



*We are not
like the other
design factories*

YOUR GUIDE TO THE DESIGN FACTORY GLOBAL NETWORK

**DESIGN
FACTORY
GLOBAL NETWORK**





30 DESIGN
FACTORIES IN **24**
COUNTRIES ON
5 CONTINENTS





ITINERARY

THE YEAR IN NUMBERS 8

THE JANITOR SAYS 10

DESIGN FACTORIES IN ASIA 14

Design Factory @ SIT 16
Design Factory Korea 18
Hannam Design Factory 20
Kyoto Design Lab 22
Sino-Finnish Centre 24

DESIGN FACTORIES IN THE MIDDLE EAST 26

METU Design Factory 28
Design Factory Shenkar 30

DESIGN FACTORIES IN EUROPE 34

Aalto Design Factory 36
Design Factory London 38
Fusion Point 42
Future Design Factory 44
HAMK Design Factory 46
IdeaSquare@CERN 48
inno.space 50
Oper.Space 52
Porto Design Factory 54
RTU Design Factory 56
Sandbox 58
Technovation Hub 62
UPV Design Factory 66
Warsaw Design Factory 68

DESIGN FACTORIES IN NORTH AMERICA 70

Nexus Design Factory 72
NYC Design Factory 76
St. John's University Design Factory 78

DESIGN FACTORIES IN SOUTH AMERICA 82

Cali Design Factory 84
Design Factory Javeriana Bogota 86
Design Factory São Paulo 88
Duoc Design Factory 90

DESIGN FACTORIES IN OCEANIA 92

Design Factory Melbourne 94
Design Factory New Zealand 96

EVENTS AND COLLABORATIONS 100

International Design Factory Week 102
DFGN Community Day 104
Connections of collaboration 106
Collaborations we have done 108

DFGN DEVELOPMENT 112

A critical lens 114
A unique organizational model for globally distributed network organizations and effectiveness of the organization's collaboration practices 115

FAMOUS LAST WORDS 121



GREETINGS FROM THE EDITOR

By Marthe Dehli,
Design Factory Global Network

On January 8, 2020, Aalto University celebrated its 10th anniversary with bells and whistles. Here at the Design Factory Global Network, we had our own celebration within the celebration, gathering together when the 30th design factory, Technovation Hub from Leuven, Belgium, joined the network.

Little did we know that 2020 would be like no other year, with the DFGN becoming more important than ever. As campuses shut down across the world, our members reached out to one another to compare notes on online learning platforms, facilitating off-site digital prototyping sessions, and maintaining a sense of community and togetherness.

The concept of the design factory has never been a “plug-and-play” thing; design factories are tailored for the needs of their host institutions, marked by the people who created them, and influenced by the students who use them. Since the beginning of the calendar year, I have had the pleasure of interviewing representatives from all the different design factories, including students, professors, directors, and teaching assistants. Some of the interviews were done before the world turned upside down, some at the height of the craziness, and others when the term “the new normal” started to dilute “the state of emergency.” Regardless of the context and timing, the representatives were asked the same seven questions.

We titled this publication *We are not like the other design factories* not just because that was one of the most repeated lines but because it's true. Thirty design factories means that there are 30 different design factories as the people who use them are singular and operate in unique contexts. What they all have in common is a passion for co-creation, a desire to change the way we see and do education and learning, and a firm belief that interdisciplinarity is the key to success for both individuals and societies.

In this publication we introduce you to some of the things that make up the DFGN: the collaborations, the numbers, and, most important of all, the people. Without them, none of this would be possible.



THE YEAR IN NUMBERS

COLLABORATION

100%

OF DFS HAVE
INTERDISCIPLINARY ACTIVITIES

76%

OF DFS ENGAGED IN AN ACTIVITY
WITH AT LEAST ONE OTHER DF

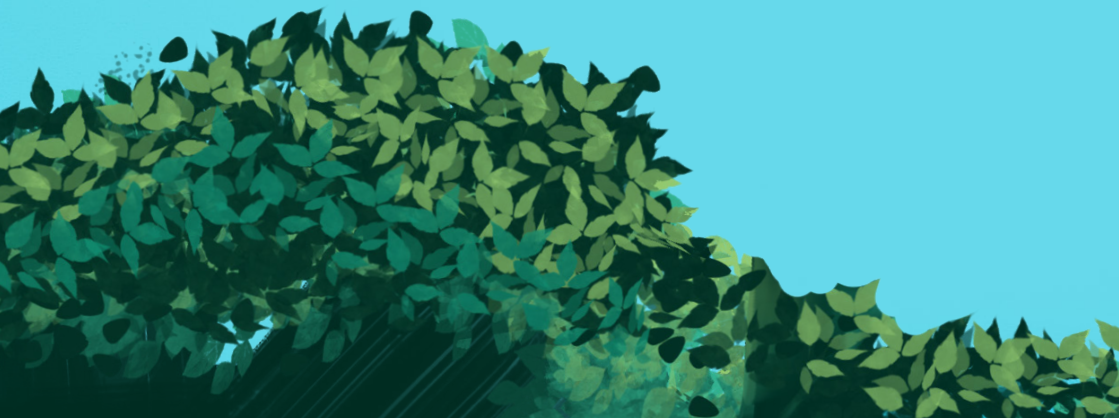
ACTIVITY

651

STUDENT PROJECTS

424

INDUSTRY
COLLABORATIONS



STAKEHOLDERS

6675

STUDENTS TOOK PART IN DF
COURSES / PROJECTS

492

PARTNER
ORGANIZATIONS

204

DF STAFF

INFORMATION IS FROM THE ACADEMIC YEAR 2019-20 OR THE CALENDAR
YEAR 2020 WHERE APPROPRIATE.





THE JANITOR SAYS

By Kalevi "Eetu" Ekman,
Janitor & Founder of Aalto Design Factory

The Design Factory for Aalto University was launched 12 years ago in Finland with a strong local focus. We had absolutely no plans or even a dream about a growing network of 30 design factories around the world. Somehow, we got here.

Stirling Moss, the famous race car driver who passed away in April 2020 at the age of 90, had a saying: "If you feel that everything is under control, you are not driving fast enough".

I can't imagine anything that better fits the development of design factories and the Design Factory Global Network.

This publication is your guide to the network and our ways of working. By putting our students first and through collaborations with industry actors and enterprises, we are changing the concepts known as education and learning, one collaboration and experiment at the time.

Let's keep the wheels rollin' – fast and safe.





WE ARE NOT
LIKE THE OTHER
DESIGN FACTORIES



EVERY DESIGN FACTORY IS UNIQUE. IN THIS SECTION, YOU GET TO KNOW EACH OF THEM BETTER THROUGH INTERVIEWS WITH THE PEOPLE WHO WORK AND STUDY THERE.

ASIA

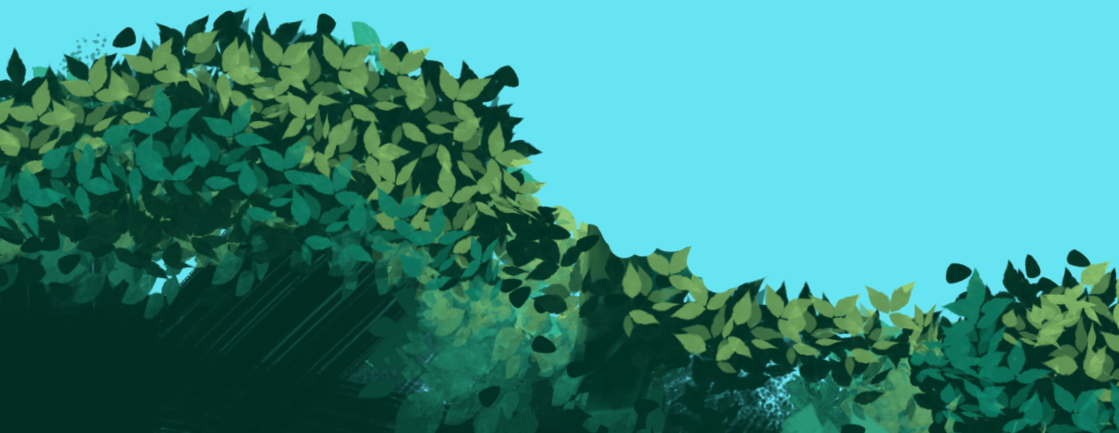
Page 16 Design Factory @ SIT

Page 18 Design Factory Korea

Page 20 Hannam Design Factory

Page 22 Kyoto D-Lab

Page 24 Sino-Finnish Centre





DESIGN FACTORY @ SIT

Interviewee:

**NICHOLAS
TEO**

Assistant Professor &
Deputy Programme
Director

Host institution
**SINGAPORE
INSTITUTE OF
TECHNOLOGY**



Location:
SINGAPORE +

CAN YOU DESCRIBE DF @ SIT IN THREE WORDS?

Innovative, applied, multi-disciplinary

WHO ARE YOUR STUDENTS?

The students of the Design Factory @ SIT comprise both undergraduates and working adults. We want to make sure that our undergraduate students, who are mostly from polytechnics, are technically proficient as well as possess the practical and soft skills needed for industry. Design Factory @ SIT is a collaborative environment to foster creativity. It provides opportunities for students to work on innovation projects together with company staff through the guidance of professors with related expertise – this allows them to pick up skills that are in demand and get a sense on the types of challenges the industry is facing. Through our design factory, we also hope to strengthen and upskill the workforce in Singapore by fostering creativity and design thinking values in them.

WHAT DOES A TYPICAL DAY LOOK LIKE?

We are looking at building a physical space for our design factory which is closely integrated with industry and community. I'd envision our design factory to bring in industry and have very open conversations with them on what they need and what the students need.

Our focus will very much be on constant conversations with faculty, students, and industry partners, and our day-to-day work will be fostered around the foundation of that tripartite relationship.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

The projects range from product design to service design. We're looking at solving problems from both the tangible and intangible aspects. Our students come from various fields, such as health and social sciences, engineering, accounting and business, so we are constantly getting different types of problem statements.

One example is working with the Urban Redevelopment Authority to come up with new ideas to educate Singaporeans on heritage and conservation.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I am honored to have Päivi [Oinonen, Design Factory Global Network] and Pauliina [Mattila, Design Factory Melbourne] giving workshops at Design Factory @ SIT. They are good friends of mine.

A good thing with the design factory is the opportunity to engage with the international network. I was at DF Melbourne in Australia and I did an internship at Aalto in 2013. These are fond memories and great learning opportunities. Every country and city has its own problems to solve. The range of methodologies, techniques and design thinking frameworks that they use is wide and varied.

WHERE DO YOU SEE DF @ SIT IN FIVE YEARS?

One of our goals is to add value to the industry. Beyond training students, we are also looking

to ensure that our methodologies and design factory serve as a knowledge hub for our faculty, students and industry partners. We want to have companies partner us, use our facilities, and learn our frameworks. We want them to come to us, and we help solve their day-to-day problems.

We also want to grow internally and make sure that everyone in SIT knows what design factory and design thinking methodologies are about.

WHAT IS YOUR DREAM FOR THE DFGN?

I hope that Design Factory @ SIT can be a strong partner for other global projects. Solving local problems is definitely important, but we also want to start contributing to the global issues out there.

We can start small and progressively find ways to contribute to the DFGN, such as organising and hosting activities for the community.





DESIGN FACTORY KOREA

Interviewees:

SEON LEE
Coach

**JOSEPH
SOLIEV**
Teaching
Assistant

**MARC
KOFFI**
Teaching
Assistant

Host institution
**YONSEI
UNIVERSITY**



DFK
DESIGN FACTORY KOREA

Location:
SEOUL, ♦
SOUTH KOREA

CAN YOU DESCRIBE DFK IN THREE WORDS?

Marc Koffi [MK]: Design, teamwork, and creativity.

WHO ARE YOUR STUDENTS?

Joseph Soliev [JS]: Our space is open to all students from a specific college, Underwood International College, but most of the students we have are actually interactive design majors.

WHAT DOES A TYPICAL DAY LOOK LIKE?

JS: Working on something. Usually the students have their own teams, and they are in every corner of the space, sitting down and doing something. Some of them are coding, some of them are working on a virtual-reality simulation. Sometimes you'll even find a random math or science student in a corner, writing down their own equations on a blackboard.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

MK: We are actually in a room full of projects! Here's a product that helps you monitor your temperature to predict when you will have your period. I'm not sure, but I imagine this will be very helpful! I also really like this one that's a shopping platform for the visually impaired that can tell apart different colors. Every student in a design major is required to

join a team. The team is assigned a question or a problem, and they are supposed to come up with a solution and present the solution to a couple of corporate representatives. Usually they receive some funding to actually implement their ideas.

JS: It's all about social innovation. All the projects and prototypes in this room are from a class called the Capstone Project, a class that's received a lot of attention on a national level.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

JS: Movie night! This Halloween we invited seniors from different majors to a scary-movie night. It was a lot of fun!

MK: It's breakfast. Every semester we have an event called DFK Omelets, where the DFK club prepares breakfast for the student body. It's free, and you go there and mingle with the professors, students, and staff. It's really great
Seon Lee [SL]: Since I've just recently joined



the staff, I haven't seen these special occasions yet, but I look forward to it!

WHERE DO YOU SEE DFK IN FIVE YEARS?

SL: I hope that in five years the space will have been opened up to everyone from the university. Opening it up so that anyone can come here and design products or something completely different so that we can share.

WHAT IS YOUR DREAM FOR THE DFGN?

JS: I wish we worked on more projects together! Let's say we have a certain problem and want to make a prototype, and we want to build it with certain equipment. What if we could all do that together? So, solving problems together and making projects and prototypes together on a broader level.



HANNAM DESIGN FACTORY

Interviewees:

**SO-HYUN
KANG**

Design
Factory
Coordinator

**RICKY
PARK**

Design
Factory
Manager

**EUON-WOO
KWAK**

Teaching
Assistant

Host institution
**HANNAM
UNIVERSITY**



Location: ♦
**DAEJEON,
SOUTH KOREA**

CAN YOU DESCRIBE HDF IN THREE WORDS?

So-hyun Kang [S-hK]: Coffee, freaky, and Ricky! Those are the three words that represent HDF since those things can always be found here!

WHO ARE YOUR STUDENTS?

Ricky Park [RP]: Our students are passionate, devoted, and talented, and I am very proud of every one of them. They come from eight different majors, such as business, design, and engineering.

WHAT DOES A TYPICAL DAY LOOK LIKE?

S-hK: As soon as I get to work in the morning, I have my coffee while I sit by the computer and handle administrative tasks, such as receiving official documents and checking emails.

RP: There are students here all the time!

Eun-woo Kwak [E-wK]: Usually I do my homework here and chat around with friends. Sometimes I help out with running the design factory.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

RP: Our students are currently involved with eight different projects, including making a new type of wheelchair, a trash can for recycling, and a fence system to assist young kids who are crossing the road. A construction company has actually been our main sponsor this semester, and we will have more companies participating next semester.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

S-hK: We have a beautiful garden here in front of the building, and my favorite memory is having a relaxing cup of tea together with my colleagues on a parasol bench in that garden.

E-wK: My favorite memory comes from the IPD [Innovative Product Development] Christmas gala when we threw a big party. All the hard work had been really painful, so it felt good to have a great time afterwards.

RP: To me, it is the very first gala. At the time, everything was a first experience, so everything was really hard but also very interesting. I will also never forget the Design Factory Bootcamp 2019! It was the first time I experienced a design factory, and it was such an impressive thing to me.

WHERE DO YOU SEE HDF IN FIVE YEARS?

RP: We got a new building! We will have two buildings, the new one is bigger than the main building we're in at the moment, and it's just 50 meters away. We will be part of the start-up village that combines the design factory and the different programs for start-ups and entrepreneurs. We were supposed to move in this March, but because of the COVID situation, the move has been postponed.

S-hK: I expect us to have more interactions with the DFGN and become close friends with the members. I also hope there will be some employee exchanges within the network.

RP: I'm going to jump into the details. In five years, I want to be at a point where we educate more than 500 students every year and incubate around 10 start-ups. I also want us to have at least 100 students participating in international programs related to the DFGN, and I want us to register 20 patents per year

and be able to show to more than 50 different products being developed here.

WHAT IS YOUR DREAM FOR THE DFGN?

S-hK: After COVID-19, I hope there will be more active exchanges of students!

RP: In September 2020, we will join the PDP [Product Development Project]. Eight of our students are doing that. I would also love to see some staff exchanges and to build good, long-lasting friendships with the DFGN members.

E-wK: I hope to be able to physically visit every design factory!



**KYOTO
DESIGN
LAB**

Interviewees:

EIZO**OKADA**Professor, Chief
Executive Officer**SUSHI****SUZUKI**Associate professor,
Head of the
Intrapreneurship and
Entrepreneurship
DivisionHost institution
**KYOTO
INSTITUTE OF
TECHNOLOGY****KYOTO
Design Lab**Location:
KYOTO, JAPAN +**CAN YOU DESCRIBE D-LAB IN THREE WORDS?**

Cross-disciplinary, international, Kyoto.

WHO ARE YOUR STUDENTS?

We are an engineering school with a very strong design-and-architecture program, so a lot of the students who join the program come from these three disciplines and are often at the master's level. The students who join are interested in the wide variety of project topics offered at the KYOTO Design Lab (for example entrepreneurship or regional revitalization). Some of our programs, especially the two summer schools, are open to outside students as well. As a result, about 30 percent of the students involved at the D-Lab are international.

WHAT DOES A TYPICAL DAY LOOK LIKE?

During the school year, the wood-working and digital-fabrication spaces are buzzing with students building prototypes for D-Lab projects, classwork, or personal projects. These spaces can get especially active at the end of the semester when assignments are due. The big open space is usually subdivided and hosting project meetings either locally or over the internet with international partners. Some days the space is transformed into a workshop space or a classroom for the summer school.

The kitchen space downstairs doesn't see too much activity on regular days, but at the end of workshops, there are often parties with students celebrating the end of projects. There are usually at least one or two people on their laptops working on the 25-meter sofa.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

The KYOTO Design Lab is part of the ME310/SUGAR network, so there are industry-sponsored projects utilizing design-thinking to develop innovative products and services. Beyond that, regional revitalization is a hot topic at the D-Lab as it is also a hot topic for Japan as well. On the research side, there are ongoing projects for new material development, more recently looking into biomaterials. Food has been another consistent theme throughout the years.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

Eizo Okada: Definitely when the building was completed in 2017 and we celebrated. For the

first several years of the D-Lab, we used open spaces around campus but didn't have the centralized location that we do now. Designing the new building was also a big collaboration between the architecture and the design professors.

