

Aalto Design Factory Annual report

Year: 2020 - 2021



*Within you will find all the awesome stuff we did during our
last year, both in our community and globally - all in a
compressed format.*

**Remember to always keep a copy of this file.
Love and hugs... the ADF staff**

HELLO WORLD!

As for the rest of the world, the academic year of 2020/2021 has been a challenging one for our community. Together, we have gone to great lengths to keep the Aalto Design Factory running and our people from turning into an army of teleconference zombies. Together with this publication and the Annual Report series – our Vimeo documentary – you will find out more about the efforts and mischievous endeavors we have been up to!

The ADF community has grown stronger, not only in numbers, but also in spirit. Relentlessly and unanimously, we have risen to the occasion as new challenges and needs have occurred – both inside the walls of ADF and in front of the computer screens we have all become too familiar with.

The researchers have not been resting on their laurels. Various publications and events have been published and hosted, some of them earning internationally renowned prizes and nominations.

Internationally, the design factory family has welcomed four new members this year, now catering to a total of 34. The repertoire of activities and projects grows accordingly, all of them aiming to create better learning experiences for students.

Within this document you will find a compressed and clear report of what we did during our last academic year.

INDEX



Community

5

The Community in Numbers	6
Partner Plaza : Partners this year (during Academic Year 2020-2021)	7
Social Media Outreach: Total social media followers	8



Education

9

Space Utilization : Meetings organized	10
Hosted Courses	11
Lab & Workshops Utilization	12



Research

13

Research Projects	14
Publications	15
Research-based Teaching and Development activities	16



DFGN

17

Design Factories Around the World	18
DF Lab (March + April + May 2021)	19
DF Lab 101 (Dec 2020 + Feb 2021)	19
World Design Factory Day (May 2021)	18
International Design Factory Festival (Oct 2020)	20

COMMUNITY



Looking at the Design Factory from outside, it is just like any other red brick building in Otaniemi. However, you can sense the ADF spirit immediately when you step inside. The Design Factory community consists of students, researchers, startups, and companies and of course the staff that facilitates that facility and supports the activities that take place there.

Since the outbreak of COVID-19 pandemic in the spring of 2020, only the mandatory teaching and project activities have taken place in ADF premises according to the current guidelines given by Aalto Crisis Management Team. As we say: safety comes first in ADF and the community has been active and implemented safe ways of working on these exceptional times. The following metrics reflect the importance of ADF as a University facility that supports co-creation and experimentation even when the environment and processes are disrupted by force majeure.

New staff members	13
The Community in Numbers	
Partner Plaza : Partners this year (during Academic Year 2020-2021)	16
Social Media Outreach: Total social media followers	15000

COMMUNITY

For more information visit
[@aaltodesignfactory](https://designfactory.aalto.fi)
[#aaltodf](https://twitter.com/aaltodf)



Annual report series

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the **community** section on our
Annual report series



The Community in Numbers

When the factory runs, the engine needs to be taken care of. Over the past year, there has been several new people joining the ADF gang. Even if the access has been limited to mandatory teaching and learning activities, we have been able to show ADF to interested visitors virtually. As we often say at ADF, safety comes first. This has been an extremely important rule during the COVID-19 pandemic. With the following measures we have ensured safety and pleasant working environment for the ADF community.

New staff members 13

Registered visits 7200

Masks handed out 3230

Litres of hand sanitizer used 24

Surface disinfectant wipes used 3600

Virtual tours 27

Bottles recycled 4100

Wellbeing yoga sessions 16

Cups of coffee consumed 10900

Partner Plaza

Even during the COVID-19 pandemic, Aalto Design Factory has served as a home base for a bunch of early phase startups. Especially the ADF prototyping facilities have been essential in the R&D operations of many of our Partners. These following companies have been a part of the ADF community during the past year.

List of Partners Academic Year 2020-2021:

ProtoRhino Oy	Aeropod Oy
Trick Technologies Oy	DS Products Ky
Riot Innovations Oy	StrategyCo Oy
Teraloop Oy	Luke (Natural Resources Institute Finland)
Port 6 Oy	Epiheart Oy
Caidio Oy	Hyperion Robotics Oy
EntoCube Oy	Showerloop Oy
Surgify Medical Oy	
Aurora Propulsion Technologies Oy	

Partner
Plaza
companies

16

Partner
Plaza
entrepreneurs

46

Total
turnover
of Partners

1M€

Based on publicly
available data of 7 of
the 16 companies

Social Media Outreach

Aalto Design Factory actively uses Instagram, Facebook, and Twitter to share stories about the activities in the house. When Instagram and Facebook are targeted mainly to our student & international followers, Twitter is mainly used to disseminate research findings. The following numbers describe ADFs social media activity during the academic year 2020-2021.

