

Who Will Know How Tomorrow? A Sector Perspective

Applying ArtiProof to knowledge renewal across organisations

ArtiProof · KopKen | Whitepaper 1.0

When recruitment is not enough

A company automates much of its junior work. Experienced staff review the output, delivery improves, and difficult cases remain manageable. When additional expertise is needed, the company hires someone trained elsewhere. From the perspective of that company, the arrangement may work well.

Now imagine many companies making the same decision. Some still offer beginners sustained practice and supervision, so experienced recruits remain available for a while. Yet the sector may gradually become better at moving expertise between employers than at developing the next generation of experts. The work may still get done, even as the route to becoming an expert weakens.

This is a scenario, not a finding that junior recruitment is already collapsing in a particular sector. AI may also create better learning opportunities, support career changes or make some old skills unnecessary. The practical question is whether replacement learning pathways develop the judgement the sector will still need.

This raises a sector-level question: how much knowledge can be lost before people struggle to understand essential work, question its results or restore it after disruption? A temporary shortage and the loss of the ability to rebuild expertise are different problems. ArtiProof may help make that difference visible. This paper explores how its existing framework could be applied across organisational boundaries.

Why the sector is the relevant boundary

An employer can address a shortage by recruiting from a competitor. That move can spread knowledge and create new learning opportunities. By itself, however, it does not add another experienced practitioner to the sector. Recruitment from outside the sector can add capacity, but its availability and the training effort behind it must then enter the picture. Bringing in expertise can strengthen capability, provided there are workable arrangements for access, transfer and continued learning. It is a possible response whose conditions need examination.

The risk can emerge while some employers are still training newcomers. Remaining providers may lack enough supervisors, suitable practice or time to replace expected departures. Conversely, fewer junior positions need not mean weaker renewal if new routes demonstrably produce sufficient capability.

This is a collective dependency. Organisations that train people can benefit others through mobility, while employers may face incentives to recruit rather than invest in development. Whether that becomes a damaging imbalance depends on the sector. The relevant investigation follows the learning pathway rather than presuming that every employer must use the same training model.

Define the boundary explicitly: which activity, occupational capabilities, geography and time horizon are included? A national professional sector, a regional industrial cluster and an international supply

chain produce different answers. Successful organisations do not automatically add up to a resilient sector.

The ArtiProof basis in brief

ArtiProof examines the knowledge needed to understand, perform, justify and recover important work. Its existing organisational framework distinguishes Source Knowledge, Craft Knowledge and Generated Knowledge, and examines Integrity, Provenance, Authority, Understandability and Resilience. [1]

At sector level, source knowledge includes shared standards and technical references; craft knowledge includes judgement acquired through practice; generated knowledge includes model outputs and automated interpretations. Their interaction matters. Preserving a manual does not establish that someone can interpret an unfamiliar exception.

The five properties remain separate. Knowing where an answer came from does not mean understanding it. A well-understood process may still depend on a small group of specialists with no successors. This paper extends the use of the existing framework across organisations; the proposed sector scan remains exploratory.

A quick scan that begins with one essential function

A sector association, training partnership or group of employers can use the questions below to structure an initial conversation. Include educators, experienced practitioners and people entering the profession. Employer views alone cannot establish what learners actually get to practise.

Choose one function such as resolving unusual payment failures, interpreting complex inspection findings or handling exceptional service cases. Agree what competent performance means and which mistakes would matter. Then record an answer, a supporting example or evidence reference, and an unresolved question for each prompt.

1. What must someone still understand to perform and challenge this work?

Identify the essential decisions, exceptions and source materials rather than listing every historic skill.

2. Where does that knowledge currently reside?

Map people, employers, training bodies, suppliers and tools; identify apparently separate providers that depend on the same experts.

3. How does a beginner develop sound judgement?

Look for supervised practice, feedback and progressively harder cases. Can learners handle unfamiliar situations and recognise when to use tools or seek expert help?

4. Are we developing enough expertise for future needs?

Compare evidence of developing competence with expected departures and changing demand. Make clear where the figures are estimates.

5. What changes when AI takes over part of the learning pathway?

Identify lost practice and the replacement route; test learning outcomes rather than counting tool access.

