



FabLabNet

DT1.3.4 Exchange on Fab Lab

Management practices and Tools

Report by PP2

Final Report
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1. Introduction

On the 28th and 29th of June 2017 PP2 organized a knowledge exchange visit for the project partners in Vienna. Eight of the nine partners joined the meeting. The content of the missing partner PP3 Fab Lab Budapest was collected online and the project partners were also asked to reflect and check their workshop input that is documented below online too.

Program:

In a talk on management practices the co-founder Karim Jafarmadar gave the partners some insights on the lab organization, business model, the legal structure and trainings at Happylab. This was followed by Q&A's from the partners and a Lab tour.

In a next step we had a workshop held by an expert on Fab Lab management practices Raphael Luba. He is a developer at Fabman, a tool that helps to manage shard spaces. This tool is also used by Happylab. The aim of the workshop was to collect, share and reflect tools, best practices and problems regarding the daily management practices of the project partners.

The outcome of the workshop is documented below.



2. Workshop outcome

Partner	Who are you? How do you...? machines, members, square meters, access, financing	What kind of tools are you using? Manage members & billing, handle reservations, do trainings, workshops, keep the lab safe, track usage, maintenance?	What are your good experiences? What works really well, that you would recommend other labs?	What are your biggest pain points and what swallows your daily business?
PP1 IT Muse	<p>Small lab</p> <p>financed by museum</p> <p>fee-based membership</p> <p>offers: teaching children, exhibition, service for members and enterprises, team building for companies</p> <p>opening hours are limited to museum hours (10-18)</p> <p>CNC just internal use</p> <p>2 volunteers, 1 technic, Average 1 member visiting per day</p>	<p>Reservation via mail</p> <p>google calendar, users pay at museum desk</p> <p>Eventbrite and fb</p> <p>website for promotion events and workshops</p> <p>Tracking system for users at cashing desk for the lab - how many people came in.</p> <p>trainings for 3d and laser safety course and stuff there</p>		<p>used tools are not efficient but for amount of people it is fine</p> <p>time eaters = last minute jobs asked by MUSE, on demand help for members</p>



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PP3 HU Fab Lab Budapest	<p>We are a hybrid lab: we function as a traditional Fab Lab and also a manufacturing service provider for other companies. Therefore both our business and operational model is dual. We have 3 full time employees and 1 trainee who is giving most of our workshops.</p> <p>We have a membership system, but our users prefer most of the time usage based fees.</p>	<p>Presently our Fab Lab has a lack of management tools. For event management we use Facebook and Eventbrite. For billing we have an offline program which also does inventory and consumables management, but it was mandatory for our bookkeeper it is not the best tool for a Fab Lab. For daily management we use Google calendar and Spreadsheets</p>	<p>Regular monthly based demo days; divided workshops for machine operation and thematic creation.</p>	<p>Present structure and management tools do not allow high efficiency. We are not using our time well. Also we spend too much time individually with our users and this brings an unplannable factor.</p>



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PP5 CZ Brno University of Technology	<p>130qm</p> <p>users are students of the department, last year opened for bachelor and other departments</p> <p>users in general: 40 students from all university and 30 from their department</p> <p>equipment for research is also shared with fab lab, ne fees for students</p>	<p>Customized system for management and door opening</p> <p>machine reservation tool is under development for around 100 students</p> <p>trainings are offered in the summer school and special courses students need to do at university</p> <p>safety - no dangerous machines in the lab</p>		<p>Limitation of the Lab is, that it is just for students, not allowed to cooperation with public</p> <p>In the future the lab should be run by students</p>



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PP6 PL Regional Development agency Bielsko-Biala	<p>Fab Lab is embedded in Regional development agency</p> <p>Educational focus for high schools in the region, offer 150h of training programs</p> <p>Problem that is was located outside the city in an incubator, now a new lab will open the city centre 180qm</p> <p>Equipment: 4 3D printers, scanner, laser cutter</p> <p>Business model with trainings and small custom production</p>	Tools: own website with calendar and reservation system.	Location need to be right and easy to access	



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PP7 SI RogLab	<p>Lab with 30qm in the city centre</p> <p>Part of the city museum, financed by the museum, memberships from the users is an additional income</p> <p>No exact amount of members (100-200), monthly around 40 users</p> <p>staff 2 full and 3 part time</p>	<p>Tools: Simply booking platform for reservations</p> <p>Membership management is (for now) done by hand, and billing with DragOn Ticketing, training subscription managed by jotform: web form integrated on website, feeding an excel file on google drive.</p> <p>Safety = staff is always there. Users tracking with booking system + jotform/excel file on google drive</p> <p>3d files for printing user bring on USB</p>	<p>Can recommend Simply booking, easy integration with other apps, reminder for booking for users e.g.</p> <p>Trello: To do, Ongoing, Done + other column used for information storage/sharing (ideas for workshops, equipment to buy, potential partners, practical information's, etc.). Updating status of each tasks on weekly basis. Real meeting once a month.</p>	<p>Combination and integration of all used application: simplybook.it, jotform, trello, Google calendar, i-Cal.</p> <p>Compatibility issue for networking between mac and windows.</p> <p>Reporting, paper works</p>



