designjournalen

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Omslagsbild:

"Kreativitet är det fantastiska och osannolika mötet mellan barnets ohämmade energi och den vuxnes sinne för ordning och disciplin."
/Norman Podhoretz

Hampf Industrial Design AB

Design är värt besväret

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I dessa tider då fokus på design ökat är en ständig fråga som söker svar den om design lönar sig. Trots de otaliga exempel på framgångsrik design som svenskt näringsliv har visat upp genom åren hänger frågan fortfarande kvar. Hur lönsamma är investeringar i design? Lönar det sig för mitt företag? Hur mycket investerar svenska företag i design? Svaren på dessa frågor söks av både designer och beställare.

Jag kommer ihåg otaliga tillfällen när denna fråga kommit upp under mina år som verksam designer. Både internt och externt. Det är nästan alltid samma formulering: Om man är beredd att ta den ökade kostnaden, kommer det verkligen att löna sig? - dvs finns det en rimlig tid för att återhämta kostnaderna? Tyvärr är det oftast fel fråga och ett mycket olyckligt sätt att se på situationen. Den mer korrekta frågan är om man har råd att inte investera i design. Att göra ingenting kan vara kortsiktigt frestande, men förödande på lång sikt. Man hamnar allt för ofta i bakvatten med enorma investeringar som följd för att bara komma ikapp. Man ligger inte längre i framkant av utvecklingen och hamnar då ofta i en prisdiskussion hellre än en om värde och brukarnytta, lust och livskvalitet. Det är hos kunderna och användarna slaget om design skall stå - inte internt i marknads- eller produktionsleden!

På SVID får vi ofta frågan om en mer omfattande och framför allt vetenskaplig studie, som på ett sakligt sätt kan ge svar på designens lönsamhet. En studie genomfördes för något år sedan i Danmark som bl a visade att exportföretag som aktivt arbetade med design var 34% mer lönsamma än jämförbara företag som inte gjorde det. Inspirerade av detta beslöt SVID och Teknikföretagen därför att genomföra en större studie bland svenska företag i olika branscher. I den här studien utgick vi från en bred definition av design som alla företag fick som underlag när de svarade:

Design innebär att man arbetar med att lösa ett problem utifrån ett kreativt sätt där både estetiska och funktionella krav är avgörande. Fokuseringen på företagets designbehov utgår från produktutvecklingen, men kan omfatta hela organisationens behov av design. (Exempelvis: industridesign grafisk design, interaktiv design, inredningsarkitektur och design management).

Den 11 maj 2004 presenterades resultaten av denna studie. I studien försökte vi dels att få svar på lönsamhet, men också på attityder relativt design. Att däremot få svar med en siffra på designens andel av lönsamheten var inte möjligt. Vi anser att studien är både saklig och vederhäftig och visar glädjande resultat. Den visar att kraven på design ökar, främst från företagets kunder. Medvetenheten om design bland företagen är idag hög och användningen av design är utbredd. Tre fjärdedelar av de intervjuade företagen investerar i design, antingen genom att ha anställda som arbetar med design eller genom att de köper in designkompetens utifrån. Drygt hälften av företagen har också ökat sina investeringar i design. Den bransch som investerar mest i design är möbelindustrin och företag inom kultur, underhållning och sport. Den senare gruppen är företag där upplevelsen har blivit en viktig del i verksamheten, vilket gör att design får en allt mer betydande roll. Att företag inom jord-, stenvaru- och stålindustrin samt fastighetsbolag är de som satsar minst kanske inte är så förvånande.

Ett annat positivt resultat var att företagen anser att svensk design ligger långt framme med tillräckligt många duktiga designer i Sverige för att tillgodose näringslivets behov de närmaste kommande åren. Det kan vi också tolka som att den svenska designkåren och designutbildningen håller hög internationell kvalitet. Detta gynnar också det växande intresse som vi märker bland svenska designföretag att expandera sin verksamhet internationellt.

Men resultaten visar också att det inte räcker med att arbeta med design, utan det är hur design används som blir en avgörande faktor för framgång. Därför behöver vi veta mer om detta hur. Vi får inte stanna upp. För att förbättra resultaten av denna typ av undersökning nästa gång den görs och nästa och nästa... behövs en stor satsning på forskning och utbildning i och om design. Det är först när återväxten och bredden är säkrade som vi kan inta en ledande ställning i användandet av design i Sverige.

Innehåll

Redaktörsanteckningar

Vad är designforskning?

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Vad är designforskning? Det är en fråga som - jämte frågan om designens lönsamhet - har ställts sedan en längre tid. Precis som lönsamhetsfrågan är svaret varken avgränsat eller givet. Liksom intressen för design har även intresset för design-forskning ökat de senaste åren. Dessutom ser vi en tendens till att olika, redan etablerade forskningsfält börjar intressera sig för design. Forskare inom teknik och produktutveckling var tidigt ute. Där finns det också sedan lång tid tillbaka en koppling till designområden som industri-design. Utifrån min egen företagsekono-miska horisont kan jag konstatera att även inom företagsekonomi och manage-ment börjar det märkas ett större intresse. Rubriker på sessioner på forskarkonferen-ser börjar innehålla ordet design. På EU-RAM (European Academy of Manage-ment), som förra året ägde rum i Milano, hade en av de tjugotal parallella sessionerna temat: "design based firms and industries". Även om flera av de som presenterade här var mer konstruktions-orienterade än designorienterade var de flesta ändå inriktade på design och flera är väletablerade forskare inom design management. Mer information finns på www.euram-online.org/

Även årets EURAM konferens, i St. Andrews, Skottland, hade en av de parallella sessionerna ett tema som inkluderade design: "Strategy for value creation through knowledge, innovation and design". Dessutom fanns det en hel del artiklar med fokus på design i flera av de andra sessionerna. Det som tas upp i dessa forskningsrapporter är till exempel integrationen mellan design och manage-ment, designprocessen och dess metoder som kunskapsbas, estetiken och

företagandet. Flera forskare inom management, speciellt ny forskning inom entreprenörskap och arts management, menar att traditionella management-metoder, baserade på ett rationellt och instrumentellt tänkande inte förmår fånga upp det sätt att förhålla sig till produkter, kunder och konsumenter som dagens krav på innovationer och marknadsutveckling ställer. Vi ser inom marknadsföring att det traditionella planeringsparadigmet håller på att förskjutas till ett mer mång-facetterat paradigm med utgångspunkt i konsumentens faktiska beteende. Något som stämmer väl överens med design-processens metoder. Konst och företag är ett designnära område som på senare år har växt fram inom företagsekonomi, där det estetiska förhållningssättet är centralt. Bland andra har Emma Stenström på Handelshögskolan i Stockholm och Pierre Guillet de Monthoux på Stockholms uni-versitets företagsekonomiska institution byggt upp stora forskningsprojekt och utbildningar inom detta området. Denna typ av forskning kräver nya allianser mellan humaniora och ekonomi på universiteten, mellan designhögskolor och företagsekonomer.

Det börjar också finnas flera etablerade och årliga designforskarkonferenser. En av de äldre är det brittisk baserade Design Research society som anordnar konferen-ser i samarbete med olika universitet runt om i världen. Se mer på www.artifact.ac.uk/displayoai.php?id=1690

En av de yngre, men nu väletablerade designforskarkonferenser, är European Academy of Design (EAD), som grundades 1995 i Salford, England, med ambitionen att utgöra ett forum för alla aspekter av design. 2005 års konferens

äger rum i Bremen och har temat: Design - system - evolution. Mer om denna hittar ni på ead06.hfk-bremen.de/

Den som har varit ansluten till Ken Friedmans maillista där akademiker (lärare och forskare) och i viss utsträckning praktiker, kan konstatera att diskussionen kring design handlar om allt från metod- och definitionsfrågor till filosofiska, estetiska och sociala frågor. Adress till maillistan är www.jiscmail.ac.uk/lists/phd-design.html

Även detta nummer av Designjournalen tar det breda perspektivet på design-forskning. Tore Kristensen tar i den första artikeln i detta nummer upp en aspekt som ofta ignoreras, men som är viktig när vi försöker förstå samspelet mellan olika funktioner i organisationen, nämligen "The Physical Context of Creativity". I en studie som jag och min forskarkollega Ulla Johansson genomfört kunde vi observera att när företaget satsade på att bygga upp en designstudio, med stor yta, inredning och redskap för att skapa, testa och visa produkter, fick man till ett helt nytt samspel, först mellan tekniker och designer och senare även med marknads-sidan. Det blev mer kreativt och en bättre dialog. Det ledde också till en bättre beslutsprocess där kompromisserna inte var att "ge upp" utan att komma fram till bra lösningar ur olika synvinklar. Vi var några som besökte IDEO Design i Boston sommaren 2002. De är kända som ett mycket kreativt företag. Deras lokaler speglade detta. Flexibiliteten och att inte bygga in hierarkier i organisationen var påtaglig. Man använde till exempel stora svarta kuber för att bygga tillfälliga projektrum. Man skapade den kreativa kontexten i rummet.

Design handlar om kommunikation och inom kommunikationsforskning har semiotik och semantik, som ursprungligen kommer ifrån litteratur och språk-vetenskaperna, bildat ny skola. Semiotik och semantik har blivit en viktig forskningsgren även inom design. Design handlar också om att övertyga, eller förföra. Retorik handlar om konsten att övertyga. Hittills har dock semiotik och semantik dominerat forskning om design ur ett kommunikationsperspektiv. Louise Valentine, industridesigner vid Dundee University, har disputerat på en avhand-ling om designers tänkande. Denna avhandling är utgångspunkt för den andra artikeln i detta nummer. Louise Valentine har utgått ifrån ett retoriskt perspektiv. Syftet med forskningen var att lyssna, observera och ifrågasätta designerns sätt att tänka. Undersökningen fokuserade på relationen mellan ord och bilder, snarare än hur själva tankeprocessen såg ut. Att få mer kunskap om designers tänkande kan också ge bättre kunskap om design-processen som sådan, vilket är viktigt för alla som berörs av designprocessen.

Som en analog fortsättning av Louise Valentines artikel följer den tredje artikeln om designern som strateg författad av Naomi Gornick. Retoriken hos designers skiljer sig från den hos managers. Ändå måste de samverka. Utifrån sin erfarenhet som lärare vid Royal College of Art, Brunel University och Dundee University samt lång konsulterfarenhet inom design management drar Naomi Gornick slut-satsen att trots att design har uppnått den länge efterlängtade strategiska positionen i företag, är det få designers som har varit villiga att utbilda sig till strateger. Hennes slutsats är att om designers vill ha en strategisk roll i företagen måste de också lära sig språket och retoriken hos managers.

Den fjärde artikeln är av ett annat slag. Den visar på intresset för design inom olika grenar av företagsekonomi och management. På Wiens "Handelshög-skola", inom entreprenörskap pågår forskning om innovation och produkt-utveckling. I ett projekt som redovisas i

den fjärde artikeln har Martin Schreier studerat konsumenters relation till design och nya produkter. Den här studien visar att konsumenter även själva är intresserade av att designa sina egna produkter. Forskargruppen har utvecklat ett webbaserat verktyg som gör att konsumenten själv kan designa till exempel en egen klocka. Köparen är dessutom villig att betala mer för denna klocka jämfört med liknande klockor som erbjuds i butiken. En tolkning är att det skapar engagemang och stolthet som gör att de är villiga att betala mer för de egna designade produkterna. Hur påverkar detta designers produktutvecklingsprocess om de inte ska leverera själva slutresultatet utan skapa förutsättningar för konsumenterna, "amatörerna", att själva designa? Men framförallt ger det upphov till fortsatt forskning om relationen mellan konsumenter och produkters design. Här finns det uppslag till fortsatt forskning.

Den femte artikeln handlar om de italienska möbelföretagens framgång i USA inom "high end" segmentet, dvs de möbelföretag som representerar det moderna "made in Italy". Gabriella Lojacono, som har disputerat på en avhandling om management i italienska designintensiva företag, beskriver här en studie av designintensiva företags utveckling och positionering på den amerikanska marknaden. Med utgångspunkt i teorier om hur framgångsrik export utvecklas var syftet att komma fram till vad de italienska företagen bör göra för att öka sin export. Baserat på intervjuer i USA konstaterade hon att många av de italienska företagen har gjort få anpassningar till den amerikanska marknaden. De har stort variationsrikt sortiment, vilket orsakar långa leveranstider. De är dåliga på engelska och verkar sakna känslan av "brådska". De svarar sällan, eller mycket sent på e-post, de är små företag, med begränsade resurser, som hindrar expansion. För att öka exporten handlar

det således om att effektivisera. Samtidigt kan man göra en annan tolkning med hjälp av teorier om upplevelseekonomin. Den stora variationen på produkter gör att de produkter vi får från dessa italienska företag, när vi väl får dem, efter lång och invecklad väntad, är unika produkter. Vi kan berätta för våra bekanta vilken komplicerad process det var att få dem levererade, men vi lyckades. Vi får inte bara en möbel som är unik och svårtillgänglig, vi får också en historia att berätta om upplevelsen av själva köpet. Historier om effektivitet får någon annan berätta. Relationer mellan design och konsumenter handlar om förväntan och upplevelser kring de processer som även omger själva ägandet och användningen. Om det är något som slår en när man lyssnar på italienska designers är att de har en historia att berätta om sin design. Men om hur svårt det är att få tag på produkterna, är den historia som tillverkarna lägger till. Att komma fram till rekommendationer som kan öka exporten handlar dock om en djup förståelse av kulturella mönster, av konsumenter och andra marknadsaktörer, vilket kräver fler teorier än de upplevelseekonomin erbjuder.

