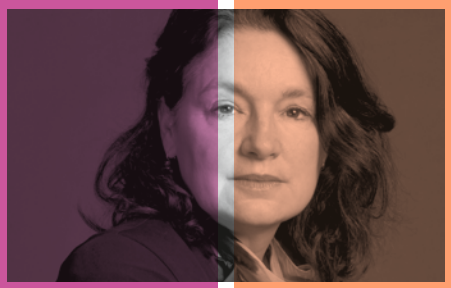
CRISP #2

Magazine
October 2013

Challenges of the industry

José Teunissen considers the challenges the textile industry faces in manufacturing PSSs — Page 3



Exploration in practice

Guido Stompff describes how Océ Technologies prototypes new business PSSs — Page 28

Also in this issue

Bertholt Leeftink (Ministry of Economic Affairs), Hester Anderiesen (TU Delft), Paul Gardien (Philips), Erik Roscam Abbing (Zilver Innovation), and many others.

Editorial note

Six months after the launch of the first CRISP magazine, we are still pleasantly surprised by the great response to the first issue. CRISP Magazine #1 was in many ways an experiment: an experiment in communicating the CRISP ideas, activities and initiatives to the outside world. Although we have no idea whether it was because of the magazine, in her culture vision letter to the House of Representatives of the Dutch parliament, Minister Bussemaker of the Ministry of Education, Culture and Science specifically referred to CRISP as a very good example of how science, the creative industry, and companies can work together. We believe that is something to be proud of.

Jeroen van Erp, Christine De Lille & Janneke Vervloed

Magazine team

We would like to thank the following people who have made this magazine possible, trying to inspire through the many projects CRISP counts:

Editorial board
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Colophon

See inside back cover for the full colophon.

Upcoming issues!

Encouraged by the positive response, we decided to publish four more magazines in the period until the formal end of this programme in 2015. The next issue will be published in April 2014 and deals with the use of prototypes in designing PSS. If you are interested in contributing to that issue, please feel free to send a message to: c.s.h.delille@tudelft.nl

Bertholt Leeftink

This second issue of CRISP magazine outlines the importance of design to the Dutch government's top sector policy.

Over the past few years the Minister of Economic Affairs has actively supported the Dutch top sectors, aiming to strengthen the Dutch economy's ability to create value and prosperity. This is important in a time of economic and financial crisis, as spending cuts, economic volatility and rising unemployment have shaken public and business confidence. At the same time we face global challenges in areas like healthcare and the ageing population, the depletion of raw materials, the loss of biodiversity, climate change and food security. This reality of economic stagnation and global issues requires solutions. Solutions that only industry, knowledge institutes, governments and civil society organisations together can create.

Yes, there are challenges, but by working together we see opportunities for innovation and further modernisation of the Dutch economy. Because these challenges are not unique to the Netherlands, they offer our businesses numerous opportunities to export Dutch solutions to other countries. This also applies to the creative sector, where design plays a key role. With a long tradition in design, the Netherlands has built a strong knowledge base in this discipline as expressed in the CRISP research programme. We can see CRISP's relevance in its focus on the development and dissemination of knowledge and the methods needed to design complex combinations of intelligent products and services that optimally fulfil the needs of customers and clients. After all, just like non-technological and technological innovation, products and services are increasingly getting closer related. Where would we be with a phone without a contract, a fleet of bicycles without a reliable rental system, or remote care for the elderly without a reliable camera and connection?

Smart combinations of products and services add value for the user. The Dutch economy has great potential to make such valuable combinations and innovative creations, which is important for the innovative power of our economy. It also provides an effective model to connect sustainability to profitability. Research is needed to realise this economic potential, and the CRISP programme contributes to this. It is an excellent example of industry, knowledge institutes and civil society organisations working together to address societal challenges. The programme is perfectly suited to the policy regarding our leading economic sectors.

Design plays an essential role for innovation in the creative sector. With CRISP, we show how creative businesses are closely involved in public-private partnerships. I see in CRISP an example of how creative businesses can work together with other leading sectors in addressing societal challenges. It is a fine example of what we are aiming for with the top sector policy; global challenges, Dutch solutions. I challenge the design sector to continue to take the lead, both as innovator within the creative industry, as within other (top)sectors.

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Jeroen van Erp is one of the founders of Fabrique, a company that has grown through the years into a multifaceted strategic design agency. In recent years Jeroen has been closely involved in bringing together design practice and research through various initiatives.

THE NEW

Jeroen

CRISP is investigating how to become a PSS Houdini **by providing design professionals with skills and methods to develop successful and profitable PSSs**

IT'S UP TO THE DESIGNER TO COME UP WITH A HOUDINI-ESQUE ACT TO MAXIMISE THE SATISFACTION OF BOTH PARTIES

The differences between commercial PSSs and PSSs with societal relevance

COMMERCIAL PRODUCT SERVICE SYSTEMS	PRODUCT SERVICE SYSTEMS WITH RELEVANCE
Goal Contributing to business	**Goal** Creating societal relevance
Challenge Making durable profit	**Challenge** Finding/creating ownership
Funded By private money	**Funded** By public/private money
Accountability By numbers	**Accountability** Hard to measure

When he performed his memorable escape acts, Houdini had to skilfully deal with a combination of chains, handcuffs and locks. To develop successful and profitable PSSs, design professionals need to display a similar set of skills: finding the perfect combination of (1) user needs, (2) company interests, and (3) societal relevance, in order to pull off the 'great escape', namely creating sustainable value for all parties involved. CRISP investigates all three domains and equips design professionals with the skills and methods necessary to become a PSS Houdini.

In design practice, we're confronted daily with the dilemma between, on the one hand, creating value or meaning for the user or consumer, and on the other, creating value for our commissioning parties, in most cases companies. For the commissioner, provider or owner, value is generally related to direct or indirect financial benefits. The designer or the design team is often forced to play the role of broker between user concerns and company interests in order to create the perfect fit. In fact, we are constantly negotiating between the two.

For instance, as consumers, we like personalised attention, but it's not difficult to imagine that implementing intelligent product-service systems has a price. It is up to the designer to come up with a Houdini-esque act to maximise the satisfaction of both parties.

It's clear that you can't create economic value — broadly interpreted — for a company or institution if there is no value in the PSS for the customer. Value matters for both. But merely creating value for the user doesn't guarantee that the PSS is profitable for its owner or instigator, either in the short term or long term. Moreover, a PSS that is unlikely to be profitable will probably end up in some design manager's drawer, even though the product and/or service may be of great value or importance to potential users. This economic relevance is of critical importance for a product to become successful, and even more so for a PSS. Making a complex PSS profitable generally requires endurance.

The user experience

Ask designers about their ambitions and many will say that their main desire is to fulfil the needs of the users. That's a great and legitimate starting point, but it overlooks the question, 'How will the owner or investor profit from this?' often resulting in a disappointing process. Daily practice has taught us that the best idea may not always be a profitable one. If you look at it from one

angle, only those designs that accidentally fulfil the economic promise will be realised. This places designers in a submissive role and limits their influence. That's not my ambition; I'm interested in designing a complete system that works.

Designing relationships

But are PSSs really that different? Is this all so different from designing regular traditional physical products or plain services? Yes, it is different and the key factor is the relationship that is built between the consumers and the owners of the PSS. This relationship requires dialogue, development and maintenance but above all: attention. This is fundamentally different from, for instance, selling a flat screen television to an anonymous customer or renting out a bike to a tourist. Enduring ownership of the PSS is of vital importance and an essential asset for a successful system. These relationships build on the achievements of the digital revolution: the possibility to implement location-based services or to be connected with the user at any time. In the past, the number of transactions was one of the most important key performance indicators. In the near future, durable economic relevance will be more often based on developing and maintaining relationships.

As designers, we're not only able to meet the challenges of our commercial clients, but we're also quite capable of contributing towards solving social and societal problems. In this field there is also a trend in the directions of PSSs that interact with the user on a regular basis. Here we face a different challenge: 'Who's going to pay for it?' Given that maintaining a PSS requires money, the mechanics or principles are more or less the same: you have to balance both sides, but in a slightly different way. Where benefit is the magic word in the commercial world, in the field of social or societal problems, the biggest challenge is creating ownership for solutions. Benefits for society at large are often indirect and/or hard to calculate. It's not always easy to find ownership for — at first sight — brilliant and sympathetic ideas, which can be frustrating. Who is willing, these days, to pay for a solution that, for example, enables Alzheimer patients to cook their own meals for as long as possible? The costs of implementing the idea are likely to be higher than the calculated benefits for the care home for the elderly. We realise that public money is limited, but it's interesting to explore possibilities in the field of public-private collaborations, for example, between insurance companies and the government.

Bipolar

It is not difficult for experienced designers to create rich, beautiful and engaging experiences. The huge challenge we encounter every day in design practice is to create these experiences while also generating sufficient benefit for the owner. Economic laws are as undeniable as gravity, so, if you can't beat them, join them! Business models for product-service systems are complex and layered, and in general entwined with the ongoing interaction between owner and user. I believe that, if we incorporate economic and strategic concerns in the design process at an earlier stage than we are used to, this will make the PSS operate like an ecosystem and increase the likelihood of its survival. Without this approach, we wouldn't be able to benefit from Nespresso, the OV-fiets or Nike+.

Such bipolar characteristics are inherent to the nature of design but are even more firmly felt when designing or developing complex and durable PSSs. The dynamics of the relationship between the producer, provider or owner of the system, and the consumers demand that every aspect of the design is reconsidered on a regular basis. As a consequence, the designer also has to stay alert to keep the systems relevant for both parties. It's all about an inbuilt reciprocity that's part of the design.

In this issue of the CRISP magazine, we focus on the economic value of PSSs and research into this subject. Besides key financial issues, the most important focus areas are collaboration, synergy, and insights on how to deal with the complexity of PSSs.

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' HOUDINI

van Erp

TWO LINES TO TELL OUR STORY...

Introducing Value

As we prepared this issue, we discussed the meaning of the word 'value'. There is a big difference between value for the customer or user—which often relates to meaning—and value for the producer. For the producer, provider or owner, value is generally related to direct or indirect financial benefits. In this story line, we will look at value from both angles: value matters!

Introducing Collaboration

Many of the insights new PSSs are based on are developed only through collaboration between different partners in industry, creative consultants and academia. It is not only the companies and academia who have to adapt to this new way of working, but the creative consultants as well.

An inspirational test bed enables textile developers to understand the multi-disciplinary opportunities and challenges of creating Smart Textile Product Service Systems.

THE NEXT THREAD

Some would argue that fashion is the dematerialised aspect of clothes. **Fashion as a phenomenon has perhaps more to do with lifestyle than with clothes. Why are there so few fashion service systems?**

José Teunissen

This observation by the Swedish scholar, Otto von Busch is intriguing. He wonders why, in today's fashion world, so little attention is paid to designing service systems, when such systems could be very useful, for instance, in the current thinking on sustainability. 'Why are there no authorised Zara repair centres in town? Where should I get the right spare parts when the zipper breaks?,' Von Busch asks. More generally, he states that the fashion industry, compared with, for instance, the design industry, has been slow at binding customers closer to their brands with various forms of services[1].

As a market proposition, PSSs extend the traditional functionality of a product by incorporating additional services. Recently, the first small, avant-garde fashion companies have started to think about the use of a product, rather than its purchase. In the Netherlands, for instance, Mud Jeans recently launched a lease concept for jeans[2].

It remains difficult, however, to develop propositions like this in the fields of Textile and Fashion: fields still organised as classical chain production systems where low-wage countries play an important cost-saving role.

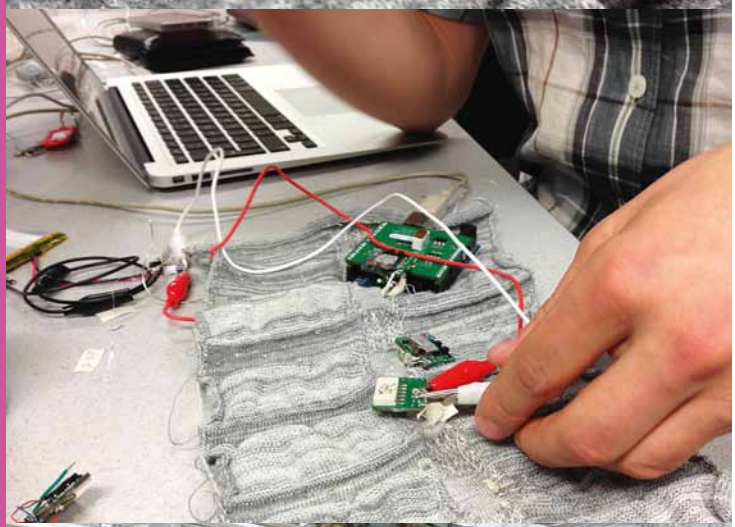
There are now clever cash point systems that can analyse which trends are 'moving' and which ones aren't, so production can be adjusted accordingly. Leading fashion companies like H&M and Zara no longer update the collections on their racks once a season, but every six weeks. However, forty per cent of all manufactured clothing in the fashion industry still ends up unsold in the rubbish bin, making the fashion's chain production system highly inefficient.

If we want to change this system, the people behind the fashion brands will have to think more about the wearer's needs and develop appropriate services to meet those needs. Perhaps the consumer can be more actively involved in deciding whether a product should or should not be made when these chain logistics are transformed into more sustainable network logistics where supply and demand are geared to each other. The current insights into the environmental impact of the fashion system will probably help to change the system within a few years. Especially now that the design process and the digitalisation of logistics offer such a vast array of new possibilities, we ought to expect more production-on-demand in the world of fashion. This is exactly the point where the PSS approach could and should enter the fashion system. To that end, the textile and fashion industry should start to reinvent itself by looking at other design disciplines already familiar with PSS.

The Smart Textile Services (STS) project in CRISP can serve as an interesting example for the fashion industry, as it is one of the first design research projects that deals with PSS in collaboration with the Dutch textile industry and, as an indirect result, also with the fashion sector.

It is interesting to take a closer look at some initial results of the STS project, at how they have set up their research project, and what kinds of methods they are using. Although the 'sale of use' emphasis of PSSs is novel in the field of textile and fashion, these fields are also very unfamiliar with user-centred methods,

40% OF ALL MANUFACTURED CLOTHING STILL ENDS UP UNSOLD IN THE RUBBISH BIN



testbeds, co-creation, and a cross disciplinary approach in research. The question is how these methods can be used within the STS-project and what kind of new approaches and ideas they introduce in the field of textile and fashion.

The first remarkable achievement of the STS-project is that they have managed to closely collaborate through co-creation with the small, specialised textile industry that still remains in the Netherlands. Since outsourcing of the garment industry started in the early 1960s, almost all textile manufacturers have disappeared from the Netherlands. Only those that moved to a niche market have survived. This industry understands that, as sustainability and technology are changing the parameters of the system, 'being innovative' is the only way to survive.

The fashion trade and system is changing, not only due to the rapidly growing need for more sustainable fashion as mentioned above, but also thanks to the technological developments in smart textiles. The interplay between sustainability and technology will bring about a radical change in the traditional 19th century manufacturing process of textile: the process of developing a fibre into a yarn, weaving or knitting a fabric from the yarn, and finally making a pattern from a drawing and sewing the garment together with a sewing machine. With the latest technology, we will probably no longer need this mechanical process. It may not be long before we as consumers order our knitted or woven garments directly from 3D printers. In February 2013, the renowned Dutch fashion designer Iris van Herpen, for example, presented a flexible 3D printed ready-to-wear dress on the Paris catwalk, created in collaboration with Austrian architect Julia Koerner and 3D printed by Materialise.

What does the future hold for cotton, Trevira and wool, now that new fibres and fabrics that are environmentally safe or 'smart' can be developed from grasses and organic waste? This new materiality will make the consumers and manufacturers reflect on the value and the significance of fashion and clothing in our culture. Do we really want something new every six months (or six weeks), or do we want clothing and textile that is smart and lasts longer? If so, what demands must that clothing satisfy in order to remain attractive? The most important quality of a garment may no longer be its fashionable aesthetic; its empowering capabilities and the story behind it will become essential values.

One benefit of the STS-project according to the Dutch textile industry is that it addresses all these questions. As an industry, the project encourages manufacturers to experiment with new materials and new ways of manufacturing. Their challenge is that they can now take on a different role; they are no longer only suppliers for home wear and fashion, but have become developers and manufacturers in a research environment of new and innovative products that imply new ways of manufacturing as well as new business models.

