



# DESIGN FACTORY

**ANNUAL REPORT  
2008 – 2009**



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# WELCOME TO DESIGN FACTORY!

The most important objectives of Aalto University are to develop and cultivate the passion-based, student centric learning culture, as well as the quality of research and education. The three 'factories', spearhead projects of Aalto University – Media, Service and Design Factory – are serving as experimental platforms, showrooms and sources of inspiration for all the parties involved. On behalf of Design Factory, it is now time to wrap up the experiences from the first academic year.

Design Factory is in essence a place where students, teachers, researchers and industry partners can interact under the same roof. During the first nine months, we have managed to attract a beautiful number of activities into the house, as described in this report. The place has its architecture and certain enabling and supporting technologies, but perhaps even more important are the soft issues – philosophy, attitudes, our ways of working. Briefly put, as several visitors have formulated it: "I can see a lot of energy in this place!"

Design Factory is continuously looking for new partnerships and co-operation with all Aalto teachers, courses, students and other parties. I hope that this report encourages the reader to come for a visit. Just contact us for further discussions or co-design. Better outcomes in learning and research are the only things that matter, and Design Factory is dedicated to help you in that. In the name of passion, fun, learning and hard work – come and see if we can do something together!



A stylized, handwritten signature in blue ink, likely reading 'Kalevi Ekman'.

**Kalevi Ekman**  
Director  
Design Factory

# BACKGROUND

## An interdisciplinary future?

Born in the hearts and minds of innovative and passionate professors and students, Design Factory is the organic result of an earlier project named Future Lab of Product Design. This initial project, kicked off in 2007, aimed at creating the most ideal working space and environment for product developers and researchers alike. Simply put, 'a facility driven by passion, coaching and inspiring the mind'.



The FLPD research group, consisting of 10 people, believed that the environment should enable and encourage interaction between students, researchers and professionals. The space was meant to accommodate a variety of different product development phases. This made easy access to prototyping materials and an open information flow throughout the environment crucial factors. On the cognitive side, the group studied especially how the initial phases of PD could be supported. The aim was to develop state-of-the-art innovative physical facilities, tools and practices for interdisciplinary co-operation, and to give a platform for educating the world's best product designers.

The success of the project, lasting from 2007 to 2008, exceeded expectations. Immediate plans were made to advance the concept to the next level, both in sheer size and in educational capacity. The enthusiasm and dedication taken in the following development steps can be attributed to the results achieved by the FLPD.

**"To Educate  
theWorld's  
BestProduct  
Designers."**



## The Idea of Design Factory

The idea of Design Factory was invented in a workshop in June 2007, where a number of people from Aalto partners were introducing their dreams and developing their vision for the emerging innovation university. The Ministry of Education directed some complementary financing for the preparation of the Aalto University, and Design Factory was chosen for one of the spearhead projects to be developed with that money. The vision was actualized in early autumn 2008, and most of the Future Lab ideas were transferred to the new Design Factory during summer and fall 2008.

Design Factory officially opened its doors to the eagerly awaiting students, staff and industry partners on 3rd October, 2008. The idea had now grown from a 300 m2 test lab concept to a more than 3000 m2 world class educational facility.

## And... Action!





### **Design Factory**

is an experimental platform for education, research and application for interdisciplinary product design.

### **Design Factory Project**

develops and maintains the 3000 m<sup>2</sup> cultural and spatial environment and offers its services for Aalto University courses, research projects and industry partners.

### **The Building**

is designed for interaction, lectures, seminars, workshops, team work and all kind of hands-on activities: prototyping, experiments, user tests etc.

### **The Users**

can flexibly have access to the spaces also outside of the office hours.

### **The Spaces**

can be easily modified and rearranged for various set-ups and for different purposes of use.

### **The Philosophy**

is to have fun, to learn and to work like crazy! Design Factory is committed to act according to the principles of open innovation and continuous development.