Slutligen - en artikel om det seminarium om tjänstedesign som Svensk Industridesign (SVID) anordnade den 17 maj. Framtiden för industridesign och designer. Jag citerar Alan South, IDEO Desiugns Europachef, som medverkade vid seminariet: Design needs service, service needs design; service design - similar but different. Liknande, men annorlunda. Det är ofta detta utveckling handlar om.

The Physical Context of Creativity

Text: Tore Kristensen

Creative processes are complex and consist of sub processes, e.g. value creation, scaffolding, imagination and materialization. Creativity takes place in a physical context, i.e. in a confined space. Such space restricts and enables the free flow of sensory experiences and proximity of other people. The confinements may make certain sensory experiences available (vision of source material, sight and sound (including noise). That is, this framing allows certain cognitive processes and restricts others. This may induce emotions that, in turn, facilitate or reduce the enhancement of creativity. Physical space affects the well being of people, the channels of information, the availability of knowledge tools and sets the stage for coherence and continuity, which may contribute to competitive advantages.

Companies can generate more good ideas by using the physical space more diligently. By using the choice of place and space, creative processes may be facilitated.

The creativity literature (e.g. Sternberg and Davidson (eds.) 1996, Csikszentmihaly 1996) presents many good examples of individual people's creative habits and launches the general argument that space means a lot for people's emotional well-being, which in turn is fundamental for creative work. In the business literature, creativity is highlighted, whereas space is hardly ever mentioned. In the cognitive literature (e.g. Kirsh 2001), some ideas on workspace in general are presented. In architectural literature, Alexander et al. (1977 p. 847) shows how a good workspace might be designed, but presents little theoretical explanation. Yet, there is inspiration to find in this litera-ture. So far, there is limited knowledge on how the physical space actually enhances creativity.

The article is organized as follows: The next section addresses creativity including the conventional phase models. The third section explores spatial concepts. The forth section defines embodied cognition and reframes the concept of creativity. This leads to further elaborations and ways of juxtaposing the nature of creativity into four different processes in section five, where we also discuss spatial requirements. The last section contains a discussion and conclusion.

Creativity

A creative individual is somebody who actively seeks new knowledge, who is motivated by curiosity and who wants to achieve something. Sternberg (1996) has proposed an investment theory of

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creativity. According to the theory a creative individual adopts an idea, which is in low regard and develops the idea to make it accepted by a larger audience. This assumes, that there is a pool of ideas and much creative work is concerned with selection of potential one's. Creative individuals are able to sustain ambiguity and stay in a state of "indecision" for longer time than others. A risk-taking attitude may also be found. While these characteristics may be true, they should not be exaggerated. Csikzentmihaly's (1996) interviews with over a hundred people, especially selected for achievements at Nobel Prize level, indicate lifestyle and being in the right place at the right time, play a major role in creativity. To know when and where the right time and place indicates that factors outside the creative individual is at play. This means the creative person must match with the field of experts and the domain of knowledge.

Wallas (1926) introduced a phase model, which has been used and referred to as an anchor point of creativity ever since (Csikszentmihaly & Sawyer 1995). The model serves as a good guideline for how a creative process may consist of different phases. In the phase model, the first phase is *preparation*, the second is *incubation* followed by *insight* and finally *elaboration and evaluation*. We will inspect these, before describing relations between the creative processes and the spatial dimensions.

The preparation stage

The general issue of this stage is to facilitate data and information for the process. Such situations differ, as both a single individual as well as a team may conduct the preparation. Space for organizing the information and easy retrieval is essential. It is vital for team members to exchange frameworks, to set the common goals and stage the remaining process. The spatial arrangement must support as much information flows and absorption as possible to each member. The tools, like personal computers, bulletin boards and general

access to information is important both for individuals and for teams. Communal space seems important for teams. Sometimes a private space is essential for analysis both by individuals and team members. The length of this phase can vary - depending on when the team reaches a barrier, fatigue or leaves the assignment.

The incubation stage

In the incubation stage, the cognitive processes seem to be essentially a personal or private affair. Incubation can happen when people change to other assignments or simply relax from a previous one, but the cognitive process of problem solving goes on implicitly. The literature on incubation only refers to individual cognitive processes, (Dorfman et al. 1997). Despite this, it seems likely that "distributed cognition" happens because perceptual clues are shared among team members (Hutchins 1995). In such cases, the team members need a medium of communication e.g. a bulletin board (Reddy 2002) or any other cognitive artifact (Gedenryd 1998). Some creative people are best left to themselves in the incubation stage, while others seek company. Incubation is an implicit cognitive process, but perceptual clues may facilitate the process. Staying in the room where all the information from the preparation stage is kept may facilitate such implicit perception as a process of "priming".

The insight stage

Insight (or illumination) is a "flash" that occurs when the winning concept cuts across the barriers of consciousness. Accounts of insights are often reported as idiosyncratic and it may not matter much where it takes place (Hadamard 1945).

Elaboration and evaluation

We shall compare the results with the goals of the preparation stage where the value creation is at the center. In this context, thorough analysis and evaluation are necessary in order to see if the desired

goals and values are met. Contextually, this stage must resemble the preparation stage, as the operations are similar. While the preparation stage starts with a briefing, the elaboration and evaluation stages end with a debriefing and implementation. While we can assume how space may increase creativity, there are no aspects of this in the theories.

Spatial Concepts

Concepts of space are often thought of in "vernacular" terms, due to the difficulty of its articulation (Hillier 1996). Even architects have only recently developed a scientific language for space (Hillier 1996). The most basic concept when dealing with space must be that of place. The position and extent of the place must be established before the particulars of space matter (Nordberg-Schulz 1970). "Place" refers to the physical extent or territoriality, whether in the home or at work. The "dwelling," signifying the locus one returns to, is important, as this is the foundation for an identity within the whole organization. Space is the 'built environment' and includes shelter, confinement and protection (Lawrence & Low 1990 p. 454).

"Built form" also refers to specific elements (e.g. doors, windows, roofs, floors and chimneys) as well as subdivisions of buildings (e.g. rooms, arrangements and connections) referred as "configurations" (Hillier 1996 p. 33). There are several concepts of space (Nordberg-Schulz 1970). Although physical, perceptual, phenomenological space differ analytically, in most situations these concepts must be seen in relation. Architects and builders create the physical space, but the space we use is founded on what we perceive. The physical space is the foundation of the perceived space that affords opportunities for our activities. Physical space is the objective and the perceived space is the subjective aspects of the same space. Other variables are paths, connecting spaces or spaces naturally leading to movement or in a certain direction. Paths guide much automatic behavior (Bargh & Barndollar 1996), since we usually follow them without effort or conscious decisions, which is an important aspect of how space direct behavior. The density of the place can be important as it means that people move closer to or further away from each other, the so-called "proxemics" dimension (Hall, 1968). Density is usually not a homogenous phenomenon. High density may result in more intense interaction, e.g. when people do brainstorming. On the other hand, when people get too close, the space becomes crowded (Baldassare 1978).

Norberg-Schulz (1970 p. 17) defines space as "a relatively stable system of schemata", where these schemata can be logical, pragmatic, perceptual, cognitive, emotional or existential. A number of spatial dimensions are important. One is configuration, which has a quantitative aspect and can be defined formally:

"If we define spatial relations as existing when there is any type of link-say adjacency or permeability-between two spaces, then configuration exists when relations between two spaces are changed according to how we relate one or other or both to at least one other space."
(Hillier 1996 p. 33, 96ff)

When we consider two adjacent rooms and consider a situation where a person comes from the outside and enters one of the adjacent rooms it becomes clear why configuration matters. If you have to pass through one to get to the other, the configuration is asymmetrical. This means that it is possible to grade rooms according to access. Some rooms are accessible from outside and allow strangers to enter. Others require more doors and are restricted to privacy. The issue is both practical and cultural. Few cultures allow a

stranger coming from outside to enter the intimate rooms of a home or a shop. Buildings in most of the world have graded accessibility to rooms, marking the level of intimacy from the outside. Typically, there will be a communal space that strangers are invited into first, which is also the room that provides access to most of the other rooms in the house. This quantitative aspect is measured by the simple means of a j-graph and shown as simple branch or network models (Hillier 1996 p. 35, 99). The configurations can be characterized as form, e.g. centralized, linear, radial, clustered and grid (Ching 1996 p. 57), which all offer a variety of usages.

The other important characteristic is qualitative. This is more complex and this is where the real challenge is. Many experiences and emotions are attributed to space (Baldassare 1978). Especially relevant for our purpose is the connection made between space and imagination. Aristotle made use of the spatial term topos (Nordberg-Schulz 1970), which is similar in meaning to Newell and Simons' (1972) term "problem space," meaning a discourse. Physical space is correlated with cognitive space. This is a metaphorical relation, where the physical space gives form to cognition. Our objective is to identify what qualities in the outer space feed into an effective inner creative process.

Embodied cognition and creativity

Creative processes are mental and have been the object of research among the early cognitive scientists, e.g. Newell and Simon (1973). The aim of that research was to develop a metaphor resembling a computer image of the brain. Although this research was successful for many years, criticism has recently emerged claiming that the research program ignored context (Haugeland 1995; Clark 1997; Hurley 1998). In contrast, their view assumes that cognition and emotion integrate body and mind, and that it

cannot be regarded as an activity apart from the physical reality and body of the thinking and feeling subject. Much cognitive activity is "situated", that is, it happens "on-line" when challenges are met and action is required. This does not mean that planning and reflection is not happening or that it is not very important. It means that even when the best planning has been conducted, the reality of the situation is a direct force that must be accommodated in real time and with complex feedback. Hurley (1998) uses the following metaphor:

"...*the circus performer who puts the handle of a dagger in her mouth, tips her head back, balances a sword by its point on the point of the dagger, and with the whole kit balanced above her head magisterially climbs a ladder, swings her legs over the top rung, and climbs back down the other side of the ladder. Each move she makes is both the source of and exquisitely dependent on multiple internal and external channels of sensory and motor-signal feedback, the complex calibrations of which have been honed by years of practice. An only slightly less intricate structure of dynamic feedback relations knits the nervous system of a normally active organism into its environment.* " (Hurley 1998, p. 2)

Much cognitive work is "situated", once we are there, we must act out the plan and make all kinds of situational adaptations as problems occur. Often, things happen so fast that only automatic responses (Bargh & Barndollar 1996) and emotions (LeDoux 1998) are fast enough. Creativity is a process that brings new knowledge, that is, previously unrelated elements of knowledge that are synthesized bring new insight through a mental process. There seems to be four sub-processes, "layered" into each other, which connect with each other in a variety of ways. Each of these processes goes through the four phases of the Wallas model, but not equally strong. They run partly simultaneously and partly one of

the processes dominates according to which phase we are in the Wallas model. The processes are:
- Value creation processes
- Scaffolding
- Imagination processes
- Materialization processes

Value creation processes

Value creation penetrates the whole process as the goal of creative endeavor. A critical element of innovation in business companies (Christensen 1997) is that the process takes place in close cooperation with the value chains of the company. An innovation is a reconfiguration of value chains and if innovations are detached, i.e. done independently of implementation, implementation may jeopardize the innovation and no new value or exploitation will be realized.

Scaffolding

"Scaffolding" means that a creative process is designed within a context of space, tools, people and information. This usually takes place in the beginning of the creative processes in order to support the subsequent processes. Any cognitive process goes on within a mediating cultural and physical context. Cognitive processes are "embodied, environmentally embedded" (Clark 2001 p.140). Humans move around in the "creative space" much like we move around in a landscape. When this happens, a "perceptual rehearsal" is performed (Ippolitto & Tweeney 1995). This supports the process of imagination, which accommodates changes in concepts and adopts new ones. In this process, people perceive sensory impressions. Furthermore, the scaffolded environment becomes a part of the creative brain, and an implicit factor that we only question where we detect problems. Problems of sub-optimal environments may be experienced only as symptoms and as emotions can that impair the creative output.

Haugeland (1995 p. 236) specifically asks whether the context embodies the information and knowledge created in cognitive tools and processes of a laboratory. Any studio or laboratory scaffolds its specific activities to match their ways of creative working (Kelley 2001). The first spatial issue is that of shape or configuration. The basic configurations are centralized, linear, radial, clustered and grid (Ching 1996). At a very general level, the activity that takes place must be facilitated by the floor plan. Long corridors facilitate a hierarchical organization with people in separated rooms, whereas a flat structure is afforded by open space where people interact at many levels. For instance, people meet when their paths cross. A forum or meeting place enables many people to interact simultaneously. Narrow paths that only allow sequential passages reduce interaction (Sundstrom a.o. 1982). The linear space may appear tidy and well ordered, however it is difficult for a group of people to assemble to discuss preparations or feed new information into the system. This is best done when a circular structure can be realized. Often meeting rooms or lecture theatres are used in sharing information. But these are usually intended to communicate the ideas on one person to an audience, not audience sharing information. Thus a centralized or radial shape seems more appropriate in the sense that communal space can be realized at the center of the creative space. Often there will be a center, where communal tools may be placed, e.g. storage of vital information, earlier successes, etc. In situations where multiple disciplines work together, the need for a central location and information system may be vital. IDEO Product Development (Kelley 2001) has such facilities.

