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Cumulus Working Papers

COLLE DI VAL D'ELSA

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About the PDF Version

This digital version of Cumulus Working Papers is identical to the paper version with two main exceptions: blank pages have been removed and the resolution of images has been optimized for download purposes.

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Preface

Impact of Design on European Societies and Economies

The Cumulus Conference in Colle Val d´Elsa, Siena, Italy was successful in a number of ways. We were surrounded by the best what Italy can offer: history, culture, a friendly atmosphere, excellent food, good wine and what best, fine people.

The venue of the conference was a Shakespearian theatre "Teatro dei Varii" in a city presenting mastery in Italian architecture built on a slowly bending hilltop in beautiful Tuscany landscape. The unique location provided an excellent context for the discussions: how tradition and future can meet in an innovative way.

Michelle Capuani, host of our "Design, Barycentre of Innovation" meeting, had built a good programme: a focused theme with many well prepared presentations. I think this was one of the best Cumulus meetings we ever have had.

The Colle meeting was created to discuss the emerging new roles of design. Michelle Capuani wrote in the programme: "Contemporary world is becoming more and more complex, and we can observe that successful innovations happen when efficient synergies act. European countries are today forced to bring more and more quality to their products and communication, to be visible and competitive in the world wide scenario. The key words to innovate are interaction, multidisciplinary knowledge, technological transfer, etc." Design has an important role in this scenario. "It is a barycentric knowledge for the innovation at different scales: from companies to nations".

New opportunities, new challenges

The questions raised in the conference discussion – how design can play a more visible and active role in developing innovation systems, in supporting local, regional and national development, how the knowledge base of design can be strengthened through research and doctorate education, how to build a closer dialogue with industry, ethics of research and development work, etc. – provide an excellent agenda for future activities in Cumulus.

The development of international economy (globalisation), the saturation of the market economy (the excessive amount of products), the development of the information society (e.g. the fast growth of intelligent technologies and materials) and the tightening of competition have pushed design into an increasing development everywhere. The comprehensive exploitation of design in the trade of businesses brings up many new fields of know-how: design conduct skills, the need of deep understanding for the user, and the control of the communication process.

Design helps companies to create products and services that make their unique know-how visible. Design has a great effect on the experience of users: emotional, cultural and functional experiences. *We design our users' multi sensory experiences.*

Design improves companies and the competitiveness of their operational environment. The recuperative effect of the competitiveness of design grows by its unique capability of creating innovations, visions and *gives a perceptible form to the thoughts* which are created in companies and local development groups with diverse fields of know-how. Design creates synergic innovations.

As the need of design grows, so does the need of developers of design strategy, as well as brand designers and company image designers. Designers

need to understand the needs of companies more clearly than before. As the "intelligence of products and services grows" the need for handiness and intelligibility is increased. The user based idea is highlighted in the product development process and the meaning of creative team work based on diverse field of expertise is growing. *In the design of products, company images and services, there is an increasing question of communication processes.* New fields of know-how, as well as needs, emphasize the demands of expertise. There are truly lots of challenges and opportunities for the educational institutions. This is a good reason for intensified research.

Design gives the materialistic culture a meaning

Industrial art, (art and design) creates and interprets the reality that we live in. The result of works always has a practical function: their task is to make possible a good and mentally rich life to all people, to make our world interesting and help us understand the world we live in.

At a time that so strongly idealizes external beauty, technology and economic values, it is important to emphasize the thoughts that people have which grow from real needs, and to serve these needs. *The challenge is to bend the increasingly technical world to the needs of people* and find a way to strengthen the permanent values. From this way of thought a culture of sustainable competitiveness and prosperous equality can grow.

Design creates a mental atmosphere that we live in, whose poetry and cultural energy *make life and the world meaningful.* The most valuable aim of education is the creation of artistic growth, the understanding of art and the creation of the most important completions of artistic creativity.

Cumulus achievements and coming activities

When listening the lectures and discussions I noticed that Cumulus is really flying high. The Cumulus members and members of the Executive Board have taken many initiatives in developing various activities. What has happened and will happen includes:

- European Ways of Life Exhibition in Paris (Carrousel du Louvre) and in Seoul with excellent catalogues and large number of visitors (thanks to Gerard Vallin, SAD, Esag, Robin Baker and Sasa Mächtig)
- Cumulus Fashion tour in Paris, Milan, London,... (thanks to Andre Cardinali and Anne Puvis)
- conferences in Rotterdam (´01), Stockholm–Helsinki (´01), Paris (´02), Colle di Val d´Elsa (´02), Tallinn (´03), St. Petersburg "West meets East" (´03), Oslo (´04), Copenhagen (´05)...
- Cumulus Culture 2000 Project: Spark! New Design Scenarios for Daily Life in Europe in Finland, Denmark, Estonia, Italy, UK (thanks to Eija Salmi and John Thackara)
- Cumulus Triennale in Copenhagen 2005 (thanks to Gösta Knudsen and DDS), 2008 in ?
- Cumulus Virtual ARCA: Virtual Art, Design and Media Community Arena Online (thanks to Leena Koskinen and Eva-Maria Hakola)
- Design Europe Initiative with BEDA, EIDD and others (to create one voice and one force for design in Europe)
- publication of Cumulus Working Papers and opening of new web-pages (thanks to Eija Salmi)
- new identity to Cumulus (thanks to Sasa Mächtig)
- the mapping initiative collecting data of design education in Europe (thanks to Robin)
- classification of design and creating quantifiable data of the impact of design on European ecenomy and society (thanks to Sasa Mächtig).

The wide interest expressed by European and oversees universities to Cumulus membership is also a mark of success.

I think the listed achievements and the planned activities are a good record. Cumulus has proven its value.

Next step

I look forward to the next Cumulus meeting in Tallinn, Estonia in May 2003 to discuss the idea of an inclusive and barrier free society: how to shape a society which is built on humanistic values and aims at creating a better everyday life for all of us.

Thanks

I would also like to thank Robin Baker and Sasa Mächtig for leading the two days in Colle in an effective way and in good spirit.

Eija Salmi and her team (Hanna Karkku and Jaana Lantto) deserve our best thanks for giving professional assistance to Michele Capuani in building the Colle meeting.

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Design, Barycentre of Innovation

Introduction

The relationships between design, innovation, manufacturing and marketing have not been adequately explored. Most importantly, design led innovation has not been integrated with economic development activities to allow small manufacturing enterprises in a region to successfully participate in the global marketplace. This paper describes a cooperative project between government, industry, and educational institutions in Siena, Italy which seeks to accomplish this objective.

Design inside Innovation

We often forget that the practice of design becomes necessary when innovation is required. Design alone has very limited power to improve the lives of people: it can be advanced in research and formally superb, but it is not real design until it is manufactured, distributed, used and appreciated by people. I cannot imagine designing a product without someone else first making an analysis of the market and finding a demand that might generate a business opportunity. To realize an innovation someone is also needed to optimize manufacturing techniques and distribute the product: It is the interaction of Marketing, Design, Engineering, and Sales that brings a design into the hands of the people who will use it. A good interaction between these four disciplines produces a successful design.

In the practice of design, the management of different kinds of knowledge and the formal representation and resolution of this complexity seems essential to successful innovation. The primary benefit that design brings to the process of innovation is the *comprehension* and *interpretation* of knowledge. Design is a tool for transferring and integrating knowledge (a very humanistic activity). Designers understand the needs of potential users and translate this information into forms that can be manufactured. They also understand the technologies available to make a product and can select among them to facilitate an appropriate result. Design is an activity of coordination and synthesis. Invention is not necessarily involved. Products are successful and appreciated because they both have a sense of style and make sense to the user. They look better, do something better, are safer, easier to use or cost less then what existed. Very often they are a mix of different qualities. A product that has a sense and makes sense is a product that justifies its existence on the earth. A no-sense product is just a waste. Design gives sense to products by using creativity to create innovative forms and services.

In the past, designers have not always seen their role in the process of innovation. Technical knowledge, mainly engineering and physics, are commonly understood to be the key actors in industrial innovation. Top managers – the best potential clients for designers – often misunderstand the role of design. Some years ago, a friend of mine was invited to give a lecture at Harvard business school on Italian design. To open his talk he asked the managers in the room what their understanding was of Italian design. They answered Ferrari and Armani. They, along with most consumers, identify design with style – with form not substance – not with real innovation.

Thus, the perception of design is very far from its real essence. Designers have many responsabilities for this misunderstanding. They tend to focus their discussion of the role and mission of design in terms of the traditional disciplines of Architecture, Art and Design, considering them to be comprehensive regarding the knowledge necessary for design education and practice. They have always preferred to keep theoretical discussions inside the design disciplines and interactions with other actors involved in innovation have been rare. Designers should work to cancel misunderstandings about their role, and provide

more leadership during the process of innovation.

Design, barycentre of Innovation

Design is the appropriate candidate to be the leading discipline in the process of innovation because of its focus on the application of creativity. To explain this concept, I will make a comparison between evolution and design-led industrial innovation. Evolution is the process by which organisms adapt over generations to the environments in which they live. Such a process takes much more time then humans have. Design-led industrial innovation can be understood as a strategy to evolve more quickly through creative thought and action applied to the development of products for human use. Marketing, Design, Technology, and Use are decision making tools in this task, but its ultimate goal is the modification of existing manufactured products or services to better adapt the environment to our needs.

Time is thus one of the big differences between natural evolution and design-led industrial innovation. Humans adopt strategies that produce benefits during their own life and more and more these have shorter and shorter cycles. For example during the stone age the timing of innovations was more like natural evolution: at first the wheel evolved very slowly over many generations from a single round stone, to one with wooden spokes, then steel followed by rubber treads. While today, innovations in the materials, design and manufacture of modern high speed tire come very rapidly.

Human evolution has been succesful because our brain gives us the capacity to conceive and adopt products and behaviors that are different from those we have experienced. Men and women do not act only according to their experience, but also by imagining what innovation would improve or replace that experience with something better or different. Often exploratory research and risk taking is involved. For example we know a fire can burn and hurt us, but we take a controlled risk because we see its benefit.

A creative act is a strategy to explore objects and behaviours that may not be legitimised by prior experience. The practice of applied creativity is crucial to innovation just as innovation is crucial to quick evolutionary improvement in the environment and human life. Humans have always had the capacity to discontinue acquired behaviors and discard faulty objects; designers can help them create new and better ones.

Design complexity

Traditionally, design has been concerned with the creation of products. The design of simple objects made with simple technologies results in products of low complexity. Products of high complexity requiring consideration of ergonomics, control, conditions of manufacture, special material handling, etc typically are produced when advanced technologies are used. A spoon is an example of a low complexity product, a car of a high complexity product.

In the last 20 years, much more attention is given to products of higher complexity in which specialized knowledge must be fused to achieve understanding of what ids involved. Even the practices of trading have evolved into complex marketing activities involving analysis of the cultural, macroeconomic, social and commercial situation and everyone today understands that is impossible to plan a product without a marketing strategy.

The reason for this important change in level of complexity is very simple – the world around us is becoming more and more complex and it is very difficult to take a succesful decision without a wider point of view. The management of complexity is a role that many disciplines share, especially economics and engineering. The level of complexity in a specific case depends on its circumstances, but the rise of global markets has made it very difficult for small businesses to participate.

In order to address this problem, it is necessary for design to become more *strategic*. "Strategic Design" is a new discipline alongside marketing that subsumes product design and development but is concerned with the broader context and what is needed to operate successfully there. A business and the system in which the business operates both require a forward looking design strategy.

This is because, given a higher level of complexity, it is very important today to design the services that consumers really need. Physical products should be produced only if the service that they give is really wanted and effective, yet this is often difficult to understand evaluate or support. In order to design "useful, usable and delightful products" (John Thackara, Doors of Perception, 2000) a higher point of view is necessary from the perspective of each business or business system.

Strategic design of territorial systems

Only rarely can single companies and research centers compete in the global marketplace. More often "territorial systems" consisting of companies, universities, financial institutions and governments are successful: an example is the Italian industrial district.

If not supported by public funds, the costs of research and technology transfer for industrial applications are not substainable by single small companies. For a long time, big multinational companies such as GE have concentrated research activities inside their organization to create the synergies they need. These organizations are vertical and concentrated on product development. Only rarely do big companies develop a horizontal organisation to employ independent research groups. In either case, when management sees a business opportunity in a research project the process of industrial development is launched.

The Italian system provides a good alternative to such big industrial concentrations: Italian industrial districts are based on the system of "subfornitura" which enables them to produce at low costs with great flexibility. The organization of these districts is based on a "local network of knowledge": every actor in the net has a good level of knowledge in a specific field and the sum of their specialized knowledge can produce a product competitive in the global market. The local network of knowledge helps individual industries to be competitive and generate high quality design products using a low level of technology – small investments produce big results.

This organisation has been studied and applied in many regions of the world, where the passage from an artesan economic system to the global market must be managed. In Italy, this is the cultural and economic background in which design has developed.

It is not an accident that Italian design has a level of excellence in areas where the complexity of products is low: furniture, fashion, houseware, luxury products. In fields of more complex products (electronics, computers, telecommunications) italian design and Italian industries are less well developed.

The relation with the world of research is the main problem with the existing economic organization of the Italian industrial district. Access to sophisticated technologies is very limited because there is no system to encourage, educate for and support such access. The products of the local network of specialized knowledge are competitive, but they are not able to establish a permanent advantage because they can be easily imitated and therefore, must be continuously renewed. Small and medium size enterprises can develop short term projects of very good design; they cannot finance long term research and developement with high technological contents.

To be competitive in the global market it is necessary to conduct excellent research in areas where several products can be generated based on the same research and strategic design.

Siena Innovation System

The local government of the city of Siena (Tuscany, Italy) has created an opportunity to address the problems described.

The local system of enterprise is made of Small Manufacturing Enterprises (SME) and the local government understands the need to help them create innovative products. The capacity to innovate will be one of most important strengths of this region in Europe: the government that can educate and support innovation in their territory will probably create a better future to their populations. In the past, designers were mainly consulting with private companies to elevate the quality of their products

and services. In the near future, Design Institutions will serve as interlocutors to European, National and Regional Governments as they develop strategies to help industrial districts compete in the global village. Only strongly synergistic actions will be successful, and design is the creative discipline that can co-ordinate knowledge from other disciplines to produce positive innovation. Design will become the discipline leading the innovation process only if it will be able to incorporate the other disciplines in a fluent process.

Analysis and design method in IED experience Case 1: Centro Canario de Diseno Integrado

The demand for design as a tool to support territorial developement has been visible for about 15 years: It comes from countries with a low knowledge in design and it is addressed to countries with a well known tradition. It is about poor industrial districts and small enterprises. It deals with artisan technology and culture. Some significant experiences in this context have been developed inside IED.

Analysis and design method in IED experience Case 2: Via Design

More recently, the awareness of the potential interest in the artisan based industrial district has extended to more industrial countries in Europe. As a consequence, methodology and actions are addressed to a more competitive environment, where the technology and market are established and efficient. The Siena Innovation Strategy is a good example in this direction.

Siena Innovation Strategy (SIS): aims & tasks

The promoters of SIS (local government, unions of enterprises, associations) aim to support the local industry in innovation, being strongly convinced that quantity and quality of work can be elevated only through innovation oriented actions.

Italian enterprises, particurarly small and medium ones, do not have resources and concentration to develope innovation for their products and services. SIS is the implement to support local enterprises in achieving information, data banking, transferring technologies, developing products. To develop such an ambitious program, the understanding of the real demand of innovation and design is indispensable.

SIS audit method

The audit is targeted to the main manufacturing enterprises on the territory, the consulting company, educational institutions, associations, employment agencies.

The main topics of questionnaire are:
– main markets and technologies
– how product and visual design are managed inside the company
– significant innovations in the last 10 years
– insourcing and outsourcing in the design process
– upgrade of internal resources
– demand of internal/external designers
– motivation to innovate
– expectations for the future.

The local manufacture enterprises have been analysed in 4 clusters:
– crystal houseware
– caravans
– furniture
– stone.

Siena 2002: state of the art in design 1

The analysis of the audit information has generated four (4) main conceptual ideas on the state of design:

Local companies are oriented to manufacturing. Their culture is focused on technology and the industrial process: 99% of income comes from manufactured products, more than 30% is supplying for competitors. 69% build molds, design and builds industrial equipment, develop industrial production lines.

Innovation is perceived as a cost, not an opportunity: Only 1 of 20 companies has allocated funds for Research and Development in their budget. Only 15% have a separate office for R&D. Most outsource (47%), many have a technical office that makes also design (36%).