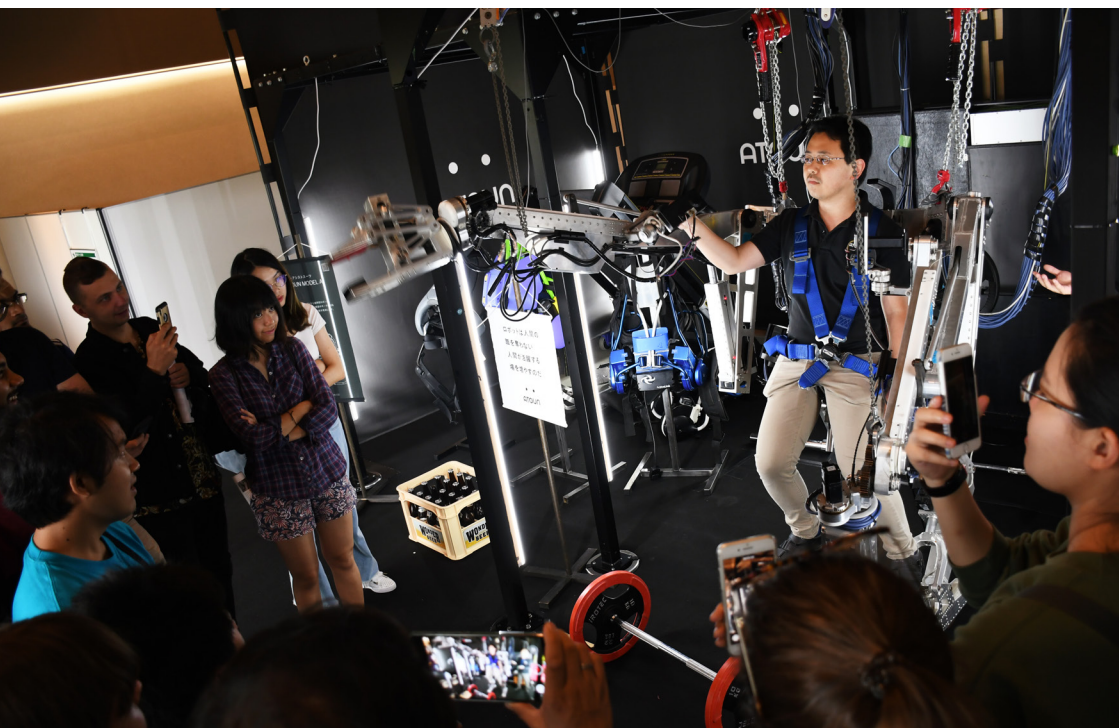
Sushi Suzuki: The Kyoto Startup Summer School that I run brings a lot of energy to the D-Lab for two weeks, and it is one of the most exciting times of the year for me. As the program takes a lot of planning and coordination to launch, the day we start is a big sigh of relief for me, and the day we finish is a slightly melancholic celebration with the students. The EXPO for ME310/SUGAR is also a big milestone every year, and I have fond memories of "graduating" the students who completed the challenging 9-month program.

WHERE DO YOU SEE D-LAB IN FIVE YEARS?

Working on more projects that connect the research and resources within the university. Seeing more project results getting implemented and making an impact in the real world.

WHAT IS YOUR DREAM FOR THE DFGN?

It would be great if the DFGN could increase student mobility so that more students could come to Kyoto for their studies and be involved in the D-Lab activities. Someday it would be great to set up joint programs beyond what exists today, possibly even leading to a joint degree of some kind.





SINO-FINNISH CENTRE

Interviewee:

**XIHAN
HANNA
CHENG**

Project Manager

Host institution
**TONGJI
UNIVERSITY**



Sino-Finnish Centre
Tongji University
同济大学中芬中心

Location:
SHANGHAI, CHINA

CAN YOU DESCRIBE SINO-FINNISH CENTRE IN THREE WORDS?

Innovative. Energetic. Diversity.

WHO ARE YOUR STUDENTS?

Our students come from all over the country, and they are enrolled in different majors such as industry design, interaction design, architecture, and landscape.

WHAT DOES A TYPICAL DAY LOOK LIKE IN YOUR DESIGN FACTORY?

Waking up – having some baozi and a cup of soy milk – going to DF with a Mobike – attending a discussion about global issues – lunch break and a quick nap – brainstorm with students online – working on some documents – going to a dimsum restaurants with friends – going home with a Mobike – personal hours – time to sleep!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We work on projects that are related to real-time issues, including product design, culture exchanges, and product solutions.

WHAT IS YOUR FAVORITE DF MEMORY?

Once, we held a Christmas party in our design factory, and we were lying on a sofa, drinking some wine and eating dessert, having a chat with friends while watching an old movie. It was the best time ever!

WHERE DO YOU SEE THE SINO- FINNISH CENTRE IN FIVE YEARS?

We will keep searching for better solutions with our passion of life, for everyone, for our mother earth. Five years later, we can have more influence to turn the ideal into reality.

WHAT IS YOUR DREAM FOR THE DFGN?

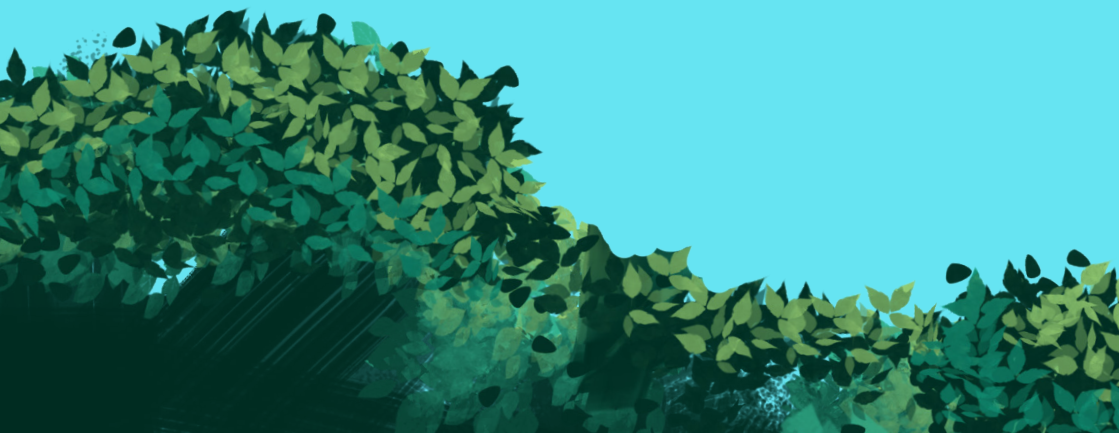
By using online platforms, there can be more interaction between different design factories face-to-face, students may have the opportunity to go to other design factories to experience different styles of innovation. At this time, when the world seems to fall apart, we need to strengthen our ties to work for a better future.



MIDDLE EAST

Page 28 METU Design Factory

Page 30 Shenkar Design Factory







METU DESIGN FACTORY

Interviewee:

**ARZU
GÖNEÇ
SORGUÇ**

Director

Host institution
**MIDDLE EAST
TECHNICAL
UNIVERSITY**



TASARIM FABRİKASI
DESIGN FACTORY

Location:
ANKARA, TURKEY ♦

COULD YOU DESCRIBE METU DESIGN FACTORY IN THREE WORDS?

Exciting, creative, full of energy.

WHO ARE YOUR STUDENTS?

We actually have students from all the different departments, and it's truly interdisciplinary because in our university, we have 42 different disciplines. We are open to all of them.

WHAT DOES A TYPICAL DAY LOOK LIKE IN YOUR DESIGN FACTORY?

First we feed the two dogs we adopted. They are lovely, they are staying with us in our garden. Then we have a cup of coffee and get started by chatting and planning the day. During this pandemic we have been especially busy as we have kept on fabricating devices and other little things.

In our design factory, we all have our own corners, so we go there and start our work or studies. We'll gather for coffee breaks and lunch. A typical day for us also entails a lot of phone calls and emails, planning meetings, responding to new demands, and dealing with public relations.

At night, before leaving, we feed the dogs again!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

This year, our students dealt with four projects. One with GAMA Energy, a Turkish energy institution, where the project was digitalization of the company.

Another one was with British Nuro Aerospace, the students were working on small drones and their use in safe transportation of goods and cargo. The project was especially focused on cargo stations, and not the drones themselves, but the network of drones.

We did two projects with the United Nations Development Agency; one related to awareness on different subjects, including environmental issues, the other to ghost spaces and the transformation of ghost spaces for the public.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

When the pandemic started, some of the core members, including me, two specialists, and two co-directors, we met and started developing two different things. One is a face shield, a very simple one, the other was just for fun really - a door opener.

We made everything available on the internet, and also sent some to the hospitales immediately because they were asking for help. Later, we received a really nice email from an older person, it had a picture attached. Older persons in Turkey have been confined, they are supposed to stay at home, and he sent us a picture of a wooden door opener, he had found our drawings on the internet!

He said that he was very happy and thankful, because the door opener became like a puzzle for him, something to spend time on, and something to give to his friends and family.

It was such a wonderful message to receive, very satisfactory for us, so precious.

We also made face shields whenever we were alerted that more were needed in hospitals and emergency centers.

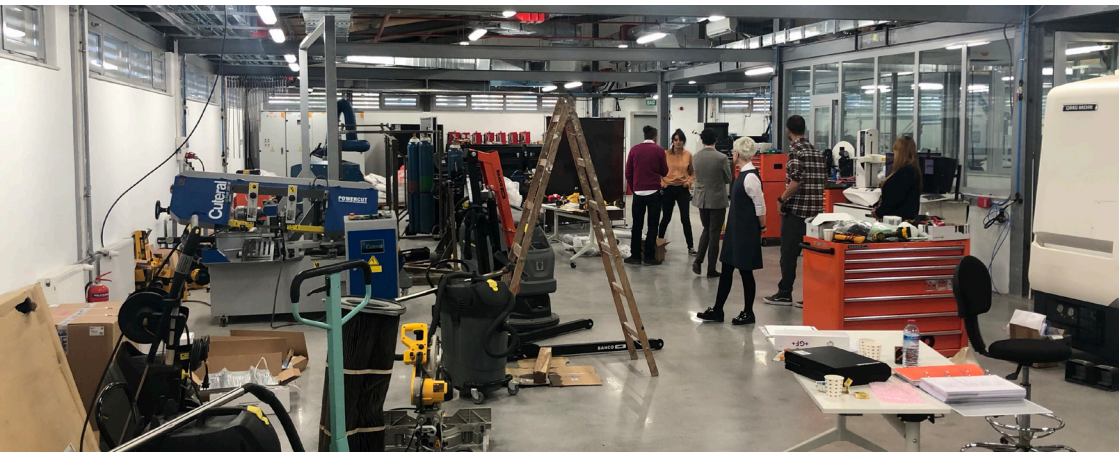
WHERE DO YOU SEE YOUR DESIGN FACTORY IN FIVE YEARS?

Everyone here has accepted the importance of the design factory, not just as a design research center, but also as a motivator for education. We were very successful in online education this year, we were able to promote creativity and fabrication, we had quite satisfactory results, and the students are very happy.

We have many consulting projects that we do for other innovation centers, and many companies come to us to consult and to collaborate. I hope that in five years, we will be even better at contributing in innovative ways to projects, and help companies open their minds. I think we will be much better, and keep getting better.

WHAT IS YOUR DREAM FOR THE DESIGN FACTORY GLOBAL NETWORK?

One day, I hope we all collaborate, that we are able to have collaborative projects where we can work together, either face to face or online. I hope the DFGN mediates this environment, because sometimes it's very difficult to be tuned in with others. We are always busy! But I hope the network will moderate the issue. That's my dream.





ISRAEL
Middle East

DESIGN FACTORY SHENKAR

Interviewees:

**MERAV
PEREZ**

Incoming Head
of Department of
Industrial Design

**DR. VERED
PNUELI**

Head of the
Game Design and
Development
Program

Host institution
**SHENKAR
COLLEGE**



Location:
TEL AVIV, ISRAEL +

CAN YOU DESCRIBE DF SHENKAR IN THREE WORDS?

Merav Perez [MP]: It's new, exciting, and a meeting point.

Vered Pnueli [VP]: It's an intersection for everything else that happens at Shenkar.

WHO ARE YOUR STUDENTS?

MP: The Design Factory is open to all Shenkar students. We have two faculties: Engineering and Design, and we have an Art School. Geographically, the factory is located closer to the graduate programs in design and gaming, so it's a good meeting place for the different programs. On the second floor, we have a center for interactive technology, and students come from all around the campus to take courses there. If you are a student on our campus and you have some kind of an interdisciplinary or multidisciplinary appetite, I think the Design Factory is the right place for you.

VP: Yes, absolutely. And it's a good intersection as well for the graduates and undergraduates to work together.

MP: It's also a great place for visitors. Our campus is small, and there are only a few free spaces for meeting. From the moment we started renovating the Design Factory—I wouldn't say we're finished because there's still work to do—but the moment it was clean, nice, and colorful, people immediately started to use it! Now, when we have corporations or organizations coming in for meetings, it's a great place to bring them to because it's both a metaphor for a place and it's a physical place. So, it acts simultaneously on both levels, as the symbol for interdisciplinarity and as the physical place where it really happens.

VP: The thing about the architecture of the Design Factory is that we made part of it in a corridor that did not exist before. So we actually broke the wall between the undergraduate classes and the graduate classes, and now the Design Factory is just the path in-between them.

WHAT DOES A TYPICAL DAY LOOK LIKE?

VP: It has become a good place for students to just sit and work from the early morning. So they come in, some of them receive mentoring and some of them work on their own projects. In the evenings we have workshops. We realized that Shenkar needed more specific workshops and guest lectures that really enrich the regular studies. We've found that so far, this is what suits our students' needs the best.

MP: At the moment it's more of a thinktank that everybody can use for meetings, co-working, and even co-teaching activities. Since COVID-19 caught us toward the end of the renovation, Vered and I have been trying to work out a plan for next year. I really hope that in a month or two, we can bring the place back to life and realize the vision that we had after visiting Aalto.*

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

VP: We're just getting started, but so far, we've had the chance to work on an interdisciplinary course on VR [virtual reality] and video games and on a course on preventive medicine.

MP: Shenkar has joined the SUGAR network, so obviously the Design Factory is going to be the home for such academic activity. Shenkar often receives collaboration offers from industry, and some of them find their way to us. Instead of taking it to our departments, we channel them to the Design Factory to create opportunities for our students.

VP: So many things are happening and changing now [due to COVID-19], and another initiative that we're talking about is to make the fashion catwalks digital and in VR.

MP: Yes, the fashion show is the highlight of the year, and now we have to reimagine, rethink, and reinvent.

VP: These are some of the things we want to do in the framework of the design factory because, once you have it, it turns out to be the best place for activities like this.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

VP: I would say the opening. It was during Hanukkah. People kept asking, "What's the Design Factory? What's the Design Factory?" And about two days before we were supposed to open, it was still under construction. All the builders were there, and it looked like it would never finish on time. But then, magically, on the first day of Hanukkah, we were able to remove the stickers from the windows, and everything looked perfect.

All the students came by, the college president came, and we lit the Hanukkah menorah. It was very beautiful. We also had a video-game show there, and so many people came over! It was very exciting, and it really felt like the start of a new era at Shenkar.

MP: I love it when people ask about the "hugging point." In Israeli culture, it's such an eye-opener, and it's a crazy conversation starter. People ask, "What is it? What it's all about?" And I love the conversations that ensue from those questions.

**Every year, the Aalto Design Factory hosts a Design Factory Bootcamp where representatives from the institutions interested in the design-factory way of working spend a week learning the ABC of creating and running a design factory. Shenkar took part in the DF Bootcamp 2019.*



WHERE DO YOU SEE DF SHENKAR IN FIVE YEARS?

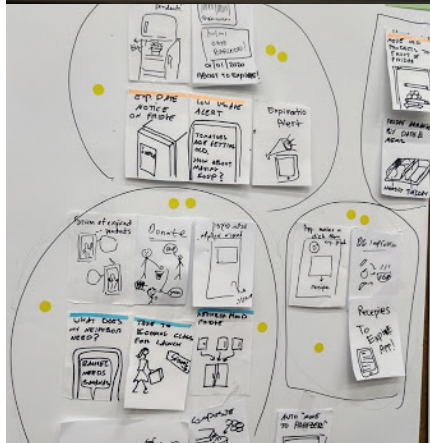
VP: It's going to be a hub. I also think it's going to have more digital expansions than we thought about initially. We spent a lot of time worrying about the physical space. We're always worried about that at Shenkar because we are a city college without much space. Finding new spaces is hard, and it's amazing that we found this corridor, broke down the walls, and made this beautiful space out of it. But because of what happened now with COVID-19, I'm pretty sure it will have much more digital activity than we realized when we started this journey.

MP: I think it will be a landmark on campus five years from now, and I hope it will bring together students, staff, and workers and play a significant role in their academic experience.

WHAT IS YOUR DREAM FOR THE DFGN?

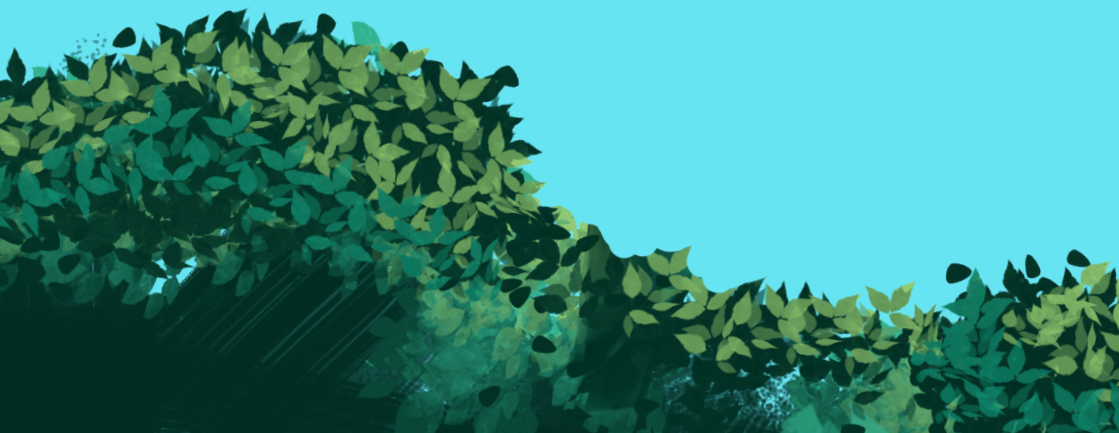
VP: It would be great to have a DFGN meeting in Tel Aviv. That's an amazing dream.

MP: I want to learn from the network and bring our own local culture of innovation and entrepreneurial spirit. I imagine a two-way relationship where we take and give back, contributing to the network the best we can. We are so excited to be a part of it.