Facebook

Followers 6985

Posts 96

Reactions 1289

Reach 41446

Twitter

Followers 6193

Tweets 126

Impressions 144723

Profile visits 773

Mentions 136

Instagram

Followers 1938

Posts 112

Likes 2482

Reach 11664

Impressions 106200

**Total Social
Media Followers**

15000



EDUCATION

Aalto Design Factory was originally built around an idea to create the best possible environment for supporting product design education. Nowadays, Aalto Design Factory is a home base for a vast variety of student activities and interdisciplinary courses that are not solely focused on product design but for example combining mathematics and arts. Over the past years ADF has been also building bridges to elementary schools and high schools by providing TET training, internships and supporting youth events like TuKoKe (research, experiment & develop) competition. The Corona outbreak has challenged us to re-think the ways for creative teamwork and how to educate the next generation of game changers online. During the academic year 2020-2021, ADF was implementing a hybrid model for teaching, which consisted of facilitation of physical prototyping activities in the ADF premises when necessary and also of supporting online teaching by providing tech, help, video production and teaching facilitation by ADF.

Student teams working safely (at Design Factory premises)	100 +
Space Utilization : Meetings organized	2000 +
Hosted Courses	16
Supporting material produced (videos & tutorials)	110
Lab & Workshops Utilization	

EDUCATION

For more information visit
[designfactory.aalto.fi/
courses/](https://designfactory.aalto.fi/courses/)



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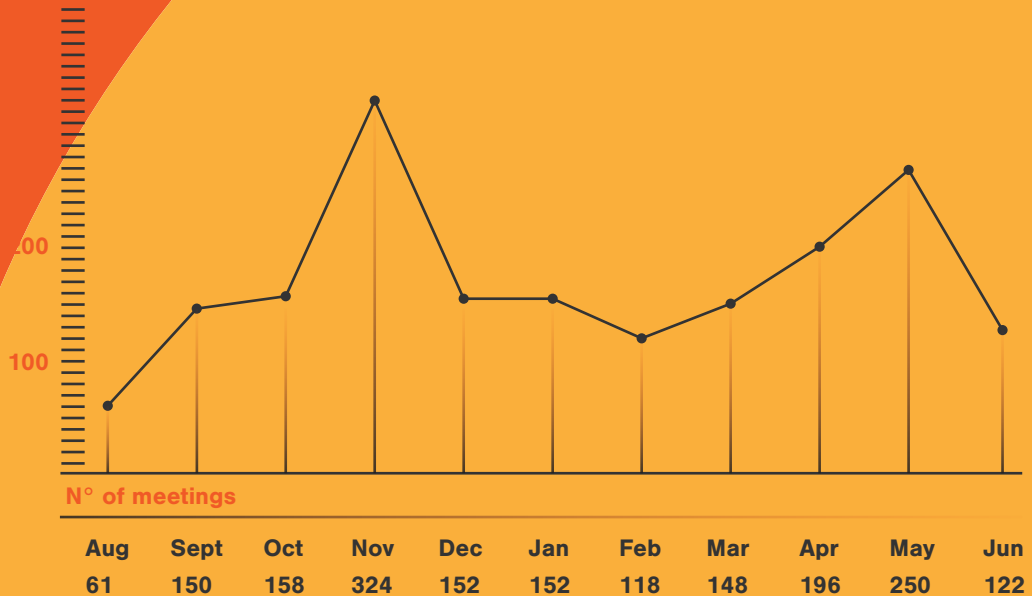
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the **Education** section on
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Space Utilization:

Meetings organized

Tools like Zoom, Teams, and Miro are great for teams working online. However, sometimes it's absolutely necessary to meet up physically so the team can do project work together. Below you can see the amount of the student team meetings at ADF in 2020-2021. All the meetings were organized accordingly to the safety guidelines of Aalto.



Hosted Courses & Supporting Material Produced

During the academic year 2020-2021 all the study courses were organized fully online or as a hybrid teaching combining online classes and on-site teaching. The following courses used ADF facilities. On top of that, the Aalto Design Factory personnel supported online classes by providing facilitation, tech support and digital content production.

