Future STEAM Cities Full STEAM Ahead

Final Report Sep 2024 – Aug 2026

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These were two years of learning, in all directions and about many STEAM-related topics. Learning by doing, testing and failing, being frustrated and excited, changing directions and workmates, starting again and again, being inspired and overwhelmed. Succeeding with a plan. A bumpy journey that ends at a starting point: the one from which all five STEAM plans will set off. And years will show how STEAM leads people to stay.



I. Introduction
The UIA project: Aveiro STEAM City

STEAM stands for science, technology, engineering, arts and mathematics. As a way of learning, it brings these subjects together around real problems. The arts connect the technical subjects to creativity, critical thinking and ethics, capabilities that matter more as artificial intelligence reshapes the world of work. In this network STEAM is also a strategy for the whole city: it links schools to employers and cultural institutions, and gives young people reasons to see a future where they live.

Future STEAM Cities brought together five European cities, Aveiro, Alytus, Kolding, Płock and Oulu, for two years. They worked within URBACT, the European programme that helps cities learn from one another, and shared one question: how does a city become a place where young people choose to stay? Aveiro had already built an answer with European funding, a model that connects schools, employers and cultural institutions through STEAM. The other four adapted it to their own circumstances, which is what URBACT calls an Innovation Transfer Network. Aveiro led the network as its Lead Partner.

Each city tested parts of the model, learned from what worked and what did not, and ended with an investment plan. All five turned separate activities into a single programme, linked to a strategy the city had already adopted. They adapted the parts of the model that work directly with people, such as Tech Labs, hackathons and company visits. The network drew seven lessons from this work, set out in Section IV.

This report is written by the network's Lead Expert, who accompanied it from start to finish. It draws on the network's four Quarterly Journals, the Transferability Study, the cities' final plans, the reports of its meetings and webinars, and a closing conversation with each city. Its purpose is to explain the cities' journey and the lessons they learned, both individually and as a network.

Aveiro, a Portuguese city of around 91,000 people, built its model through the project Aveiro STEAM City, which ran from November 2018 to April 2022. It was funded by Urban Innovative Actions (UIA), a European Commission programme that paid for cities to test new solutions, under the priority "Jobs and Skills". The project started from a question many mid-sized cities share. In Aveiro's own words, the question was not how to create more jobs, but how to improve the value and wealth those jobs produce: how a city attracts and keeps talented people, and how it uses technology to improve everyday life.

The project had four connected axes, each addressing a different side of that question: Education; Training; Technology, Services and Applications; and open Challenges.

Education brought STEAM into schools, mainly through Tech Labs: learning spaces equipped for hands-on work with technology. By early 2025 there were Tech Labs in 42 schools, reaching 12,377 students and 225 teachers.

Training was for adults already in work or about to enter it. Three editions of the Tech City Bootcamp trained 60 people in coding. Fifty-nine completed the course, and many later found work in Aveiro's technology companies. Microcredentials followed from this experience. These are short, certified courses developed with the University of Aveiro and backed by more than €10 million, designed to raise graduation rates and widen adult training in STEAM fields.

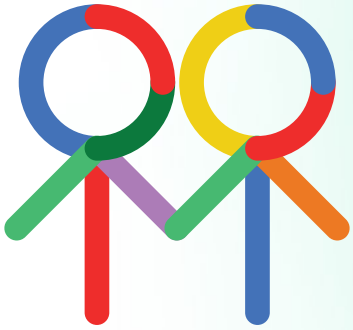
Technology, Services and Applications made the city itself a place for testing. The Tech City Living Lab gave researchers, start-ups and businesses a real urban setting in which to develop and demonstrate new technology. It was supported by 16 kilometres of fibre-optic network and more than 40 companies and research centres. An Urban Platform processed live data on energy, mobility, the environment and utilities. That data fed a City Governance Centre, built to support public decisions as well as technical monitoring.

Challenges opened the project to the wider community. #MTFLabs, a five-day event for building prototypes, was held twice. Each edition drew 50 participants from more than 26 countries, and together they produced 19 collaborative projects. The Entrepreneurship Contests asked students, teachers and businesses to solve real local problems together. In one of them, students carry out projects of their own in their schools and communities. It has involved 26 schools, 15,922 students and 1,136 teachers, and led to 109 projects.

By 2022 the project had become something more lasting. Fourteen public and private organisations signed the Aveiro Tech City Collaboration Protocol, among them the municipality, the University of Aveiro, research institutes and local companies. The protocol turned four years of testing into a shared, continuing strategy.

This is the model that **Future STEAM Cities** transferred. It is not a single tool or technology. It is a tested way of connecting education, industry and public life around a question that each city in the network came to recognise as its own. That question has become more pressing. In September 2026, at the **URBACT City Festival**, Aveiro and Kolding presented this lesson to cities from across Europe: cities now compete for people as much as for investment, and STEAM can help make a city a place where people choose to stay.





The partner cities starting point and ambitions

Each partner city brought the same challenge to the network: how to become a place where young people choose to stay, return or settle. Policy calls this talent attraction and retention. It matters because European cities now compete for people as much as for investment. What differed from city to city was the form the challenge took, and the barriers to meeting it.

