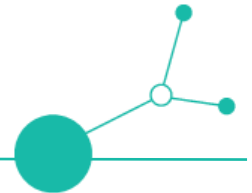


Pilot Run Reports

D 2.2.1





PILOT RUN REPORTS - PP5

Project Partner: PP5 NOI Techpark Südtirol / Alto Adige – FabLab / Maker Space, Bolzano (Italy)

Executive Summary

This report documents the design, implementation and evaluation of the pilot runs delivered by PP5, NOI Techpark Südtirol/Alto Adige, within Work Package 2 (Activity 2.2) of the DiSTT project. Unlike a single repeated format, PP5 deliberately piloted a broad catalogue of re/upskilling programs, in order to test which formats work best for the regional target group of employees, jobseekers, trainees and artisans from micro-enterprises and SMEs.

Between September 2025 and April 2026, PP5 delivered 18 pilot runs of six distinct programs in two languages (Italian and German), totalling 241 delivered training hours and reaching 107 participants. One further run was cancelled for lack of registrations. The catalogue comprises four structured LEARN IT! skills courses (CAD Basics, Arduino & Electronics, CAM & CNC milling, CAE Pro) and two project-based MAKE IT! workshops (Tool-Tray, Smart Charging Station). Against the committed targets of 5 runs, 300 hours and 80 participants, PP5 therefore delivered more than three times the number of runs, 80 % of the committed hours and 134 % of the participant target.

Evaluation results are consistently positive. Across the nine runs with complete pre/post datasets, mean self-rated technical competence rose from 2.04 to 3.45 on a five-point scale, a gain of 1.41 points; in the comparable LEARN IT! runs, transversal competences rose from 3.18 to 4.14. Across all 18 runs, mean overall satisfaction was 4.65 out of 5. The strongest gains occurred exactly where each course concentrated its hands-on content, and in courses whose participants started from a very low technical baseline.

The piloting also produced clear structural findings, the most consequential of which is quantified across the whole catalogue: 223 registrations resulted in 107 actual participants, an attendance rate of 48 %. Free courses suffer measurably from no-shows, especially on specialised or advanced topics; stated prerequisites must be verified rather than assumed; and workshop scope must match the available hours. Acting on these findings, PP5 has retained and refined its four strongest formats, and will discontinue the Charging Station workshop in its present form, redistributing its content. A transnational partner residency visit by PP4 (brigg Digitales Gründerzentrum) took place during the Tool-Tray workshop in November 2025.

1. Introduction

DiSTT addresses digital skills gaps and supports the development of transferable re/upskilling programs connected to FabLabs, makerspaces, education providers and employers. PP5 contributes the Maker Space / FabLab at NOI Techpark in Bolzano, a practice-oriented environment in which learners work directly with digital fabrication equipment and take home a tangible result.

The DiSTT skills-gap analysis for South Tyrol identified a specific regional situation: a dense fabric of micro-enterprises, small companies and craft businesses, many of them in geographically peripheral areas, whose staff have limited access to structured digital-fabrication training. The pilots therefore addressed employees, jobseekers, trainees and artisans who want to re- or upskill in order to work more effectively within their organisations.

Rather than repeating one intensive format, PP5 chose to pilot a varied catalogue. The central question was which subjects, durations and delivery formats actually reach and retain this target group – a question that can only be answered by testing several formats side by side, in both regional languages.



1.1 Programme overview

All pilots were delivered in person at NOI Techpark Südtirol in Bolzano (Maker Space Main Lab, Training Room and seminar rooms), in Italian or German, and were free of charge for participants. Two complementary program families were piloted:

- **LEARN IT!** – structured skills courses that build a defined competence from the ground up: CAD Basics (Autodesk Fusion, 32 h), Arduino & Electronics (8 h), CAM & CNC milling (32 h) and CAE Pro / FEM simulation (14-28 h). Formats range from single days to two-week blocks.
- **MAKE IT!** – short, project-based workshops (4-8 h) in which participants build a finished object: a laser-cut and 3D-printed tool tray dimensioned to their own workplace items, or a smart smartphone charging station combining wood, 3D printing and Arduino.