EUROPE

- Page 36** Aalto Design Factory
- Page 38** Design Factory London
- Page 42** Fusion Point
- Page 44** Future Design Factory
- Page 46** HAMK Design Factory
- Page 48** IdeaSquare @CERN
- Page 50** inno.space
- Page 52** Oper.Space
- Page 54** Porto Design Factory
- Page 56** RTU Design Factory
- Page 58** Sandbox
- Page 62** Technovation Hub
- Page 66** UPV Design Factory
- Page 68** Warsaw Design Factory







FINLAND
Europe

AALTO DESIGN FACTORY

Interviewee:

**MARTTI
JERKKU**

Project
Manager

Host institution
**AALTO
UNIVERSITY**



Location:
ESPOO, FINLAND +

CAN YOU DESCRIBE ADF IN THREE WORDS?

Welcoming, dynamic, and adaptive.

WHO ARE YOUR STUDENTS?

Basically, our student base comes from all the different schools of the university. Since ADF's background is in engineering, most of our students are from engineering, but all the different disciplines and levels are represented, we also have PhD candidates working on the premises.

WHAT DOES A TYPICAL DAY LOOK LIKE?

Usually when I come to the design factory, I have some sort of an idea of what I want to have achieved by the end of the day. In reality, I rarely get all of that done, and the day turns out completely different than expected. Suddenly, you find yourself half-naked in the Engine Room [a meeting room]. There, a Vietnamese lady is taking photos of you for prototyping purposes. Your payment is a movie ticket. Your wife calls and asks what you've been up to that day, you tell her all of this, and she understands because she knows what the design factory is like. You realize it's EOB, and you've only done about 50 percent of the tasks you were supposed to. So, you take the to-do post-its from today and move them to tomorrow.

This is not for everybody. My work is very repetitive at times, there are a lot of admin things. On the other hand, you very often find

yourself in situations that you just cannot expect. And that's the beauty of it! Half of my job is doing things that are new to me. It gives you gray hair sometimes, but it's also what keeps it nice, interesting. I feel successful in my job when I am able to help students or colleagues overcome obstacles, or if I at least have been able guide them to the right person or place that can help them.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

The design factory concept was—and is still—built around interdisciplinary student teams working with design challenges provided by industry partners. Nowadays, we also have a solid base of start-ups, including student-based start-ups, 17 different companies in total. Then we have a bunch of students who just show up at the design factory with their own ideas, and

we happily help them to get further with their projects.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

Well, I think the best memories are always connected to this “work hard, party hard” attitude and mindset that we have. The work that we do and the work the students do is very project-based. Toward the end of the projects, it gets hectic but also often packed with awesome results. We get to be happy about that, what we achieved and if we met or exceeded expectations, and we try to celebrate that together as well.

If you want me to mention a specific memory, that would be last autumn when we celebrated the ten years of our design factory and embraced all the awesome things that had accomplished. Friends from all over the world joined us in celebrating all the memories from the past ten years.

WHERE DO YOU SEE ADF IN FIVE YEARS?

As I said, the design factory has been a project since the beginning. Nowadays, you could say

that we are more than a project and we have a very consolidated position within the university. However, there is still work to be done to foster interdisciplinarity at Aalto. Looking to the future, the focus could be more on the global level, continuous learning and education within industry, learning as a lifelong process—how can we contribute to that as a university, not just for students but for the people who are already working? I think that’s something that should and will be on our plate in five years’ time.

WHAT IS YOUR DREAM FOR THE DFGN?

That’s an interesting one because I think no one expected the DFGN to grow so big so fast. There are 30 different factories around the world now, and I think there are challenges with this exponential growth. So far, it’s been a group of very close friends, sharing the mindset and fighting against windmills. But now, getting this big, it’s become something beyond that. The challenge is to keep growing as a network and still be able to keep the feeling of unity even though we are a million miles apart.





ENGLAND
Europe

DF LONDON

Interviewee:

IAN
FERRIS

Programme
Director

Host institution
**BRUNEL
UNIVERSITY**



Brunel
University
London

Location:
LONDON, ENGLAND +

CAN YOU DESCRIBE DF LONDON IN THREE WORDS?

Ambitious, challenging, exciting.

WHO ARE YOUR STUDENTS?

The plan is to work right across the university. At the moment, we are initially planning around the design department, the engineering department, and the business school. We have also got some interest from the part of the university that teaches humanities.

WHAT DOES A TYPICAL DAY LOOK LIKE?

I anticipate that if you're on the operational side, it's going to be extremely busy. Given the range of students and departments we're working with, there's going to be significant pressure on the operational management of it, sorting out problems and making things happen, that will increase as we do more international collaborations or collaborations with industry.

On a practical level, there's going to be lots of setting up of collaboration projects and fitting projects into timetables, setting up systems and infrastructure, and then really trying to sell the whole concept of the design factory to students and teaching staff. The early stages are going to be a big challenge in terms of selling the whole concept of the design factory to people who may have never heard of one before and are wondering why they should participate. A lot of it is going to be around creating the internal

and external "brand and brand culture," trying to get people to buy into the idea of getting involved with this exciting innovation initiative.

I think we have got to start doing things very, very soon. We've got to start building stories, getting the word out. In a university environment—we've seen it before with other programs—things just take too long to be taken up.

WHAT KIND OF PROJECTS DO YOU SEE YOUR STUDENTS WORKING ON?

We've got such a diverse range of students. We'll be looking for industrial collaborations rather than theoretical projects being set up. The model we're adopting is thinking in three areas: one about the technical feasibility of a solution, one about the business viability of a solution or how it deploys within an organization, and one about the desirability of a solution in terms of its fit

with either user or customer needs. This allows students from any discipline to participate in creating objectives for final innovative solutions.

Coupled with a design-thinking model, this provides a flexible, scalable, and pragmatic way to focus students' thinking in any given project. But it's those underpinning objectives about desirability, feasibility, and viability that are the three constants that we're always working toward. Otherwise, it becomes simply a "designing or ideas" project, we want to teach student and industrial collaborators how to realize an "innovation outcome," which we see as a broader proposition. So, it's not just, "Have you got a good idea?," "Have you got a good idea that's technically feasible and also implementable?," and "Have you got a good idea that is sustainable in commercial and environmental terms once it's launched?"

These things are all part of that design-thinking framework that we'll be employing in different types of collaboration projects. That's the exciting part of it really, to see that happening with students from different disciplines collaborating on and learning in a real-world project.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

It was fantastic going to Bootcamp!*

Firstly, seeing a kind of a complete infrastructure for doing this kind of work that I didn't even know existed. It was massively impressive the way that it evolved, been thought through, what you deliver, the whole ethos and learning experience. For me, the feel of what the design factory is about was just fantastic because as a designer, it just connected with so many of the things I value as a professional.

The second thing was the ambition and enthusiasm that all the other people going to the Bootcamp had. That was just amazing, really, getting that kind of energy but the openness as well, in one space, it was very energizing to see that happen. It helped me to think further

about how we could do things over at Brunel.

WHERE DO YOU SEE DF LONDON IN FIVE YEARS?

I'm not really sure where we will be in five years' time, and I think that's the point about this whole design-factory experiment and innovation in general. It's an uncertain journey. We do have some things we hope to see happen though, I'm hoping that it's recognized across the university as an effective way to teach innovation, to stimulate new collaborations, and, despite the current COVID-19 situation, I'm hoping that we're working internationally, collaboratively with the other design factories. That's one of the big things we want to do and one of the reasons we joined the network.

We also want to impact our external relationships with industry. We want industry to be part of this. It's not just industry helping us out a little bit, it's industry being part of it. Because it's always been a thing in Brunel about how we engage with industry, and today we do that with traditional research activities and student placements, but this is a new kind of activity. It's about an exciting thing called innovation and working with industry on innovation topics that are real and can mean something can actually be implemented. That's just such a massive prospect for the university and for our students, academics, and researchers.

WHAT IS YOUR DREAM FOR THE DFGN?

The dream would be that we, through the efforts of all the people involved, do some fantastic new things together in how we teach, what students experience in Brunel, and how we can influence innovation in industry. That's my dream.

I'm a designer, my colleagues are engineers, scientists, academics, organizational specialists, marketing strategists, humanities academics; the exciting experiment we are undertaking is to see what happens when we all work together



to make Brunel's design factory happen, stir the pot a little and see what new things we can achieve. Opportunities like this don't happen very often, but I'm excited about being part of something that is responsible for generating fantastic solutions to whatever problems we start looking at, for finding new ways to influence how students and industry think about innovation.

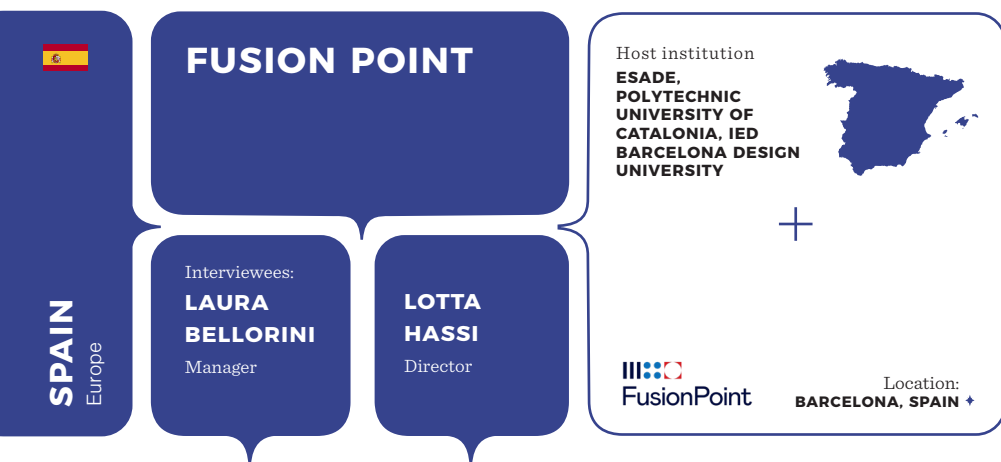
That's my hope for what Brunel can do and what the Design Factory Global Network can do, whether or not that's addressing real-world problems or teaching innovation in meaningful way, whether or not that's creating new solutions for industry, getting students to think differently about what they're doing, how they're doing it, and how they fit into the world of work after university.

We all just want to be doing fantastic new things that really count for something. That's why I'm involved with it, because that's what gets me excited.

**Every year, the Aalto Design Factory hosts a Design Factory Bootcamp where representatives from the institutions interested in the design-factory way of working spend a week learning the ABC of creating and running a design factory. Brunel took part in the DF Bootcamp 2019.*







CAN YOU DESCRIBE FUSION POINT IN THREE WORDS?

Experimental, experiential, socially impactful.

WHO ARE YOUR STUDENTS?

Fusion Point brings together business and law students from ESADE, engineering and technology students from the Polytechnic University of Catalonia, and design students from IED Barcelona Design University. Therefore, we can't really say to have a "typical" student but rather several types of student profiles, ranging from business managers, data scientists, developers, lawyers, product and service designers... Our students always work in multidisciplinary teams. What they do have in common is open-mindedness, curiosity, and willingness to experiment with us, which brings fresh new energy and a different perspective to every project.

WHAT DOES A TYPICAL DAY LOOK LIKE?

Our days are fully packed with courses and projects that we design, develop, and commit to improve every step of the way. Both the students and the Fusion Point team rotate between the three institutions' campuses and enjoy the multidisciplinary among the professors and coaches, which prevents the work from getting repetitive and boring. We learn something new every day!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We maintain and continue to develop a tight bond with industry and organizations to

make sure the multidisciplinary projects our students work on are always starting from a real-life challenge. A significant portion of our projects is aimed at solving challenges coming from companies of all sizes, from start-ups to multinationals. At the same time, the social relevance and impact of our projects is a core element of Fusion Point, one we continuously seek to strengthen. Therefore, we tend to select projects specifically aligned with these aspects.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

It's difficult to pick one, but for sure the best memories stem from when the entire team from the three universities comes together with the

students to celebrate the conclusion of a project we all have worked so hard on. One example is the Challenge Based Innovation Gala hosted by IdeaSquare at CERN, where final presentations are followed by all-night-long parties.

WHERE DO YOU SEE FUSION POINT IN FIVE YEARS?

In five years we hope to have established our role as an educational innovator and be recognized as an R&D lab, prototyping the future of education for the three schools we represent. Furthermore, we hope that we have understood what it takes to bring experiential learning to such a scale that more students have access to these learning experiences and more faculty are involved and apply this learning approach and methodology to their subjects.

Internally, we would like to be able to create new positions to support experiential and multidisciplinary education. Externally, we wish to build an extensive network of collaborators to reach a large part of society with our collaboration networks. From a research perspective, we wish to bring pedagogical research to a significantly higher level, not necessarily publishing academic papers but relevant publications from a practitioner/educator perspective. In addition, we aim to do consistent research, collect learnings in a structured and rigorous manner, and communicate our outputs clearly.

Finally, we would like to add new disciplines to our portfolio, expanding from four to five or six, by including disciplines from, for example, health care and medicine.

WHAT IS YOUR DREAM FOR THE DFGN?

Our dream is to leverage the full power of the network to elevate it to the next level. We wish the DFGN could facilitate more specific interactions between the different DFs by taking a more active role in trying to make the connections happen. From those connections we could see either student exchanges, research

collaborations, or pedagogical collaborations starting. This way, the DFGN could have a central role in the network to identify and pinpoint valuable connections and relations more specifically and to facilitate and make an active, very focused, specialized, curated matchmaking happen, done with some specific objective in mind.

Moreover, we wish the DFGN would consider creating an advisory board, driving with foresight all of the DFs and the entire network, focusing on the future of learning in education. Imagine if there would be twice per year an advisory board meeting (one virtual and one presential), and from each DFs one person could participate, where the focus would be the future of educational innovation, the future of higher education and learning.

Moreover, we wish the DFGN could help each DF to make their value more visible and tangible and help to communicate it better and more strongly to external parties.



FUTURE DESIGN FACTORY

Interviewee:

ERIC VOIGT

Coordinator

Host institution
**NHL STENDEN
UNIVERSITY OF
APPLIED SCIENCES**



frisian design
factory

Location:
**LEEUWARDEN, +
THE NETHERLANDS**

CAN YOU DESCRIBE FDF IN THREE WORDS?

In three words?! Curious, creating, networking.

WHO ARE YOUR STUDENTS?

A student who would like to get out of their comfort zone, who is curious, and who has passion for creating. Mostly they study communications and community design, we also have some students with technical background, so engineering, and then we have some economics students, so business.

WHAT DOES A TYPICAL DAY LOOK LIKE?

Most of the days the students will be working in teams of six, where one of them functions as the project manager. The teams are working on a real project from a real client. When they need information or help, they will come to the teachers, and we will provide them with that or put them in touch with someone who can help.

We do five iterations of prototyping; every iteration ends with a presentation. By building on the iterations and the feedback they receive, they will create a minimal viable prototype that is presented at the final gala.

As educators we also give lectures on topics like brainstorming, prototyping, and the five steps of design thinking. For the teaching team it's really about being available to the students when they have questions.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

There are no typicals. We are very broad. We have the Trend Lab, which is a project that runs for the whole year, two semesters, where students learn to do trend research. Their findings are given to SMEs in order for them to be able to adapt and find new business models and products. The Trend Lab is still quite new, it's been running for a year and a half right now. The students really like it!

We are also working on a product for a healthcare insurance company, and we have a project for our fashion program. How can fashion help those people who are in need of something to boost their confidence instead of rocking and living in these very expensive trends. Another project is for a library, to come up with a new tool for toddlers to understand how recycling works. Completely different projects every time!

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

The students organized a party. They were really successful with their project, and that made everything come together during the party. The amazement, the individuality of the students, but also the capability of being a team. Making sure that everybody was there. Yeah, I'm always proud when I remember that party!

WHERE DO YOU SEE FDF IN FIVE YEARS?

In five years? Well, I hope in five years we will have pop-up design factories on the international sites of our university, where students can learn and create in Bali, in South Africa, and in the other parts of the world. I hope the design factory will be an academy of sorts in its own right. Right now, it's just a project within the university, and I hope that in five years we will be equal to the academies with our own budget and all. That would be my goal.

WHAT IS YOUR DREAM FOR THE DFGN?

I would love to have between two and five projects every semester together with the other design factories in the network. Not only the Europeans but really international, working with all the different parts of the world. To let students work together, to learn together, and also to understand the cultural and economic differences. That would give them really, really good learning opportunities and experiences.





FINLAND
Europe

HAMK DESIGN FACTORY

Interviewees:

**KRISTINA
KIISKI**

Comms &
Marketing

**MARKKU
MIKKONEN**

Technical
Expert

Host institution
**HÄME
UNIVERSITY
OF APPLIED
SCIENCES**



Location:
**HÄMEENLINNA, +
FINLAND**

CAN YOU DESCRIBE HAMK DF IN THREE WORDS?

Markku Mikkonen [MM]: Collaborative, co-creative, the third would probably be open source.

WHO ARE YOUR STUDENTS?

MM: Our students are from all across HAMK: business, design, IT, construction, bio, nursing, to mention some. It's open to everybody!

WHAT DOES A TYPICAL DAY LOOK LIKE?

Kristiina Kiiski [KK]: I do the communications and marketing, so I'm behind the computer a lot. At the moment [February 2020], the PDP [Product Development Project] is taking a lot of time, I help the students with any questions they might have, and make sure that they know what's happening when. In general, I would say I get a lot of freedom to do the things I want to do.

MM: Me, on the other hand, I'm way less behind the computer as my job is to take care of all the machines and materials we have: the wood shop, the metal shop, 3D printing, 3D modelling, and so on. I also guide the students, teaching them how to use the different tools and machines to develop their prototypes.

KK: Markku has also been teaching me how to use the laser cutter and how to do 3D modelling and printing. Perhaps I'll move on to the metal shop and the wood shop eventually. It is pretty amazing that my job allows me to learn how to use machines!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

MM: Right now, we have six different PDP teams, among them are teams working on a new hospital that is being built in Hämeenlinna.

KK: It's a huge construction that is about to start, they are making the world's most human hospital, and our students get to work with that.

MM: Yeah, four of our PDP teams are involved in that project, creating prototypes for different problems. Another group is working on researching and developing a robot to be used in health care.

We are currently in sprint one of the PDP, and the students will present a very basic prototype at the end of it. From there, they will either continue their project or start from scratch if the sponsor wants something different. So, in a way, we are going to get 12 different prototypes before summer. At least that's what we hope for.

KK: This is the first time we are doing the

PDP, so anything can happen. I'm not even sure what's going to happen next week!

MM: We are very open about that to the students as well, we are all doing this for the first time, and we need their input to continue developing the program.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

KK: One thing that's often on my mind is how much trust has been given to me. I'm just a trainee, I'm only a student, and the DF team tells me to do as I wish. They support me and believe in me, and that is such an amazing start to my work career. I get to try things out, and if it doesn't work, that's okay. I learn from that and do things differently.

MM: When I was a student here, the building we're currently in was a total mess. It looked like a bomb had exploded, especially the spaces that are now our workshops. Back then, I was so annoyed that nothing happened there, it didn't make any sense. There were no guides, you couldn't find any tools, the machines couldn't be used... But then HAMK Design Factory happened, and I was given the opportunity to make changes. Now everything is in order, we have bought new machines and fixed the older ones. Finally, we are at the point where the workshops are pristine, and you can actually work here.