6. What happens if a major training or knowledge provider withdraws?

Examine alternatives, mentor capacity and the time required to restore the capability.

Turning the scan into a useful sector profile

The first output should be a short profile of the selected function: what knowledge matters, who or what holds it, how people acquire it, where dependencies are concentrated and what to do next. Link findings to the relevant ArtiProof properties. Describe what is demonstrated, partly supported or still unknown; these are working descriptions, not formal grades. Resilience here means absorbing a specified loss and restoring enough capability to perform the work.

Unknown does not mean absent. A sector with little shared evidence should not automatically be described as less capable than one that documents itself well. Equally, a confident self-report should not receive the same evidential weight as an observed handover or an independently reviewed case exercise.

Useful indicators could include how many selected critical functions have a tested route for training successors; how many independent providers can teach and assess a defined capability; and how long it takes a trainee or replacement team to demonstrate it. Before comparing profiles, use the same function, performance requirements, time horizon and disruption scenario. State exactly what is counted and how competence is assessed.

Counts of training hours, junior vacancies or certificates can help locate questions, but they are not substitutes for the ability to handle important work. Avoid combining all findings into a single maturity score: abundant training in one area cannot cancel out an irreplaceable dependency in another.

An illustrative comparison

Consider the same essential function in two fictional regional sectors with equally strong current service performance. In Sector A, several employers provide supervised exposure to difficult cases and an external assessor has reviewed outcomes. In Sector B, most employers rely on experienced recruits and offer an AI-supported learning programme. Its results on unfamiliar cases have not yet been assessed.

The scan would identify an unanswered question about Sector B's training pathway, not demonstrate that it is failing. Sector A would still need to show that its training capacity is sufficient for anticipated demand and departures.

A useful first action for Sector B could be a shared exercise on unfamiliar cases, followed by an adjustment to supervised practice if needed. If AI-supported learners perform well and can explain their decisions, that is evidence in favour of the new pathway. The scan must be able to reveal successful adaptation as well as fragility.

Building on existing work

Knowledge renewal is not a newly discovered problem. Research on absorptive capacity explains why existing knowledge helps organisations recognise, assimilate and use external knowledge. Cohen and Levinthal provide an important foundation, while OECD work discusses capability development and knowledge flows. [2, 3] Those contributions support the relevance of internal learning capacity; they do not validate this proposed sector scan.

Strategic-autonomy research also examines dependencies in innovation and production. The European Commission Joint Research Centre has published an approach to assessing open

strategic autonomy. [4] ArtiProof can complement this work by following the practical knowledge needed to interpret, challenge and recover a particular function.

The proposed contribution is therefore modest: bring existing ArtiProof questions to dependencies that fall between employers, educators and other knowledge carriers. Whether that adds enough insight to justify the effort remains a practical question.

From awareness to action

A scan is useful when it helps people make, justify or revise a decision. Possible responses include pooled supervision, shared access to rare training cases, protected mentoring time, transferable learning records or a replacement pathway for experience previously acquired through routine work. The suitable response depends on the finding; cooperation is not automatically the answer.

For an initial trial, select one critical function, record the starting assumptions and run the scan using existing evidence. Choose one proportionate action, agree who will take it forward and set a review point. Then record what changed and how much effort it took. Ask whether the scan revealed anything useful beyond a well-informed sector discussion.

The sector question is straightforward: who will learn to understand and perform this work tomorrow? Applying ArtiProof across organisations offers a practical starting point for examining the answer while there is still time to strengthen the learning pathways.

Selected sources and scope

[1] ArtiProof, Keeping Organisational Knowledge Dependable in the Age of AI, Public Whitepaper 1.1 EN; and the corresponding Dutch edition. Method background: [Open source](#)

[2] Cohen, W. M. and Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128–152. [Open source](#)

[3] OECD, Oslo Manual 2018, Business innovation and knowledge flows. [Open source](#)

[4] Kroll, H. (2023). Assessing Open Strategic Autonomy. European Commission Joint Research Centre, JRC136359. [Open source](#)

The examples are hypothetical. The proposed sector scan has not been independently validated and is not a benchmark or certification. The companion paper Knowledge Autonomy in Society examines knowledge at societal level.