'STS has taken a pragmatic and non-hierarchical approach: from the beginning, two years ago, industry and researchers were connected and equally important,' states project leader Oscar Tomico. The local industry and their existing know-how was the starting point. As a result, both researchers and industry started to work as co-developers. Everyone is seen as being equally important: the whole project functions as a test bed for emergent smart textile services where designers, industry and researcher work together during the whole process. ➜

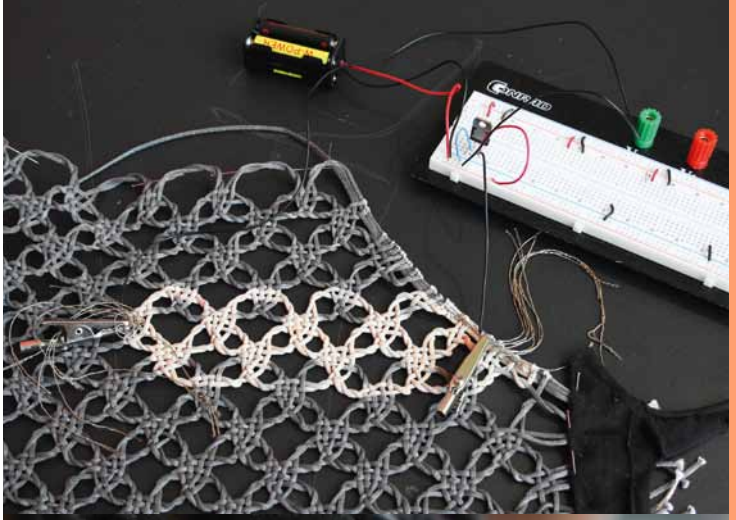
The test bed is not the place where the research project starts the dialogue with the consumer, but with the industry. Researchers and craftsmen from the industry share their know-how and expectations and they have been experimenting and prototyping right from the start. 'The project is about designing bottom-up,' explains Tomico. 'Each design activity starts with developing materials and, subsequently, trying to understand their quality and interaction possibilities.'

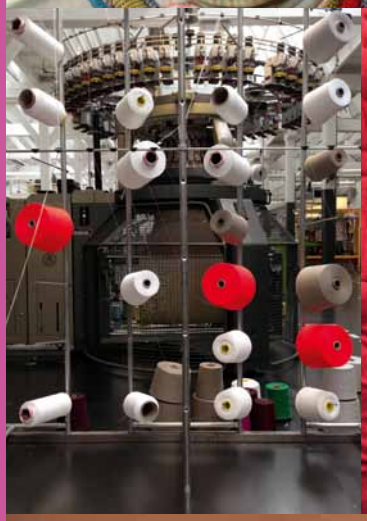
The next step then is questioning for whom they might be interesting and what the future impact on society will be. Based on their skills and knowledge of the material, both researchers and industry will start working on experimental prototypes which serve as demonstrators, enabling thinking on the kind of service that can be developed with it. Otto von Busch sees this approach — designing beyond the look — as a fundamental step for the fashion world to take.

'The design project or process in itself must be judged from how it deals with internal and external capabilities, rather than the "process" or looks of the final outcomes[4].'

Since the STS project began, it has invited more and more fashion designers and fashion schools (HKU and ArtEZ). Borre Akkersdijk and Pauline van Dongen, for example, are currently collaborating and developing prototypes with companies like Optima Knit BV and Savo BV. Museums and exhibitions are paying rapt attention to their work-in-progress and prototypes. Moreover, the STS project is well embedded in the international smart textile and fashion research networks and universities. Eef Lubbers, for instance, recently won the SYSTEX award in Ghent in June 2013 with "Unlace," a prototype of interactive lace lingerie which allows couples to connect by becoming more aware of touch and warmth via lingerie that is painted with thermochromatic ink[4].

THE TEXTILE MANUFACTURERS FACE A NEW CHALLENGE — THEY ARE NO LONGER ONLY SUPPLIERS FOR HOME WEAR AND FASHION





BUILDING A LARGE AND BROAD NETWORK ALSO RESULTED IN CRAFTING WEARABLES, A CLICKNL PROJECT

One of the results of building up this large and broad network for the project — where also Modint and the Textile museum in Tilburg are partners — is the new CLICK/NWO research project, Crafting Wearables. This interdisciplinary research project developed by Radboud University Nijmegen, TU Eindhoven and ArtEZ Institute of the Arts, builds on the current STS network and the project's results. The project aims at designing wearables that are fashionable as well as commercially viable within the production chain. In order to achieve this, the team and participating partners are bringing together more expertise from fashion and the humanities to connect them to the results of smart technology and the textile industry. This research project, initiated in September 2013, will not only craft wearables but also analyse how fashionable technology relates to identity, determine its social impact and bring technology closer to (commercial) fashion design.

These projects can further develop these concrete PSS ideas for the fashion industry and, in doing so, STS and CRISP are introducing the textile and fashion industry to PSS.

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1) In 2008 he earned his doctorate with the study FASHION-able: Hactivism and Engaged Fashion Design, and since then he has been urging consumers and fashion designers to take personal responsibility for the fashion system by asking questions about what good, sustainable design really means.
2) Von Busch, 0. (2013). Where are the Fashion Service Systems?. In J. Brand & J. Teunissen (Eds.), *A Fashion Odyssey* (pp 231). Arnhem: ArtEZ Press.
3) http://www.mudjeans.nl/en/
4) Von Busch, ibid. pp 231.
5) http://rainycatz.wordpress.com/2013/06/17/smart-textiles-salon-2013-miat-museum-ghent/

BEYOND BUZZ

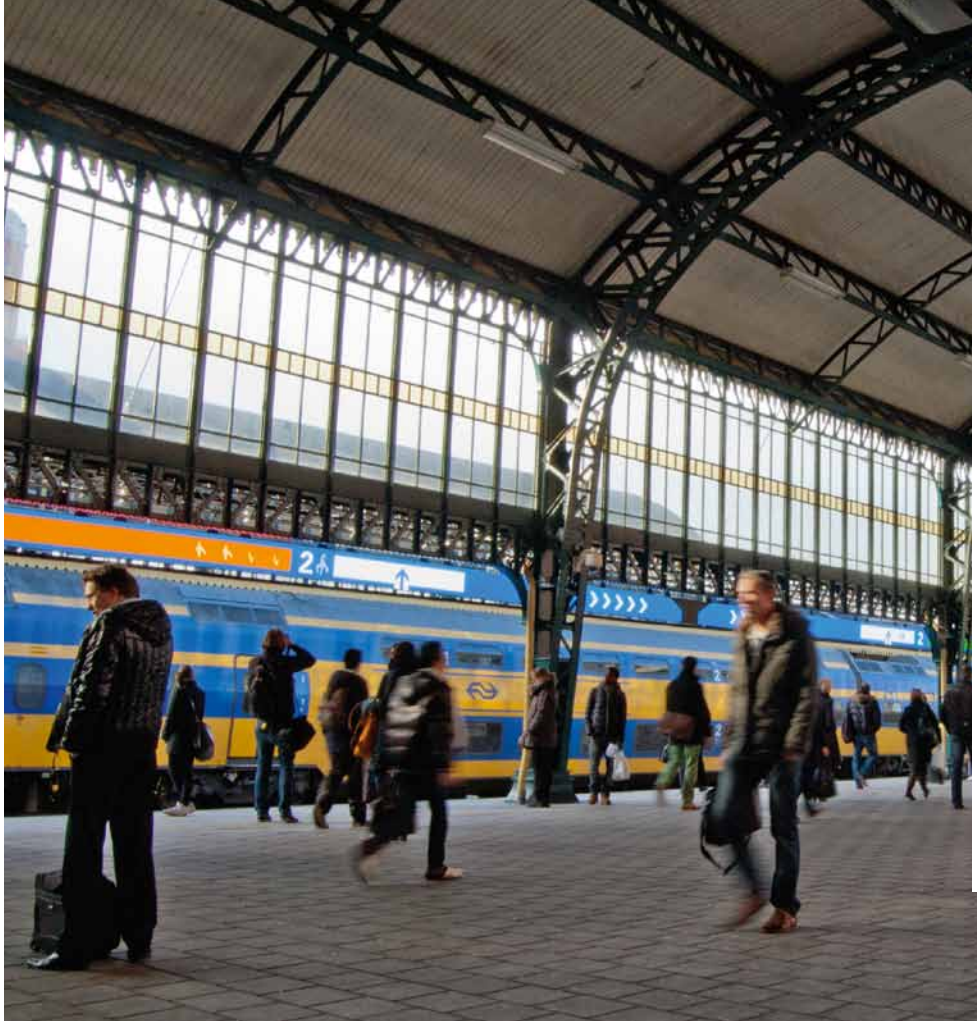
Innovation in services: Insights from a three-year programme.

Tanja Enninga & Remko van der Lugt

Is service design an emerging new field, a specific domain or a different perspective on the current way of work? **The "Innovation in services" programme explored how to position service design for the creative industry and what it means both for clients and service design agencies.**

INNOVATION IN SERVICES — *CRISP Magazine #2*

This external project is similar to CRISP but smaller in scale. Unlike CRISP, where the academics are in most cases in the lead, in "Innovation in Services" the creative partners take the lead.



READ MORE!

PROJECT INFORMATION

The nine case studies of the 'Innovations in Services' project are documented in the book *Service Design, insights from nine case studies*, available in Dutch and English, at ISSUU.

Most explanations of the impact of service design go back quite a few years, when the UK-based Engine successfully helped develop a London-Heathrow terminal for Virgin Airlines. By 2010, service design was buzzing, with many designers and academics discussing whether service design was an emerging field, a specific domain, or a different perspective on the current way of working. Client companies were also eager to 'do something' with the design of their services, yet were hesitant because service design agencies were then unable to convince them of the value they could bring to these large service organisations.

The goal of the "Innovation in services" programme was to position Service Design as a key domain for the creative industry in the region around Utrecht. Its first objective was to make service design tangible for the service industry by providing in-depth, Dutch case examples of concrete service design projects. At that time, most international descriptions of service design cases dealt with the outcome and far less with service design as a process in practice. In response, the following three questions were formulated: 1) How do service design projects run in practice? 2) What are barriers and enablers in the collaboration between a service design agency and the client (the service provider)? 3) What added value does a service design approach provide?

Another objective was to strengthen the Service Design Network Netherlands by stimulating a range of activities and through a connecting web-portal. This resulted in regular Service Design Thinks and Drinks, later followed by Service Design Workouts where sectors yet unfamiliar to service design were treated to a workshop to discover what value service design could bring them, further helping the community grow. CRISP and IIS emerged in the same period and there is an overlap in their interests and connected academic and practice communities. Where CRISP focuses on scientific research for product-service combinations in the future, often with a focus on large innovators and networks of innovators, IIS took a straight 'what happens now' approach to study how design agencies (and their clients) cope with applying a 'service perspective' in current design practice. The focus in this article will be on the project's case studies.

Participatory research

Many design agencies have contacted us saying they like to actively contribute to practice-based research projects, rather than be a passive audience, as is often the case in research projects. In this programme, the design agencies were responsible for the design work in the cases, while the researchers joined the design teams as 'participatory researchers', joining in in design activities, but never taking the lead. The researchers met regularly, collating all their data, notes, pictures and reflective diaries, distilling insights based on all the projects, and developing and further refining research themes during the process. Insights and research themes were shared and checked with the design agencies and the founding service provider ProRail. This resulted in a practice-based and realistic programme.

The projects

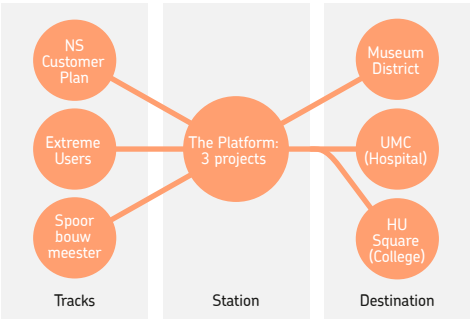
The focal point of the service design projects was Utrecht Central train station. The station is undergoing a substantial renovation process in order to prepare for a major increase in travellers in the near future. Travellers' sense of service is under pressure, which makes the railways a promising case domain for service design. The programme consisted of nine projects that dealt with different aspects of the station: The central case dealt with the platform, the railways and the destinations. ➜

Aims and Results

The aims and the results of each of the nine projects differed. Some projects aimed to deliver consumer insights and building blocks for new service designs; others delivered concepts or prototypes. In the three projects involving the platform, STBY and Edenspiekermann provided insights about the experience of train passengers during frequent or incidental train travel, and developed concepts for communication problems at the platform. During the project, one prototype was tested in real life: NS and Prorail, together with Edenspiekermann and STBY organised a pilot study at Den Bosch station to test an information device for train travellers. An LED-strip indicated the location of the doors of the approaching train and the position of the first and second-class carriages. The colours red, yellow and green indicated which train compartments were occupied and in which compartments the traveller could easily find a seat. In four projects, concepts were developed for a number of target groups: extreme users of the platform (such as people carrying loads of luggage during rush hour), visitors to the Utrecht museum district, hospital patients, and students of the Utrecht Science Park.

Two service design projects, instead of focusing on the service's users, focused on the cooperation between organisations. In the case of Spoorbouwmeester, design techniques were used to design a prototype for a workshop concept where some of the assignments during the workshops are based on design techniques. In the other project, design techniques were used to cooperate in a so-called Customer Plan, a joint plan developed by ProRail and NS, custom-made for each railway station under renovation.

Overview of the cases

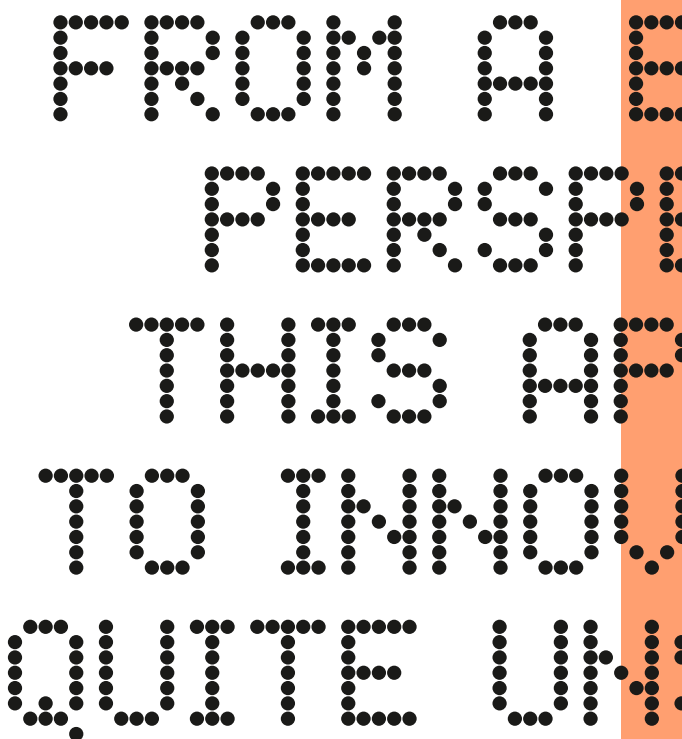


Insights

Added value is more than end results alone

Service providers stressed the point that not only the end-results were valued, but that they also attained valuable insights from the intermediate results and the way these design agencies work in such service design projects. In one of the projects, centred around the University Medical Center Utrecht, Linda Streefkerk was asked about the value added in the project she coordinated. She summed up a number of points, "We already have a lot of information about the patients and their behaviour, but this study really succeeded in fleshing out this information, particularly through the intensive interviews with the patients about their needs and desires and their experience of the hospital. We combined these insights with the information we already had on the patients to produce four personas that illustrated certain patient categories. For the first time, we were able to combine the information provided by the patients with these personas and use this as the basis for further research. Another unique result was that we were able to chart the patients' experiences throughout the whole journey from their home to the hospital and back again."

One particular way of working that comes with the designers and is novel for the service providers is the level of visual thinking and visual output used in the research. Although they were unfamiliar with this, all providers described it as being insightful, clarifying and attractive. For example, Miriam Meier of NS Reizigers, 'I was really impressed by the impact of the visualisations. This is a very powerful way of explaining the key facts of a given project. Really amazing.'



Providers and designers do not have the same perspectives

Service providers and design agencies have different vantage points with which they approach an innovation project. Service providers exploit a business by providing a service or set of services as efficiently and well thought out as possible. Designers are "wired" to explore and broaden the range of opportunities, to be creative. It was hard for the service providers to grasp the nature of 'service design' for various reasons. Some service providers struggled with the lack of a clear structure of the process and wanted an overview. The fuzziness of the first steps, the iterations during the process, all was quite different from a structured business process. "Can you explain which steps you will take and what the solution will look like?" one service provider asked, which, from a business point-of-view, is a reasonable question to ask. The answer, however, puzzled the service provider beyond reason, "No, I can't," the designer answered. If you look at it from a designer's perspective, where the designer tries to identify the underlying question which in turn can lead to solutions being found in totally different directions than expected, this is quite a logical answer. From a business perspective, seeking structure, efficiency and control, however, this approach to innovation turned out to be quite unsettling.

Another difference in perspective was user-centredness. Do you study people as individuals or as representatives of a larger group? Some service providers were able to make the — sometimes dramatic — shift in perspective that 'people centredness' required; viewing people as complex and whole individuals, rather than elements that are part of a target group or customer segment. How can you trust and generate ideas based on so few individuals? To what extent can the solutions developed for them fulfil the needs of the broader range of customers? How do you use insights, such as personas, when you do not know whether they represent the majority?

On some occasions, the solutions that looked promising from a user perspective aberrated from the organisational structure and processes. Service designers were thus not only engaged in the design of services for users but sometimes also faced far-reaching organisational issues, with all the consequences thereof. This could affect the introduction of the new service and the time required to be able to move forward in the development process.