Siena 2002: state of the art in design 2

Design is considered an additional tool, mainly formal: 45% makes some concept design (mainly with external consultants). Only 15% make product design. Only 2% make 3D design work.

There is no investment in Human Resources for Innovation: 47% outsources to local consultants (62%, rest of the world 38%), mainly to reduce permanent internal costs.

Siena 2002: state of the art in design 3

In the entire Siena region 700 people are employed in innovation, including all different professions: from product design to visual communication, from modelling to prototyping, form CAD drawing to mold construction, etc.

At least 40 people should be recruited every year only to cover the local demand. About 50% of companies are searching for skilled people to employ. Product designer, CAD operator, pattern maker are the positions most in demand.

SIS vision

The level of interactions between local enterprises and institutions is very low, there is no knowledge sharing, no industrial coproduction. Know how in process and technology is not sufficient anymore to have succesful products in the global market. Research, Developement, Technology transfer are too expensive for small companies. Enterprises are too far from the world of research and technology, local university is too far from enterprises. SIS will plan, support and drive network projects between local actors and worldwide partners. SIS will support (through education, information and design services) the development of competences in product *development*, with a special focus on design *and innovation*. SIS will consult enterprises in financing innovation, creating relations to pubblic founds or venture capitals. SIS will support and coordinate a new fow of interactions between enterprise and universities, in cooperation with a new Pole of the University of Siena to be located in Colle.

SIS output

Services
- information – about opportunities, technologies, competitors, financing
- education – for continuing and advanced programs
- Strategic design – to explore opportunies, drive the synergies
- product developement – to consult and assist the companies in the design process.

Competences
- environ – to support strategies of compatible development
- materials – to support the use of new materials and transfer technologies
- safety – to make products safer for final users.

Expectations and summary

SIS long term goal is strategic for the territory of Siena. We expect this region of Italy to become a place strongly oriented to innovation, an ancient landscape living toghether with hi-tech enterprises, research institutions, universities. This will happen without any conflict with the environment and tourism: Tuscany must preserve its landscape and art that are wealth of humanity.

In the short term, SIS will generate some projects both in education and services. We want to support projects in wich enterprises can have an immediate feedback benefit. I trust in territorial strategies of innovation as a shared competitive factor in global markets: to make this vision permanent, it is necessary to make benefits visible for all the actors.

“Optotechnologies for Safety” is a good example of the projects we wish to support.

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Situating Innovation in Design Theory, Education and Practice

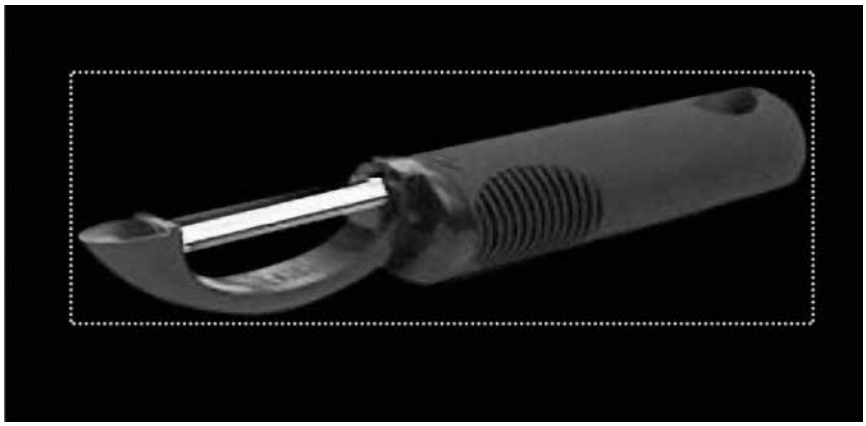
Innovation vs invention

Innovation, the introduction of something new, depends on the situation in which it occurs. Yet design theory, education and practice typically value invention, the creation of something revolutionary, over innovation without considering the disruptive nature of invention or fully appreciating the power of improvements that innovation can provide. While both invention and innovation involve creative change and may produce extraordinary economic and social value, an invention usually makes greater demands on circumstances and infrastructure, often destabilizing existing patterns and forcing costly and disruptive change over long periods. For example, the gyroscopically stabilized Segway™ Human Transporter is a completely novel invention that can carry a person anywhere a person can walk at up to 12.5 mph. It is neither a cycle nor a car and poses problems as to where its use will be permitted. In a hospital? In a shopping mall? Environmentally friendly and easy to use it is now slowly being introduced into commercial markets (postal workers, security, etc.) but may never be broadly used.

Innovation, on the other hand, is less disruptive and more quickly assimilated. OXO Good Grip house wares simply introduced an innovative handle designed to allow a more comfortable grip for a greater range of users of conventional kitchen implements. The improvement was immediately recognized, understood and adopted by a great number of people without disruption to marketing, manufacturing or distribution infrastructures, becoming highly profitable and helping to establish the new field of "universal design".

Although it is sometimes hard to distinguish invention and innovation, differentiation should be made on the basis of the user experience – not on new technology or infrastructure. On this basis, the cell phone is an innovation, not an invention, because its novel technology and infrastructure is not self-evident in the user experience.

Invention
www.segway.com



Innovation
www.oxo.com

1. Invention and innovation.

Situating innovation

Design theory, education and practice have placed too much emphasis on invention while also viewing the "design problem" as the context in which innovation matters rather than the situation in which it will be experienced. Although a situation is occasionally studied to uncover problems and opportunities, more often a "design problem" is established through imperatives outside the user experience (such as a decline in market share) or through the perceptions, desires, or assumptions of those involved in product development (client, manufacturer, designer, focus group). The search for a "design solution" addresses the stated problem rather than the circumstances and experience that will be changed by the innovation. As a consequence innovation (and invention) often lacks objectivity, effectiveness and an evolutionary perspective.

To address these failures in creative emphasis and problem setting, the circumstances in which an innovation will be experienced must become the primary focus for design theory, education and practice. Improvement in the circumstances of concern and the products and services involved must be emphasized over formal novelty and even the functional and sensable improvement of objects. Moreover, because circumstances are constantly changing, efforts to innovate must be continuous. A more timely, interactive and adaptive approach to innovation is required, one characterized by continuous creative response to changing circumstances.

The problem in achieving this new perspective for design theory, education and practice is in understanding how to apprehend, inform and support continuous innovation in collaborative, highly interactive, knowledge based environments that are not specific to a particular design problem. Although design research is beginning to focus on situated thinking[1] and the strategies that designers use[2] this research has not focused on the nature of innovation, its continuity, or effects. A broader, more reflective approach to the improvement of human circumstances is needed than is afforded by simply looking at what we do, or improving a known service or product type.

The development and upgrading of monitoring systems, networked customer services and open source software offer valuable models to consider. Monitoring systems such as those that track the well-being of patients and children and the flow of information and supplies allow needs to be identified as they arise; networked customer services allow agents to quickly acquire information needed to address a problem as it is being described; and open source software (such as Linux) allows users to constantly improve it as a shared resource. Design innovation is not thought of, taught or delivered in anything approaching such timely and responsive ways. As a consequence design and manufacturing are not fulfilling their potential to improve the human condition. How then should design theory, education and practice change to facilitate more responsive, timely and effective innovation?

Situating innovation in design theory

The goal of innovation should be to seek improvement, well-being and delight – not just change for its own sake. To facilitate continuous innovation, design theory must explain how designers and their colleagues can grasp what is needed in a situation, how they can understand what is involved, and how they might respond in timely ways. In this regard, innovation requires constant "attention" to what is going on in a situation in order to discover what might be improved. Attention itself involves noticing a need or opportunity, "seeing" problems and potentials, and grasping what is involved. Brain scans have recently validated the cognitive reality of "arousal" "orientation" and "focus" as aspects of "attention"[3]. Such cognitive activities are not explicitly supported by design theory, tools or techniques. Yet design "intentions", "proposals" and "goals" arise and are ultimately realized through the management of attention and information regarding a situation.

—

1 Gero 1998.

2 Cross 2001.

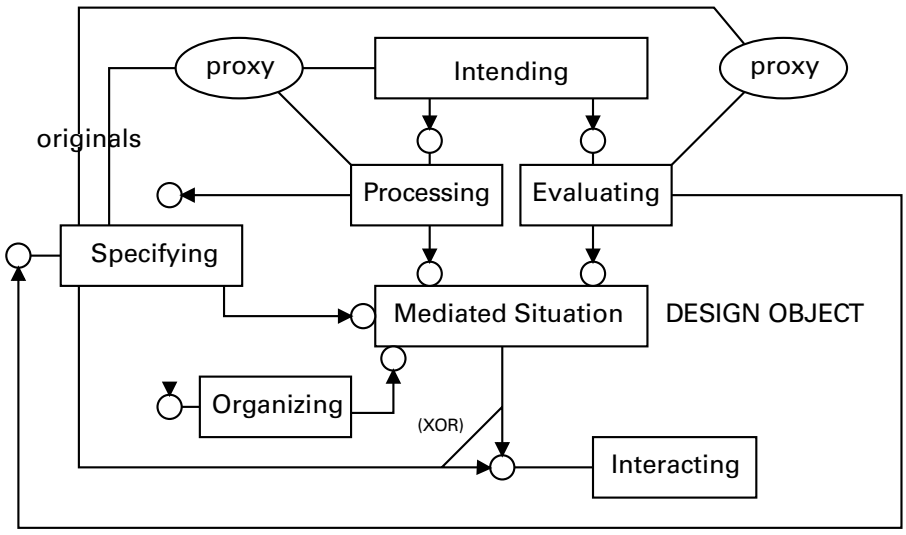
3 Carter 1998, p. 305.

Design intention and knowledge must be related to a situation to determine what innovation is needed there. At issue are: what is attended to in a situation, what references to prior knowledge occur and what interpretations and actions result. Although case based reasoning has addressed such issues[4] design theory has been largely silent regarding them.

In his conception of "intentional stance", "design stance" and "physical stance", the philosopher Daniel Dennett[5] has provided some useful ideas; an "intentional stance" is assumed regarding what innovation in a situation is about; a "design stance" is assumed by considering possibilities for innovation in the situation, and an "empirical stance" is assumed to evaluate the effect of the potential innovation in the situation. The designer's frame of mind (desires, meanings, assumptions, perceptions, capacities, goals, and relevant knowledge) regarding the design task is their "Intentional stance", their mind set regarding what to do and expect is their "Design stance" and their appreciation of properties of the situation is their "Empirical stance". Each stance is different in its objective and thus in the ways a designer acts regarding it. Their "Intentional stance" is declarative and directive and concerned with comparing the existing situation to what might be desirable. Their "Design stance" is prescriptive and procedural and concerned with potential changes based on what is known to be relevant to the situation. Their "Empirical stance" is experiential and evaluative regarding whether the change in the situation is worthwhile. A theory of innovation through design can be built on this intentional source-path-goal schema.[6]

Thus, attention to a situation, purposeful representations regarding it, and relevant knowledge are fundamental to grasping the potentials for worthwhile innovation within any situation. Innovation should arise from close monitoring and mediation of a situation and be informed by relevant knowledge. The issues lie in how these operations are managed to assure open, responsive, creative and ongoing innovation. In this regard the following model of design thinking describes the interaction of different modes of thought with the mediated situation which is the focus for design innovation.

Each mode operates as an agent with particular goals, behaviors and responsibilities regarding that aspect of the focal situation with which it is concerned. Note that the Intending component is responsible for managing other components and all contribute to mediating the situation (the object of design). The knowledge in dynamic memory[7] manifested through the Integrating mode of thought, is constantly being called from the mediated situation even as it is being specified or re-specified (adapted) through processing and evaluation (see figure 2).



2. UML diagram.

4 Kolodner 1993.
5 Dennett 1996.
6 Burnette 2002.
7 Schank 1999.

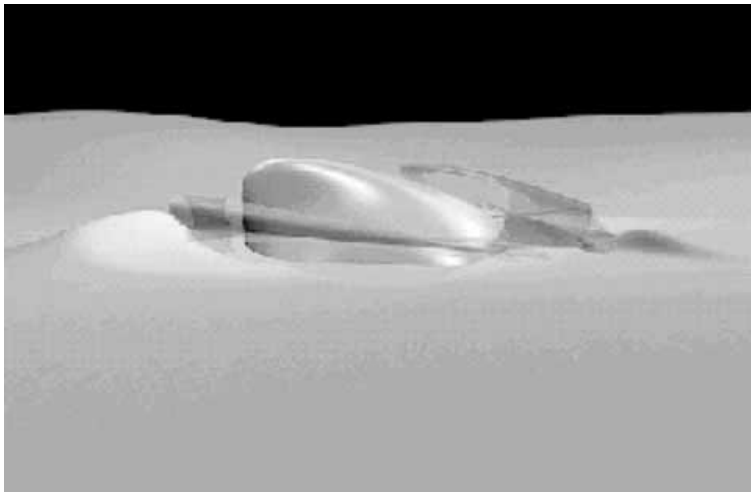
This model of situated design thinking (diagrammed in UML – the unified modeling language for software development) describes a collaborative component framework[8] involving seven agencies capable of supporting distributed computation with input from many sources. Although beyond the scope of this paper, this theory and model have been elaborated elsewhere[9]. The important point here is that theoretical tools are emerging with the capacity to dynamically model design innovation in a situated context.

Situating innovation in design education

Generally speaking, in design education problems have been presented out of the context in which they arise, invention has been emphasized over innovation, sustainable design has focused more on reusable materials than adaptive improvement, universal design has addressed shared norms rather than personal satisfaction and usability has concentrated more on interfaces than experiences. The dynamic management of change to improve a situation has also not been addressed in design education. If students are to be taught to address changing contexts in more innovative and pragmatic ways, emphasis should shift to "live" information sources, collaboration with users and reflective "problem setting"[10] as exemplified by the Netherlands Design Institute's project Presence: New Media for Older People[11].

Similarly, innovation in nature is adaptive, modifying existing organisms to better suit their environments, and the mechanisms by which form is generated in nature are becoming understood even at the genetic level[12]. Design education should be about innovation within an environment and the generation of form and function appropriate to the needs found there. This is already happening in architecture and urban design where forms are being modeled in response to the flow of energy and people (see figure 3).

Although the natural morphing of forms under environmental pressures[13] have provided inspiration to students for years, the principles and forces that could determine form in an experienced situation are not considered in industrial design education. Energy is taught by type and technology (electrical, gas, hydro, etc.) not in terms of need, forms of response, or effective outcomes. Although any form making process can be described in terms of force, material and constraint (hammered bowl = tool /metal/mold;



3. Ambient Amplifiers, Ocean North.

8 Kobryn 2000.
9 Burnette 1994; 2001; 2002.
10 Schön 1983, p. 18.
11 Hofmeester and de Charon de Saint Germain, eds. 2000.
12 Coen 1999.
13 Thompson 1959.

4. Faltazi.

etc.), the physical generation of form is taught from a crafts and technology perspective rather than in terms of the resources and operational constraints relevant to a situation. Fortunately, sustainable design education requires only that continuous improvement, principles for generating appropriate forms in context, and responsive and responsible innovation be added to the consideration of ecologically and humanly sound objectives, renewable resources, appropriate technology, clean, safe manufacturing and use, optimal performance and life cycle design to provide a coherent basis for teaching situated innovation.

To support education in innovation, situated concerns, live information, responsive modeling, on-line collaborative tools, interactive processes, experience design, and case based reasoning must become integral to design studio activity. Graduate work should increasingly focus on developing comprehensive, interactive, monitoring, modeling, simulation, and assessment tools[14].

Situating innovation in design practice

Changes in theory and education should support changes in practice. These changes should include closer monitoring of situations to uncover opportunities for innovation, better communication with users and resources to enable quicker, more effective innovation and closer attention to product performance and use to improve knowledge and the value of innovations. As Schön noted[15] "A reflective practitioner must be attentive to patterns of phenomena, skilled at describing what he observes, inclined to put forward bold and sometimes radically simplified models of experience, and ingenious in devising tests of them compatible with the constraints of an action setting." A statement completely consistent with the views in this paper.

While opportunities for innovation arise naturally at the beginning and end of a product life cycle, during product development and replacement, they also arise during normal use, routine maintenance, and moments of economic, technical or cultural failure when needs and desires are no longer being satisfied. Even such enlightened statements as "Customer needs should be expressed in what the product has to do not in terms of how the product might be implemented"[16] should be extended to include continuous monitoring, preliminary explorations and simulations of potential implementations and impacts in situations of interest.

New relationships between designers and users are already changing the nature of innovation in design practice. For example Faltazi[17] in France and Elephant Design[18] in Japan encourage users to make their needs known by suggesting new products and product improvements that are given marketable form, visibility and promotion by the designers. Through such direct engagement with people, designers can become creative knowledge workers that promote innovation to industry.

