

From Collaboration to Toolkit: Applying eDSR in a Generative AI Knowledge Management Project

Research-in-Progress

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Haaga-Helia

UNIVERSITY OF HELSINKI

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Problem

- Complex artefacts (toolkits, platforms, socio-technical systems) are increasingly built through **industry–university collaboration**
- But these projects are hard to run: **evolving problems, many stakeholders, high technical uncertainty**
- Built-in tension: **companies want quick, tangible** results; **universities want generalizable, reusable** knowledge
- Public funding (European Regional Development Fund, ERDF) adds pressure: **measurable industry uptake required**

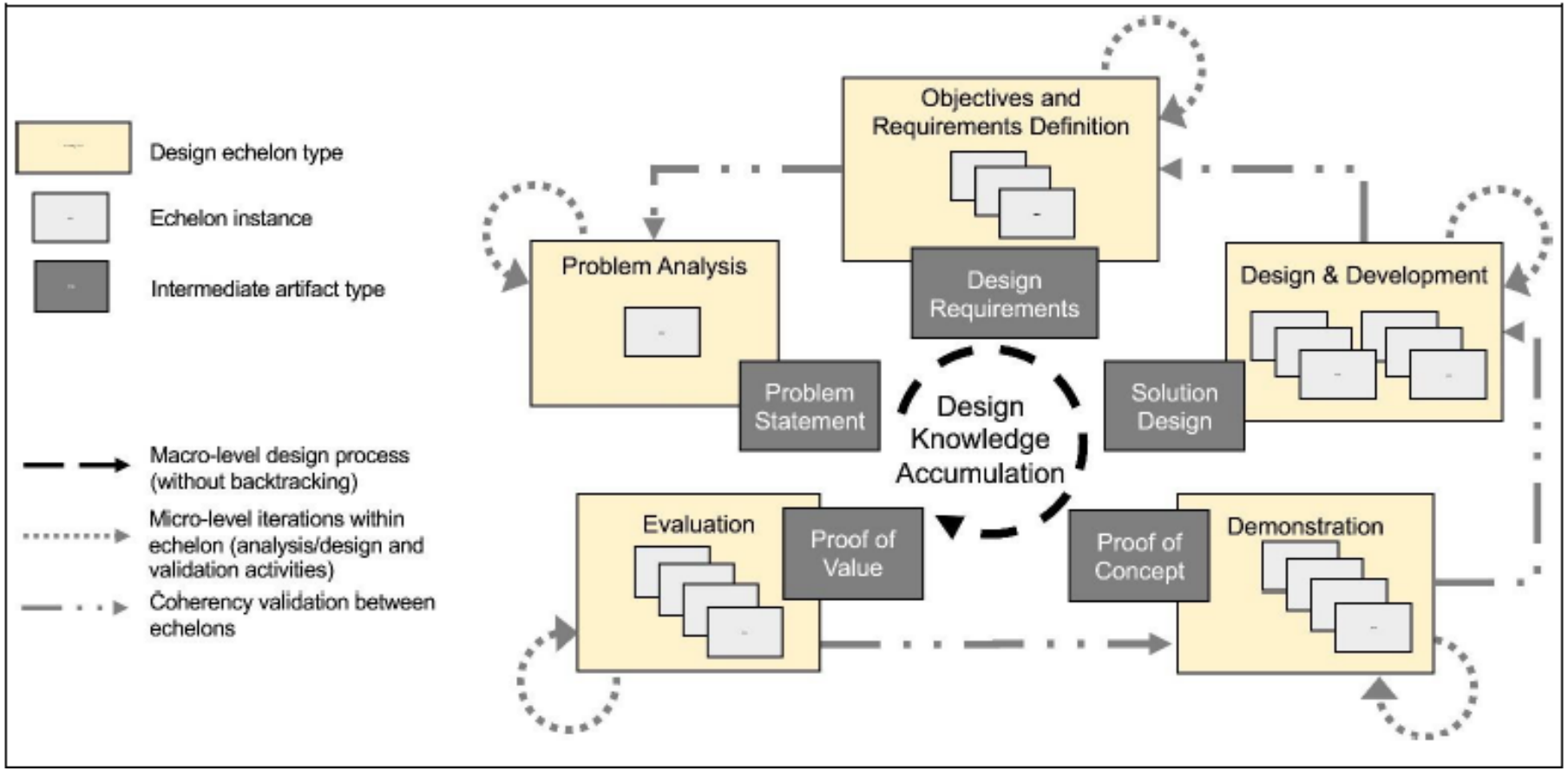
What we suggest

- Complex collaborative artefacts need a *correspondingly complex* methodology
