

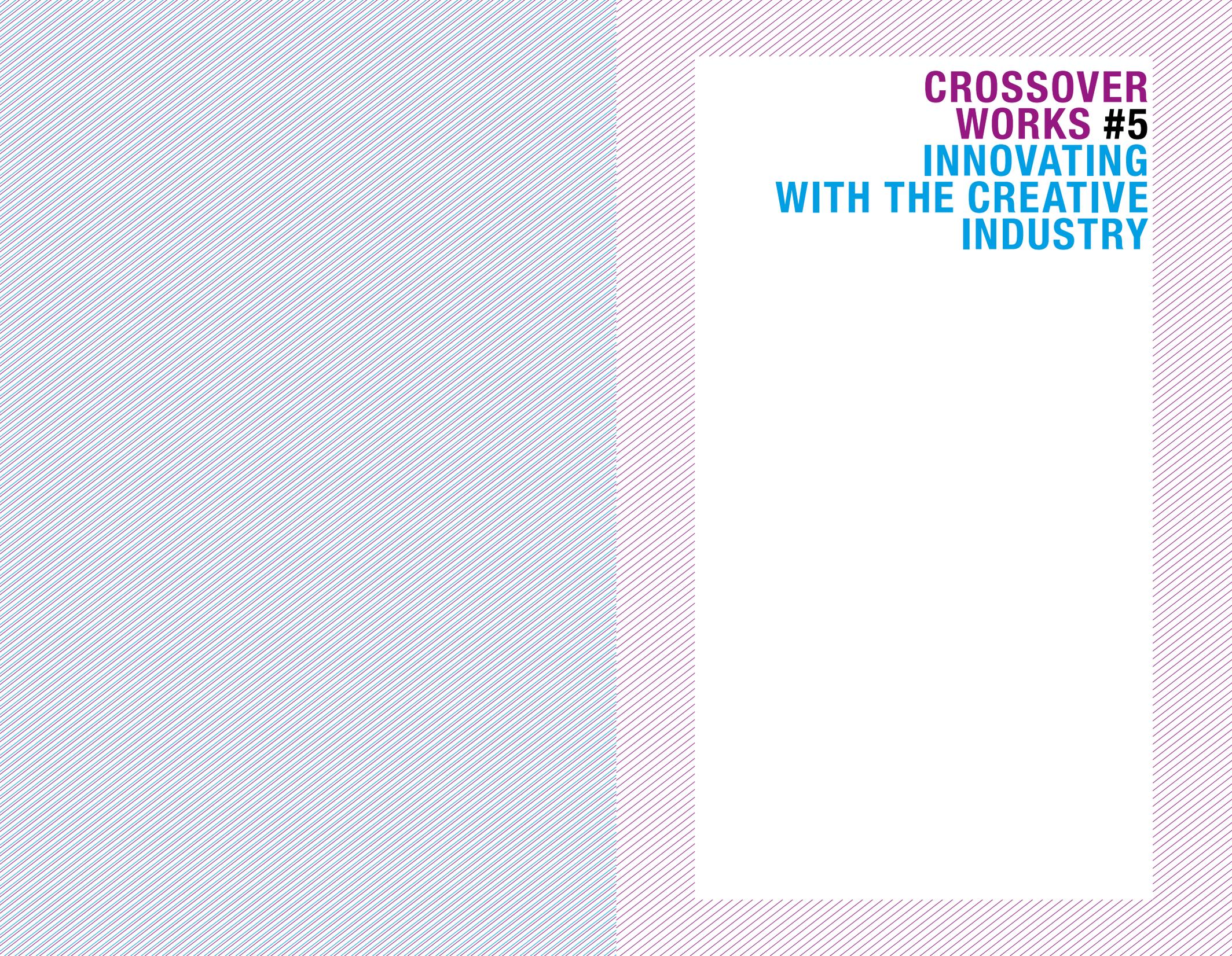
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#5

INNOVATING WITH THE CREATIVE INDUSTRY



**CROSSOVER
WORKS #5
INNOVATING
WITH THE CREATIVE
INDUSTRY**

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Foreword

The creative industries are a major contributor to the innovative capacity of the Netherlands. Often in close collaboration with other sectors, they strengthen the competitiveness of the Dutch economy. They also make a significant contribution to solving societal challenges. Intensifying international competition and increasing digitalization mean that innovation and differentiation will become even more important in the future. The creative industries are characterised by their strong ability to think outside the box by focusing on the user, adopting a forward-thinking mindset and rapidly adapting new technologies. This not only translates into innovative products and services, but also innovative business and revenue models.¶

Together with other sectors, the contributions of the creative industries to solving societal challenges are so extensive that this is already the fifth edition of the *Crossover Works* book. I'll admit that I personally avoid using the term 'crossovers', I prefer to call them 'exceptional collaborations'. Fortunately, these are not limited to the creative industries, but this sector does it particularly well. The contributions that designers can make to Smart Industry or the collaboration between the dance sector and innovative start-ups in the Open-House project are examples which connect to the projects in this book that we as the Ministry of Economic Affairs are directly involved with.¶

The fifth instalment in this series once again highlights great examples of cross-sectoral projects in a variety of areas from which wonderful innovations have emerged. It's concrete evidence that the creative industries rightly deserve to be called a top sector!¶

Bertholt Leeftink

Director-General Enterprise & Innovation

Dutch Ministry of Economic Affairs

Learning outside the box

From a variety of angles, this book asserts that *Crossover Works*. But how do you get people to the point where they are really ‘crossing over’? Is it possible to learn how? The education system is becoming increasingly aware that they are training people for an unknown future. That future requires professionals who are agile and flexible, who have the ability to adapt. And who above all don’t remain inside their own ‘professional box’.

Désirée T.M. Majoor

You can’t put creativity into a box. That also applies to entrepreneurship, curiosity, critical thinking, design thinking and an inquisitive approach. Can these things be learned? The response from the education system is that in any case, these abilities can be further developed. And to do that, you can’t start early enough.

How do we train a new generation of professionals? It’s a question that occupies many people – both inside and outside the field of education. What must this generation know and be able to do to face the challenges of the future? Because it’s quite a load to bear: they need to be innovators, and they don’t only need to save our economy, they also need to be able to handle what have become known as ‘global challenges’.

With its Dutch Scientific Council for Government Policy (WRR) report *Towards a learning economy* (2013) the Van Lieshout commission provided important insight into the issue. Among other things, the report advocates that in order to remain innovative, we need people who can make connections between creativity, entrepreneurship and technology. In other words, people who create crossovers. Such as the designers, scientists, engineers and other creative thinkers and doers that are showcased in this book. How can education contribute to shaping these people?