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14 Burnette 1999.
15 Schön 1987, p. 322.
16 Ulrich and Eppinger 1995, p. 51.
17 Faltazi.
18 Devereux 2002.

Conclusion

Innovation should be understood, taught and practiced as a process of continuous monitoring, interactive exploration and adaptive change in experienced situations. This does not preclude extending to mass markets innovations that arise in a particular situation, nor does it preclude creative inventions that entirely restructure the context of an experience. Rather, it recognizes that change in any situation is constant and the response of the designer must be continuous, creative and dynamic regarding how to introduce improvements to it.

Beauty and meaning will always remain in the eyes and understandings of the creator and user and be shaped by their intentions, skill and prior experience. Innovation will simply be more constant, opportunistic and evolutionary. To support such continuous innovation, design theory must become more biological in nature, design education must become more involved with managing change, and design practice must become more broadly engaged with actual circumstances and resources. Reflective computational modeling, simulation, communication, and knowledge management systems will be essential. But more importantly, the constant search for opportunities to innovate must be at the center of every designer's attention.

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Design and Situated Collective Learning – The Italian Experience

1 Introduction

The transformation of firm organization, structure, location, and of the social and cognitive models of actors, linked to the *fordist* production paradigm, pinpoint the need to understand the role played by design activities in the reconfiguration of *the product-service system*[1] within the Italian design system. In fact the Italian case is an example of a particular national innovation system in which exists an unusual relationship between the social, cultural and economic organisation of its Local Production Systems (LPS) – especially in its typical socio-geographical configuration, the Industrial Disticts[2] – and the design processes which take place within territorial context as emerged from a great field study, the National Research Project funded by Italian Research and University Ministry entitled *Italian Design System: the role of industrial design for product innovation. Development of design resources of the System-Italy between local resources and global market* /'98–00[3].

In this national context some particular phenomena were recognized by the research investigation:
– the role of socio-productive *milieu*[4]
– a collective process of value co-production based upon design driven innovation[5], an emergent model of innovation based on widespread, expanding design activities with a great support of not formalised actors and of tacit knowledge integration.

The fundamental catalyst of this particular kind of innovation – a *design driven* recombination of the production system – is the unusual process of translating local knowledge and expertise, both in its tacit and explicit forms, into structures and actions linked to design activities, through a process of social interaction between the significant actors of territorial contexts involved in specific types of social *forums*[6].

This particular knowledge creation process generates an evolving, *situated* path for production systems (design oriented), therefore *de facto* constituting a *learning-by-doing* situation, localised in time and space.

The initial point of view of my argumentation considers knowledge[7], and its design related activation and translation process, as a fundamental enabler for constructing a competitive economic system based on the knowledge of local actors[8].

In fact, even though the potential of the Italian economic system's production is comparable to that obtainable through a *fordist* production method, it is mainly made up of small and medium sized firm

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1 The product-system is a combination of concrete elements (a business' institutional communication, its advertisement, its products, its sale locations, the charcteristics of its offices and factories, etc.) and intangible elements (brand perception, interpersonal relationships with service providers, product status, sharing of value, etc.) which require the continued interaction between producer (performer) and client (user) for the co-production of value. Normann and Ramirez 1995.

2 Becattini and Rullani 1993; Brusco 1997; Becattini 1998; Becattini 2000; Quadro Curzio and Fortis 2000.

3 This research was awarded with Compasso D'Oro Prize in 2001.

4 Maffei and Simonelli 2002.

5 Simonelli et alii 2002.

6 Strauss 1978; Wigren 1998.

7 Rullani says that economic value, within advanced capitalist production methods, was born from "…the use of information, understood as either the subjective (tacit or explicit) expertise of the actors, or the useful relationships which are inscribed objectively within a context or a code…" Rullani 1998, p. 121.

8 Porter 1990.

communities whose history and organisation allow them to activate and develop – based on the wealth of their relationships and relative contextual resources – an ensemble of *distinctive expertise* which forms the base of their competitive advantage [9].

This structural and organisational model is also of particular interest to the typical systematic business configurations based on territorial production (i.e. LPS) which, having a strong background of distinct cultural, territorial and social knowledge, have been able to supply goods and services based on *learning-by-doing* innovation model, but selected and developed by a *learning-by-using* dynamics.

2 Situated actions, situated learning, territorial learning

The theory of *situated action* [10] explains how execution of the action strongly depends on its material and social circumstances.

Based on this theory, the significance attributable to the action can be simultaneously developed in both the physical and social worlds, i.e. in a shared cognitive environment with common rules, which is also a physical environment, organised and transformed around artefact systems and the actions which produce and reproduce them. The Italian case – if we try to use the approach suggested by this theory – describes the existence of localised learning, based on group learning – the *community of practice* learning [11], strongly connected by common actions and joint enterprises, mutual engagement, shared repertoire – which is transformed into collective learning (in LPS) through a process of social and communicative interaction.

At first, collective learning is channelled through the system of interpersonal relationships, which is made stronger through the materialisation of social/cultural structures and practices and of productive artefacts and structures (*product-systems* and business systems). This process defines what I consider the *context*.

This type of learning, therefore, becomes a binding element (i.e. it selects a series of potential action opportunities) and also an *enabler* (i.e. it activates the relationships between relevant actors and the action opportunities present therein). The *context* of learning within the example case considered – i.e. Italian LPS with a strong design attitude – almost always coincides with a defined physical *location*, a distinctive sets of resources and skills and with precise cognitive approaches. In fact, the existence of a fundamental space for learning [12] emerges more and more from the intersection of these two plans.

This statement it is also fundamental for the construction of another stronghold for the discussion: that of an industrial district's *identity*.

For this reason we believe that the actions of design within the productive and social/cultural system of an LPS should be analysed as the result of an action which is being continuously redefined, based on the changes induced by collective learning processes of the previously defined context.

The social actors who represent the propelling strength of design actions in design oriented LPS (in their tacit or explicit forms) are also those who are somehow involved in the learning process, *spread* across the territory, which occurs through territorial entrepreneurial actions, by key social, economical and institutional agents. In this way, these agents initiate the process of *learning by interacting* [13] that leads to the situated collective learning mentioned in the paper's title.

From this point of view, therefore, we could describe design activities as the enablers of the integration of territorial, cognitive and action elements of context and of the system of interaction between the context's significant agents.

Essentially, one can translate this point using a model, which views the process of *learning by interacting* as the starting point for developing various *potential*

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9 Becattini 1998.

10 Born from social sciences and, in particular, from a branch of anthropology called ethnomethodology. Garfinkel 1967; Suchman 1987.

11 Wenger 1998.

12 Wigren 1998; Wenger 1998; Wenger, McDermott and Snyder 2002.

13 Lave and Wenger 1991.

innovation paths (including the one anlyzed, driven by design), as a result of a negotiated interaction process between significant actors, linked with the *situated-frame* binding system[14].

In this way, the model we recommend overtakes the simple *learning by doing* model. Local knowledge production processes are tied indissolubly to the social frame's configuration processes. That is why we refer the *historical stock* of expertise, deposited in knowledge and in territorial interaction processes, to the basic relationship system that ensures the transfer and reproduction of languages and codes (even formal ones), which are essential for transferring and disseminating knowledge.

3 The Italian Local Productive Systems (LPS): an example of situated collective learning

Becattini suggests[15] that the Italian productive system is historically characterised by the *competitive advantage* of its industrial production system. This is based on territorial systems of SME, which are particularly strong in so called *light* manufacturing sectors (such as textiles, clothing, footwear, real estate, tiles, etc.) or in niches of instrumental goods (such as machinery tools, packaging machinery, etc.). By analysing these advantages, he concludes that they reveal a common logic, based on technological and merchandise peculiarities, which unites the above-mentioned types of consumer goods.

The Italian solution to the innovation problem is generally represented by a particular configuration of the economic/productive system, which joins the extensive offer of product-systems with the training and development of particular product and project expertise (*dispersed* within historically deposited practices).

The catalyst element of this system is the attention to the needs (including niche needs) of the final users of the goods paid by particular communities of practice (entrepreneurs, designers, technicians…) that becomes the key point for defining an innovation strategy within the communities of local SME.

This defines the process of *reification* of the product-systems, who are the carriers of local innovation clusters. This feeds the cultural and social interaction processes, which are mediated both by the artefacts themselves and by the actions and processes employed in their production. The final result is a production and circulation circuit relative to design project, production, distribution and communication knowledge, expressed in their *explicit* and *tacit* forms[16].

The first hypothesis, based on a theory by Becattini, is the existence of a selective demand matrix, confronted with strong local expertise[17] .

This type of innovation in characterised by neither *technology push* nor *market pull* dynamics. Instead, it demonstrates a great understanding of new expected user profiles and of the product-systems which achieve them.

For this reason, we can confirm that the characteristic Italian feature, relative to the interaction between a business and its reference environment (i.e. its final user, the market), is the fact that *territory* (a productive system's common social and cognitive space) binds and configures cooperative production processes for new knowledge. It expresses the demand for a good/service, and at the same time configures the instruments and processes which satisfy that demand, based on history and on experience.

Italian LPSs with strong design components represent a valid example of the efficient realisation of tacit and explicit knowledge-conversion mechanisms[18] within the types of organisations described by Nonaka and Takeuchi[19].

The types of expertise they display are *pragmatic* rather than abstract. In other words, they are directed towards defining the conditions and situations relative to the *possibility of action*[20]. Knowledge,

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14 Lave and Wenger 1991.
15 Becattini and Rullani 1993; Becattini 1998; Porter 1990; Piore and Sabel 1995.
16 Polanyi 1967; Nonaka and Takeuchi 1995.
17 Historically selected by learning processes.
18 Polanyi 1967.
19 Nonaka and Takeuchi 1995; Reinmoller 1999.
20 Suchman 1987.

therefore, is increased through both cumulative and *recombining* dynamics, i.e. by integrating the processes of interaction between the actors involved. The ability of the LPS businesses to act efficiently is, therefore, based on an activation process involving all four phases of the spiral which, according to Nonaka and Takeuchi, describes the process for creating new knowledge through the interaction of internal and external actors.

These innovation dynamics are born of the concept of *embededness*, i.e. from interpreting human activities as the inextricable result of their relationship with social and cultural contexts. Therefore, the only way to study this type of innovation is to study the location (either physical or social) in which it is developed: in this case, the LPS.

One must, therefore, study the *context setting*. The best way to do this is with an ethnographical approach, which takes account of a complex and structured network of social relationships.

4 Research on Sistema Design Italia: as an example of situated, collective learning within LPS

We share Becattini and Rullani's idea that the deciding factors for determining an LPS's development opportunities are linked to processes of production, circulation, transformation and knowledge-use.

As Sebastiano Brusco [21] states, there are two types of knowledge that interact within Italian LPS: coded knowledge, which forms and exchanges itself within language and within scientific and technical domains, and local knowledge, built on practice and on experience. However, I'm not interested in building two abstract definitions. The focus of my interest is in the relationship structures which turn knowledge into explicit knowledge, in a concrete dimension of historical development.

It isn't clear, in fact, how one can generate a *linear* model for social/economic development from either of the two knowledge types defined above. The reason for the success of some LPSs can, therefore, be found in their historical relationships with actors, institutions, languages and resources which, by bringing themselves in line with various universal knowledge and development policies, have determined their specific characteristics.

This means that an LPS's main *functional* characteristic is that of *integrating* the two forms of knowledge production described above.

The study of design, as an element that recombines and structures the interaction between the two forms of knowledge relative to the role and nature of the internal innovation processes of Italy's economic/productive system, was the exact scope of the national research project *Sistema Design Italia*.

This two-year project has strongly confirmed the particular relation between design action and Italian social, cultural and economic organisation.

The research project's particular standpoint was a bottom up investigation strategy, based on the analysis of Italian design through case studies regarding product/business-systems in significant territorial contexts.

Through its four main phases, the research project has devised an original thought process: it has determined a wide-ranged view of the relationship between social/productive systems, configured around a territorial basis, and the Sistema Design Italia (SDI) with all its characteristics and its complex cultural configuration. These phases were organised as follows:

- a collective discussion of the method's premises and of the research project's investigation methods and instruments
- a consolidation of the research project's conceptual and operational structure, creating the basis for identifying and efficiently carrying out case studies;
- a preliminary analysis of the principal territorial systems, within which the case studies were conducted
- a summary socio-economic analysis by area/sector, highlighting their particular characteristics and evolutionary dynamics

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21 Brusco 1997.

– a focused analysis of the more relevant industrial design aspects: for territorial research, the analysis of a series of relevant territorial characteristics (business systems, key products, production processes and their articulation, articulation of project activities, etc.); for sector research, the nature of theartefacts under scrutiny, their composition, the main production processes and their articulation, the articulation of project activities, etc.
– a survey of clear design activities (design houses and associations, schools, cultural centres, museums, editorial activities, etc.)
– a selection and subsequent carrying out of significant case studies through a original, purpose-made research format, prepared by the research network.

In this way, an abundance of information and examples of concrete design resource-uses had been assembled. It was the first attempt to create a conceptual and analytical analysis of Italian design and of the phenomena linked with it; the research was trying to understand the relationship mechanisms between design actions and local productive systems.

The variety of the case studies examined (nearly 90) has highlighted a clear and common feature: there exists a strict correlation between design activities and culture and the LPS's production activities and culture.

This statement signifies that the culture of design practice is strongly linked of different territorial practices and experiences, which demonstrate the constant presence of the collective, situated learning method I defined before as *learning by interacting.*

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National Study on Design Education

The Project on Future Objectives, Needs and Demands in Design Education

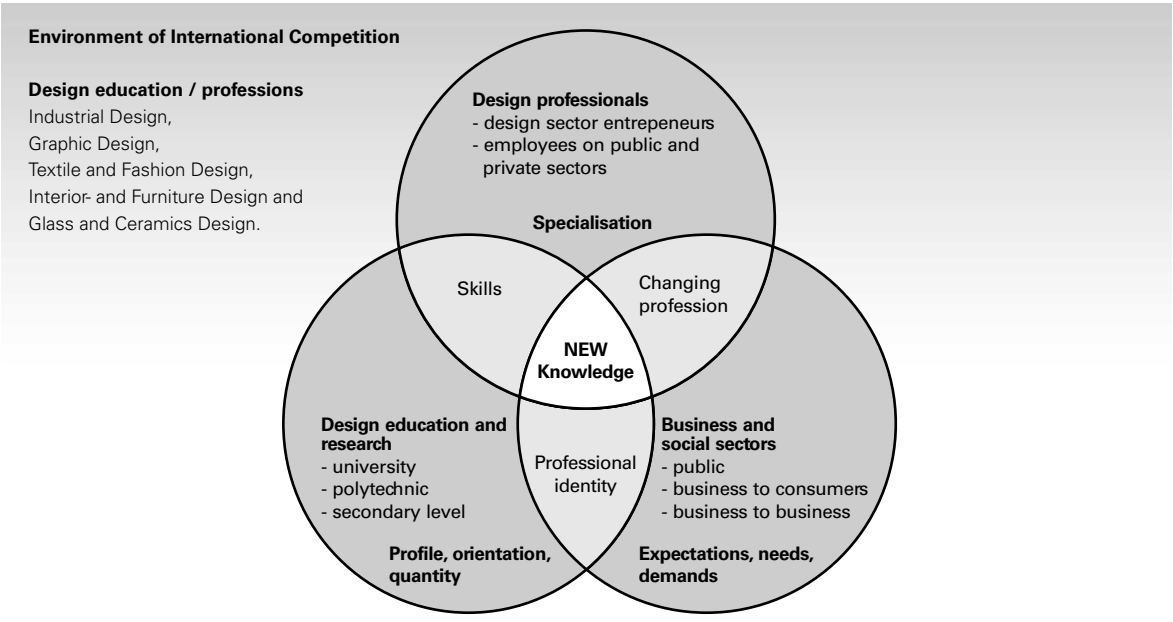
The study is financed by The Ministry of Education in Finland and the European Social Fund.

The executive team of the National Study on Design Education represent the University of Art and Design Helsinki (TaiK), the University of Lapland, the Lahti Polytechnic, the Ministry of Education, the Confederation of Finnish Industry and Employers (TT) and professional designers and design consultancies in Finland. Rector Yrjö Sotamaa (TaiK) is the chair of the executive team.