WHERE DO YOU SEE HAMK DF IN FIVE YEARS?

KK: I don't know what's happening next month, much less five years!

MM: I can see us in like a year. PDP will be better, our spaces will have been developed further, and hopefully we have more personnel. Right now, I'm the only one who works 100 percent for the design factory.

KK: I hope HAMK Design Factory will become a reason for students to apply to HAMK. We are very proud of HAMK DF already, but that would be amazing!

MM: One thing that I've thought about is that I can see HAMK DF providing open-source material and the possibility for anyone to come here to use the machines or learn how to make prototypes.

WHAT IS YOUR DREAM FOR THE DFGN?

KK: I would love to see a big or small project where students from different design factories around the world can really work together and share ideas. Our students aren't involved with the global projects yet, but I would like to see that happen. To see students get together, create together... That would be amazing. Not just students from different fields but also different cultures.





IDEA SQUARE @ CERN

Interviewee:
**SANTERI
PALOMÄKI**
Idea Shepherd

Host institution
CERN



Idea^s

Location:
GENEVA, SWITZERLAND +

CAN YOU DESCRIBE IDEASQUARE IN THREE WORDS?

Innovative, futuristic, ambitious.

WHO ARE YOUR STUDENTS?

There are two different types: internal students and external students. The internal students are technical students at CERN. The typical one would be this geeky engineer who wants to build something for themselves, and they've heard that we have a machine shop and a 3D-printing shop.

The typical external student is enrolled in a product-development or an interdisciplinary course at a European university and is super excited to be at CERN!

WHAT DOES A TYPICAL DAY LOOK LIKE?

More than 70 percent of the days, we have an event going on. If we are running a student course, we typically start the day with some coffee and croissants. Afterwards the students head off to some sort of energizer while I escape to my office to work on my emails. There's a lot of noise up until lunch while the workshops are being held, some of the physicists might look a bit annoyed, but they secretly love it because they're still here. After lunch it quiets down as the students go to their respective containers to work on their team sessions.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

The projects are typically related to the sustainable development goals (SDGs), so

product or service development related to the SDGs. Usually, when they are in IdeaSquare, the ideas are still quite conceptual. They do build some prototypes, but not very technical ones, so they're more "show-and-tell prototypes." More like cardboard, glue, stuff like that.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

It's one of them... I can't pick one. But the end parties with the students. To be diplomatic, I'll just pick the latest one. We had the Fusion Point CBI final gala. All the students were super nervous, we held the final presentations in the Globe of Science and Innovation, on the big stage. The students were super nervous, but everything went really well, and they had some brilliant pitches. After that they had the demo

show—there were so many awesome demos! We saw a lot of people from CERN who were supporting the students and who were super enthusiastic about being there with the students. We went on to Restaurant 2 for dinner, and it was great seeing the students super relieved, dancing and singing karaoke.

WHERE DO YOU SEE IDEASQUARE IN FIVE YEARS?

That's a great question because we are now sort of transitioning into ATTRACT, and I assume that it will change quite a lot. Maybe we will have slightly different types of projects. I think we will see more companies involved. I assume in five years' time there will be some start-ups founded based on ATTRACT, and I hope that we will be hosting some start-ups in addition to the students. And then see more of this student/start-up research-project collaborations compared to what it is now.

WHAT IS YOUR DREAM FOR THE DFGN?

For the DFGN my dream would be to have some sort of a huge joint project that combines both commercial and sustainable aspects. For example, we have this crowd for a Sustainable Development Goals EU project that started now in IdeaSquare. We could go global and engage all the different design factories in their local communities. All of their efforts could be brought together in this one, huge, global SDG-related project that would also have some sort of a commercial aspect.



**INNO.
SPACE**

Interviewee:
**CATARINA
BATISTA**
Coach

Host institution
**HOCHSCHULE
MANNHEIM**



inno.space
DESIGN FACTORY MANNHEIM

Location:
**MANNHEIM, +
GERMANY**

CAN YOU DESCRIBE INNO.SPACE IN THREE WORDS?

Fun, hands-on, and home.

WHO ARE YOUR STUDENTS?

From a purely educational background, we have students coming from computer science, design, medical engineering, and business engineering. What makes them inno.space students is that they are very open, curious people. They all share some of the same traits: they all like traveling, they all like cooking, they all like to do sports. It's clear that we have some kind of pattern of like-minded people coming in, and I think that's what really makes the community as tight as it is—we all share somewhat the same values and the same vision.

WHAT DOES A TYPICAL DAY LOOK LIKE?

Let's take a Tuesday because that's one of the most exciting days of the week. Normally I go to the office, and the first thing I do is get myself a cup of tea. In the morning I'll have a meeting with one of the teams where we go through what they've done so far and what their next mission is going to be. Then we usually have lunch in our little improvised kitchen, where the microwave and fridge definitely are for prototyping purposes only...

After lunch, the teaching team has a meeting where we align on what's going to happen next. Every two weeks, we have a community dinner where one of the student teams is in charge of cooking for everyone. We're now doing virtual community dinners [due to

the pandemic lockdown], so we'll meet slightly after mealtime so that the students can eat with their families. Then we get together and play cards or Pictionary online while enjoying a beer.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We have three different programs, two of them are in the network. We have CBI [Challenge Based Innovation] with the New York City Design Factory and Design Factory Melbourne and a new collaboration program with Tartu [Sandbox] called GDIP [Global Digital Innovation Program]. We also do ME310. I would say that the bottom line is that all of them deal with human-centered projects, and they all come down to impact and human-centered

innovation. They are all multidisciplinary and international.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

Definitely the second-year anniversary we had last year. We decided to make something out of it, do a celebration. We put a lot of work in, we had guests coming from other design factories to give keynotes, we had all of our teams presenting on stage. The celebration was held during those 40-degree days here in Germany, and we had no air conditioning in the auditorium. I don't know how, but people still just stayed and enjoyed themselves while they were dripping sweat all over. There was so much laughter, and the audience was so engaged. We also made little gifts and souvenirs for the students, including a laser-cut certificate that we made ourselves. There was ice cream, lots of cakes, balloons... A real celebration!

WHERE DO YOU SEE INNO.SPACE IN FIVE YEARS?

Oh, five years is a long time. Like so many other design factories, we will keep on fighting to keep this place alive. Hopefully, we will get even

more students, although it's kind of a chicken-and-egg problem that we want more students but don't really have more space. But we don't get a bigger space until we have more students. We would like to have a bigger facility to offer more "making" activities for the outside. We are already getting very well-connected to the start-up ecosystem here, and in time I would like to see even more projects coming to life and even more collaborative activities.

WHAT IS YOUR DREAM FOR THE DFGN?

That's tricky because I already like DFGN so much! It's obviously growing a lot, and I think we should continue to grow with consciousness. I would love to have even more contact within the network and perhaps get more opportunities to meet and share. My main dream is that the DFGN keeps the same kind of like-minded people sharing the same values. That we keep those core values but keep reinventing and stay updated on the needs of the educational world and the world of innovation so that we don't become obsolete. We have to keep the connection, keep reinventing, and keep going with the same passion that we've done until now.





ITALY
Europe

OPER. SPACE

Interviewee:

**MATTEO
VIGNOLI**

Assistant Professor

Host institution
**UNIVERSITY
OF BOLOGNA**



ALMA MATER STUDIORUM
UNIVERSITA DI BOLOGNA



Location:
BOLOGNA, ITALY +

CAN YOU DESCRIBE OPER.SPACE IN THREE WORDS?

Open innovation, collaboration, human-centricity.

WHO ARE YOUR STUDENTS?

Troublemakers! Unconventional. People who go beyond the rules, people who are active, willing to collaborate with others.

A few years ago, we changed the way we select students for our programs in terms of all the academic things like grades, time, track record, and achievements to include also passion, fun, and willingness to work with other people. So, candidates send us their resumes, and we strip away, you know, the interesting ones. We created a rule we call the hangout rule. Would you hang out with this person? If the person responsible for the selection says yes, then we will consider that candidate; if it's a no, then it's a no.

So far, so good. In three years, we have had the best students ever. Some of them are like, "I'm sorry, I'm a DJ, I don't have good grades. What do I do?" And we say "Come here, we like DJs."

WHAT DOES A TYPICAL DAY LOOK LIKE?

We created three new programs for the lockdown, so we have a lot of innovation activities going on even now [during the lockdown]. A typical day [pre-COVID-19] has a lot of proximity and physical, mental, and social closeness. A lot of hugs and intense moments, the "I'm-doing-the-right-things-and-I'm-really-learning-for-the-first-time-in-my-life" type of moments for everybody who's there. From a more practical point of view, it is a lot of post-it ideas, discussions, and testing of prototypes. Energy goes in all directions, and also frustration and uncertainty.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We have several projects that we are working on. We do the Challenge Based Innovation program. In the past we have collaborated with other design factories internationally, but since we are bringing this new concept to Italy, we are focusing on our region with the idea of expanding to the rest of Italy. Then we have ME310/SUGAR, which is an important program for global innovation, and that led me into the world of design thinking and eventually the DFGN.

Then we have a program that's called Embedded. It's a program that a company can start up at any point in time. It mostly involves alumni who have done our programs before, they form small teams and go into companies and work with the employees to create more innovation. We have had a lot of success with it so far.

We also have programs that are more toward people, like workshops, hackathons, and coaching. We designed a program that embeds a modified version of "Designing your Life" and is meant for people who want to use design to change their own path and career.

Since COVID hit, we have created three new programs. One of them is called TEN – Transform Emergency Now. It's a ten-day open innovation program where the participants get a societal challenge that they have to solve. In the first round we did, one of the challenges was that 30 percent of students in Italy couldn't access school because they didn't have a computer. We discovered that people who have a computer are likely to have one in one corner of the house and another one in a drawer somewhere. There are also smartphones lying around. So, we created a platform called Digital & Equal, where people can give their spare computers to students in need. In just two weeks it was operational and attracted a lot of computers and devices for students.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

The hugging point in IdeaSquare. I didn't use it in my first visit to the Aalto Design Factory, which was more about programs, activities, and structures. But walking into IdeaSquare, I was so excited to see the new space, to meet the people working there, and to use the hugging point. I feel that the human connection that design factories create really goes beyond any culture, religion, or nationality. It's a sense of the people that hang around there being the people that you would like to hang out with. Because

you are alike, you share the same passion of knowledge and doing.

WHERE DO YOU SEE OPER.SPACE IN FIVE YEARS?

I think that we will have contact points in different companies, and I believe that somebody will have an Oper.Space point in their own house. I see it really distributed among all the people we encounter in the next five years.

A lot of people ask where Oper.Space is, they ask to see the building. Frankly, I think that Oper.Space lies in the heart of all the people who interact with each other, and I think that's stronger than any building.

WHAT IS YOUR DREAM FOR THE DFGN?

I hope that it grows to every university on the planet! For me, without integration of knowledge, we don't go anywhere. The most interesting organizations in the world are working across disciplines and in teams, and they know how to do innovation.

That's distinctive competence that we need to develop not only in companies but in governments, in society, in your own sports association. If you don't have it, then you never reach the pace the world is moving at, and you're not ready to face uncertainty. You're not ready to redesign the world in a sustainable way. I see the need from everyone for the values and culture that design factories bring. Therefore, a toast to more design factories around the world!



PORTO DESIGN FACTORY

Interviewee:

**JOSÉ
MIGUEL
REIS**

Program
Coordinator &
Teaching Assistant
for ME310, PDP,
and A3CBI

Host institution
**PORTO
GLOBAL HUB,
POLYTECHNIC
INSTITUTE OF
PORTO**



Location:
PORTO, PORTUGAL +

CAN YOU DESCRIBE PDF IN THREE WORDS?

I would say challenging, exploratory, and definitely transitional.

WHO ARE YOUR STUDENTS?

We get a lot of students from engineering and design; mechanical engineering and industrial design. From time to time we get some business students as well and students from other areas, such as health, accounting, and other management courses.

WHAT DOES A TYPICAL DAY LOOK LIKE?

We have very, very weird days where it can be very still or very dynamic. A typical day can start very quietly, then all of a sudden someone starts doing something, and everything happens at once. I don't even know how to describe it. For instance, we had an event the other day with more than 100 people attending—it was very lively. Then suddenly, in the afternoon, it all stopped.

The typical day has changed a bit in the last few years. We have different people now, not just students, there are also start-ups that are incubated in the design factory. I think there's more collaboration now on smaller things. Smaller projects but more collaboration. It's like we've become more united somehow.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

This year we have two teams in ME310 and one team in PDP [Product Development Project]. The PDP team is working with Airbus on a new proposal for an innovation and co-creation space that is to be built in Hamburg. In ME310, we have a Portuguese sponsor and a Finnish sponsor, the Finnish one being Kone Cranes. The students are developing new controlling experiences for the crane operators who are on the factory floor, controlling the cranes. What will their experiences be like, five-ten years from now?

The Portuguese sponsor is the waste management company LIPOR, and they gave us a brief related to waste management in the region of Porto. By 2023, every country in the EU must be able to correctly process up to 75 percent of all biowaste. Portugal doesn't have the infrastructure for that, so the students have

to rethink the whole system on how biowaste and organic matter are handled and treated.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

In the beginning, when we were kicking off, we had a lot of events, there was so much cool stuff happening. The year I did ME310, we hosted the kickoff, and that was pretty nice! I would say that my PDP year, the first year I started as a student in the Porto Design Factory, is my most treasured memory in the sense that I really started to transform from this typical industrial design student into what I try to be today: a more polyvalent and more flexible person in terms of disciplines.

WHERE DO YOU SEE PDF IN FIVE YEARS?

A big transition is about to happen! The strategy of the university is to gather all the research centers and design centers into one building, so we are changing locations. Engineers,

researchers, and start-ups, all of us are going to be in that building together. So, in five years, I see us in that building, part of an ecosystem with every research center and several companies.

WHAT IS YOUR DREAM FOR THE DFGN?

That it keeps being a network and keeps on growing. I don't know about the other partners and other factories, but in our context, I think that we need to be better attached to and more connected with the network, despite the contextual changes and differences. In terms of the expansion of the network, I think an interesting path to explore would be more social-innovation and social-challenges programs.





LATVIA
Europe

RTU DESIGN FACTORY

Interviewee:

**NADINA
ELESKE**

Communication
Manager

Host institution

**RIGA
TECHNICAL
UNIVERSITY**



**RTU
DESIGN
FACTORY**

Location:
RIGA, LATVIA +

CAN YOU DESCRIBE RTU DF IN THREE WORDS?

Prototyping, innovation, and entrepreneurship.

WHO ARE YOUR STUDENTS?

I think our students are the most motivated and perhaps the most innovative ones at the university. We have a very vast array of students here, they come from all sorts of different fields. Our design factory is a bit different because we also run all sorts of different entrepreneurship programs, and a lot of our students come from that field. They want to build and create something.

WHAT DOES A TYPICAL DAY LOOK LIKE?

It is very busy! We all have different things we work on, several projects at the same time—we are crazy multitaskers. Recently I heard someone describe us saying that each of us is like a human orchestra, we single-handedly play all the instruments and deliver the results and the sounds as if we were a whole group of people.

We have a lot of projects and a lot of competencies in-house, and we get a lot of requests and do a lot of collaborations. I often wish I could get more hours in a day so that we could get more time.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

A lot of the students come here to use our equipment to work on the things they have to do for school. But then we also have the ones

who are trying to make their hobby or their crazy idea into a product—that is especially the case for the students who come here via the entrepreneurship programs. It happens quite often that students build something more or less by accident or just because they thought it was a cool idea, and they realize that they can turn that into a business.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

It is hard to pick just one, but one thing I really appreciate is that we have a lot of cakes all the time. We celebrate everything with cake! We even have a diagram where we keep count of all the cakes we have had. I think we had 33 different cakes within the first two months of this year.



WHERE DO YOU SEE RTU DF IN FIVE YEARS?

Definitely a bigger space! We are running out of space already because we have new employees and team members coming in pretty often because of the growing amount of work. We will be bigger and better and capable of working with even more students and even more companies and researchers. We want to do what we do but on a bigger scale every year.

WHAT IS YOUR DREAM FOR THE DFGN?

Closer collaboration, more active communication within the network, and more opportunities to visit each other. It would be great to have an overview of the different resources and equipment that the different design factories have so that if we have an incoming project that we don't have the right tools for, we could send our clients or students to someone who does.

SANDBOX

Interviewee:

**ANNE
JÄÄGER**Head of Industry
Collaboration,
Institute of
Computer ScienceHost institution
**UNIVERSITY OF
TARTU****SANDBOX** UNIVERSITY OF TARTULocation:
TARTU, ESTONIA 

This interview was conducted before the official opening of Sandbox on February 27, 2020. For Anne's comments on that, keep reading.

CAN YOU DESCRIBE SANDBOX IN THREE WORDS?

To. Be. Launched. Successfully launched, I hope! We are doing well, looking good, and we are going to be brave.

WHO ARE YOUR STUDENTS?

In terms of background they mostly come from master's-level computer science. They were our first target group when we piloted the program last year. This year, we are already recruiting economics students to make it more interdisciplinary.

This semester is the official launch semester, so I will test out some new elements, but we are not reaching our full scale of activities yet. We plan to intensify the program over the next semesters, and more disciplines will be added as our capacity to manage more students increases.

WHAT DOES A TYPICAL DAY LOOK LIKE?

There hasn't been one yet! We have the space ready in our brand-new University of Tartu Delta Centre. The building will be officially launched next week (end of January 2020), and the students will move in when the spring semester starts at the end of February.

After the launch, Sandbox will host design-thinking and digital-product-management courses, and you will find students working on their industry projects. Hopefully, some faculty and staff will also hang around, and it will become a place where you can be part of

the Sandbox community, be inspired to make a difference, and just be or meet in a non-structured way.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

I believe that design-thinking processes can be applied to very different kinds of challenges. I can say that we are more likely to look into digital solutions because of our computer science background. Our Sandbox space will be very clean in that sense. It is a co-working office space, but if our students want to go crazy

with some physical material and what not, they are more than welcome to.

Sandbox does not have enough examples to talk about “typical” yet. In the pilot last year, we had four companies who were all very different, from an NGO that advocates recreational sports to a factory that wanted to simplify the onboarding process for their new staff. I want to keep a very open mind, see what the needs of the industry are, and try to meet the companies halfway. We have developed a certain core process for industry projects, and regardless of the company, it can be applied. Since we take in a limited number of projects, we can really mentor the teams in a very customized way. It is more about doing well than doing a lot.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I have a very fond memory from the Aalto Design Factory (ADF). Sandbox has been a member of the Design Factory Global Network for almost two years, and I have been involved with ADF for three. The funny thing is that up until now, the network has known more about Sandbox than our home institution because we have been a bit “undercover” during the pilot phase and while waiting for our physical Sandbox space to be opened.