# MISSION

## **A passion-based co-creation platform**

Design Factory develops creative ways of working, spatial solutions, and enhanced interdisciplinary interaction to support world class product design in educational, research and practical application contexts.

Design Factory assists the developing of the passion-based student centric learning culture for Aalto University.

It hosts visitors from all parties, who are interested in practical applications of problem-based learning philosophy, and hands-on activities that support theoretical studies.





# LEARNING

At Design Factory, the students come first. The Factory aims to promote real hands-on learning and doing by providing students with easy access to all materials, equipment and tools. All Design Factory spaces have been designed to support open idea flow, and the actual realization of visions through rough prototyping. Action speaks louder than words!

During 2008-2009, Design Factory has accommodated both interdisciplinary courses affiliated with Aalto University, as well as subject-specific courses that have benefited from the setting. While some courses have been held partially at the Factory, several others have been organized completely within the premises.

## Product Development Project (PDP)

Product Development Project course (PDP) is a course organized by Aalto University, where students with different backgrounds carry out projects in teams of circa 10 persons. The projects, sponsored by domestic and foreign companies and organizations, last one academic year. A project typically includes the phases of planning, searching for information, creation of concepts, decision making and detailed computer aided development. Finally, the manufacture, assembly, and testing phases have proved to be the most valuable learning experiences.

**Participants 08-09:** 120

**Credits:** 10 cr

**Held at Factory:** completely

In 2009, 13 student projects were completed with outstanding results. The final solutions were presented at the PDP Gala held on 24.4.2009.

- |                        |                        |
|------------------------|------------------------|
| ■ Azigear (ABB Marine) | ■ Nokia.Expand (Nokia) |
| ■ BMUU (Rostek)        | ■ Royce (Ensto)        |
| ■ D-rain (Ruukki)      | ■ Sgreen (Martela)     |
| ■ Flow (Kone)          | ■ SteelGood (Stala)    |
| ■ Guardian (Safera)    | ■ TourTalk (Savox)     |
| ■ InTent (Suojasauma)  | ■ UpWise (Konecranes)  |
| ■ mypoBox (Itella)     |                        |

*Royce, a new generation power cable clamp, sponsored by Ensto. PDP 2009.*





## International Design Business Management

The IDBM is a joint teaching and research programme of the Aalto member universities. The core of the IDBM programme consists of a project commissioned by a company and lasting one academic year (6-12 ECTS cr). Within the industry project a multidisciplinary team of 3-5 students addresses problems related to the marketing operations, product development, logistics and/or design operations of the company concerned. The project permits students to engage in practical work in an interdisciplinary team by contributing their own skills and expertise.

**Participants 08-09:** 43

**Credits:** 30 cr

**Held at DF:** partially

## Global IPR Realization Race

GRR or the Global IPR Realization Race is a course where patents are taken out of dusty cabinets and brought into daylight. VTT offers their most recent patents for the students to unleash the underlying potential. In eight weeks, the students create a business plan and a prototype with the guidance of the Philips Innohub personnel. They have 2000 € to realize their vision and show it off in the Grand Finale.

**Participants 08-09:** 11

**Credits:** 10 cr

**Held at DF:** partially

## Other courses at the Factory 2008-2009:

- A-36.3330 Urban renewal (10 cr)
- T-76.4115 Software Development Project (Lobby project)
- Maa-20.3379 Workplace management (5 cr)
- T-121.5601 Käytettävyyden arviointi (5 cr)
- T-121.5700 Käyttäjäkeskeinen konseptisuunnittelu (4 cr)
- Kon-41.4169 Industrial Design in Product Development (5 cr)
- Kon-41.4001 Product Development (5 cr)
- Stanford E310 Design Innovation (see p. 20)
- Kon-41.V Indian Folk Painting (1 cr)
- Kon-41.V Creative Film-Making and Video Production (2 cr)

## An Interdisciplinary Learning Platform - Knitting Factory

Knitting Factory, located at Design Factory, is part of the Knitting Studio at University of Art and Design Helsinki. It completes the knitting studio situated in Arabia premises in Helsinki. Knitting Factory is a platform for studying, designing, researching, developing and manufacturing knitted samples, knitwear and other knitted products. Besides course utilization, Knitting Factory welcomes technical applications, research and cooperation projects.