- Two things must be managed **at once**:
  - Creation and validation of **design knowledge** (the artefact)
  - Evolution of the **collaboration relationship**
- Most methods address one or the other — not jointly
- **Our move:** combine **eDSR** (artefact side) with **UIL** (collaboration side)

Background: the building blocks

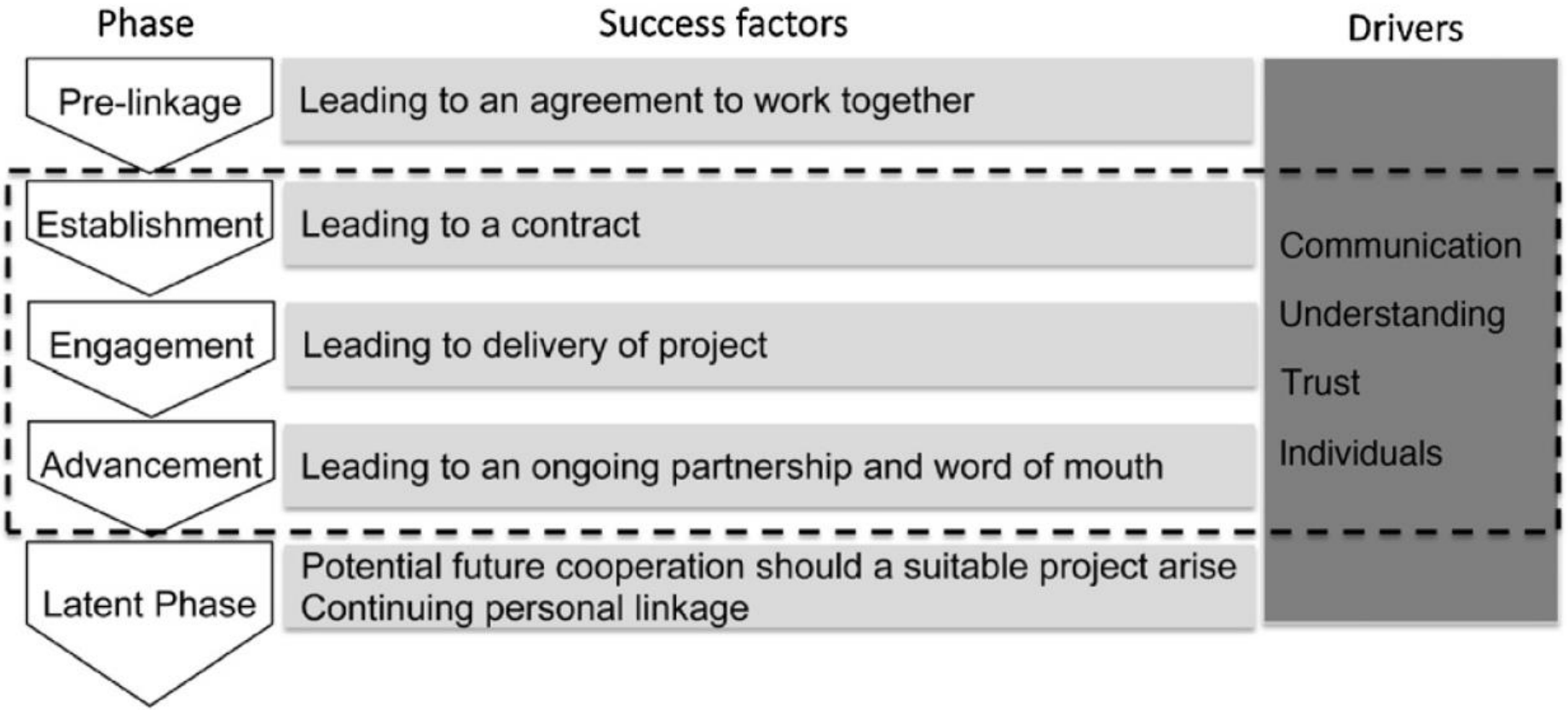
- **DSR:** Design Science Research
- **eDSR:** echeloned DSR (Tuunanen et al., 2024): scales DSR for large, evolving programs
  - *Layers* = echelon types (problem, objectives, design, demonstration, evaluation)
  - *Strata* = iterations over time
  - *Echelons* = self-contained units of design knowledge
- **UIL:** university–industry linkages (Plewa et al., 2013): collaboration evolves through phases
  - Phases: *pre-linkage → establishment → engagement → advancement → latent;*
  - *success factors for each stage*