Outcomes

The added value of the nine case studies is not limited to the resulting concepts, or to introducing new ways of working and new methods, but it also encompasses the degree to which the designers succeeded in getting across the different perspectives convincingly to the service providers and embedding these perspectives in the organisation. A number of aspects of the content and the processes of service design were combined on a map, creating a roadmap with several possible routes. Designers and service providers who collaborate on the design of new services will probably not visit all the stations on each route, but the map may help them become aware that these aspects play a role. The nine case studies are documented and combined with insights from the researchers and interviews with three service providers in the book "Service Design, insights from nine case studies", available in Dutch and English, at ISSUU.

This programme now functions as an inspiring example of how design research can be put into practice while engaging both the strengths of the researchers and the service designers. Many of the participating organisations continue to use the designerly approaches to innovation. Meanwhile, NS has taken the platform projects a step further with the addition of an app and a 700 people validation study, executed again by Edenspiekermann and STBY. Now a business case is being written based on the notion that as people mount and dismount a train more quickly will allow NS to run more trains on the same tracks.

· During the Innovation in Services programme, creative agencies 31Volts, bureau H20, DesignThinkers, Edenspiekermann, STBY, and architects from Movares worked together with service providers such as ProRail, NS, UMC Utrecht, Hogeschool Utrecht (as service provider) and four museums to design services and collect case examples. Hogeschool Utrecht and TU Delft did case-based research; taskforce Innovation Utrecht Region was the programme coordinator. Innovation in Services was funded through the "Peaks in the Delta-programme" (Pieken in de Delta) by the Ministry of Economic Affairs, the Province of Utrecht and the City of Utrecht.

BUSINESS
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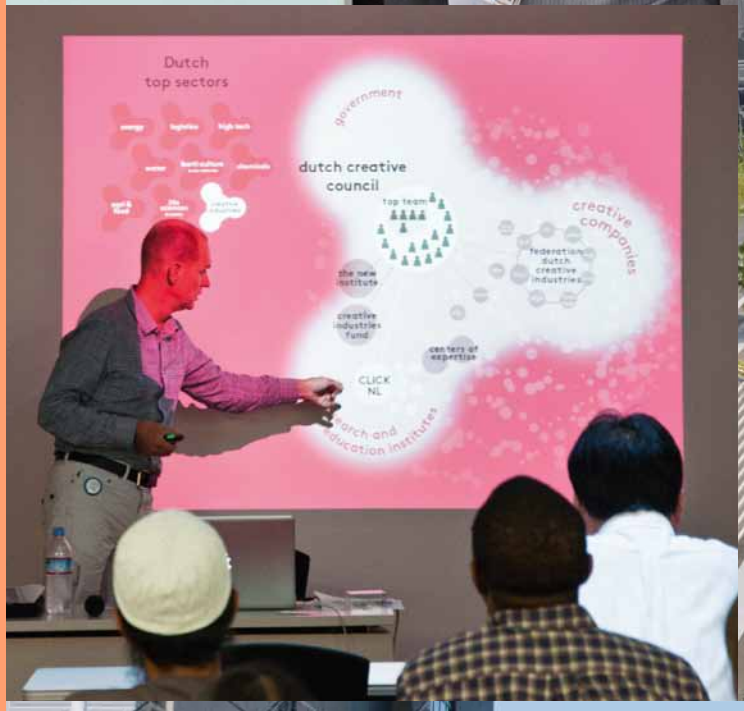
日本から こんにちは!

Japan gets to know CRISP:
sharing research insights in Tokyo.

In August of 2013, the International Association of Societies in Design Research hosted its fifth biannual conference in Tokyo, Japan. Many CRISP researchers attended the conference to share insights they gathered in the various research projects.

The following CRISP members were present at the conference: Dirk Snelders, Petra Badke-Schaub, Evelien van de Garde-Perik, Caroline Hummels, Lu Yuan, Jeroen van Erp, Ana Valencia, Paul Hekkert, Steven Fokkinga, Wei Liu, Geke Ludden and Christine De Lille. Throughout the year, CRISP researchers attend various conferences (both for academics as for practice) where they share their insights. However, never before has the delegation been so large.


ct interaction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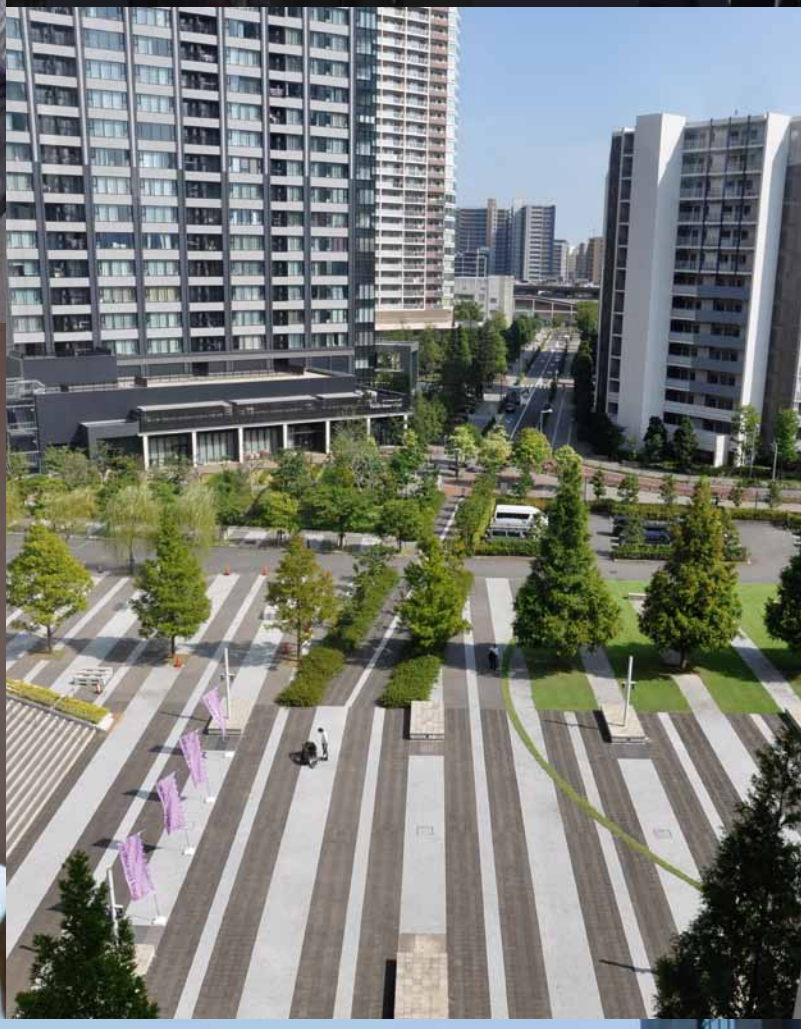


Paul Gardien is member of the Programme Committee of CRISP and as vice-president of Philips Design, he encounters the challenges of organisations to design PSSs on a regular basis.

A child plays with the 'Kitten Scanner' to understand the CT scan procedure.

DESIGNING FOR NEW PARADIGMS

Paul Gardien

As they began designing PSSs, Philips Design needed to change their current business. **New paradigms require new solutions for young and old.**

Most of us wish to live independently for as long as possible. Research shows, however, that the two biggest threats to independent living when we get older are falling and medication errors. For this reason Philips developed Lifeline medical alert, a service for seniors that connects a small, unobtrusive pendant to a help desk. It provides immediate help at the touch of a button in the case of an emergency, as well as an auto-alert function that can automatically detect when someone has had a fall and notify the help desk.

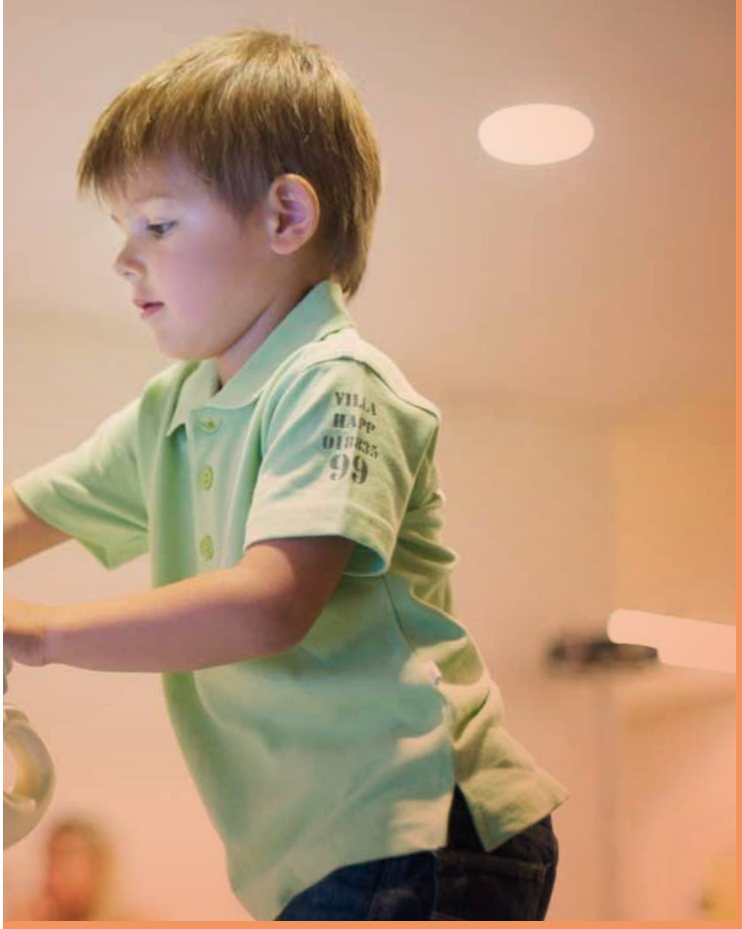
Philips Design have worked hard to optimise the complete product service system as well as seemingly trivial but vital details such as making sure that the battery of the pendant is always charged. The designers helped the development team explore a number of potential scenarios to tackle the issue. One finding was that, rather than requiring people to change batteries or to deal with recharging, the most effective way of ensuring that the pendant always works was to replace it with a new, fully charged one, mailed directly to their door as soon as a low battery signal is detected. By incorporating the solution into the overall service, the concept led to a complete change of the business model. A new sustainable logistics system was set up that enables refurbishment and exchange of used products, and ensures a positive experience and ongoing service for the subscriber. A few years ago, we would never have considered designing the replacement of a battery as part of the service.

A very different type of healthcare service delivered by Philips is Ambient Experience, which involves designing the complete patient journey in a hospital, instead of only the imaging machine. By integrating lighting, multimedia and the design of the environment, the entire patient journey is supported, thereby ensuring that patients are more at ease and workflows in hospitals run faster. One part of this experience, for example, is the award-winning 'Kitten Scanner', a toy CT imaging machine that helps calm and prepare children before a scan. By choosing a toy and placing it in the scanner, children trigger an animated story which helps them understand the procedure in an entertaining way. They see that if the toy is shaken in the scanner, the image distorts, so they know that they must lie still to get a good image. The type of toy they choose determines the personalisation of the examination room through animated projections and lighting effects. The technician uses the effects to guide children through the procedure.

Research by the Netherlands Cancer Institute confirmed that an ambient approach indeed reduces patient anxiety (Vogel et al. 2012), but that it also offers economic benefits for hospitals as it helps to optimise and speed up workflow. Designers undertake a thorough 'experience flow' to understand the needs of all the different stakeholders. By combining the collected insights with our understanding of the technical equipment and our design expertise, we have created a patient-centred environment that is also a more effective workplace for clinicians. This approach of designing the total service around healthcare equipment is becoming increasingly common for our designers.

Besides the advantages for the end users and care providers, there are also a number of business reasons for a company to move into services. The first and most obvious reason is that because products commodify rapidly, services are more profitable than products alone. A service offers opportunities for new business models, for example the 'power by the hour' Rolls Royce airplane engines service, proving the advantage of uptime versus hardware sales only.

A second important reason for researching Product Service Systems (PSS) is that, in order to cope with the larger issues the world is facing, we need to develop solutions that assist people in a more profound way than products alone can. Our lifestyles, for example, are increasingly



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PSS... HOW?!

Philips sees designing PSSs as an opportunity to develop solutions that assist people in more profound ways than products alone can do. This is one of the aspects Gerda Gemser addresses in her article on the challenges organisations face in designing PSSs.

References

- Vogel, W. V., Olmos, R. A. V., Tijs, T. J., Gillies, M. F., van Elswijk, G., & Vogt, J. (2012).
- Intervention to Lower Anxiety of 18F-FDG PET/CT Patients by Use of Audiovisual Imagery During the Uptake Phase Before Imaging. *Journal of Nuclear Medicine Technology*, 40(2), 92-98.

out of balance and our unhealthy habits are putting our health at risk. We are ageing as a population and, as we get older, are more likely to suffer from chronic diseases. As a result, our healthcare systems are increasingly being required to provide costly and complicated care. Yet these systems, with their limited resources and traditional models, are already struggling to meet the existing demand. In short, the healthcare industry is in crisis and facing paradigm change. Enabling lifestyle changes is an important part of finding solutions for these problems, and those solutions often emerge in the form of Product Service Systems. Designing to enable lifestyle change needs to be based on a deep understanding of scientific principles. For instance, to create relevant propositions to support people with sleep problems requires deep insight into circadian rhythms and other scientific models around sleep. Understanding these models is important, but the solutions that designers develop also need to have a demonstrable effect on people. For example, we are in the process of demonstrating that the specific ambient design of a room has a measurable impact on the distribution of contrast fluid in the body for specific imaging procedures. This so called 'evidence-based design' must become an integral part of the design discipline. This means that when testing concepts, designers will need to adhere to strict scientific standards; a relatively new skill for many designers.

As these examples show, as design becomes more knowledge-intensive across disciplines, it is critical to create partnerships between academia and industry such as our current projects on stress in the CRISP program. In the future, there will be an increasing role for data in the design of solutions. In the Lifeline example above, it is one thing to provide help after a fall, but preventing falls is the logical next step. This will of course help the seniors, but will also reduce the costs associated with falls, thereby helping keep the healthcare system affordable. Preventing falls depends both on collecting data–on activities, fall patterns, etc.–and on developing smart algorithms to predict falls.

As increasing numbers of products become connected, the so-called 'internet of things', more data will be generated. The largest revenue streams, though, will not come purely from technical solutions. Instead, the key to generating money from data lies in finding insights into the chaos and white noise by moving from mere data mining towards data meaning. Companies that manage to turn complex data into seemingly simple products, services and platforms that make sense to people — improving their relationships, health, happiness, and connection to the world — will create strong bonds and enduring connections with their customers. Design plays a key role in defining these experiences. In order to do so effectively, we need new insights and tools, which further underlines the importance of CRISP.

PHILIPS
sense and simplicity

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AN XT OF SH F R C TO C

Memories play an important role in the lives of Alzheimer patients. **Alessia Camaduro co-designed an interactive storytelling game that helps to reveal long-lost memories.**

"Elderly with dementia suffer damage to parts of the brain which play a central role in memory encoding and retrieval. They progressively lose their short-term memory", explains Marja Dijkwel, manager at care institute Careyn. She adds that negative emotions can be part of the illness, "The sharp contrast between the real world and the fragmented memories often generates negative emotions that can provoke feelings of anxiety, fear and aggressiveness in the mind of the elderly. Some of them will try to escape and will start screaming if doors or windows remain closed."

From Alessia's observations at the Careyn Care institute, it became clear that because of these negative emotions, relatives and caretakers find it difficult to find a suitable communication channel with patients who suffer from late-stage dementia. She came to realise that the memories of these patients contain details which remained hidden from care-givers. The technique they were using, where the patient creates a 'book of life,' registered only basic images and information about the patient's earlier life.

Alessia started a co-design process to develop a service that could stimulate the communication between the elderly, their relatives, and the Careyn caregivers. She spent many hours in the Careyn institute interviewing and observing patients and their family members to involve them in co-designing a game that could trigger memories from the past. The result is What Remains? — a storytelling game in which residents and their relatives collect, share and arrange images using a computer application and physical photo cards. Alessia, "We investigated the images provided and found that they often revealed biographical information that helped care-givers to better understand a cause of distress. I am convinced that the insights produced by our 'storytelling game' can play a critical role in providing truly

R P IR H ES GOI G URCH

The design of the game's spheres, the shape and materials, was the result of multiple co-creation sessions. In these sessions, Alessia's team tested the abilities and limitations of patients to create the trigger for a playful experience. As the spheres are made of transparent glass and contain a slot in the middle to insert the round photo, each picture is magnified, increasing its visibility.

personalised care. This personal aspect becomes more important as late-stage dementia sets in and the channel of communication narrows. Personalised care means that caregivers have more precise knowledge of what a patient does and doesn't like or need. Residents, their relatives, and care-givers can together turn insights into interventions that greatly improve the residents' lives."

The What Remains? application can initially be used during the intake phase, when elderly people enter the care home. By collecting and organising personal photographs, the application provides the caretakers with a good understanding of each new patient. It can then be used later on to consult the personal information of the patient and quickly personalise the type of care. The design of the application's interface also allows caretakers and the relatives of the elderly to continuously update pictures, through new and more in-detail information and discoveries. As a consequence, the application becomes an important tool to support the work of caregivers, as they can quickly memorise visual information about the patients. The second phase only starts once the patient's relatives finish uploading the majority of the pictures and information related to the patient's life. The relatives and the caretakers make a selection of 40 to 50 pictures based on the scenario offered by the application which allows the pictures to be selected one by one from the categories and printed in a round shape. Once the pictures are printed and cut out, they are placed into the game's twenty spheres, which become the triggering elements in the psychology of play with the elderly, their relatives, and caretakers.