More advanced forms, such as clusters or grids, may improve the space, allowing special attention to be given to the specific requirements of tools, e.g. visual or prototyping. A creative space should allow the peculiarities of the present disciplines to deal with the particulars, while enabling communal space for intensive exchanges and collaboration. The design studio is a

good model, as many designers like to design their workspace. Symmetries are often preferred for aesthetical reasons, but often functionality and variation is facilitated by asymmetry. An asymmetric space may also be more challenging and present an exciting atmosphere.

When two planes are vertically in parallel, they can provide different configurations and allow paths to include both horizontal and vertical movements (Ching 1996 p. 143). A grid structure can thus be obtained and allow both effectiveness and flexibility. A good creative space seems to contain challenges to the inhabitants and a part of its use. At first sight, the studio of the Finnish architect Alvar Aalto seems to be quite simple, but in reality it is not (Ching 1996 p. 138). The space is basically L-shaped, which pro-motes functionality. The Finnish architect Aalto brings the outdoor area into the picture with an amphitheatre for lectures and social occasions in the surrounding garden. This is visible from the windows and brings a dynamic into the space that asserts its potential circular form and sense of community. Often, space developed for other purposes, e.g. sacral space, seems to afford creativity. In such space, the religious activities are usually centered where the community can surround the rituals and share them. Similar activities seem to be a part of the process of creativity and should therefore be similar.

Imagination

In the creative processes the imaginative is sought, what did not exist before. Real imagination is concerned with new insights. In a creative process, imagination may be intense, but with short duration. The concept imagination (Johnson 1987; Brann 1991) stands for the integration of knowledge into coherent and unified representations over time. These should be in the form of "schemata" that mediate between abstract concepts, contents of sensory experiences and the creative, free, open-ended activities by which we achieve new ways of experiencing and accommo-

dating the exiting structure of knowledge to integrate new knowledge. This is obvious if the outcome is a physical object, but even a service or system must be documented e.g. using visual and verbal descriptions (Horn 1998).

Imagination is the representation of what does not yet exist. To imagine is to envision or create. Imagination is a dramatic human capability and a way for changes (Brann 1991 p. 23f). Imagination, as the word's etymological origin suggests, is having a picture in the "mind's eye". Some of the definitions include 'to abstract or extract from multiple ideas and compound them into one' or 'the human capability to find analogies'. Lakoff and Johnson (1999) bring metaphors; cross-domain mappings, to the foreground of imagination. According to them, creativity is the recombination of existing elements of knowledge or symbolic representations. Herbert Simon's (1996 p. 111) definition of design raises the issue of imagination. He distinguished between the logics of "what ought to be" in contrast to "what there is." Filling this gap is the role of design and, according to Simon, the solution is heuristic research, which is equal to imagining.

The history of creative processes has explained how their creative thinking was visual (Hadamard (1945) and Feynman (1985)). Crick and Watson (Gick and Lockhart 1995 p. 214) similarly "saw" the double helix of DNA after theirs and others' constant remodelling of the molecular structure. The workspace is found in design studios, and laboratories are filled with images, artifacts and models. Sometimes "odd artifacts" such as a DC 3 wing finds its way into existence because it "must be there" (Kelley 2001). Such space is usually personalized and people design it themselves. The idea of sharing workspace and leaving a clean desk with no personal belongings seems to create a sterile environment that inhibits imagination. What seems to facilitate creativity is personal and idiosyncratic. Only flexibility can make this happen.

Materialization

Finally, the materialization process transforms concepts into material objects. Concepts must be made to sensory experiences. A doctrine held high in the IDEO Product Development company is "rush to prototypes" (Kelley 2001). It means whenever possible an idea or concept should be materialized. This is in accordance with the embodied cognitive theory (Clark 1997). The idea of "wideware" is that the environment facilitates a cognitive process, where space, surfaces, objects (artifacts) are part of the apparatus and interact with the biological brain in a concerted way. Some cognitive processes are sometimes only possible when externalized. The lack of visual clues reduces the memory, although memory techniques may facilitate it. Brann (1991 p. 282f) claims that memory is facilitated by using space - and by internalizing experiences in a spatial-temporal setting. Memory is sometimes facilitated by the impressions of a particular place. This could be due to different sensory impressions. Many people, when they forget something head back to the last place they could remember what it was about. We can generalize from this and use the environment systematically to stimulate memory creativity. A simple way of materializing is sketching and using diagrammatic methods, visual models and tangible objects. Therefore, availability of tools for prototyping and models is important. Some companies rent design studios for the purpose of immediate availability of workshop facilities.

While it was not Newell and Simon's (1973) intention to connect workspace and problem space, we make the connection because the two are natural extensions of each other when we consider embodied and embedded cognition. In particular, when we consider space for design work and research laboratories, this makes sense. Creative people externalize the mental constructs in order to work better with them. Other studies (Kirsh 1995, 2001) also account for the importance of physical space in work processes. In the end, value creation must be material to be implemented in production, whether products or services.

Table 1 (in the back) shows how the concepts of spatial embodiment and creativity processes work together.

A case

A big pharmaceutical company was in a process of developing new devices for their hormones. Having been one of the leaders in the field, the company decided that in order to improve their competitiveness, they had to integrate syringes for delivery of this particular hormone, aimed at the growth of children. The process they were aiming for was to follow a "Wallas-type" creative process (Wallas 1926). Early explorations led to the idea, that since the new product was not strongly connected to the existing (pharmaceutical) product lines, there was no particular reason to expect that the development would benefit from proximity to the pharmaceutical research and it was decided that the development team find their own space. Available space in the company is ordinary linear office space. Small rectangular offices were located in a sequential fashion like a typical office or hospital building. It was evident, that walls could be put down and offices combined to form larger rectangular shapes. This was not found to be very attractive since the development team, consisting of engineers, product designers, a marketing and brand expert and a user research expert wanted a centre of gravity where the project was physically anchored. Instead a design studio was commissioned on a part time (1 to 2 days per week) basis to serve the space. The vicinity of the city centre with easy access to city life and nice panoramic views may influence the process as well as the variation of changing spaces 1 or 2 days a week. It is difficult to isolate the affect of place vs. space, but we assume space is the

most important factor.

The studio consists of one big room and several workshops located in a "clustered" fashion. The big room is at the center of the design studio and paths go in radial manners out from this central location. Since the studio could only be used 1 to 2 days per week on a regular basis it was not possible to make fixed installations. Everything had to be flexible to allow other applications. The centre consists of two large tables with drawing facilities and computers. The space is large compared to the limited number of people and crowding is not an issue. The colors are light and the walls and floor filled with objects and models.

In the preparation phase, the space was furnished with bulleting boards, flat tabletops, drawers and filing cabinets for localization of specification, progress reports and sketches. Computers with CAD were present in the studio as was metal and wood workshops, very close to the main location. Competing products and other relevant props were displayed on shelves surrounding the room. The work in this phase consisted of a lot a brainstorming. The individual participants prepared themselves, mainly at the own workspace home in the company. Asked why, the answer was, that this is routine work and for that purpose the existing structure serve well.

The incubation phase was not experienced as a real transition. The studio space provided tranquility and this was supported by sufficient space and light colors, availability of many objects, both familiar and strange. The view to outside where people would pass, sit for drinks in the sun provided a continual variation of view, very different from the one at the company site. Incubation just happened between weeks of intensive collaboration. It must be stated, that this innovation is above all incremental. Novelty is needed and patentability is an important issue, still the process incremental.

Insights were explained to happen in

communal sessions, where well-prepared experts presented their revised studies for the others. The close vicinity of the wood and metal workshops enabled the innovators to jump to simple models to explain the principles. The recordings of previous sessions were always present, easy to access and the bulletin board and tables displayed previous attempts.

According to the company and the designers who manage the studio the process is very successful and the collaboration has lasted for several years. This gives an accumulation of recorded material and experience which it-self is useful. It seems that the changing place may be a factor, since isolation from disturbances may be a factor. The inconvenience of bringing information from the company to the studio goes in a contrary direction. Most of the effects should be due to the spatial issues. Only seating arrangements have been changed during sessions. Private space for contemplation and concentration is available and frequently used.

Conclusions

A limitation in this study is the lack of comparative situations. Csikzentmihalyi (1996) raised this as a general issue in creative studies. An experiment could be set up where two teams are given similar assignments but different spatial conditions. This means that the case is only an example of how some companies deliberately use physical space as a toll in their creative pursuits. In this paper, we have discussed the spatial requirements during different stages of creative processes. The article suggests that there are differences in the requirements between the stages. The preparation and elaboration stages typically require a combination of communal and private space. The incubation and insight stages probably require more private space. For example, useful information presented in the nature of objects, artifacts, tables, images, tabletops etc. can facilitate the process at an implicit level.

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Table 1:
Embodied creative processes

	Preparation	Incubation	Insight	Elaboration & evaluation
Value creation	Guiding principle	Guiding principle	Guiding principle	Guiding principle and benchmark
Scaffolding	Physical organization of process	Subject to altering and manipulation	No particular role	No particular role
Imagination	Perceptual rehearsal accumulates inf.	Perceptual rehearsal accumulates inf.	The moment of novelty	No particular role
Materialization	Preparation includes tools for	No particular role	A new concept, solution or artefact is material or sensory	The material object or artefact is subject of elaboration and evaluation

The Activity of Rhetoric within the Process of a Designer's Thinking

Text: Dr Louise Valentine

This paper summarises a study of the activity of rhetoric within one designer's thought process. It attends to the relationship between words and images, and focuses on how the design er's mind visually understands. The paper begins by outlining key attributes of the methodology used, before briefly presenting the essence of three empirical studies. In doing so, it provides a theoretical description of rhetoric, before drawing on the philosophy of mindfulness and the method of Bohmian dialogue to facilitate further articulation of the activity. While rhetoric is both a language and a meta-language, the thesis was concerned with the process of a designer's thinking rather than design process thinking. Therefore, discussion attends to rhetoric as a meta-language as it focuses upon the process rather than product of rhetoric. It closes by presenting the activity in relation to the indeterminate nature of designers thinking and by explaining the activity of rhetoric as an interrelated process of looking, listening, and questioning.

This research was concerned with communication of design thinking, from the perspective of a designer, and in relation to the process, product, and user experience of design. It was a study of the act of persuasion within the process of a designer's thinking, and was concerned with interpretation of the relation between words and images. The role of technology, intuition, and visual thinking were identified as three key components of design thought, and the way these three constituent parts inter-relate was the subject matter of inquiry.

Design Research Framework

Rhetoric is a form of interpretation that demonstrates the relation between language and action. It is an approach to conducting conscious acts of interpretation: a study of the set of effects within a discourse (Bygrave, 1993). Filled with subtle yet significant statements and phrases, rhetoric is a way of producing a collective meaning rather than providing a

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prescribed understanding (Backman, 1987; McKeon, 1971). As such, the methodological approach used in the thesis was not communicated through one explicit description and explanation. The methodology encouraged the reader to accept that engaging with the visual aspect of the work was a dynamic rather than passive experience, and one that required the reader (at strategic points) to bring their own understanding of design and design thinking into the conversation. The methodology was encapsulated across five discourses rather than being confined to a single definition. This gave flexibility to the approach allowing the direction and subject of inquiry to be interrogated continually. This approach demanded an open-mind and, an understanding that there were times when questions were not immediately answered, rather they were carried with the researcher throughout the investigation until a level of understanding, that allowed articulation of her thoughts and the knowledge gained, had been reached. The methodology also gave the reader an opportunity to reflect on his or her own intuitive processes whilst gaining insight into this designer's intuitive process.

The study of the activity of rhetoric was an investigation of the relationship between words and images rather than a study of the pattern of thought formed through words. It was a 'practice-led' thesis (Gray, 1998) where, *'Research is completed in the process of execution'* (Newbury, 1996).

The practice of communicating design thinking was the topic, the context for investigating a designer's thinking was doctoral research and the methods used for exposing a designer's thinking were observation, interview and questionnaire. However, attention and emphasis was not given to the content of the data derived from these methods, but the subject under investigation within these methods (i.e. design thinking *within* observation of design as a process; the practice of

intuition, on *reflection* of interview conversations, and the exposition of my assumption surrounding visual thinking *through* the construction of a questionnaire). Within this approach to research, the direction of inquiry is less predictable and subsequently, a detailed plan is less applicable (Newbury, 1996; Scrivener, 2000b).

Exploring the Process of a Designer's Thinking

Communicating design thinking out with the practice of making objects and in the context of research is an unusual challenge for designers. It requires a shift in emphasis (from the content to the nature of a problem) and a discussion centred on the process rather than the product of a designer's decision making.

Investigation of the activity of rhetoric began by compiling a comprehensive digital portfolio of information concerning the design process. The portfolio presented 97 examples of the problem solving and learning processes of second year design students, and captured, for example, technological and materialistic, environmental and/or cultural differences within and between eight design education programmes.

The digital portfolio (or visual discourse) was a vehicle for exploring the activity of rhetoric within this designer's process of thought. Observation was conducted from three perspectives: visual, verbal, and numerical, where a balance between the internal dialogue of the observer and the external dialogue of the situation was sought. The act of thinking was not separated from the act of doing, and as such the researcher was both the observer and the observed (Moustakas, 1990). The accompanying process of observing design process thinking served as a primary means of listening and questioning the internal perspective of a designer's dialogue.