Research and design

In any case, views on education are changing across the board. If we look at what this year’s initiative from Sander Dekker has achieved to generate images and ideas about ‘the education of and for the future’, then we see in the recommendations from Platform Onderwijs2032 (Education Platform 2032), that the general consensus on this subject has significantly shifted compared to a few years ago. In addition to knowledge, these 21st century skills play an important role, just like ‘learning to learn’ and civic education. Often topics that can’t easily be crammed into the ‘box’ of traditional school subjects or conventional lectures. The platform also advocates breaking through barriers between school subjects and acquiring interdisciplinary skills. Many secondary schools have long been aware of this. Years ago, they started initiatives like cultural profile schools and curriculums focused on technology and entrepreneurship. Within those areas, they are experimenting in different ways with making new connections, and students work on projects which challenge them to experiment, research and design. An excellent example of this is the H.N. Werkman College in Groningen where HAVO students designed shelters to protect people from the rain along the bike path between Bedum and Groningen. Similar examples are becoming more commonplace; an increasing number of schools are seizing the opportunity to start doing their own



HKU's Expertise Centre for Creative Technologies brings technological experimentation and high-end tech innovation to the school.



experiments. Fortunately, the government is also prepared to give them more room to do so. Because if crossovers need to start somewhere, it's in primary education.¶

Living labs

At HKU University of the Arts Utrecht, we agree that crossovers work. Crossovers are in our institution's DNA: in addition to art and design schools, we also have technical and economics schools. We use these 'resident crossovers' for our art and design programmes. The Expertise Centre for Creative Entrepreneurship ensures that students have support for entrepreneurial initiatives during their study. The Expertise Centre for Creative Technologies brings technological experimentation and high-end tech innovation to the school. But we also look for crossovers outside of HKU. For more than 10 years, HKU has had a strong tradition of project-based education, in which external clients bring their questions to the school, or students themselves approach outside parties. One example is the study unit 'Imagining Tomorrow', where teams of five students from different HKU programs devise the best solutions to realistic questions from clients like Rabobank, the Princess Maxima Centre for Paediatric Oncology, the public library and more. This type of education is now widespread at the HBO and MBO (secondary school) level, and seems to be the rule, rather than the exception. 'Living labs' are now springing up everywhere, in which different parties such as the government, research institutes, businesses and social partners join forces to tackle contemporary issues. The Achilles Initiative, a collaboration between HKU and the Military Rehabilitation Centre in Doorn (case study four in this book), is one example of this. Also, an increasing number of HBO and MBO schools are working with creative incubators, where students can already take an entrepreneurial approach during their studies. In addition, the Centres of Expertise (HBO) and the *Centra voor Innovatief Vakmanschap* (centres for innovative craftsmanship, MBO) unite the education and business sectors. They often focus on a specific crossover, such as with U-Create – the joint Centre of Expertise from the HU University of Applied Sciences Utrecht and HKU – which focuses on health-related crossovers in partnership with the University Medical Center Utrecht

(UMCU). In short, there are plenty of examples of how crossovers can play a role in education. Incidentally, that can sometimes lead to clashes with a bureaucratic system that would prefer to put educational programmes into a box – which is especially difficult with crossovers.¶

What do you want to be when you grow up?

Educating people for an unknown future: we are increasingly aware that that's what we need to do. Such a future requires professionals who are agile, flexible and adaptable. It requires people who keep learning. People that don't have 'an occupation', but who as professionals and human beings, have added value. Who can do things that cannot be taken over by a machine. Whoever reads *The Future of the Professions* (2015) by Richard and Daniel Susskind, will realise that in the future, the concept of 'profession' will no longer exist in same way it did as when my generation was growing up. This will immediately solve one problem: young people will no longer need to know exactly what they 'want to be when they grow up' when they're 18, 17 or 16 years old. Roel Meijvis, first-year journalism student at Fontys, wrote an essay about it. He was among the award winners of a competition that was part of Jet Bussemaker's higher education tour. "Many people earn a degree to become something, but only by *being* can you really make a difference," he wrote.¶

You can't put creativity into a box, and you also can't do it with crossovers. And we shouldn't try that with people either.

Désirée T.M. Majoor (1963) has worked for more than 20 years in higher education as a director and manager. Currently, she combines her position as a director of HKU with a role in the Dutch Creative Council and the

Creative Industries Top Team, where she focuses primarily on the transition from education to business life, creativity in education and lifelong learning in the creative industries.

CASE 01

WEARABLE SOLAR

No more searching for a power point

It started with a dress and a jacket with solar cells that generate enough energy to charge a smartphone, and this family of products is steadily expanding. Pauline van Dongen is investigating the energetic possibilities of fashion.¶

With Wearable Solar, designer Pauline van Dongen demonstrates that clothing can be much more than a way to keep warm or express yourself. “We’re extremely dependent on connectivity,” says Van Dongen. “When you’re on the go, you’re always looking for a power point because your phone’s battery drains much too quickly. By using the sun, we can generate the required energy in a sustainable way with our clothing.”¶

By working with experts in the field of solar technology, she managed to merge textiles and electricity. “In the dress and jacket, there are many small, individual cells and standard electrical circuits that had to be manually soldered. Last year, in collaboration with the Holst Centre in Eindhoven, they successfully laminated flexible circuits onto the fabric, which is a major step forward in terms of wearability.” On the recently launched Solar Shirt, the printed electronics became the focal point of the design.¶

The newest addition is the Solar Parka, developed on commission by the *Waddenvereniging* (Wadden Sea Society): a wind and waterproof jacket made of recycled Blue Loop denim especially for *wadlopers* (mudflat hikers). Out on the mudflats, a fully charged phone can indeed be vital. This jacket uses a flexible solar panel which attaches to one of the pockets with press studs. Once your battery is full, the panel can be safely stored in the jacket’s lining. It’s just the beginning, predicts Van Dongen: “Maybe in a few years we won’t be focusing on phones anymore, but on screens integrated into fabric and interactions. Eventually, clothing will increasingly act as an interface.”¶