The What Remains? tool has been well-received by Careyn as it has already triggered a better understanding of some patients. Consider the case of Rita (not her real name); she always complained about having only one pair of shoes. By playing the game, they found out that as a teenager, she had had an extra pair of shoes to go to church. Giving her this extra pair helped her to calm down.
Marja Dijkwel, "We already knew that images could stimulate a better understanding, but we were very surprised that What Remains? revealed so much detailed information. Cooperating with a design researcher was very helpful for us; an outsider's view of our tools and services was an essential element we needed for improvement."
For Alessia, the collaboration and the support of all parties involved in this project was fundamental to create value. "Re-designing services in a health-care environment can only be successful if everyone in the field strongly believes that their role is essential."

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· Member CRISP project G-Motiv

Designing motivation. Changing human behaviour using game-elements. Achieving lasting change is difficult; people are often poorly motivated to change their behaviour.

DRINK IT WHILE IT'S HOT

Hester Anderiesen

The financial cuts in healthcare reduce the time available for the human task of taking care of our society's eldest, **even though it is these people, and especially those suffering from Alzheimer's disease, that need personal assistance to enjoy everyday life.**

During my qualitative studies to explore the nursing home context, it was this personal assistance, and the little time available to give it, that many care professionals remarked on.

According to one of the caretakers of the small-scale dementia care environment "De Dierenriem", stimulating residents to start an activity is not that difficult. Within minutes, though, they forget what they are doing and stop again. People who suffer from Alzheimer's disease lose the ability to take initiative, and will never (re)start that activity by themselves. It is not surprising that 90% of all nursing home residents with dementia suffer from passive behaviour (Kolanowski et al., 2005).

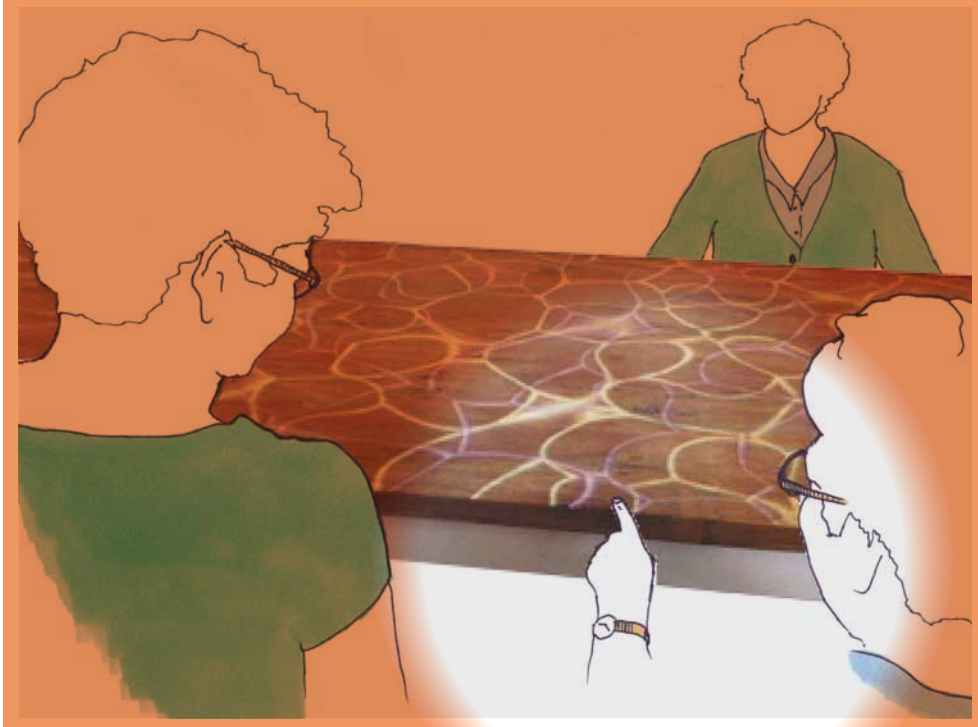
I was struck by the caretaker's story and it inspired me to design a product that provides nursing home residents with triggers to help them start, and continue, activities. Physical activity has a positive effect on older persons' mental, physical, and emotional well-being. The design goal of my PhD project is to stimulating older persons with Alzheimer's disease and thereby reduce their passive behaviour.

My research interest within our g•motiv project is how to design user-product interactions that facilitate play experiences to change the user's behaviour. The available literature provides a wide array of play experiences, such as competition, exploration, fellowship, challenge, and thrill (Korhonen et al., 2009). However, we did not know which play experiences people with different severities of Alzheimer's disease could experience.

Together with the department of Clinical Neuropsychology of the VU University Amsterdam, we mapped the 22 play experiences defined by Korhonen and colleagues (2009) along the neuropathology of Alzheimer's disease. Based on neuro-imaging and clinical studies, we found that there are many more play experiences suitable for this group than game developers and designers use today.

The residents of small-scale dementia care environments are in a moderate to severe stage of the disease. As such, my design concept 'Active Cues' is based on (sensory) stimulation and reminiscence and additionally contains elements of fellowship, nurture and humour. The Active Cues is an interactive installation positioned above the dining table which triggers residents through the projection of light to engage them in activities of daily life. For example: if a resident forgets her coffee, the Active Cues will grasp her attention by projecting light on the table, reminding her to take another sip.

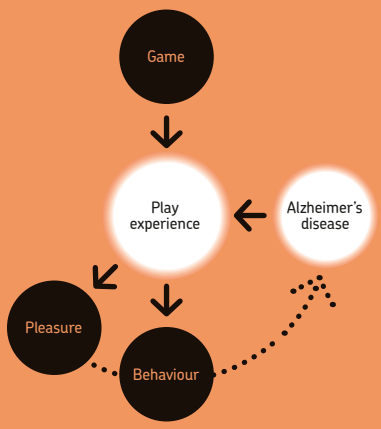
THE ACTIVE CUES WILL GRASP HER ATTENTION BY PROJECTING LIGHT ON THE TABLE, REMINDING HER TO TAKE ANOTHER SIP



APPARENTLY, THE LIGHT CUE ITSELF WAS MORE INTERESTING THAN HER FORGOTTEN CUP OF COFFEE

Together with game design company Monobanda, we developed a 'wizard of Oz' prototype and tested many different light cues with residents. We were excited to test our prototype, but wondered whether the 'unknown' light cues would scare or upset the residents. Luckily, this was not the case at all! The 'mysterious' lights on the table intrigued the residents and they enthusiastically engaged in the various games we played.

Our first experiments showed that the initial behaviour we had designed for was not what the residents actually did with our product. While we 'cued' a cup of coffee that was forgotten by one of the residents, she picked up the cup and set it aside to play with the light cue! Apparently, the light cue itself was more interesting than her forgotten cup of coffee. Although she did not continue to drink her coffee, the Active Cues successfully interrupted her passive behaviour.



In the coming experiments, we will try out more light cues to help residents to continue drinking coffee. As the residents were so enthusiastic about the light cues, we will also explore the possibilities the Active Cues offer to facilitate group-games and atmospheric stimuli to more freely stimulate physical and social interaction.

Now, in the final phase of the project, we are building an interactive prototype and will test its effects during a controlled intervention study. The mixed methods set-up of the study contains several measurements. We will measure the effects on the level of physical activity quantitatively, and will qualitatively evaluate the effects on social interaction and the emotions that the residents express while interacting with the Active cues.

The initial, but promising results of the user tests raise the question what will happen with the Active Cues after this project. Although very little is decided yet, we have the ambition to develop the concept into a consumer product. Whether the next steps will be in a new start-up or collaboration with another company is something to explore during the coming year. First things first: we have to know whether, and how, the Active Cues contribute to the elderly person's everyday life.

References

- Kolanowski, A. M., Litaker, M., & Buettner, L. (2005). Efficacy of theory-based activities for behavioral symptoms of dementia. *Nursing Research*, 54(4), 219-228.
- Korhonen, H., Montola, M., & Arrasvuori, J. (2009, October). Understanding playful user experience through digital games. In *International Conference on Designing Pleasurable Products and Interfaces* (pp. 274-285).

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PSS... WHAT?!

There are already many interesting examples of designed PSSs, for instance, the Barclays Bikes in London.

In CRISP #1 magazine, Bram Kuijken used a Product-Service matrix to explain how PSS can be defined. **The challenge that remains for many organisations is how to design PSS.**

CASD PROJECT — *CRISP Magazine #2*

Using the strategic role of design to strengthen the competitive position of Product Service Systems and industrial design providers.

PS
HOW

Gerda C

This article is based on an earlier paper
Kuijken, B., Gemser, G., Wijnberg, N., & van Erp, J. (2012). The experience of product service systems. In 8th International Conference on Design and Emotion: Out of control (D&E 2012) (pp. 1-8). Design and Emotion Society. This article is also a follow-up on the article by Bram Kuijken on "PSS... what?" in the first CRISP magazine.

References

· Ulaga, W., & Reinartz, W. J. (2011). Hybrid offerings: how manufacturing firms combine goods and services successfully. *Journal of Marketing*, 75(6), 5-23.

SS...?!

Gemser

We've attempted to define PSS in the previous issue of CRISP magazine. **The challenges organisations mainly face, however, is how to design PSS.**

Companies increasingly design and deliver combinations of products and services to gain competitive advantage. Many in the manufacturing industry have shifted their focus away from only designing and selling physical products, to designing and selling product-service systems (PSSs). This bundling is advantageous for manufacturers because services tend to lock users into a long-term relationship, which helps secure a steadier revenue stream over a product's life time. Another benefit is that it provides companies with the means to differentiate their offerings and ask for price premiums. The ability for companies to differentiate themselves is gaining increasing importance as a result of low-cost competition from upcoming, primarily Asian, economies.

Although the PSS concept has, in general, been discussed from the perspective of the manufacturing industry, service providers may also enter into PSSs by adding products to existing services. The benefit for them can come from, among other things, higher efficiency; i.e., when direct, personal contact with customers is (partly) replaced by (intelligent) products. An example of this is robots which assist care providers. Another benefit for service providers is that by integrating products into their service offering, it becomes more tangible and thus easier for customers to evaluate these before purchase. Although there are many benefits to PSSs, some studies note that when manufacturers enhance the service component of their offerings, this does often not result in better financial performance. This may be because the business concept of PSS is still emerging and best practices for ➔

COMPANIES THAT COMBINE PRODUCTS AND SERVICES INTO PSS SHOULD MAKE SURE THAT USERS EXPERIENCE THE ADDED VALUE OF THIS COMBINATION

CURRENTLY, PSS ARE RARELY DEVELOPED 'FROM SCRATCH'

its design have not yet been established. As a research programme, CRISP aims to deliver these best practices.

Do you see the added value?

The existing literature and the first results of our CRISP studies provide some initial, tentative insights in how to design effective PSSs. A first thing to check for when companies combine products and services into PSSs is whether users experience the added value of this combination. From a business perspective, investing in PSS is only beneficial if users acknowledge that the system adds more value than selling the good and service on the market separately. This is, however, not always the case. Ulaga and Reinartz (2011) describe the case of PSSs that ensure correct functioning of the seller's good during all stages of its lifecycle (e.g. maintenance contracts or take-back agreements). In these cases, customers typically consider these services as 'must have' and thus show low willingness to pay extra for such services. For them, the services do not provide much extra value; they only ensure that the product performs its intended tasks. What is lacking, then, is a real synergetic PSS in which products and services enhance each other's value.

BOTH MANIFESTATIONS OF PRODUCT AND SERVICE SHOULD ENHANCE EACH OTHER

Synergy requires starting from scratch

Currently, PSS are rarely developed 'from scratch'. The current trend for manufacturers or service providers is to combine their existing offerings with new or existing products and services. Developing PSS from scratch, rather than working in a mere additive manner, may be necessary to develop hybrid offerings that create value in a synergistic interaction between product and service elements.

According to Ulaga and Reinartz (2011), managers consider the realisation of synergy in PSS creation a major challenge. They stressed the need to adopt a systematic approach to PSS development, where the service components need to be incorporated early in the NPD process, even before the actual design of the product. Building the PSS up from the ground allows for the design of physical features that synergistically interact with the offering's service elements.

Synergy and coherence

A second requirement for a PSS to be effective is that products and services ought to be combined in a coherent fashion, providing a 'synergetic' user experience, wherein both manifestations enhance each other. Take, for example, the Nespresso PSS: both the coffee maker and the coffee capsule–sent by mail rather than being available in supermarkets–express 'exclusivity'. This is how Nespresso wants to position itself in the market and we find this coherence and synergetic user experience in the different parts of the system, each adhering to the same strategy when it comes to user experience. This coherence is often harder to achieve than initially conceived. In many PSSs, a number of organisations participate, each with their own interest and own brand identity (e.g. Krups with Nespresso). Even when a PSS is offered by one organisation, development rarely takes place with only one designer or business unit. More often there are many (e.g. a product designer and a service designer), and each can have their own interpretation or conceptualisation of the PSS in terms of user experience. To end up with a coherent, synergetic user experience, it seems essential that everyone adheres to the same set of goals.

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What's next

From the viewpoints discussed above, we postulate the following as being important in the design of effective PSSs: a PSS is most effective when there is synergy between its manifestations; the PSS is coherent when it adheres to a consistent strategy and a consistent set of user goals, and expresses one coherent identity. When it comes to designing PSSs, there is still a great deal that remains unknown. To what extent must a given user experience be provided by the product-part and to what extent by the service-part of a PSS? How can designers make sure that the product and service parts are coherent or consistent? Is this important for user evaluations? Future (CRISP) research aims to provide answers to these important questions.

PROJECT VEYLINX

Bram Kuijken

Some customers may find it difficult to understand a PSS, which makes it hard for them to determine the value of such a system. This illustrates that the positioning of a PSS is crucial for its market success. Veylinx is an online tool we developed to determine which positioning customers value most, based on actual purchase intent. It uses experimental auctions to reliably measure consumer's maximum willingness to pay.

After signing up at www.veylinx.nl, consumers are invited by e-mail to participate in so-called 'sealed-bid secondprice auctions'. In this real auction, all participants place a sealed bid in which bidders cannot see each other's bids. The highest bidder wins the auction but pays the second highest bid. Nobel laureate William Vickrey proved mathematically that in this auction set-up, it is always in your best interest to bid your maximum willingness to pay.

Veylinx allows us to conduct randomised experiments: although all bidders see the same object, the positioning depends on the treatment in which the bidder is placed. After closing the auction, we can analyse which positioning is valued most and by whom. So far, we have run about twenty auctions to test the system and build a panel. We tested, for example, the effect a design award had and found that this had a positive effect, especially on women's willingness to pay. Results from another auction show that using analogies–to explain radical new products–does not always lead to higher perceived value. On the contrary, using a remote control as analogy for a smartwatch had, when compared to the treatment without an analogy, a strong negative effect on willingness to pay.

We plan to use Veylinx to further study PSS and address such questions as how a product and service elements can create synergy or contribute to a coherent user experience. We will also examine how PSS are categorised and whether focusing on either the product or the service elements makes a difference in consumers' willingness to pay. On a more practical level, we can test to what extent brand identity is important and which brands should be communicated to increase market success. These questions become especially relevant in cases where PSSs are offered by a cooperation between different organisations. Veylinx is currently available for both academic as well as industry partners within CRISP.

veylinx

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Ferdi van Heerden is a design consultant acting as an independent change agent for organisations and uses design to unlock their organisational potential. Ferdi reflects upon the topic of this issue: how values affect organisations?

How you see and measure the added value of design depends on where you stand in the process of value creation. **This article outlines an approach for applying the added value of design to the design of business and unlocking a sustained culture of relevant innovation.**

TH
UNITY
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OF HUMAN-CE

Ferdi van

40

A CONCENTRIC BALANCE

Karianne Rygh uses a map to support organisations in re-aligning their values with their business. This map helps employees and stakeholders to make their capabilities and expectations explicit.

HE
ENCED
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NTRED DESIGN

Heerden

Business owners' initial interest in 'design' often comes through their expectations of higher margins and premium positioning that 'designed' products conjure. They look at companies like Apple and admire the premiums that these beautifully shaped objects of desire command. In their mind, the value of design is primarily measured by financial metrics: how much extra does a design cost and how much more can be asked for it. Differentiation is measured against other products in a category instead of the depth and meaning to a consumer.

Design, though, is not just an outcome; it is a journey of engagement, and this engagement triggers a subtle yet fundamental shift in how you view the world. Because design solves a user problem in context, we need multiple points along the journey to measure success.
'Use' is by nature a process, and a process view provides businesses with insight by looking at the socialisation and adoption of a product or service. Not only needs, but intentions have to be understood and taken into consideration; you need to try and understand why people prefer one product above another. How does it grab their attention? What makes them tell others about it? The key lies in not only asking: 'What does this product have to do?' but also asking 'What gives it meaning?'