I visited Aalto Design Factory to celebrate their 10th anniversary in 2018 when I promised to throw a rooftop-terrace pancake party in Tartu one day. I still have the post-it where I wrote it down! Then I discovered today [January 2020] that there is a plaque in Kafis [ADF’s kitchen area] where it says that I will throw that pancake party. It is so cool that our interactions turn into things that will actually happen. We will toss some pancakes during the Sandbox opening in February!

I have had Sandbox in my mind for several years, and now I’m seeing it roll out. For many people in my home institution, Sandbox is just now being created, but for me, this is the ending

of the most important phase.

WHERE DO YOU SEE SANDBOX IN FIVE YEARS?

I don’t look that far. In general, I think it will be a lot more established, matured. Right now, everything is very ad hoc and “on the go,” it is a very early stage, like a start-up. In five years, it should have grown out of some of that early-day style. Have a stable program of courses, projects, and events, a strong community of students as well as partner companies and guest mentors from the industry. A fully operational ecosystem in that sense, self-sustainable and always looking for ways to improve.

But as I said, I don’t know what is going to happen in five years. I have learned that five years is too long to look ahead. I think two-three years is something that you can actually work on and maintain flexibility to take on new emerging opportunities.

WHAT IS YOUR DREAM FOR THE DFGN?

Everything has a lifecycle, and if we say that the network’s goal is to spread design thinking and innovation mindset as wide as possible, then in the end we could say that the best-case scenario is that there is no need for a separate network anymore. I don’t mean this in a gloomy way!

Some level of institutionalization is necessary because you need to manage growth, but it should not become too much. The most important thing is to understand the future role of the network and to be able to adapt to that. Community members should feel that they can come, contribute, and go, that being part of the network is a phase in their lives filled with great experiences, where they acquire new skills and connections that they can take with them on their next adventures.

THE OPENING OF SANDBOX HAS HAPPENED! IS THERE ANYTHING YOU WOULD LIKE TO ADD?

The Sandbox launch and pancake party was a great success! In addition to the local community, we were happy to celebrate with special guests from six design factories. With inno.space from Mannheim University we have also launched a joint project course this spring semester, providing us with great experience in applying online collaboration methods and tools for innovation, much needed these days.







TECHNOVATION HUB

Interviewee:

**CHRISJE
HAENEN**

Executive
Committee Member

Host institution
**TECHNOVATION
HUB,
SUPPORTED BY
KU LEUVEN**



TechnovationHub

Location:
LEUVEN, BELGIUM +

CAN YOU DESCRIBE TECHNOVATION HUB IN THREE WORDS?

High tech, entrepreneurial, and creative.

WHO ARE YOUR STUDENTS?

Our typical students are engineering students, engineering scientists, engineering-technology students, sometimes business-engineering students, or bio-science-engineering students. We also work together with students from other disciplines, like communications, legal, and economics.

WHAT DOES A TYPICAL DAY LOOK LIKE?

It differs because our students are in different student teams based on a variety of topics, for example, automotive, robotics, energy use, 3D printing...

We don't have our own office space yet. We have smaller workplaces scattered all around Flanders where they work. Some of them work within university spaces, others within companies.

They usually start quite early in the morning, like normal office hours, eight-nine. They'll do scrum meetings, these stand-up meetings where they decide on what to do and what they need to solve that day. The work that follows can be desk work or in a workshop.

The teams always have lunch together. I think that might be the best part of it, they have a lot of fun getting together, sometimes they'll cook. It's really good for group dynamics.

After lunch it's back to work, and often it gets quite late. They are here until ten or eleven in the evening, and we had to set some rules that working at night isn't really advised. They can, but, for safety reasons, it's not the best idea, especially in the workshops. They're so passionate!

A lot of them become friends, some of them even live together, and they'll go home and keep working or perhaps go grab a drink in the city center. They are really committed to what they do.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We have two automotive teams. It's the formula-electric team and the solar team, and they participate in international student competitions where the goal is to really design and develop a car within one or two years. They

do everything themselves, for example, they build their own motor, and they try as best they can to not buy any made parts but create everything from scratch.

The robotics team designs and builds small robotics, and they are currently looking for implementations in the health sector. As we all know, health personnel are very busy, especially now, but they often spend a lot of time on tasks that are not related to health care, for example, serving meal trays. Small robotics can do that! Another team is working on projects concerning efficient and sustainable energy consumption. A hot topic at this moment is the circular economy, and one of their sub-teams works on a smart platform for the re-use of coffee cups in close collaboration with local coffee bars.

Two other teams are bridging the gap between the life sciences and technology by using genetic modification technology or 3D bioprinting. This last team is working on sustainable production and 3D printing. One of their projects is taking cigarette butts and turning them into 3D-printing materials.

It's really weird, but it looks amazing. Quite recently we got a start-up team. That's a team for our student entrepreneurs who often start off individually, but our goal is also to bring them together and form new teams because teams are typically stronger and more successful than individuals. We want them to share ideas, knowledge, experiences, and relevant material so that they can learn from each other. We also coach them, both together and individually.

I think sustainability and social relevance are important to all of our teams. We have very motivated students who are creative and entrepreneurial, it's so nice to work with them, and they give me a lot of motivation.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

It's the progress I see when the students are working together. I started here in 2013, and there was no Technovation Hub. There were some teams, but they really competed with each other. They competed for the best students, for the best sponsors, for the clients. They didn't



share anything with each other.

In 2016 we launched Technovation Hub, and already the year after we could see a huge change in the culture. There's no hostility between the teams anymore, we all work together as a united front, we organize events together, and we share knowledge and data as well as materials, machines, and tools.

Technovation Hub brought everyone and everything together, and I never thought we would be able to do that culture shift.

WHERE DO YOU SEE TECHNOVATION HUB IN FIVE YEARS?

Things are moving fast! I hope we have our own space next year already so that we won't be scattered all over Flanders still. We are in conversations with the city of Leuven as they are starting a makerspace, and we are trying to get Technovation Hub in there to create a prototyping lab.

I would love for that to be our base in the future, a place where our students can work in smaller teams and where we can welcome people, have some machinery, and perhaps organize some lessons. It would also be a great way to let the citizens of Leuven get to know Technovation Hub.

WHAT IS YOUR DREAM FOR THE DFGN?

It would be great if we had one international course that was up and running on all the design factories.

We did a collaboration with the University of Bologna [Oper.Space] recently, and it was such a great experience. There were all of these student teams from different universities taking part, doing international benchmarks, sharing experiences together, and learning from each other and the different situations in different countries.

It would be great if we could have a new project around engineering or high tech where students from different design factories

participate as one team. It should, of course, be online, but also some offline events where they can meet in person and have that cultural experience would be great.





UPV DESIGN FACTORY

Interviewee:

**CARLOS
RIPOLL
SOLER**

Director

Host institution
**UNIVERSITAT
POLITECNICA
DE VALENCIA**



**UPV DESIGN
FACTORY**

Location:
VALENCIA,  SPAIN

CAN YOU DESCRIBE UPV DF IN THREE WORDS?

Student empowerment program.

WHO ARE YOUR STUDENTS?

Our focus is on undergrad and master's students. They come from different academic fields, like business administration, engineering, computer science, architecture, fine arts, and design. We could say that all academic fields are represented in our design factory. We are really multidisciplinary! I like to say that they play the main character in a film written and directed by themselves. They like to be in charge. Our role as the design factory is to facilitate the whole process. The only requisite is that the activities they engage in must be a driver for them to develop soft skills because our focus is on education, where the student is the authentic core of the whole learning process. I would say that this approach makes us quite unique. Nonetheless, due to the COVID-19 pandemic, we are considering hosting some programs, but the truth is that our DF relies on student initiatives, and turning it around could compromise the uniqueness of our learning process.

WHAT DOES A TYPICAL DAY LOOK LIKE?

It is difficult to say because we are not enclosed in a single space, nor do our activities happen on a daily basis. It is more of a continuum. Our co-working space, where people come and go, plays a relevant role, but our ecosystem is well entrenched in the whole university campus. From the set of services we provide, the one I like the most is mentoring. Guiding students through the whole process has proven to be a key part. We help them to convert a narrative into a feasible project. We support students in making their project a reality. As a part of that

process we ask questions, many questions, so they realize what they want to achieve with their project and which role it will play in their education.

We also have a funding program that students can apply to in order to get resources for their projects, and we organize roundtables, breakfasts, and other networking events in the design factory to create a sense of community among all the teams.

The administrative staff, partly working for our DF, is fundamental in keeping the flow. It is true to say that the university administration

itself can become a gigantic challenge for students, and the administrative staff is always there, ready to help.

And last but not least, I would like to remark that the role our student staff play is of the utmost importance because they are part of the student-to-student interaction process. Most of the time they are like a help desk and the first contact that participants have with our design factory.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

They participate in international competitions, community building activities, or societal challenges. They are all co-curricular activities and voluntary. The projects are always multidisciplinary, covering the three main fields of the university (arts and design, business administration, and engineering). I could list a lot of examples because, at this moment, there are more than 70 different projects per academic year going on. Some of those are focused on a challenge, especially those aimed to win a competition, but some others are promoting specific skills. If I had to find a common thing in all the projects, it would be that in every single case they are learning by doing. This is what our students are obsessed with.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I have several! From my own design factory, I remember when we became part of this big family. It was a very informal ceremony. At a certain moment we established a video conference with the Aalto Design Factory and we saw Eetu [Kalevi Ekman] and his team, standing there with a very nice tie, a suit, and a glass of champagne, welcoming us to the Design Factory Global Network.* It was the best picture in the world, seeing all of them give us a warm welcome. It was very nice!

WHERE DO YOU SEE UPV DF IN FIVE YEARS?

I would like for us to live in less hectic times, not only because of the pandemic but because, in order for us to keep this thing alive, we are relying on a very informal structure, and sometimes we struggle to keep things moving. I would say that my role model is Aalto [the design factory], in terms of buildings, facilities, and people. But things are going in the right direction, and in less than two years we will be happy to inaugurate a new building on campus dedicated to our design factory.

So, in five years, our goal is to have a new building, dedicated staff, and, of course, a bigger-than-ever community of students willing to take part in the design-factory activities!



WHAT IS YOUR DREAM FOR THE DFGN?

I see the network as a learning community. So, I expect it to be kept as a place where you can meet with other people who are doing interesting things and who are like-minded. By doing that, we could become the most decisive and relevant design-thinking community in the world!

**Some design factories have live video links to each other's spaces as a way to communicate and foster community across borders.*



WARSAW DESIGN FACTORY

Interviewee:

**PIOTR
PALKA**

Innovation
Overseer

Host institution
**WARSAW
UNIVERSITY OF
TECHNOLOGY**



WDF

Location:
**WARSAW,
POLAND**

CAN YOU DESCRIBE WDF IN THREE WORDS?

Constant improvement, a lot of teachers, crazy ideas.

WHO ARE YOUR STUDENTS?

Most of our students are the engineers of the future. They cover a lot of disciplines: IT, mechanics, mechatronics, science, chemistry, physics... A lot! We also have some management students.

WHAT DOES A TYPICAL DAY LOOK LIKE?

I mainly work from our electronics-and-information-technology faculty building. When I go to the DF, it is to work on something with the students or to have some sort of meeting.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

Two of our student teams are working with the PDP [Product Development Project]. One of them is Team Winco, working on an alternative way of doing rail-switch repairs in railways, the other one works on a wearable PET-scanner in Team Laser. Our ME310 students are analyzing the experience people have when they go to the dentist. Other students are working on national courses, focusing on challenges and problems related to smart cities.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I remember our official opening. Our workshop is a 10-minute tram ride from the actual design factory, so during the opening we were planning on showing a video of the workshop. The day before the opening, the workshop was still empty. No tools, nothing. I went home, found some tools I had lying around, and I brought them to our workshop and set everything up before filming to make it look like there was something there. We shot the video and showed it at the opening. That was a crazy movie!

WHERE DO YOU SEE WDF IN FIVE YEARS?

We have elections for the new rector coming up this year, so anything can happen! I hope it will change for the better and give us even more autonomy.



WHAT IS YOUR DREAM FOR THE DFGN?

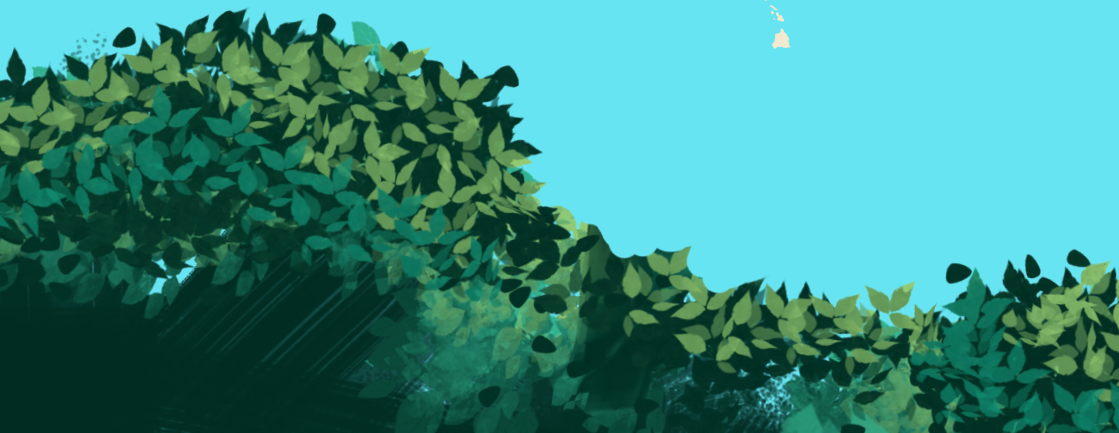
My dream is that all the design factories get more decision-making power within the university. That way collaboration would be easier, and we could also decide things like “from now on, in every design factory, we have a course.” At the moment, that’s impossible.

NORTH AMERICA

Page 72 Nexus Design Factory

Page 76 NYC Design Factory

Page 78 St. John's University Design Factory





72
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76

78



UNITED STATES
North America

NEXUS DESIGN FACTORY

Interviewee:

**TOD
CORLETT**
Director

Host institution
**THOMAS
JEFFERSON
UNIVERSITY**



Location:
**PHILADELPHIA, PA
USA**

CAN YOU DESCRIBE NEXUS DF IN THREE WORDS?

Bringing people together. The principles of user-centered research and design are already in the university's curriculum, so for us the challenge is that we need to be a place where we can break the silos between the different programs.

WHO ARE YOUR STUDENTS?

Our students are a combination of design students who tend to be very confident and socially outgoing. Then we also have business and engineering students who might not be so confident of their skills in working in group projects or working in teams. We bring these cultures together, and it's a really interesting opportunity.

This gives us a really interesting opportunity, which is also a challenge: to take the two cultures of students—primarily from health and health science and students from product development and innovation broadly considered—in other words, design and engineering and business, the traditional triad of the design factory, and trying to bring these two cultures together. It is interesting because you have to face up to the fact that professionalism means different things in product development and business and in health care. In both product development and engineering and business, there's this unqualified empathy with the user and empathy with the consumer. In medicine and health care you want to have empathy with the people you're serving, but on the other hand, in these fields, people die. So you also need to maintain a certain professional distance. That makes these very interesting issues of professionalism very appropriate. These two fields and these two groups have to understand that the other is not wrong, they're just operating in very different contexts.

WHAT DOES A TYPICAL DAY LOOK LIKE?

In the past [before COVID-19] a typical day would be having somebody from a local design-and-product-development firm giving a presentation on intellectual property. Not focusing on the process of how you get a patent but what you need to know about that process as a person who actually wants to take something and put it out in the world. For instance, have you read

40.022229, -75.192279

a patent to understand what the protectable claims are? And if someone else has a patent that seems to mean that you can't put something out into the world, how do you rework what you're doing so that you're not infringing on the work they've done? Or how do you reach out to them and license what they've done so that you can incorporate that into your own work?

Closer to the end of the day, we are joined by medical students who are interested in figuring out how to take particular systems, products, or platforms within their field that have been found to be profoundly problematic by experts but stayed unaddressed for multiple decades. The students want to change that.

On the other side of the table, there will be students from business, engineering, or design who are going through a design-centered process. They know the process very well, but they've never had to work with live clients and real problems in quite this way. The next step for them is to go into the hospital to shadow and do research.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

Right now, we have a project going which was actually started at the Center City Campus before the merger [Thomas Jefferson University and Philadelphia University merged in 2017]. Back then, it was called Jeff Solves Med Tech, and they would take medical students and let them work on design and design thinking, bringing in an external design firm to work with their students. If I may be so bold, the expertise that was missing was the expertise in facilitation: moving the process along and pulling people over the bumps that happen in the road along the Double-Diamond process. Now that the merger is complete and we have faculty from the design programs involved, we are able to provide a more productive experience with less frustration. We need subject-matter expertise, we need process-oriented or silo-breaking expertise, and we have people on call for that.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I have so many good design-factory memories! My favorite must be from the night that we got together across the street from the Liberty Bell during the International Design Factory Week here in Philadelphia. Because it was wonderful to have that sense that I had taken all of these friends that I know from the design-factory community and shown them our city and what it has to offer. Since COVID-19, gatherings like that have seemed even more precious, and they ring even happier in my memory. I am so glad we managed to do that before all of this happened.

WHERE DO YOU SEE NEXUS DF IN FIVE YEARS?

I think we have a really interesting opportunity to be a place to unify international and inter-university activity of the kind that we love to do here. We like to get clients from industry, and we bring people together from multiple places within the university to do an interdisciplinary project.

But what do we call that? Where do people go when they have an idea for how that could happen? I'd like for Nexus Design Factory to be the banner over the door where new ideas walk in. We have another place here on campus called the Innovation Pillar. Right now people think that that's where the idea should walk in the door. In fact, the Innovation Pillar are really good at what they do, but their place, that's where the ideas get dressed, where they find their clothes and leave the university. That's where they do commercialization and where you find the Intellectual Property Office. In five years, I'd like to see the design factory being known as the entry door for new projects, as the place that figured it out first and best in terms of how to do collaboration. In the new hybrid world, where things aren't in-person as much as they used to be back in the before-times.

WHAT IS YOUR DREAM FOR THE DFGN?

I've got a short-term and a long-term dream. My short-term dream for the DFGN is that we can return to operations and start visiting each other and interacting more again.

My longer-term dream for the network is that we get to the point where we have a very clear understanding of the needs, capabilities, and profiles of all the institutions in it. That way, we will have the ability to be very responsive. The design factory in each city becomes the place that other people outside of the DFGN know that if they need an international partner, they can just drop in or call the design factory and be linked very efficiently and with a high degree of confidence to an international partner who would be at least a great conversation partner and potentially start a really interesting collaboration. Basically well-known within all of our universities as the place where international innovation happens.