Intuition: Its place in decision making for designers

To further investigate the activity rhetoric,

a case study focusing on the physical and emotional experience of being a designer was conducted. The objective was to provide insight into the means by which intuition supports the creation of a network of decisions that connect theory and practice within a designer's thinking. Five leading Scottish graphic and product designers were interviewed. The individual interviews were not treated as independent studies and there was no attempt made to integrate them into a sample of designers as a whole. The purpose of the series of interviews was to observe and question the internal dialogue of a designer's thinking from five perspectives.

Looking and questioning the internal dialogue required an ability to work for long and intense periods of time in a highly ambiguous environment, often without new information being uncovered. This situation was very uncomfortable and there were times when the researcher was overwhelmed by fear: fear of the inability to conduct this research and fear of presenting how this designer approaches decision-making. However, the researcher did not try to control the uncertainty, but simply looked at the information and allowed thought(s) to float in and out of awareness. Whilst there were times when the content of the conversation was referred to, this was generally avoided, as it would have directed the researcher's attention towards discussing how the visual information (derived from analysis) was constructed, rather than focusing on articulating how this designer's mind visually understands.

Intuition has been presented from an extensive range of thorough, well-explained theoretical perspectives. Some of which were particularly pertinent for their discussion of the practice and experience of intuition as opposed to those restrictive technical explanations. Hope Fitz (2001) presented that intuition involves active engagement with an experience and not passive response. Michael Gelb (1997) viewed it as a higher form of

intelligence, and Michael Polanyi (1966) presented intuition as a process of awareness in which the whole mind is at work: a process that ranges widely and represents integrative acts taking place at any stage of inquiry. Though they emphasised different facets of intuition, their conclusive presentation was of the same essential idea.

Intuition is not simply an emotional response to an experience rather it demands that an individual be closely involved with the inherent process of observation. Every part of the person is involved; every sense is at work. When experiencing intuition, the mechanics of the body alter. Intuition is not perceived by most subconscious minds because it is dependant on an individuals willingness to compare conditional truths with probability statements gathered from situations, environments, people and/or objects (Langer, 1989). There is a depth of thought that one is aware of, something intense but no conception of it. It is something that one cannot see; one cannot disturb. There is no physical access to this information because the mind seems to be working on it beyond consciousness.

Intuition is inconceivable thought. A paradox, because one goes beyond all they think themselves capable. A designer creates space around him/herself, and in doing so, is open to surprise. When the environment is there, there the designer is ready. They are open to the 'whispers'; the 'glimpses': intuition becomes a personal marker.

It was apparent that the use of intuition within decision-making requires a degree of trust. Whilst this was a closely related issue, and one that was worthy of close attention, the topic was not dealt with directly within the interviews. To investigate the development of the ability to 'read' the process of intuition requires complete attention. Indeed, the interpretation of the process of intuition, which gives rise to a deeper understanding and

out of which a greater trust for and appreciation of intuitive knowing can be gained, was considered too complex an issue to be dealt with during the interviews. However, the process of reading intuition was not completely dismissed. Whilst this case study did not question the development of intuition, the process of listening to one's inner dialogue captured intuitive decisions.

Visual Thinking: an evaluation of a designer's process

Visual thinking was the core of this doctoral inquiry: the principle method of investigation, where the associated questioning relied on intuitive analysis of the inter-relation between information content, and the means of expression in shape, line, form, colour and pattern. Communication of visual thinking was initially directed toward the theoretical validation of its role. In doing so, an objective perspective of its use within the process of a designer's thinking was provided. However, this perspective confined visual thinking to being understood as a tool for thought and did not acknowledge it as being thought itself. To address this imbalance, the latter issue was also attended to.

Richard Buchanan (1995: 45-6) in his seminal work on the relation between rhetoric and design raised the difficulty surrounding communication of the themes of 'expression and styling ' in design thinking.

'The problem is how to accommodate sensitivity to expression with the intellectual and analytical issues belonging to communication, construction, strategic planning, and systematic integration. The neopositivist approach is to distinguish sharply between emotion and cognition, leaving expression as something emotive, irrational, intuitive and noncognitive. However, in the context of a rhetorical approach, the expressive appearance or styling of a product carries a deeper argument about the nature of the product and its role in practical action and social life. Expression does not clothe design thinking; it is design thinking in its most immediate manifestation, providing the integrative aesthetic experience which incorporates the array of technical decisions contained in any product.'

Visualisation is intrinsic to design, as it is a designer's private tool for thinking (Scrivener, 2000). It is a means of externalising, analysing, interpreting and communicating (Cross, 1999). However, visual or non-verbal thinking is also essential to the manner in which thought is conceived (Falconer, 2000; Arnheim, 1969). To articulate this, a parallel between design and mindfulness was drawn as the process and product of the discipline of mindfulness is inextricably interwoven: it is both a means and an end - a philosophy and a method. The cognitive aspects of mindfulness, as adopted by Hanh (1991), Kabat-Zinn (1994), Langer (1989, 1997) and Bentz & Shapiro (1998) are that it is a way of seeing which causes and maintains inter-connections. It is an approach to inquiry that draws a person's attention and awareness to the impermanence and uncertainty surrounding a problem.

Whilst attention and awareness are universal human qualities, 'in our society, we tend to take these capacities for granted and don't think to develop them systematically in the service of self-understanding and wisdom' (Kabat-Zinn, 1994). Within design, mindfulness can enhance the richness of information contained within indeterminate problem solving by supporting the inclusion of a designer's subjective qualities of judgement and experience during decision-making. Through careful and systematic self-observation of one's own mind, mindfulness helps an individual deal with the turbulence that surrounds chaotic circumstances. Whilst it does not

remove the natural environment, it provides an individual with a deep sense of knowing: a richer understanding of oneself and how to engage with uncertainty.

Mindfulness can support transparent communication of indeterminacy, as it is a philosophical orientation that guides an individual's choices and teaches them to adapt their knowledge and understanding to unique situation(s). In this respect, the discipline has a profound relevance for design as it can deepen a designer's awareness of his/her process of thought, thereby heightening an ability to communicate why design does and does not have a subject matter.

A Context for Mindful Inquiry

Teaching visual thinking to novice art and design students was the context in which mindfulness was practised. Although the word 'practice' can be used to indicate an activity with a repetitive nature, it is meant in this instance to describe the cultivation of mindfulness. The essence of teaching was to develop an ability to keep one's attention focused on one's visual thinking in an attempt to communicate efficiently and intelligently, aspects of one's tacit knowledge.

The Method of Dialogue

Dialogue is a means of allowing an individual to hold a 'vision' whilst embracing the widest and most creative aspects of problem solving. It is a responsive tool, and although it is an intensive discipline of openness and listening, it is a method that facilitates an ability to see the interdependence of the subject and object of knowledge (Bohm, 1996; Yankelovich, 1999). Within a dialogue, there is no attempt to accomplish any useful purpose since the assumption(s) behind what is defined as 'useful' limit the value of a dialogue and block the unfolding meaning (Bohm, 1985).

The purpose of dialogue within the study was to give attention to the process of questioning in an attempt to develop an

ability to see the assumption(s) lying behind visual thinking. Thereby deepening an awareness of thought as a system and providing a basis from which to begin dissolving the assumption(s). However, the difficulty with dissolving one's assumption(s) is that one's mindset cannot be viewed as a problem rather the situation must be viewed as a paradox for reasons that Bohm (1996:70-72) succinctly articulated,

'If I say I am going to look into my mind but I don't consider my assumptions, then the picture is wrong because the assumptions are looking. That is a common problem of introspection. You say, "I am going to look at myself inwardly," but the assumptions are not looked at - the assumptions are looking...

...very often, the first question you ask will contain the very presuppositions that should be doubted... Somewhere "back in the back" is somebody who is observing what is wrong, but he is not being observed. The very "wrong" things, which he should be looking at, are in the one who is looking, because that is the safest place to hide them. Hide them in the looker, and the looker will never find them.'

An individual can conduct a dialogue, but this is unusual due to the high level of anxiety associated with exercising one's assumptions and challenging one's opinions and views (Bohm, 1996; Ellinor and Gerard, 1998). Dialogue was chosen as a method to provide insight into what it means to be a designer and to use visual thinking. It was not used to provide a generalised visual thinking statement in an attempt to change existing definitions; rather it was a way of becoming aware of one's personal assumption(s).

Visual Thinking Questionnaire

A questionnaire was used as a means of communicating the key elements of the teaching programme without intrusively re-iterating individual learning outcomes, and it was also a way of gaining insight into the value and significance of the teaching programme from the user's perspective.

The value of the questionnaire to this research was as a facilitator of dialogue. The resultant internal process of reflection gave rise to a particular series of questions: why are the processes of looking and listening to verbal and non-verbal information important to the process of visual thinking? Why is the exposition of one's internal decision making process important to developing an understanding of design and why are visual methods appropriate for facilitating the exposition of a tacit dialogue?

Exposition of an Assumption: visual thinking

The information a person perceives to be relevant is often guided by their tacit pre-suppositions, which are often irrational and interrogated by questions that are full of contradiction. These assumptions which profoundly affect the perspective from which one chooses to listen, and directs how information is collected, gathered and structured, are dangerous as they exacerbate the confusion which surrounds a problem (Bohm, 1996). To become aware of one's assumptions one must listen, and as Bohm discussed, listening is an ability not simply concerned with accurate, conscientious and empathetic sensitivity to words and their meaning, but one which involves attending to the misperceptions of an individual's spoken intent. To approach and understand the process of listening from this perspective, he remarked, can lead to new meaning when communicating rather than on reflection of communication.

Within the study, ten perspectives on one assumption provided insight into the tacit dimension of this designer's thinking, and in doing so, they presented this designer's understanding of visual thinking in relation to the nature rather than the content of a design problem. For example,

- Visual thinking is a form of interpretation where the objective and subjective processes of looking and listening occur simultaneously. The value of being able to combine both processes is that it facilitates an understanding of the content and process of problem solving as it happens, thus providing the observer with an ability to read and question constantly changing situations. This ability to interpret unpredictable scenarios commands an individual to establish a close working relationship with the internal perspective of thought. Recognition of this attribute facilitates a deeper awareness of the tacit dimension of visual thinking, and subsequently provides a platform from which to document and question the dialogue. Thereby contributing to an understanding of design as a discipline of thought.

The Activity of Rhetoric

The variety of ways in which Richard Buchanan communicated design, his attention to the cultural change in design, and his argument for a deeper understanding of the essentially pluralistic nature of design, triggered an investigation into design thinking as a form of rhetoric. Buchanan argued that the field of design needed to adjust communication of design thinking, and consider the new circumstances in which it exists. He highlighted that one of the problems facing design, was that not enough designers were willing to consciously criticise their approach within the new culture of design, and *'yet keen interpretive work is needed to understand the philosophical positions that are expressed [in design thinking] and to project their concrete implications'* (Buchanan, 1990: 84).

Buchanan proposed that by recognising

'*the inherently rhetorical dimension of all design thinking*', design could be communicated as a humanistic enterprise (1995:24). He argued that understanding the doctrine of placements in design thinking was crucial for understanding design as rhetoric: '*The systematic pattern of invention that lies behind design thinking is ... found not in a set of categories but in a rich, diverse and changing set of placements, such as those identified by signs, things, actions, and thoughts*' (Buchanan, 1992:12). The doctrine of placements is a means of addressing a designer's visual thinking, and a designer's intuitive approach to decision making.

Communicating through Multimedia Technology

Multi-media technology was an integral issue being addressed throughout this doctoral process of design research. Computer technology was central to communication as the computer, despite being an essentially linear processing tool, had the potential to facilitate communication of the rhetorical process of a designer's thinking, and the capacity to retain the integrative nature of design thought. Thereby emphasising the dynamic interchange of information, which was considered to be the essential characteristic of design thinking.

Computer technology was the tool used for drawing because it had the capacity to demonstrate the process of 'layering' information, which occurs in design thinking. It enabled communication of design thinking by demonstrating how layers of information can be added, and at times, taken away within the process. The ability to add and subtract information is an integral characteristic of a designer's decision-making as it allows the designer to look at a problem from a plurality of perspectives and to juxtapose characteristics of the process. Each layer represented one perspective, from which the process of thought can be viewed and interrogated. It demonstrated how each aspect of

the process is related, and how the resultant network of decisions, directly and indirectly affect the end result.

Computer technology also facilitated the organisation of a large volume of visual information, and the creation of an interactive digital portfolio. It was used because it had a capacity to communicate a diversity of design methods and techniques in a systematic and manageable way. Digital technology retained a dynamic relation between the problem and the researcher; it supported the ability to move freely within and between 97 examples of the problem solving and learning processes within an undergraduate design programme. While communicating the process of observation, the phrase, 'the observer paused for thought and in doing so, interacted with the digital portfolio was used'. This contradictory statement referred to the internal conversation the researcher was having with the visual information, and on reflection of the rhetorical process, the following stages were identified:
- Looking without immediately questioning the visual information
- Recording what is observed at a particular moment in time
- Listening to one's personal understanding of the newly presented information
- Allowing questions to arise from personal understanding and in relation to the new information contained in the digital portfolio
- Looking and appreciating what one physically sees within the visual information
- Listening to one's inner thoughts; to what one thinks when observing the visual information
- Discussing with others what has been observed
- Producing written statements or developing questions, and using these to direct observation
- Recording what one sees through questioning

- Listening to what one think when observing one's inner thoughts
- Interpreting the information
- Exposing the interpretation

By simultaneously looking internally at the content of her thought process, and externally at the nature of the various design processes, the researcher became aware of the relatively random and free-flowing pattern of decision making within her thought process. The process of looking intensively at design thinking from a practical and theoretical perspective provided an awareness of the activity of rhetoric. It presented that,

- Rhetoric facilitates interaction between a designer and a problem as it creates a relation between the processes of listening and questioning during the process of observation
- Rhetoric is a tool for working with ambiguity. Whilst ambiguity is not given unlimited freedom within a designer's thinking, it is used throughout the process as it is an environment for working with intuition. Rhetoric is a tool for identifying a problem within an ambiguous environment.
- Rhetoric is an open-ended process of thought. A continuous deliberation between one decision and another, subsequently causing changes to how one thinks about past and future decision, or how one views current pieces of information. In a process of decision-making, rhetoric nurtures endless reverberations and it creates an ambiguous environment.
- The *activity* of rhetoric within the process of a designer's thinking is the relation *between* words and images.
- Rhetoric facilitates a discourse between words and images, and rhetoric *is* the discourse between words and images.