This type of questioning moves how your product (and by extension your firm) is defined beyond a static appreciation of its form and features, to a dynamic understanding of its value and role in various relationships. Your business opportunity can then be defined according to your mandate, and not just a market segment. As Unilever you can shift your focus from shifting crates of margarine to promoting cardiovascular health. This kind of mandate includes the hopes and intentions of the stakeholders and beneficiaries (business partners, channels, investors) invested in making real the idea behind a product. For Unilever, this means that far more people are interested in achieving a shared goal: improving cardiovascular health. Their inanimate product (i.e. Margarine) begins to fulfil a service: a dynamic series of interactions that can be purposefully shaped to meet a specific objective and deliver a specific outcome (according to the mandate). Through this mandate, managers understand that design goes beyond the object to shaping a context and meaning, thereby unlocking a new level of value.

Designing interactions requires a higher level of engagement and understanding from employees. You can only have an interaction by interacting and it requires an understanding of motivation, meaning and intent. It requires a deeper engagement with the real human beings affected by the solutions. It requires an interaction that does not take place through the one way mirror of a research facility; it needs to move from the office and the factory out to the real world. This process of engagement not only requires but also builds empathy.

When employees engage with customers through design processes such as prototyping and iteration, they are often surprised to realise that what they thought was fixed is actually changeable. When designers look at an object, they do not only see what it is, they also think about what it could be. What used to be thought of as insurmountable 'problems' suddenly become jumping points as design ➜

DESIGN IS NOT JUST AN OUTCOME, IT'S A JOURNEY OF ENGAGEMENT

constraints. Reality is not manifest destiny, but a set of choices inside boundless opportunity. Design is at its core optimistic 'opportunity thinking'.

By turning employees into designers, a company can tap into this rich source of motivation, learning and inspiration. Once a manager and his team have been taken into the wild, there is no turning back. Time and again I have seen how product managers and leadership discover a new sense of purpose and meaning in what they do when they reconnect with the people they are designing for and those they are designing with (that is, their suppliers and vendors).

When this empathy is applied to designing solutions, it affects not only the downstream business practices (towards customers) but it can also shift the perspective on suppliers and business partners. Once employees have taken part in human-centred design practice, they begin to realise that business interactions are another example of relationships that can be designed towards a better outcome.

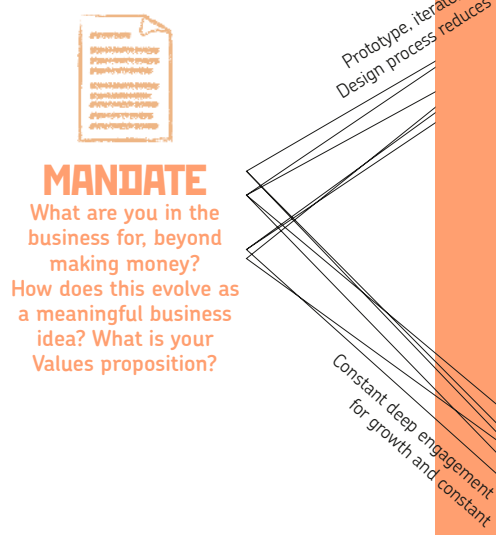
Collaborative and co-creation design techniques in particular can bring a new level of innovation chain solutions. Through a human-centred design approach, the value chain becomes a process of values alignment. Design ultimately expresses and injects a set of values into what we experience and consume.

Whether consciously or subconsciously, designers embed their values in the choices they make. One unintended consequence and sustained value of design is its cultural impact on organisations . By injecting empathy into the values alignment, the business takes on a more meaningful role.

This is not mere conjecture. The New Zealand government has been running a program called 'Better by Design' since 2005.

THE VALUE CHAIN BECOMES A PROCESS OF VALUES ALIGNMENT

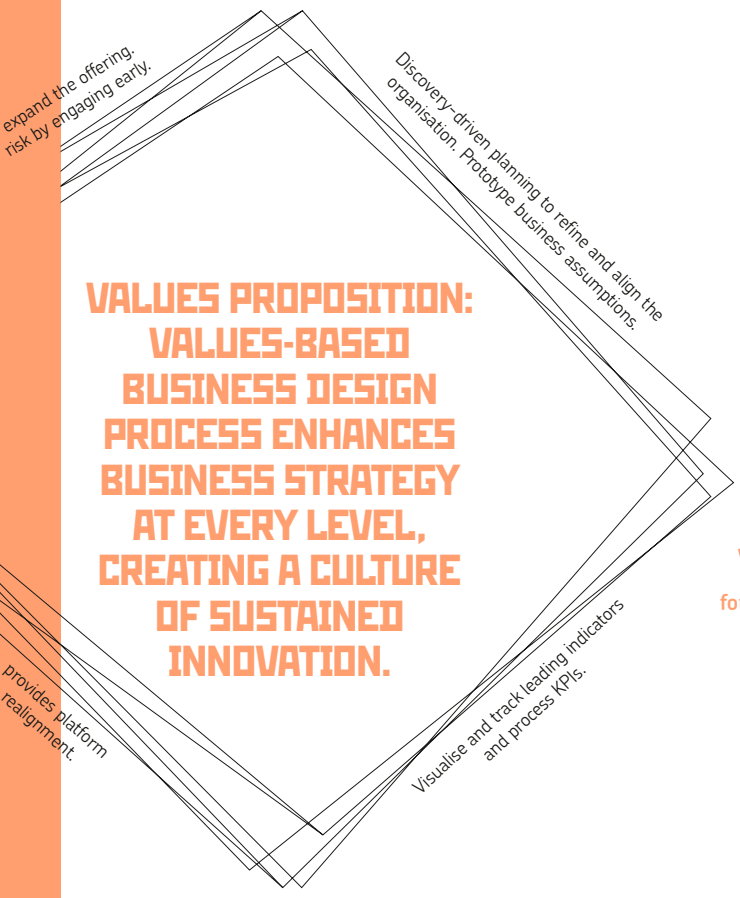
Their original intent was to increase New Zealand's global competitiveness through an increased use of and appreciation for design. When the impact of the program was assessed in 2010, the CEOs consistently commented on the cultural impact design had brought to their companies. It not only improved exports and inspired new product innovation, it had also changed the way in which they viewed the world and engaged with customers. As employees connected with the users of their products, they became more motivated and engaged; they suddenly understood the purpose of their roles in the context of real world meaning. Can we possibly accelerate this impact on business? To address this challenge, I have come up with an approach to purposefully and practically design a business model that is firmly anchored in the specific and differentiated culture of your company. At the core of this business approach is a 'values proposition': a definition of why the business exists. It is the problem you are trying to solve that people care about, as opposed to the more popular value proposition that mostly simply defines what people are willing to pay for. To align your business with the values proposition, you can follow this four step process:



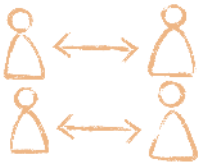
HOW YOUR VALUES CAN LEAD TO A SUSTAINED CULTURE OF INNOVATION

MAP

Who wants to see the idea succeed? How can they contribute?



VALUES PROPOSITION: VALUES-BASED BUSINESS DESIGN PROCESS ENHANCES BUSINESS STRATEGY AT EVERY LEVEL, CREATING A CULTURE OF SUSTAINED INNOVATION.



MOTIVATION

What motivates and connects employees with world challenges? Are you providing opportunities for meaningful contributions?

METRICS

What are the upstream indications of emotional and financial engagement? How can you share and bring to life rich experiences that inform design?

1—Meaningful mandate

Deep engagement with the beneficiaries provides insights into a meaningful business purpose. Ask: 'What are we in the business for, besides making money?''

2—Map constituency

Define the business constituency beyond capital and labour. Ask: 'Who wants to see this idea succeed and what can they contribute?' This may redefine competitors as partners and turn the value chain on its head by making customers investors.

3—Mobilise with motivation

Engage employees as designers to unlock engagement and empathy. Ask: 'What have you seen or experienced in the real world that informs this decision?'

4—Measurement mix

Apply a mix of leading indicators and process engagement to identify momentum. Social media and crowdfunding tap into a rich source of metrics that give a clear understanding of potential success. Ask: 'Who is invested (emotionally and financially) in making this idea a success? How are we tracking adoption and socialisation?'

Empathy and collaboration help unlock the potential of a more values-based business. The 'values proposition' approach to business planning provides a move towards operationalising this reality. It does not pit 'people' against 'profits'. On the contrary, it respects the notion that a company can only outcompete its peers when it continues to identify and respond to customers' needs faster and better than others do. When values become the framework against which decisions are tested, you reduce risk and cost through new forms of collaborative commerce, sustainably making the company more flexible and responsive.

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Guido Stompff is senior designer at Océ Technologies and member of the CRISP CASD project. Within Océ, Guido explores how design can contribute to new PSS business models.

PROTOTYPING NEW BUSINESS

Guido Stompff

How can we create new viable business for the future? **This question raises two challenges. First, creating meaningful proposals that are not so obvious. And second, presenting these ideas in such a way that others can understand their value.**

The problem is that proposals for new business cannot necessarily be proven until they have been developed. In hindsight, all successful innovations make sense, but the value may not be obvious at the beginning. Still, managers and investors need to decide whether or not to pursue an idea, considering time, money and resources. Many great ideas never cross the 'Valley of Death' — the virtual chasm that separates innovative ideas and credible demonstrators that show their potential. A long-term study on designers inside multidisciplinary teams (Stompff, 2012) suggested that design practice may help to cross this chasm. Recently, a CRISP project was initiated with the aim of developing a method for designing and exploring viable new business propositions, sometimes named projectas (Buijs, 2012). A projecta is "a concrete, tangible demonstration and exploration of new design hypotheses, which are unconventional, fresh, powerful, pushing boundaries forward, and breaking with traditions."

Océ, a Canon group company, provides print solutions for professionals. Océ develops products, software applications and services, i.e., product services systems. The Design team deploys several user-centred methods for idea generation, such as contextmapping or contextual inquiry. Still, several designers felt something was missing that would assist in broadening the business horizon beyond existing products and services; another approach was needed. The designers sensed that developing projectas revolves around showing and discussing propositions with others, and thereby continuously redrafting what the proposition will be: How can Océ know what Océ needs to do, until Océ sees what might be possible?

Three designers started without a project brief in a 'garage-like' office space with adequate support to build prototypes. The designers all have considerable experience with Océ products, technologies, and markets. The first step was to find a range of possible projectas. Many sources served as inspiration: client visits were carefully re-examined, a traineeship was organised, shop-excursions were done, and personal hunches explored. Business/R&D managers were also interviewed, and the main question asked was, 'What opportunity do you think we need to show so that others will (also) understand its value?' Several ideas were synthesised into four concrete proposals that were presented to management.

On the one hand, these were represented by nothing more than a catchy title and an iconic sketch, using a highly simplified style (somewhat like Windows 8 icons). On the other hand, these proposals were developed to a point to enable reflection from management. No persuasive presentations were prepared, and no comprehensive analyses presented. Interestingly, it was precisely the iconic quality that led to excellent discussions. People started to explore the ideas in ways not previously conceived , showing what was on their minds. Sometimes, just seeing the proposal already sparked a discussion, even before the designers had a chance to explain it. The proposals had the 'charm of the skeleton' — a persuasive vigour and charm allowing others to commit themselves, while leaving ample space to explore what it might become.

All agreed that one idea was particularly interesting, above all because it was about exploring new markets using existing technology; a new business around the corner. Rather than considering what new products and/or services Océ should offer, the focus was on what kind of things can be made with Océ technology, sometimes even using existing products and services. These are things that are new to the world and have a high added value; things that only can be produced for an interesting price if an elaborate product/service system is developed.

CONCEPT CARS CONTAIN A FALLACY

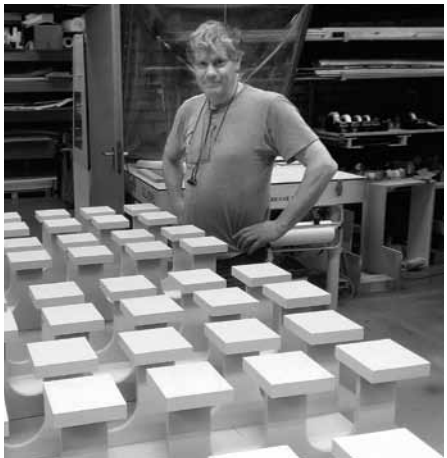
The modelshop of Océ Design was turned into a production site for several weeks.

The innovation is more or less a paradigm shift: central to development is not the products or services themselves, but what can be done with these products and services.

The second step was to follow a more regular design process, in which the fledgling idea was developed into a fixed and concrete proposal, the equivalent of a 'concept car'. Concept cars are tangible, full-scale models of future cars, showing what might be without the need to have it entirely developed. A kind of concept car for the new business was needed, demonstrating what the new business might be, without the need for developing it entirely. In a few months , the designers created a proposition, including the products, services and the customer journey. Less obviously, they also included ideas for production, sales channels, pricing, and business models. Inevitably, many eyebrows were raised. Fortunately, there was sufficient support from management so that the designers seldom needed to 'pull back' due to turf issues.

The designers realised that concept cars contain a fallacy. Concept cars are persuasive and seductive, making stakeholders fall in love, yet blinding them to more practical problems. In real life, the business may not take off because the product is too expensive or the sales channels are a mismatch. When starting a new business the risks may be even larger, as new business inherently include many unexpected problems. Consequently, the designers concluded that the business concept needed to be prototyped and tested with real consumers. To test the usability of products and services, simple prototypes are often created that provide sufficient context and focus on the interaction, nothing more. The challenge for the designers was to ➜

In the newly founded copyshop rough prototypes were build.



consider what kind of prototype was needed to test a new business. To sell products, the entire customer journey needed to be part of the test, including branding, a (web-) service, products, a shop and so on. All these were developed, but always with an eye on the big picture rather than the messy details. For example, an adequate brand-identity was developed within a few hours. As products would be sold, these products were rigorously crafted by the Océ Design team. However, matters such as the website, packaging or shop interior were essentially 'window dressing', i.e. appearing better than they really are. In time, a shop was opened on the Océ premises to sell a limited number of products within a limited timeframe. It was a success: the 'business prototype' drew much attention and the products sold out quickly. The bottom line, naturally, was not positive: any product sold was basically an expensive prototype sold at the price of an engineered mass-product. However, nobody cared: any prototype is costly, yet it serves to promote learning, and much was learned...

The project has not yet ended and, for reasons of confidentiality, the results cannot be made public at this point. Still, several conclusions can be drawn. First of all, the typical visual, iterative and holistic design process proved to be a viable option for generating business. It facilitated an open process in which many people could contribute by voicing their opinion and sharing their expertise. The designerly approach is about dialogue rather than debate; about expressing rather than explaining; and most of all about imagining rather than analysing.

Second, all involved were amazed by the results of the 'business prototype'. Many new insights arose, and some assumptions admittedly turned out to be wrong. For example, what kind of product would become most popular and why this was the case was contrary to our expectations. Also, new insights arose on the (necessary) service and production. However, for a relatively small budget and resources, lessons were learned in a controlled environment instead of the hard way, in the real world.

Third, and possibly most important: the project created a platform that all stakeholders could examine and reflect on. They observed how the product was launched and became successful within days. They could start up discussions, invite others, or even include business partners. By prototyping a business, suddenly it was no longer simply a 'good idea', but a viable option for the future. To quote George Bateson, "An explorer can never know what he is exploring until it has been explored."

References

- Buijs, J. A. (2012). The Delft innovation method: *A design thinker's guide to innovation.* Eleven International Publishing.
- Stompff, G. (2012) Facilitating team cognition. *How designers mirror what NPD teams do.* Doctoral thesis, Delft University of technology.

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- Member CRISP project CASD

IT'S ABOUT EXPRESSING RATHER THAN EXPLAINING

Products were designed and engineered as mass-produced, yet in reality people got flawlessly crafted models.

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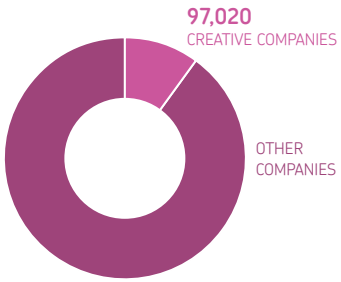
BEYOND BUZZ

The Innovation in Services project explored how different design consultants can collaborate in projects for one service provider. The project explored to which degree these design consultants succeeded in convincingly getting across the different perspectives to the service providers.

Designers running a pop-up shop as a prototype for new business

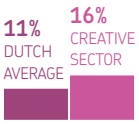
DUTCH CREATIVE INDUSTRY

The following figures (from 2012 & 2013) provide an overview of the creative industry's contribution to the Dutch economy on a yearly basis.



COMPANIES

8.6% of all Dutch companies are from the Creative Industry.



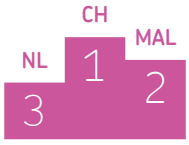
NEW COMPANIES

A high dynamic by 16% in new Dutch creative companies

€ 50,000

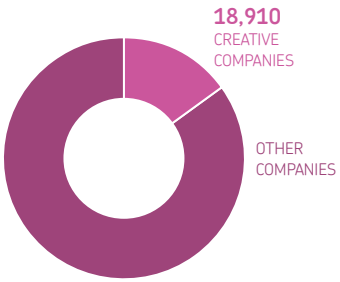
PRODUCTIVITY

The Dutch creative industry produces € 50,000 per person.