UNITED STATES
North America

NYC DESIGN FACTORY

Interviewee:

**ANDREEA
COTORANU**

NYCDF Lead

Host institution
**PACE
UNIVERSITY**



Location:
**NEW YORK CITY, +
USA**

CAN YOU DESCRIBE NYCDF IN THREE WORDS?

Experimental, adaptable, high-tech-high-touch [yes, this is one word by NYCDF standards].

WHO ARE YOUR STUDENTS?

Most NYCDF students study computing disciplines, including computer science, information systems, software engineering, and data science. However, NYCDF brings together students from disciplines outside computing, including art, business, economics, health care, and environmental science. NYCDF students come from all over the United States and from all over the world. They bring diverse perspectives, excitement, and curiosity. They are confident, energetic, driven, and full of love. They take on the energy of the city they live in, NYC!

WHAT DOES A TYPICAL DAY LOOK LIKE?

A typical day is powered by caffeine, NYC pizza, and hugging points. A typical day starts early and ends late. A typical day may appear chaotic for some, yet it is perfectly balanced for the NYCDF family. Throughout the day, students and coaches come and go, and we pass the baton from one to the other. The day revolves around students, faculty, and friends coming together, sharing meals, exchanging ideas, having industry visitors, promoting projects, and hosting events. A typical day brings about unexpected opportunities to learn, connect, and support each other, students, projects, and community. We enjoy our typical days but look forward to the special days when members of the DFGN family stop by, a wonderful occasion to catch up and co-create over delicious food—visit us at NYCDF!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

Internationally, NYCDF students have been a part of the ADF Product Development Project [PDP], a long-term engagement that we're very excited and grateful to take part in. In addition, for two consecutive years, NYCDF students participated in Challenge Based Innovation A3 [CBI A3], an amazing program powered by Design Factory Melbourne, IdeaSquare, in collaboration with inno.space and NYCDF. Nationally, in the United States, NYCDF students have been participating in Nexus Maximus, another great program led by our friends at the Nexus Design Factory in Philadelphia. Locally, as a way to engage the community, NYCDF students also take on projects from start-ups, corporations, and non-

Design thinking is a process and a mindset.
Don't wait. Innovate!



profit organizations covering diverse industries, including technology, finance, environment, and health care, to name a few.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I'm particularly fond of the students and seeing them grow through the DF experiences. So the fondest NYCDF memories for me are about the students who have completed their project and presented their work. This is a time to witness their transformation, and it happens with every group of students. As an educator, I look forward to witnessing this transformation that seems to magically happen.

WHERE DO YOU SEE NYC DF IN FIVE YEARS?

Expanding and strengthening this passion for doing, always and in all ways! We work toward having our own building that will allow us to bring together all our resources into one space. We'll continue to nurture interdisciplinary collaborations internally within the university

as well as externally with members of our communities and the DFGN. The DF has been a transformative experience of teaching, learning, doing, collaborating. The future will be about continuing this transformation, serving as a catalyst for positive change, impacting our people and our communities, and having an amazing time doing it!

WHAT IS YOUR DREAM FOR THE DFGN

Oh, I just wish we will continue to be a strongly connected community that attracts passionate people with a commitment to advance higher education and co-creates transformative learning experiences that impact the world, locally and globally.



UNITED STATES
North America

ST. JOHN'S UNIVERSITY DESIGN FACTORY

Interviewee:

LUCA

LANDOLI

Associate Dean for
Global Programs
and Research

Host institution

**ST. JOHN'S
UNIVERSITY**



Location:
NEW YORK CITY, USA

CAN YOU DESCRIBE SJU DF IN THREE WORDS?

An innovation hotspot where students can express their creativity.

WHO ARE YOUR STUDENTS?

Our students come from different disciplines. For example, from computer sciences, IT, and cybersecurity, and we have people from different parts of advertising, like mass communication, journalism, and TV. We have students from sports management who are working with esports, and we have a new video-game degree that combines mass communication and computer science. Students also come from hospitality management, humanities, and legal studies.

St. John's University was born 150 years ago with the explicit mission of making higher education affordable to underprivileged groups, such as immigrants. The College of Professional Studies was created 50 years ago as a school for professionals—a lower academic grade. In time, that has changed as a lot of new, innovative disciplines found their way to our school. That explains the social and disciplinary diversity we have, and it's also one of the reasons I think the design-factory concept is such a good match for us. Our professional origin means that the type of teaching has always been very hands-on, we have a lot of labs, and classes have always had a big practical component.

WHAT DOES A TYPICAL DAY LOOK LIKE?

A typical day definitely includes some teaching activities because we hold several classes in our design factory space, especially classes that have design or lab components. I also teach my creativity and innovation class in that space, we have forensics and computer-science classes and advertising classes there as well.

The other types of things that are going on there are special events, like seminars and

workshops. We have organized a few workshop series on different technologies that the students can use to build prototypes. Some student clubs organize their own programs there, for example, the entrepreneurial society that uses the space for their bi-weekly meetings.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

There are so many interesting things going on! Because of the multidisciplinary curriculum of the school, it really depends. Sometimes it's the students themselves who have an idea they're working on, and they want to use the space to develop it further. The majority of our students are girls, and a lot of them are into sustainable cosmetics and beauty products. We had a team who did a haircare product using natural ingredients.

We are also working with a travel company trying to find ways to innovate their offers, especially targeting the younger population as they normally serve a more mature, grown-up type of customer. So, two teams are working on proposing different projects targeting different destinations that the travel company should consider offering.

A former student of ours is starting a streaming platform for emerging rappers. It's not just about streaming, it's also a platform to help people collaborate with each other. For example, if someone's specialized in writing, they can look up someone specialized in the creation of a musical base (the "beat"), and they can put things together. It's a really interesting concept, and we have a team working on designing the website for this company.

Another one is the integration of video gaming into regular sport-management programs. If you think about basketball video games or the FIFA video games, there's a lot of sports knowledge that needs to go into that. You have to design the game in a very realistic way, and that requires a lot of domain knowledge. We have a project going on how we can integrate the esports in a regular sports event. It's such a new domain with a lot of interesting stuff going on.

We have all of these different activities and labs, and even though we already are connecting them, we want to make that connection even stronger through our design factory.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

The innovation event that we did last year was really nice. The students showcased their work, and there was a lot of interest from other people, and we had Mauro Porcini, the Chief Design Officer from Pepsi, coming in to give a wonderful presentation. It was a really great event.

WHERE DO YOU SEE SJU DF IN FIVE YEARS?

What I would like to see in five years is not just a bigger design factory with more activities and more people involved but a design factory better integrated and connected to the rest of the campus.





We have a very nice space where we have all of this new technology, especially on 3D printing, digital media, and virtual reality. We mostly work digital as we don't have an engineering school. New York is not really into manufacturing anyway! I want to have all of these resources, not necessarily under the design-factory umbrella but strongly connected to what we do.

At the same time, we are working to establish more continuous relationships with companies so that we can have a feed of projects coming in directly from them.

WHAT IS YOUR DREAM FOR THE DFGN?

It's already a great thing, it's very hard to ask more from it. It's a fantastic network of people, and there is so much we can learn from each other, especially for us who are new to this.

For me, the value of being part of it is to be part of a community in which there's a lot of learning going on across the design factories and also opportunities for students to be involved in international projects.





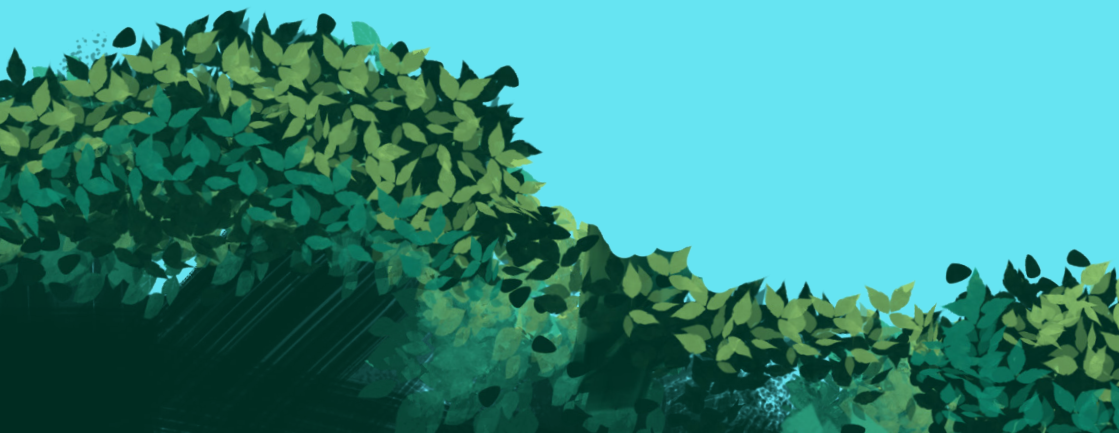
SOUTH AMERICA

Page 84 Cali Design Factory

Page 86 Design Factory Javeriana Bogota

Page 88 Design Factory São Paulo

Page 90 Duoc Design Factory





CALI DESIGN FACTORY

Interviewee:

**DIANA
RIVEROS**

Director Center for
Innovation and
Entrepreneurship

Host institution
**PONTIFICIA
UNIVERSIDAD
JAVERIANA**



Location:
CALI, COLOMBIA +

CAN YOU DESCRIBE CDF IN THREE WORDS?

Community, curiosity, resourcefulness. It is amazing what we can do with not very much!

WHO ARE YOUR STUDENTS?

It is pretty diverse, mostly we have designers, engineers, and people from international business. We are trying to reach out to others, this year, for example, our PDP [Product Development Project] star is a philosopher! She is like the rock star of their team. We are very happy about that.

WHAT DOES A TYPICAL DAY LOOK LIKE?

We don't have typical days! There are always exciting things happening. CDF is part of the center of innovation and entrepreneurship, so there's always this cross-pollination between the entrepreneurs who come here to work and have their meetings and our students who are creating models and prototypes.

This year has been particularly crazy* because they are giving us a new space, so we are buying all the new "toys." Everybody—everybody!—is excited about it and wants to see it. Bureaucracy is taking its time, but we are getting there. The space is nearby where we are now, right across the soccer field. At the moment we go back and forth!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

The center is trying to focus more on social tech

and green tech. The pull toward social tech is stronger within the health-tech community, and with all this crazy pandemic, the challenges are endless! So, we need healthcare professionals in our projects. We want them!

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

That's tough! A recent one is putting the new space to use. We went there with the PDP team, just us, and had a sort of celebration. There has been so much struggle and a lot of work. The students were waiting for it because they really need a space to prototype, and it was so much fun to finally give them that. It was really great.

WHERE DO YOU SEE CDF IN FIVE YEARS?

We are pioneers in building close relationships with industry, it does not happen much here.

So, I see us being champions for that to other universities in Colombia, increasing effective collaboration and transforming education as a consequence of that.



WHAT IS YOUR DREAM FOR THE DFGN?

Oh, I don't know. I have so many dreams for the network! Can it be a crazy one? I dream of hugging points turning into teleportation portals, making it possible to go to other hugging points instantly!

This, of course, symbolizes increasing effective and natural collaboration among us, getting to know what's happening everywhere, getting people to come here, and creating good international experiences for our students, researchers, and entrepreneurs. It's such a big and interesting network, I'm sure we can do incredible things together.

Update: And it got even crazier with COVID-19! We've been away from campus for six months now, and it doesn't look like we are going back soon. We had to turn to virtual tools and smart ways to learn and co-create very fast!



COLOMBIA
South America

DESIGN FACTORY JAVERIANA BOGOTA

Interviewees:
**RICARDO
RUGELES**
Coordinator

**OMAR
RAMIREZ**
Preceding
Coordinator

Host institution
**PONTIFICIA
UNIVERSIDAD
JAVERIANA
BOGOTÁ**



Location:
**BOGOTÁ, +
COLOMBIA**

CAN YOU DESCRIBE DF JAVERIANA BOGOTA IN THREE WORDS?

Ricardo Rugeles [RR]: Design for non-designers.

WHO ARE YOUR STUDENTS?

Ricardo and Omar are surrounded by hardworking students, Ricardo turns to ask them what they are working on.

RR: These students are doing a course that is called “Equality for All”. This is an open course for the whole university, so here you have students from engineering, from business administration, science, nursing, nursing dentistry... Basically all the disciplines here in the university.

Omar Ramirez [OR]: It would be easier to list the disciplines that are not here yet, but our mission is to work with all the disciplines.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON, AND WHAT DOES A TYPICAL DAY LOOK LIKE?

RR: It can begin with a breakfast with an enterprise and some professors. We do some business after that, and you can find a group of sociologists and psychologists working on how to create a new town for ex-combatants from FARC [Revolutionary Armed Forces of Colombia]. You can also find a group of ecologists trying to create a new system to control the temperatures for frogs and other species. After that, perhaps a group from architecture working on the integration of the new bases for the new town for the ex-FARC.

OR: A regular day starts at 8 a.m., and we all know the plan for that day. But by 12, the plan has been changed by new tasks to be done. We all start with a plan and end up with new achievements and new goals to reach.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

RR: For me it is when a professor who doesn't know the design factory discovers it and finds that it is a useful space for the university and brings their students here. Psychology is an interesting example: they thought that the design factory wasn't for them, but we talked to the



professors and students, and now they want to come here and develop projects. When you find the right persons to work with, those moments are incredible.

OR: I have a breakfast memory. We love doing something related to breakfast here, we cook arepas. It was a special day, we had invited some very, very super-formal university people, with ties and everything. We start cooking, and I tell them, "Let's get to it! Take off your coats and ties." I didn't expect them to actually do it, but to my surprise, they took off their coats, and they started cooking along with the students and other people. That was really special for me because it shows that the spirit of the design factory is working here.

WHERE DO YOU SEE DF JAVERIANA BOGOTA IN FIVE YEARS?

RR: A greener space. It is too white and engineering-like at the moment. We should

get some plants! Maybe if we change the idea that sustainability is the last part you have to structure in a project, as well as develop activities here with sustainability as the base, we will be able to make a better, faster change in industrial design and in the design factory.

OR: I agree. My dream is also that in five years there will be no single disciplines in this university and that we achieve new goals together.

WHAT IS YOUR DREAM FOR THE DFGN

OR: The dream I take with me every year to our annual meeting is to develop new ways of working together. We have different cultures, different backgrounds, different time zones, and that brings a lot of difficulties. My dream is that we find a way to break down all those difficulties and find easier ways of working together.



BRAZIL
South America

DESIGN FACTORY SÃO PAULO

Interviewee:

**MARIANA
OLIVIERA**

Product
Development
Project Teaching
Assistant

Host institution
**UNIVERSITY
OF SÃO
PAULO**



Location:
SÃO PAULO, BRAZIL +

CAN YOU DESCRIBE DFSP IN THREE WORDS?

Collaborative, entrepreneurial, and hands-on.

WHO ARE YOUR STUDENTS?

Our design factory has set up a sort of co-working space, and we host several entrepreneurial teams. Our student body ranges from engineering to architecture, pharmacy to law, and history to accounting. The one thing that brings and holds them together is entrepreneurship. They are very diverse and engaged.

WHAT DOES A TYPICAL DAY LOOK LIKE?

Our design factory is a makerspace, and it is open for the students in such a way that they can just come and do their projects whether they are directly linked to our design factory or not. There is also a co-working space where someone is always working, mostly on entrepreneurship projects. Our 3D-printers are used a lot for prototyping. Then we have a small library where people can come and help themselves or leave any books. People come and go all the time, it's quite busy!

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We are the home for several entrepreneurship groups. They have their own projects, and we help them out, but they are not directly involved with the design-factory activities. Our projects,

the ones where we get our hands dirty, are mostly linked to product-development courses. This year we have around 70 students who are working in nine different groups. Each group has a project and an industry partner, it can be local or global. The overarching theme this year is Industry 4.0, last year it was medical-product development.

Another thing we did last year was a pilot of a social-innovation course. We partnered with a local NGO that helps socially vulnerable people, ranging from newborns to the elderly. Eighteen of our students were working as teaching assistants for a group of kids from an institution. The kids are between 12 and 14 years old, and together throughout the semester, we conducted five design-thinking projects with them where we solved a problem they faced in their daily lives.

It is impactful to see how these experiences may change the lives of these kids: bringing them to the university, teaching them how we work, giving them access to this kind of knowledge, technology, and machinery. It makes a difference, and it was something both the students and the kids looked forward to every week.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

I got to know our design factory last year. I didn't do my undergrad in this university, so I wasn't aware that such a structure existed. In my previous university, we had a few labs, but our access was limited and restricted. There was always a lack of raw material, and we had problems with actually building stuff.

I remember when I first came here... My advisor showed me around, and I just went, "Wait, everyone can use this?!" It was such a surprise to me because I had never imagined anything like this. I think the combination of accessibility and resources enhances the university experience and the knowledge you get from it. It seems a lot of people come here and feel the same way, and that's just beautiful.

WHERE DO YOU SEE DFSP IN FIVE YEARS?

I see our product-development courses getting stronger and stronger, constantly evolving. We're in the seventh edition now, we have had over 350 students in this course since 2014, and we are getting stronger every year with better industry partnerships and projects.

In addition, I see us being able to host more collaborative events. At the moment, we have rather limited space, so hosting events is a bit difficult for us.

I would also like for us to explore and do more partnerships on the social side. We have a population here that has needs and that doesn't have the resources that we have. We are in a position to make a difference, perhaps through

partnerships or open courses on topics like design thinking and coding.

WHAT IS YOUR DREAM FOR THE DFGN?

Oh, that's a tough one, it seems to work so smoothly. Even though there are long distances between us, we are always close and in constant contact with each other. The dream that I have is that we can collaborate more on the social-innovation side. We have such different contexts here [in the DFGN], and we have a powerful hub that could make a collective effort to build something that can be applied everywhere. So, I have a dream that we can grow partnerships for the development of global approaches. Not global solutions but approaches because we have such different contexts.





DUOC DESIGN FACTORY

Interviewee:
**ANDREA
ORDENES**
Academic
Coordinator

Host institution
**DUOC
UC**



Location:
SANTIAGO, CHILE ♦

CAN YOU DESCRIBE DDF IN THREE WORDS?

Network, growth, diversity.

WHO ARE YOUR STUDENTS?

We have super enthusiastic students! They are looking for different challenges, including academic challenges, and they are explorers. Our students come from very diverse fields, we have students from international gastronomy and natural resources, engineering and design, and business administration and communication, among others. In general, they share the interest to look for new things. We offer them a space where they can unfold. It takes a lot of commitment from the students; it requires extra work and extra passion. They like to spend their time in a meaningful way.

WHAT DOES A TYPICAL DAY LOOK LIKE?

We don't really have typical days. Right now our design factory is more conceptual as we don't have a unique space gathering all the people involved. We are distributed all over different campuses, but we are scheduled to move into a new space, which will be part of our innovation center.