The experience of conducting five interviews with professional designers, and the initial process of analysing the data gathered from the interview conversations, was used as a base for reflecting upon a designer's thinking process. Realising where the value of the interview process lay, in relation to providing insight into the activity of rhetoric was not immediate. At first, the researcher tried to analyse all of the data collected from every interview by producing a series of mind maps. She attempted to individually and collectively present the information, in order to evaluate the work and extract knowledge of the activity of rhetoric.

She found herself desperately trying to validate visual thinking as an appropriate method to use in a determinate framework, despite knowing that the problem she was investigating was indeterminate, and the method she was using was also indeterminate. This contradiction is certainly not a new problem or challenge within practice-led doctoral design research, and it remains an internationally contested issue (see, for example, Durling, 2000; Friedman, 2000; Gray, 1998; Krippendorf, 2000; Margolin, 1998).

The second contradiction that the researcher appeared to be caught up in, was that she was looking to define rhetoric as a product of design thinking, despite understanding that rhetoric is innately amorphous. In this state of confusion, she found herself redirecting her attention to alleviate the level of anxiety. She stopped looking for the 'right' information, and stopped trying to use the 'right' method, and simply listened to the visual information.

The researcher allowed her intuition to select aspects of the process of interview for interpretation. The process of 'mapping' sections of the participant's interview conversation (i.e. transferring words into an image) was a means of achieving this, and multi-media 'moving images' were created to demonstrate the process. By making a 'moving image' of the process of drawing, computer technology, for example, enabled the researcher to repeatedly watch the relation between

looking and questioning during the process of listening. Thereby, providing an opportunity to observe the process of a designer's thinking in action. It allowed her to demonstrate the relation between looking and questioning. Indeed, it facilitated the ability to articulate the activity of rhetoric as the relation between looking and questioning when listening to a conversation. Computer technology was not simply a tool for communicating the process and product of visual thinking; it was a facilitator of learning. It demonstrated where to look for the activity of rhetoric, how to listen to rhetoric, and what questions to ask in order to expose rhetoric within the process of a designer's thinking.

On reflection of another intuitive decision, the researcher disclosed that intuition facilitates the activity of rhetoric by drawing attention to contradictory information within situations, and rhetoric interrogates an intuitive decision by questioning the relation between visual and verbal information. Technology retained a relation between the implicit process of looking at visual information and the process of questioning the content of one's internal conversation. Thereby, capturing the intuitive decision to move from one piece of visual information to another, and demonstrating the process of intuitive decision making within visual thinking.

Closing Remarks

An essentially holistic approach to understanding the designer's decision-making process was adopted, and as such, the research did not separate the act of thinking from the act of doing. A visual methodology was developed, providing a context that allowed the designer's qualities of judgement and experience to become subjects in themselves. It attended to the unfolding nature of a network of relationships that developed amongst the roles of intuition, visual thinking and technology. In doing so, the inquiry contributed to knowledge by communicating, 1) the significance of visual thinking as a methodology for doctoral design research, 2) the role of computer technology as a tool for looking, listening and questioning the activity of rhetoric, 3) intuition as a facilitator of rhetoric and, 4) rhetoric as an interrogator of intuition.

The following visual (figure 1) communicates the activity of rhetoric within the process of a designer's thinking. It presents the process of looking as the relation between listening and questioning, the process of listening as the relation between looking and questioning, and the process of questioning as the relation between looking and listening, where each process has a subjective and objective perspective. The activity of rhetoric is an interrelated process of looking, listening and questioning.
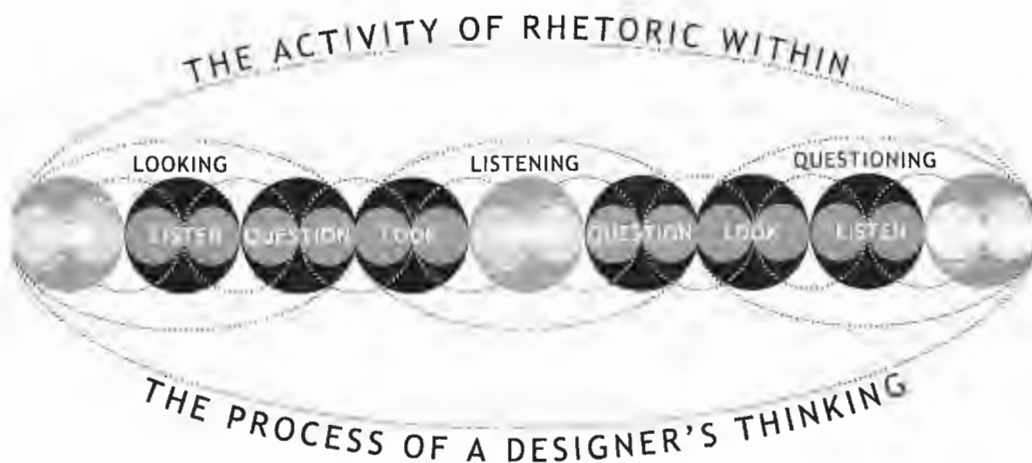

Figure 1:
The activity of rhetoric

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The designer as strategist: a convergence of languages

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Working in the middle field between design and management implies a constant search for signs of progress towards better understanding and knowledge exchange between the two disciplines. Very often the starting point for discussion is a re-examination of the current state of polarity. There may be a continued investigation into the nature of creativity in both fields, or the nature of left and right brain thinking, as well as the processes and language used by practitioners in each camp.
It sometimes seems self-indulgent to be so concerned with a relatively small part of corporate, institutional and working life when the world itself is increasingly chaotic. But such is the nature of this field of activity and its protagonists that there always appear to be windows of possibility for designers, and managers, to contribute more profoundly to economic improvement and society's well-being.

Two years ago, the author identified several dilemmas (1) concerned with the status of designers in organisations, the overwhelmingly popular perception of design as manifesting solely fashionable trends and the need for re-appraisal of current design education. The intervening months have revealed new findings and emerging patterns of managerial activity that mirror design thinking. There are subtle shifts in typical workplace roles. More design-trained people have taken up significant positions in industry that respond with increased empathy to new consumer expectations and new organisational attitudes. In developing an investigation into current design career characteristics for this paper, the author found several connected areas for discussion:

Recent thought on economic and organisational change is more akin to revolution. The massive, as opposed to incremental, change being proposed for companies in the 21st

century is affecting working patterns and the nature of consumption.

Managers' realisation that many new processes they are being asked to adopt have remarkable similarity with design activity is delighting them, but leaving most designers bewildered or indifferent.

There is a significant juxtaposition of new radical positions in management and recent transformations in design roles and practice - a new kind of convergence of knowledge worker from both areas. One role is prescribed to deal with new corporate and management imperatives, we could say it is the manager as creative. The other is evolutionary, emerging as it does from the general demand for innovative personnel as well as a more specific searching by designers for new career routes. I have called this role the designer as strategist.

The conversational life in organisations for both managers and designers indicate that there is a vital need for enhanced communication skills to sustain and promote knowledge as a key resource. The call for clarity and precision, especially in designers' conversation may be in direct conflict with what is seen as 'creative' discourse.

These connections reflect the continuing manifestations of dissatisfaction and persistent constraints in current design education as well as a noticeable groundswell of change in designers' career trajectories.

Organisations and the future of work

Largely as a result of extensive media coverage, it is in the areas of ethics, sustainability and energy conservation that companies today come under the spotlight. What was once critical subject matter for a newspaper's business section can now be seen commanding front page headlines. Corporate social responsibility (CSR) is the new mantra. How to keep the organisation functioning well and to the satisfaction of an increasingly aware consumer public and traditional shareholders is a problem for most company decision-makers. The two aspects of company life that have altered palpably, possibly as a result of increased media attention, are the changes in organisational culture due to new patterns of work and new perceptions of the nature of consumption and the value of corporate brand.

The author Charles Handy (2002) spent a large part of his working life, happily, at Shell. (2) He considers that organisations are very different places to work in now. 'It would be a shame' he writes, 'if the idea of the corporation as a lasting community, the work-time home for many, were to disappear. 'For forty years' he says, 'I have heard the language in organisations change from one of commands to one of contract and negotiation. Organisations are no longer seen as machines with human parts, but as communities of individuals with very individual aspirations.' These individuals have individual needs, therefore the trust between them becomes increasingly important. Handy says ' Electronic communication may be advanced but people still need to meet in the flesh if they are going to have a relationship.'

Zuboff and Maxmin (2003) go further: They describe a new enterprise logic (3) that will demand something altogether different from 'employees'. In their new 'support economy', work calls upon the whole self. 'It is no longer acceptable to leave one's life at the door, replete with its special knowledge, experience, common sense and empathy. In work, these are critical resources that people have to draw upon in achieving alignment with individuals, realising value with them, and

ultimately creating wealth.' At the moment they see a chasm between today's individuals and today's commercial organisations, which they maintain will require radical change. They call this a 'transaction crisis'.

(There is a sense that designers may be especially prone to 'leaving their lives at the door', thus failing to make connections to a wider context. In the past this has confined their work remit and absolved them from responsibility to contribute valuable insight to both organisations and strategies.)

Robert Reich (2001), the former Secretary of Labour in the Clinton administration, and now Professor at Brandeis University, takes a broad view (4), "Even if you're called a full time employee, he writes "you're becoming less of an employee of an organisation than you are a seller of your services to particular customers and clients, under the organisation's brand name... In some respects, we're coming full circle to an earlier age in economic history in which people contracted to do specific tasks. The whole idea of a steady job is rather new, historically speaking - and, as it turns out, short lived. It flourished in the United States and other industrialised nations for a century and a half, during the industrial era of large-scale production. And now its coming to an end.'"

While trying not to be too sensitive about Reich's 'other industrialised nations' one can recognise that his view of the future is already taking shape. Although one might tend to agree with Handy's nostalgia for the community 'work-time home' of the large corporation, his writings have already detailed the arrival of the 'portfolio' type of working life with the implication that career change is inevitable. In continuing to connect the dots, the portfolio may be seen to represent designers, many of whom, in turn, are finding different pathways back into the new organisations of today. It could be seen that a new type of knowledge worker is emerging as required by organisations on the one hand and, on the other, responding to this need with not one but many diverse working options.

Correlation between management theory and the thinking-doing process in design

In the late 1980s and early 1990s, while the author's academic programmes at the RCA and Brunel University were being developed, it became apparent that international management gurus were writing about the executive skills required urgently in organisational change and, in fact, describing attributes that are inherent in design thinking. The imperatives prescribed were the ability to conceptualise, to supply prototypes and to reveal an enhanced understanding of the consumer. Tom Peters (5) made the connection between these 'new' requisite management skills with the design process and designers' activity immediately. He promoted the concept of business creativity to his audiences and used design consultancies as business models, notably, the Palo Alto- based consultancy IDEO.

There are increasing instances in behavioural management theory where the description of attributes required for current innovative positions resemble designers' skills characteristics. We read, for example, John Harvey Jones (1993) 'The qualities we must seek...are the more controlled and collaborative, forward thinking and creative person (6)...and Charles Handy (1995) 'We need to be able to recognise and identify problems and opportunities...The skills involved are conceptualising, co-ordinating and consolidating (7)...'

Conversely, the design community has been slower in coming to terms with the fact that their skills and processes have far wider usability. Other closely related-discipline players such as marketing and advertising have no such qualms in expanding their sphere of operations.

It appears that there is a logical and an

arguably, more lasting, state of design and management convergence; a condition that has developed almost imperceptibly. Connections can be made between management pre-occupation with design and innovation processes and new design career roles similar in status to senior management in organisations. In seeking to broaden traditional design education and to find more meaningful career directions for designers, the author has been tracking graduate careers of her own and other programmes. Certain characteristics of these new design pathways have already been documented (8) as have a management demand for a ' new idea practitioner' described below. It is useful to consider the subtle convergence of these two strands of work and career pathways as well as the emerging communication skills transformation that accompany these journeys.

New management roles - New design roles

Harvard Business Review currently highlights attention on the exceptionally skilled management personnel now required by organisations. The focus of these studies is the potentially 'hidden' nature of these individuals either by reason of their position in the organisation or as a result of their particular intelligence and motivation. Their roles and activities are diverse but a set of common skills and personality characteristics are indicated which compare remarkably with those of our graduates from advanced design masters programmes as well as those in radical new design roles.