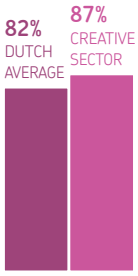
CREATIVE OUTPUT

The Dutch creative industry comes third on the list of creative outputs (global innovation index). Zwitserland is 1st, Malta holds the 2nd place.



STARTING COMPANIES

12% of all starters are from Dutch creative Industries.



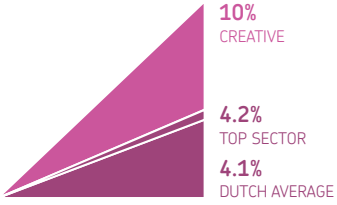
NEW COMPANIES' SURVIVAL

87% of all new Dutch creative companies survives their first year.

148,000 FTE

PAID LABOR

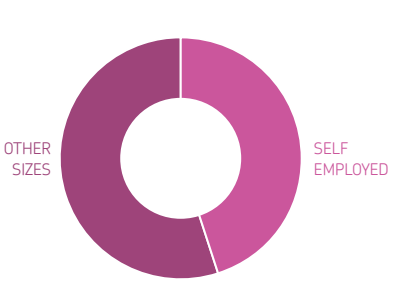
The Dutch creative industry holds jobs for 148,000 people. Forecast: number of workers 2014 +0.25% with respect to 2013



COMPANY GROWTH

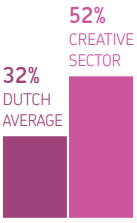
The creative industry is the fastest growing sector of the Dutch economy.

Data derived from: CBS Monitor Topsectoren (2012) INSEAD, Global Innovation Index (2012), UNCTAD, Creative Economy Report (2010) and Panteia, Topsectoren: beeld en ontwikkeling (2013).



COMPANY SIZE

47% of people in the creative industry is self-employed and companies have an average of 2 people.



KNOWLEDGE WORKERS

The Dutch creative industry holds the highest part of knowledge workers.

€ 9,715,000,000

ADDED VALUE

The Dutch creative industry has an added value of € 9,715,000,000. 1.85% of the total Dutch GDP. Forecast: added value 2014: +0.50% with respect to 2013.

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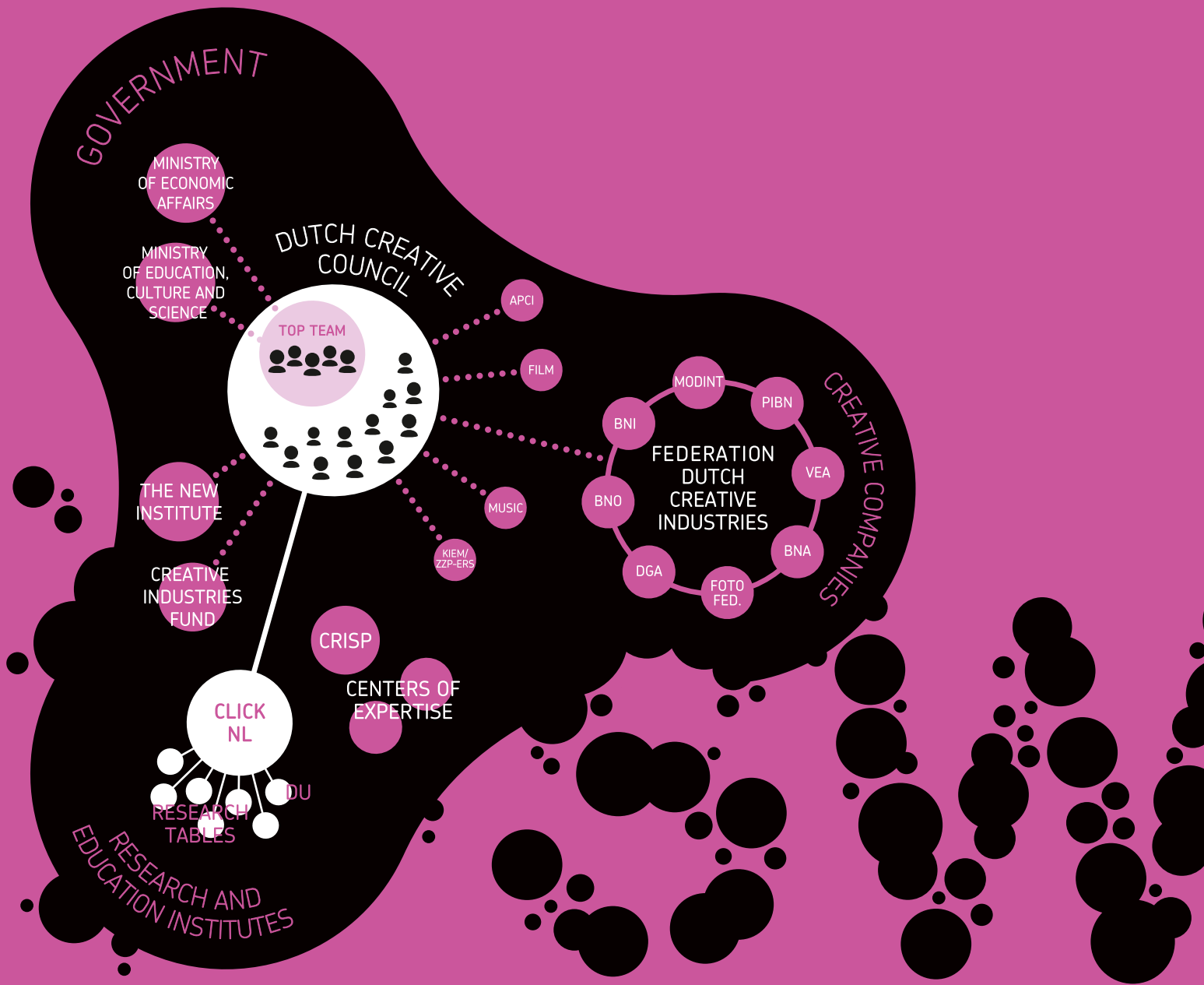
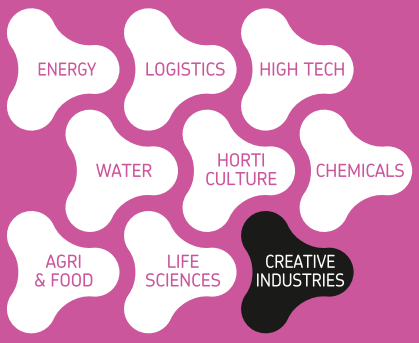
SWARM

These figures give an idea of the position of the Dutch creative industry within the economy. Because of their diversity, these creative companies are more or less organised as a swarm. The following page provides an overview of this swarm.



This infographic shows how the landscape of the Dutch creative industries is organised. The industry itself acts as a swarm around it. **A swarm which is flexible, consisting of many small enterprises, in which parties collaborate, but is above all, energetic.**

DUTCH TOP SECTORS



The creative industries is one of the sectors in which the Netherlands excels globally and are a government priority.

BNO
Association of Dutch Designers

BNI
Dutch Association of Interior Architects

MODINT
Trade association for fashion, interior design, carpets, and textiles

PIBN
Platform Internet Bureaus Nederland

VEA
Association of Communication Advice Bureaus

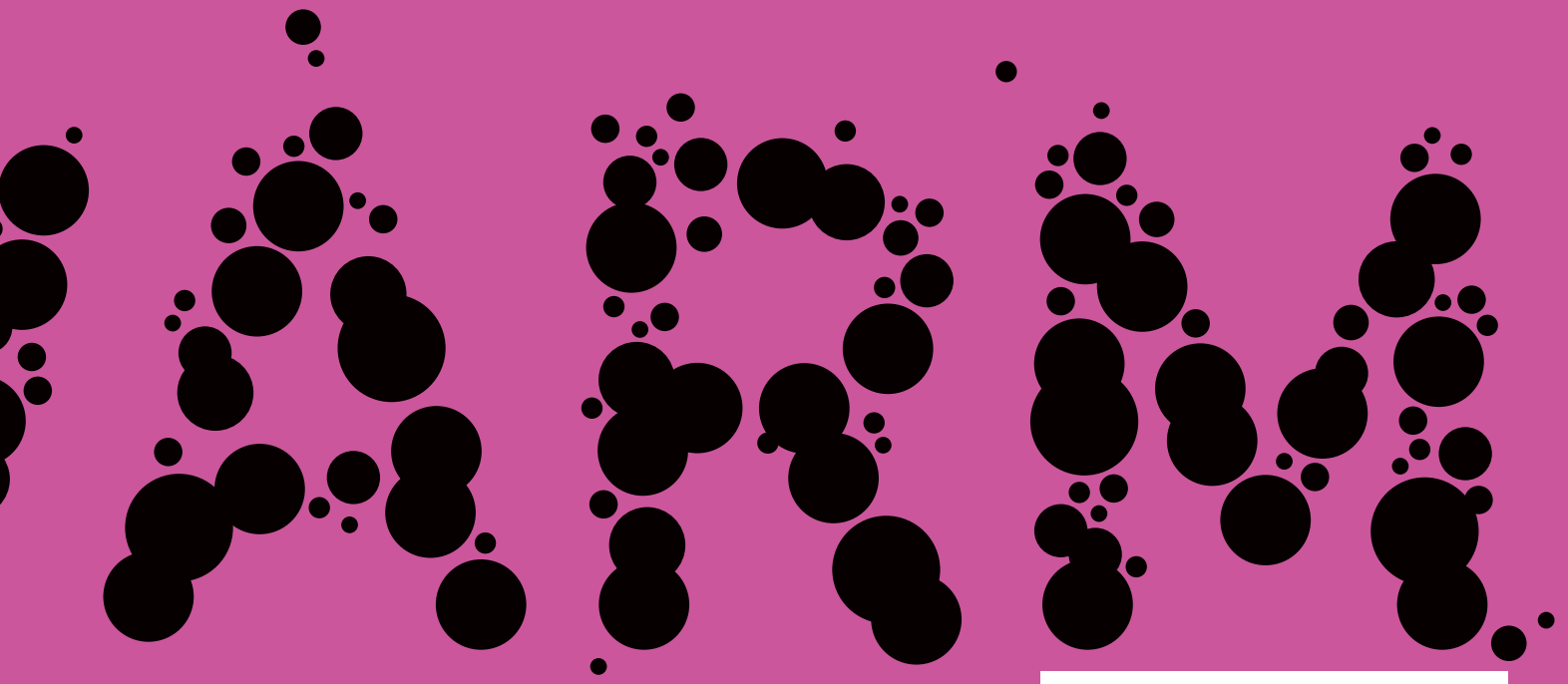
BNA
Royal Institute of Dutch Architects

DGA
Dutch Game Association

DU
Design United

APCI
Alliance of Producers in the Creative Industry

Infographic inspired by *Frédérik Ruys*



Within the swarm, the creative industry collaborates with both research institutes and the industry in general. These articles focus on how the creative industry organises itself for designing PSSs.

Janneke Vervloed is an alumna of Industrial Design Engineering at TU Delft with both a research and an industry background. For CRISP Knowledge Transfer, she works with the scientific partners and the creative industry to go through the project results and experiences and share these with the desired audiences.

CREATIVE INFRASTRUCTURE

CRISP aims to strengthen the Dutch economy by providing generic knowledge for the Dutch Design Sector and the Creative Industry. **How does this work? And what do we know about the relation between knowledge, design and the economy?**

Unravelling this relationship may sound ambitious, but by starting with picking apart the sentence on the upper right and briefly describing what each term used means, we will come to understand the value of design and design research in the context of CRISP. The Dutch Creative Industry includes all the design disciplines: architecture, fashion, communications, gaming, industrial design, as well as media, music and film. CRISP focusses on creative business services in the field of industrial design. The Creative Industry is more than just a booming sector; it acts as a catalyst and a driving force for economic growth throughout almost all economic sectors. As this effect is expected to increase over the coming decades, the CRISP design research will affect more sectors than the Creative Industry alone, also as a result of its multi- and transdisciplinary nature. To ensure a strong impact on business and society and to remain competitive in a rapidly growing international field, the Creative Industry should have a comprehensive knowledge infrastructure. CRISP strengthens this knowledge infrastructure by focussing on 'Design of PSS': developing the knowledge, tools and methods necessary to design complex combinations of products and services, with a holistic approach and a fulfilling user experience. One example of these tools is the Product-Service Matrix we developed in CRISP to define what elements are key to a PSS.

The Value of Design

There are currently no reliable means of measuring the value of design to compare either the national economic or non-economic benefits of investing in design. There is, however, strong anecdotal evidence for the value of design to companies[3]. Several studies have demonstrated that investing in Design pays off in terms of increased profit margins, market share and exports[4]. But design cannot be reduced to mere economic metrics. Its value must be understood at multiple levels, including its social impact and its transformation of culture[5] i.e. we should measure the increase in quality of life!

The Creative Industry sector is founded on the creating and creative capacity of individuals, groups, companies and organisations. Creation, production and exploitation are core activities of creative companies[1].

Creative Industry Scientific Programme — 8 research projects on design of Product Service Systems

Value = Benefits / Cost. From a user's point of view, value is the perceived gain, which is composed of individual's emotional, mental and physical condition plus social, economic, cultural and environmental factors. From a provider's point of view, value is the gain measured in terms of financial metrics, percentages, and money.

CRISP CREATING VALUE WITH PSS DESIGN

Product Service System: a specific combination of product and service elements jointly capable of fulfilling a customer's need, like Barclays Cycle Hire in London.

Design for a better life!

Creativity is the generation of new ideas. Innovation is the successful exploitation of new ideas. Design is what links creativity and innovation[2].

PSS IN CRISP

A PSS is a promise of value to be delivered and experienced that a business network offers to or co-produces with its clients. This value can only be realised when PSSs are carefully designed and have the support of a collaborative multidisciplinary network. In CRISP, we are learning how to design PSSs and how to deal with collaboration in multi- and transdisciplinary networks. As a result, CRISP creates value with PSS design which will benefit customers/users of the PSS, designers, organisations that provide the PSS, the Creative Industry, and other sectors. This in turn will stimulate the Dutch economy and society.

Social impact

A business concept that is currently often mentioned is Creating Shared Value: the creation of economic value in such a way that value for society will also be created by addressing its needs and challenges. When managing a company, it is no longer sufficient to focus only on economic data; value-oriented management means maintaining a complex eco-system of values with, on the one hand, the increase of profit and innovative strength of companies and, on the other hand, the customer benefits and social improvements. These values are reflected in the design of a PSS. Although not all values of a PSS are known in advance, in CRISP, we are very keen on recognising and creating values along the way in PSS research and development. CRISP creates value in many areas, from the well-being of elderly to competitive advantage for design agencies, and on many levels, for customers, organisations , and knowledge networks.

CRISP Creates Value with PSS Design

The close collaborations in CRISP between over sixty partners from government, multinationals, knowledge institutes, creative companies, public transport, health care and social institutions has led to cross-overs being established between the participating parties and the creation of integrated knowledge development on PSS design. Our newly generated knowledge, as well as the industry-academia connections CRISP has set up, will enable the Creative Industry, industry in general, and the public sector to achieve higher levels of excellence and increase international competitiveness.

In 2015, we will further elaborate on CRISP's economic and societal impact through its research results and cases by:

— using the strategic role of design to strengthen the competitive position of PSSs and industrial design providers;
— helping stakeholders to understand the multi-disciplinary opportunities and challenges of creating PSS;
— improving conceptualisation and communication between all those involved in designing PSS;
— designing for behavioural change and promoting well-being through social and physical play;
— humanising care-droids to supplement and replace existing care-services;
— and improving mobility services for the elderly and enabling them to live independently and stay socially connected.

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- CRISP Knowledge Transfer

References

1) CBS, Creatieve industrie in Nederland: bedrijven en personen, N. Braams en N. Pouwels-Urlings, 2011
2) HM Treasury. (2005). Cox Review of Creativity in Business: building on the UK's strengths', Cox, G.
3) Design Council UK. (2009). Briefing 05, Measuring Design.
4) Gemser, G. and Leenders. M.A.A.M. (2001). How integrating industrial design in the product development process impacts on company performance
5) Design Council UK. (2011). Design for Innovation.

Examples

- Design Council UK. (2012). Designing Demand: Executive Summary.
- Commission of the European Communities. (2009). Design as a driver of user-centred innovation.
- European Design Innovation Initiative. (2012). Design for Growth and Prosperity.
- The Finnish Design ROI Project. (2013). Measurable Design.

Erik Roscam Abbing is a design consultant who supports his clients in developing Product-Service Systems. His clients are not alone in the many challenges they face; Erik also has to rethink his way of working.