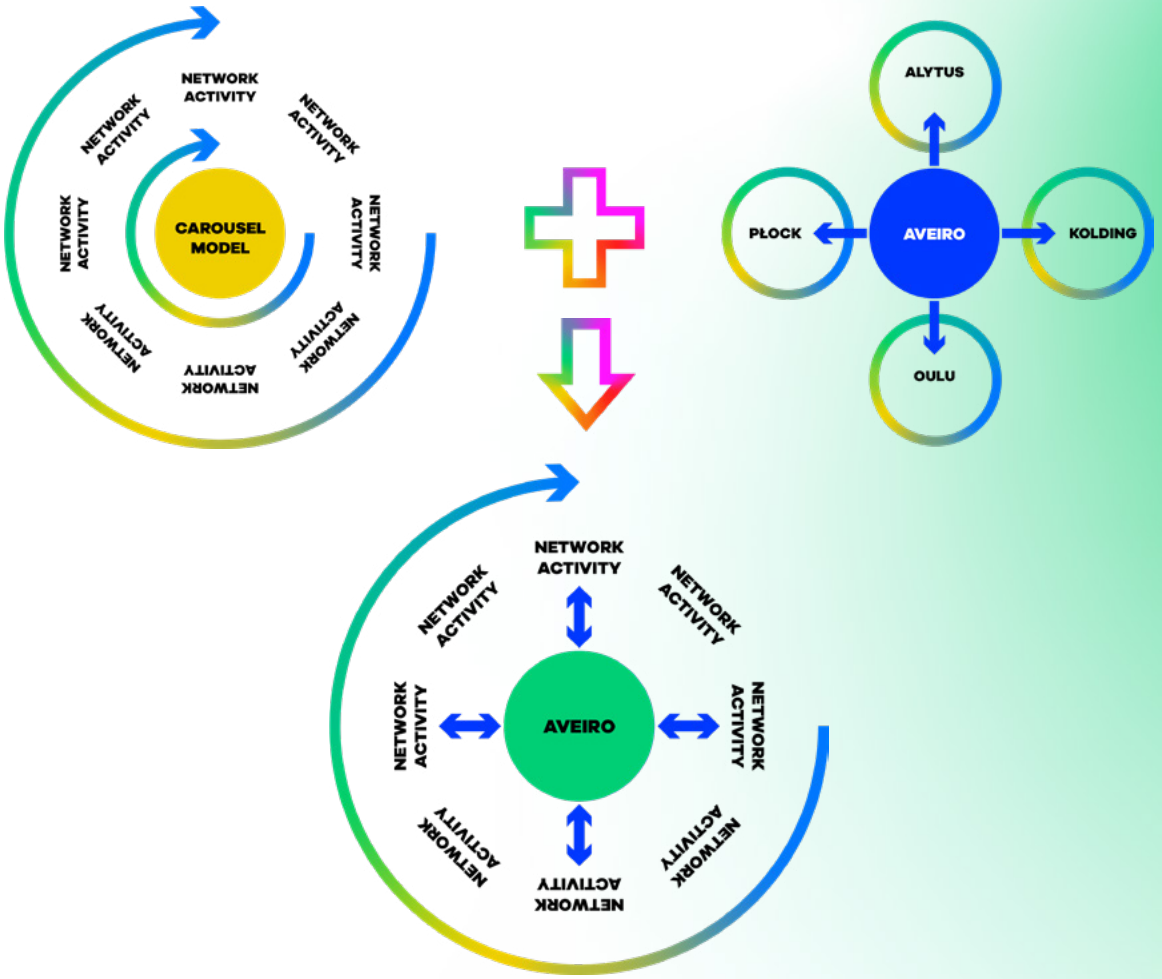
Alytus, Lithuania (population c. 50,000) is an industrial city whose economy is changing but still depends largely on low-value-added work. Its barrier was that young people were leaving for larger cities, partly because education and the local labour market were poorly connected. The city had real assets: a full network of schools, committed local leadership and businesses willing to engage. But these worked separately, not as a coordinated system. Alytus's question at the start was how a city turns young people who leave into young people who stay, learn and build something there.

Kolding, Denmark (population c. 96,000) faced something closer to a paradox. It is a UNESCO Design City with major employers and four higher-education institutions. Its barrier was not a lack of opportunity but a lack of connection: graduates were leaving a city that had jobs for them. Here the work was coordinated by Business Kolding, a business support organisation, and not by the municipality, which took part as a member of the local group.

Płock, Poland (population c. 108,000) had the furthest to go. It has real strengths: a striking setting on the Vistula, strong industry, good schools and housing support for young people. Yet schools and businesses operated, in the city's own words, as parallel worlds, and STEAM had barely entered the curriculum. Other partners could extend a STEAM practice they already had. Płock expected to build one almost from the beginning.

Oulu, Finland (population c. 217,000) came to the network from a position of strength. It was already Finland's leading STEAM city, with close to forty schools practising it. Its barrier was subtler. More people move to Oulu than leave, but the population is ageing and the city needs to attract and keep innovative people. An advanced practice can also stagnate if it stops reaching new groups. Oulu's expectation, honestly stated, was curiosity: a chance to keep learning while already leading.

Aveiro, Portugal, where the model was first built, had two roles. It was Lead Partner to the other four cities, and it was developing the next stage of its own work in a document formally called a Continuity Plan. In this report the planning documents of all five cities are called investment plans, because that is the function each one serves.



II. How the network learned

Future STEAM Cities Methodology: How the network worked

Future STEAM Cities worked in three stages. First the partners sought to **understand** Aveiro's STEAM City model. Then they **adapted** it to their own cities by testing parts of it. Finally they **prepared it for reuse**: each completed an investment plan and explored how it could be funded once the network had closed. This sequence, Understand, Adapt and Prepare for Reuse, is the method URBACT uses for its transfer networks.

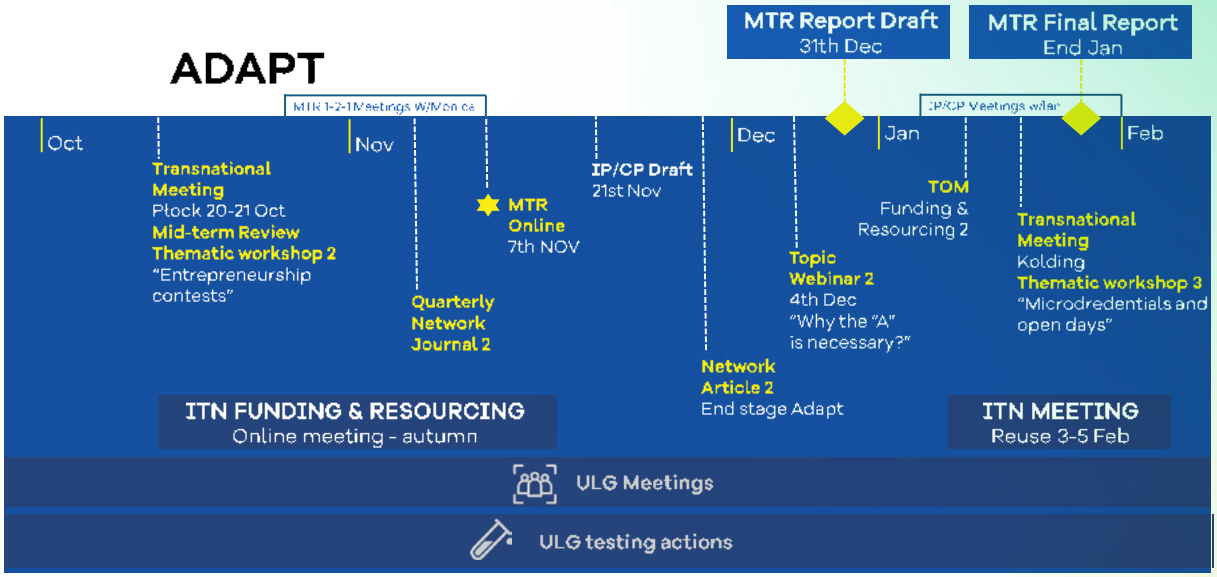
The model allowed each city to respond to its own version of the shared challenge. Each of its four axes is made up of modules, such as Tech Labs, the entrepreneurship contests or the bootcamp. A city could adapt the modules it needed without adopting the whole model, or a whole axis, unchanged.