110 Supporting videos & tutorials produced

16 Hosted courses

Visual Communications Design

PDP Product Development Project

Universities of Future Course

DF PhD Course: Research in Design and Innovation

Product Analysis

Methods in Early Product Development

Mechanical Engineering in Society

Yrittäjyys Aallossa

Games Now

IDBM Industry Project

Käyttäjätöinen tuotekehitysprojekti

Pack-Age

Design Thinking Tools for Creating Change

Designing an Electronic Device for Business

ADD Basics

Sustainable Global Technologies course

Lab & Workshops Utilization

Even if the study courses have been organized as hybrid courses, ADF labs have been running on full steam supporting the student projects over the past academic year. It definitely has not been silent season here at Aalto Design Factory.

Circuit boards made with Bantam tool 63

CNC machining time in hours 1231

Water jet hours of work 240

Welding machine hours of use 360

Laser cuts 1000 +

3D printing projects 700 +



RESEARCH

The research community at Aalto Design Factory conducts high-quality research on design, experimentation, and innovation - particularly with an eye on how we can better collaborate and interact across individuals, teams, and organizations in such efforts. We are a multidisciplinary bunch of researchers, coming from a variety of fields - engineering, sociology, psychology, business, educational sciences, and history to mention a few. United by a thirst to tackle wide, complex questions, our research contexts span from food and beverage entrepreneurs and designer change agents to empathic engineers and future universities. We use our research insights to inform practice through our teaching and development efforts, as well as the Design Factory Global Network and industry collaboration. This year was certainly different for us as well with almost fully remote operations, but luckily the lack of physical contact did not limit the flow of ideas and insights! We continued to connect with our colleagues, our students and the designers, engineers, managers, entrepreneurs, and academics we study on Zoom, Teams, Mural, Miro, Slack, you name it. Our output is perhaps more diverse than ever, ranging from published studies to podcasts, blog posts, online events and toolkits.

Here are some of our key numbers from this academic year!

Research Projects	10
Publications	27
Research-based Teaching and Development activities	50+

RESEARCH

For more information visit
[designfactory.aalto.fi/
research](https://designfactory.aalto.fi/research)



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Research Projects

This year may represent our record number of interviews, ranging from product developers, designers, food and beverage entrepreneurs, teachers, students and users. For example, we interviewed 104 designers on how they integrate sustainability into their work, 24 experts on how the pandemic has changed product development efforts in technology companies and 50 entrepreneurs and stakeholders on collaboration in the food ecosystem. These interviews provide us with a gold mine of data for research, but also serve as reflection opportunities for practitioners, taking stock of how they might further develop their work. In addition, researchers at the Design Factory have been busy analyzing video data, survey responses, student essays and material experiments thinking about how to reduce the use of plastics in prototyping.

Research projects 10

Interviews conducted 285

Experiments done 2

Other data materials collected 41

Publications

Surma-Aho, A., Hölttä-Otto, K., Nelskylä, K., & Lindfors, N. C. (2021). Usability issues in the operating room—Towards contextual design guidelines for medical device design. *Applied Ergonomics*, 90, 103221.

Designing usability is challenging in the context of operating room devices, with the complex teamwork, high-risk stakes and plethora of technologies that all need to work together seamlessly. Based on 64 hours of observations and interviews at Helsinki University Central Hospital's operating rooms, we investigated the usability issues that nurses and surgeons experience in their daily work. While many devices have their own unique challenges, the most prominent issues arose from interactions between different technologies, through things like lack of synchrony and different operating logics between brands. Usability should always be considered in use context, and the study provides design guidelines to help in doing so.

Björklund, T.A., Keipi, T. & Maula, H. (2020). Crafters, explorers, innovators, and co-creators – Narratives in designers' identity work. *Design Studies*, 68, 82-112.

Bringing together research in design expertise, literary analysis and identity, this study explores how designers see their role in organizations. Based on the interviews of 38 professionals, novelty, learning and community emerged as fundamental building blocks for motivation. Designers shift between different facets of creativity in different situations, ranging from craftsmanship and exploration to new innovation opportunities and co-creation. The publication won the best paper of 2020 award of Design Studies.

7 Journal publications

12 Conference publications

8 Books and reports

Research-based Teaching and Development

5 Toolkits for design thinking

6 Podcast episodes

1 Exhibition

Moving to remote operations has created new needs to support co-creation practices online. For example, as a part of the DesignBites research project investigating co-development practices in packaged food and beverage development, we've developed three open access online toolkits - mapping stakeholders, ideating together and planning experiments, available at <https://designbites.aalto.fi/toolkits/>.