Getting Our Hands Dirty

IN SERVICE DESIGN CONSULTING

Erik Roscam Abbing

As products seldom stand alone these days, many companies will have to shift in order to unlock new value, both for themselves and for their customers. In the midst of the shift, they are confronted with new ways of serving their customers. **They must re-organise themselves.**

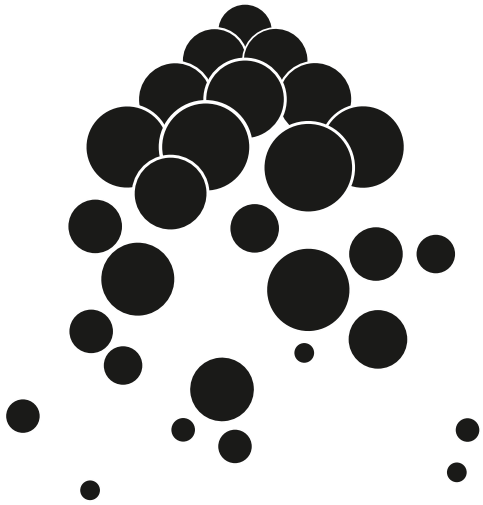
Co-creation, open innovation, customisation, user-centredness, embedded technologies, the internet of things, big data, or peer-to-peer business models: the list of new phenomena, models and strategies to deal with seems endless, and the people managing them need flexibility and openness to be able to adapt.

But you know what? The design consultants that help these managers are going through the exact same transitions They need to make exactly the same shifts, a viewpoint which design consultants sometimes overlook, busy as they are pinpointing all the changes their clients need to make in the short term.

I HAD A DREAM...

I am one of those design consultants. I try to help companies design innovative services or product service systems. When I began, 18 years ago, I had occasional dreams of owning a very large design studio. It would run like clockwork, this studio of mine. All methodologies, processes, and tools would be tested and optimised to ensure maximal efficiency. It would be a controlled environment where people underwent intensive training in order to adhere to strict principles. And clients would choose our services from a menu of pre-set propositions. Boy, what a business!

The studio never made it. I guess you could say I failed. I still admit to a tiny bit of envy for those entrepreneurs who do succeed in managing such studios. But, on the whole, that dream is very far from what I aspire to right now. It's not at all what I would feel comfortable with, or excel in.
But worse, it would be very far from what my current clients need. What happened? Did I lose the passion or did I find wisdom? The fact that I'm not alone in this may suggest the latter: more and more design consultants are operating on their own or in small cells.



The studio of my dreams would run like clockwork...

but it never made it.

A MORE RADICAL ANSWER

I've been involved in a project for an insurance company where I brought together a project team of eight people. In the team, three small design agencies and two freelance consultants were involved. The project was very explorative. We were mapping user needs across the customer journey. We wanted to find opportunities where we could improve the insurer's service or customer experience. Preferably, we wanted to discover insights that would lead to new product development. We wanted to co-design these solutions with the client's experts. And we wanted to design project outcomes in such a way that they would be adopted by the entire organisation. Nothing was sure at the beginning. We had hunches; we had approaches; we had some tools and methods and we had a lot of experience, but no fixed way of getting from A to B. Fortunately, neither did the client. What the client did have was the courage to divert from the successful business they were doing with large, more traditional consultancies. Consultancies that did know how to get from A to B, with a fixed set of management methods and tools in place and a proven track record of success, at a fixed cost, in time. Consultancies that had become big because their processes allowed scaling up because they were sufficiently standardised.

The client had the courage to choose a different partner for this project because they felt they wanted a deeper, less predictable, and more radical answer. They wanted compelling results, instead of just proven facts. They wanted to really emphasise with customers, instead of generating more statistics. They wanted us to get involved with their experts, and learn from them, instead of telling them what to do.

The client told us later that we had won the pitch because we were small, co-operative, curious, design-led and honest about what we did and didn't know. They liked the fact that we were eager to explore uncharted territory with them.

LET'S REINVENT OURSELVES

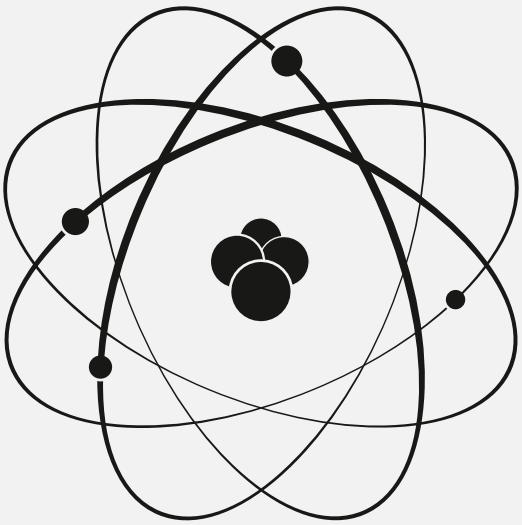
This story is illustrative but not unique. I see many agencies and independent consultancies that have the same kinds of experiences. What it leads to is a seemingly new paradigm in the way design consulting is organised. But is it new? Doesn't Hollywood work like this? Thousands of experts join forces temporarily to make a movie together and then split up again to become part of a new project. And what about expert business consultants? They too successfully adopted these collaborative structures many years ago. So there's a lot out there to learn from. But, as a designer, I believe learning from others is not enough. I believe we have to prototype and see for ourselves what this new way of working may bring. ➜

One of the things it has brought me was a trip to Sydney to get involved in a project for Virgin Mobile, run by the service design consultancy ProtoPartners. I had met the Australian partner through social media and although we had met in person only once, he had enough faith in our collaboration to bring me over. The full team included business analysts, user researchers, experience designers, and psychologists: people I'd never worked together with before. The co-operation was a success because each expert was curious about the other's insights and respected the other's expertise. And we all loved working with the client, who was engaged, co-operative and proactive. The project significantly contributed to increasing Virgin's customer loyalty metric. Virgin said the co-creation, user empathy and design tools of our approach perfectly matched their brand and the challenges they were facing and helped them to actually implement the project's results.

GUIDE OR FOLLOW?

I once ran a large project where I brought together 4 independent experts to form a team to help a client develop user personas and design principles. The goal was to improve their customer experience and to develop new, insight-based products and services to strengthen their brand. Each of the four experts was experienced and had been involved in similar projects. But because each had their very own approach to the challenge at hand, we had to spend a lot of time aligning these approaches. I was struggling with the fact that I had brought in these experts for their experience and expertise, and I wanted them to follow their own hunches and methods. At the same time, I saw we were losing time over endless debates and the budget was evaporating faster than a puddle on a pavement in a heatwave. We hadn't even started the actual work yet!

If I had adopted a more directive management style with me leading the way and telling the team which route to follow–my way or the highway–the project would have been more successful financially. But, then again, why bring in experts if you start telling them what to do? Another challenge design consultants like me continuously face is this: it is very hard to put the value we provide in hard numbers beforehand. We do our calculations but, in innovation, returns on investments are hard to predict. So any proposal that is signed involves a certain amount of faith on the client's side. I recently won a project for a client where building up this faith took a lot of time. Case studies have helped but are no proof: the client's business is always different. Calculations have helped but always contain many assumptions. At a certain point, the client was ready to take the plunge. They started to believe that a more design-led, empathic, innovative approach may be the right way. So they allocated a part of the brand experience budget to us. Now it was up to us to show that we could deliver as well as keep precise check of the value we would generate, preferably putting our findings into numbers wherever possible. I may have converted a hard-nosed business manager or two this way and my efforts have paid back, but it isn't the easiest way to earn a living!



Doesn't Hollywood work like this?

Let's reinvent ourselves!

The challenges of developing PSSs require a new way of running consultancy projects. We need to resolve the paradoxes between the new kind of value networks we offer and the need for structure, efficiency, predictability, and manageability. The good news is, though, that our clients face the exact same challenges in serving their customers. We'll just have to be very good at reinventing our own businesses while we help our clients reinvent theirs. Paradoxes are there to be resolved in order to unlock value for various stakeholders. That's what designers do. It's just that this time, we're part of the paradox. But that's a lot better than shouting our advice from the sideline without getting our hands dirty!

So, there certainly are successes to celebrate. But, let me assure you, my personal challenges and mistakes have also been numerous. Let me state again: I don't think I am alone in this (if you recognise what I'm talking about, let's share our findings).

THE FUTURE OF MY OWN EXPERT NETWORK INNOVATION

Erik Roscam Abbing

The way I see the future for my own work is a mix between manageability and reliability on the one hand, and openness and flexibility on the other. I will continue to work in expert networks, especially since a circle of trusted international experts is starting to crystallise, with people that I know I can count on to deliver. I am working on making this circle of trusted experts even more international and more cross-disciplinary, especially looking at 'design thinkers' with a business background or user experts with a background in psychology or ethnography. I'm also constantly on the lookout for people with dyed-in-the-wool implementation and execution skills.

Lately, my role in these networks has been to acquire projects. When I write the project proposal and I invoice the client, though, I think I will also have to establish the structural backbone of the project. Only then can the different experts that I bring in play their expert role. This means that some starting points may not be challenged by the experts, no matter how experienced they are in their fields. Compare it, for example, to the role of a movie director, who must let his actors shine, while safeguarding the plot of the movie and the demands of the audience.

Lastly, I am starting to form a 'nucleus' that is more closely knit and may involve a business partner and a few FTEs. While the experts may circle this nucleus like electrons, and may hop to other nuclei, my nucleus will be a constant factor in the projects I run, guaranteeing that the project runs like clockwork, operationally. It also forms a repository for experience, culture, methods, and tools. This nucleus must have the advantage of providing stability and certainty to a client without having the disadvantage of high overhead costs and fixed assets.

Meanwhile, I hope to continue to play a role as an expert for other nuclei, on condition that I can focus on contributing expertise to the project and that the other nucleus takes care of management and planning. I have been involved in work for Australian, Spanish and German service design consultancies. These nuclei organised these projects so well that I could play the expert role perfectly. I hope to continue to do so many times in the future. To return the favour, I will strive to become better at providing the structure for them to shine as experts.

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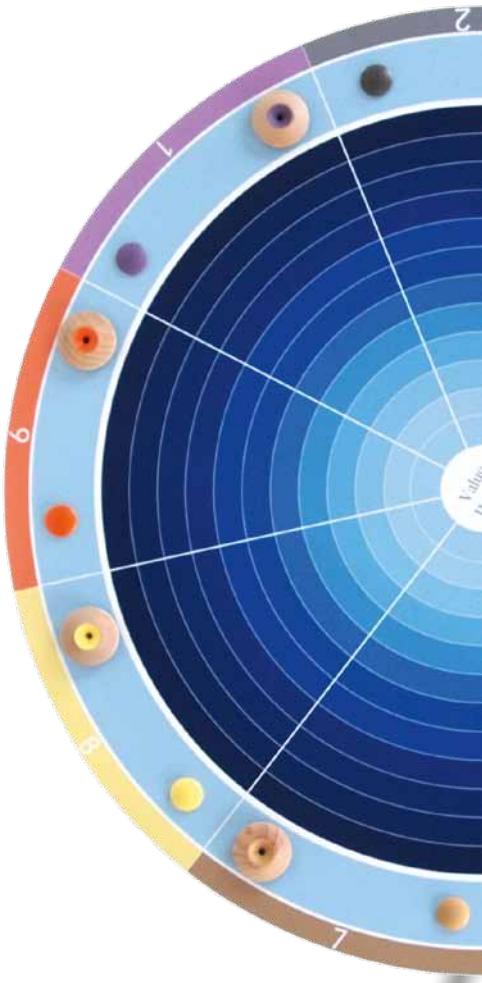
8

BEYOND BUZZ

The Innovation in Services project explored how different design consultants can collaborate in projects for one service provider. The project explored to what degree these design consultants succeeded in convincingly getting across the different perspectives to the service providers.

This project is developing a framework of tools, techniques and methods that improves conceptualisation and communication between all those involved in designing PSS, across industries.



As companies move from providing specific products to providing PSS, their networks expand to include professionals from different fields than their own. **In practice, this means they have to work with individuals with a completely different background and agenda.**

Karianne Rygh

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As companies move from providing specific products to providing product service systems (PSS), their networks expand to include professionals from different fields than their own. In practice, this means they have to work together with individuals with a completely different professional background and agenda. Health care organisations such as ZuidZorg, for instance, work together with stakeholders which include telecommunication experts and software developers to make services more accessible for care patients, thereby not only improving the health care of these patients, but also increasing their general well-being. As a service becomes more complex, the network becomes more multidisciplinary, further increasing the challenges facing those who must collaborate to deliver these services.
Each PSS stakeholder adds value to the specific PSS network in the form of experience and knowledge regarding development and roll-out of new service concepts. In theory, these networks can be a reservoir of expertise from different professional disciplines available to all network partners. Unfortunately, due to a lack of common language and understanding of each other's goals and interests, organisations often remain in independent 'silos': cooperating but not collaborating through the sharing of their independent values. To build a thriving network and to develop more innovative PSS, organisations need to work together and incorporate the expertise of other network partners in the early development stages of their independent solutions.

'Value' and common goals can have different meanings for different stakeholders. One organisation might seek examples of similar roll-outs of new concepts; another might be in need of products that solve a specific problem within their service. Individuals within an organisation may wish to learn other methodologies and ways of doing business immediately applicable to their daily work. By collaborating in a network, individual stakeholders represent a resource and therefore a 'value' for other network partners. The PSS 101 project →

A

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ANCE

team is developing a framework and tools that will facilitate the exchange of such 'values'. Océ pointed out during a PSS 101 workshop that they have learned that when creating PSS in networks, whether inside or between organisations, success crucially depends on three factors:

1 — Each stakeholder involved has an understanding of the value to be gained from the networked collaboration;
2 — They can express their needs clearly;
3 — They understand the other stakeholders' expectations.

A current tool that relates to these factors is a stakeholder map, which gives an overview of network relations. These maps, however, do not convey which relations are of actual value, nor do they supply the necessary foundation to indicate where new connections can be made. As networked organisations communicate through email, for instance, there is nothing on their screens to indicate how they benefit from a network nor what others bring into it. This lack of information prevents the development of better service experiences for the end user and increased economic value for the stakeholders involved.

It is important to realise that networks providing PSS are social networks and that relations of value within these networks are created by individual people as extensions of the companies they represent. Trust within a network affects a person's ability to convey experience and communicate how this expertise can be used. This, in turn, affects how resources are shared within a network. One approach to building trust in networks is by expanding the stakeholders' overview and understanding of how their individual efforts contribute to the success of a PSS. Karianne Rygh is currently studying how visualising value maps within a network can help build and maintain trust. Together with the PSS 101 partners, she has created the 'Value Pursuit' tool, a game board that can be used in workshops to clarify how stakeholders in a specific PSS can be of value to each other and thereby identify shared goals within the project.

On the 'Value Pursuit' game board, each participant must write down their contributory value and what challenges they face. Their (potential) value is then connected to other partners' challenges. These connections are counted and represented by playing pieces on a second game board (resembling a radar) which visualises how much each partner gains and contributes to a network. For a network to thrive and trust to be maintained between network partners, these playing pieces should be aligned as much as possible. How much people gain from a network has to be balanced against their contributions.

'Value Pursuit' is already being implemented by Zuid Zorg in their care facility concept 'My Own Front Door' to spark discussions among different care professionals. These discussions help clarify how they can assist each other in collectively providing better care for the end user by highlighting the differences in agendas. By providing an overview of what their individual value means for the end service (what they can bring to the table, so to speak), the tool contributes to building trust and sparking motivation in Zuid Zorg's service concept, weaving together the different health care disciplines that previously worked independently and in parallel.

The aim is to develop 'Value Pursuit' further into a dynamic, real-time 'radar' of what exchanges occur within a network, visible to each person operating within it. Although it is important to understand where value creation lies within a network, it is equally important to understand that shifts may occur as people and projects develop. As human nodes in a dynamic network, we can maintain trust between partners by providing them with a common language through visualisations of how their value is paying off and how this value can be implemented in new areas. The key to keeping a network 'alive' and productive is to capture the dynamics of these relations and understand the role each individual plays, thereby increasing the end value of a product service system.

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HOW IT WORKS

In the first circle, participants are asked to place which values they can contribute to the network (values can be experience, expertise, solutions, etc.) They are then asked to write down/place in the next circle what challenges/struggles/obstacles they face in producing PSS in networks. Next, the participants are encouraged to place their contributions on other participants' struggles, showing how they can be of benefit to each other within the network.

These connections are then counted and placed on the 'radar', the second blue game board. Each participant has a large playing piece, which represents the number of potential contributions they have received from other participants. The small playing piece represents how many contributions they have offered to the other participants.

The first game board is meant to collect info about how participants in a network can benefit from each other. The second game board visualises these gains and contributions. The large and small playing pieces should be in balance, where people gain as much as they contribute. The 'radar' is also a good indicator as to whether or not a company should be involved in the network at all. If they are not gaining anything, or perhaps they are not contributing anything, perhaps there is no reason for them to be in the project.

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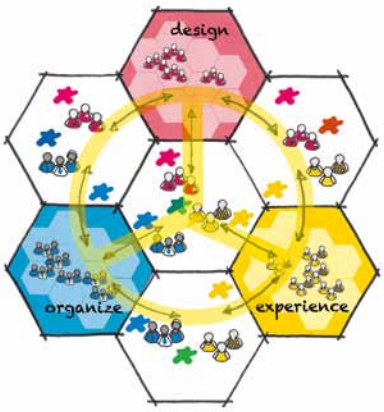
ISSUE #1

CROSSING BOUNDARIES

In CRISP#1 magazine Lilian Henze explained how boundary objects can be used to support collaboration. She described a framework to map all the interactions and the people and objects involved. This map clarifies where boundaries may emerge and where tools can be used.