## A Student Perspective: Wycliffe Raduma, TKK (Product Development)



“Design Factory is a place for interdisciplinary collaboration. I have had the opportunity to work with people from different educational, cultural and professional backgrounds through the Product Development Project course and the Global IPR Realization Race. The Factory has been a flexible and adaptive environment to work in - it is suitable for long hours, late nights and quick prototyping. Furthermore, the necessary tools for different kinds of work are available or at least easily obtainable.

I would like to see the Factory continue to grow and develop.”



# RESEARCH

For researchers, Design Factory offers unique opportunities to form and participate in ambiguous research initiatives challenging the industry status quo. This is due to the Factory's close relationships with industry partners and its role as an enabler of interdisciplinary research agenda. For traditional within-discipline research efforts, the Factory is an interesting environment to meet people, collect empirical data, and to study different methods and phenomena related to innovation, design, business and education.

During 2008-2009, Design Factory has hosted two major research groups and has been affiliated with the research activities outlined in this section. In addition, Design Factory's own research team and several separate master's and doctoral thesis workers use the facilities on a regular basis.

## Research Groups at Design Factory

### Decode

Decode is a cross-disciplinary group within Design Factory and BIT Research Centre at Aalto University (TKK). The goal of Decode is to develop conceptual and hands-on means to identify, create, and realize strategic innovations.

Decode is working hand-in-hand with hundreds of academics, students, and practitioners from various disciplines every year. To further improve the odds of being sensitive to industry boundaries, bottlenecks, and basic assumptions, decoding is done in a round-the-globe & round-the-clock mindset with global partners from Asia, EU, and USA.

### Product Design Research

Product Design Research has its background in the Department of Engineering Design and Production at TKK. The research group's focus is on product design and development activities. These include design process improvement, conceptual user-centered engineering, product architecture and modularization. Furthermore, the group also organizes education and training in both university and corporate level.



## Research Collaboration

### BogFires

BogFires explores the structures and practices of Finnish rock export and internationalization. The empirical starting point for the BogFires research project is the recent success of a number of Finnish metal and hard-rock bands.

### FIMECC (MeKoSHOK)

Finnish Metals and Engineering Competence Cluster FIMECC Oy is an innovation enterprise, aiming to link the industrial view of future sources of competitive advantage with the research expertise of research institutions.

### MIND Workshops

Managing Industry Changing Innovations (MIND) 2009–2010 aims to develop an innovation platform around the nucleus of Aalto University's factories capable of discovering, creating, and realizing strategic innovations.

### Mobile Mixed Reality (MMR)

A joint research project between Nokia Research Centre TKK and VTT, MMR seeks to enable physical locations to become knowledge hubs, combining physical context with social networking and aggregated content.

### YTK Projects

The Centre for Urban and Regional Studies (YTK) is an interdisciplinary unit, specializing in urban and regional planning research and education. Research objectives include promoting the development of urban and planning theory and contributing to informed decisions regarding the built environment.

### Future Home Worklife 2.0

Worklife 2.0 aims to pinpoint what kind of environments support the success and productiveness of knowledge workers in physical, virtual and social working situations. Future Home Institute is an interdisciplinary research unit, doing applied research focusing on habitation environments.

### FLPD (Future Lab of Product Design, see p. 3)



## Design Factory's Own Research

### Introduction

Design Factory's own research team aims to provide a theoretical base and new ideas for creating social, mental and physical environments supporting passion-based co-creation. The main activities are centered on creating a scientific contribution and visibility for Design Factory, disseminating research results through cooperation, and developing research and thesis mentoring for Factory collaborators.