Courses were offered at beginner level (CAD Basics, Arduino & Electronics, Tool-Tray), pre-advanced level (Charging Station) and advanced level (CAM & CNC, CAE Pro), the latter with a stated CAD or Arduino prerequisite.

1.2 Learning outcomes

Across the catalogue, participants were able to:

- Create 2D sketches and 3D models in a professional CAD system and prepare files for production.
- Operate the Maker Space equipment safely and independently, including 3D printers, laser cutters and CNC milling machines.
- Plan a machining process, define toolpaths, run a CAM simulation and produce a part in wood or metal.
- Build and test electronic circuits, wire sensors and actuators, and program an Arduino microcontroller.
- Run a FEM simulation, interpret the results and derive design recommendations.
- Take a project from idea through digital design and fabrication to a finished, functional object.
- Judge which digital tools and Maker Space technologies are useful for their own work, and approach unfamiliar equipment with confidence.

2. Methodology

The evaluation followed a mixed-method, practice-oriented approach, combining quantitative pre- and post-course self-assessment with open participant feedback and trainer observations. Because PP5 piloted several different programs rather than one repeated format, the reporting unit is the individual pilot run: each run was documented in its own report using the common project template, and results are synthesised across runs in this deliverable.

2.1 Data collection

Participants were recruited through NOI Techpark's established channels – the newsletter, the website and the Maker Space community – and registered online. Each pilot applied the same evaluation design:

- A pre-assessment completed before the course, with Likert-scale items (1-5) on technical competences specific to that course, plus a common set of transversal items covering autonomy in learning new software, independent troubleshooting, awareness of useful digital tools, and awareness of the Maker Space. An open question captured expectations.
- A post-assessment completed at the end, mirroring the pre-assessment item by item, plus four satisfaction ratings (overall satisfaction, perceived learning, likelihood of applying the skills in own



projects, likelihood of returning to the Maker Space) and two open questions on results achieved and further suggestions.

Questionnaires were administered through Microsoft Forms in the language of the course. Trainer observations during practical work and the finished objects produced by participants complemented the questionnaire data.

2.2 Analytical approach and quality considerations

Results were analysed per run by comparing aggregate pre- and post-scores, and then synthesised across runs. Three quality considerations apply and are stated openly:

- Group sizes are small. Individual runs range from 1 to 8 participants, so single-run figures indicate direction rather than statistical significance; aggregated figures across runs are more robust.
- Comparisons are made at group level. Questionnaires were anonymous and not individually matched, so pre- and post-response groups are compared rather than paired individuals. In a few runs the number of pre- and post-responses differs slightly, which is noted in the respective run report.
- The instrument evolved. The assessment tools were refined during the piloting period and applied consistently from January 2026 onward; the early run reports therefore document entry and exit profiles descriptively rather than as directly comparable means. Quantitative pre/post figures in Section 5 are based on the nine runs with complete comparable datasets (Pilots 11-19).

Two program families also use different second-section items: the LEARN IT! courses ask self-efficacy questions, whereas the MAKE IT! workshops ask attitude and perception questions, including one deliberately incorrect statement about machine access. These are therefore reported separately and never merged into a single average.

Signed attendance lists for all runs are retained by NOI Techpark. They are not appended to this narrative report because they contain personal data, but they are available for project verification if required.

3. Pilot Run Data

3.1 Delivery scope and achieved results

Under Activity 2.2, PP5 committed to 5 pilot runs, 300 training hours and 80 participants. Delivery against these targets is as follows:

Indicator	Committed	Delivered	Comment
Pilot runs	5	18	Target exceeded more than threefold. One further run was cancelled for lack of registrations.
Training hours	300	241	80 % of target, delivered as a larger number of shorter, more targeted formats.
Participants	80	107	Target exceeded (134 %), from 223 registrations.