Background: The eDSR Metamodel



Tuunanen, T., Winter, R., & Brocke, J. V. (2024). Dealing with complexity in design science research: A methodology using design echelons. *MIS quarterly*, *48*(2), 427-458.

Background: University–industry linkages (UIL) phases



Plewa, C., Korff, N., Johnson, C., Macpherson, G., Baaken, T., & Rampersad,G. C. (2013). The evolution of university–industry linkages: A framework.Journal of Engineering and Technology Management, 30, 21–44.

Background: Drivers of UIL success

Phase	Communication	Understanding	Trust	Individuals
Establishment phase	Quality of communication	Understanding of partner's needs	Trust in reputation and credibility	Synergy, based on similarity
Engagement phase	Bi-directional, open communication	Learning more about the partner and its environment	Trust in the individual	Development of personal relationship
Advancement phase	Discussions going beyond project	Working together; acting in an integrated manner	Trust in the relationship	Personal relationship; often progresses to friendship

Plewa, C., Korff, N., Johnson, C., Macpherson, G., Baaken, T., & Rampersad,G. C. (2013). The evolution of university–industry linkages: A framework.Journal of Engineering and Technology Management, 30, 21–44.

Core contribution: aligning the two

- A **synchronization mechanism**: align eDSR **iterations and echelons** with a **UIL phases and success drivers**
- Design iterations advance *in step* with the maturing relationship
- Lets you jointly coordinate:
  - stakeholder **engagement**
  - **expectation** management
  - **knowledge** production



Mapping DSR project iterations, eDSR echelon types and UIL phases

Iteration and project stages	Main layers or echelon types in eDSR	UIL phase/-s
Iteration 1: Project initiation and consortium building	Problem statement v1 & Design requirements v1 (preliminary)	Pre-linkage phase
Iteration 2: Project proposal preparation (funding application)	Problem statement v2 & Design requirements v2 (more mature and detailed)	Establishment phase
Iteration 3: Project delivery, artifact development	Solution design, Proof of Concept, Proof of value	Engagement phase
Iteration 4: Project delivery, artifact usage and adoption (with more users)	Solution design (improvement), Proof of Concept, Proof of value	Pre-linkage phase, Establishment phase, Engagement phase
Iteration 5: Follow-up project/-s initiation	New Problem statement & corresponding Design requirements	Advancement phase

Application of the approach:
GAIK project (Generative AI-enhanced Knowledge Management)

The primary project goal:
Creation of the **open toolkit** for knowledge-focused GenAI solution development and implementation