The 2008-2009 academic year organized around four major projects (FLPD, DPD, Thesis Factory and RINE) and two conferences (IPMA and INTED). Research efforts were focused on new learning methodology, as well as tools, spaces and practices for successful product development.

### Learning Methodology

Several workshops were held, e.g. on PD6 as a learning method. Other learning approaches and methods were developed as well, for example for DPD2008, TKK Dipoli's Diploma in Product Development training, based on which a new model and content was created for DPD2009. These thoughts were further developed scientifically and presented at INTED2009.

The year also saw the development of Thesis Factory, a preliminary model for a multidisciplinary thesis seminar focusing on the development of professional expertise. Thesis Factory provides a peer community and an intentional, supported process for gaining the skills and identity needed in professional life. The model won an award in the Aalto University teaching development idea competition in Spring 2009, and currently Aalto is searching for funding to realize Thesis Factory on a broad scale.

### Tools for Successful Product Development

The importance and nature of the organizational mental climate was studied based on data collected from DPD2008, as well as reinterpreting in-depth interviews from 2007. This research was presented in an IPMA International Project Management Association conference, becoming a best paper award candidate finalist, and was also published as an article in a compiled book, *The Human Side of Projects in Modern Business*.

Passion-based co-creation methodology was also developed further in planning several employee-driven workplace improvement projects.

### Design Factory's Research in Numbers 2008-2009:

- 5** Research team members, representing
- 5** academic fields and
- 17** working months
- 3** Published papers, **5** written papers
- 3** Scientific presentations
- 4** Conferences attended
- 3** Educational entities organized and executed (presentations and workshops)
- 2** Future educational programs planned
- 7** Research proposals written
- 8** Non-staff parties received research guidance (including students, researchers and workers)



## A Researcher's Perspective: Miko Laakso, Product Design Research



"Design Factory brings together researchers from various backgrounds, cultures and disciplines. One could say that the Factory functions as a sort of a melting pot of expertise, methods, approaches and phenomena. Especially with interdisciplinary research interests, it would be hard not to benefit from the setting.

Beyond the field of research, the Factory supports communication, networking and building contacts to the industry and students - both essential for flourishing and sustainable research. Unplanned encounters have sparked ideas and collaboration. These 'chance encounters', with both residents of the Factory and visitors, have already proved valuable in both professional and personal level. And while, in effect unplanned, these encounters would not happen randomly without the proper setting.

The flexibility of the physical spaces offers a vast amount of opportunities for different kinds of research uses. There are facilities for user observation, prototyping, all kinds of teamwork imaginable, workshops and seminars – all under the same roof. At the same time, the continuous development of the environment poses excellent opportunities for developing the preconditions for research. The collaborative development philosophy provides everybody the opportunity to participate in the ideation of the entire system ranging from practices to physical spaces. This approach enables the research parties to actively shape the environment to meet their needs ever better."

"The Factory is without a doubt a leap forward from the traditional surroundings for research I have experienced. A multitude of benefits have already been realized but, what's best, there still seems to be masses of untapped potential, and we can all take part in unleashing it."

# COMPANIES

For business practitioners, the Factory is an innovative environment for finding, incubating and realizing new ideas together with the leading scholars, top future talent and a mixture of other companies. Because companies can work hand in hand with a great variety of people, Design Factory is also a fruitful environment for recruiting purposes. Design Factory inhabits both company partners and Aalto University based start-ups. During the first year of operation, the following companies have inhabited Design Factory.

## Company Partners

### KONE

KONE Corporation is a global manufacturer of elevators and escalators and a supporting partner of Design Factory.

KONE holds department meetings at Design Factory, and makes use of the building's creative spaces according to their needs. KONE is also involved in student projects through the Product Development Project course.

### Nokia

Nokia is a multinational manufacturer of mobile devices and a supporting partner of Design Factory.

Nokia has held several seminars and events in the building, and occupies a room in the corporate wing. Nokia is also working closely with students through Design Factory collaboration, for instance through the PDP course.