www.paulinevandongen.nl

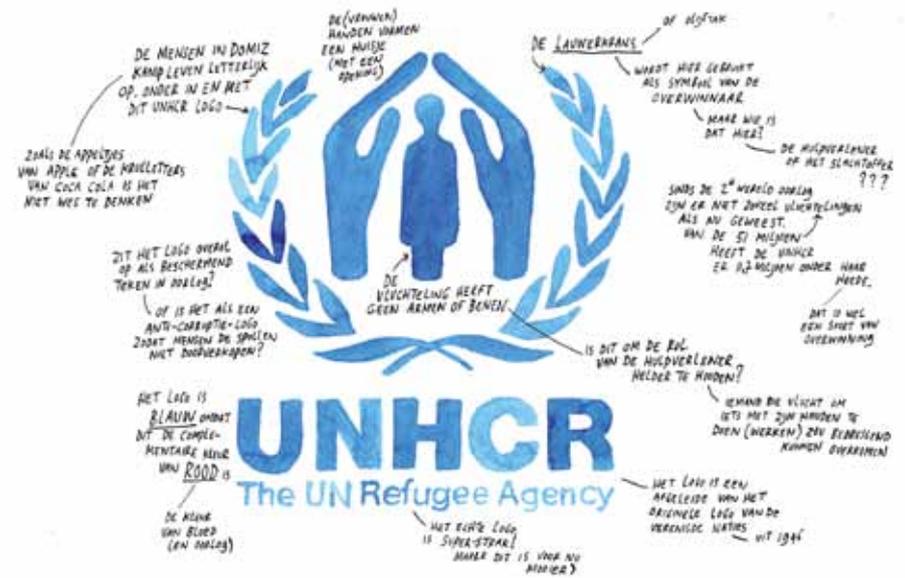


Stories from the refugee camp

Four million Syrians have fled from their country. Many have been living in refugee camps for quite some time. Refugee Republic brings everyday life in these camps into view – in an unconventional way which reveals much more than the stereotypical images.

A group of women sit in the sand in front of a row of white tents waiting for help; a dusty child behind barbed wire peers into the lens with large eyes. These are the images that reach us from the refugee camps. “But that’s incredibly stereotypical,” say artist Jan Rothuizen. Together with multimedia journalist Martijn van Tol and photographer Dirk-Jan Visser, he went to Syrian refugee camp Domiz in northern Iraq to capture the real camp life. Domiz is intended for a maximum of 40,000 people, but nearly 60,000 refugees live there. Rothuizen: “It’s called temporary housing, but most people have lived here for years. As a result it has become a miniature city, with its own economy and politics.” Refugee Republic takes you into the world behind the posters from aid organisations. Through the drawings of an artist, the eyes of a photographer and the ears of a radio producer, you explore the camp. You meet residents and get to know them better via a scrolling audiovisual story, or wander around in the detailed drawings. You are introduced to Ahmed, who cuts class at the camp school because he has started a bird shop, follow a day in the life of Shixmous, a busy circumcision doctor and fall silent when you see Fatma, who hopes to launch her singing career on YouTube. This new journalistic approach creates a new perspective. “We’ve purposely focused on everyday stories. Work, love, living, entertainment – it’s just as important there as it is here,” says Martijn van Tol. He describes the interactive mix of drawings, film, photography and text as a moving diorama, where viewers are free to find their own way and form their own opinions.

www.volkskrant.nl/refugee-republic | refugeerepublic.submarinechannel.com



Solutions for the networked society

‘Design thinking’ is totally hip, and it’s not just a matter of fashion – there’s a good reason for it. When we take a design approach, we examine complex issues in a broader context and from a variety of angles. In today’s ‘networked’ world, where everything is connected to each other, it appears to be a good way of solving problems.¶

Kees Dorst

We live in a networked world. Our new reality, the experience of who we are and what we do, is greatly determined by the lightning-fast exchange of information over the internet. We’ve never before been so closely connected to each other. That’s unique and extraordinary. But at the same time, this ‘Brave New World’ comes with its own challenges: by networking ourselves, we have also unintentionally networked our problems.¶

In this new networked world, everything is tied together – on a personal level that’s sometimes quite confusing; you almost become nostalgic for the days before the internet revolution. What’s more important is that unfortunately our organisations are also not built to deal with this new world. Both businesses and government organisations are in danger of stagnating because of this increasing complexity.¶

How can you continue to make decisions in a situation where everyone feels connected to your problems, and wants to get involved? In the good old days, you could still be the ‘owner’ of a problem, and using feedback procedures, keep the other stakeholders at a distance. But within our networked society, that’s no longer possible. And on top of that, not only do you no longer have a monopoly on the problem, you’re also most likely not the sole owner of the solution. And the solution lies right inside that troublesome network.¶

In short, we will need to tackle problems in a networked society in a radically different way. But how? A somewhat vague appeal to the public interest won’t work, certainly not if everyone has a different opinion about what that is.¶

Design thinking

Then how can we continue to think about problems, make decisions and implement them? How do you deal with a world in which problems are open, complex, dynamic and networked in nature? This question is hardly new. Over the past 15 years, a growing number of organisations have been looking for new ways to find solutions to these types of complex problems. So it seems obvious to borrow from other disciplines that have always dealt with problems like these.¶ That brings us to the designer’s craft. ‘Design thinking’ is totally hip, and it’s not just a matter of fashion – there’s a good reason for it. Designers have faced networked problems for quite some time, and have therefore needed to develop smart ways of overcoming these complex situations. They imagine a new approach (frame) to the problem, come up with solutions based on that, and then experiment in a very open process with all stakeholders. So in the end, everyone in the network is on the same page.¶



Marathon Eindhoven Live

Mobile webapplication
Ruben Delil

Photography: Johan Siekmans and Ruben Delil

Paradoxical marathon

Here's a brief example of a project where a complex and networked social problem is being examined from a design perspective: a few years ago, the city of Eindhoven approached a group of design researchers from the Eindhoven University of Technology with a traffic problem. What was the situation?

On the day of the marathon, the centre of Eindhoven is extremely crowded and difficult to access. The downtown area is very busy, and the marathon completely encloses the city centre. Many access roads are closed – to the great frustration of Eindhoven's residents. The city has made every effort to minimize the inconvenience: with a public awareness campaign and better signposting (apps, etc.) to make residents and visitors aware of major congestion and detours, and by deploying additional police officers and traffic wardens to keep everything running smoothly. But it has barely helped – the residents still find the situation chaotic, and tensions can run high.

Looking at the source and history of the problem, the designers encountered a paradox. The marathon was first set up to promote the city of Eindhoven and make it livelier, but now many residents flee town precisely on that day, making the city feel less dynamic. Therefore, the original goal contrasts starkly with the end result. It won't be easy to find a solution.