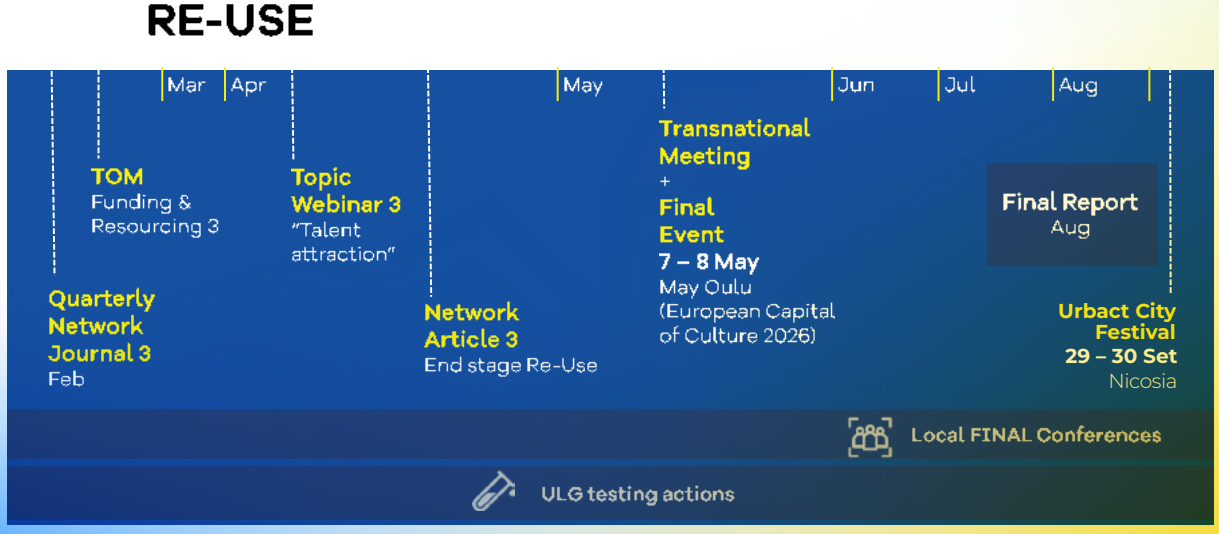
Learning moved in several directions. Aveiro shared its model with each partner and learned from watching how they adapted it. The partners also learned from one another. The Transferability Study calls this a hybrid of two models: radial, from Aveiro to its partners, and carousel, between peers. What the partners returned to Aveiro informed its thinking about its own plan.

To understand the challenge more broadly, and what a real solution would require, each city worked with a local group of stakeholders. URBACT calls this an URBACT Local Group (ULG). Some groups were new; Alytus and Oulu worked with groups that already existed. Each brought together local stakeholders and municipal departments, separately from the core project team, to examine how the shared challenge appeared in their own city.

A single shared **roadmap** structured the work. It began in Aveiro with a deep dive visit. The partners spent time in the city and saw the model as a whole, across its four axes, so that everyone started from the same understanding of what they were adapting.

The Understand stage lasted until February 2025. After the visit to Aveiro on 3 and 4 October 2024, the Lead Partner and Lead Expert visited the partner cities. Each city assessed its own readiness against the same criteria: fit with its strategy, political support, resources and funding. The cities then reviewed one another's assessments online on 4 February 2025. The result was the Transferability Study. It recorded each city's starting point and the modules it intended to adapt. It judged the potential for transfer to be high in Oulu, medium to high in Kolding, and medium in Alytus and Płock. All five cities drew up the roadmap together.





Transnational meetings in person brought the five cities together at each stage: Alytus in June 2025, Płock that October, Kolding the following March and Oulu in May 2026. Each meeting presented the host city's context, its stakeholders, and the progress of its testing and its plan. Each also included a **thematic workshop** in which Aveiro examined one of its modules in depth: Tech Labs in Alytus, the Entrepreneurship Contest in Płock, and microcredentials and Open Days in Kolding. In Kolding, for instance, partners learned how a Portuguese university developed short certified courses with local companies, and what it needed to keep those companies engaged once their first interest had faded. Where possible, the meetings coincided with events in the host city, so that partners saw its work in practice. The first meeting in Aveiro took place during the city's Tech Week. The partners arrived in Płock for the gala of its annual hackathon. The final meeting in Oulu was held alongside the Amazing North festival and ToolCamp.

Peer review, in which cities comment on one another's plans, was part of every meeting. In Płock it was a rapid round of pitches and feedback. In Kolding, peers took the role of funders. In Oulu, in the final phase, partners reviewed one another's plans in pairs and presented them to stakeholders from other cities. This let them test how a funder would receive the plans before making their last adjustments. A highlight was presenting the results of Future STEAM Cities at the STEAM Summit, as part of Oulu's year as European Capital of Culture 2026.

Seventeen shared **tools** supported the cities at different stages. They ranged from the Testing Loop, through storytelling exercises such as "Letters from the Future" and the "Storyboard of Our ULG Journey", to later tools for strengthening investment logic and funding strategy. The full set is listed in Annex 1. Some come from the URBACT toolkit.



At its midpoint the network paused for a **Mid-Term Reflection**. This drew on a survey of all partners, a reflection session in Płock, one-to-one conversations with each city and a follow-up meeting online. It found that coordination and local engagement demanded more of the cities than they had expected. It also found that they shared one difficulty: turning test results into investment logic, that is, a reasoned case for what should be funded and why. Some of the changes that followed were adjustments in the roadmap for its second half and sessions on funding and resourcing scheduled for the period when cities were drafting their plans.

Three **thematic webinars** accompanied the network's work and were open to a wider audience than the five cities. They gave partners and participants room to reflect on questions that went beyond the project. Section III gathers their reflections.

Expert input was a further form of support. Four specialists and the Lead Partner each had a defined role, and they shared what they observed in each city's plan as it developed. Liat Rogel helped cities turn what they had tested into investment logic. Jon Aguirre-Such worked on narrative. Ian Graham examined technical robustness, governance and readiness. The Lead Expert worked on monitoring, evaluation and funding, and coordinated the group so that its advice stayed consistent. The three ad hoc experts, specialists engaged for a specific task, joined for the final stage. By then all four contributions served one output, the investment plan, and that shared output is what made close coordination worthwhile. Aveiro selected the experts jointly with the Lead Expert, and its own plan received the same expert support as the other four. A dedicated article reflects further on this model of expert coordination.

"Sometimes we, experts, are like parachutes landing in a project, doing our work and leaving. It's creating a whole road map that is really helpful for us to understand the context and has a bigger impact in the cities we support."

Jon Aguirre-Such, ad hoc expert

The five city journeys

The five journeys that follow are told in the same order: where each city started, what it tested, how it moved from testing to a plan, and where it arrived. The first table sets the journeys side by side: each row is a city, and the columns follow its journey from left to right, in the order things happened.