Target audience:
Small and Medium-sized companies (SMEs)

University-Industry cooperation

Timeline: 01.02.2025 – 31.01.2027

Co-funded
by the European Union (European Regional Development Fund), universities, and companies

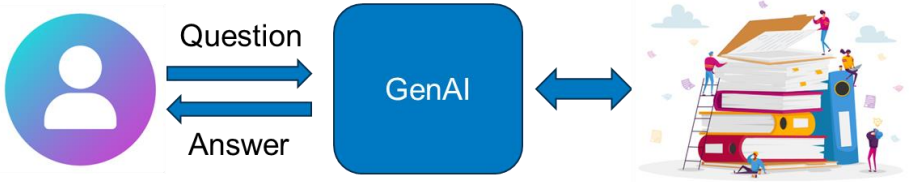
Project consortium:

Haaga-Helia
Tampere University
UNIVERSITY OF HELSINKI
LUVATA
LOTUS DEMOLITION
QA dental
AZETS

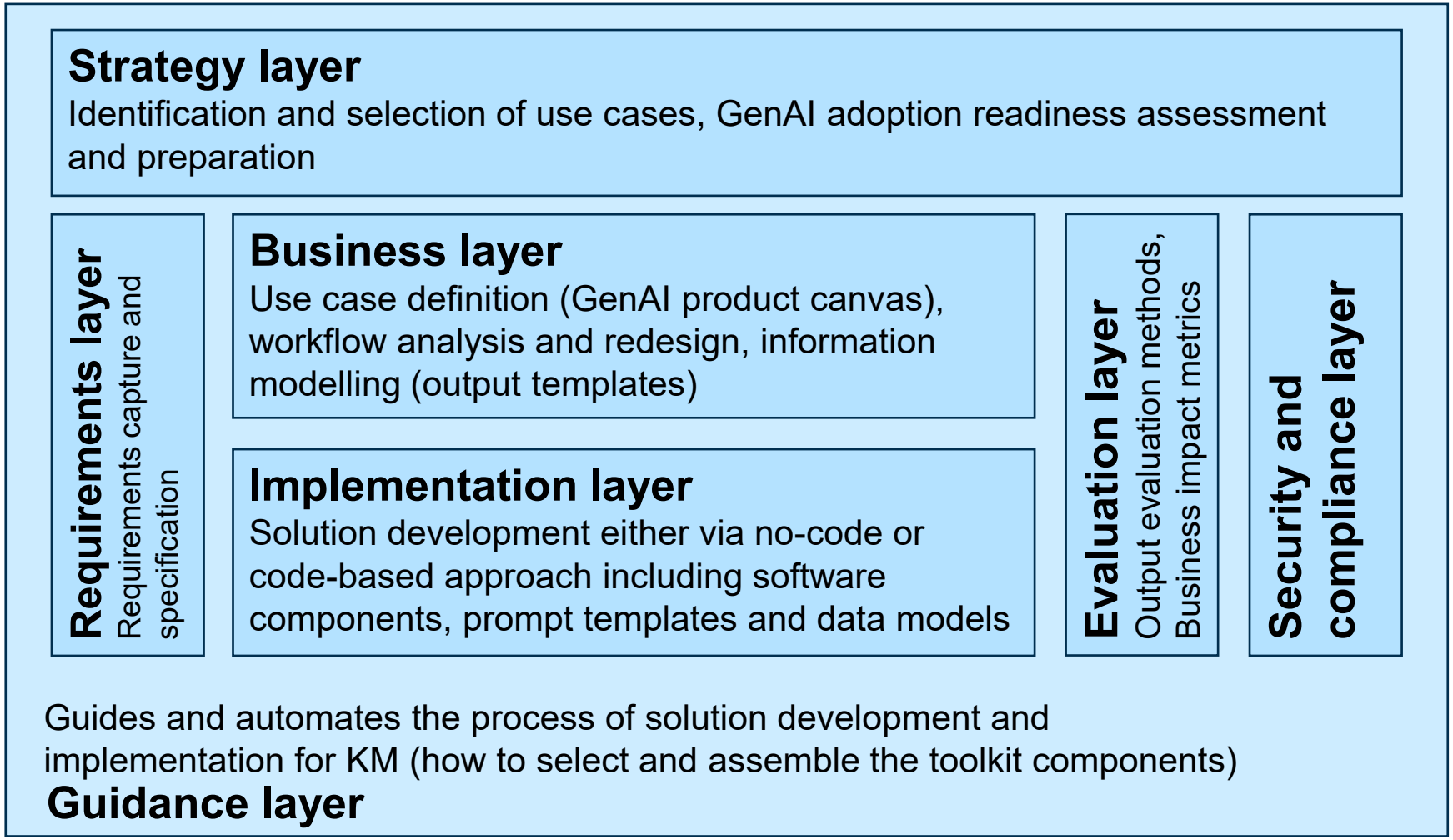
University-Industry cooperation

The scope of GAIK: knowledge processes

Knowledge processes as the basis