### Bravo Media

Bravo Media is an expert on multi-channel community and corporate communication, producing video, magazines and consulting. The company's specific expertise relates to higher education institutions.



### Veturi Growth Partners

Veturi is a venture accelerator that helps entrepreneurs to translate innovative business ideas into significant growth companies.

# COMPANIES

## Start-Ups

### Aito

Aito, a Finnish start-up of the Dutch dSwitch, develops user interfaces familiar from industrial technology for consumer applications. More precisely Aito is focusing on seamless, moisture- and dust-resistant keypads.

### Powerkiss

Powerkiss has developed an integrated wireless charging solution, which turns basic furniture into smart energy platforms. The first prototype was built and launched at Design Factory (see picture on the right), and the technology is being further developed at the Factory premises.

### Seos Design

Seos is the first design company in Finland to specialize on sustainable design and product development. Seos's office houses four full-time employees, who create products, spaces and services for a diversity of clients.



"The best thing about having an office here is the publicity. With big events weekly and newcomers touring the building, it's an excellent place to be. The second best are the facilities: Machinery, such as wood and metal working is available, so ideas can be realized immediately in the form of prototypes."

Janne Korhonen, Seos Design

# COMPANIES

## **A Start-Up Perspective: Maija Itkonen, Powerkiss Ltd**

“Design Factory is essentially a place to which everyone can come very easily. The place is open whenever there is someone who can answer if the doorbell rings. For a start-up, this can mean that on a completely ordinary Tuesday morning, the exact CEO you’ve been trying to reach for weeks appears on your doorstep by accident.

The low threshold is reflected in all other communication as well. People interact spontaneously and in unplanned situations, which can result in unpredictable forms of co-operation. There is no unnecessary vertical hierarchy between people. A suggestion from a student is taken as seriously as one from a rector. This makes ideas fly.

Also the spirit of Design Factory is suitable for start-up companies. Here the common rule is to roll up the sleeves and get into action if something needs to be done. In case there is an obstacle – be it finding the right person for a job, needing a component, or lack of resources – there is always someone to help you.

For example, the Factory setting really helped us when we were building our first prototype. All of the tools were available at Design Factory, and if something extra was needed, it was possible to make suggestions for developing the place.



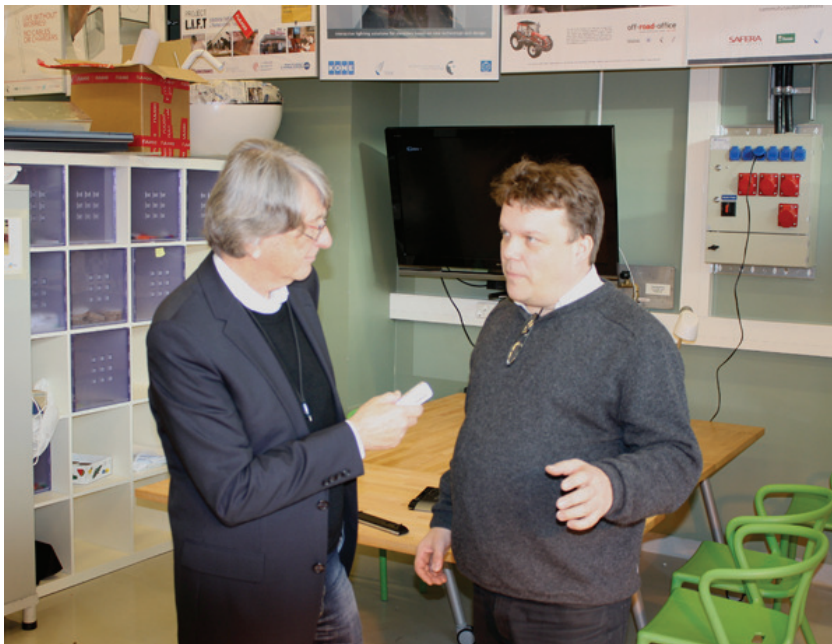
Similarly, we were able to build our product stand into the café area of the Factory. This illustrates the co-creative spirit of the place.