There, we're going to offer more courses and get a better feeling of community. We don't have that at the moment. We have professors who are very dedicated and active and who bring the design factory into their classrooms, but we're a bit all over the place.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

We have a main course where the students develop an innovation project based on challenges presented by companies or public-private institutions. Every semester we run 12 courses in parallel, around 40–60 teams of students. The projects and the subjects vary each semester and can be related to product design, services, or communication strategies; of course, it depends on the kind of challenges that the counterparts present to the students. For example, last year one of the teams worked with a huge company that does meat products, hamburgers, and so on, exploring different formats and new products related to that. Another project was with a children's

hospital. Our students worked on how to make the food more appetizing and attractive to the children with restrictive diets and products and accessories related to that. This year some of the students are working with the National Forestry Corporation in three different challenges related to the active conservation role of visitors in protected natural areas.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

It is always special and different when we finish the semester and we have the presentations of the students to the counterparts and community, also when we have had training sessions for teachers. But the most memorable occasion for the team was when we organized the IDFW [International Design Factory Week] in Chile. The original space didn't allow us to receive all the visitors and have all the activities required, so in three days we had to transform a completely empty space into a pop-up design factory, transporting furniture and equipment from one campus to another. It was a bit challenging, but, of course, it was amazing to host and to be part of the planning of the whole week for the Design Factory Global Network.

WHERE DO YOU SEE DDF IN FIVE YEARS?

I see our DF as a large community present in each one of the 18 campuses of the institution, with students creating prototypes of products and services with high innovation value. In five years, I would like to see DDF as a reference for a strong community identified with shared values of collaboration and high-quality projects for industry and community.

WHAT IS YOUR DREAM FOR THE DFGN?

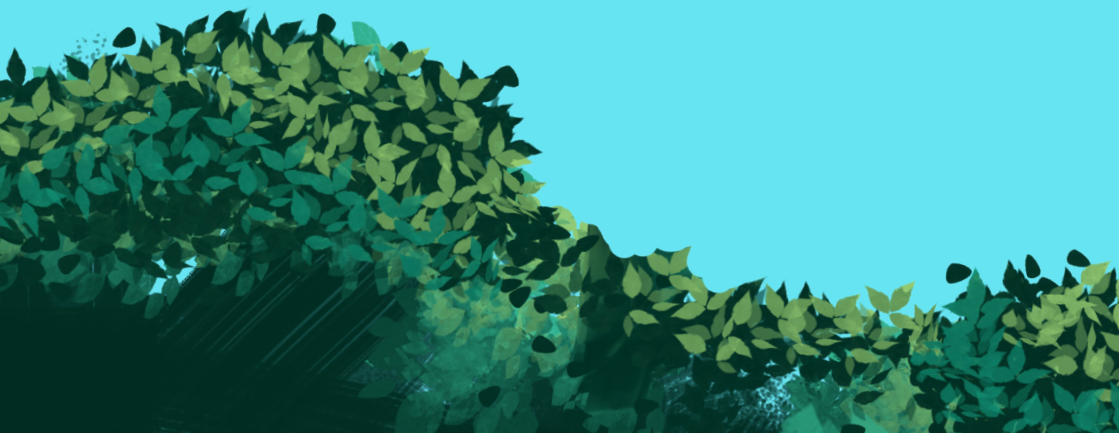
I would like to see the people sharing learning experiences and knowledge in an open, close, and simple way, from students to academics and external partners. The possibility to visit other design factories is always restricted by distance and travel costs, and I would love to look for a way that the students and academics could have the experience to visit each other in a remote way and get the chance to meet with their peers. We have to look for more opportunities of sharing knowledge, experiences, and discussions around the future of education and innovation and how we contribute as change makers in our own communities but connected to global challenges.



OCEANIA

Page 94 Design Factory Melbourne

Page 96 Design Factory New Zealand





94

96



DESIGN FACTORY MELBOURNE

Interviewee:

**ANITA
KOC SIS**

Director

Host institution
**SWINBURNE
UNIVERSITY
OF
TECHNOLOGY**



Location:
MELBOURNE, AUSTRALIA

CAN YOU DESCRIBE DFM IN THREE WORDS?

Local, global, boundary-riders.

WHO ARE YOUR STUDENTS?

We are a part of Swinburne's Innovation Precinct and lead a number of student programs from undergraduates all through to PhDs, providing students from all across the university with an innovation experience. Typically this means our space is filled with students from design, entrepreneurship, business, and health. Occupational-therapy students are one of the largest cohorts working together with designers. We have recently designed a new master of design program that will launch next year, embracing new innovative ways of learning and collaborating with industry, so that's exciting!

WHAT DOES A TYPICAL DAY LOOK LIKE?

On a typical day in Design Factory Melbourne, you walk through the doors and you see a sign that tells you when the coffee was brewed. You see someone making something delicious or stinky in the kitchen, and then to the right there is the studio where some team is doing something awesome together. That's the first layer of activity, what I would call the swan. Underneath all of that are the legs of our team, furiously kicking and creating energy. There is a lot of work, a lot of collaboration, and a lot of planning that goes into our team-based activities to get stuff done.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

Everything! I am always amazed by the range of challenges our student teams tackle. But the common thread is trying to solve something for someone, whatever the context! In the past students have worked on new products, systems, and service offerings together with banks, government, big science, start-ups, retail, health care, hospitality, food... You name it! We've seen teams reimagine the future of snack food, create smart buildings, new water experiences, and much more. Recently we've championed TOM@University together with people living with disabilities to bring occupational therapy, design, and engineering students together



to solve challenges and strive for inclusive design solutions. We love our global friends in the SUGAR/ME310, CBI [Challenge Based Innovation] and PdP [Product Development Program] programs. Our CBI-initiative (CBI A³) students tackle UN sustainable development goals and explore future solutions with CERN tech.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

Ah, I have many. If I add them all up like a series of quick moments in time and turn them into a movie, the consistent thing is about the collective happy place, the collective energy. So, for me, it's more of a feeling than a thing.

WHERE DO YOU SEE DFM IN FIVE YEARS?

I would like to see it as an experimental lab that functions as the engine room where it is okay to work at the boundaries. Where it's okay to work across any discipline with the aim to produce meaningful solutions, where students are the ones who are the smartest people in the room. Researchers and partners still have to be there, but I would like to see an opportunity where

leadership is more acknowledged around the student engine.

WHAT IS YOUR DREAM FOR THE DFGN?

My dream for the Design Factory Global Network is that we provide a look-in for others—whether they're start-ups, whether they're corporations, whether they're universities—that we provide a lens for how to and that we are transparent enough to demonstrate that we don't really know how to at all times. But we are a brand that provides methods and embraces opportunities for other organizations. I see us as a resource or some sort of evidence that the passion to collaborate sometimes in itself is more useful than what we collaborate on.



DESIGN FACTORY NEW ZEALAND

Interviewees:

**MARGI
MOORE**
Director

**AIDAN
BIGHAM**
Facilitator
& Coach

**ELNA
FOURIE**
Facilitator
& Coach

Host institution
**WINTERC -
WAIKATO
INSTITUTE
OF
TECHNOLOGY**



**Design
Factory
NZ**

Location:
**HAMILTON, +
NEW ZEALAND**

CAN YOU DESCRIBE DFNZ IN THREE WORDS?

Aidan Bigham [AB]: Student-centered, passion-based, energetic.

Elna Fourie [EF]: Community, fun, growth.

WHO ARE YOUR STUDENTS?

AB: We have a set of doers, we are diverse, inquisitive, and multi-cultured. We have as many students from overseas in our classes as we do from our New Zealand heritage, I suppose. They are from the Pacific Islands, we've got Europeans, Polynesians, students from international China and international India, and we get an Austrian every semester too.

EF: In terms of discipline of study, I think we're in a fortunate position where our courses are available to students throughout Wintec. So we've got students who come from IT, engineering, media, arts, sports science, social science...

AB: If you can name it and we teach it at Wintec, then the DF is available to those students. One of our current groups has six students, and every single one of them comes from a different discipline.

EF: So we're fortunate in that sense because we don't sit under one particular school. In one semester, we'll have students from at least four different centers, which is quite unique. It's an opportunity that they don't get in any other space, studying with students from all through the campus.

AB: Another thing that comes to mind is social good. Our students are interested in the social good of what's happening in New Zealand and the world. A lot of our work is around social good, and as Design Factory New Zealand, that's probably where we've ended up using our processes to help the most.

WHAT DOES A TYPICAL DAY LOOK LIKE?

EF: Design Factory New Zealand is a small space. It's the everything space, so at any one time, when it's really busy, you might come in and there's an undergraduate class running. There might be some postgraduate students working, there may also be meetings happening at someone's makeshift desk-and-office at the main table. There'll be people in the kitchen, there'll be a small office space where you find Mira [Cornes, DFNZ Coordinator]. Things will be happening. Students can come in, even when it's not classes. It's the everything space. It's a different kind of chaos sometimes, but it works!

AB: The lights go on at about 7:30, and the lights go off at about 7:30. We've got people who get in earlier, and we've got people who leave a bit later.

EF: Our first value is "Welcome home." We ask the students to treat it that way, welcoming other people in and making anyone feel at home. When we've got an industry partner who walks in, goes to the kitchen and makes a cup of coffee, then offers it to someone else who walks into the building, you kind of know you've got something right.

WHAT KIND OF PROJECTS DO YOUR STUDENTS WORK ON?

EF: We have done quite a few projects for not-for-profits. Usually they'll be around people's behavior. We've worked with a company called Extreme Zero Waste and thinking about how you might deal with waste at public events. We've also done quite a bit of work with various councils around behavior-change projects, like how do you get young people to vote. At the moment some students are looking at mobility and accessibility in urban spaces.

AB: The need is coming from the councils, they know that something's not quite working, and they don't really know what the answer is. Our students get to a proof-of-concept stage, we place a lot of emphasis on the insights and

the key messages that come through from the people that the students have interviewed. One of the huge advantages that we have and that the industry sees is that we can reach people they can't, in ways that they can't.

EF: Especially places like councils that find that it's challenging sometimes to get the engagement or the kind of data that the students are able to get. People are more open to talk to students, and I think the process of actually being heard... There's a lot of value in that.

AB: One example from last semester: it's quite cool that they went and interviewed some people in a local town, and then they interviewed the mayor and the chief executive. The newspaper came along at the same time because they were like, "Oh, this is cool!," and the students ended up in a story in the local newspaper, which then went online the next day. The following day the business association of that same place got in touch and wanted to know more. And it's such a cool story because it shows the exposure our students are getting just in our region and now nationally, and they are proud of being in a newspaper article with their photos and the stuff they're doing. It's also cool because it gets them in contact with people that they wouldn't normally be able to get in contact with, talk to people they would never get to talk to in their studies.

One of our big aims is to get people ready for the working world, and the best way to get ready for the working world is to actually talk to people in the working world.

WHAT IS YOUR FAVORITE DESIGN FACTORY MEMORY?

AB: The hour after the gala where everyone has just finished their presentations, the students are very relaxed, they're so proud. When the industry partners have left and it's just us and the students after that. That, for me, is one of the proudest moments.

Another favorite is when we do the personal-development plan and the student comes back and says, "I've really made a

difference in myself in this way.”

EF: I get the really awesome opportunity to work with the students and read through their personal-development plans and their reflections. Some of my favorite memories are when the students go, “Wow, I feel like I’ve really gained this or I’ve learned that.” Often it doesn’t necessarily have to do specifically with the process or the project, but it’s something about the ethos and the environment and the way that we do things that helps them recognize a new strength and helps them grow in some kind of way. As staff members we often talk about it, we’ll share those things.

Margi Moore [MM]: I agree with Aidan about after the gala. It’s kind of a relief, it’s a celebration. The students can really enjoy each other’s company, it’s no longer assessment time.

Another favorite is when we’re sitting in the Design Factory and something happens that we’ve talked about that we want to have happen. It might just be a little moment where a group of students work together in a way in which we’ve talked about. Or when an industry partner comes in and really gets what we’re all about. They come in and they do stuff in a way that it feels like they’re almost doing our job for us. I’ve had examples where industry partners have come in and almost taken over the briefing and the hosting. Those things you talk about as a kind of concept, seeing them coming into life like this—those are pretty nice moments.

EF: It’s one thing is to talk about the values and have them on the wall, but we can say that “Welcome home” is something that is truly felt and actually acted on.

MM: Statements like “I wish we had something like this that we could go and study when we were younger” or “I wish I’d known about this earlier,” they’re an unprompted and unsolicited kind of feedback where the qualities of what we’re doing are recognized.

WHERE DO YOU SEE DFNZ IN FIVE YEARS?

MM: I would like to see it well-established and well-known in our region. That people refer others to us because they know about what we can do and have had positive experiences with the DFNZ.

I would also like to see that we have expanded on what we do. At the moment there’s quite a bit of focus on undergraduate experiences, and the postgraduate is slowly gaining a strong reputation, but we would really like to see that growing and to be able to contribute more to the global network. We offer external workshops, which have given us lots of opportunities to build our networks.

EF: We have the opportunity to potentially expand and have people come to us from elsewhere as well. We have a strong local footing, the next phase is regional, and then beyond that.

MM: I also think that we would be a larger team of people with more staff dedicated to the design factory. At the moment Aidan and I are the only full-time staff. In five years’ time I see a strong team of permanent staff members as well as a circle of people around us who will champion the cause.

AB: I want us to always keep pushing things, helping out, I want to do more globally. In five years’ time, I’d like for us to be not only recognized in New Zealand but also recognized internationally as a really good place for design thinking and that we can mentor other design factories coming along. For example, Design Factory Melbourne to us is a big player, they’re right next door, and they push us. I like to be pushed! And I want to pass that on.

WHAT IS YOUR DREAM FOR THE DFGN?

EF: I think we’ve seen a glimpse of things, starting with the International Design Factory Day that we had earlier this year. I can see how that can grow because we know that the different design factories are there, but I think some of

the more serendipitous moments of connection are more likely to happen through informal meetups and hangouts online. Places where we see people, where you can feel the connection

AB: One of the things that really drives me as a part of Design Factory New Zealand is the top-of-the-line, right-on-the-edge facilitation techniques, student-centered learning, and all of that. That's what I see as the methodology of the design-thinking process. But it's not just the design-thinking process, it's actually everything. I see the Design Factory Global Network right there at the cutting edge of the facilitation to students, taking everything into account. In the future, I'd like for it to still be there, but even more so and that everyone in the world knows that's what a design factory does.

I want Design Factory New Zealand to be at the top of the game for facilitation, knowing

what we're doing and why we're doing it, that people seek us out. And when they do that, we can say that we've done this and that, and we've linked it to the Design Factory Global Network who are also at the top of the game, and all these different institutions are with us.

MM: I've always been really motivated about educational excellence. What's always really attracted us to the design factory is that the people leading and participating in the design factory are motivated to offer great educational experiences and to engage directly with industry partners. When we joined the network there was a clear set of values and we could design experiences that suited our context in our institution and New Zealand. It wasn't cookie cutter, but there were these really strong guiding principles that helped us build a curriculum. I think that's unique and special.





EVENTS & COLLABORATIONS



THE DESIGN FACTORY GLOBAL NETWORK ENABLES COLLABORATION AND CO-CREATION ACROSS TIME ZONES, CULTURES, AND DISCIPLINES. HERE ARE SOME OF THE PROJECTS AND EVENTS DFS FACILITATED AND ATTENDED THIS YEAR.

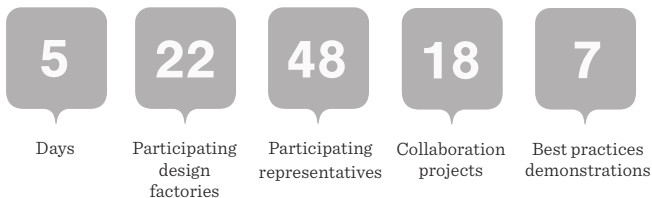


Once per year, representatives from each of the design factories are invited to the International Design Factory Week (IDFW) where they learn about best practices, plan for future collaboration, and get to know each other. IDFW also serves as a forum for development discussions and as the governance and decision-making platform for the network.

The DFs take turns in hosting the week, and in 2019 the time had come for the DFGN to visit Nexus Design Factory at Thomas Jefferson University in Philadelphia, USA. That the host institution changes every year enables the network members to get to know the different design factories and how they are organized. It also provides the host with an opportunity to introduce their local community and ecosystem to the network they are a part of;

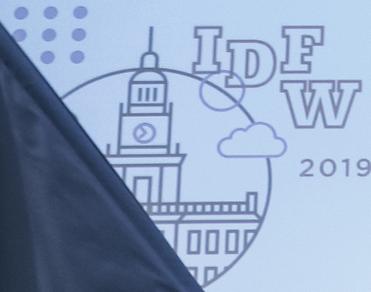
“Networks, in the end, aren’t about the universities and places - they are about people. The leadership at Thomas Jefferson University was convinced of the value of participation in the network by meeting the DF representatives, and it was really valuable to make connections between other DFs and the people here at Jefferson building programs and doing valuable research,” says Tod Corlett, Director of Industrial Design Programs at Thomas Jefferson University.

Over five days, representatives from 22 different design factories came up with 18 different collaboration projects that will push and promote change in the world of learning and education.



International Design Factory Week

October 7-11, 2019



EXUS
DESIGN
FACTORY

IdF W

Jefferson

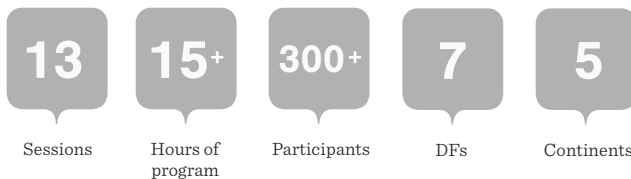




The idea of a Design Factory Day came about during International Design Factory Week 2019; events would happen in every design factory around the world, from breakfasts to workshops. Then campuses started shutting down, lessons were moved online, and the DFGN decided to practice what we preach - we pivoted.

The DF Day became the DFGN Community Day, a fully digital event with a little something for everyone. Seven different design factories organized sessions, among them DF Melbourne, inno.space, and NYCDF whose students presented their design solutions for 2030 using CERN technology, and DF New Zealand who hosted a virtual pub quiz.

To quote one of the DFGN community day hosts:
“It was great, felt like everyone was together” DFGN Community Day host.



DHRUVIL
GANDHI
Coach



 Dhruv Gandhi



 Karen Joy

MARLENE
HASSLINGER
Student



 Marlene Hasslinger



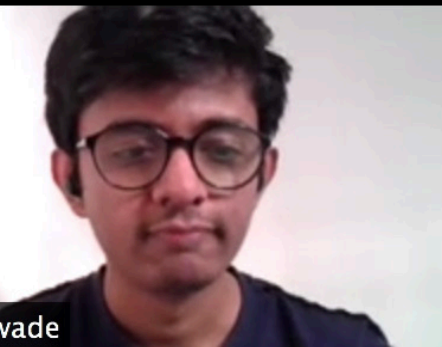
Luca landoli



 Tiina Tuulos



Miray Gülsoy



Kuntal Surwade

CONNECTIONS OF COLLABORATION

The infographic illustrates how some of the network engagement occurs.