CITY	1. Where it started (February 2025)	2. Testing (June 2025 to March 2026)	3. From testing to plan (January to June 2026)	4. Where it arrived (June 2026)
AVEIRO	Its original model, with the aim of reaching people beyond schools	A Tech Lab opened to residents at the Citizens House; an animation workshop for families	Coding for adults over 40; the family workshop turned into three requests to funders	A plan to 2030 that makes workshops for adults and families permanent
ALYTUS	Young people leaving; schools, business and culture not coordinated	Company visits for students, coding in primary schools, Tech Labs, an entrepreneurship contest and an art and technology installation	Found that its actions ran apart from each other, and gathered them into one local talent programme	Seven actions forming one coordinated system, phased to 2029
KOLDING	Jobs available, graduates leaving. Intended a centre for practical technical learning (the Hard Skills Station), challenges set by companies and a Living Lab for testing technology	Entrepreneurship workshops; a challenge set by ten companies for sound-design students; two company visits for primary pupils	Concluded that one-off events must become yearly activities; ran a hackathon with city data	Yearly cooperation between education and business, with the ambition of becoming a STEAM Tech city: business challenges, hackathons, Business Open Days and the Hard Skills Station, led by Business Kolding
PŁOCK	Schools and business apart, STEAM almost absent	Five actions: STEAM classes in schools, university and museum workshops, a teachers' conference and project-management training for IT students	Reframed the five as one programme, timed with the national curriculum reform; held its first STEAM Festival	One programme, the STEAM Innovation Hub: STEAM Labs in schools, City Bootcamps and a yearly STEAM Festival
OULU	The most advanced city, wanting to reach adults and seniors	Named its ambition "STEAM for all"; chose a school to host a Future Classroom, where companies test products with students	Built the classroom; ran an artistic residency and a first hackathon	The next stage of its STEAM work, set within a city strategy to 2035

Each action adapted one of Aveiro's modules. The second table lists those modules, with a short description of each, and shows how each city adapted them. A dash means the city did not adapt that module. Plans changed during the work, as cities understood the modules and their own resources better and took decisions with their local groups.

AVEIRO MODULE	ALYTUS	KOLDING	PŁOCK	OULU
Tech Labs Learning spaces in schools equipped for hands-on work with technology	STEAM Labs in 3 schools	Hard Skills Station: hands-on learning with firms	STEAM classes in 3 primary schools, with university and museum workshops and a teachers' conference	Future Classroom, a learning space where companies also test products
UBBU Code A code-literacy programme for younger pupils	5 schools, grades 1 to 6	—	—	—
Entrepreneurship contests Students solve real problems with local companies, or carry out projects of their own	Contest with an expo	Challenges set by companies for students	—	—
Hackathons Short, intensive events in which teams develop solutions to a set challenge	—	Hackathon with city data	Its own annual hackathon, for three age groups (9-year-olds, 16-year-olds and professionals), with challenges set and funded by private companies	First hackathon for ages 16 to 19
Open Days Visits by students to local companies	4 companies, 60 students	Business Open Days	—	—
Artistic residencies Artists work with teachers and students on projects that join art and STEAM	Light installation at City Days	—	—	Artistic residency, Invisible Beauties
Bootcamp Intensive training in digital skills for people entering work	—	—	Project-management training for IT students	—
Microcredentials Short, certified courses developed with a university	—	Short courses at the Hard Skills Station	—	—

None of the partner plans included Aveiro's technology infrastructure, Living Lab or urban data platform. Kolding's plan makes the rationale explicit, focusing instead on actions "that can be adapted without requiring large-scale technological infrastructure". Not every module could be adapted either: short certified courses were not feasible in all contexts because of national regulations, while other modules required levels of investment that were beyond what partners could readily commit.

Aveiro

Aveiro had two roles in the network. As Lead Partner, it supported the four partner cities while also exploring what its own STEAM model could become beyond the schools where it had begun. In October 2024, during the city's Tech Week, Aveiro hosted the first transnational meeting, presenting its approach while listening to the challenges and ambitions of its partners. By spring 2025, a clear direction had emerged: extending STEAM to families, unemployed people and older people who had not been reached by the original project. Carla Semedo, Head of Economic Development and Innovation at the Municipality of Aveiro, described this as "a smart territory strategy – connecting people, data and opportunity".

The city tested this through a Tech Lab installed at the Citizens House. At the Płock meeting in October 2025, a further idea emerged: a learning circle where young unemployed people could teach digital skills to seniors and families. Around the same time, Carla Semedo posed the question that shaped what followed: "Before moving forward, we need to ask: is our starting point still the same as when we began? The context changes, and our plans need to change with it."

Two tests followed in 2026. On 28 February and 7 March, families took part in a Stop Motion workshop, creating scenery and writing scripts about their city. An introductory coding course for adults over 40, including people out of work, began at the end of March. Both tests pointed to demand for informal STEAM learning beyond schools: workshop participants engaged with the creative format, while those on the coding course asked for longer sessions.

From these tests Aveiro drew one conclusion: informal activities develop digital skills among people its school programme does not reach. With the experts, it turned what the family workshop had shown into three requests a funder could act on, for programmes, spaces and systems. The resulting Continuity Plan to 2030 keeps the four original axes and aims to make STEAM workshops for adults and families permanent. Part of this came from its partners. The plan to offer Tech Labs to seniors and families followed from Oulu's ambition to take STEAM to all citizens. As the plan itself says, Aveiro "is not simply continuing past projects".

What we learned is that...

"Even we, the city that transferred the STEAM City model, kept learning from our partners — and not only from what it set out to teach."
Alytus's clarity on formal business partnerships, Oulu's instinct to bring adults and seniors into STEAM alongside schoolchildren, Kolding's attention to soft skills alongside technical ones, and Płock's own approach of bringing its Museum into the STEAM offer each came back to us as a genuine addition — not just proof the model had transferred successfully. In practice, we took from Kolding the value of a dedicated body for business, and from Alytus the value of a close link with the regional level on the curriculum.

"Keeping our successful project alive over time can be challenging, as priorities change and resources that were once in place get moved elsewhere."
This is what happened with parts of our original project: some activities were reviewed or merged into others, and continuity remains a need even for a strategy written into local plans.

Alytus

Alytus entered the network with real assets but little coordination between them: committed local leadership, a full network of schools, and businesses willing to engage. Its local group had been formed in an earlier URBACT network, TechRevolution 2. The group reviewed Aveiro's practices and chose five to test: Open Days in companies; UBBU, a code-literacy programme for younger pupils; an entrepreneurship contest; Tech Labs; and a combination of art and technology. A larger commitment accompanied the testing. A new Alytus Hub will house business development and STEAM learning together and be shared with neighbouring municipalities. The city also plans to develop STEAM curricula for its own schools, making the most of what the national curriculum already allows.

In June 2025 Alytus hosted the first transnational meeting led by a partner, with 32 participants from the five cities. The network later described it as the moment "where understanding turned into doing". Partners remarked on the city's strong political support, with the mayor actively engaged, and saw the agreement among its stakeholders as a strength. The first Company Open Days took place in November, in four companies and with 60 students. The coordinator, Neringa Rinkevičiūtė, Chief Specialist at the Economy and Investment division, noticed what the students asked: "They wanted to know: what kind of people work here? Would I fit in?" Coding with UBBU was introduced in five schools and Tech Labs in three, where they bring hands-on, inquiry-based learning to the youngest pupils. An entrepreneurship contest and a light installation combining art and technology completed the tests.

The most important result of the testing was not a success. It showed that the city's actions were running separately, each school and institution working alone. Alytus treated this as the argument for a single local talent programme to bring them together. The final plan turns the tested practices into seven actions, phased to 2029. Surveys in 2026 will establish the baselines against which change is measured.

What we learned is that...

"Naming our problem clearly made a bigger solution possible."