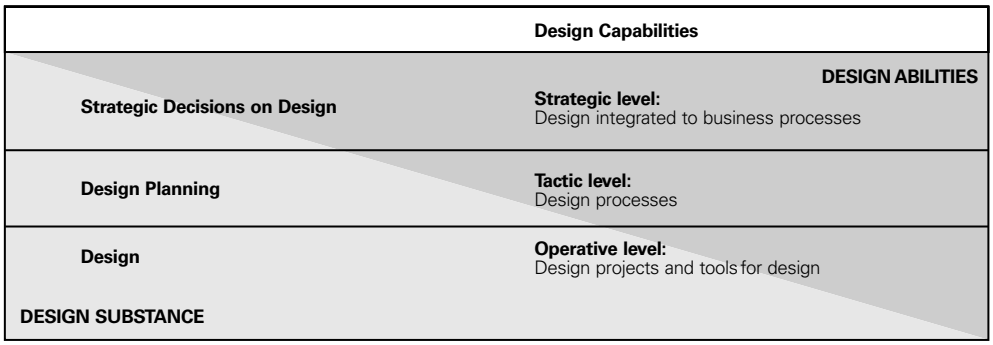
Working team: Researcher Jaana Hytönen, M.A. Industrial Designer, Director Eija Nieminen, Sc.PhD, DESIGNIUM, the New Centre of Innovation in Design, (TaiK).

The world around designers change rapidly; however, designers make their living from that change. The design education and research are the top agenda on international development of design practise. A transformation to a new structure in design servicing business is necessary in Finland. This study is for its part reaction for that demand. It looks forward to the prospects and requirements for future design education. On the other hand, from society's perspective, the focus is the competitiveness of Finnish business life.

The Finnish Government made a decision in principle on Finnish design policy in 2000. The main objective of the *Design 2005!* programme is to produce new knowledge and expertise by promoting co-operation



1. The frame of the National Study on Design Education.



2. The results of the study are classified to capability levels.

between different parties both in Finland and abroad. This study has been one outcome of the programme. The focus is on anticipation of design education future prospects. It is commissioned by The Ministry of Education in Finland from Designium, the Centre of Innovation in Design at the University of Art and Design Helsinki.

The Project on Future Objectives, Needs and Demands in Finnish design education

This national study for design education observes factors affecting future design education in Finland. The primary focus of the first phase of the study is the tertiary education at university and polytechnic levels. The purpose of the project is to draw together the future expectations, objectives and requirements in the design sector and the business community.

The Results of the National Study

The design sector in Finland is in the throes of change. The factors bringing about this change are growing internationalisation; the rapid development of design processes, expertise and research; as well as an increasing demand for design services in Finland.

Design has become one of the key factors for internationally and globally operating Finnish industry. The profound changes in the operative environment and the increasing need for design services in Finland have led to an imbalance between supply and demand. The industry's need for highly educated personnel is placing demands on all sectors of education.

Work placement is good at all levels of design education; however, it's weakest in some secondary-level study lines. Graduates with a university degree in design are easiest employed. Their work placement opportunities have developed well in spite of the slow economic growth. The next economic upturn is likely to lead to a lack of university-educated designers; this concerns mainly the sectors of industrial and graphic design.

The gap between designers' competence and the requirements of working life will widen unless the quality of education is improved. Employers expect standards to increase in all areas and levels of education, in addition with the growing need of tactic and strategic level capabilities in design. The education should produce designers who are both experts and comprehensive designers.

The Confederation of Finnish Industry and Employers has observed that the need for university graduates with a Doctor's degree will increase in the industry. Against this background, design research should be developed, both in qualitative and quantitative terms. This development would be most effective if carried out in co-operation with the industry, design universities and polytechnics and other tertiary

education and research institutions both in Finland and abroad.

What next?

During the project it has become clear that design education and research in, say, the United States and Europe are developing along much the same lines as in Finland. The purpose of the second phase is to participate the international discussion on the of design education and research and to the co-operation for future development of design education vis à vis its objectives, needs and demands, in order to have a place at the internationally frontline of design education development.

The second phase of the project looks at the subject of design education from the international perspective. The goal of this sub-project is to compare notes about the quality and content of design education and research programmes at top-notch universities from different orientations: from a scientific-technological orientation, from an architect-based tradition and from an artistic tradition. The aim is to produce a qualitative section for the National Study on Design Education in the future.

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The Contribution of Art in the Development of Design Innovation

It's not a long time ago that when we used the word "Design" we meant the total features, which would shape the form appearance of a product and its function as far as the customers' requirements were concerned. Today, this word indicates the production of items which take us back to the origin and relative ness of the words Art, Technique – Technology, where transformation and innovation are dominating Design, very often because of the ideological elaboration of the times in which Design belongs.

What makes the issue of Design so interesting is the fact that this is not only a financial matter, neither a means of self-expression, but an element containing both of the above plus the concept of culture, civilization and communication of course.

In the last years, the concepts of Psychology and Sociology as well as the intense presence of Art are included in the role of Design. Roberto Pezzeta says, *"a good designer must be partly engineer, psychologist, sociologist, programmer, marketer and communications specialist".* At this moment, I would like to add the phrase *"a good designer, beyond all the above mentioned qualities, should also be an artist or have an artist's soul".* By this way, his work renders Design to a mirror of the contemporary development of the world, while the contribution of Art in it, gives another dimension to the object, which turns to be unique and innovative.

If we look in detail at the area of Design, we will notice that this is registered in different ways, depending on the territory and on the chronological moment. We could tell that Design is the history of transformations, the structure of which consists partly from the Art the culture of each people.

Today, Art, liberated from rules, can be claimed and afforded by everybody. Specifically, in the area of Design, we could even call "Art" that innovative social activity, through which the daily experience becomes aesthetic experience, supported by the technical developments which enlarge the artistic horizon, and by the several contemporary materials that provide with different aesthetic results.

Therefore, the Design in its role, with the presence of Art, promotes the daily routine, becomes a repetition and is liberated by the tyranny of Time, acquiring multiple meanings, able to make it immortal. It is evident that the matching of Art and Design gives a special aesthetic impact on the work, without the creator denying his relationship with reality, at the moment when this impact is extended from the area of Design to the area of Art. Consequently, the creator, with his artistic and "Design" language shows, in any case, that the confines between those two concepts become more and more inconstant. Contemporary Design has not only penetrated our daily life but has become a substantial element of it. On the other hand, as Design is directly connected to Art, it has added new elements in the promotion process of a product, like (a) culture and (b) the definition of the relationship between individual and environment.

The guru of Marketing, Philip Kotler, states in his Marketing Management "bible": as competition intensifies, Design will offer one of the most potent ways to differentiate and position a company's products and services.

According to Kotler, again, Style describes the product's looks and feels to the buyer. Overall, Style has the advantage of creating product distinctiveness that is difficult to copy. Companies like Braun,

Olivetti, Bang & Olufsen have elevated Design to high Art.

By the years, the increased power of the mass media has created dramatic changes in Design, either positive or negative ones. In the positive ones, the active contribution of Art is included in such a way that Design, from an added value, to become the barycenter of innovation. Because Art becomes the motivating force, which is coordinating the knowledge in order that innovation to be produced. Additionally, Art in Design is coming to function in an objective way: to make the individual happy through the space and the objects that are surrounding him, because only then he can be in harmony with himself and his environment. Especially at the moment when Art itself is evolving as a transition of maturity from one stage to the next, or even as internal development of the artist himself, it takes Design from its up to now clearly functional roles and by establishing it as core element of innovation, positions it to aesthetic and collective roles.

We know that Design is fashion, in other words it is Time, and today its minimalism often becomes the added value bringing in the beauty. Besides, whatever is beautiful and gentle is a product of rationale and reflection. Design through science gives the rationale, Art gives the reflection.

Therefore, we could say that fashion in Design, with the contribution of Art, becomes the core of innovation, because all fashions in their times are charming and each of them consists a new effort, more or less successful, for the achievement of the beautiful and the useful and also for the approach to the ideal. In other words, Design is not only and any longer an added value to the products, as very often industry people say, but with the contribution of Art in it, Design consists the knowledge-barycenter of innovation, in different levels and cases, from companies to governments.

On the other hand, there is always the truth that Design is connected to knowledge. Knowledge is connected with the Beautiful. Beautiful is connected with Art. In this inter-connection, during which the object becomes useful and beautiful, Design consists the core of innovation, through the penetration of Art in it. And this happens because Art, with all its connotations of expressivities, sensuality, spirituality, freedom and order, is carrying a tremendous cultural weight. This impact expanded to business also.

Art and aesthetic penetrated the organizations of commerce. The successful image-makers and advertisers adopted the romantic ideals of individualism and freedom. As a result, the space and the utilitarian object became expression and communication of ideas and they covered practical needs also, so that Design, as the core of innovation now becomes the Art of the environment, declaration and communication. Design itself becomes an integrated power which, thanks to its multiple layers of meaning and its archetype nature, is detached by the space and time frame of its creation and becomes ecumenical, belonging to all times. For this reason, the important Design works face the future.

Starting from the principle that "Design today is shaping civilizations and motivates emotions", we should admit the contribution of Art in this process.

So, Art does not run as circle, as it usually does, or Art is not like a circle or a ring any longer, but it develops like a spiral corresponding to the obvious or hidden psychological human needs. But does not anxiety, stress, and the increasing perplexity of the civilized world which we experience on a daily basis, create a torturing condition which pushes us to look for liberation through spirit and soul? Because, as the human being cannot survive with material goods only any longer, he is looking for the balance among desire, dream and reality. The fact is that abstraction, in the work of a contemporary designer, consists his interest in penetrating psychologically the final consumer of the product. In this area, only a cultured artist-designer can enter and is able to produce objects designed not only to cover practical needs but also to cover spiritual needs. He is the one able to penetrate the emotional world of the consumer, in order to understand his unarticulated internal needs.

The role of Art, beyond the added aesthetic value that Art was giving to Design, was including, basically,

the effective communication which could be achieved further to the aspect of utility and aesthetics, also further to the aspect of psychology. This relation among the world, the object and Art would assure the integration between the artist's benefit and all the world's benefit.

The designer, by studying the needs of the consumers and by compromising with them, designs accordingly, depending on the target group. Undoubtedly, an important part of his success is owed to his knowledge of theory of Art.

Because his final customers are not only looking for comfort and elegance but also they desire to cover non evident needs sourcing from their dreams, reflections, traditions, culture, social class etc.

Today, Design has is part of our life which is expanded now not only towards the future but backwards also into an alive past. Here, I would like to point out the role of Universities and Institutes of Design in providing knowledge, which will allow designers to realize all their capabilities. The proper education will give them the possibility to establish Design as the motivating power of innovation, provided that the designers will properly incorporate other knowledge as well, like Art, modern technology, sociology and psychology.

Again, I would like to point out that Design and Art should go together, in any case. And here is the paradox, that in our days, none of those two precedes the other and none of those two can be expressed without the other. Besides, Art is knowledge. Whatever is being created according to the principles of Art, most of the times, it is correct. What is being created out of any principle or rule, most possibly, would be out of harmony. Durer says: *"By rule, no human being would ever be able to create anything, unless he has enriched his spirit with tough studies."*

It is a great responsibility on behalf of the universities to teach the future designers, not only how to create, but how to think and observe also, because the mission of the universities is social also. Therefore, our role as influencing elements through education requires, in addition to the knowledge, also supporting the students, so that they can discover their own personal style.

Taking into consideration the parameters of our times, during which the designer becomes an artist who is directing Art and is acting in order to achieve an objective within the frame of a global society. Through our role, we can support the activity of designers in both the area of business and the area of public organizations. Already being aware of the pressures on the new designers from the side of companies, we should try to cultivate m recognition and respect of the designer's ideologies about their freedom and individualism in Art, so that we make a progress in the unsolved problem of the issue *"the artist-designer in the business world",* at the moment that technology and production must cooperate closely in the area of Design, so that the final product to include those areas inter-connected.

In this point, we will clearly distinguish the specific knowledge of the designer and the specific need of the consumer. Therefore, our role is to convince the companies to allow more freedom to the designer in order that they, in their turn, can touch the broad public and – why not – to cultivate the public's taste. It is worth mentioning Plato's saying in "Cratylos": *"He (the customer) knows better than the artist how to use the object, when this will have been constructed and, from this aspect, as connoisseur of its use, he can be named judge of the object."* I would say that, in the government and state services level, the role of the University Schools of Design is even more important. I consider the presence of cultured *designers-consultants* necessary there, especially now that societies are multicultural and the co-existence can be easier achieved through the innovation, which Art brings into Design.

It would be more proper that governments would realize how necessary is the presence of designers in their tasks, since Art within Design is not a subjective expression, but is part of the society's expectations horizon and the work of the designer is a mission and a responsibility together. Otherwise, the government seems not to be involved in the social needs (very often the financial aspect is very high but the quality and culture aspects are very poor).

It is obvious that only an educated and cultured designer, with knowledge of Art, can create and properly serve the objectives of his country regarding reformation of the society in the frame of which the aesthetic culture will turn to be social dynamics. The properly trained designer has the ability to search for archetypes coming from the depths of his country's history, in order to use them with new means of expression. Only then, the artist-designer is able to create the present itself, giving his work a touch of past through the preservation of those traditional elements, in order to reinforce the memory of a weakened tradition, protecting it from fading out. The designer is forced by the historic sensation to create not only for his own generation, especially in our times when change is an essential condition.

I would like to close my lecture with a phrase of a contemporary designer-artist, Philip Starck: *"I function based on intuition and introspection. Further to the object, my target is to design the "ethical citizen".*

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Studio Care – Universal Design

Background

In the national plan of the Swedish government from 1998, the government includes a plan for the concept of Universal Design, which means that Sweden should be accessible and available to everyone. Within a period of ten years – until the year 2010 Sweden must create a society that works for everyone and that leaves none out. The main idea of the concept of Universal Design is that products, buildings, inside – and outside environments as well as communication including advertisement and internet products and services should be accessible and useful for all people to the greatest extern possible.

Faculty of Art

HDK School of Design and Crafts is an institution within the University of Gothenburg. About 260 students are enrolled at the institution that is located in central Gothenburg. Since 2000 HDK has been a part of a Faculty of Art made up of six different Schools of Art: Music, Film and Photography, Theatre, Opera and Musical, Valand School of Fine Arts and HDK. The co-operation within the faculty is under strong development and gives opportunities for cross disciplinary research within the schools, as well as outside the school boundaries. This makes HDK unique in Scandinavian design and craft education.

The education is divided into a three year bachelors program and a two year masters program. The main idea of the design education at the master's level is that the students from different study areas like graphic, product, industrial or interior design come together around a common theme under the same roof. The masters program has a large focus on cross disciplinary research which makes cross fertilization possible between different specialities. Learning is problem based and is pursued in project form with the help of a mentor. Students work both in groups and individually. The aim is that they will gain deep knowledge in creative processes and the opportunity to form their own personal design speciality. In order to pursue problem based projects we use themes and out of four themes one is called Care.

Studio Care

Studio Care primarily concerns the human living environment. The main objective of the Studio is to promote the design of a social environment that is accessible and available to all. Its corner stone is the well being of the human being and the right of each individual to equality of being and equal rights for all. The studio is concerned with our physical environment, both in terms of concrete objects and physical space along with information and communication.

Typical examples of the scope of the Studio are projects that further the use of design, music and light in promoting better health, projects that concern the planning of urban and public space or projects that concern information dissemination and communication. Work within the Studio can take many and varied directions leading to a wide diversity of final applications. Further examples of this diversity may be projects that, with the human being in focus, develop new techniques and services that may be tailored to and also integrated into the structure of a building or projects that develop anti-bacterial textiles or ecological materials. Such projects may be seen in light of the national directive and plan to make Sweden accessible to all by year 2010.

Care of the human being and her living space are part of our common responsibility in caring for the

environment. In working in Studio Care students are required to take an active roll in following Agenda 21, the action plan for sustainable design and development. Projects may be carried out individually or as group work. The nature of these projects allows for close co-operation with industry, professional bodies and organisations. Seminars, lectures and workshops are an integral part of the Studio.

Studio Care promotes interdisciplinary and research-orientated projects through its comprehensive network of research institutions and specialists working in various professional areas. The Studio co-operates with other faculty departments and outside universities.

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Design: Blueprint or Script? The Historicity of Design

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My subject matter is not the temporality of design. But it has a lot to do with the temporality of design, which as a subject matter is infinite. I would like to begin, therefore, with two quotes, which approach this infinite subject matter from two different angles.