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PP8 SK Slovak Scientific and Technical information Centre	<p>The lab is part of the university</p> <p>200qm</p> <p>No membership, free of charge, just a symbolic fee for external users, since the Lab provide public access</p>	<p>2 full time, 6 students party time, 2-3 people are there during the day,</p> <p>Tools: machines can be reserved via mail and then the reservations are displayed in a google calendar</p> <p>Training are not often offered- some students are allowed to use, staff always helps at the machine</p>	<p>Offer the whole lab for a team to work on a project</p>	<p>Reservation and paper work time eaters</p>



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PP9 HR Fab Lab Croatia	<p>Non-profit depending on private funding at this moment (temporary) using space offered by university (120qm)</p> <p>Project based financing</p> <p>Members: 650 students using lab resources, 150-200 real Fab Lab users</p> <p>Have 2 different user groups: students are more for services (not DIY), old users real makers not happy with university premises</p> <p>1 person is working in the joined spaces and is paid by university</p> <p>several volunteers for Pop up activities</p>	<p>Cloud platform and share point Microsoft</p> <p>Google calendar for reservations, reservations just for lasers needed</p> <p>Pop up activities (65 various activities in first half of year) in to go out</p> <p>Safe with staff, staff is doing jobs for students</p>	<p>Pop up activities for community building</p>	<p>Current situation with space for the moment it is a temporary and impact on daily business.</p>



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<p>PP10 DE Unternehmertum, Makerspace</p>	<p>1500qm, outside of city, technical campus of TU Munich, , 2 years old,</p> <p>good equipment, 5 laser cutters, around 50 machine</p> <p>Revenues can be divided into 60% memberships, 25% education, 7.5% events and 7.5% service-manufacturing (ex. 3D-Printing, etc.).</p>	<p>Tool: custom build management system</p> <p>company memberships</p> <p>no tracking system for website</p> <p>google calendar for reservation,</p> <p>booking system on the website for workshop,</p> <p>Safety = 2 sections one less danger machines and one with CNC, water jet for more advanced. 40 staff - two shifts with 4 people - safety by supervision. Formal training for machines. Front desk to check in for the machines</p>	<p>Get data on everything to standardize processes, have templates for everything and trainings are important.</p>	<p>Attracting more members, everybody likes the spaces, but not enough members, membership prices is high</p>



3. Fab Lab Management with Fabman in Vienna

Fabman is a tool that we (PP2) use in our Lab and it is one of our best practice examples when it comes to Fab Lab management. It is built to help you manage community workshops, shared office space or e.g. a laboratory at schools and universities. We are managing all of our processes and workflows with this system. Together with the Fabman Bridges and thanks to an integrated dead man system, it prevents unauthorized operation and increases safe machine handling for our members. It ensures that only those members can activate the machines that have already joined the mandatory workshop on machine safety. The Fabman Bridges are also linked to our member cards. This way we are able to control the access to the Lab 24/7, since we have 3 different memberships and the members have different access regulations for the Fab Lab.

The Fabman system also allows our users to book the machines online and it restricts machine usage to the specific member who made the booking. This feature facilitates the machine reservations for our Lab Management. Fabman also automated our accounting - it charges according to the machine usage and automatically creates invoices for one-time or recurring payments.

With this tool we can track and analyse our resource usage, payments or member growth. Besides that it helps us to maintain our machines on actual usage data and we get notifications when the next service should be scheduled. It can also be integrated with a point of sale system, which allows us to use the member cards in our Fab shop for payments too. With Fabman our members can register, update personal details and keep track of their payments. This automation helps us to save time in our daily management.



4. Summary and conclusions

We analysed the tools listed by partners and there are several different ones that are used in their daily management practices. Some of them are self-developed solutions especially for their needs and then they are combined with already existing tools like e.g. google calendar or cloud based services for booking and organization. For some of the partners it's challenging to administrate the data with the different tools in their daily management practice. Maintaining these different platforms and tools with your data is very time-consuming and error-prone, since the data is not centralized.

Most of the needed tools and functions named by the partners during the workshop are features that are all combined in Fabman, like machine booking, calendar, tracking and billing. So far within the partners no comparable tool is known, that combines all those needed features in one. The system also has the possibility for individual add-ons. Therefore we would recommend a test run for D.T1.3.5 followed by an evaluation.