Testing showed us how disconnected our own institutions were — the city and its schools not used to working together, each action running on its own with no shared thread. Recognising that problem directly, rather than working around it, is what led to a single local talent programme bringing them all together.

"The network's real value was the chance to watch four other cities wrestle with our own problem in real time."

At the Kolding transnational meeting, seeing how STEAM could start from something as modest as building with Lego, rather than a citywide programme, changed how we thought about the scale of what we needed to build.

Kolding

Kolding describes itself as “a city with more jobs than graduates to fill them”. Some of Denmark’s largest IT employers are based there, yet many of its graduates leave while those jobs remain unfilled. For Morten Bjørn Hansen, chief executive of Business Kolding, the reason is plain. Local companies need STEAM skills they cannot find. So the city has to inspire more young people to choose a STEAM education and, “just as importantly”, to “stay and build their future in our local communities”. The city aimed to connect students and companies much earlier. In February 2025 it intended to do this through a Hard Skills Station for practical learning, challenges set by companies and a Living Lab.

Testing began modestly in autumn 2025, with entrepreneurship workshops involving several institutions. It became more ambitious in October with the SONIC Challenge, in which sound-design students worked on challenges set by ten local companies. The experience showed the companies what design students could offer, and showed the students what working locally could mean. Open Days for primary pupils followed in November. The city learned as much from the one that failed as from the one that succeeded. A visit to GreenTec went very well. A drone company’s Open Day “fell flat” because, for lack of time, the pupils telephoned the company instead of visiting it.

By the time the partners met in Kolding in March 2026, the city had reached two conclusions. Involving students takes longer than expected. And activities held once need to become yearly if they are to last. The city’s first hackathon followed in May, with data science students working on the municipality’s mobility data. Over the same period, by Leendert Bjerg’s own account – business consultant at Business Kolding - collaboration became closer among those who mattered most to the agenda: the STEAM Centre, the elementary schools and the companies involved. Political engagement at city level is still developing, with Business Kolding continuing to work on it as part of its longer-term development.

The resulting plan commits Kolding to yearly cooperation between education and business, led by Business Kolding, in support of the city’s ambition to become a STEAM Tech city. It has four parts: business challenges, hackathons, Business Open Days and practical learning at the Hard Skills Station. In the longer term, the city wants learning through company challenges to become part of selected university courses. The Living Lab envisaged at the start is not among them, because the city chose actions that could be adapted “without requiring large-scale technological infrastructure”.

What we learned is that...

“Schools, companies and the municipality had never really been introduced to each other properly.”

Something that sounds too obvious to be a lesson — and is exactly the kind of thing that only becomes visible in hindsight. A design student in the city remarked how rarely her course introduced students to local companies.

“When students graduate, almost all of them leave Kolding. But if companies understand what students can do, we believe we can retain some of them.”

Retention doesn’t come from persuading people to stay in the abstract, It comes from giving them something concrete to stay for.

Płock

Płock describes itself as "a city learning to connect the dots". It has a striking location on the Vistula, a strong industrial heritage, good schools and real career opportunities. Yet young people were leaving, because schools and businesses operated separately and the curriculum rarely matched the labour market. After years of investment in infrastructure, the city wanted to invest in people. STEAM served first as a framework that brought its institutions into the same discussion.

Płock chose not to concentrate its effort in one place. From October 2025 it tested STEAM in five settings at once: STEAM classes for pupils aged 11 to 13; workshops in university laboratories linked to the school curriculum; workshops at the Mazovian Museum that joined science and technology with cultural heritage; a conference at which teachers learned from one another; and training in Agile and Scrum project management for IT students. The search for partners was itself instructive. As the coordinator, Agata Kochanowska, Project Manager at the municipality of Płock, put it: "We found brilliant teachers and devoted headmasters — proof that there are more of them out there, waiting to be found." M. Herbert, a technology trainer in the local group, made the case for the bootcamp plainly: "if they are not junior developers, they will never become senior developers."

The network met in Płock that October. The partners arrived in time for the gala of the city's annual hackathon, which had run through the weekend. Companies set and fund its challenges for three age groups: 9-year-olds, 16-year-olds and professionals. Kolding and Aveiro were particularly interested. The meeting also held the network's first peer review. Having to explain why its activities mattered, and not only describe them, led Płock to an idea nobody had planned: an intergenerational initiative in which students trained in STEAM teach their own families.

By the new year the five separate actions had been reframed as a single programme, the Płock STEAM Innovation Hub. Its timing is deliberate. It coincides with Poland's forthcoming national reform of the STEAM curriculum, which gives the plan a support the network alone could not have provided. Towards the end of the project the city held its first STEAM Festival. In June 2025, in its letter from the future, it had imagined such a festival known across Poland. The plan now has three parts: STEAM Labs in schools, City Bootcamps and an annual STEAM Festival.

What we learned is that...

"STEAM needs to live inside what students are already learning, not alongside it." — Agata Kochanowska
Watching STEAM activities added onto an already-full curriculum, we saw what teachers actually needed — confidence and integration, not an extra task competing for the same hour.

"Room to explore before being held to fixed targets is what built our buy-in — not a well-specified KPI set before the work began."
The application did not ask us for hard numerical results before the work had started. When we said so at a round table with teachers who had piloted STEAM, colleagues from our EU-funds department told us the next day that they wanted to join international projects of this kind — a reaction no fixed target could have predicted.

Oulu

Oulu describes itself as "a STEAM ecosystem where everyone can thrive", and the description is fair. The city built its reputation as the "Silicon Valley of the North" around Technopolis and a dense network of start-ups and researchers. STEAM is already part of nearly all its schools. More people move to Oulu than leave it. Its challenge, with an ageing population, is to attract and keep innovative people. Marjo Määttä, Tutor Teacher and STEAM Education Advocate and Expert, stated it directly: "to maintain our vitality and innovative approach to life and work, we need to keep the brains in the city. The answer to plugging this leakage is STEAM — all the way, always, and for all." Oulu had also worked with Aveiro before the network began, on artistic residencies.

That ambition received a name in autumn 2025, when the city's six original STEAM schools met its STEAM guidance group to ask what should come next. The answer was "STEAM for all": an intention to widen the practice from schoolchildren to adults, seniors and families deciding whether Oulu is a place to stay. Paula Vorne, STEAM Coordinator, Project Manager and Quality Coordinator for the City of Oulu, explained why a small pilot would not serve a city at this stage: "Our test has to be something bigger than a project — we are already so far with our learning culture that a small project would take us back, not forward. What we need is a system." So a school was chosen to host a Future Classroom with two purposes. It is a learning space for students, and a real setting where local companies can test their products with the people who will use them.

The first Future Classroom was built in spring 2026. An artistic residency, Invisible Beauties, ran from January to May: students studied endangered local insects and made artworks about them. In May the city held its first hackathon for upper-secondary students, at ToolCamp. As Marjo Määttä acknowledged, it was inspired by Aveiro's contests, Płock's hackathon and Kolding's challenges. A robot for literacy skills, too costly for the city to buy alone, was bought jointly with a publisher of school books. It will be tested first with pupils who find reading difficult. As Paula Vorne put it, "The 'A' in STEAM gives a voice to every learner."