The tempered radical

Debra Meyerson (2001) (9) outlines results of research into management styles of hundreds of professionals who work behind the scenes in organisations 'engaging in a subtle form of grass roots leadership'. She has called these individuals 'tempered radicals' because they effect significant changes in moderate ways.

She suggests a spectrum of tempered change strategies ranging from individual activity, which she describes as 'disruptive self-expression', through 'verbal jujitsu' and 'variable term opportunism' to collective activity, which she calls 'strategic alliance building'.

In the course of their daily actions and interactions, 'tempered radicals' teach important lessons and inspire change. In so doing, they execute a form of leadership within organisations that is less visible than traditional forms - but just as important. It is necessary for organisations to locate and encourage this subtle form of leadership.

'Tempered radicals' results are sweeping', she maintains, 'but their means are mundane. They are firm in their commitments, yet flexible in the ways they fulfil them. They often work individually yet pull people together. Instead of stridently pressing their agendas, they start conversations. Rather than battling powerful foes, they seek powerful friends. And in the face of setbacks, they keep going. These professionals understand revolutionary change for what it is - a phenomenon that can occur suddenly but more often than not requires time, commitment and the patience to endure.'

The new idea practitioner

Thomas H. Davenport et al (2003) (10) maintain that there are people in organisations with many new ideas about how their company could manage more effectively. These individuals should be nurtured as product innovations are copied quickly and easily today, leaving managerial innovation as an important way for companies to differentiate themselves. Their working characteristics are significant:

They are extraordinarily attuned to the often opaque, economic, technical or social environment that can determine whether an idea will thrive or fail.

They tend to value an interdisciplinary

perspective, looking to fields outside business for new approaches to solving problems.

They can package an idea with promise for broader organisational consumption. They translate ideas they want to introduce, tailoring them to fit their organisations specific needs thus 'building a logic between the idea and the firm'. They realise their advocacy for new ideas must reach from the boardroom to the grassroots level of the organisation.

They also have defined personality traits. The new idea practitioners are optimistic; they see the possibility of a better way and believe that people and organisations can change. They very often come from a liberal arts background and are devoted to new ideas in general. They are intellectually restless and passionate about ideas in general but their enthusiasm adopts a moderate image. At the same time they are self-confident because putting the new ideas in place is difficult. They are 'boundary spanners' in that they have the personal networks within their organisations to know whom to enlist in their efforts.

The description of these individuals' work characteristics and personality traits show a remarkable similarity to those highlighted in our RCA and Brunel MA graduate profile. The emergence of 'tempered radicals' and 'new idea practitioners' in management terms reveals a logical rationale for designers to move into more comprehensive roles.

New design professionals

This is the title we chose when describing the Brunel MA graduate profile. It is interesting to compare the list of skills that we anticipated would be acquired during the one-year course of study with the characteristics of the two new management roles described in Harvard Business Review above. We wanted to unlock new career routes and promote a new kind of professional hybrid - designers who did not reject their core

skills but were able to contextualise their professional work. In reviewing graduate career trajectories, there is evidence that these high aims have proved to be achievable

The characteristics of these hybrids are as follows:

- Design background; possessing a core of design skills but able to step out of basic design discipline 'pigeonholes' (product design, graphic design or environmental design) and recognise the need to view the inter-relationship of all disciplines.
- Boundary Crossers; understanding design holistically in an industrial context and relating design to markets, environment, social and economic issues, able to adopt new roles within client organisations
- Creative; capable of generating creative ideas, creative processes and creative environments in which others can be creative
- Leaders; highly motivated, good at team building and direction, able to enthuse and empower members of the team with enhanced communication skills and a new quality of dialogue
- Fluent in new technologies; particularly those technologies that drive new product development e.g. modelling, materials and manufacturing
- Familiar with systems; able to use appropriate information technology; have a basic understanding of new systems of accounting and quality; attain a wide understanding of contextual forces (finance, politics, social forces)
- With a global awareness; good awareness of patterns of trade and competition world wide; understanding of macro economic forces responsive to green criteria and energy issues. With long term ambitions for social improvement not just graduate employment.

The designer as strategist

Designers adopting new roles in their careers, as well as graduates from these

programmes, have indeed been able to influence change in their organisations. They take up the challenge to improve environment and processes against all odds, demonstrating a certain determination and tenacity. They are totally absorbed in the task of integrating design and in order to achieve this they invent strategies, cultivate diplomatic routes and develop an extensive learning mentality within their organisations.

In a recent lecture (11), chaired by the author, three designers who have enlarged the scope of their careers spoke about their senior in-house positions at the very heart of their companies' decision-making processes and their roles as catalysts for innovation and change. Michael Mc-Namara, Director of Advanced Solution Concepts at National Cash Registers (NCR) in Dundee, described the contribution of his work in Research and Development to the US-based company; Mike Crump, Head of Design Management at British Airways (and a graduate of the RCA programme in 1991), discussed his contribution to new product development processes in that organisation and their influence on total corporate strategy. This was particularly relevant in the case of the Upper Class 'flat bed' seat, which is now ubiquitous in many airlines, but was first introduced in the British Airways fleet. The final speaker was Brian Smith of Newlands Technology Ltd who demonstrated how a designer moves through a career process to become a Managing Director of a product innovation and design company focusing on licensing smart material technology to like-minded manufacturers. The speakers described how the way they work in their respective positions illustrates their potential to make a valuable and lasting contribution, not only to their own organisations, but also to the economy, design and industry as a whole. These are typical examples of the transformation of each designer's role. Each of the speakers had originally trained as an industrial designer.

Recently Harvard Business Review offered a list of twenty new 'Breakthrough' ideas for the year (12). One of these goes so far as to maintain that the degree of Master of Fine Arts should be seen as the new MBA. The supply of people with basic MBA skills is expanding ...and the demand for 'design' thinking is increasing. The article states: '...businesses are realising that the only way to differentiate in today's overstocked , materially abundant marketplace is to make their offerings physically beautiful and emotionally compelling' - think iMac computers, for example. Corporate recruiters in the USA have begun to visit the top 'arts graduate schools' for new management roles.'

The conversational life of an organisation

It is apparent to the author, in directing both university masters programmes and, more recently, in-house training programmes for design teams in multi-national corporations, that good communication skills are essential. These skills have to be acquired by design-based students when working on fully assessed research-based projects in industry as part of their academic curriculum as well as by in-house designers expanding professional development when studying contextual issues. The basis for this educational element is to discover how effective communication juxtaposition can be established between the individual, the team and the organisation as a whole. (13)

If managers in the same company encounter difficulty in communicating effectively with each other, imagine the problems facing designers in a corporate environment. Design-trained personnel have an opportunity to influence change in an organisation provided they have developed good written and verbal skills. How well equipped are they to do so? Generally designers' conversation concerning their work is studiedly ambiguous, relating closely, as they see it, to creative

thinking. In a world where technology
leads to the norm of compressed dialogue,
it is difficult to adapt to this imperative,
but increasingly more designers are recog-
nising the significance of clear and concise
conversation with respect to knowledge
exchange and especially to their own
status in the corporate structure. Ralph
Stacey (14) stresses the importance of
conversational life in organisations. '
...relationships between people are orga-
nised in conversations that form and are
formed by the power relations between
them...

The conversational life of an organisa-
tion is seen as the self-organising proces-
ses from which intention and change
emerge. 'The quality of conversational life
is thus paramount.' For designers in orga-
nisations, concerned about their status in
team decision-making, this is a serious
issue.

The conversational life of designers

Our emphasis on the value of industry-
based research projects for design-trained
masters students appears to reflect Stacey-
's findings: 'If there is a prescription, he
says 'it is that of paying more attention to
the quality of your own experience of re-
lating and managing in relationship with
others.' Stacey maintains that these skills
and competences (we might call these
interpersonal skills) are difficult to deve-
lop and just as difficult to sustain. They
are competences that do not usually
feature in the skill sets prescribed for
managers (or designers?).

'Examples of the necessary skills' Stacey
writes, 'are the capacity for self-reflection
and owning one's part in what is happe-
ning, skill in facilitating free-flowing
conversation, ability to articulate what is
emerging in conversations, and sensitivity
to group dynamics. These skills are not
easily taught, perhaps they cannot be
taught in an abstract way. They are essen-
tially acquired in the experience of
exercising them.'

The author's experience in advanced

design education indicates that presenta-
tion skills teaching should ideally begin
while the student is undertaking a normal
undergraduate design curriculum. At the
moment this is not the case. The industry-
based student projects, a key component
of the Brunel MA curriculum from 1994
to 2001, proved to be difficult for
students not accustomed to arguing their
case other than in a design environment.
These projects placed a special responsibi-
lity on each participant to make their
propositions clear and comprehensible to
all. For some students, many hurdles have
to be overcome before they feel confident
of their skills. A Brunel MA graduate in
2000 wrote (15): 'Learning a new langua-
ge in organisations is a bit like total
immersion in a language school. The more
words you have at your disposal the bet-
ter it will be. You have to make sure the
person you are talking to has understood.'

The key to a successful outcome is in
the continuity of presentation skills
practice. Most masters programmes try to
include this element and certainly there is
possibility for practice in Continuing
Professional Development programmes in
some design institutions. In general, the
provision for this teaching is woefully
inadequate as recently reported by the
International Council of Graphic Design
Associations (ICOGRADA) (16)

The future of design education -
The reality is different

Zuboff and Maxmin write 'People have
changed more than the organisations
upon which their well-being depends...We
have concluded that there is no methodo-
logy, no amount of heroic leadership that
can transform an organisation as long as
the tightly woven web of precepts,
assumptions and practices remain intact.
We regard most managers as extremely
capable and often brilliant. But we know
that as long as they are imprisoned within
today's enterprise logic, they are not likely
to transform themselves into what we
need for tomorrow (17)

Here is the lingering dilemma: It could also be argued that there is a 'transaction crisis' between the designer and the education now on offer. In design, we have a group of educators, extremely capable, occasionally brilliant, most totally committed. They are trapped in systems that were meaningful fifty years ago, now introducing small changes rather than a sweeping overhaul. We appear to be failing our students 'Why aren't there any business courses for creatives and why aren't design colleges redefining design as something more than aesthetics? writes a correspondent in Designweek's letters page. Well, there are more design courses now that have redefined design and that's encouraging for us all, but these are still brave and random initiatives in a sea of complacency. (18)

There is now an urgent need for an overall re-assessment of design education. Charles Handy (19) writes 'It is absurdly impractical to prepare oneself for the world as it was or as you would like it to be, when the reality is so different, and its arguably immoral to educate others for a life that can't be lived as it used to be.' It could be argued that the accelerated development of UK post-graduate design education is a direct response to the resistance to change encountered at under-graduate level.

Conclusions - A convergence of languages

Despite this educational restraint, designers are undergoing a slow but steady metamorphosis. This is happening with little media fanfare and is characterised in large part by the emergence of new design roles in organisations involved in developing innovation in new and unexpected ways. It is precisely because the world is more difficult to understand that new organisational perceptions, models, tools and especially, new personnel, are needed. These people are generally hidden in organisational structure. Raymond Turner called them part of the 'DNA' of an organisation.

As a result of long term, and ultimately successful promotion by governments, design institutions and media, designers have reached a stage of recognition they have long aspired to, but generally at a level that does not do justice to their range of thinking or experience. For the most part designers are not grasping the opportunities now open to them. Only a few designers have purposefully gained sufficient knowledge of important world issues to be able to sustain arguments coherently. Designers are now in an enhanced position to lead and yet many have been constrained by their education into thinking that strategic activity is not part of their range of responsibility. And yet more designers are deciding to expand into new roles and gradually new fields of design activity are emerging. As we have seen, organisations are seeking inventive personnel and will consider graduates with MA or MFA degrees on an equal standing with traditional MBA graduates.

What the new design strategists have in common with HBR's 'New Idea Practitioners' is an ability to bring vital new thinking into organisations currently undergoing continual change. They are valued because they have crossed the divide between design and management, they speak the language of other disciplines and they have structural understanding of institutions and corporate affairs. They do not abandon their platform of design skills, or their understanding of creative processes. These abilities become transformed. In essence, they understand the need not only to make themselves understood, but also to bring their particular expertise to the whole organisation and its strategic planning.

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15. Note: David Townson was Innovation Scouting Manager for a corporate R & D group at Orange. He is now Course Leader of Innovative Product Design in Duncan of Jordanstone College of Art and Design, University of Dundee.

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Toolkits for User Innovation and Design:
The value self-designed products deliver to customers

Text: Martin Schreier

The aim of this article is to discuss the concept of 'toolkits for user innovation and design' and to analyze the value created of toolkit-based products from a customer's perspective. Toolkits represent a new concept which suggests a shift of new product development and design tasks from the locus of the manufacturer to that of the customer.

Recent work in this field has revealed that customers designing their own products via these innovation and design toolkits are willing to pay extra premiums of up to 100%. The obtruding question is why people are willing to do so. It is argued that as every single user can handle his own problem solution, self-designed products offer a much closer fit between individual needs and product characteristics in comparison to standard offerings (functional benefit). In addition, toolkits also more generally change the way in which people consume. Instead of being a traditionally passive customer who is forced to pick a standard product, the user takes on the active role of a co-innovator or a co-designer who creates his own unique product. Thus, in addition to the mere (1) functional benefit, extra value also might stem from (2) the perceived uniqueness, (3) the process benefit, and (4) the 'pride of authorship' effect.