A wider view

If we take a design approach, we won't solve this unsolvable traffic problem, but will instead look for a new approach by taking a much



Photography: Johan Siekmans and Ruben Delil

wider view. Who are all the players involved in this event? Who is bothered by it, who benefits from it, who needs to be a part of the solution? In a broader context, it's the parents, children, schools, health insurance companies, small businesses in the suburbs, local community organisations, bus company in Eindhoven, national train company (NS), other events in the city, university and companies with research laboratories. All of these can be important, and all can benefit from the marathon! To make a long story short, the design team subsequently concentrated on two potential stakeholders: the businesses in the city and the runners' families. Businesses are looking for employees who want to come to Eindhoven to work for them. The participants' families want to watch and cheer for their family members in an appropriate place.

City marketing

The challenge is to actually make the marathon the 'Eindhoven Marathon', an event that embodies the distinct character of the city. By not taking the complaints about the traffic as the starting point, but instead the feeling of pride in what the city has to offer, it's possible to imagine new kinds of solutions. If it becomes a community event, then neighbourhood committees can each set up a section of the route. The city can take charge of the coordination and divide the marathon route into themed zones – healthcare, design, high-tech, etc. – which together present a good picture of what Eindhoven has to offer. Special events such as factory visits and exhibitions could draw the public away from the centre, reducing the crowds (and thereby

Marathon Eindhoven Live

Webapp voor o.a. iOS, Android en Windows Phone



- > Check actuele event-informatie
- > Navigeer door Eindhoven
- > Ontvang live updates
- > Deel interessante plaatsen
- > Praat mee via Facebook en Twitter



www.marathoneindhovenlive.nl

achieving the project's original goal: to solve the issue of traffic congestion). And this idea offers many additional possibilities: in general, marathon runners are highly educated, and they come from every corner of the country. For a region with many high-tech companies that are constantly looking for highly skilled personnel, it's too good to be true. Precisely because marathon runners come to the competition with their families, it's an excellent opportunity to promote the region as an attractive place to live.¶

Director's role

This is just one small example from the hundreds of projects that we (researchers/designers from the University of Technology Sydney and Eindhoven University of Technology) have now done, in a variety of social domains, in all shapes and sizes.¶

The potential contributions of design to the networked society are becoming more relevant by the day in this era of a shrinking, less involved government. An increasing number of the government's operational responsibilities are being split up and awarded to private parties – but with a networked problem, someone still needs to be responsible for having the overview and taking a design-minded director's role to lead the development process. It would serve the government well to take on that role with enthusiasm; design thinking is key part of that.¶

Kees Dorst has a degree in Industrial Design from tu Delft and has dozens of product designs to his name. He is professor of Design Innovation at the University of Technology in Sydney and professor of Design Skills for Interaction at the Eindhoven University of Technology. Dorst has written

several books, including *Understanding Design: 175 Reflections on Being a Designer*. The example described in this essay is one of the 20 case studies from his recently published book *Frame Innovation: Create New Thinking by Design*.

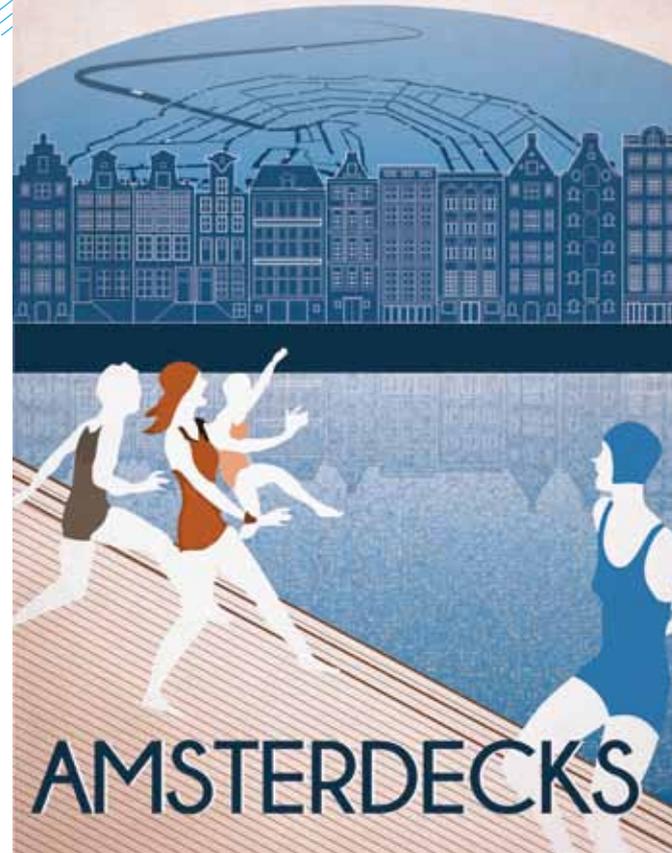
Swimming decks for cleaner water

Swimming in the Amstel River or the Amsterdam canals – at certain times and locations that can be perfectly fine. Architects Rademacher de Vries are building a network of platforms that show where you can safely take a dip.¶

The days when the canals were stinky open sewers are long gone. But even though an increasing number of Amsterdamers dare to take the plunge, almost no one knows how clean the water really is. And the water quality changes by location and by day. For example, it's less clean on busy shipping lanes, and after heavy rain it's better to wait a few days because of sewer overflow. Rademacher de Vries Associates devised a network of 'measuring' platforms that show the state of the water quality in real time.¶

They will be called 'Amsterdecks', and the first will appear in the summer of 2016: in the Amstel, in front of the headquarters of Waternet, which became a partner in the project. This system, which gives city dwellers insight into the quality of the water in front of their door, was developed together with hydrologists, public officials and engineers from Waternet. "They will be mobile wooden decks that can change shape: you can see by the position of the deck if you can swim or not," says designer Christopher de Vries. In addition, on the corresponding meters you can see the 'swimming score' and the visibility, temperature and oxygen levels. In fact, you can even check the information before biking there using a website and app developed by Waag Society.¶ The design can also be tailored to the needs of the neighbourhood: "We want to make water a more integral part of the city," says De Vries. "A unifying place where people come together to enjoy the outdoors and then immediately treat it with greater care. As a result, the water quality will only get better. Swimming is the ultimate goal, but even before we achieve that, there is still much to be gained – in terms of biodiversity, for example."¶