The network's final meeting took place in Oulu during its year as European Capital of Culture. It began at ToolCamp, the city's student innovation competition, where around fifty groups of children presented STEAM solutions to real problems in one-minute pitches. It was a public demonstration of what years of investment in STEAM teaching produce. Oulu's plan sets its four adapted practices within STEAM 2.0 and connects them to a city strategy that runs to 2035 and names STEAM. Reaching adults and seniors remains the next step.

What we learned is that...

"It's not just STEAM 2.0 anymore, it's STEAM for all."

Widening an already-strong practice to reach people it had never served, rather than deepening what already worked, was our own answer to a city that risked stagnating precisely because it was already ahead.

"We are not the centre of the universe, not even the centre of the STEAM universe"

Cities at an earlier stage of STEAM are doing work as valuable as ours, in the way that suits their own systems. We treated peer review and the network's exchanges as a two-way conversation, not a formality.



III. Voices beyond the network: webinars

Three public webinars accompanied the network's work. In May 2026 the network was also invited to speak at a fourth, organised by a European Urban Initiative project. They appear here in the order they took place, each with what it added to the network's thinking. One idea is common to all of them: the "A" in STEAM is what connects the technical subjects to everything else. It is not decoration.

Webinar 1 — Beyond STEAM education: can we imagine the future of STEAM? (6 May 2025)

The first webinar asked what STEAM could become outside the classroom. Its 36 participants concluded that STEAM belongs in the life of the whole city, where it links schools to culture, technology to care, and learning to real problems. Several noted, though, that education systems still treat it as an extra, not a core subject. Two of their reflections lasted. First, it need not always be called STEAM: once it is part of how people teach, it becomes "just the way we do things". Second, cities at the beginning should start small and build confidence.

"We may have robot tools, but we cannot have robot teachers."
— Pedro Pombo, Director at Fábrica Centro Ciência Viva de Aveiro

"It helps learners connect emotionally with scientific ideas, fostering empathy and deeper understanding."
— Barnabas Wetton, Teaching Associate Professor at Design School Kolding

"The 'A' in STEAM can be adapted to context. What matters is integration, relevance, and connection."
— Renata Romanovienė, Deputy Director for Education and Coordinator of STEAM-oriented Education at Alytus Jotvingiai Gymnasium

Webinar 2 — Exploring the "A" in STEAM: where science, technology and creativity meet (2 December 2025)

The second webinar asked what the "A" contributes. Its five speakers came from a museum, the creative industries, health research, sound design and education. They reached the same answer from different directions: the arts are how many people first approach science and technology, and they belong outside the school as much as inside it. One speaker connected this to artificial intelligence, which is changing the competences students need.

"AI is changing jobs and the labour market, so it is also changing education and the competences we need to stimulate in our students. Critical thinking and problem solving are key competences now, and the arts allow us to have this kind of thought."
— Nelson Gomes, EASE, founder of European Association of STEAM Educators and secondary school teacher

"Art appeals to the body, to the senses, to our curiosity. Before students can fully understand a technology, they can experiment with it."
— Lars Tirsbæk, Head of the Sound Design program at Sonic College, Kolding

"Museums should not be schools. We should celebrate that at the museum we are outside school: we feel free and curious, and we can act without being judged or graded."
— Joanna Michalska-Iwankiewicz, specialist in the Department of Dissemination and Promotion at Mazovian Museum, Płock

"This is how innovation happens and this is how new ideas appear, just by bringing different people together."
— Fran Iglesias Gracia, General Manager at Fundación Épica

Space4Talents webinar — Strategic exchange on STEAM-based urban strategies (11 May 2026)

The European Urban Initiative project Space4Talents organised this webinar and invited Future STEAM Cities to speak with other European city projects.

"Every student in Aveiro, every school, has tech labs. But we concluded that their parents don't know what they are doing — so the involvement and the knowledge regarding these skills and equipment doesn't reach the family. We think that is the step: to involve a wider community."
— Carla Semedo, Municipality of Aveiro

"The 'A' in STEAM is the connector between the technological subjects and reality."
— Mónica Nagore Santandreu, Future STEAM Cities Lead Expert

Webinar 3 — Talent retention in STEAM cities: how can we attract, develop and keep skilled people in our territories? (26 May 2026)

The last webinar moved from STEAM to the question behind it: what makes a city a place where people choose to build their future? The speakers agreed that a job is necessary but not sufficient. The quality of a place, its community and its identity matter as much. Béla Kézy, of the URBACT network Cities-4Talent, said that place branding "is not a logo, a slogan or even a campaign. It is your identity." A poll at the start showed how hard the question is. Asked whether young people leave for good or leave and return, participants from the same city gave different answers.

"Talent doesn't need to come from the outside. It needs conditions to grow where it already is."
— Mariana Guerreiro, Chief of Staff, Strategy & Transformation at AMS Coliving, Code for All project

"Half of our high school students don't want to study in Płock, because they choose the town, not the university. We are doing what we can. Now it's the City Hall's turn."
— Renata Walczak, Pro-Rector of the Plock Branch and Dean of the Faculty of Civil Engineering, Mechanics, and Petrochemistry at Warsaw University of Technology

"The community you find in Alytus exists nowhere else in Lithuania. The hardest thing to solve is jobs: it is very difficult to find a high-skilled, well-paid job here."
— Veronika Juknevicienė, Project Manager and Education Specialist at Municipality of Alytus



IV. Lessons at network level

The lessons that follow belong to the network as a whole. They depend on things no city could have arranged for itself. Working alongside four others changed how each city judged its own position. Alytus understood in Kolding that STEAM can begin with something as modest as children building with Lego. For Oulu, the exchange challenged the assumption that experience meant having the answers: other cities' approaches offered new ideas that could be adapted to its own context. Peers also asked questions that experts could not, because they read each other's plans as a funder would. Having to explain why an activity mattered prompted ideas no one had planned. And because the experts coordinated their support, each city received advice that formed a whole. As Carla Semedo observed, the five cities were at different stages but "going ahead in the same direction".

Five cities working together explain only part of this. The URBACT programme, the other Innovation Transfer Networks the network met in Paris at the start of each stage, and the experts and colleagues who supported it all brought experience gained elsewhere. Some of the lessons reflect that wider conversation across the programme.

What we learned is that...

1. Transfer runs in every direction.

Transferring a good practice does not mean the city where it began stops learning. Aveiro refined its own innovation through what its partners returned: Oulu's ambition to reach all citizens shaped Aveiro's plan for families and seniors. Learning also ran between partners. Kolding and Aveiro learned from Płock's hackathon, and Oulu's own hackathon was inspired by three of its partners. Experience did not decide who learned from whom. A willingness to learn from less experienced partners, even from a position of leadership, proved a strength of the cooperation and not a courtesy. Several partners said the meetings in person mattered most for this. A city joining a network can expect to learn from every partner, and should plan time to see their work in person.