Traditionally new product development (NDP) - and subsequently the generated new product, takes the average customer's needs into consideration. The high sales potential justifies the high fixed costs of NPD and production and makes it possible to set a price which is reasonable for both the manufacturer and the customer.

These (new) products are, however, also limited to satisfying the average needs of the respective users. They are 'one size fits all' or at least 'one size fits one segment'.

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Martin Schreier is a PhD student and research assistant at the Department of Entrepreneurship and Innovation, Vienna University of Economics and BA. He has been working in the toolkit field for two and a half years now. Together with an international academic project team (funded by the WWTF - Wiener Wissenschafts-, Forschungs- und Technologiefonds) he aims at investigating various aspects of the toolkit approach from both the customer's and the manufacturer's perspective. His work has so far been published in the International Journal on New Media Management, for example. He also presented recent papers at the World Congress on Mass Customization and Personalization and the European Academy of Management Conference.

Obviously, this traditional approach makes sense if the respective market or clustered segment is large enough, and if customer preferences within this segment are relatively homogeneous.

Recently, however, it has become commonplace to mention that increasing heterogeneity and dynamic demand have already forced many industries to move toward serving 'markets of one' (Thomke & von Hippel, 2002). We also know from prior research that a poor customer fit (a weak match between the individual's needs and the product's characteristics) has often been used to explain the high flop rates of up to 90% of all new products (Cooper, 1999; Crawford, 1979; Shanklin & Ryans, 1984).

Only recently, the coincidence of two technological developments paved the way for a radical new form of manufacturer/customer interaction which enables manufacturers to respond to each customer's individual needs with an individual product (Franke & Schreier, 2002). First, new communication tools like the Internet have allowed manufacturers to handle each user's product needs individually in a rapid and cost-effective manner. Second, mass-customizing production methods have reduced the fixed costs of tooling in manufacturing dramatically (Zeid, Mc-Donough & Kamarthi, 2001). These advances in flexible manufacturing systems and modularization have brought down the costs of single-unit quantities to near mass-production efficiencies (Pine, 1993; Tseng, Jiao & Su, 1997).

Consequently, there seems to be a promising opportunity to cope with the 'dark side of the market'. In addition, empirical studies on the sources of innovation have revealed that against conventional wisdom users might be highly innovative themselves. In both the industrial and consumer goods fields, users are often found to be the initial developers of products, prototypes and processes which later gain commercial significance (an overview is provided by von Hippel

(2002). Thus, it is often the users rather than the manufacturers who are identified as innovators of products first of type (radical innovations) as well as major and minor functional improvements (incremental innovations). In addition, studies have demonstrated that up to 30% of respondents reported having developed a new product for personal or in-house use, which supports the idea that user innovation is not a rare occurrence (Von Hippel, 2002). Thus, users might have a lot more to share than vague information about their needs, that is, they might be highly innovative and take on problem solving themselves.

Against this background one might suggest outsourcing the entire task of designing new products to users. This is where toolkits for user innovation and design come into play: A manufacturer can equip its users with a set of tools which enable them to design their own products. First pioneering industries have proven the promising potential of the customer-as-innovator or the customer-as-designer approach.

At present, our understanding of the value toolkit-based products deliver to customers is practically non-existent in the academic field. Insights into this phenomenon are not merely of theoretical importance. Manufacturers considering implementing the toolkit concept would certainly welcome knowledge of the patterns of value creation for customers; such patterns can be seen as success factors which offer them an opportunity to take advantage of this utility increase by raising prices, for example.

Toolkits for User Innovation and Design

Toolkits for User Innovation and Design are a set of tools (usually offered via the internet) which enable the customers to convert their ideas, preferences, and tastes into products. Hence, the role of the toolkit is to provide a framework for (1) trial-and-error experimentation and (2)

immediate feedback on the outcome. Thus, the individual customer completes trial-and-error design cycles in order to carry out efficient learning by doing. The entire iterative design process, including testing, evaluation and any necessary improvements, can then be carried out by the user. Once a final satisfactory problem solution is found it is transferred automatically to the production premises of the manufacturer. The product that is tailored to the user's individual needs is then produced and delivered to the customer.

Although originating from B2B industries the toolkit concept has already made its way toward many consumer goods fields. Users equipped with design toolkits can create their own unique products, such as shoes, watches, or bags (e.g. see www.masscustomization.de for examples). For example, producers of mobile phones might allow their customers to design their own personal phones. Design freedom might be restricted to hardware, including color, material, size, and weight, or users could also be given the tools to adapt software elements to specific preferences. Examples of the latter would be a toolkit for ringer settings, the information structure of menus (including shortcuts), or even games that could be created online (i.e., in JAWA), sent to friends, and played either

online against others or on the user's mobile after downloading. Some of these ideas have already been converted into profitable business (e.g. see www.designyourhandy.de).

Eric von Hippel, who conceptualized this new approach, proposes that toolkits generate value when (1) the stickiness of relevant user information is high, (2) the stickiness of supplier information is low and (3) the heterogeneity of preferences among the users is high (von Hippel, 2001, Thomke and von Hippel, 2002). As these circumstances are rather prevalent, one can predict an enormous growth of applications in the coming years.

The Value of Self-designed Toolkit-products

The evolving literature on toolkits does not yet provide a deeper understanding of the value creation from the customer's perspective. Implicitly, it is assumed that the value for the customer only stems from increased satisfaction due to the individualized product. Only one empirical study explicitly aims to assess the value created by toolkits (Franke & Piller, 2003b). The study was based on a sample of 165 business administration students who were asked to design their own watch via a toolkit. One of the central findings of this study is that the
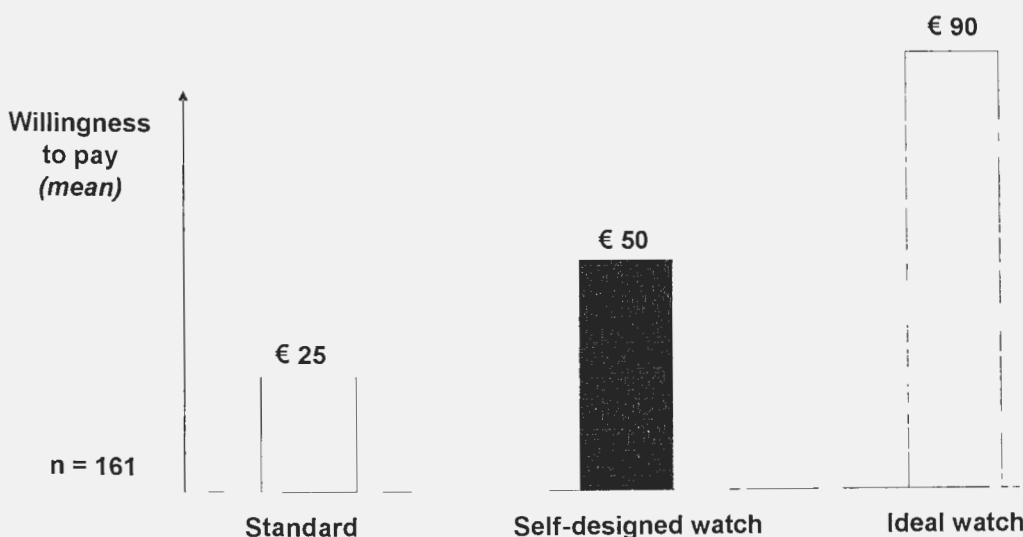
Figure 1: Willingness to pay for self-designed watches Source: (Franke & Piller, 2003)

mean willingness to pay (WTP) for a self-designed watch is £ 50.00, double the WTP for a standard watch of the same quality and functionality (£ 25.00). The results are summarized in Figure 1. Thus, the study confirms that toolkits potentially create an enormous value increment for users. In addition, they found that users were ready to pay even more (£ 90.00) for the ideal watch (in the same quality and functionality range). This indicates that there is a considerable portion of value or amount of money left on the table. This might be explained by the fact that the toolkit used can be characterized as a low-end toolkit, which means that it is rather limited in terms of design freedom.

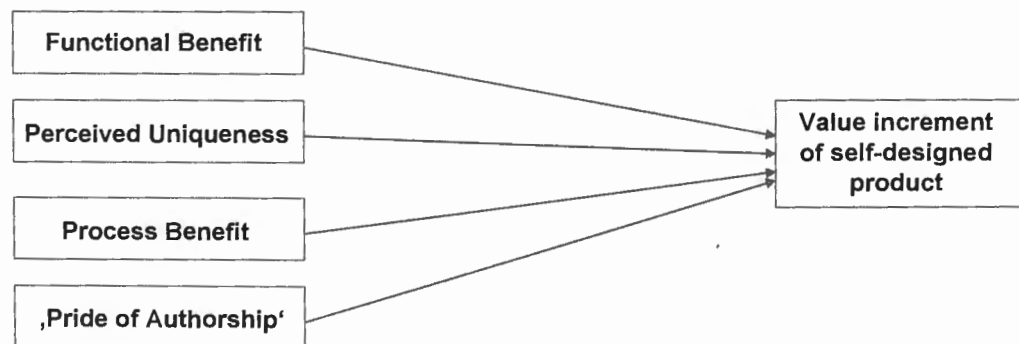## Types of benefits rendered by self-designed products

The enormous extra value toolkit-based products seem to deliver to customers highlights the promising potential of this type of customization. The urging question now is where does this value increment stem from? This question was addressed by a recent conceptual analysis (Schreier, 2004). In brief, a user employing a toolkit may benefit from the closer match between individual needs and product characteristics. This functional benefit of self-designed toolkit products can be referred to as the product's obvious functional uses.

In addition, there are various other aspects that seem likely to influence the value created by toolkit products. Psychologically oriented literature stresses the fact that customers sometimes attribute subjective value to a product beyond its objective characteristics (e.g. Belk, 1988). According to material possession theory, individuals do not buy products only in order to use them, but also to possess them. Therefore, apart from the product's obvious functional uses, it also serves as a symbolic expression of its owner (symbolic meaning) (Dittmar, 1992; Levy, 1959). In the toolkit field in particular, two types of symbolic benefit seem to have a huge impact on the value created - namely the perceived uniqueness and the pride of authorship. The first stresses the product's exclusiveness and subsequently the user's individuality, as the toolkit-based product is one of a kind. The second focuses on the fact that the user has created something on his own, which may add extra value due to the resulting enthusiasm.

Next, the process of creating and designing a product substantially differs from picking a standard product from the shelf. Therefore the process of using toolkits itself implies additional cost and potential benefits to the user - thus influencing the value created. Each component is discussed in detail below. (1)

(1) An empirical test of the proposed framework will soon be available via the author's website.

Figure 2:
Overview of types of benefits delivered by toolkit-based products

(1) **Functional Benefit.** In general, a user may be able to accomplish specific tasks using a given product. In essence, the customer is likely to pick the best product available - the product that promises the most successful and thorough performance with regard to his underlying needs (Thaler, 1985). The value of individualization in general is defined as the increase in utility a customer gains from the individualized product compared to the best possible standard product (Chamberlin, 1962; Du & Tseng, 1999). Hence, the functional benefit refers to objective product attributes (which, of course, are perceived and valued subjectively). They include technical aspects as well as design aspects, thus covering a broad spectrum of possible characteristics depending on the product category in question. In the case of a user-designed watch, for example, it might be the unique design, in the case of a cell phone's software it might be an individualized navigation structure.

(2) **Perceived Uniqueness.** In general, 'people buy things not only for what they can do, but also for what they mean' (Levy,1959, p.118). In addition to the product's functional uses, purchasing a product also implies a symbolic product meaning (Ligas, 2000). Consumers often acquire things in order to feel different from others, and selected material possessions are used to express the customer's individuality (Tian, Bearden & Hunter, 2001). Furthermore it is often found that people attribute greater value to products that are unique than to ones that are common (Brock, 1968; Fournier, 1991; Fromkin, 1970). Against this backdrop, it seems very likely that user-designed toolkit products will also deliver this value of uniqueness. Toolkits offer the possibility of generating individual, user-specific products. Even simple toolkits contain an almost endless number of options. In fact, one has to convert the numbers of choices into familiar terms to gain an adequate understanding of how many choices the customer has. For example, if all the possible variations of Idtown.com watches (approximately $2*1011$) were displayed in a shop, the shop would need to be the size of Luxembourg (Franke & Piller, 2003a). As with the functional benefit also the extent or impact of this type of benefit heavily depends on the *perception* of the individual user.

(3) **Process Benefit.** Instead of rather passively shopping through the malls, a toolkit user actively engages in problem-solving. This role change implies a further source of benefit - the benefit of the process of designing ones own product. Going more into detail there might be two facets: a negative and a positive process benefit. On the one hand, as the customer devotes his time and effort (which actually incurs costs to the user) to designing his own product, it seems more than plausible that the toolkit use will have a negative impact on the likely value of the outcome (compared to the reduced effort involved in picking a standard product from the shelf). On the other hand, the process of designing one's own product per se might also add value if it is perceived as a self-rewarding process, like going shopping or exercising in a fitness center. We often observe that people seem to derive an intrinsic benefit from 'doing it themselves'. A study of the traditional do-it-yourself (DIY) market revealed that a majority of German do-it-yourselfers actually do so because it is an enjoyable and fun experience (Institut für Freizeitwirtschaft, 1997). In addition, parallels can also be drawn from theoretical and empirical work on open-source software. Here people participate in software development for free because they enjoy working on creative tasks and perceive writing or improving software as fun, creative, and interesting (e.g. Shah, 2003). In the toolkit field, it also seems likely that a user designing his own product will enjoy the act of designing

itself. The degree to which this hedonic benefit is experienced will in turn impact the value of the outcome of the process, the self-designed product.