The first quote is by Robert Musil: "*The path of history is not that of a billard ball, which, once set in motion, follows a set trajectory. Rather, it resembles the path of one who wanders about in the streets, gets sidetracked by a shadow here, a group of people there, or by some strange intersection of facades, and finally ends up in a place he neither knows nor ever wanted to reach. The course of world history implies a certain getting lost. The present is always like the last building in a town, which somehow does not quite belong to the townhouses any more."*

With respect to my subject matter this quote is important to me for the following reason: it modifes the claim inherent in the notion of design that a given conception can be attained as a future reality. Yes, design does sometimes claim and prove that the goal-oriented realization of a sketch is possible. But design also claims closeness to life. Intentionally or not, design – like architecture, politics, and education – thus gets close to claiming that life can be planned. Interestingly enough, the virtue of imagination – such as I see it in the design theoretician Musil, among others, and such as I demand it from design students – seems to be getting lost to the same extent as design succeeds in its claim that life can be planned. A simple comparison between the city described by Musil – in which it is actually possible to get lost – and a typical contemporary city mall will suffice to confirm this impression.

The second quote is much shorter. It is from the film 'Minority Report', Spielberg's adaptation of a Philip K. Dick story. A major role is played by Agatha, who is what is called a pre-cog, i.e. someone with the ability to foresee future murders with the highest precision and accuracy of aim. Temporarily liberated from her habitat, Agatha asks the following simple question: *is it now?*

This question, I claim, will not seem completely absurd to someone who is at home in today's version of the present. I believe that this has to do with the fact that the classic pattern of deriving the future from the present has lost in importance. The notion of design has also strongly been shaped by this pattern, by which the possible is derived from the actual. In my high school, a typical math problem would go like this: *"Given XY, what is YZ?"* According to Agatha's question, the present or actual reality is not a given, it is in question. Increasingly, the job of contemporary design includes the task to shape this search, even though design may not be aware of this. Here, too, the situation is similar to that of contemporary architecture, politics, or education.

What I say here is a completely open excursion, a kind of interim report on my thoughts concerning the subject at hand. Maybe it will help open some questions. The similarity between design and education directs my thoughts. But I do not intend to focus on the problem of education itself.

1

In this paper I intend to probe and sketch what the work of designers looks like, if one adds to the paradigm of the blue print (which rhymes with the notion of product) another paradigm of equal importance, namely that of the script (which rhymes

with the notion of program). Let me note here that the term 'blueprint' serves to translate the German term 'Entwurf'. It is meant to invoke the notion of a plan to be realized. I will explore the possible meanings of 'script'. As a preliminary outline of what I mean by these two paradigms I shall provide two initial descriptions.

The paradigm of the blueprint includes all important aspects of the design process in so far as it has to do with the goal-oriented realisation of plans in the form of objects, forms, structures etc. (in Jean Nouvel's words, la représentation exacte d'une volonté). One might think as an example of a park bench, commissioned by some authority according to a certain profile of its function and effect, executed by a designer, then put in place. That means, for example, one should be able to sit and lie on it; the object should be firmly attached; it should not cost more than a certain amount of money; it should fit in with the general picture etc.

The paradigm 'script' includes aspects of the design process in so far as it anticipates behavioral processes of humans in interaction with objects, forms, structures etc. One might think as an example of the same park bench. But the client would not order an object in the strict sense, but rather something like an open script of what might happen in that park. That could mean for example: the bench includes a narrative approach to experiences I might have with it; a precise mediation of the way in which I appropriate its specific features; a number of views I have when I sit or lie on it; a concrete vision of the way the bench will be populated, what kinds of encounter become possible on it etc.

This approximate juxtaposition between the views of 'blueprint' and 'script' hints at further juxtapositions such as:
– factual vs. virtual
– determined vs. open
– plan vs. play
– objects vs. ways of life.

These two paradigms exist. They are common knowledge. The main stage for design as 'script' are commercials, which aim at providing the product with effective connotations of a specific symbolical world and its related experiences. But it is exactly this circumstance which proves time and again that the script is treated as a supplement to the blueprint, and as such is not taken seriously.

2

In order to go one step further, I want to make a digression and go one step back. How can one understand or view design, when the focus shifts from blueprint to script, from product to program? I want to suggest a definition which follows Krippendorf[1] and others: *let design be the pre/construction of meaning.*

Krippendorf's *'axiom for industrial design'* contains both a concept of 'meaning' and a concept of how it is arrived at. This goes far beyond the stage in which the designer determines the object. The axiom goes like this: *"No artifact can survive within a culture – be conceived, produced, distributed, used, maintained, etc. – without being meaningful to those who can move it through its defining process."*

Within my definition, 'meaning' is not necessarily a normative term, but rather the whole range of what an object or an offer of interaction can represent or mean or be worth to me as a user – from what is called the 'primary use' to its enjoyment with all its front and backsides up to the various forms of personal or collective, physical or symbolical appropriation. Whatever people in their behavior and their speech treat as the meaning (or 'significance'), however relative, of an object (in relation to its respective presupposed environment, both physical and symbolical), can also be approached under the broad heading of 'value'.

What is gained thereby? Design would be one of the ways in which meaning is prepared, preconfigured, preconstructed. My definition covers the park bench as well as a newspaper, a film, a board game, a restaurant or one of its entrees. That means:
– Whoever designs such constructs more or less implicitly writes a 'script' of what might happen in the interaction with an object, a text, or an

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1 Krippendorf 1994.

environment. Such a 'script' can be 'written' visually or verbally.
– Designers in this sense provide and prepare images/narratives. The park bench and its daily user thus perform or interpret the narrative as it actually unfolds. In other words, 'design writes itself'. It is the anticipated 'life of the thing', which is later realized to a greater or lesser extent.
– From the beginning, the 'product' is seen as a narrative, as a more or less collective appropriation, as the defining process of the artifact. In this view, there is no important boundary of any kind between what is intended as an object and what is done with it. There is no fundamental distinction between the projection of life and life itself. There is no design in this sense any more. Design dissolves into moments within a process which for want of a better term I call life.

3

Within design as "history" – in other words, the defining process of the artifact – there is the artifact as a narrative, which is a crucial and re-occuring moment of decision. This may include everything that comes to mind when being confronted with a two- or three-dimensional image, a sketch, a model, a commercial thing or an everyday object. I include here above all every discourse of persuasion, which aims to enable the object to follow a trajectory of ever increasing cultural validity: from the sketch and the model up to an omnipresent object, a formative environment, an icon etc.

We see such a narrative at work for example in the way in which a designer tries to persuade and convince the person who ultimately decides (or enables or multiplies or judges etc.). Of course, this narrative does not emerge from nothingness. Often it has already been shaped by the narrative as an overarching strategy as developed by marketing. In other words, it has been shaped by any anticipation of what is believed will be accepted by and will work with the client. In a later stage in the life cycle of a product these discourses are then turned into texts, which the seller will use with the customer: reviews, commercials, recommendations, presentations etc. In all these cases, we could say: "Design narrates itself". Quite often the quality of the narrative is not beyond doubt. Everyone who knows the often vague dialogue of persuasion between the semiotic magician and its client knows what I am talking about.

An even more specific form of this relationship exists between the student and the teacher. When the designers are students and the person to be convinced is a teacher, the sceptical attitude can easily lead to weariness. As a mentor of student projects, I always harbour the intention to let myself be enthusiastically persuaded by the narratives of the designer. But as a critical person more often than not I am at least partially disappointed. At first I reacted to this by telling myself that design as blueprint and design as narrative are two different things altogether. I have come to see this differently now: design means that blueprint and narrative interact in a convincing way.

This is how I have arrived at the thesis which I try to explain and confirm here: not only do designers have to be script writers with respect to the narrative of the designed product. They also must be able to deal with the narratives which accompany the artifact itself.

4

A second digression I would like to make concerns the notion of the computer program. What does script writing in the wider sense of the term have to do with computer programming? We know that both come together in the design of educational tools or other computer games. But I claim – invoking Agatha's question – that the writing of program codes is paradigmatic for design as such.

In order to explain this, I would like to go back to the notion of 'value'. In a program, the programmer will produce in a systematic and goal-oriented way the possibility to assign values within a structured temporality and within predefined areas. Wherever the program is open to influences which the programmer cannot anticipate – and this is the higher 'meaning' of computer programs –, the assigning of values is an 'open' hermeneutics in so far as

definitions are implied and accepted by the program. This is once again the 'defining process' as described by Krippendorf. The field of design in which it becomes crucial is that which deals with mass customization or with the design of configurators.

Here design means the creation of the specific circumstances within which values are assigned. If an appropriate language for this does not exist, it must be created. Any creation of any artifact whatsoever that enters the world with any claim to purpose or meaning, however doubtful, can be described in this way: creation of specific circumstances for the assignment of values. Besides the park bench, examples might include the book, the bomb, the bonbon. In the history of humankind or in the fantasy which the people of today entertain of the people of old, there is hardly one 'product' which eludes this description. (Kubrick's bone in '2001 – A Space Odyssey' condenses this argument into one image.) The application to design serves the purpose to foreground certain features of the work of design. (But, of course, conventional quantitative measurements of value employed in the field of economics are not excluded – to the contrary: behind the bonbon stands the business plan.)

5

To conclude, I want to mention in passing two further crucial terms: virtuality and innovation. From the perspective I have suggested, the virtuality of objects to which, somewhere between 'function' and 'symbol', meaning can be ascribed, is "as old as humankind". What is new are the possibilities to distinguish between validities with technological means. What is new are the metaphors that emerge in this process, both in our minds and in our languages (including the visual language of 3D design).

New in this sense could be:
- the scenario as a serious method of design, in which objects, experiential environments and living spaces are conceptually included
- working on making explicit circumstances which have ceased to be obvious. In other words, working on the relativity of ways of life, views of life etc. This includes the necessity to come up with premises in the sense of norms, and to make them explicit (such as 'What is a human being? What is a human being allowed to do?')

From this an aesthetics of design could be formulated which focusses on the life stories of people, communities, behavioral patterns and things. The search is on for things whose life stories are convergent and compatible with as many other life stories as possible. I call this sustainable design.

These stories and narratives include the story of the rabbit as well as the story of clover. The story of humankind. And as a small aspect, the story of the designer. To profess the historicity of design means to profess the fundamental limitations of our situation in life and of our vision. But also a profession of forms of innovation which deserve this title. That means: a Profession of Imagination.

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Design and Entrepreneurship – An Introduction from a Swedish Perspective

Sweden is making a major investment in design, trying to establish its young designers as leaders of international design. The country hopes these designers will be able to add quality to the field, while stimulating the national economy.

What makes a country want to start such an extensive process before it has any hard evidence that it will be profitable? The answer is clear: for the challenge. To help this process along, I would like to pose a few questions pertaining to design. What is good design? What kind of education will best benefit the development of such design? What values should lead research and development in the field?

I believe good design is simple but not banal, elegant but not tacky; innovative, useful, confident, and valuable rather than cheap. These values are probably very Swedish and need to be complemented by other values in order to be internationally applicable.

The design process is also important. I prefer the kind of process that seems joyful and experimental while also having a scientific base, as well as being respectful of people and the environment. The choices should be well motivated and smart. Product safety and safety in production is essential. Some of the areas we continually need to master and develop are knowledge about our fellow man, knowledge about materials and their characteristics, and the artistic dimension of the refinement process.

In order to promote good aesthetics, we need insightful journalists to write about design and architecture, and we need good exhibitions and design museums to display products that demonstrate these values. Sweden's design tradition should be apparent to any foreigner who visits. The country should also utilize its embassies and consulates to advance the agenda. To establish our ideals internationally, it is important to enter into design discussions in foreign countries.

Some areas are more design-intensive than others. Design is the major part of product development. Function and material are often natural, while color, form and sensitivity to lifestyle changes can be varied and may result in headlines and sales pitches. This is especially true for furniture and clothes. Exposure and store environments are important, but the product itself determines if it will last.

The conditions in the manufacturing industry are different for many reasons. Most importantly, the starting point of this kind of design is often a specific need or function. The choice of material comes later in the process. Here development and innovative design are often the result of teamwork, which demands the coordination of contributions from different people with different skills. To adopt new research results in practice is both a challenge and a source of inspiration.

At our department at the University of Arts, Crafts and Design, we give students the opportunity to develop these kinds of collaborative methods by offering them the chance of working with specialists from varied backgrounds. We are a member of the Stockholm School of Entrepreneurship (SSES), an organization that also includes the Stockholm School of Economics, Karolinska Institute and the Royal Institute of Technology. This collaboration has entered a dynamic stage of development.

Our own school offers students good conditions for working with this kind of cross-disciplinary work

by making a breadth of subject matter available to them. We are trying to intensify the collaboration between different design areas to increase efficiency. In a number of projects, the Design Studio has brought together different fields. These collaborative projects have resulted in a number of exhibitions of a new generation of designers in Stockholm, Tokyo, Paris, and most recently thanks to the Consulate General in New York.

A designer has many different duties – to take initiative, to generate and present ideas, and to create actual designs. These are all necessary specialties. It is helpful to have an artistic nature when working as a catalyst for a project. Artists are sensitive to the changes in society and its conditions. This kind of awareness is essential for driving a project forward.

Just being good is not good enough if Sweden is going to gain a leading position in international design. Swedish designers are showing a great deal of confidence, and that is heartening. And "industrial design" is becoming an established expression. That is a really good start.

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A Presentation of an Entrepreneurial Initiative in the Stockholm Region

Background

The Stockholm School of Entrepreneurship is a joint initiative by the leading universities in Technology (Royal Institute of Technology), Medicine (Karolinska Institute), Economics (Stockholm School of Economics) and Arts (Konstfack) in Stockholm; to promote the Stockholm Region as one of the leading innovative and entrepreneurial hot spots in the world.

The overall purpose of SSES is thus to support the development of Stockholm as an economic region for business creation, through scientific research, academic and practitioner education and business creation activities in close collaboration with the universities, the business community and public agencies. SSES could be seen as a response to the demand for a more active role for institutions of higher education in industrial and social development (the triple helix model).

SSES operates in three areas: education, research and lab activities.

Education

The courses that SSES currently offers to students from the member schools as well as those enrolled in the SSES Practitioner Education are listed in the table 1.

Konstfack is responsible for two courses: Creating Brand Identity and Creating Design. Further information regarding all courses as well as SSES can be found on the web site www.sses.se.

Lab activities

SSES is engaged in Business Lab activities at the three partner schools Royal Institute of Technology (KTH), Stockholm School of Economics (SSE) and Karolinska Institute (KI). The Business Labs are initiatives to help entrepreneurs evolve an initial business idea to a fully fledged business plan and finally into an operational business.

The presence of Business Labs in the entrepreneurial system is important and valuable for refining

Course Name	Course Director	Credits
Creating a Business Opportunity	Terrence Brown	5
Growing Young Firms	Johan Wiklund	5
Creating a Business Plan	Terrence Brown	5
Creating Brand Identity	Björn Thor	5
Creating Intelligence	Sven Hamrefors	5
Finance for Start-Ups	Peter Kelly	5
Creating Design	Björn Thor	5
Science Based Companies	Carl Johan Sundberg/Anna Nilsson	5
Intrapreneurship	Terrence Brown	5
Entrepreneurship in Networks	Mary Walshok	5

Table 1. The courses that SSES currently offers to students from the member schools as well as those enrolled in the SSES Practitioner Education Program.

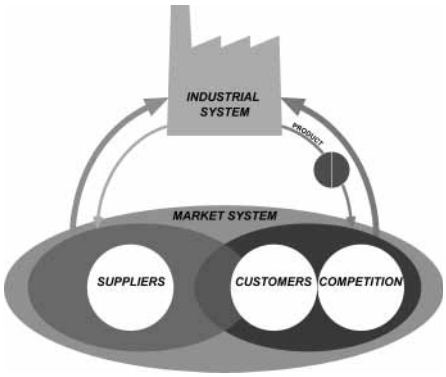


Figure 1.

ideas into viable businesses. At the same time the entrepreneurial system would be nothing without ideas to start with. In order to create a continuous flow in an entrepreneurial system it may be risky to rely only on ideas from within the existing institutions or ideas that occur spontaneously elsewhere. At Konstfack efforts are presently being devoted to creating a structured approach to the idea or concept generating process within a business context. We call our project the "Concept Lab".