amsterdecks.com | www.rademacherdevries.com



MEET
LOKAAL



NETWERK
STEDELIJK



COMMUNICEER
PUBIEK



TOEGANG
OPENBAAR



Images: Rademacher de Vries Architecten / Waag Society / Waternet

Gaming to cope with trauma

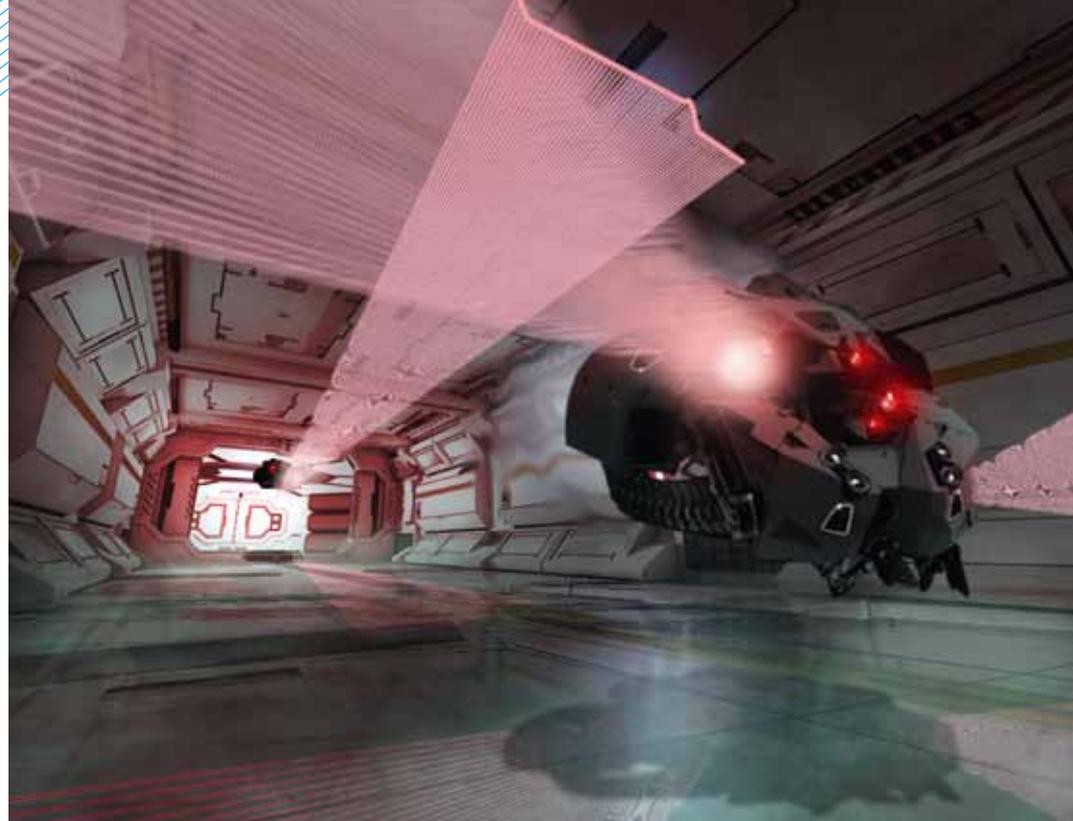
The Dutch Ministry of Defence joined forces with game designers from HKU to develop a game in which veterans battle their greatest fears. In addition to being an exciting game, the mission in ‘Sector 1’ is also a way of dealing with trauma.¶

As a doctor in the air force, Agali Mert had already immersed himself in virtual simulations. When he started working at the Military Rehabilitation Centre Aardenburg in Doorn, he went on to develop 3MDR, a new treatment for post-traumatic stress disorder (PTSD). It combines psychotherapy, movement and virtual reality in a unique way with the help of CAREN: an advanced motion platform surrounded by screens on which virtual environments can be projected.¶

“When developing 3MDR, we felt that more interaction and a gaming element could reinforce the therapy,” explains Mert. The Ministry of Defence approached the HKU University of the Arts Utrecht, where a group of students from the Games and Interaction department got to work making a game for CAREN. “The focus was on coping with trauma while gaming,” says Justin van Luijk, one of the students. It became a co-creation of the Military Mental Healthcare organisation (prof. E. Vermetten), Military Rehabilitation and the game developers. “Together, we devised and built Achilles Initiative – a kind of science fiction world where you have to literally fight off enemy drones and are confronted with personal images of trauma.”¶

“The fact that you literally confront your fears and physically do something about it plays an important role in the therapy,” says Mert. After promising test results, the game and hardware have been further developed for wider use. “The clinical results appear to be good – we’re right in the middle of the validation process. We now want to expand the application to be used by police or firefighters, for example. They are also going to start working with it in Israel, the UK, Canada and possibly the US.”¶

www.centrum45.nl | www.vanluijk.org



Artwork: Eric Felten

CASE 05

THE OCEAN CLEANUP

Getting rid of the plastic soup

If the plastic in the ocean floats around long enough, it disintegrates into miniscule particles which are swallowed by fish. And that's how it eventually ends up on our plates. The Ocean Cleanup, founded by Boyan Slat, wants to do something about that as quickly as possible.👉

During a diving holiday when he was 16, he encountered more plastic than fish. From that moment on, he began to ponder a solution. Three years later, he refuted the prevailing idea that you can only combat the problem at the source – it would be nearly impossible to clean the entire ocean. “Nevertheless, there is definitely something you can do about all the rubbish that's already floating in the ocean,” says Boyan Slat.👉 He approached the problem from another angle: Why chase after the plastic if it comes to you all by itself? The plastic rubbish is concentrated in five gyres – large rotating ocean currents. Slat came up with an enormously long, V-shaped floating barrier to use in these currents which allows marine life to simply pass underneath, but traps the plastic. The plastic then flows by itself to a point where an unmanned workstation fishes it out of the ocean. Within a decade, about half of the plastic in the most affected area – the Great Pacific Garbage Patch – could be removed this way.👉 The world reacted enthusiastically: after a feasibility study with positive results, a crowdfunding campaign raised over two million US dollars. Thanks to that funding, the largest-ever expedition to the Great Pacific Garbage Patch took place this summer to investigate how much and what kind of plastic is actually floating around. “The initial observations confirm that this problem is a ticking time bomb,” says Slat. “We need to do something before it's too late.” A pilot with a prototype off the coast of the Japanese island Tsushima starts in 2016; in 2020 the Ocean Cleanup wants to start on the larger work in the open seas.👉

www.theoceancleanup.com



Photography : Erwin Zwart / The Ocean Cleanup

Wanted: Social Designers

All societal issues come along with conflicting perspectives. There are always differing interests, and what's good for society is not always favoured by the individual. A social designer is specialised in solving these social dilemmas.¶