Design Factory lives with its users.”



# VISITORS

Design Factory has attracted an international flow of visitors during its first official year of existence. An estimated 4500 people have visited the Factory since July 2008, including students, researchers, professors and executives. The reception towards Design Factory has been enthusiastic and encouraging based on the given feedback. Visitors from the academic world have included representatives from institutions such as Stanford University, Massachusetts Institute of Technology (MIT), University of California, Los Angeles (UCLA), Indian Institute of Technology Kanpur (IIT) and the Iceland Academy of Arts. Governmental organizations, such as Vinnova (Swedish Governmental Agency for Innovation Systems) and the Finnish Committee for Education and Culture, have also visited the premises.



# EVENTS

Design Factory has been a venue for various academic, entrepreneurial and corporate events, including workshops, seminars and launches. Event organizers have had the possibility to modify the spaces for the event's purpose on a do-it-yourself basis. Design Factory has offered a stimulating environment for professional and recreational events alike. The most prominent events so far hosted at Design Factory are outlined in the following.



## **Co-Designing Design Factory 21.8.2008, 4.9.2008 & 16.9.2008**

Three workshops were held to ideate and co-define Design Factory's spirit and values, people and practices and space and tools.

## **FINDIA Seminar 9.-10.10.2008**

Design Factory hosted FINDIA seminar with TKK and the Indian Institute of Technology, Kanpur (IITK), dealing with co-operation possibilities between India and Finland.

## **Start-Up Evening 30.1.2009**

Aalto Entrepreneurship Society (AES) organized an event for students interested in entrepreneurship and startups, where young entrepreneurs told about their experiences of becoming an entrepreneur.

## **Murjottelu Kick-Off Event 13.2.2009**

The annual Murjottelu kick-off event was organized to initiate the interdisciplinary traineeship application process. Students got an introduction on Murjottelu, and a chance to mingle with the companies hiring summer trainees.

## **Martela & Powerkiss Launch 3.4.2009**

The world's first wireless recharging furniture was on display at Design Factory. The product was developed in collaboration between Martela and Powerkiss, one of the start-up companies at the Factory.

## **Product Design Gala, 24.4.2009**

The Product Design Gala was the annual seminar and exhibition of the PDP course, where 15 project results were featured to the public. The audience had a chance to check out the prototypes and interact with project teams throughout the day.

# EVENTS

## **IDBM Presentations, 15.5.2009**

At the IDBM final presentations, students presented the results of their work on design and business-related company projects, ranging from new product concepts to the examination of corporate identity, communications and design management.

## **AES Entrepreneurial Ventures Fair, 9.6.2009**

The AES Entrepreneurial Ventures Fair brought together Aalto students, startups, HSE and TKK alumni and MBAs in an evening of networking. The event acted as a venue to advertise own ventures, find potential partners, exchange ideas and experience the new university's entrepreneurial thrust.

## **Finway Seminar, 15.6.2009**

The day seminar, including an exhibition of Finnish business ideas and the co-creation of a 2025 future vision, was held at Design Factory as part of the Finway event, aiming to enhance Finnish-French collaboration in the fields of ecological design and innovation.

## **Other Events Held at Design Factory**

3.10.2008	Design Factory Grand Opening
11.10.2008	Kierrä kampusta – TKK Campus Tour
24.10.2008	PD6 Workshop for Teachers of Natural Sciences
24.-28.11.2008	Wärtsilä Way of Working
17.2.2009	Visit of the Committee for Education and Culture to Aalto University
4.3.2009	Nokia – DeSEMG-Based Gesture Recognition & SEMGELE Cooperation Lecture
7.4.2009	PDP Open Doors
27.4.2009	TULI (From Bench to Business Programme) Annual Meeting
24.3.2009	Dazzle AamuTäslinki – The future success factors of Finnish organizations: Part VII
16.5.2009	Masters of Art (MoA) at Design Factory