PP5 delivered more than three times the committed number of pilot runs and exceeded the participant target by a third, while reaching 80 % of the committed training hours. The deliberate strategy of a broad catalogue – six programs, each in two languages, from 4-hour workshops to 32-hour courses – traded average run length for coverage and comparability: more runs and more participants, at a somewhat lower total hour count than a few long courses would have produced. Given that the target was met on runs and participants, and that the resulting evidence covers six programs rather than one, PP5 considers the trade-off justified.



The relationship between registrations and attendance is the single most important operational finding of the piloting phase. Across the 18 delivered runs, 223 registrations produced 107 participants – an attendance rate of 48 %. The pattern is uneven: courses with a short lead time and a broad topic came close to capacity, while specialised or advanced topics lost most of their registrations (Pilot 16: 1 of 3; Pilot 18: 2 of 12). One run (Pilot 10) had to be cancelled outright because registrations never reached a viable threshold. Section 7 sets out the countermeasures adopted.

3.2 Overview of PP5 Pilot Runs

The complete portfolio is shown below, including the one run that had to be cancelled. Registration figures are given alongside attendance, since the gap between the two is a central finding of this piloting phase.

Pilot	Date	Program	Lang.	Hours	Regist.	Particip.
1	15-23 Sep 2025	LEARN IT! CAD Basics	DE	32	9	8
2	29 Sep-7 Oct 2025	LEARN IT! CAD Basics	IT	32	18	8
3	17 Oct 2025	LEARN IT! Arduino & Electronics	DE	8	13	8
4	4 Nov 2025	LEARN IT! Arduino & Electronics	IT	8	29	10
5	11+18 Nov 2025	MAKE IT! Tool-Tray	IT	5	15	8
6	13-21 Nov 2025	LEARN IT! CAE Pro	IT	28	11	6
7	28 Nov 2025	MAKE IT! Tool-Tray	DE	5	10	4
8	5+12+22 Dec 2025	MAKE IT! Charging Station	IT	8	11	5
9	9 Dec 2025	LEARN IT! Arduino & Electronics	IT	8	7	7
10	16 Dec 2025	MAKE IT! Charging Station	DE	—	1	cancelled
11	29 Jan 2026	LEARN IT! Arduino & Electronics	IT	8	6	2
12	5 Feb 2026	LEARN IT! Arduino & Electronics	DE	8	11	8
13	23 Feb-3 Mar 2026	LEARN IT! CAD Basics	IT	32	15	7
14	17+19 Mar 2026	MAKE IT! Tool-Tray	IT	4	16	6
15	16, 23, 24 Mar 2026	LEARN IT! CAM & CNC milling	IT/DE	24	15	6
16	20+27 Mar 2026	LEARN IT! CAE Pro	IT	14	3	1
17	31 Mar 2026	MAKE IT! Charging Station	IT	6	14	7
18	14 Apr 2026	MAKE IT! Charging Station	DE	6	12	2
19	21 Apr 2026	MAKE IT! Tool-Tray	DE	5	8	4
Total		18 pilot runs delivered		241	223	107

Table 1. PP5 pilot runs, September 2025 - April 2026. Participant figures are based on the signed attendance lists; totals refer to the 18 delivered runs.



4. Pilot Implementation

4.1 LEARN IT! – structured skills courses

The LEARN IT! courses follow a progressive structure from fundamentals to independent application. CAD Basics is delivered as four days in two blocks, which gives participants a week in between to consolidate 2D sketching, 3D modelling and file preparation; it produced the strongest technical gains of the series. Arduino & Electronics is a single hands-on day covering microcontrollers, circuit design, sensors and actuators.

The advanced courses use a more elaborate design. CAM & CNC milling ran over three days: a shared fundamentals day in Italian covering CAM and the basics of subtractive machining in both wood and metal; homework in which each participant prepared one CAM job for metal and one for wood; and then two machine days with the group split by language, rotating between the metal and the wood CNC mill so that every participant was taught safe operation of both machines and produced one to two of their own prepared jobs. CAE Pro was reduced from its first, four-day edition to a focused two-day FEM course, dropping the CFD component.

