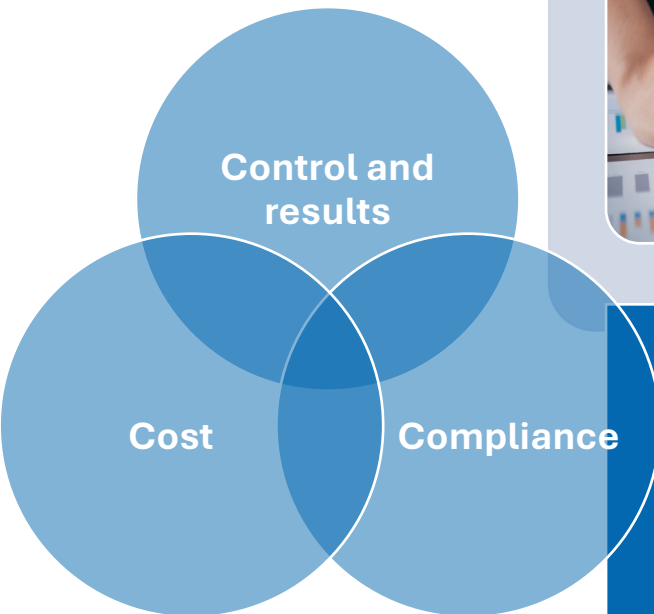


**Why challenging?**

- Tech advances seem unstoppable (also create expectations...)
- AI for now is a highly concentrated industry
- Weak(ish) institutional and market position of procurement
- Proc. heavily relies on standards & regulations (compliance) → still nascent
- Difficulty in developing exportable lessons, not yet culture of ‘productive failure’
- Contracting dichotomies
- Digital skills vs Commercial/Marketing capability



# Contracts for Tech (unproven? uncertain?)



## Modular procurement

- Architecture design that anticipates change
- Procurement clauses that enable plug-and-play expansion
- Operational feature roadmaps



## Contract approach

- Sandbox inside production contracts
- “Experimental scope” as an annex
  - Outcome-based milestones
- Risk/reward sharing in performance contracts



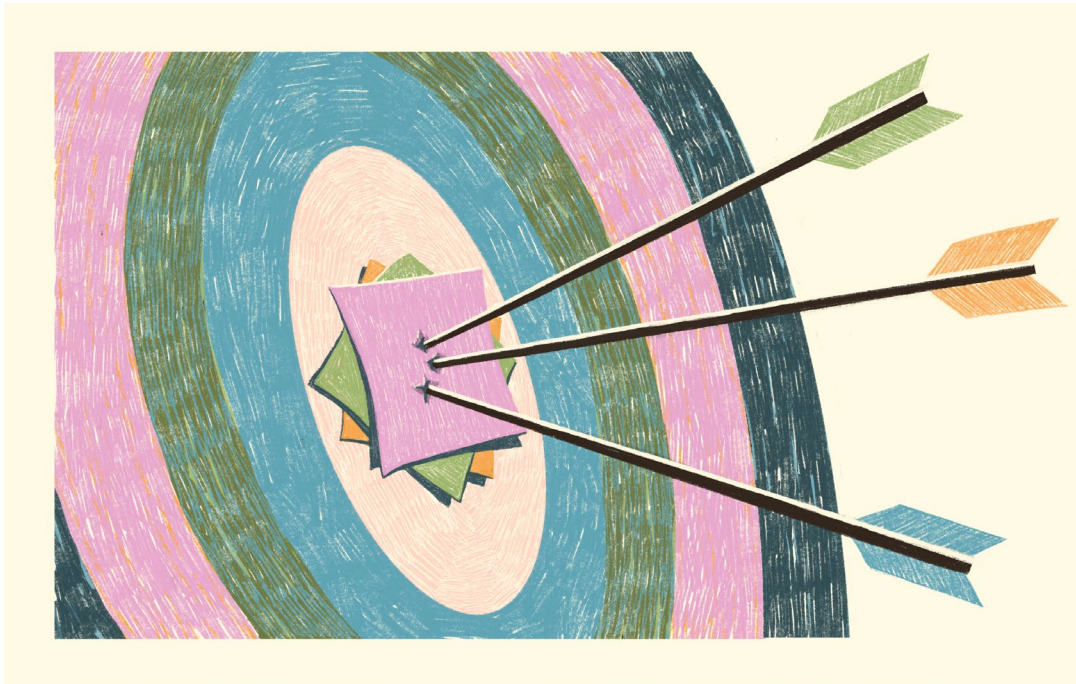
## Collaborative frameworks

For ex. with industry players and universities to leverage innovation

Consider Institutional collaboration

Local-International

# Key takeaways



- ✓ Procurement is a strategic policy tool
- ✓ Process and decision making must be informed
- ✓ Hybrid models must be intentional/planned
- ✓ Think of and Ensure Sustainability (!)
- ✓ Innovation must be futureproofed
- ✓ Need for a culture of R&D and Productive Failure
- ✓ Collaboration can increase leverage
- ✓ ...

**DPI ≠ DPG ≠ OSS ≠ Free ≠ Sustainable ≠ Easy**



# **5. Open discussion with invited Discussants and the audience**

# Discussion: cross-Government collaborations and knowledge sharing

- How can regional collaborations in procurement benefit?
- Would such approaches enhance sustainability and value for money? Would they improve the communication with the industry?
- Opportunities for governments to share frameworks for interoperable digital identity systems.



# Discussion: sources of uncertainty in AI procurement

- Setting tender and contractual requirements (beyond) existing regulatory frameworks resulting in fostering competition and meaningful solutions
- Verifying compliance with such requirements both at tender stage and throughout lifecycle of the procured (AI) technology
- ‘Lifecycle’ legal / practical risks in the procurement of AI:
  - Market engagement
  - Piloting and ‘free’/ ‘creeping’ AI
  - Exemptions from competitive procedures
  - Negotiations and confidentiality
  - Technical specifications and compliance assessment
  - Award criteria and evaluation
  - (Implied) contract modifications/flexibilities
  - (Post-delivery) handover, ownership and maintenance/sustainability



# Thank you for your attention!

## Contact information

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