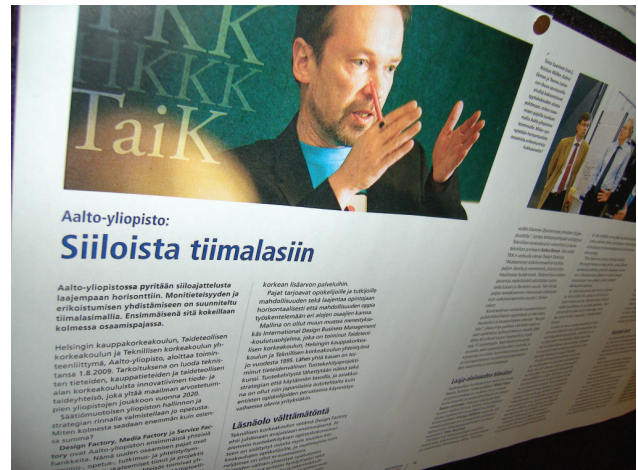


# PUBLICITY

Design Factory has attracted wide media interest both in Finland and abroad. The majority of the media hits have been newspaper coverages describing the spaces, practices and activities of the Factory. Several articles have discussed the Aalto University and Design Factory as its flagship platform. Also the Product Development Project and the Product Design Gala, held at Design Factory on 24.4.2009, have attracted media attention.

## Key Hits in Newspapers and Magazines

- Financial Times, 29.3.2009, Miranda Green:  
*Merger with innovation at its heart.*
- Helsingin Sanomat, 29.-3.2009, Marjukka Liiten:  
*Aalto-yliopiston pajoissa harjoitellaan korkeakoulujen yhteistyötä.*
- Hitech Espoo, 2009, Virve Airola:  
*Uuden Aallon osajat.*
- Metalliteknikka, 10/2008, Janne Tervola:  
*Tuotekehityksen keidas.*
- Polyteekkari, 13/2009, Janne Valtonen:  
*Design Factory kokoaa opiskelijat ja yrittäjät yhteen.*
- Suomen Kuvalehti, 4/2009, Riitta Kylänpää:  
*Tupatarkastus.*
- TEK - tekniikan akateemiset, 3/2009, Petja Partanen:  
*Tuotetta pukkaa.*
- Tekniikan näköalat, 1/2009, Johanna Aatsalo-Hallinen:  
*Design Factory motivoi luomaan uutta.*
- Tekniikka & Talous, 30.4.2009, Raija Hallikainen:  
*Aalto-yliopiston opiskelijat kehittävät yhdessä.*
- Tietotekniikan toimialakatsaus, 2008:  
*Aalto-yliopisto: Siiloista tiimalasiin.*



## Other Media

### TV

- MTV3, Kymmenen uutiset, 14.4.2009:  
*Sadat ihmiset kehittävät Aalto-yliopiston toimintamallia.*

### WWW

- Virtual Finland (<http://www.finland.fi>), 2/2009, Peter Marten:  
*Limitless by design.*
- Seed Mahazine (<http://seedmagazine.com>), 12.5.2009, Jussi Rosendahl: (F)Innovation in Helsinki.



# INTERNATIONAL CO-OPERATION

During its first operational year, Design Factory has strived to lay the grounds for flourishing relations with several relevant institutions and individuals across the globe. International co-operation has been of second nature to the Factory from its very beginning, and the quantity of contacts built during the first year is promising for the future of Design Factory. In practice, the forms of co-operating have included hosting high profile delegations visiting the Factory premises (see p. 16), collaborating with top universities in organizing and managing participation in academic courses as well as extensive networking with the international academia, research field and business life. Specific examples of the different forms of collaboration are outlined below.