Knowledge capture	**Extract needed information from** business documents, videos, voice recordings, emails, and meeting recordings	
Knowledge access	**Intelligent access to organizational knowledge** (document repositories, databases, wikis, CRMs)	
Knowledge synthesis	**Automatic generation of** business reports, sales proposals, marketing materials, project proposals	

Structure of the GAIK toolkit



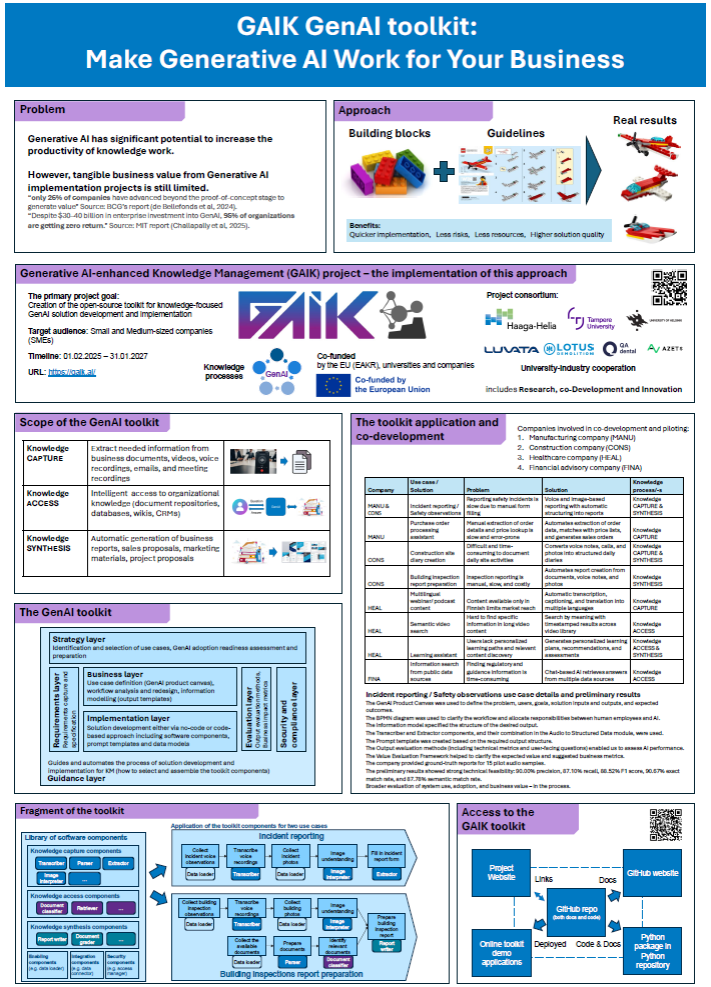
More details about the toolkit and its application