12 Courses taught

15 Master's thesis supervised

9 PhDs supervised

5 Bachelor's thesis supervised


The Design Factory Global Network consists of 34 innovation hubs in universities, and institutions around the world. From Finland in the North to New Zealand in the South, we are on a mission to create change in the world of learning and education by facilitating and conducting workshops, events, and courses revolving around concepts like design thinking, experimentation planning, and pedagogical development.

If this year has proven anything, it is that the world is an unpredictable place in constant change, and that education has to be able to change with it. As students and staff slowly return back to their campuses, traditional ways of teaching theory should be complemented by hands-on training across disciplines and schools. Classrooms should be swapped for workshops and laboratories. Learnings should become tangible. That is how we enable our students to meet the future head-on.

Design Factories Around the World	34
Four World-spanning Events	4
World Design Factory Day (May 2021)	
DF Lab 101 (Dec 2020 + Feb 2021)	
DF Lab (March + April + May 2021)	
International Design Factory Festival (Oct 2020)	



World Design Factory Day

 (May 2021)

Everyone was welcome to the World Design Factory Day - it literally said so in the invitation. Participants associated with 20 different design factories attended a variety of workshops and events designed to celebrate the network and its members.

Staff members from Design Factories 20

Activities 19

Hours of program 25

Sign-ups 185

Design Factories around the world 34

Design Factories added this year 4


Aalto Design Factory, Sino-Finnish Centre, Design Factory Melbourne, Duoc Design Factory, IdeaSquare@CERN, Design Factory Korea, Porto Design Factory, Nexus Design Factory, Future Design Factory, METU Design Factory, Design Factory Javeriana Bogotá, NYC Design Factory, RTU Design Factory, UPV Design Factory, Design Factory São Paulo, Design Factory New Zealand,

Warsaw Design Factory, FusionPoint, Kyoto Design Lab, Cali Design Factory, Inno.space, Sandbox, Design Factory @ SIT, HAMK Design Factory, St. John's Design Factory, Hannam Design Factory, Design Factory Shenkar, Oper.Space, Technovation Hub, Design Factory London.

New Design Factories this year:

**nandin (AUS), DF Aveiro (PRT),
Viikki Food DF (FIN), LinkMenų Fabrikas (LTU)**

DF Lab 101

 (Dec 2020 + Feb 2021)

DF Lab 101 took place for the first time ever in 2020, and is a 2+1 day event for people and institutions who are new to the world of Design Factory. In a two-day online gathering, the participants got an introduction to the history and pedagogy of Design Factory, as well as an interactive tour of Aalto Design Factory. The second day ended with an experimentation workshop where they planned an experiment which was conducted before the February gathering.

3 Days

31 Participants

10 Institutions

9 Countries

23 Hours of program

3 Workshops

2 Lectures

1 Virtual tour

5 Hosts

10 DF experts

4 Student experts

18 Hours of time difference

DF Lab

 (March + April + May 2021)

There is always more to learn, that is why Aalto Design Factory and the Design Factory Global Network hosted the DF Lab 2021. Professionals from all over the world interested in the design factory way of working, teaching and experimenting spent the spring sharing best practices, learning from internal and external experts, and expanding their network. The goal? To (further) develop their design factory.

3 Gatherings

12 Hours of workshops

21 Hours of interactive sessions

9 Student experts

22 DF experts


6 Hours of reflection

10 Hours of recorded content

128 Sign-ups

14 Institutions

International Design Factory Festival

 (Oct 2020)

International Design Factory Festival (IDFF) is where the members of the Design Factory Global Network get together to plan collaborations, get to know each other, and share best practices. Normally the International Design Factory Week (IDFW) is hosted by a new design factory every year, but the 2020 edition turned into a fully virtual event.

Days 5

Collaboration projects 12

Hours of time difference 18

Participating design factories 25

Design factory representatives 52

Events 59

Hours of program 66

Participants all together 1073

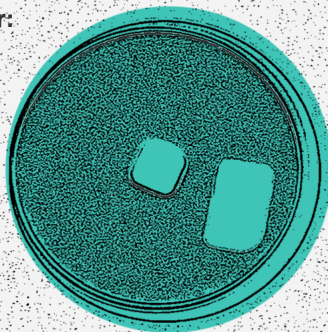


BIG THANKS!

This annual report would not have been possible without great effort from our dear Aalto Design Factory community. From sharing insightful information to digging into the small details that make up the bedrock of our daily operations; they have contributed with it all. Others have contributed by bringing a comforting cup of coffee, opening up for a break and a chat. The dedicated community has done a marvelous job putting together this lovely report. We sincerely hope you have enjoyed it.

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And all of the ADF vcommunity...



26