Nynke Tromp

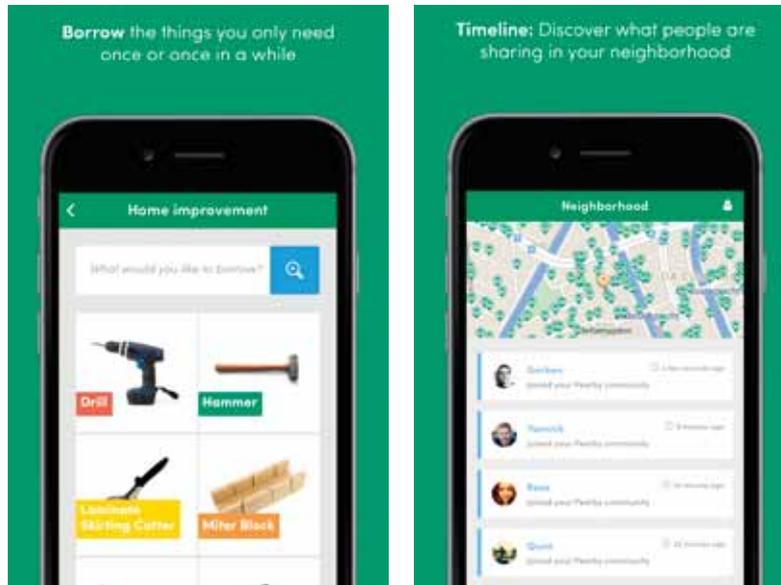
Now that we're being confronted by a number of difficult societal problems, we're increasingly noticing that we lack expertise. The arrival of refugees, the impact of our consumption habits on climate change, violence against aid workers or trade in endangered species: these are complex issues that have no single answer. And therefore multidisciplinary teams are being assembled which challenge experts to look beyond their own field of expertise and use an interdisciplinary or even transdisciplinary approach to find solutions.¶ But we also know how difficult it is to 'see beyond your own field' – certainly as an expert. Internalising a perspective that's different, or even conflicts with your own perspective, requires the willpower and the ability. Especially because then 'the solution' might fall outside your own field. It's a rather disheartening conclusion if you're not yet familiar with the skills of designers.¶ Today's designers are in able to – in collaboration with experts or drawing on their own expertise – play a crucial role in tackling complex issues. In this essay, I will explain why the appearance of designers in the social domain should be applauded, provided they know how to use their skills in the right way.¶

Uniting conflicting perspectives

When designing an object, for example a chair or coffee maker, an understanding of the materials, production methods, construction and technique, aesthetics and ergonomics must be integrated into a single form. This is a major undertaking in and of itself, but becomes even more complex when the optimization of one aspect has negative consequences for another aspect. For instance, conflicts can easily arise between ergonomic and aesthetic optimization. The chair that supports your body in the most responsible way is often not the most attractive one. Understanding a design issue from different perspectives and finding answers to the conflicts within is therefore a key aspect of design. It requires what we call 'integrative thinking', which is often considered one of the unique skills of designers.¶ Today many, if not all societal issues are likewise characterised by these kinds of conflicting perspectives. First of all, social problems logically have many stakeholders who may have differing ideas about what a better situation might be. Secondly, social problems can be classified as 'social dilemmas': situations where the public interest conflicts with the interests of the individual. Providing shelter to the many refugees could have a positive impact on the Netherlands (economically or in terms of international reputation, for example). But the citizens who end up living alongside these 'new Dutch' have their own personal concerns. How will this change my neighbourhood? How will it affect my chances of getting a job? Within every social

problem lies a conflict between what we find important as individuals and how we view it as a society. This means that to develop solutions to social issues, both personal and societal perspectives need to be integrated. And that's exactly what a social designer does well.¶

Case 1



Peerby, a platform that helps neighbours borrow things from each other

By offering access to nearly any product without requiring people to purchase it, Peerby is bridging the gap between personal convenience and collective sustainability.¶

Understanding where and how to intervene

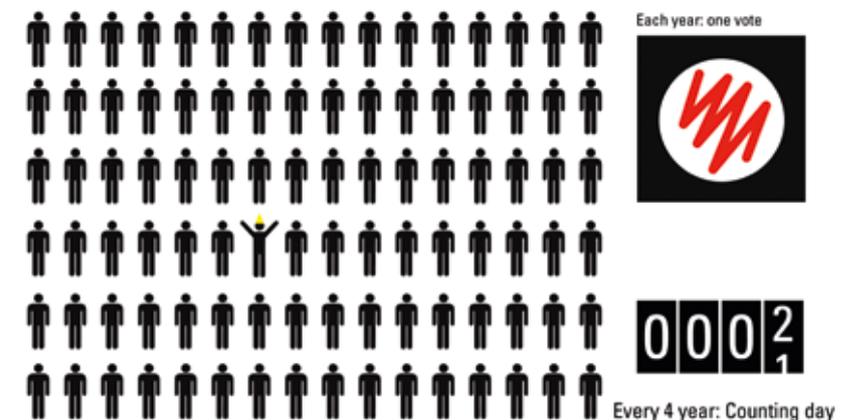
At the TU Delft we've been working with the 'Vision in Product' (ViP) design method since 1996, developed by professors Paul Hekkert and Matthijs van Dijk. What's unique about this method is that it encourages designers to take an effect-driven approach. Strictly implemented, this means that you can't decide what will be designed beforehand. However, many design projects start with exactly that kind of assignment: 'design an e-bike', for example. As a result, the final form of the design is already known: it's a bike. And at that moment, there are plenty of design methods that can help to design the bicycle as well as possible. In contrast, the ViP method forces designers to acknowledge that a product is simply a means to a specific result, and accordingly brings the e-bike itself up for discussion.

What do we want to achieve? And is an e-bike the best way to do that? This method encourages designers to examine the factors that help clearly define the desired effect, and then subsequently design the most suitable way to achieve it. But it could just as well be an app, training, physical product or urban design intervention. Reframing the assignment therefore requires an understanding of the various forms of design. Only once the desired effect is clear, can the designer determine if it can best be achieved with an e-bike, or if new signage, different bike racks, new types of public transport payment plans, different regulations for car drivers, new infrastructure, new child-care arrangements or new types of recreation should be developed.¶

This approach is extremely valuable for addressing societal issues. Because of the systemic nature of these kinds of issues, there are many different answers. By taking an effect-driven approach and being able to consider every solution, social designers are able to understand where best to intervene, before determining how.¶

Case 2

The think tank Redesigning Politics is proposing voting every year (on your birthday!) on a party's vision, instead of en masse every four years based on the person running for office (for more information, watch the TedX video 'Disrupting Democracy'). Once every four years, all of the votes would be counted on 'counting day', after which a coalition would be formed. The question that the think tank members asked themselves was: How can politicians gain the freedom to structurally build a better country, instead of being preoccupied with the issues of the day and their media performance? But where do you



Vote on your birthday! A proposal to improve our country's government, by Redesigning Politics

intervene to achieve that effect? How do you change such complex interactions between voters, politicians and the media? At first glance, the fact that people would vote every day seems like it would only feed the media frenzy. But nothing is further from the truth. Because every day, politicians would be held accountable for their ability to effectively realise their party's vision. Nice promises on one day could certainly generate votes, but if they are not fulfilled, it could result in a loss of votes on the days that follow.