Poster at the Startup and Industry forum

Today 15.30 – 16.30

Foyer of the Münster Castle

https://gaik.ai/genai-toolkit/



Cooperating with companies in GAIK project

Two roles

- **Technology users** — firms applying AI to their products, services, and processes *(the focus of our cooperation)*
- **Technology providers** — developers, vendors, consultants who help build toolkit components

Technology users in two cohorts

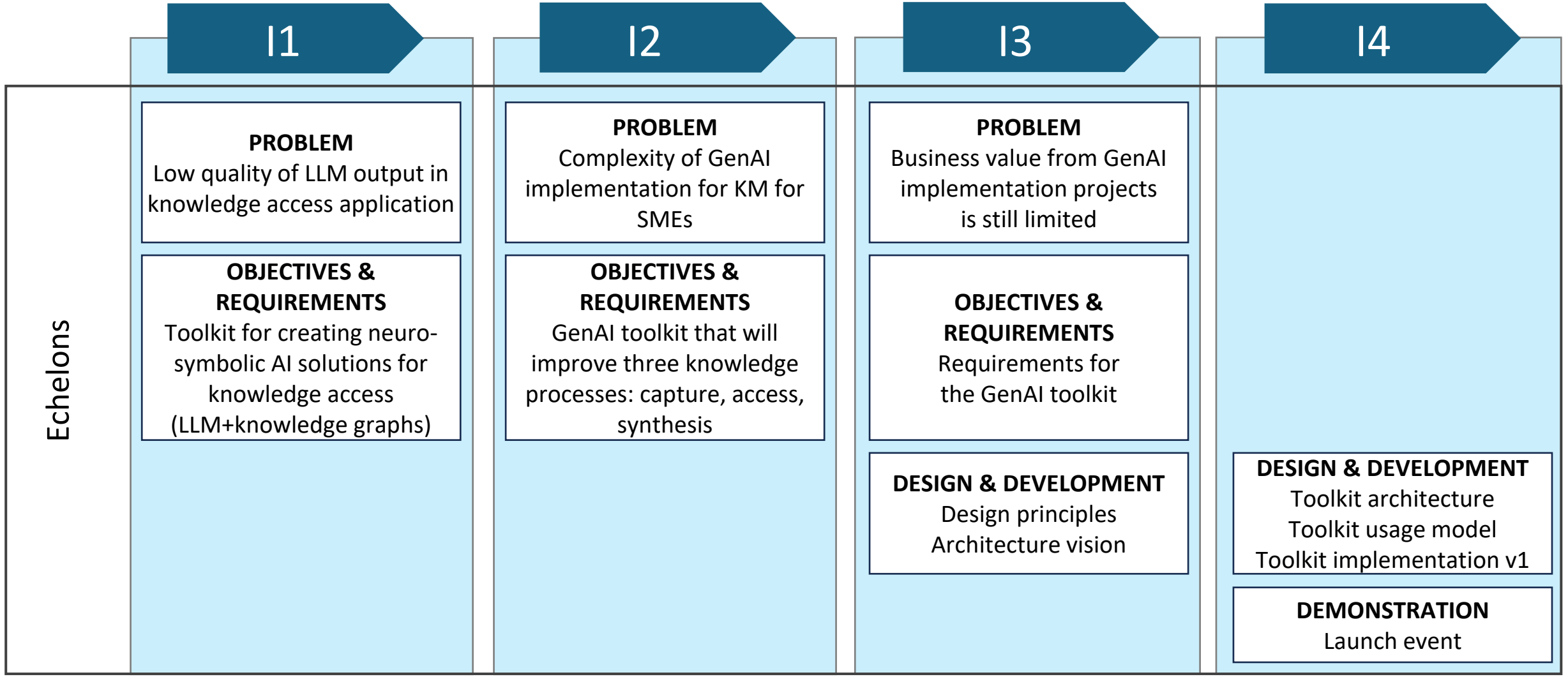
- **Cohort 1** — 4 companies co-developing *with* us now; their requirements → solutions → testing fed the toolkit's requirements, building blocks, and evaluation methods
- **Cohort 2** — join later after the launch event; use early toolkit versions, contribute through feedback