NORTH AMERICA

Nexus
Design
Factory

NYC
Design
Factory

St. John's
Design
Factory

EUROPE

Aalto
Design
Factory

Design
Factory
London

Fusion
Point



Cali
Design
Factory

Design
Factory
Javeriana
Bogota

Design
Factory
São Paulo

Duoc
Design
Factory

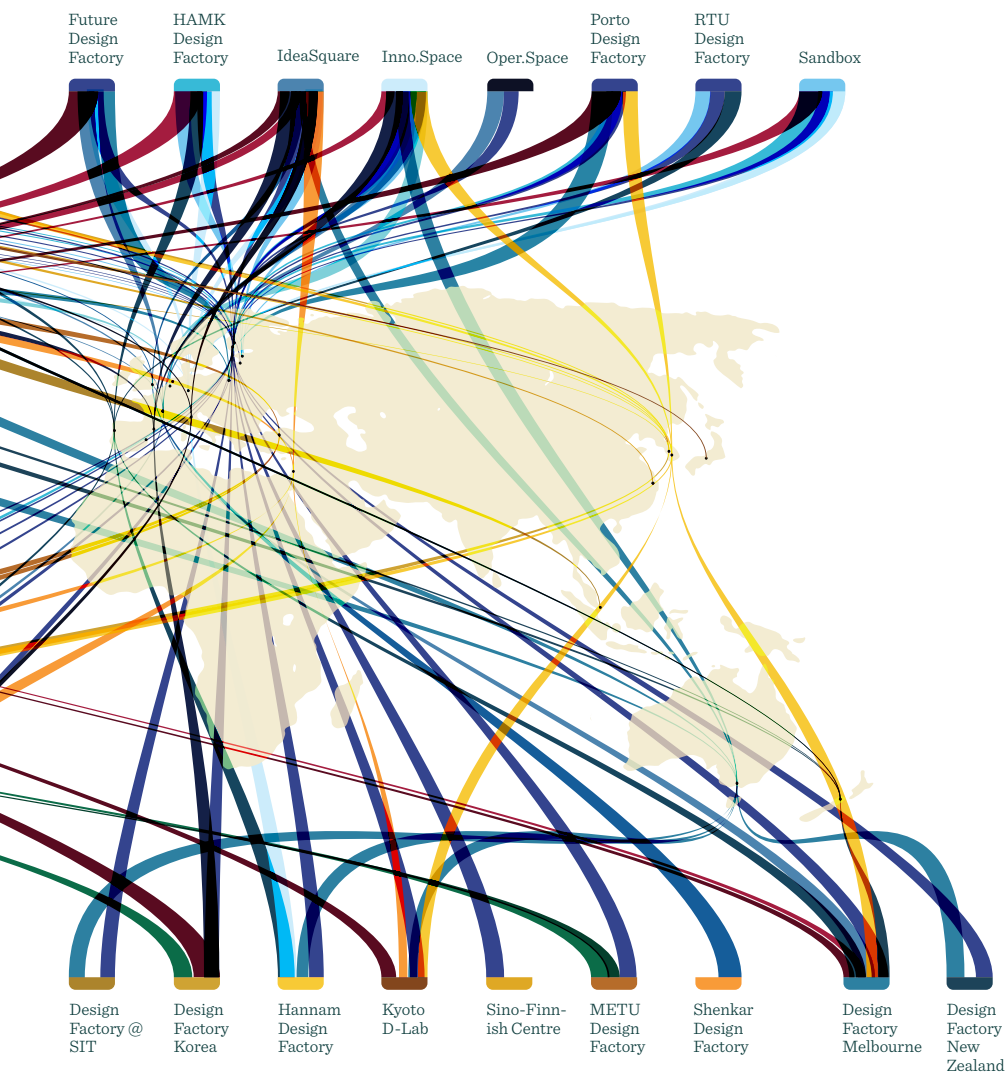
Techno-
vation
Hub

UPV
Design
Factory

Warsaw
Design
Factory

SOUTH AMERICA

EUROPE



ASIA

MIDDLE
EAST

OCEANIA

COLLABORATIONS WE HAVE DONE

CHALLENGE BASED INNOVATION (CBI) AND CBI A³

The roots of Challenge Based Innovation (CBI) go back to 2013 when IdeaSquare ran a pilot course aiming to find societal applications for CERN technology. In true design factory-spirit, several iterations and CBI programs have since been organized in collaboration with other institutions.

In 2017 CBI A³ program was developed by Christine Thong at Design Factory Melbourne with the DFGN specifically in mind. It builds on the previous pilots from IdeaSquare, to apply radical design innovation methods at the intersection technology-push design, futures thinking and UN Sustainable Development Goals. Student teams join a global community of practice, and create implementation roadmaps to demonstrate how their 2030 future concepts that use CERN technology to address societal needs might be realised. CERN coaches inspire and support students in the journey. Participating design factories have included DF Melbourne, inno.space, NYC DF, and Porto DF.

ATTRACT

ATTRACT is a pioneering initiative funded by the European Union's Horizon 2020 research and innovation programme. The goal is to bring together Europe's fundamental research and industrial communities to lead the next generation of detection and imaging technologies. The project aims to help revamp Europe's economy and improve people's lives by creating products, services, companies, and jobs.

In January 2020, Aalto Design Factory hosted a two-day workshop that brought together the ATTRACT Programme Consortium, members of the Design Factory Global Network, and a number of international universities. They either participated in the ATTRACT phase 1 pilot, or have indicated interest to participate in future design factory-type activities and were happy to share experiences and ideas. In a series of workshops, they came up with possible structures for running the student projects during phase 2 and also discussed how other currently running courses on design thinking could be aligned to maximise impact for the students.



PRODUCT DEVELOPMENT PROJECT

For 23 years, the Product Development Project [PDP] has brought together students from business, design, and technology to tackle industry challenges and develop state of the art solutions to real problems. PDP is the flagship of Aalto Design Factory [ADF], older than ADF and Aalto University combined.

In the academic year of 2019/2020, 12 student teams spent two semesters completing the design challenges provided by industry sponsors like ABB, Airbus, and Trenox. In addition to students from ADF, PDP this year also welcomed students from Cali DF, NYCDF, Nexus DF, Porto DF, Warsaw DF, HAMK DF, RTU DF, and DF Melbourne.



SOCIAL DESIGN WEEK: HANNAM DF VISITS INNO. SPACE

From the 7th to the 10th of January, Hannam Design Factory visited inno.space in Mannheim, Germany. Together, students from both design factories worked on social challenges related to Sustainable Development Goal 15 - Climate Action relevant to the local context of Mannheim.

During the week, the students developed ideas to solve the city's problems with bulky waste. The concept ideas revolved around the collection of big waste from the streets - such as furniture and home appliances - as well as giving old products a second life.

It was an extremely rich event full of fun, gifts, and interesting facts about both cultures, all while collaborating on a social challenge.

GLOBAL DIGITAL INNOVATION PROGRAM

Design factories Sandbox and inno.space collaborate on the Global Digital Innovation Program (GDIP). The first edition was kicked off in March at Sandbox' headquarters at the University of Tartu.

Over the course of four months, the globally distributed teams applied human-centered innovation methods to solve real-life problems. The participants were introduced to methods like user research, problem reframing, prototyping, and user testing to develop several digital and physical prototypes in order to test their assumptions and deliver the most value to the user.

At the end of the semester, the student teams presented one solution to the problem as a proof-of-concept. This year, the teams developed incredible prototypes to increase the awareness of chronic diseases and create an on-demand school bus system.



SURF SCHOOL

In 2019, Aalto Design Factory and Design Factory Melbourne established the Design Factory joint PhD program, initiated by Tua Björklund and Anita Kocsis.

In true design factory spirit, the aim of the joint PhD program is to bring together researchers from different backgrounds to work together in the field of design innovation. The first PhD researcher, Floris van der Marel, shares his experience:

“Having worked as a design researcher and facilitator at the Future Design Factory and Aalto Design Factory, I felt I was the right guinea pig for this program.”

Floris' research focuses on unheard voices in Participatory Design.

“Together with Wimmera Health Care Group, a hospital in rural Australia, I started a participatory design initiative to reduce

patient-to-staff violence. We brought together hospital staff from across the organization, and we have begun unpacking what is causing the violence and how we can respond to it. During the workshops, I have been able to democratise the space and make sure everybody can contribute. During the experimentation and implementation, it is important to keep monitoring whether everybody is still heard, respected, and equally responded to.”

Admittance to both Aalto and Swinburne enables access to the resources of both universities, as well as freedom to research in both locations.

Floris is now back at ADF to do a comparison case study while still coaching the Australian case.



A blurred office background featuring a desk, a chair, and a bag. The text "DFGN DEVELOPMENT" is overlaid in the bottom left corner.

DFGN DEVELOPMENT



MASTER'S STUDENT AFNAN AHMED SUMMARIZES
HIS THESIS FINDINGS.



A CRITICAL LENS

By Päivi Oinonen,
Design Factory Global Network

When Aalto Design Factory (ADF) opened its doors in 2008, it was on a foundation laid down by the Future Lab of Production Design (FLPD). FLPD was a two-year project with a purpose to build a prototype for what would become Aalto University.

ADF was set up to be a co-creation platform fruitful for innovation and creativity. Back then, the forms of operation were very similar to actual factory environments; they were built to minimize risk and maximize efficiency. However, risk and efficiency have a very different role in innovation processes. That is why we wanted to create an environment which was accessible 24/7, which invited all stakeholders in and facilitated serendipitous interactions between them. A place with easy access to prototyping, and most importantly, a place that provided the freedom to create. These new ways of working called for new ways of organizing the community, and a distinct design factory-culture emerged.

Since 2013, when the decision was made to systematically develop the Design Factory Global Network, the same way of organizing the community, the same organizational culture, has been used as a guideline when scaling up activities. The network has always been an experiment aiming to provide its members with freedom and responsibility to create, an experiment that lowers the barrier of international and interdisciplinary collaboration and reduces risk through shared understanding of the process and purpose.

We continue to explore new frameworks for collaboration and coordination. As there are many similar characteristics between the theory of self-managing organizations and our ways of operating, we have been pulling inspiration and learnings from organizations run in accordance with the theory. This year, we gave Aalto-student Afnan Ahmed the opportunity to showcase his talent and provide a critical lens to our development work.



A UNIQUE ORGANIZATIONAL MODEL FOR GLOBALLY DISTRIBUTED NETWORK ORGANIZATIONS AND EFFECTIVENESS OF THE ORGANIZATION'S COLLABORATION PRACTICES

By Afnan Ahmed

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."

– Richard Buckminster Fuller

Managing a globally distributed network organization, consisting of 30 autonomous units with hundreds of members without a functional hierarchy and regional managers sounds like an absurd concept, even in today's advanced world. However, such an entity very much exists, with consistent growth, indicating that traditional organizational models are not always the most effective. Design Factory Global Network (DFGN) is one such example, which I researched the past year, to understand how collaboration practices can be effective within a globally distributed network organization even in the absence of supervision of the managers.

Traditionally, formal hierarchies have characterized most organizations although

the formal structures may vary, due to them being more efficient.¹ However, with the rapid changes in the environments in which these organizations are working, there has been a need to look elsewhere to be able to adapt more quickly which is not possible with traditional hierarchies, in most cases.² There are key challenges of organizing that the organizations must address to thrive and survive in the changing environments. In the past, there was a fine line between the work and life of the people, which is rapidly disappearing now, as people seek to be involved in meaningful work.³ A relatively novel construct, of self-managing organizations has surfaced consisting of a flat structure with no managers and people being empowered through radically decentralizing authority.⁴ This is an interesting concept when compared with the DFGN, where there is no hierarchy and the individual design factories have the autonomy within the network.

Challenges of organizing	Traditional organizations	Design Factory Global Network (DFGN)
Employee empowerment & motivation	Employee considered as 'machine' or 'instrument. Need for control to ensure reliability, exercised through increased supervision.	Autonomy in the initiatives the members want to participate in. The community aspect serves as a means of intrinsic motivation.
Processing complex information	Mostly the responsibility of higher levels (of hierarchy) with little on-ground knowledge and awareness.	Transparency and accessibility to ensure that same information flows throughout the network.
Coordinating & collaborating with other units	Clarification of roles and responsibilities makes it easier to coordinate effectively. Different levels of hierarchies assist in resolution of conflicts.	Happens naturally in most cases, or in some cases, is guided by the central team, particularly for the new units.
Responding to change	Rigid structures, good for routine activities but not adaptive. Standardized tasks and processes, not flexible.	Decentralized authority enables flexibility and adaptability, thus response to change is easier.
Scalability of organizations	Use of authority within hierarchies enables fast decisions needed to scale.	Consensus-based decisions present a challenge as the network grows.
Organizational decision-making & purpose	Decision-making associated with achieving profitability, clear drift between the goals of the organizations and individual employees.	Decision-making tied with the overall purpose of the network, and members connect with the purpose that the network serves.

Table 1: Summary of how DFGN model compares with traditional paradigm in addressing key challenging of organizing

DFGN prides itself in being an interdisciplinary experimentation platform, trying and implementing new models to organize and collaborate within the network. Being similar to a globally distributed organization, it is intriguing to see there are no hierarchical levels within the DFGN to get things done. The organizational challenges still exist, however, the means to address them are entirely different from what has been utilized traditionally. The approach utilized by the DFGN is addressing the key challenges akin to that of self-

managing organizations. The differences in the two different organizational models are summarized in Table 1, showing how the DFGN model compares with the traditional paradigm to address the key challenges of organizing.

Through my study, it has been realized that the collaborative initiatives between the design factories around the world forms the crux of the network. Remarkably, these projects are not governed or managed by any 'supervisor' or 'manager', even when the participating units may have never worked together before. Rather, the

members of the network belonging to different autonomous units agree within themselves on the decisions and timelines related to the collaboration projects. This demonstrates the freedom that the participants have within the network, which supports them by not enforcing them to participate in anything. This is a stark contrast from the traditional global organizations where the choice allotted to the units is fairly limited.

On the contrary, this does not imply that all of the units participate in the collaboration projects in DFGN, as often, collaboration is centered on only some of the design factories. This is a possible drawback which becomes increasingly prominent as the network continues to expand, leading to widening of differences between the units. These differences not only affect the collaboration practices but also influence the interdependencies and relationships between the units, impacting the network's structure and governance. Although the DFGN operates without hierarchy, like in a self-managing organization, this aspect of differences within design factories impacting the collaboration suggests the need for an alternative approach. This is because the self-managing organizations are particularly beneficial when there is less coordination and more independent work.⁵ However, at the same time, the findings suggest that autonomy and empowerment within the network are key to its functionality.

As a contrast from traditional organizations, DFGN can suitably be classified as a 'collaborative community' with sharing of resources amongst the design factories and the members having the possibility to choose their own tasks or initiatives they would prefer to participate in.⁶ Such collaborative communities possess the aspect of peer-based control, which is not directly prominent within the DFGN, although, it was realized that there are cases where certain design factories might feel inclined to contribute or participate within

the network. At the same time, within DFGN, the different mechanisms nurture trust and the feeling of a community purpose promotes intrinsic motivation which is a significant part of such collaborative communities.

In close relation to this is the autonomy-supportive nature of the central team, whose presence is more for guidance and facilitation, and influences the shared purpose and feeling of belongingness within the network despite the fragmented network structure. It is a significant aspect of the DFGN which differentiates it from other traditional organizations, as different units and members connect with the overall purpose of the DFGN. This is further shown by the perceived value of the network within the members which consists of the 'family' feeling being part of the network and it being a means to achieve personal aspirations as well. This is similar to the 'evolutionary purpose' that self-managing organizations possess, which provides the members with an opportunity to do meaningful work.⁷ When compared with traditional organizations which view employees as 'machines',⁸ this approach does not only bring the best out of people, but also make them self-aware, thus making the organizations sustainable.

One aspect where the organizational model that DFGN observes can be problematic is that of growth, because as the network expands, it will become increasingly challenging to maintain the shared values within the network. Although, traditional hierarchical models are more suitable to the organizations looking to scale up, for the DFGN, which thrives on experimentation, it would mean more of a hybrid approach. This will be to ensure that the values of autonomy and empowerment which defines the network are not lost, as the network expands beyond the current number of 30 design factories.

Overall, DFGN is a unique case when it comes to organizational models, however, considering that it utilizes alternative approaches to address the key challenges of

organizing, there are lessons that can be learnt by globally distributed network organizations and ecosystems. As the world changes with more people wanting greater control over the work they do, the model utilized by DFGN of self-managing and autonomy-driven, will become more popular. This will drive the organizations to not only utilize the capabilities of their people to their full potential but also ensure that they are adaptive and flexible to the rapidly changing external environments.

- 1) March, J. G. & Simon, H. A. (1993) 'Organizations' 2nd edition, Cambridge (Mass.): Blackwell Publishers.
- 2) Martela, F. and Kostamo, T. (2017) 'Adaptive Self-Organization: The Necessity of Intrinsic Motivation and Self-Determination', in 'Navigating Through Changing Times', Routledge, 63–80.
- 3) Laloux, F. (2016), 'Reinventing Organizations: An Illustrated Invitation to Join the Conversation on Next-Stage Organizations', Nelson Parker.
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- 5) Martela, F. (2019) 'What makes self-managing organizations novel? Comparing how Weberian bureaucracy, Mintzberg's adhocracy, and self-organizing solve six fundamental problems of organizing', *Journal of Organization Design*, 8, 23.
- 6) Kolbjørnsrud, V. (2017) 'Agency problems and governance mechanisms in collaborative communities', *Strategic Organization*, 15(2), 141–173.
- 7) Laloux, F. (2016), 'Reinventing Organizations: An Illustrated Invitation to Join the Conversation on Next-Stage Organizations', Nelson Parker.
- 8) March, J. G. & Simon, H. A. (1993) 'Organizations' 2nd edition, Cambridge (Mass.): Blackwell Publishers.



FAMOUS LAST WORDS

This is the last page of the Design Factory Global Network's *We are not like the other design factories*. The network is defined by the collaboration projects we do - this publication is such a project. Thank you to all who have dedicated their time to make it happen, both in and out of print. To the students, coaches, staff, professors, and pets at every design factory around the world. And to the World Wide Web for keeping us connected.



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The Design Factory Global Network (DFGN) consists of innovation hubs in different universities and research institutions, spanning from North America to Oceania. Common values and practices enable us to collaborate across time zones and cultures, despite differences in governance and setup.

Design factories are experimentation platforms, and it is through experimentation our network moves forward towards its overarching goal: to create change in the world of education and learning