Concept Lab

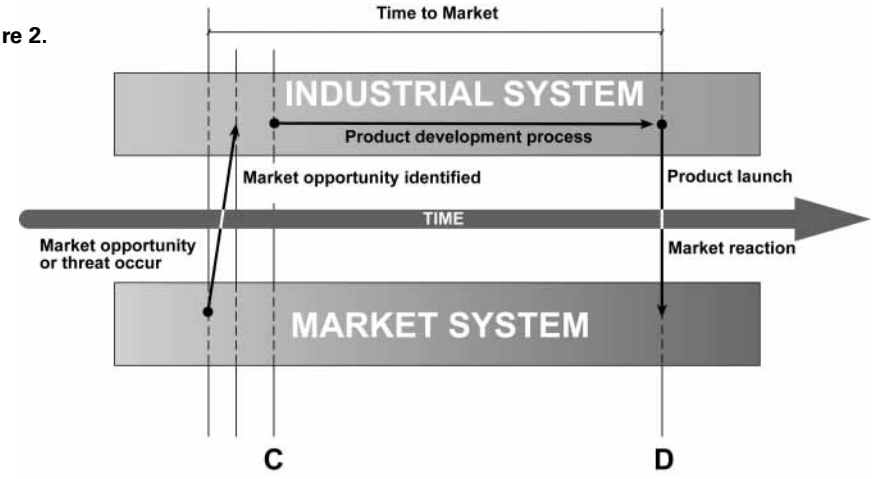
The Concept Lab is based on a three-dimensional model of the business context. The model in turn is based on the assumption that functionaries involved in product development, product planning etc. in an organisation have different perceptions of the business context. Two perspectives are used. One is more business-marketing focused and the other more development oriented. The first perspective, a business-marketing perspective, here called "The value producing loop" is shown in figure 1.

Here the word production is used to emphasise an activity that is constantly repeated.

This perspective shows how recourse flows are exchanged between the two systems, the industrial system and the market system. Industry buys infrastructure from society, capital from investors, knowledge, components, time from employees etc. These recourses are refined in the industrial system and a business proposal is made to the market. The proposal can be a product and/or a service offering. If the business proposal is attractive and gets chosen, recourses flows back to the industry and the loop is closed. If we assume that the business proposal is based on sound economics with margins great enough to cover and enable the industry's spending, the loop may continue for as long as the business proposal stays attractive. The problem is that attractiveness is a context-linked concept and will change over time thus forcing the industrial organisation to improve or develop new business proposals.

This gives us a new perspective on the business context, the "Value Creation Perspective". Here the word Creation is used to emphasise that the activity is unique for every business proposal developed. In the present lean organisational environment development initiatives often come from the market and may be pictured as in figure 2.

Figure 2.



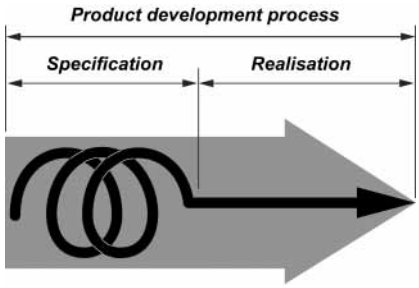


Figure 3.

A market opportunity or threat occurs in the market system. It is detected in the industrial system. After a while a product development project may be started, culminating in a new business proposal to the market. Time to Market is here defined as the time from when the threat/opportunity occurred in the market system until the industrial system has responded with a new business proposal to the market. We can call this system a reactive system. Product development is usually carried out in projects and the state of art is to work in frontloaded projects as in figure 3.

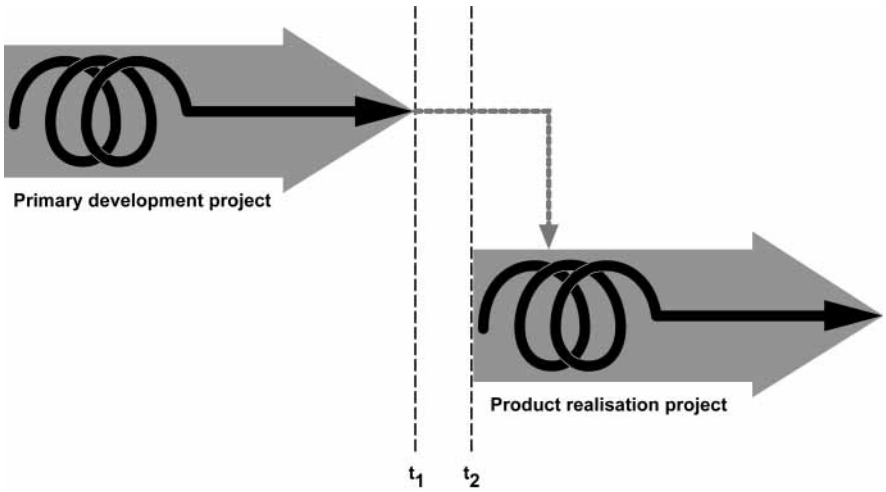
Even with the frontloaded project there are often problems when it comes to achieving all the prerequisites such as delivering on time, to budget and with the correct specifications. One solution to this is to eliminate all uncertainties in the product development project, initiating a so called primary development project. Primary development projects seek to solve and/or verify uncertainties before solutions, methods, processes etc. are specified in a frontloaded product development project at the point where it is transform from its specifications phase to the realisation phase (see figure 3).

This approach results in a sequence such as shown in figure 4.

From an internal revenue perspective it is of interest to make the gap t_1–t_2 as short as possible or even negative. It is most vital though to keep the two types of projects separate, not allowing unfinished primary development projects to say leak into product development projects.

Figure 4 shows the basic sequence for primary development projects and product development projects.

Figure 4.



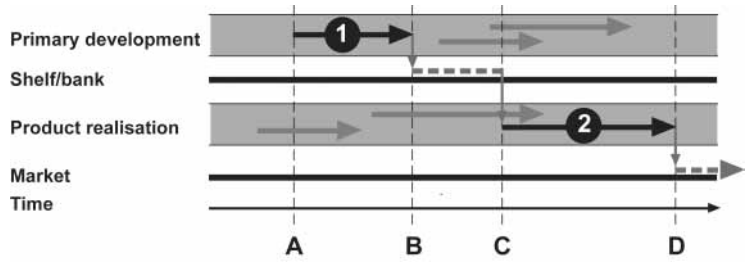


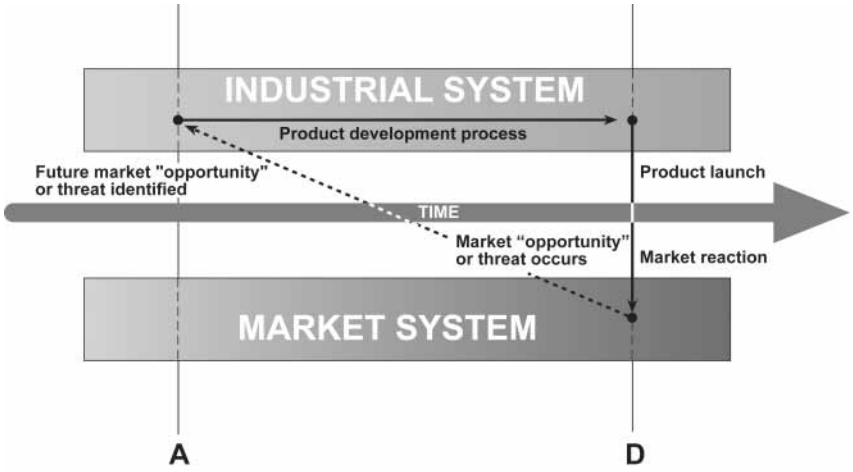
Figure 5.

In reality there are often a number of projects of each type running simultaneously, resulting in a picture such as figure 5.

From figure 5 we can see that even if we are able to shorten the project time the result that we are offering to the market and its attractiveness is still dependent on projects that we loaded into our primary development system much earlier. In the hypothetical case seen in figure 5 the time horizon is from A to D. This will put new demands on the product development system and one alternative to the system presented in figure 2 may be a system such as that shown in figure 6, a proactive system.

In a proactive system we can make an interesting observation: the Time to market, as defined in figure 2, is zero. Time to market is a measurement of how efficient an organisation is in its efforts to detect and respond to changes in the business environment. Time to Market is something that can be improved. Organisations will tend to become increasingly efficient in their product development process. As time progresses "Time to Market" may cease to be a competition parameter, as all organisations will tend to be more or less equally good in this area. A new competition parameter may then be the ability to create a head start and initiate the right predevelopment at the right time.

Figure 6.



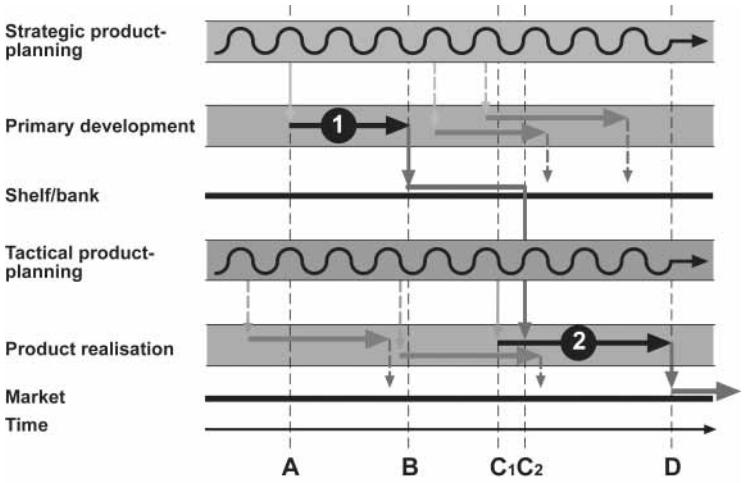


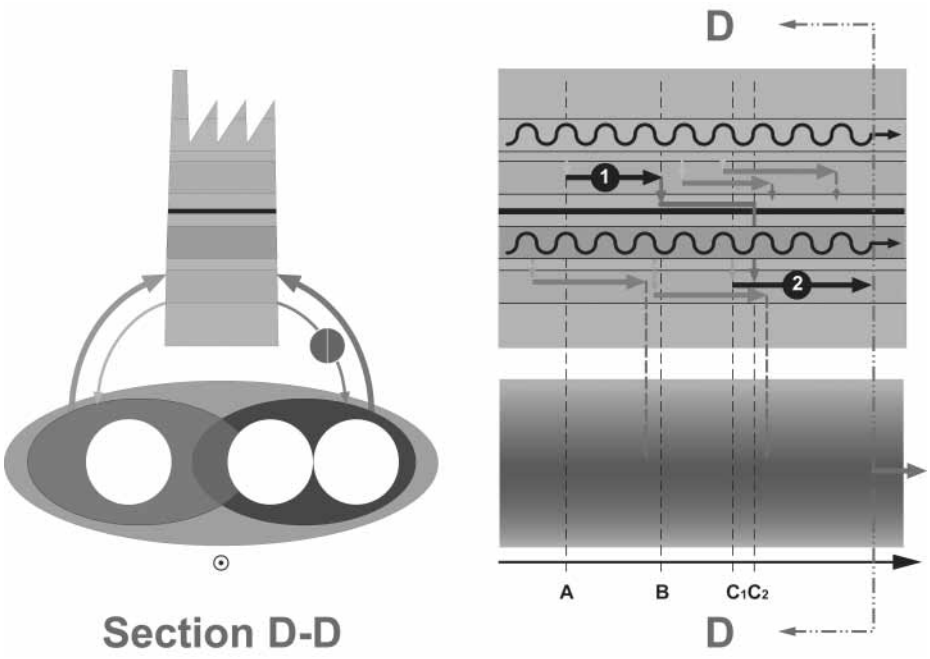
Figure 7.

This ability in the organisation calls for a change in organisation. To achieve this ability a new function handling strategic product planning can be introduced (see figure 7) giving us the total picture of the Value Creation Perspective.

The control function "Strategic product planning" (SPP) objective is to identify future market opportunities or threats that the organisation faces. Based on this information the SPP function shall initiate appropriate primary development.

We have up to now discussed two perspectives of the business environment, namely the Value Creation Perspective in figure 7 and the Value Producing Loop shown in figure 1. The internal relationship between these two perspectives is shown in figure 8.

Figure 8.



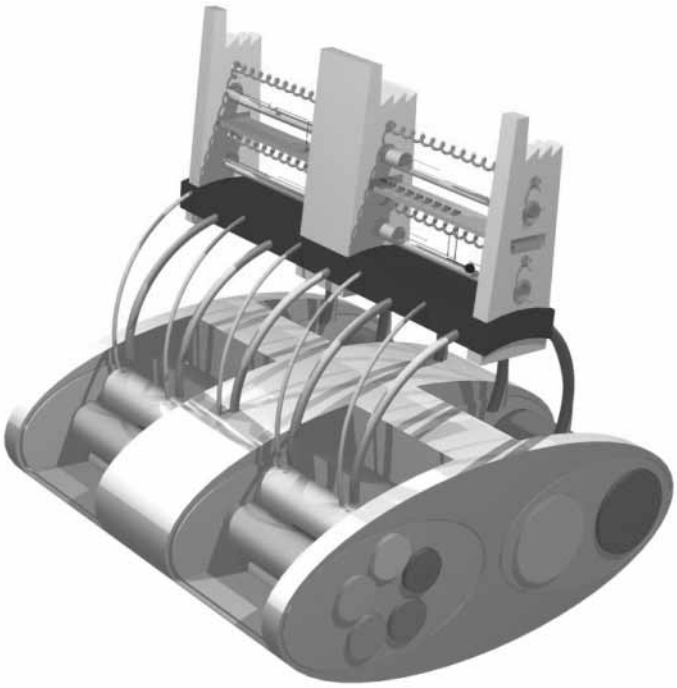


Figure 9.

This picture can also be viewed in a perspective that reveals a three dimensional form such as the one found in figure 9.

It is this three-dimensional model of the business environment that the SPP function has to analyse and understand; the structure of the system and its driving forces.

The business environment is a complex system and to analyse and understand it takes a multi-competence team. Teams with multi functional competencies tend to have communication problems due to differences in frames of reference. The use of a three dimensional model may aid the teams work much the same as rapid prototyping aids product development teams as a common reference frame.

The Concept Lab is to work as a SPP function. A fully functioning SPP organisation is however a costly operation (cf. Monitoring Centres in the car industry). To cope with this we are trying to establish a networked organisation. Around a central "Advisory Board" a set of resource centres are initiated or alliances are made between existing organisations. An example of such a resource centre is CEPS (Centre for Product Safety) a joint initiative between the Karolinska Institute, the Royal Institute of Technology and Konstfack (see www.ceps.nu). An example of such an alliance is the Engineering Institute at KTH (see www.ei.kth.se).

Each resource centre performs both research and development and has its own set of deliverables to the market, making it semi self-supporting with mixes of support funding and income unique to each resource centre and its stage of development.

It is planned that the Concept Lab will work on two levels. Firstly, it will offer postgraduate education for students from the member schools of SSES and secondly a higher level of education to senior level co-opted members from the various resource centres. The Concept Lab will also be open to

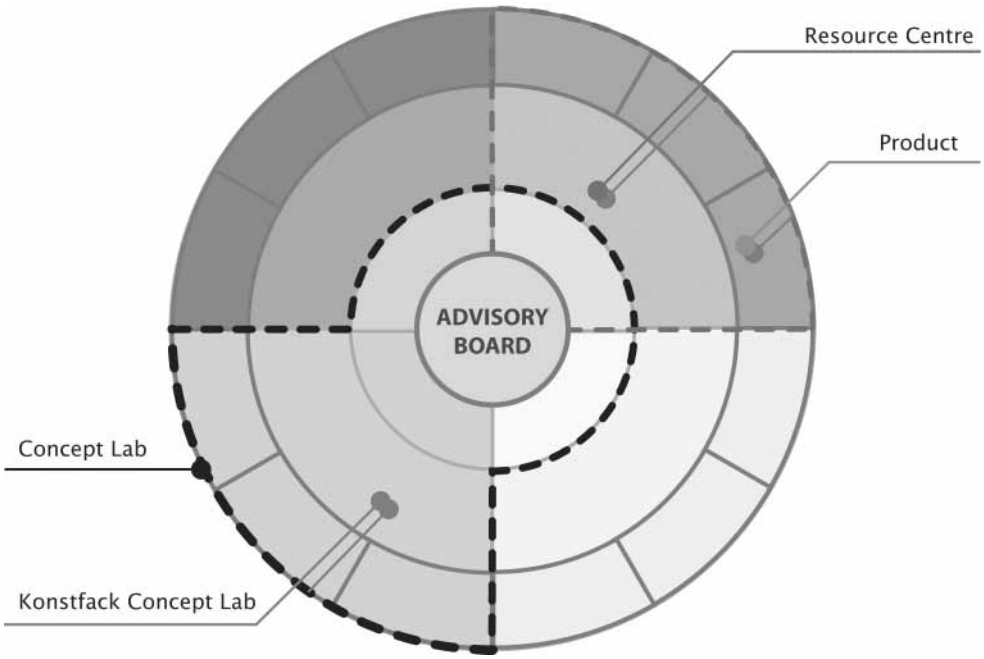


Figure 10.

practitioner students from sponsoring companies and organisations.