Using the implicit influence of design

The designed environment has a huge impact on how people behave. The way that the tax form looks affects how willingly people pay their taxes and whether they actually do it. The way our infrastructure is designed has an impact on the number of traffic violations. And the products that people surround themselves with at home have an effect on family relationships. What's extraordinary about these effects is that people are often not aware that they are being influenced.¶

By using the implicit influence of design for societal issues, social designers can make a unique contribution in comparison to more conventional interventions like campaigns and subsidies. But of course, secretly influencing people doesn't sound very ethical. Yet it's actually unethical not to do it. The simple observation that our environment affects us – whether we like it or not – is already an argument to use this influence for our mutual benefit. It's also true that many people would be willing to change their behaviour for the benefit of society, but they find it difficult. So above all, it's about supporting those people, especially if with implicit influence you're not excluding other behaviours.¶

Case 3

In 2014, Anna Peeters graduated from the TU Delft with a design to improve the welfare of pigs in the meat industry. She noticed that many people think animal welfare is important, but at the supermarket their budget often takes top priority, and they go for the best deal. So she designed Tomorrow's Menu, which invites people to pay a monthly fee to become a member of a specific type of farm, depending on the importance they attach to health, animal welfare and sustainability. With this programme, when you go to the shop you pay the same amount for the meat that comes from your farm type as you would for the deal of the day. That's how Tomorrow's Menu aligns with people's good intentions while taking their habits into account.



Tomorrow's Menu, by Anna Peeters

A new vacancy

The aforementioned cases are all examples of social design. Of course, the solution to societal problems doesn't only depend on these design ideas; that requires a combined effort from a variety of disciplines. But designers can bridge the gap between these disciplines like no other: by definition, they take a transdisciplinary approach. In addition, every design affects society. Knowing that, it's surprising that a vacancy for 'social designer' has never yet been posted.¶

Nynke Tromp is assistant professor of 'Social Design & Behaviour Change' at the faculty of Industrial Design, TU Delft. Since 2007, she has been focused on design for social issues. At Reframing Studio, she has worked for the Nierstichting (Kidney Foundation), Parnassia and Stichting Natuur

& Milieu (Nature & Environment Foundation), and in 2013 she obtained her PhD with honours on the subject. At the moment, she is focused the reform of the GGZ (Dutch Association of Mental Health and Addiction Care) and the endangered species trade.

CRAFT

Virtual on-the-job training

Learn how to operate a drill press or water jet cutter and at the same time earn credits to build the fastest rollercoaster in the class: this unique mix of simulation, gaming and 'on-the-job' training from CRAFT is proving popular with students.¶

“Professions such as mechatronics technician, welder or metalworker are primarily learned on the job,” says Senne de Jong, technical director at game company Little Chicken. “But unfortunately, there’s also a lot of dry theory that goes along with applying and operating the tools and equipment.” CRAFT makes that part of the instruction much more attractive. In close collaboration with knowledge centre Kenteq, which develops lesson materials for the technical sector, Little Chicken made an applied game for Dutch MBO (vocational college)-level Mechatronics students.¶

To do this, the game developers replicated a complete technical workshop with realistic machines, including all of the operable buttons and modules. While playing the game, it’s as if you’re actually standing behind the water jet cutter or lathe. An additional gaming element is that correctly completed procedures result in credits to build your own rollercoaster in a virtual abandoned warehouse – for the ultimate ride at the end of the game. “So you immediately see why you’re doing it,” says project manager Maria de Lange. “With the information that you’re learning, you can later really build an amusement park. That provides motivation.”¶ CRAFT closes the gap between theory and practice, in part due to the ‘just in time’ method: “What you practice in the morning in CRAFT’s virtual workshop you do in the afternoon for in real life,” explains De Jong. And virtual experimentation ensures better educational results, confirms a study at the TU Delft. An added advantage is that CRAFT has created a uniform protocol for processes and the operation of equipment. This validated educational tool is already being used extensively at a number of schools. According to De Lange, “It works so well that we are now applying the same principles to developing instructional, training and testing games for adult machinery users.”¶

www.kenteqcraft.nl



SAINT GOBAIN INNOVATES WITH WAAG SOCIETY

Fablab as an engine for transformation

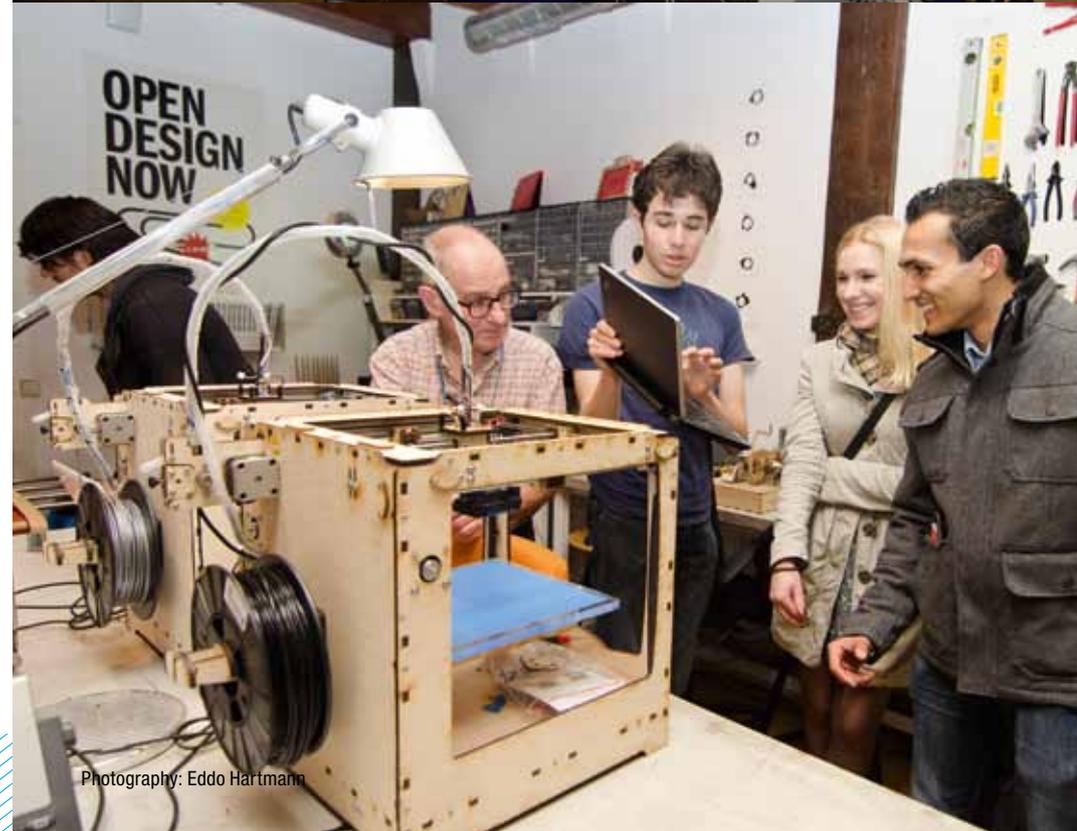
What can a major industrial multinational corporation learn from a Fablab that makes the latest digital technology accessible to the public? Saint Gobain came to the Waag to experiment with different thinking, working and creating processes.¶