4.2 MAKE IT! – project-based workshops

The MAKE IT! workshops are built around a single finished object. In the Tool-Tray workshop, participants bring items from their own workplace so that the tray is dimensioned and subdivided to real needs, then design, laser-cut and assemble it. Two delivery variants were tested: two short sessions with the 3D prints running in between, and a single continuous afternoon with the standard parts pre-printed and an optional “design your own variant and collect it later” path. Both work; the second produced the highest satisfaction of the entire series.

The Charging Station workshop combined woodwork, 3D-printed parts, circuit building, soldering and Arduino programming with an IoT status indicator. It was piloted in three configurations – a three-session Italian run, a single Italian session and a single German session – and is the one format where scope could not be reconciled with the available time (see Section 7).

4.3 Pedagogical approach

All pilots follow a learning-by-doing structure: short inputs and demonstrations are immediately applied in guided practical work, and every course ends with a result the participant has produced themselves. Assessment is formative throughout, through trainer feedback and iterative testing.

Mixed entry levels are addressed through graded task complexity: a common core exercise that beginners can complete and consolidate, plus harder variants of the same task for more experienced participants. This was applied explicitly in the German Arduino run with a full group of eight and kept the whole group engaged without holding anyone back. Group sizes are deliberately small, particularly for machine-based courses where the number of workstations is the binding constraint.

5. Evaluation

5.1 Pre- and post-assessment results

Technical self-assessment improved in every run with a complete dataset. Across the nine runs, the mean rose from 2.04 before to 3.45 after the course, a gain of 1.41 points on the five-point scale. The pattern is consistent: the largest gains occur where participants started from a very low baseline and practised the skill intensively, and the smallest where the course either began from an already moderate baseline or could not cover its planned content.

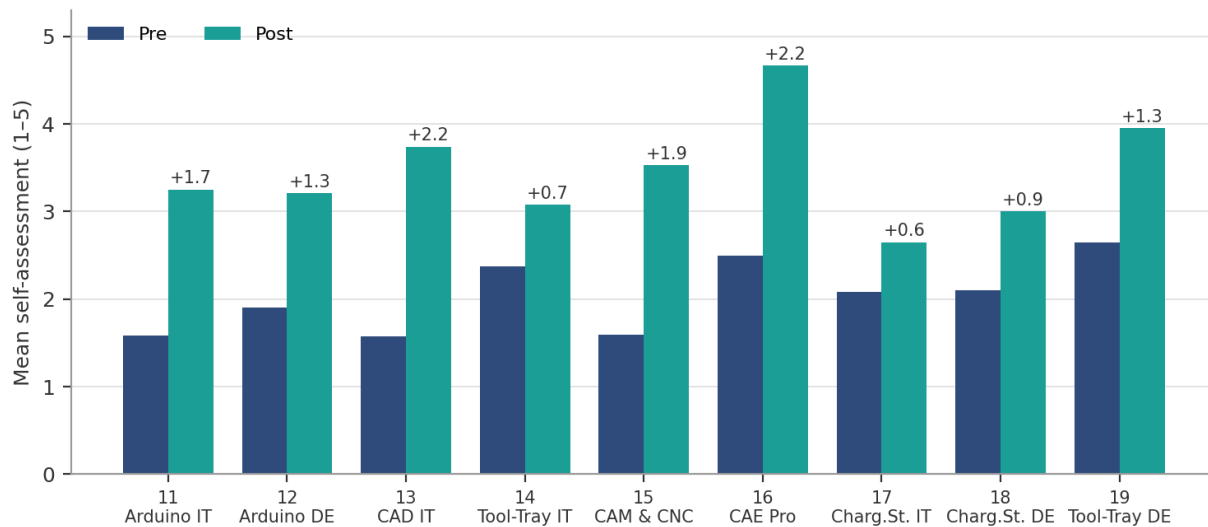


Figure 1. Mean technical self-assessment before and after each pilot run (Pilots 11-19).