Research

The Concept Lab is at present under construction but will, when established, generate numerous research topics and opportunities. Research at Konstfack within the SSES initiative will focus mainly on methods and processes to be used in the Concept Lab and the effects that the concept lab may have on industrial organisations and the business context. Research methodology will focus on the area of "Participatory Action Research".

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What Is the Role of a Design School?

1 What is the role of a Design school?
What is the mission it has?

To fix a strategy – a long term plan – the manager has the responsability to never forget the "role" of the organisation he leads. For example, when you ask some of the representatives of L'Oreal about what is the role of the company, they may tell you: "We are producing perfumes or beauty products…" Lindsay Owen Jones has an other approach: "The role of L'Oreal is to produce 'hopes', hopes for men or women to be good looking." There are two totally different ways to define the role.

Concerning the field that design schools are involved in – Education in Design – we have to be very clear and precise about our intentions. We have to define exactly what is the role of a Design School.

Four (4) years ago, when I arrived in L'Ecole de Design Nantes Atlantique, I asked the staff and the teachers: what is your mission, what is our mission?

What is a school of Design? A centre of creation, an education centre, a business centre for new products, a research centre, a wonderful place to invent tomorrow or something else? The issue is complex and all those questions may be answered by "Yes": we are all those mentioned things and hopefully even more.

What is the job of the faculty: is it teaching, creating, innovating or is it helping students to find good jobs, good positions, high salaries, valuable perspectives for their careers? Or is it to help them to become good creators? Or, in an other way, could it be to help companies to find new products, new targets and new outlets?

What is the job we are doing? What is a school of design? This is probably the most important question we have to answer.

Probably, the most obvious things are the ones we forget the most easily. One of those obvious things is to define this role and the goals we try to achieve and then we have to find ways to get there. This is a very crucial question which determines how we organize the whole academic program, the whole organisation of our structures and permit to fix the strategy and development.

We may have different points of view about the subject nad diverse appproaches, considering culture, structure, faculty and feelings. Nobody is definitely wrong or right.

Let me give you the point of view of L'Ecole de Design Nantes Atlantique.

What is our role?

We consider that we have two major goals:
– **To promote Design in the companies and the economic fields.**

This means to promote creation and innovation as an economic matter, a generator of added values – profit or image – for products and companies.

In France, the expansion of Industrial Design in the economy has been historically slowed down by the supremacy of Applied Arts and the mistrust within the economy. With the exception of a very few fields, design has not been spread out as an integral part of companies. Most representatives still think we are teaching to artists and they think design is still reserved for furniture, interior decoration or recently multimedia.

We definitely want Industrial Design to become an economic matter, which places creation at the heart of Production, Marketing and Management.

When we talk about a product, we are not speculating about an object but we are really dealing with a concrete item of the market. It represents in itself a tool for profit or image. To go further: a well designed product should be a "sold product" corresponding exactly to demand, or corresponding exactly to the image that helps you to increase your sales. Good design should be measurable in terms of sales and profit in the same way as advertising is.

Is this sufficiently "noble" for Design and Designers?

I think this approach is highly Humanistic: ss designers, we have the responsability to place humanistic values at the heart of industrial production and market, and give a menaning to these elements.

We have the responsability to use the economy to serve society. This is sufficiently "noble".

– **To teach design may be our second goal, the one for which we are paid: To teach the students to become good creators. In fact, this is not the case.**

We have the responsability to place our students in Design jobs. This is the second goal. Help them work as designers, in good positions, with decent salaries, with good perspectives for careers to permit them to create. These are the conditions necessary for them to become good creators.

2 Multiply ways to approach companies

To pursue our two goals, we have different responses that have evolved recently, two major developments in our approach:

– All our academic programs are nowadays organised around professional projects dealing with industrial and commercial companies. That represents about 30 to 40 projects per year. First of all, the academic program is defined by the faculty, teachers and designers to garanty the development of knowledge and to ensure working on the main trends of the moment. Then we look for companies. They are involved from the beginning to the end.

  Some companies have already approached design, others have not. Some know about design, others need to be informed about it. It is exactly what the students will be faced with through out their careers.

– The five year program leads to a diploma, recently recognized by the French Ministry of Education, which is awarded to students by jury. It evaluates two necessary steps: a final project (one semester) and a training period of professional integration in a company or agency which ends the curriculum (second semester).

  The purpose of the jury is to answer this question: "Is the student ready to become a professional designer?", the question is not whether he is a good creator or not.

To demand a final training period in a company as the end to the program is our recent major change.

Paradoxically, if we think about the history of Design education, we are very suspicious of national or international competitions. This is because competititons usually are not the right occasion to meet companies. The professional approach, that is to say working with teams or professionals, is often absent from these types of competitions. Often, these competitions simply give many ideas to companies for pocket money.

3 What are the ways to develop in the coming years?

We are working on two major ways to develop our expertise in Design:

– In our school, we have no expertise in fundamental research. (Most of our projects are valuable but there is no capitalisation of the work we are doing. We can work two or three years on the same project without furthering our experience. We are surfing on trends rather than having a real expertise. We would like to create real

research departments, financed by public and private funds and work with companies as the engineering schools, on long term plans.
– We are developing courses for professionals in Design, creativity and management for executives or people coming from other fields, to make them aware of the opportunities and responsabilities of creation in all economic fields. We have just opened a post-graduate program with Audencia – School of Management – on Design Management.

To conclude I want to emphasize what I presented before: to promote Industrial Design as an economic matter.

We really do think that Design offers us new means to appreciate economics and management. Design is the way to federate people in companies and to motivate them to work on projects of creation. As I said already, Industrial Design gives us the opportunity to place creation at the heart of the economy, and gives it a meaning: better products tomorrow for a better life.

In France, Most of the Managers are people coming from "Exact Sciences". We think managers from now on should be men and women aware of human ressources and creativity with great intuition in their approach. In one word they should be Designers. Our role is to prepare the managers of tomorrow. Engineers give us the opportunity to be "high tech", designers create the generation of "high touch" management.

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Myth and Design

What Myth is

"In order that the dream last,
must touch the everyday life."

The ancient Greeks trying to interpret and to comprehend different physical and not physical phenomena, as well as more ancient rituals, they invented myths, that is fables the recitations of which left a great and free field to the fertile imagination.

The logic of their imagination created anthropomorphous gods, giving them human failings and godlike qualities that allowed them interventions in life and in death. They lived together the daily facts, hoping to their favour.

The Myths bore one the other and they kept pace with the people in an armful of ideas, often without cohesion, which did not bother the people, as they did not have any other choice for answers or for reference to something supernatural.

In the modern time, men do not need to mythicize the physical phenomena; nowadays, by observing the physical forms, they are lead to the invention of myths from which subjects-ideas derive for the beginning of plastic creations, places and objects that frame the human activities.

Their myths are through a subjective dimension, a dimension that is defined by what they experience and that leads to the creation of personal symbolism. We could apprehend the symbolism as a reflection of meanings, structures, values that is expressed and represented through shapes and colours.

The human imagination that creates the myth, converts it to an idea that looks like an imaginary effigy of a real fact that will follow. The procedure is developed step by step toward its completion, by rules that concern the final product, area or object because the Myth of the specialised man, as the Designer is, contains also the art of thinking.

The Intellectual processing contains the observation, the judgement, the invention that, in combination with the manual work, leads to the design of the object. This is what will define the creative moves of the hands, will make man to choose the proper materials and colours, the tools for more effective plastic solutions. Also, the Intellectual process does not exclude casual compositions with an aesthetic result, either it refers to a handy object or to an object of art.

What Design is

In Athens of the classical time, of the measure and of the Democracy, the agony of the worthless and of the unnecessary is unknown.

The Myth touches the daily facts, life and death, defining the creation of forms in objects and places. Pots for worship or practical use bear on them elements of design, as an attraction for use or a transmitted message. They use the curve in many combinations, in order to create vessels of different types, shapes for different uses, in respective names, unbrokenly connected with the rites. The pots that had *a clarified use* were always easily *recognizable*. The themes that were depicted on the vessels, had relation with their shapes, the inspiration of the artist, the requirements of the customers, the fashion of the epoch (that is, we find the characteristics of the modern marketing).

Thus, every vessel narrates facts and expressions about the daily life and the civilisation of the ancient Greeks.

According to the myths, the Gods who protect places and ideas were defined in a worshipping shape and form.

Goddess Hestia who represents and protects the interior of the house, is determined by a circular shape. She was placed in the centre of the house and around her the rest functions were developed.

Hermes, her brother, an inseparable twin with Hestia, represents and protects the people in the "market", on their travels and he reaches the entrance of the house, and he is determined by an orthogonal shape.

Hermes who was also a messenger and protector of the traveller's, "forms" the Hermean columns that function as signposts and they are erected at the ends of the roads.

The urban planning in ancient Athens appears in anarchy, because the weight of the buildings falls to the message that is transmitted by the function that is entertained and that forms the designing of the building from inside outwards.

Goddess Athena, as patron, protectress of Athens, causes the creation of Parthenon, since it was built in order that the statue of Athena, made of gold and ivory, which Phidias created, may be guarded.

Parthenon is one of the pioneer temples of the ancient world, in countless conceptions and genius solutions, that sealed the course of the whole architectonic creation.

For the concept, designing and execution of such an admirable work, the simultaneous presence of important men, politicians (Pericles), philosophers, architects (Iktinos, Kallikratis), and artists (Phidias), but also of craftsmen, experts of unexampled techniques of the marble that left their seal in the construction of the temple was catalytic. The aesthetic result of Parthenon is owed mainly to two characteristics: the good proportion, that is the analogies of its surfaces and its volumes, and the called refinements, that is the curvatures of the horizontal and the vertical surfaces. The refinements are an *innovating* confronting and they constitute a conquest of the Greek architecture.

In conclusion, a unique diachronic work-monument resulted, by a collective work with individual freedoms – today we would call it *collective work* of specialists.

Diachronically, the Design is referred to the result that arises from the partial study of sections of the object or of the area, so that they may get their own entity and personality, as members of a whole that obey to the total, that is characterised by equilibration, rhythm and personal style.

The area or the object that will arise, must function in such a way so that we may feel it as an extension of our soul and of our body, offering comfort, safety, aesthetics.

Myth and Design, a combination that aspires to attract and to express the spectator and the user

The right plastic language of the composition of interdependent forms that are defined by the colour and the material, attracts and recites its myth, in a full *communication* with man.

The dyadic relation of the object with the subject changes from creator-object in object-production, object-spectator, object-user, claiming always, the characteristics of the intellectual dealing.

Myth and reality of the object

The specialised man-creator derives his inspiration from the above (heavenly) and from the below (earthy). The inspiration-idea is transmuted and guided by the purpose, meaning by the use of the product. The use in the space may be plainly artistic or handy.

In the modern times, the handy object is identified with the Industrial product, where the concept and the accomplishment of the idea in a model contains in force the Myth, and the production and the commercialisation of the object contains in force the reality.

The object, either handmade and artistic, or industrialised and handy, must combine *use and art*.

It is clear that *art* is not a right, it is an obligation. And Brecht points out that:

"Art needs knowledge.
The observation of the art
Cannot ensure real joy.
If the art of the observation
Does not exist."

The honesty of the myth of the production, advertising, consumption

The development of the technology and of the Industry became the vehicle for the easy production of the complicated design. The versions of reduction of the production cost occupy the Industries that often are lead to the dishonest construction and promotion of the products.

The manufactured product inspires to be identified with the merchantable consuming product, and its run from the production to the consumption is embroidered with feigned elements, in order to become attractive. The intervention of the marketing and of the advertising in this run is definite. The Myth appears for once more to the proscenium, in the mask of the attraction of the spectator, presumptive consumer; at this point the misleading lurks.

When the communication that is attempted by the final acceptor, has the characteristics of the ephemeral impressiveness, it soon gives its place to the disappointment of the useless. The honesty of the myth of the advertising is a politic attitude that touches the interleave of the societies.

The aggressive disposal of imposition that is often expressed by the men of the production, is what dissolves the myth and the well-poised relation of the object toward itself, toward man, toward the environment.

However, it is confirmed that the confusion between a recognisable form of a product and its possible multifunctional use leads to an affirmed inclination of purchase and desire of products that give a social eminence to a consumer, even if he cannot comprehend their operation.

Design, the barycenter of the innovation

Innovator or modernist is considered both he who creates and he who follows the new ideas. The new ideas are animated by an ideology and touch the basic areas of a society that is the Cultural, Economical, Political, Religious and Artistic.

They always result as a need of the qualitative upgrading of the life of the societies and they express or they are materialised in political will.

The ''overthrow of the order'' in our planet disturbs and puzzles. The "cities" of today visualise viable areas, quality of life, a friendly daily lifestyle. A daily lifestyle that we live by our five senses, by the sentiment and the logic.

The object of the Design, area and object, is invited to approach and to satisfy the above needs as an obligation.

Mies Van der Rohe, the great master, formulated the total view that:

"The basic matter is that illuminates gradually
– what can be constructed
– what is necessary
– what has a meaning as 'art'."

The partial pointing out in simplicity totally compose an *innovating inclination*.

Every Creative action is called to enter this, either it is expressed as a technical object of use, of Industrial production, or as a handmade work in aesthetic function.

The role of the education

The percept for the space and the objects is not self-evidently common for all the historical epochs and the geographical areas.

The structured place, built and free, all the objects of the daily life carry the myth in their organisation itself, while simultaneously they serve it in unique societies and habits.

Protagoras, the Greek sophist maintained, that man is the measure-size that counts everything, the world. *He forms areas and objects and he is formed by them.*

It is judged as important that the language of decoding the measure may be common and common property, so that we may travel together harmonically with the myth and the reality.

Here, the observing is identified with the ability of the worrying and searching for the causes. The pedagogic programs should be oriented towards this direction, that is towards what we must realise and apprehend.

The education affords the guarantee that the interested person will get knowledge, adeptness, by developing his critical and searching predisposition. The School Master will stimulate and will waken his creative ability but he will also clarify as much the fixed as the specific values that are formed by the spirit of the days. The education should be fertilised by the spirit of the time and cultivate the dialectical disposition. *The target for a world better than the yesterday's world, is visible, let us try to reach it in a heart full of conscience and truth.*

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Innovation as a Tool towards Doctoral Thesis

The tradition of academic research in design is rather thin. Most of the research has been carried out by art historians or cultural historians, quite seldom by practicing designers or architects. We do, however, have a lot to contribute to the academic world, if we take advantage of our professional capacities and our experiece of the co-operation with the industrial partners.

Why do we need academic research in design?

A designer as well as an architect is always oriented towards future, is constantly seeking new solutions, looking for new things. Of course it is easy to say, that there is nothing new under the sun, everyting has already been invented etc. Yet it is our professional duty and creativity which demands the search for something different, something new. Often, however, those things which prove to be really avant-garde, are a combination of both tradition bearing aspect and something which at the same time breaks the tradition, is done in a different way. Just think for example of the Pantheon in Rome. A really traditional central cupola building with the mere exeception that the only source of light is the oculus with a diameter of circa 8 meters in the ceiling of the building. And it still, after two thousand years, it is avant-garde, a breath-taking spatial experience. So, a slight change in the traditional solution might result a completely different result.

I truly belive, that research is one of the best ways to birng about new knowledge. At the same time it developes the hypothetical thinking of the designer. Research also promotes Innovations and real inventions. And this way a researcher who has a background in design, may also lend a hand to the industrial partner. The Finnish Nokia has always understood this. It is not just combining the latest technology with the high quality design, but also with continuous search and research, which leads to the best innovations.

Theory and praxis in interaction

Most of the research of design and architecture is so called applied research, but basic research is also needed. Design research still needs to work on its concepts and theory. Often combining both basic

research with applied knowledge is the way to the best doctoral works in this field. Of course every designer has to work on developing his or her own design philosophy, even if one wouldn't give it such a demanding name. For this the design schools should provide sufficient education both on masters and doctoral level.

It is also possible to activate innovations through research. The search for new knowledge, new materials, new applications and new combinations are natural parts of design research. It also gives space for dreams, ideas and utopias. At the same time it gives us a chance to learn from the mistakes made in the past.

Scientific criteria

If a student after the master's degree wants to elaborate more on a certain topic, it is important to consider the following aspects:

– Is the problem interesting? Are you willing to spend enough time in solving it?
– For whom is it interesting? Yourself, industry, consumer, client..?
– What are your means and methods for solving the problem?
– How about variations and complexity?
– Does the solution of the problem bring new data, new knowledge?
– Does it contribute to the design research in general?