## Indian Institute of Technology (Kanpur):

Visiting professor Jayanta Chatterjee has worked at Design Factory for the spring 2009, his primary focus being creating a manifesto for problem-based, interdisciplinary learning. Several researchers from the university have also been doing their work on the Factory premises. Two students from IIT Kanpur have participated in Design Factory's Murjottelu summer trainee programme, working hand in hand with their Finnish colleagues in June-July 2009 in various developmental tasks.

## Product Development Project:

In 2009, up to 20 out of 120 students taking part in the PDP course were remote participants from foreign universities. The course was organized completely on Design Factory premises. Participating universities included the Massachusetts Institute of Technology (US), Rhode Island School of Design (US), Kungliga Tekniska Högskolan (Sweden), Indian Institute of Technology (Kanpur), as well as Graz University of Technology (Austria). For more information about the PDP course, see p. 7.



## Stanford E310

Design Factory has acted as the homebase for the Finnish students taking part in the E310 Design Innovation course organized by Stanford University (US). In 2009, three student teams of a total of 12 people used the spaces provided by the Factory for working and collaborating with their foreign project team members.

*Finnish E310 participants with their colleagues minutes before the final product development gala EXPE on 4th June, 2009 at the Stanford campus.*

# PUBLICATIONS

Helminen, P., Ainoa, J. (In press). *User Innovation Toolkits in Product Development: Qualitative Study in Shopping Center Design*. International Conference on Engineering Design, ICED'09, 24 - 27 August 2009, Stanford University, Stanford, CA, USA. (Decode)

Liikkanen, L. A., Björklund, T. A., Hämäläinen, M. M. & Koskinen, M. (In press). *Time constraints in design idea generation*. ICED'09. (HIIT, Design Factory, PDR)

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Björklund, T. A., Eloranta, M.-M. (2009). *Adapting knowledge: Interaction between education and working life*. In Proceedings of INTED2009 Conference, pp. 2138-2148. International Association of Technology, Education and Development (IATED): Valencia, Spain. (Design Factory)

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Itkonen, M., Ekman, K. E. & Kojo, I. (2009). *Murjottelu - Interdisciplinary Training Campaign for Industrial Design and Engineering Students*. European Journal of Engineering Education, 34, 3, 263-271. (FLPD, Murjottelu, Design Factory)

Korhonen, J. M., Hassi, L. (2009). *Design Thinking Unpacked: An Evolutionary Algorithm*. 8th European Academy of Design Conference, 1-3 April 2009, The Robert Gordon University, Aberdeen, Scotland. (Seos/Decode)

Laakso, M., Hämäläinen, M., Häggman, A. (2009). *Improving Lead Organization and Supplier Interaction - A Case Study*. International Council for Small Business World Conference 2009 (ICSB2009) June 21 - June 24 2009 / Seoul, South Korea. (PDR)

Tuulenmäki, Anssi; Helminen, Pia (2009). *Lead Users of Positional Value*. 8th European Academy Of Design Conference, 1 - 3 April 2009, The Robert Gordon University, Aberdeen, Scotland. (Decode)

## Master's Theses

Häggman, A. (2009). *Managing change with causal relationships of problems in product development - A multiple case study research*. Master's Thesis, Helsinki University of Technology. (PDR)

Korhonen, J. M. (2009). *A practical decision framework for sourcing product development services*. Master's Thesis, Helsinki University of Technology. (Seos Design)

Laakso, M. (2009). *Design operations improvement in a small knowledge-intensive business service company*. Master's Thesis, Helsinki University of Technology. (PDR)

Björklund, T. A. (2008). *Expertise and relevancy perceptions: How product development experts and novices differ in design brief interpretations*. Master's thesis, University of Helsinki. (FLPD)

Lyytikäinen, V. (2008). *Introducing ways to facilitate the utilization of user information in product development*. Master's Thesis in Machine Design, Helsinki University of Technology. (FLPD)

Santamäki, E.-M. (2008). *Introduction to re-designing product development working spaces*. Master's Thesis in Machine Design, Helsinki University of Technology. (FLPD)

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