Pilot	Program	Pre	Post	Change	Interpretation
11	Arduino & Electronics (IT)	1.58	3.25	+1.67	Very strong increase
12	Arduino & Electronics (DE)	1.90	3.21	+1.30	Strong increase
13	CAD Basics (IT)	1.57	3.74	+2.17	Very strong increase
14	MAKE IT! Tool-Tray (IT)	2.37	3.08	+0.71	Clear positive development
15	CAM & CNC milling (IT/DE)	1.59	3.53	+1.94	Very strong increase
16	CAE Pro (IT)	2.50	4.67	+2.17	Very strong increase (n = 1)
17	MAKE IT! Charging Station (IT)	2.08	2.65	+0.57	Moderate; core content not covered
18	MAKE IT! Charging Station (DE)	2.10	3.00	+0.90	Clear positive development
19	MAKE IT! Tool-Tray (DE)	2.65	3.95	+1.30	Strong increase

Table 2. Technical competence development per pilot run.

The two extremes are instructive. CAD Basics and CAE Pro produced the largest gains (+2.17 each): both are software-based courses with a clearly defined skill set and a very low entry level. The Italian Charging Station run produced the smallest gain (+0.57), which is a direct consequence of the format problem documented in Section 7 – the IoT and programming core had to be dropped, and the assessment items covering exactly that content barely moved.

5.2 Technical and transversal development

Transversal competences were measured with an identical four-item set in the LEARN IT! courses. They started considerably higher than the technical items and improved by a smaller margin, rising from 3.18 to 4.14 across the five comparable runs. This is the expected pattern: participants who sign up voluntarily for a digital-fabrication course already believe they can learn new software, while their concrete technical skills are genuinely low.

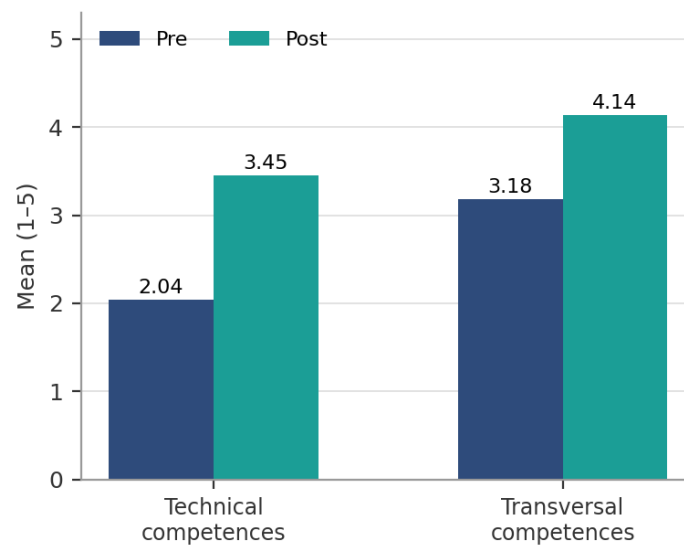


Figure 2. Aggregate technical and transversal competence development.

Within the transversal items, the clearest movement was in awareness of which digital tools support prototyping and of what the Maker Space can be used for. In the MAKE IT! workshops, whose second section measures attitudes instead, a consistent and intended effect was observed on the deliberately incorrect statement that the laser cutters may be used only by Maker Space staff: agreement fell in every run in which it was measured, most strongly in the German Tool-Tray run (from 2.3 to 1.3). Participants leave understanding that they may operate the machines themselves – a precondition for returning to the Maker Space independently.

5.3 Participant satisfaction

Satisfaction was high and stable across programs. Across all 18 delivered runs, mean overall satisfaction was 4.65 out of 5, with individual runs ranging from 4.0 to 5.0.