'VALUE' AND COMMON GOALS CAN HAVE DIFFERENT MEANINGS FOR DIFFERENT STAKEHOLDERS

CRISP DESIGN REVIEW SESSION 4

Sharing knowledge, findings and experiences within the CRISP network twice a year.

Twice a year, in April and October, CRISP organises Design Review Sessions (DRS), where some 150 participants attend plenary presentations and parallel discussions and listen to one or two guest speakers. April 2013 marked the halfway point for CRISP.

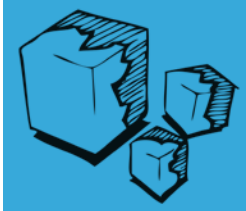
During this review session, the first issue of the CRISP magazine was handed out to Marjan Hammersma (Director General Culture and Media at the Ministry of Education, Culture and Science).

Feedback of the International Scientific Advisory Board to the project leaders and researchers was to collaborate more between the eight projects to complement each other's research fields.

The following pages give overview of the eight CRISP projects.

CASD

Foundational project



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Using the strategic role of design to strengthen the competitive position of Product Service Systems and industrial design providers.

Competitive Advantage through Strategic Design (CASD) is about achieving effective strategic design thinking that enhances the competitive position of Product Service Systems and industrial design providers. Product Service Systems (PSS) can help companies achieve competitive advantage. To realise effective PSS, companies should integrate design thinking in their innovation process. Design thinking is characterised as a creative, user-centred and vision based approach—rather than being technology or marketing driven. Design thinking becomes strategic if it is adopted in the fuzzy front end of innovation where opportunities are identified and ideas are generated, or when it informs strategic decision making at later stages. Strategic design thinking can help firms to realise (a portfolio of) PSS combinations that are recognisable, legitimate and coherent for customers.

PROJECT PARTNERS

FABRIQUE · Design Academy Eindhoven · FLEX/the INNOVATIONLAB · KLM · npk design · STUDIO DUMBAR · océ · PHILIPS sense and simplicity · scope · SKYTEAM · KVD REFRAMING · TU Delft · zeeno · Universiteit van Amsterdam

20
PSS... HOW?!

ISSUE #1
THINKING BEYOND THE BOX

ISSUE #1
INTRODUCING DESIGNERS TO THE BOARD

ISSUE #1
CLIMBING UP THE VALUE CHAIN

G-MOTIV

Foundational project

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Designing motivation. Changing human behaviour using game-elements. Achieving lasting change is difficult; people are often poorly motivated to change their behaviour.

Designing Motivation—Changing Human Behaviour Using Game-Elements (G-MOTIV) is about researching and applying new approaches to behavioural change based on motivation by using game elements. We will conduct research on the motivational effect of game elements in changing behaviour. Our multidisciplinary team of scientists and designers will work on developing intelligent PSS prototypes in the fields of health care and human resources, resulting in structural behavioural change. Achieving lasting change is difficult; people are often poorly motivated to change their status quo! In the domains of healthcare and human resources, this resistance leads to large financial costs for society and reorganisation costs for companies. Currently, people are 'helped' to change using therapy, training and coaching, however these often only result in short-term effects.

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GREY BUT MOBILE

Test bed project

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Improving care-related mobility services for the elderly supporting them to live independently and stay social connected.

Enhanced Care Service through Improved Mobility for Elderly People (Grey But Mobile) is about improving care-related mobility services for the elderly supporting independent living and social connectivity. Importantly, the quantitative and qualitative effects of these proposed services have to contribute to the improved health of the elderly as well as to the economic efficiency of care.

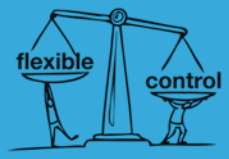
Today, elderly live in their homes longer, predominantly because of improved home care. For reasons of efficiency and costs, this is considered a good development, but it has a downside too. Elderly often live alone and solitude is regarded to be a main cause of health problems. Keeping elderly socially connected and involved, requires them to remain mobile. However, current mobility solutions do not cater specifically for this group.

PROJECT PARTNERS

connexxion · design academy eindhoven · DIVACO · INDES · People Creating Value · Roessingh Research and Development · zorggroep Tellens · tmz · TU/e Technische Universiteit Eindhoven University of Technology · UNIVERSITEIT TWENTE. · WAAIJENBERG · zuidzorg Vertrouwd Dichtbij · stichting vrienden van de thuiszorg

GRIP

Foundational project



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When designing a PSS, designers try to find a balance between flexibility and control to create effective and socially responsible value for users and other stakeholders.

GRIP is about how designers achieve a balance between flexibility and control when designing PSS, leading to the creation of effective and socially responsible value for users and other stakeholders.

When designing from a system perspective, the creative control of design is structurally lower than in product design. The designers have to deal with complex, dynamic environments and need to negotiate decisions with a range of stakeholders. The PSS development process is less formalised and is characterised by a high level of co-creation and co-production. This raises questions like how tight should the designer's grip on the processes and outcomes of design be, when working together with end-users and other partners in PSS development?

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I-PE

Test bed project

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Intelligent Play Environments are those in which a playful persuasion approach encourages social and physical play, which in turn can contribute to well-being. Such environments may counter part of the trend that children are not physically active and risk obesity and isolation.

The Intelligent Play Environments project (i-PE) is about the development of an 'inspirational test bed' to develop fundamental knowledge, insights and guidelines for the design of intelligent, playful environments. This design research includes playful persuasion, emergent behaviour and interaction opportunities that stimulate social and physical play of various user groups. The project examines how an environment should be designed to sense players' behaviour and create appealing play opportunities. Furthermore, a tool is under development to measure the user experience. The interaction opportunities are designed in an open-ended manner to encourage players to interpret the possibilities in their own manner and improvise during play. Also, a decentralised approach has been taken to examine whether we can design a play environment that adjusts to changes in the play context, such as number of players and, or the configuration of play objects.

PSS concepts will be used as vehicles of research, further developing our design philosophy for social and active play. Different play designs have been developed which support various forms of play, for example fantasy play and social and physical play. Furthermore, the design approach has been applied to other application domains, such as way-finding in an amusement park or a hospital.

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PSS 101

Foundational project

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This project is developing a framework of tools, techniques and methods that improves concep-tualisation and communication between all those involved in designing PSS, across industries.

Methods for Conceptualising Product Service Networks (PSS 101) is about developing a framework of methods, techniques and tools that improves conceptualisation and communication between all those involved in design and development, across industries.

Products are no longer just products, Services not only services. Take Océ; once they used to sell printers and now they 'support document management across different departments.' Exact, well known for its Financial and Administrative software, now produces business service systems for SMEs, enabling them to integrally support and manage their business, including relationship management. This type of thinking requires new design and development structures, moving people out of their traditional compart-ments, meeting the needs of an often diverse and evolving group of end-users. Product Service Systems (PSS) are designed in highly dynamic network environments, mixing people and parties, models, interests and goals.

PROJECT PARTNERS

connect innovate · Design Academy Eindhoven · = exact And it all comes together. · océ · ..STBY... · zuid zorg Vertrouwd Dichtbij · TU Delft

ISSUE #1
CROSSING BOUNDARIES

ISSUE #1
LOW-HANGING FRUIT

SELEMCA

Test bed project

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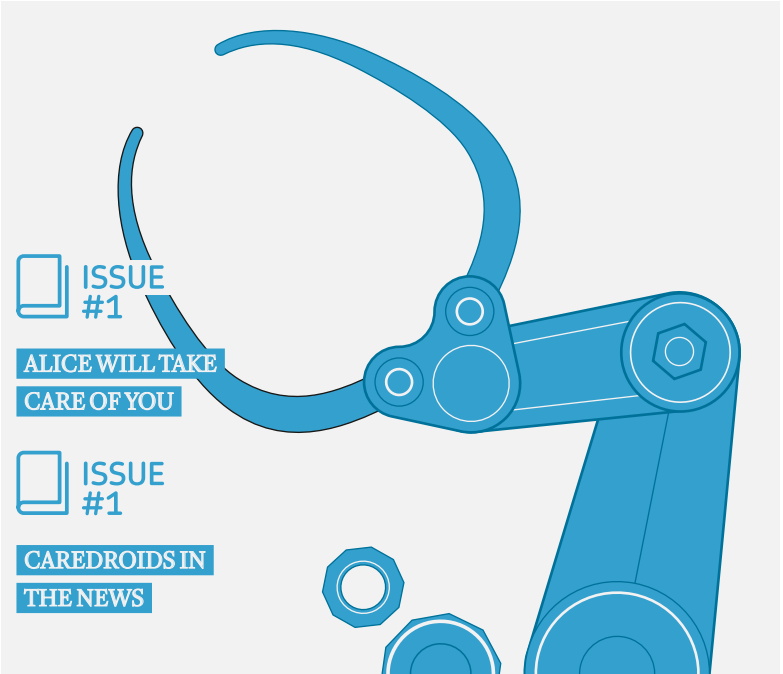
Humanising care-droids using creative technological solutions to supplement and replace existing care-services.

Services of Electro-mechanical Care Agencies (SELEMCA) is about establishing a trans-disciplinary design theory of human-android interaction by investigating the human affective system, emotion regulation, and creativity.
The increasing demand for care services for the elderly and those with mental health disorders cannot be solved by productivity improvements alone. Many of this group are hospitalised or residents of care centres and nursing homes. This target group requires intensive care-giving, administrative care, as well as physical, cognitive and psychological support. A new approach is the use of creative technological solutions to supplement and replace existing care-services. These solutions include agents, robots, ambient and virtual worlds; mechanotronic robots that we call Caredroids—PSS systems that create a better fit between carer and patient. Services of Electro-mechanical Care Agencies (SELEMCA) envisage 3 types of Caredroids, each providing a different service: medical questionnaire and form filling help; matchmaker between carer and patient; and lastly, a robot care deliverer, for example for exercise, medicine coaching and virtual therapy.

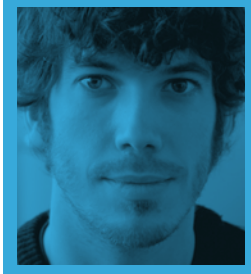
PROJECT PARTNERS

waag society · germansmedia · IC3D MEDIA · LBi · UNIVERSITEIT TWENTE. · VU UNIVERSITY AMSTERDAM · TU Delft



STS

Test bed project



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An inspirational test bed enables textile developers to understand the multi-disciplinary opportunities and challenges of creating Smart Textile Product Service Systems.

Designing and Selling 'Soft Product'—'Valuable Service' systems (Smart Textile Services) is about the development of successful methods, platforms, guiding principles and the business models required to understand the multi-disciplinary opportunities and challenges of creating Smart Textile Product Service Systems.
Innovation in the form of the combination of soft materials with high technology has led to the development of so-called Smart Textiles. These are of strategic importance for the European textile industry to sustain their competitive edge and to counter threats from low-labour cost producers. Smart Textiles can conduct light, heat or currents; i.e. the textile becomes an interactive product and can now become part of larger product service systems (PSS). This opens up a vast field of opportunities for textile developers and product and service designers to combine their disciplines in the application areas of well being and life style.
To develop these complex PSS solutions, manufacturers need to move away from their current fragmented, slow or non-existent knowledge exchange methods and team up with relevant partners. Initial investment in this field has led to the design and development of an inspirational test-bed, called 'Wearable Senses' at TU/e.

PROJECT PARTNERS

Stichting Contactgroep Textiel
TextielMuseum TextielLab
Design Academy Eindhoven
waag society
Metatronics
De Wever
MODINT
SAXION Hogescholen
TUDelft
TU/e
UNIT040
V2_

ISSUE #1

MAKING OPPORTUNITIES TANGIBLE

ISSUE #1

KNITTING THINGS TOGETHER

GOVERNANCE

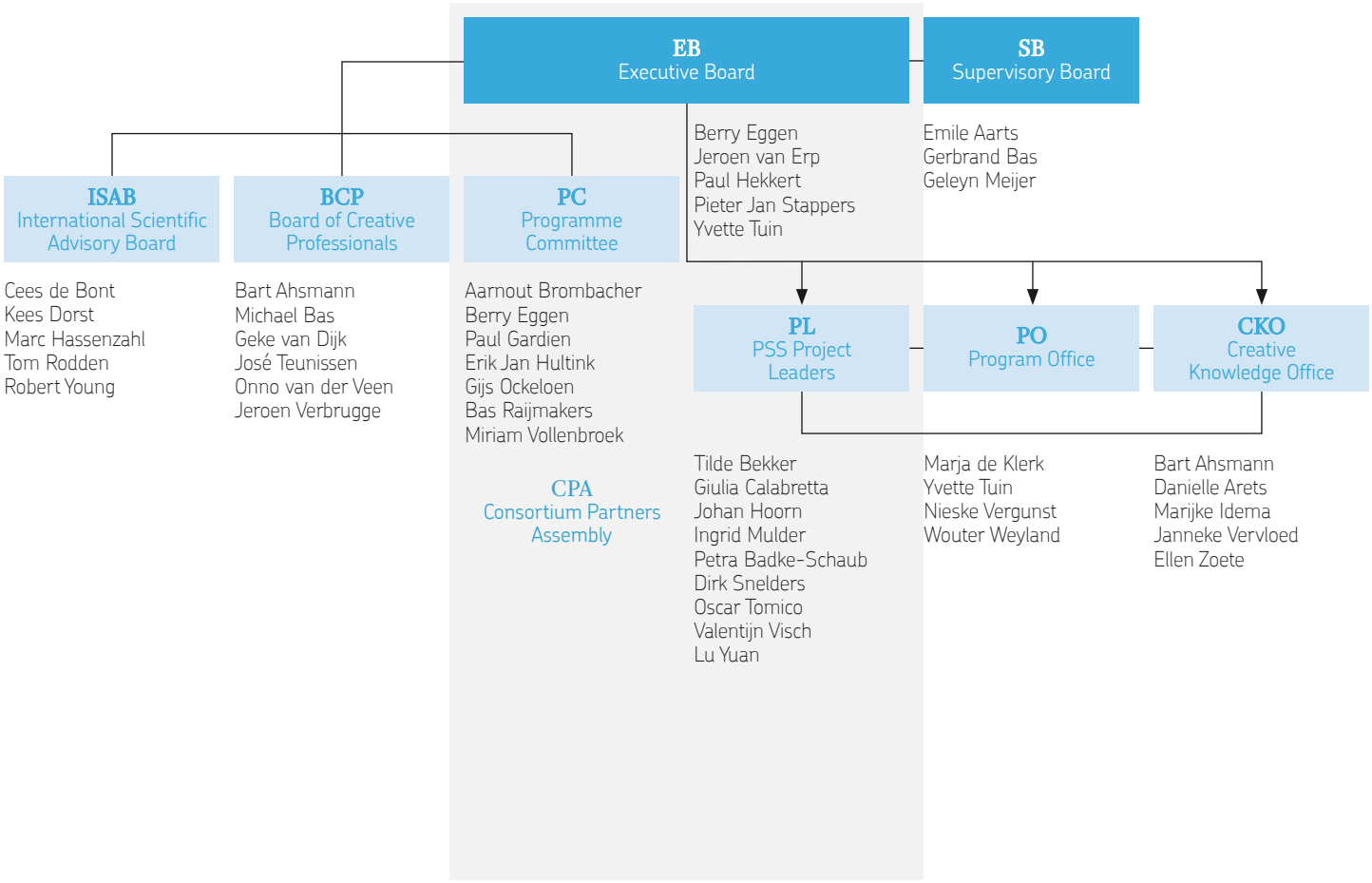
For an effective and efficient governance structure, CRISP implemented functions as:

Responsibilities and liabilities for monitoring, financial, programmatic and operational management; Decision making among involved organisations; Internal and external review mechanisms, evaluation and monitoring. With the requirements of:
— Flexibility in execution
— Giving the creative industry influence on results and interaction
— Clear access point for main external stakeholders

This has been realised by a governance structure as shown, with the bodies:

Executive Board for operational management of the programme
Supervisory Board for strategic decision-making
Programme Office for operational support
Creative Knowledge Office for knowledge dissemination and programme communication
Program Committee for evaluation of the projects' results

International Scientific Advisory Board for engaging and retrieving feedback of leading scientific representatives
Board of Creative Professionals for engaging and retrieving feedback of leading creative industry representatives
Eight PSS projects with their respective project leaders, responsible for the actual research and the **Consortium Parties Assembly** as a community for all participants, anchored in a Consortium Agreement.



GENERAL INFO

CRISP

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Ministry of Education, Culture and Science

NWO
Netherlands Organisation for Scientific Research
Chemical & Physical Sciences Division

COVER STORY

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The next issue is expected in April 2014. If you are interested in contributing, please feel free to send a message to: c.s.h.delille@tudelft.nl

EXTERNAL LINKS

THE CREATIVE INDUSTRY ONLINE

The Topteam
top-sectoren.nl/creatieveindustrie/topteam

Dutch Creative Council
creative-council.nl

Federation Dutch Creative Industries
dutchcreativeindustries.com

CLICK NL
clicknl.nl

The New Institute
thenewinstitute.nl

The Creative Industries Fund NL
stimuleringsfonds.nl/en

Design United
designunited.nl

COLOPHON

Crisp #2
Value Matters

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