2. A small group with the power to decide.

An investment plan does not stall for lack of local enthusiasm. It stalls when ownership is unclear: when nobody can say who is accountable for turning commitment into delivery. Two things helped in this network. A small, committed local group served its city better than a large, passive one. And a group worked best when it included, from the first day, people with the power to decide and not only people who advise. Where both were true, local groups changed from committees that coordinate into places where policy is designed jointly. A city starting this work should prefer a few committed members to broad representation, and make sure some of them can take decisions.

3. Results build buy-in, though not automatically.

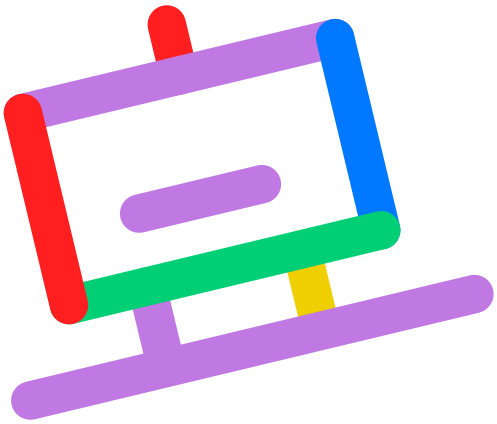
Showing results wins political and stakeholder support far more effectively than asking for it in advance. Płock showed this most clearly. Once teachers had tried STEAM in their classrooms and spoken about it in public, colleagues in the municipality and the mayor took an interest that no earlier request had produced. But the effect is not automatic. Good results do not always bring a political response. A city should present its results in public and directly to decision-makers, and not assume they will be noticed otherwise.

4. Monitor from the start, and evaluate to learn.

The network worked with monitoring, evaluation and learning (MEL). Cities monitored their tests from the beginning and evaluated them in order to learn. This does not require targets to be fixed in advance, because the approach is flexible by design. Indicators develop as evidence is gathered through the three stages, and testing helps a city decide what to expand, what to adapt and what to stop. The result is a better-evidenced route to a credible plan than setting targets before the work begins, as Płock describes in its own account above. A city can apply the same principle: start with small tests, record from the first day what it wants to learn, and set its indicators once it knows what the tests have shown.







5. Build funding from day one.

Funding and resources are what turn an investment plan into implementation. Whether a plan is carried out depends on addressing them creatively and collectively from the earliest stage. The Transferability Study recommended this in February 2025. In practice the network's work on funding began at the mid-point, in October 2025, and the Mid-Term Reflection confirmed that cities saw it as central. Who supports a plan matters as much as what it proposes. As the expert Jon Aguirre-Such observed: "Co-design with companies and stakeholders is not just a delivery mechanism but a legitimacy strategy. Funders respond not only to the proposition, but to who is visibly behind it." A city should discuss funding with its partners while it is still testing, and involve in the design those whose support a funder will look for.

6. Coordination is itself a deliverable.

How a small team of Lead Partner and experts ordered and shared its work shaped what each city could produce. The cities noticed two things. The experts complemented one another. And their assignments led the cities to do the work themselves, not to have it done for them. This was possible because all the support served one output, the investment plan. As Ian Graham put it: "Building an investment plan is about stitching it all together. There are always different bits, and the job is to make them one thing." Liat Rogel saw the same from her own work: "Even when I'm not thinking about narrative, like when I'm turning test actions into decisions, what you're really looking for in the end is a story. It's the story of the plan." Where outputs are more varied, parallel support may be enough. Coordination also has a cost. Leading a network while delivering within the same team strains capacity, and a lead partner needs time reserved for it. A network should plan and resource coordination as a task in its own right.

7. Sustaining change is harder than starting it.

Keeping a successful project alive is difficult. Priorities change and resources move elsewhere, even when a strategy is written into local plans, as Aveiro describes in its own account above. What remains in each city is less the investment plan than the two years of integrated, participatory work that produced it. The plan is a practical and necessary tool. The lasting result is the learning behind it: how a city thinks, relates to its stakeholders and works across departments. Alytus is an example. The local group it worked with in this network had been formed in an earlier URBACT network. A city should treat the relationships and ways of working it has formed as a result worth protecting when the project ends.



Five of these lessons were already recommendations in the Transferability Study of February 2025. The table compares what was recommended then with what two years showed.

Recommended in February 2025	Lesson	What two years showed
"Keep political champions on board", through visible results	Results build buy-in	Confirmed where results were shown in public. Not everywhere.
"Make every euro count from day one"	Build funding from day one	Work on funding began at the mid-point. Cities saw it as central.
"Empower stakeholders to lead the change", with shared ownership	A small group with the power to decide	Ownership needed decision-makers inside a small, committed group.
"Plan boldly, test smartly"	Monitor from the start	Testing served as a filter. Indicators were built as evidence came in.
"Break silos" across departments	Sustaining change	Early signs only: groups that worked apart now share a direction.

Looking back, the Lead Expert would change two things.

First, cities would benefit from working on funding and resourcing earlier. The topic was raised at the start and stressed its importance when cities formed their local groups, but the specific activities came later. Focused exercises at that stage would make sure partners think it through early and learn from what other cities have done.

Second, cities would benefit from earlier expert support to connect testing with their investment plans. The testing phase is when many questions and doubts emerge: what to monitor, how to make sense of the results, whether the test is addressing the original challenge, and what needs to change. Flexible troubleshooting spaces, available when cities need them, would provide a place to work through these questions and help keep the link between testing, learning and investment decisions in view.



V. Next steps

Future STEAM Cities does not end with the final investment plans. The plans were completed in June 2026. The network's final products, **a video animation** and **a booklet of practical recommendations**, were presented in July, and the project closed formally in August. In September the network presented its results to other URBACT cities at the City Festival in Nicosia. In October the European Week of Regions and Cities in Brussels offered a second occasion to share them.

In Nicosia, Aveiro and Kolding presented what they had learned to other European cities. The session asked what makes people choose to stay in a city, return to it or move there. It was an early sign of the readiness described in the last lesson: the evidence, reasoning and partnerships a city has built allow it to approach its next challenge better prepared.

What comes next differs from city to city. Each plan has its own horizon: Alytus to 2029, Aveiro to 2030, Oulu within a city strategy to 2035, Płock over ten years, and Kolding through activities repeated every year from 2027. Some cities have already taken the next step. Płock has applied to the European Urban Initiative to expand its STEAM work, on the basis of what it tested in the network. Aveiro has applied to the same programme to extend its technical infrastructure, including the Digital Twin. Aveiro also sees this network as the beginning of a wider one, which it intends to develop through existing European networks of STEAM educators and living labs. Alytus and Kolding have each joined bids for URBACT Action Networks with other consortia: Alytus with partners from its earlier Cities4Talent network, Kolding in a network on women in technical fields, which would fund its hackathon. No bid continues Future STEAM Cities as a network, but each continues part of its work. Oulu has yet to take its next step. The city plans to seek European funding to extend the Future Classroom beyond its first pilot, but has not decided how.