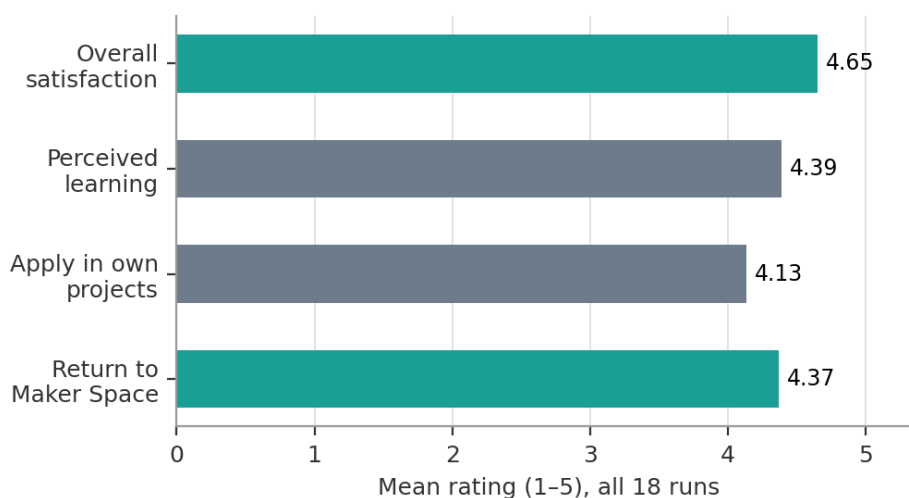


Figure 3. Mean satisfaction ratings across all 18 delivered pilot runs.

Perceived learning (4.39) and likelihood of returning to the Maker Space (4.37) were similarly high. The lowest of the four items was consistently the likelihood of applying the skills in participants' own projects (4.13). This is a meaningful signal rather than a weakness of delivery: an introductory, mixed-background



audience leaves confident and satisfied, but not all participants have a concrete next use case. It is the main argument for offering follow-up and project-oriented formats to graduates of the beginner courses.

5.4 Participant feedback

Open feedback reinforces the quantitative findings. Participants most frequently described gaining a working command of the fundamentals – understanding Arduino and circuits through hands-on practice, designing 2D and 3D objects, preparing a CNC machine and finally seeing the accessibility of FEM simulation. Several described the experience in terms of discovery, reporting that a whole new and highly creative field had opened up, or that they had gained a concrete sense of how to turn an idea into a physical object.

Trainers were praised repeatedly, in both languages, for explaining complex topics understandably and for the supportive atmosphere in the lab. Requests concentrated on two things: advanced follow-up courses, particularly for Fusion and CAM, and more time or clearer support for the programming content in the Charging Station workshop. Both have been taken up in the recommendations.

5.5 Instructor observations

Trainer observations confirmed the questionnaire results and added information the surveys cannot capture. Small groups allowed highly individualised support: in the Italian Arduino run with two participants, both progressed to wiring and testing circuits autonomously. Larger groups worked equally well where graded exercises were prepared, as in the German Arduino run with eight participants.

In the machine-based courses, observation revealed the practical consequence of unmet prerequisites: participants who lacked the assumed CAD basis could not prepare their own CAM jobs, and the quality of the resulting parts varied accordingly – some were produced perfectly, others required substantial rework on the machine. Observation of the finished objects proved to be a reliable indicator of competence that self-assessment alone does not provide.

5.6 Effective assessment tools

The combination that proved most effective was a short mirrored pre/post questionnaire, trainer observation during practical work, and the finished object itself as evidence of applied competence. Keeping the item sets stable per course made runs comparable, and the four satisfaction items gave an early signal of format problems: the drop in the “apply in own projects” rating flagged the Charging Station scope issue before it was fully articulated in the qualitative feedback.

Two improvements are recommended for future measurement. An anonymous participant code would allow paired pre/post analysis without collecting personal data, which matters given the small group sizes. A short structured trainer observation checklist – covering safe machine operation, task completion, independent troubleshooting and the functionality of the finished object – would formalise evidence that is currently captured narratively.

6. Involvement of Other Project Partners

Transnational exchange in PP5's piloting took two forms: a partner residency visit and the shared evaluation framework.

A residency visit took place during the MAKE IT! Tool-Tray workshop in German (Pilot 7, 28 November 2025), which was attended by Max Hofedank of PP4, brigk Digitales Gründerzentrum (Ingolstadt, Germany). Observing the workshop in delivery allowed direct comparison of two rather different partner approaches: PP5's short, object-centred workshop format for SME staff and artisans, and PP4's longer, mentoring-based work with SMEs and hackathon teams. The exchange focused on how a compact makerspace format can produce a tangible result within a few hours, on group size and equipment logistics, and on the recruitment



of SME participants — a challenge both partners share, and which PP4 also documents in its own pilot run report.