If you have answered these questions you may go on with the choice of the method, do the prototyping, the experimenting, the testing and the evaluation and then come up with the final solution, which might be a new artefact.

So a doctoral thesis in design or architecture might constitute of f. ex.:

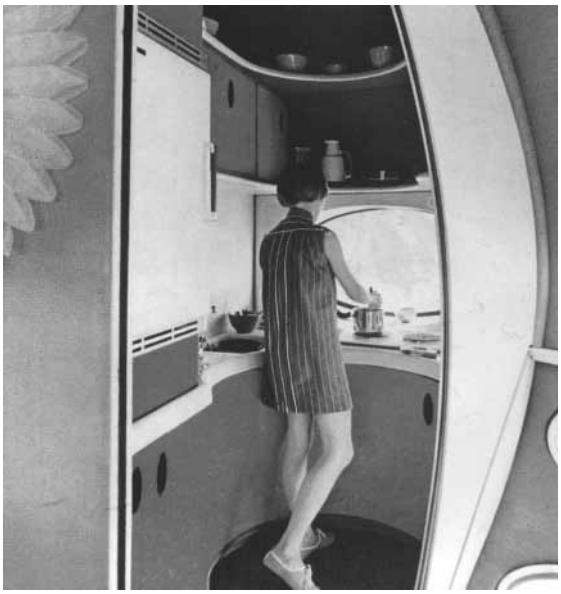
40 % product development or design work (empirical data)
20 % literature research (what is been studied of this topic before)
20 % theoretical framework
20 % own design philosophy in reflection to the artefact or developed product.

Doctoral thesis as a tool

It is of course not necessary that everyone should be urged to go on with their studies after the master's degree. But the ones who are eager to do it, should be encouraged. The doctoral thesis in design is a rather sure way to real inventions. During Future Home Graduate School 1999–2002 at the University of Art and Design Helsinki, 23 students with the background in design or architecture, were working towards doctor's degree. The first results are collected in the book Designing for the Future. What has been achieved? Yes, several inventions and new innovations. New concepts have been developed, several products and also improvements of the producution processes have been worked out with the industrial partners. Besides doctoral works we also feel that we have made better and braver designers through research education.

Anna-Maija Ylimaula
dir. of Future Home Graduate School at University of Art and Design Helsinki during 1999–2002.
Dr.Tech., Architect, currently doing research in France and Italy.
e-mail ylimaula@uiah.fi

Illustrations from the book *Futuro – Tomorrows House from Yesterday.* Edited by Marko Home and Mika Taanila, 2002, Helsinki: Desura Oy Ltd.



Virtual ARCA – Cumulus Goes Virtual

Background

The University of Art and Design Helsinki presented an open invitation for the Cumulus network members at the Cumulus conference in Paris on the 4th of May 2002. This was an invitation for members interested in creating and developing the use of IT in teaching and research in the area of art, design and media.

At that time the idea was to carry out a pilot course between European partners by using the internet, in the case that a sufficient amount of partners could be found. Seven brave partners joined, of which most have stayed on at a certain level in the planning and creating work. Also more partners have joined.

Fairly quickly in the working group it was discovered that equipment, the use of IT and opinions of the realization of distance courses varies largely inside Europe. It was also discovered that in the area of art, design and media, no information has been gathered about how art, design and media institutions in Europe use IT, what sorts of pilot course experiments have been done, if done at all, what kind of material has been produced, or has any been produced and that could it be of use to other members of the network. It was decided that it would be sensible to begin mapping out the present situation and in general strengthening the Cumulus network members awareness of each other by reinforcing interaction and knowledge of other members expertise. Especially important would be to get the people who are part of the network, such as teachers and researchers, involved. From this starting point a project was created that contained a short and long term plan. The project was presented to the Cumulus board at the Cumulus conference in Italy, Colle di Val d'Elsa on the 16th of November 2002.

The board supported the project and named a working group to continue realizing the project. An application for funding from the EU 6th Framework Programme is being prepared for the project.

Description of the short term plan

Description of the action

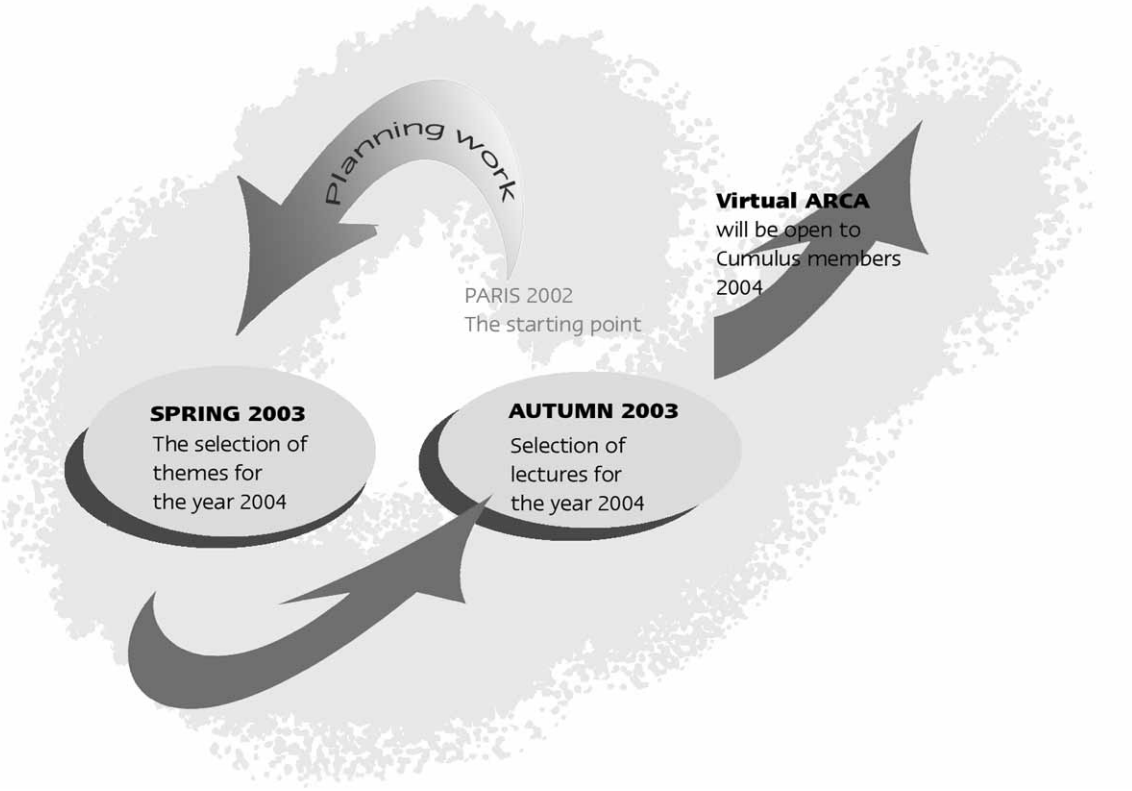
An open virtual lecturing space will be opened for the members of the Cumulus network. Every month a lecturer, from one of the Cumulus institutions, will be invited to give a virtual lecture in this forum.

Every year a theme will be chosen, which the visiting virtual introducer will discuss from the perspective of his/her area of expertise.

After the publication of the lecture the members of the Cumulus network (students and teachers) may give their opinions and have discussions on the basis of the introduction to compare experiences and exchange views. This discussion will happen online, in a discussion area open only for members of the Cumulus network.

The effect of this action

The aim of this action is:
– to gain a concrete activity inside the Cumulus network
– to reinforce the network and its functions also in regards to other projects
– to get the various institutions in the network more acquainted
– to share expertise and knowledge on what sort of expertise can be found in which institution within the network
– to encourage teacher student cooperation
– to encourage teacher and student exchanges
– to map out the material database in the area of



1. The history of Virtual Cumulus.

art, design and media
– to give support to partnerships and to the further development of the project.

The organising actors and their functions

The Cumulus board should name and authorize a responsible working group which will organize the operation in practice.

The task of the working group is to prepare 5 themes for the Cumulus board meeting in the spring. From these five themes the Cumulus board will choose 1 to be the theme of the coming year. After this the working group will begin searching for lecturers from within the institutions that are part of the cumulus network to write about this theme. Every month will have an expert representative according to his/her area of art, media and design. It will be the responsibility of the work group to ensure that the perspectives vary objectively between the different areas of art, media and design. It will be desirable for the members of the Cumulus network to make suggestions on both the themes and the choices of lecturers.

At the autumn Cumulus board meeting the board will confirm the theme for the year to come. The theme and the visiting lecturers will be announced officially at the Cumulus conference in the autumn.

Description of the long term plan

This project includes an already existing broad network of 43 art, design and media institutions. The purpose of this project is to support and develop diverse IT-use in teaching in the area of art, design and media. The project is an umbrella, under which several subprojects will take place. These projects will produce research, development and training of teaching practices for teaching staff in this area, shared teaching and support material, databases and equipment and finally the needed requirements for mainly European art, design and media institutions

to have shared courses as well as the sharing of expertise in this area on a European level.

Project coordinators and the working group

The coordinator for this project is the Virtual University of the Helsinki University of Art and Design and the person responsible for the realization is Eva-Maria Hakola assisted by Katy Kjisik.

People in the working group are:
– Veli-Pekka Tuovi
  Principal Lecturer, Multimedia Production,
  Lahti Polytechnic, Finland
– Eunice de Vere Thorne
  Course Leader, International Studies,
  Southampton Institute/Faculty of Technology
  Design, UK
– Mr. Robin Baker
  Rector, Professor,
  Ravensbourne College of Design and
  Communication London, UK
– Rob Korver
  Senior Lecturer Architectural Design,
  Coordinator of International exchanges,
  Faculty of Visual Arts and Design,
  Utrecht, The Netherlands
– Lylian Meister
  Vice Rector,
  Estonian Academy of Arts, Talinn, Estonia
– Leza M. Uffer
  Rector,
  HGK Luzern, Switzerland
– Urs R. Wyss
  HGK Luzern, Switzerland

The Working Group members also have the right to name themselves deputy members or people from their institutions who would best be qualified for this project. Also, if necessary other experts may be invited in addition to the chosen working group.

Eva-Maria Hakola
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Virtual University
University Of Art and Design Helsinki
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EWOL after EWOL

Two follow-ups: a local example and an overseas example

A Paraphrase of a paraphrase:
Think global – act local = Think local – act global (John Naisbitt)
Think European – go global: a strategic view of Cumulus activities.

1 A local example

Some members used both their own contributions as well as the overall achievements of Cumulus network's exhibition for the promotion of the network's strategy.

Examples: For the ICSID secretariat and its world-wide publication ICSID NEWS (3/2002) we wrote an article about the EWOL exhibition in Paris. In Slovenia, the public was informed through print and electronic media. For specific groups like the scientific and R&D communities, we published an article in a special supplement of "Science" attached to the major national daily newspaper DELO. The business community was approached through the Adria Airways In-flight magazine while University scholars and educators were informed by the University of Ljubljana bulletin VESTNIK (News) etc. We are happy that our students will be awarded for their collective team contribution and achievements at EWOL with the highest university academic award by the end of this year.

The event in Paris

EWOL was based on the hard work of our French colleges at SAD and ESAG. They deserve to be commended.

The contributing Cumulus members and Executive board finalised the project with the final form of a design exhibition in the very heart of Paris, one of the most important of the world's cultural capitals. The exhibition was a solid model of the joint effort and promotional strategy of Cumulus. It was propelled by the energy of institutions, students and tutors. In this respect Cumulus does express its influence in both education and the design profession in general.

The exhibition was a kind of mirror of the present state-of-the-art of the profession in Europe represented by the youngest generation of designers. It strengthened the community's spirit and was a clear demonstration of the diversity of the European cultural patchwork. The exhibition raised a number of questions and showed a high quality of conceptual, material and designerly solutions to the questions spanning issues from the Universe to the Body. We might observe the exhibition from different points of view: social, cultural, political, and economic, always keeping in mind the European free flow of ideas, capital, people, products and services.

Cumulus deserves the attention of the European Commission due to its potential to facilitate a constructive dialogue on identity in present-day Europe. The exhibition was also a common ground for interaction of design and business.

EWOL went beyond its immediate environment and touched new possibilities. As an example, the exhibition traveled to Seoul as had been previously envisioned and served as a sound promotion of European culture to overseas countries. There is no doubt that the achievements of the French organisers, Cumulus network and individual contributors were exceptional.

2 An overseas example

Exhibition: New EWOL, SAC, Seoul, Korea

The initiative and ideas discussed at Paris's press conference a year before the exhibition found its realisation in September 2002 in a huge Korean cultural centre i.e. Seoul Art Centre, due to the exceptional efforts of Ms. Claire Kim, the spiritus agens of the Korean exhibition. She was aided by Prof. Robin Baker and tutors like Kim San-Kyu and Kang Myung-Ji, Mr. Kim Soon-Kyu, president of the SAC, the Ministry of culture and tourism of the Republic of Korea and sponsors IDAS and LG Electronics.

The exhibition was followed by a 147-page monograph entitled "From Body to Universe – European way(s) of life". The introductions were written by Mr. Kim Soon-kyu, professor Robin Baker and tutor Ms. Claire Kim. Later, a smaller brochure for the first-day seminar was added.

The exhibition was enriched by two seminars under the leadership of Claire Kim with the help of prof. Namshik-Lee from IDAS – International Design School for Advance Studies and guest speakers Robin Baker ("London – The Creative Capital of Europe" and "Seeing, drawing"), Leighton Reid ("New Interiority") and myself ("The European Way(s) of Life (EWOL) raises numerous questions on the image of the future Europe" and " Case – METRA group, Interdisciplinary project of urban and industrial design proposal for improving public transport in the city").

At the panel discussion Prof. Hyo-Shin Park (professor of multimedia at Hanyang University and Mr. Christian Guelerin, director of the school of Nantes Atlantique in France, took part as well.

The event was widely covered by newspapers such as the International Herald Tribune.

Professor Sasha J. Mächtig
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University of Ljubljana, Academy of Fine Art and Design
e-mail sasa.machtig@uni-lj.si

Aarhus School of Architecture	Aarhus	
Gerrit Rietveld Academie	Amsterdam	
The Arnhem Institute for the Arts	Arnhem	
Technological Educational Institution (T.E.I)	Athens	
Elisava Escola Superior de Disseny	Barcelona	
College of Art and Design	Bergen	
Academy of Fine Arts and Design	Bratislava	
Universitatea de Arte	Bucharest	
Hungarian University of Craft and Design	Budapest	
Danmarks Designskole	Copenhagen	
Academy of Fine Arts	Cracow	
National College of Art and Design	Dublin	2/98
Design Academy	Eindhoven	
University of Essen	Essen	
Kathiolieke Hogeschool Limburg, Media and Design Academy	Genk	
Gothenburg University, Faculty of Art	Gothenburg	
Gothenburg University, Stenebyskolan (HDK)	Gothenburg	
University of Art and Design Helsinki	Helsinki	5/00
Designskolen Kolding	Kolding	6/00
Lahti Polytechnic, Institute of Design	Lahti	
University of Ljubljana, Academy of Fine Art and Design	Ljubljana	4/00
University of Ljubljana, Department of Textiles	Ljubljana	
Ravensbourne College of Design and Communication	London	
Royal College of Art	London	
Hochschule für Gestaltung und Kunst	Luzern	
Istituto Europeo di Design	Milan	3/99 9/02
Politecnico di Milano	Milan	
L'École de Design Nantes Atlantique	Nantes	
National College of Art and Design	Oslo	
Oslo School of Architecture	Oslo	
Ecole Supérieure d'Arts Graphiques et d'Architecture Interieure ESAG	Paris	8/02
Paris Institute of Art and Design (Boulle, Duperré, Estienne)	Paris	
Strate College Designers	Paris	
Academy of Arts, Architecture and Design	Prague	1/98
Iceland Academy of the Arts	Reykjavik	
Willem de Kooning Academy Hogeschool	Rotterdam	
University of Lapland, Faculty of Art and Design	Rovaniemi	
Konstfack	Stockholm	7/01
Estonian Academy of Arts	Tallinn	
Institute of Design, Umeå University	Umeå	
Utrecht School of the Arts	Utrecht	
Vilnius Academy of Arts	Vilnius	
Universität für angewandte Kunst in Wien	Wien	
Hochschule für Gestaltung und Kunst	Zürich	

Cumulus Working Papers, documentation of meetings by Cumulus, European Association of Universities and Colleges of Art, Design and Media, established in 1991. CWP is published by the University of Art and Design Helsinki, the network coordinator.