GAIK project iterations and echelons (till 4.2.2026)

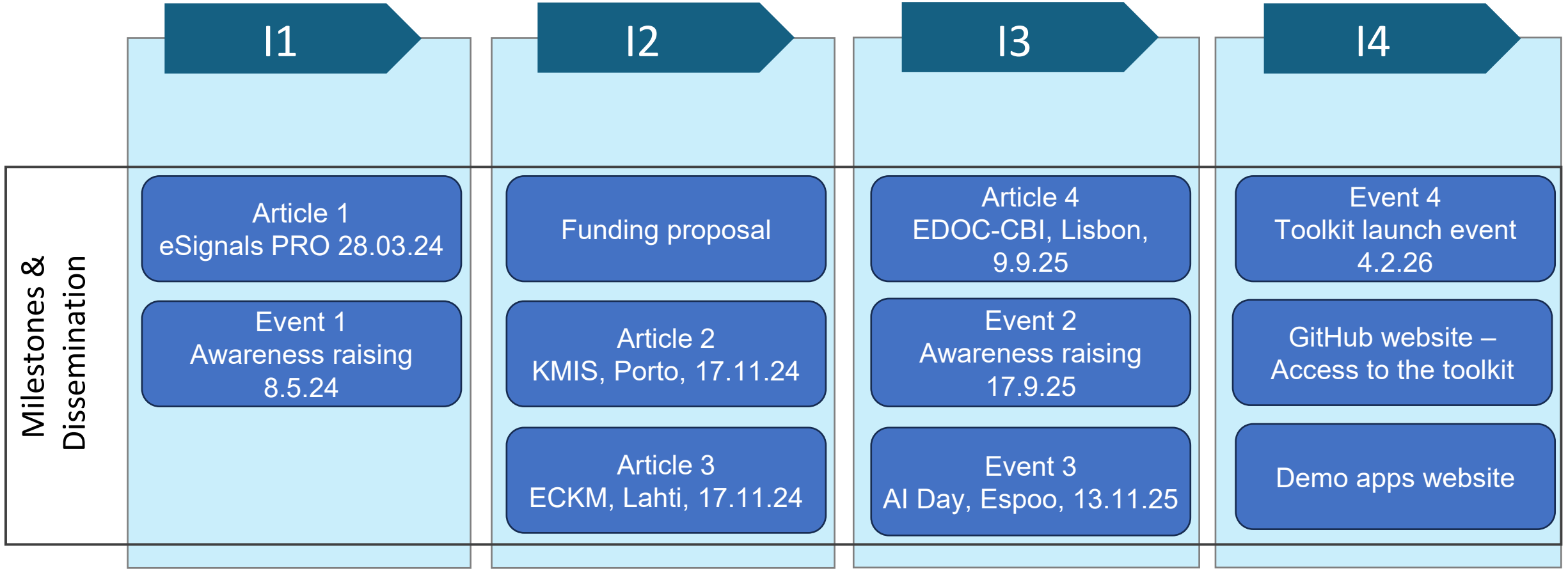
11.2024 → 2.2026

	I1	I2	I3	I4
Objectives	1. Attraction of companies to understand their needs	1. Attraction of companies 2. Persuade companies to co-fund the project 3. Funding application	1. Creating the toolkit architecture vision, first components and demos 2. Getting feedback 3. Establish a community of interested companies	1. Creation of the first version of the toolkit 2. Attraction of new companies for piloting the toolkit
UIL phases	Pre-linkage for Coh 1	Establishment for Coh 1	Engagement for Coh 1	Engagement for Coh 1 Pre-linkage for Coh 2.