Grow Your Own Car, here and now, with the materials available and in an hour, give what you have to your neighbour. To the senior managers of an industrial multinational corporation, it sounds like a puzzling assignment. “Yes, it’s quite disruptive for a company where there is still a major division between workers and management, and where everything is protected by patents,” says Marleen Stikker, director of Waag Society. She’s talking about Saint Gobain, an industry giant in the field of building materials, glass and conductors for the automotive industry. They came to Amsterdam’s Fablab in the Waag to experience a new culture of makers.¶

“Of course, Saint Gobain’s factories have already had 3D printers for quite some time, but the corporate culture and production process are still based on 19th-century systems,” says Stikker. “To stay competitive in today’s market, they’ll need to innovate. That requires more than assembling a new product. Innovation is only possible if you truly start thinking and working differently.” And that’s exactly what the Fablab Amsterdam had to offer: a dose of design thinking and acting marked the beginning of a series of international sessions where managers, factory workers and designers challenged conventional processes together.¶

Together with YourOwnLab from Belgium, Waag Society helped four Saint Gobain branches in Germany, Japan, the UK and the US to design their own Fablab – a digital fabrication workshop in their own factory to enable them to experiment with new production processes on the spot. Stikker calls it an engine for transformation. “In Germany, they are now giving employees special ‘Fablab time’ during working hours. This taps the innovative potential of the people who now operate the machines. That alone is quite innovative.”¶

waag.org | fablab.waag.org



Photography: Eddo Hartmann

BMW i8

The sports car of the future is already here

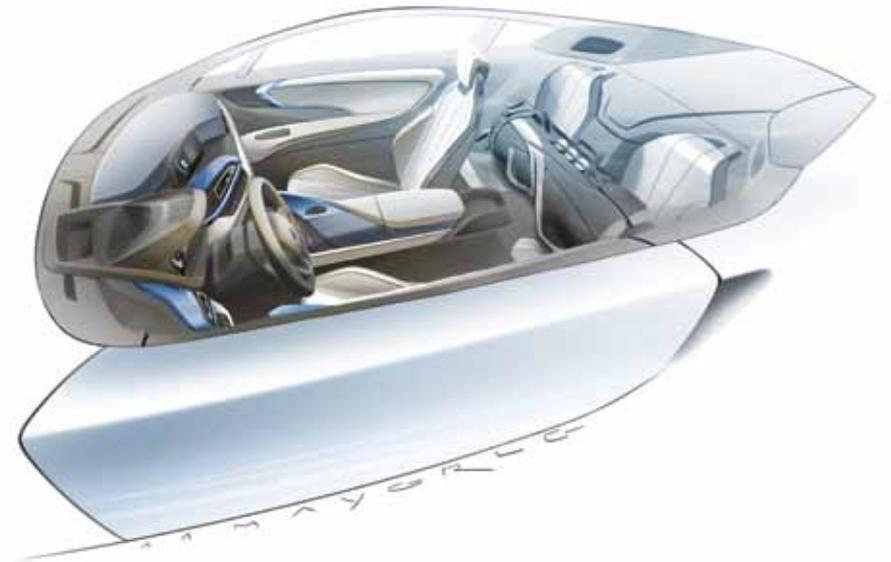
With the i8, BMW is launching a new perspective on the sports car. And according to designer Adrian van Hooydonk, it certainly has a future— even at a time when the emissions discussion is more relevant than ever.¶

This year, Adrian van Hooydonk became an honorary member of the Association of Dutch Designers (BNO) for his outstanding contributions to the design profession. The Dutch industrial designer, who studied at the TU Delft, has the job that every boy dreams of. As director of the design department at the BMW group, he has the power to determine what you see driving down the motorway. With the i Series, BMW is presenting a new perspective on driving; with the i8, the brand is redefining the sports car.¶

Van Hooydonk and his interdisciplinary design team began, in his own words, with a blank piece of paper, without being limited by the fixed formats of automotive design. It led to two game changers: cars which are produced and operate radically differently. The i3 is a very environmentally friendly, lightweight electric city car filled with recycled materials. And the i8 has even created a ‘wow-effect’ among petrol heads. The stigma surrounding electric cars – not very elegant, slow acceleration, heavy battery, short driving range – has definitively been shed with the i8. And it’s not just about the proportions, flashy butterfly doors and ultimate streamlining. The technology under the bonnet is revolutionary. This plug-in hybrid has an electric engine in the front and a 1.5 litre three-cylinder petrol engine in the back. Together, the two smaller engines deliver 352 horsepower.¶

The body of carbon fibre reinforced plastic and the aluminium chassis make the i8 significantly lighter than the average sports car. And you don’t need to fill up very often: it gets 40 kilometres to the litre. With the i8, BMW convincingly shows that it’s possible: quiet and efficient in the city and roaring and explosive outside it. What’s even better is that the i8 isn’t a concept car. You can simply buy it at the dealership.¶

www.bmw.nl



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This publication is the fifth in a series on how designers can contribute to solving problems in other sectors. The examples included have been selected primarily due to the leverage they've created. Crossover Works is part of a wider movement to promote the importance of the creative industries to other sectors and began in 2013 as an initiative of Bruni Hofman and Rob Huisman.

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**creative industries
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Removing plastic from the ocean, generating energy with your coat and coping with trauma by gaming. It sounds too good to be true. However, the initial results are very promising. With a creative approach, a dash of design thinking and sharing expertise you can come a long way. In this book, designers of innovative products and services explain their approach. Crossovers from the creative industries: they often lead to surprising discoveries and improvements. ¶