Beyond the visit, the main element shared across the partnership was the jointly developed evaluation framework. PP5 applied the common pre/post assessment logic and satisfaction items consistently across its catalogue, adapting only the course-specific technical items. Because PP5 piloted six different programs, this produced a broad comparative dataset which forms PP5's contribution to the joint evaluation in Activity 2.3 (Deliverable D.2.3.1), and which complements the partners who tested a single format repeatedly.

PP5 remains available to host further partner visits at the Bolzano Maker Space in the remaining project period, and considers the exchange of concrete formats — rather than of general experience — the most productive form of transnational cooperation in this work package.

7. Best Practices, Challenges and Lessons Learned

7.1 What worked well

- A tangible result in every course: participants leave with a finished object or a part they produced themselves, which sustains motivation and makes progress visible.
- Graded task complexity, which allows beginners and more experienced participants to work productively in the same group.
- Block structures for longer courses: splitting 32 hours into two two-day blocks gives participants time to absorb the material between blocks and produced the strongest technical gains.
- Language rotation in machine courses: splitting a group by language and rotating between two machines gave every participant supervised time on both.
- Using the time between sessions for machine work: scheduling 3D prints between two short sessions removes waiting time from the workshop itself.
- Delivering the same course in Italian and German, which made the offer accessible across both regional language groups.
- A mature, well-rehearsed delivery routine in the established formats, visible in consistently high satisfaction.

7.2 Challenges

- No-shows on free courses. This was the single most persistent problem and is now quantified: 223 registrations across the 18 delivered runs produced 107 participants, an attendance rate of 48 %. The effect is strongest on specialised and advanced topics — 1 of 3 registrants attended the second CAE Pro run and 2 of 12 the German Charging Station run — and one run (Pilot 10, Charging Station DE in December 2025) had to be cancelled because registrations never reached a viable threshold. Long intervals between registration and delivery increase the risk further.
- Unmet prerequisites. The advanced courses state a CAD or Arduino prerequisite, but it was not verified. In CAM & CNC this meant some participants could not prepare their own CAM jobs; in the Charging Station workshops it made the electronics part harder to deliver.
- Scope versus available time. The Charging Station workshop combined too much content for its format: the Italian single-session run overran and still had to drop the IoT theory and Arduino programming, while the German run made room for the programming at the cost of the hands-on focus that participants valued most.



- Attrition between sessions in split formats. Where a workshop ran over two dates, participants dropped out between them – in the Italian Tool-Tray run, six attended the first session and five the second.
- Incomplete early documentation. Participant headcounts were not recorded individually in the first run reports, which complicates cumulative reporting against the participant target.

7.3 Lessons learned

- Free of charge does not mean low commitment cost for the organiser: registration must be converted into attendance actively, through confirmation and reminder steps, a short lead time and a managed waiting list.
- A stated prerequisite is only effective if it is checked. Advanced formats should either verify prior knowledge at registration or point applicants to the corresponding beginner course first.
- Small groups are a feature, not a failure, in machine-based courses – but only if the format is designed for them. The value of a run with two participants lies in individualisation, not in output numbers.
- Scope must be cut to fit the hours, and the cut must be made deliberately. Where it was not, the content that fell away was the core content of the project rather than an optional extra.
- Short, object-centred workshops are the most robust format for this target group: they fit into a working day, need no prerequisites and consistently produce the highest satisfaction.
- Piloting a varied catalogue rather than one repeated format produced comparative evidence about formats and audiences that a single-format pilot could not have generated.