Cities outside the network that are interested in STEAM will find Płock, Aveiro, Alytus, Kolding and Oulu worth following after this report. Their work continues, and each will develop differently. Their two years of testing, adapting and learning are summarised in a booklet of practical recommendations, a direct starting point for any city that wants to begin. The webinar reflections in Section III offer another.



VI. Conclusions

Five cities began with the same question and arrived at five different plans. Each brought separate activities together into a single programme with a name and connected it to a strategy the city had already adopted. The plans differ in form: some build on activities that take place every year, others on programmes lasting several years. Their initial intentions also changed as cities came to understand the modules and their own resources better. **This is what adaptation meant in practice: selecting and reshaping, not copying.**

What the partners adapted from Aveiro was the part of its model centred on people – Tech Labs, coding, contests and hackathons, Open Days, artistic residencies and bootcamps. They did not adapt its technology infrastructure. This difference reflects how the two programmes fund cities. Aveiro built its model with the investment budget of an Urban Innovative Action; an URBACT network provides no equivalent budget. The partners were therefore adapting an innovation created with far greater means, and focused on the elements that did not depend on infrastructure.

What URBACT funds is a way of working, grounded in the values of collaboration, integration, experimentation and putting people at the centre of policymaking. Its value extends beyond the funding cities receive. It does not take the form of large investment projects or physical infrastructure. **The transformation is in people and in a city's soft infrastructure: its relationships, its skills and its ways of working**. Cities learn to work with stakeholders, base decisions on evidence they have tested and build their own capacity to act. In doing so, they also become more confident about joining European projects. Four of the five cities have since applied for European funding: Płock and Aveiro to the European Urban Initiative, and Alytus and Kolding through URBACT Action Network bids.

The network's evidence comes from testing. Each city can show what it tested, who took part and what it learned, and each plan is designed around that learning. What does not exist yet is evidence from the plans themselves, because they have not been implemented. It is therefore too early to say what effect they will have on learners, or whether STEAM leads people to stay. **Yet one change is already visible. Schools, companies, cultural institutions and municipalities that previously worked separately now have reasons, and regular occasions, to work together.** We will keep an eye on the cities' STEAM stories in the coming years, and look forward to what they will show.

STEAM itself proved to be less a programme than a way of preparing people for challenges that do not yet have a name. Artificial intelligence is the clearest example. It is already changing the work young people will do. **The contribution of the arts to STEAM – creativity, critical thinking and ethics – becomes important here: these capabilities allow people not only to use technology, but to question and shape it. The network did not test this directly, but it became part of how the cities framed their work.**

As Marjo Määttä of Oulu put it in her most recent conversation with the Lead Expert:

"We don't know what kind of world our students will face in thirty years. We don't even know the new fields they are going to work in. When I was the age my students are now, we didn't have mobile phones and we didn't talk about coding. We can't be teaching our future citizens to occupations today we do not know what they are, but we can teach them STEAM skills, that include critical and creative thinking, problem solving, risk taking, testing, evaluation, being brave and innovative. It's not tied to certain occupations. It's tied to surviving in the future world."

Disclaimer: Artificial intelligence tools were used in preparing this report: to check the text against the network's source documents, to review its structure and to edit its language. The content, analysis and conclusions are those of the Lead Expert, who reviewed and approved all AI-assisted text.

Annex 1 — Tools used across the network

Adapt: the Testing Loop and its tools

TOOL	WHAT IT DOES
Testing Loop	The network's core four-stage framework for any testing action: Plan & Involve → Test & Observe → Reflect & Learn → Adapt & Integrate
Test & Involve Worksheet	Defines what to test, why it matters now, and who needs to be involved
Testing Canvas	Designs a test in detail — what happens, when, with whom, and what it aims to learn
SMART Objectives	Sets clear goals, timelines and outcomes for a city's first testing action
SWOT analysis	Reviews Aveiro's practices against local context to generate a shortlist of pilot ideas

Adapt: other tools

TOOL	WHAT IT DOES
Letters from the Future	Each city writes from the year 2030, as if its STEAM ambition had already succeeded
Storyboard of Our ULG Journey	Maps a local group's journey across four frames: where it started, where it stands now, its first real test, and how it hopes the story ends
Impact–feasibility mapping	Weighs a shortlist of pilot ideas against what they'd actually achieve and how realistic they are to deliver
FSC Testing Toolbox	A shared, evolving resource capturing the evaluation tools and approaches used across all five cities
Speed-networking peer review	A structured, fast-paced format for pitching a plan and receiving immediate peer feedback
Investment Plan Canvas	Captures testing insights and connects them to long-term planning, governance and funding

Prepare for Reuse

TOOL	WHAT IT DOES
Investment Logic framework	Pressure-tests who is accountable, where the money comes from, and why public funding is justified
Narrative Canvas	Shapes a city's investment story into a clear, consistent narrative
Funding & Resourcing cards	A card-based exercise for exploring realistic funding pathways
M&E / MEL framework	Formalises monitoring, evaluation and learning for each plan's own evidence section
Three-line investment proposition	Compresses a city's entire case into what a funder could read in thirty seconds
Traffic-light peer review	A six-dimension structured review — local context, objectives, stakeholders, M&E, implementation readiness, and visibility of Lead Partner modules

Annex 2 — Glossary

TERM	WHAT IT MEANS
Action Network	A type of URBACT network in which partner cities carry out actions together, not only plan them.
Ad hoc expert	A specialist brought into an URBACT network for a short, specific piece of work.
Continuity Plan	The plan of the Lead Partner, Aveiro, to sustain and develop its original innovation. Treated in this report as an investment plan.
Digital Twin	A digital model of a real system, such as a city's mobility, used to follow it and to anticipate how it will behave.
European Urban Initiative (EUI)	The European Union programme that funds innovative actions in cities. It succeeded Urban Innovative Actions.
Innovation Transfer Network	An URBACT network in which a city that carried out an Urban Innovative Action transfers it to partner cities in three stages: Understand, Adapt and Prepare for Reuse.
Investment plan	The document in which each partner city sets out how it will embed and fund what it adapted.
KPI	Key performance indicator: a measure used to follow progress towards a target.
Lead Expert	The expert who supports an URBACT network from start to finish.
Lead Partner	The city that leads an URBACT network. Here, Aveiro.
Living Lab	A real urban setting in which researchers, start-ups and companies develop and test new technology.
MEL and M&E	Monitoring, evaluation and learning: following an action from its start and evaluating it in order to learn. M&E is monitoring and evaluation.
Mid-Term Reflection	A structured pause at the mid-point of a network to review progress and adjust the roadmap.
Module	One of the practices that make up Aveiro's model, such as Tech Labs or the bootcamp. The modules are grouped in four axes.
Transnational meeting	A meeting in person of all the partners, for peer learning, joint work on tools and strategic exchange.
UIA	Urban Innovative Actions, the European programme that funded Aveiro STEAM City from 2018 to 2022.
URBACT	The European programme that supports cities in working together on sustainable urban development.
URBACT Local Group (ULG)	A local group of stakeholders that supports the design and adaptation of the innovation in each partner city.

thank you