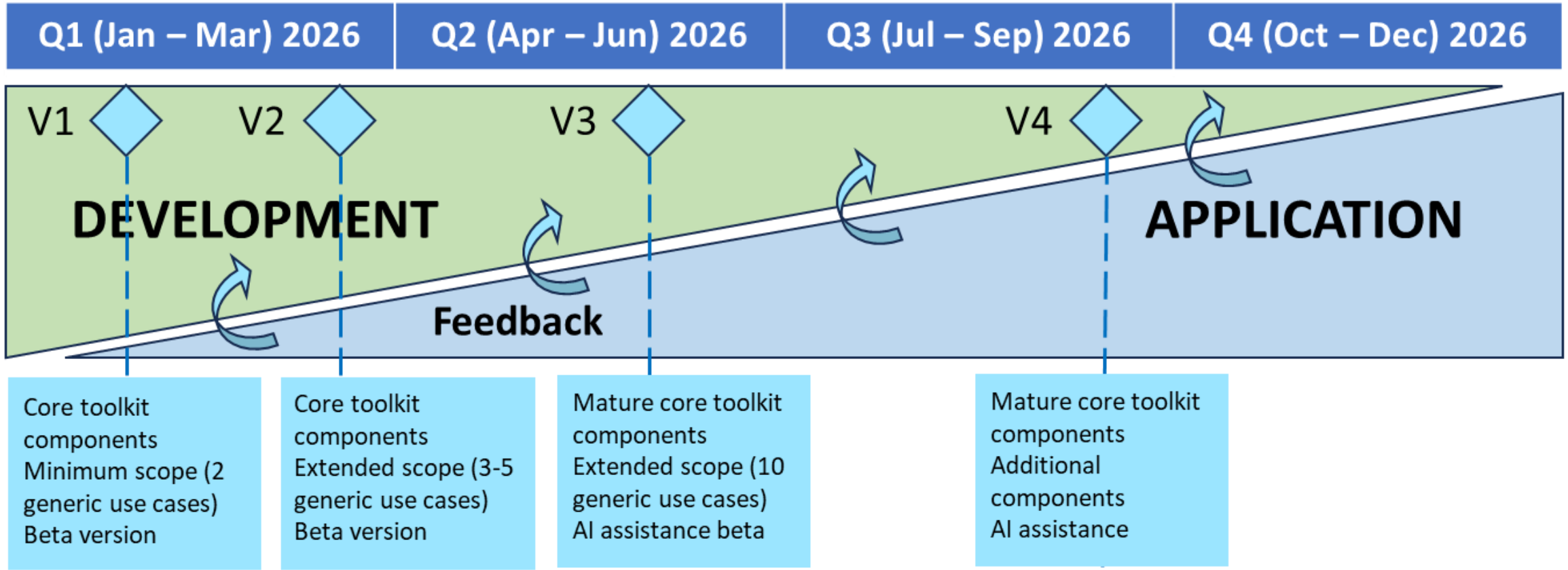
GAIK project iterations and echelons (till 4.2.2026)



GAIK project iterations and echelons (till 4.2.2026)



Toolkit development and application roadmap



Practical implications: a 3-step recipe

For running university–industry cooperation inside an eDSR project:

1. **Identify** the UIL phase(s) for each project phase and echelon type using the mapping table
2. **Define** UIL success drivers (Plewa et al., 2013) for that UIL phase(-s)
3. **Align** R&D project objectives and plans with UIL success drivers

Conclusions

Contribution: co-structuring artefact development (eDSR) and collaboration (UIL)

GAIK shows it works: a reusable, business-oriented GenAI toolkit *while* keeping research rigor and industry relevance (at least at co-development phases)

Next steps:

Practice

- Moving from the toolkit development to application, evaluation and adoption
- Moving from co-development partners to users

Theory

- To explore and validate the approach at the artifact application and adoption phases



Thank you!

Questions?

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