7.4 Recommendations for scaling and transfer

- Retain the four proven formats – CAD Basics, Arduino & Electronics, CAM & CNC milling and the MAKE IT! Tool-Tray – as the core catalogue.
- Discontinue the Charging Station workshop in its current form and redistribute its content: keep the making (housing, 3D-printed parts, assembly, basic wiring) as a short MAKE IT! workshop, and move the IoT and programming content into the Arduino & Electronics course, where it has the time and the right audience.
- Introduce a standard registration procedure with prerequisite check, confirmation and reminder, plus a waiting list, for all free courses.
- Build explicit progression paths: from CAD Basics to CAM & CNC and CAE Pro, and from Arduino & Electronics to project-based MAKE IT! workshops, and promote them to graduates of the preceding course.
- Standardise the pre-printing and “collect your custom part later” model for single-session workshops involving 3D printing.
- Adopt anonymous participant codes and a short trainer observation checklist as standard evaluation practice.

8. Stakeholder Report

8.1 Regional and EU relevance

At regional level, the pilots connect NOI Techpark's Maker Space infrastructure with the South Tyrolean economy, which is dominated by micro-enterprises, small companies and craft businesses. For these employers, sending staff to a multi-week external training is rarely feasible; short, practical formats delivered locally and in the participant's own language lower that barrier substantially. The bilingual



delivery is a specific requirement of the region and proved essential: several courses only reached a viable group size because they were offered in both languages.

At EU level, the PP5 experience contributes evidence on a question relevant well beyond South Tyrol: how open digital-fabrication facilities can serve SMEs whose staff cannot be released for long training. The findings are transferable – modest prerequisites, short formats, a tangible outcome, and small supervised groups on machines – provided a comparable equipment base and trainer competence are available. The negative findings are equally transferable, in particular the measurable effect of no-shows on free offers and the need to verify prerequisites.

8.2 Key recommendations for policymakers and innovation stakeholders

- Support short, locally delivered digital-fabrication formats that are compatible with the working schedules of micro-enterprises and SMEs.
- Fund multilingual delivery in bi- or multilingual regions; language accessibility directly determines whether the target group can be reached.
- Recognise makerspaces and FabLabs as complementary learning environments within regional skills ecosystems, alongside formal vocational training.
- Enable modular progression from introductory workshops to advanced technical specialisation such as CNC machining and simulation.
- Take account of the fact that free provision alone does not secure participation: funding models should allow for commitment mechanisms and active participant management.
- Encourage common evaluation instruments across programmes, so that formats can be compared while participant data remain protected.

9. Conclusion and Next Steps

PP5's piloting was extensive and, overall, successful. Eighteen pilot runs of six distinct programs were delivered in two languages over eight months, reaching 107 participants in 241 training hours and raising them from consistently low technical baselines to solid working competence – a mean gain of 1.41 points on a five-point scale – with mean overall satisfaction of 4.65 out of 5. The commitment was exceeded more than threefold on runs and by a third on participants.

Just as importantly, the broad-catalogue approach produced clear evidence about which formats work. CAD Basics, Arduino & Electronics, CAM & CNC milling and the MAKE IT! Tool-Tray are mature, repeatable and well matched to the regional target group. The Charging Station workshop is not, and will be discontinued in its present form; its components will be redistributed. The structural lessons on no-shows and prerequisites apply to the entire catalogue and are being implemented in the registration process.

One item remains to complete the evidence base for this deliverable: the transfer of the complete pre/post datasets into the joint evaluation under Activity 2.3, where PP5's six-programme comparison complements the partners who tested a single format repeatedly.

9.1 Inputs for further implementation (A3.3)

The PP5 pilots contribute a tested, modular course catalogue to the DiSTT Digital Skills Transformation Toolkit, together with the practical knowledge required to run it. For each retained format the transferable package comprises the course concept and learning outcomes, the schedule and block structure, equipment and room requirements, the graded exercise sets, the bilingual course descriptions used for recruitment, and the course-specific pre/post assessment instrument.



Beyond the individual courses, PP5 contributes two pieces of implementation knowledge of general value: a set of design rules for short makerspace formats (pre-printing strategy, scheduling of machine time, group size limits per machine, graded task complexity for mixed levels), and a documented account of the participation problem on free courses together with the countermeasures adopted. Both are directly reusable by other FabLabs and training providers taking up the DiSTT programmes.