Pride of Authorship. Whereas the positive effect of designing one's own product constitutes an intrinsic process-oriented benefit (the benefit of doing it oneself), the pride of authorship effect describes the output-oriented benefit of having it done oneself. The user might derive a feeling of enthusiasm - the enjoyment of success arising from one's own performance. Consider, as an extreme example, people who accomplish 5000-piece jigsaw puzzles. The self-rewarding process of accomplishment explains why people do so, but not why they display jigsaw puzzles. Thus, the outcome of the process is also perceived positively - even far beyond the objective value. Although the picture per se is - due to the fact that it is a jigsaw puzzle and not a high-quality photograph - of mediocre quality, the owner values the outcome very highly. Pride in general is defined as an emotional response to an evaluation of one's competence (Harter, 1985). In particular, pride is associated with achievement and depends on a favorable outcome attributed to one's own efforts (Lea & Webley, 1997; Weiner, 1985). Furthermore, it is often argued, that by investing attention, time, and effort in an object, 'psychic energy' is transferred from the self to an object (Csikszentmihalyi & Rochberg-Halton, 1981). It seems that the positive outcome of such processes constitutes positive feedback, which gives the individual the highly motivating feeling of his own competence and of being efficacious. Consequently, a user having designed his product on his own might evaluate the outcome very highly. At this background it seems very likely that the so-called 'pride of authorship' adds value to the product independent of its functional characteristics and its uniqueness.

Discussion and Future Research

It should not be assumed that (1) the extent of the value increment and (2) the types of benefits likely to explain the extra value constitute universal laws. Future research should address this issue by trying to identify moderating variables that are likely to explain variance across these two dimensions. In particular, moderators might be found in (1) the personality of the user, (3) the underlying product category, and (3) the type of toolkit itself. Related to the user's personality it seems plausible that there are different value creation patterns for people who are open to new things, creative, playful and have a high need for individuality. Apart from the value and the types of benefits experienced, there might also be a substantial part of customers who just do not want to design their own products. Thus, toolkits in general might not be for all users.

Also the underlying product category and its role concerning the value creation patterns constitute a black box so far. A toolkit to design your own cell phone might be a lot more appropriate for the toolkit approach than a detergent, for example (or at least might have different value creation patterns). Thus, it might be valuable from both an academic and a practitioner perspective, to investigate which product categories are most likely to be suitable for the customer-as-innovator approach.

Thirdly the underlying toolkit itself might impact the size and types of values a self-designed product delivers to the individual user. In practice, toolkits range from pure product configurators to high-end innovation software. Hence, a toolkit's scope for example (i.e., the solutions space that is offered to users), might control the overall value and the types of benefits that the toolkit-products delivers to the user. If the design freedom is very limited, the customer might not experience significant functional improvement compared to a standard product. Also, the 'pride of authorship effect' might not

occur. As a result there might be no substantial value increase compared to picking a standard product from the shelf.

Due to the newness of this field I would like to conclude with drawing attention the fact there are various other general questions in this field being still unacknowledged. For example: How do users deal with this role change from a traditional customer to a co-designer or co-innovator? How do users interact with toolkits? How should a toolkit ideally look like from a customer's perspective?

To put it even more dramatically, to date we only know a few things - the majority has still to be explored. I hope that scholars will follow to shed more light on these fascinating issues.
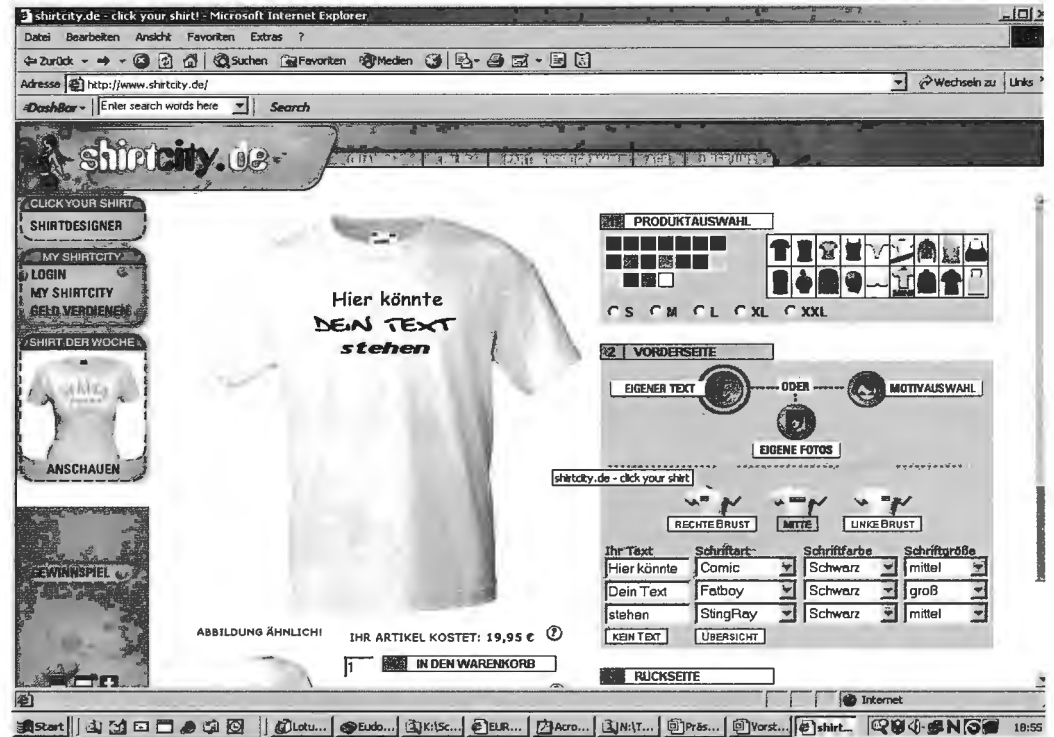
Figures
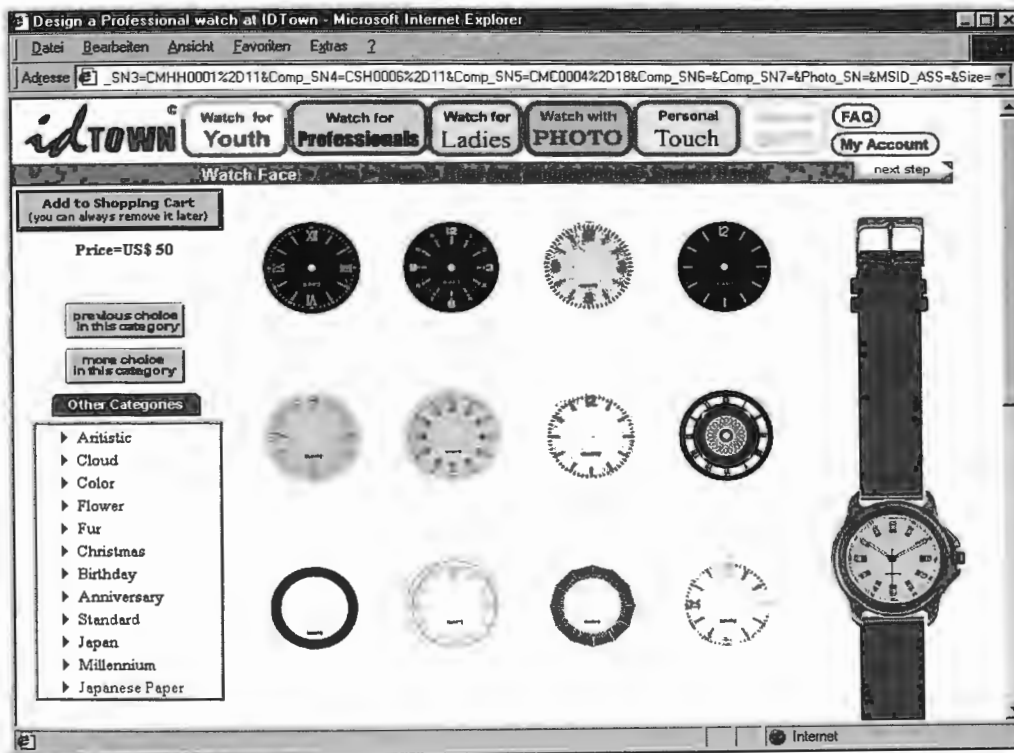
Example 1:
a toolkit to design o watch

The value self-designed products deliver to...

Example 2:
a toolkit to design a t-shirt

Example 3:
a toolkit do design a mobile phone cover

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Managing the internationalization of design-based companies.
The case of the US market for the high end italian furniture companies

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The United States is an area at which Italian furniture firms are looking ever more closely, partly to compensate for the collapse of some European markets. Italy is the third commercial partner (measured by import value) for the United States after China and Canada.
How many of these exports relate to the "high-end" market (that is, expensive products). In summary, what are the threats for the Italian system of furnishing? How do American players perceive the Italian offering? Is there growth potential? Under what conditions? Are there opportunities for development, for example linked to legislation?
This contribution has the goal of replying to these questions and of identifying some possible actions for firms operating at the high end of the furnishing market to succeed. It is set out in three parts: the first analyses the current market in terms of the composition and dynamics of exports and imports; the second is focused on analysing demand in order to assess the size of the high-end market. This part is brought together by an analysis of buying behaviour and distribution structure. The last part is dedicated to internationalisation strategies and to Italian firms' positioning in the US. All three parts are based on a quantitative analysis of macro-economic data and on a qualitative investigation carried out through interviews with players and opinion leaders.[1]

The Italian furnishings market: an assessment of the competitive dynamics

In order to understand how Italian furnishing exports have evolved and the relative positioning of our products in the US, we have looked at the following data: Italian exports by destination country; American imports by country of origin; Italian upholstery exports by destination country; American upholstery exports by country of origin. The observations on which our analysis is based cover a five year period (1997-2002).[2] The decision to concentrate on upholstery is based on two reasons:

- This is the principal Italian export category (in 2002, upholstery exports represented 27% of the total value);

- Italy is the main supplier of upholstery to the US (41% of the value of goods imported from Italy is accounted for by upholstered furnishings).

We have not gone down to the level of detail of individual merchandise because we maintain that the current level of analysis already gives a considerable amount of interesting data. The most significant fact which emerges is the considerable reduction in the weighting of the European Union as a buyer of Italian furnishings and the increased importance of the US, from 11% to 17% of Italian export value. Another point to be considered: Italian exports grew strongly in 1999-2000, by 17%, mostly due to increased demand in the US (+42%) as well as in the EU (+11%). Since 2000, relations with these macro-areas have tended to stabilise. Let us see what is happening in the US:

- China is experiencing impressive growth, showing an increase of 359% in the period under consideration (the most relevant change is that of 35% in 1999-2000), caused in part by the highly competitive prices which make Chinese furnishings very attractive. Three figure growth was also experienced by Thailand, Brazil, Romania, Poland and India. This trend appears to reward "low cost" areas.

It is interesting to note that compared to these countries, China has experienced strong growth even from a high base level;

- From 2000, Canada has begun to lose ground and is being substituted by China as the principal supplier of furnishings;

- Italy is the third most important country in terms of imported value, even if other European countries are growing faster (France and Spain). In 2002, Italy had almost reached the same level as Mexico in terms of import value;

- 2001 was a time of contraction for many countries (except China) partly due to the economic crisis which followed 11th September and which caused a collapse in international trade in the last three months of the year;

- In general, in the period 1997-2002, the US market has increased in comparison to the world market for furnishing products;

- In 2002, imports accounted for 29% of internal visible consumption (equal to 60 billion dollars at factory prices, excluding mark up).

Let us pause on the most important export category: upholstered furnishings. In this case, the US has represented the principal trade partner since 1997, and unlike export in general did not experience a decline in 2001.

However, the strength of the current evolution has for some years shown some cause for concern. Furthermore, in 2002, the US as a proportion of the whole reduced by two percentage points. Secondly, it should be noted that Italy's position as the principal supplier of upholstery (the second most important category in the US, after wooden furniture) is threatened by Chinese firms who, as in other sectors, are much more competitive on price.

The international success of Italian furnishings firms: what do we export?

If we analyse the data relating to Italian firms' overseas sales in an accurate

[1] In the summer of 2003, thirty-seven resellers were interviewed as well as eight distributors and importers; twelve subsidiaries of European firms; five architects and interior designers; three government agencies; two contractors and three consultants in New York, Boston, Chicago, Los Angeles, Atlanta, Miami.

[2] Even if five years is not a lengthy period, it is however sufficient for the proposed analysis.

[3] In 2001, Natuzzi started a factory at Shanghai where approximately 600 people work. The firm has planned to build a second factory which will allow them to double production. In China, Natuzzi produces the Italsofà line, which is at the low-medium end of the market, and which is export to the US. On the other hand, the Chinese market is supplied with exports from Italy.

[4] Due to reasons deriving from the firms contacted, only data from fifteen firms, who have requested not to be quoted.

[5] Source: CIA World Factbook (www.cia.gov/cia/publications/factbook/geos); economic Balance Sheet 2002 Federlegno-Arreda.

[6] According to the Bureau of Economic Analysis, spending on domestic furniture increased by 50% from 1988 to 1998 due to growth in the property market, strong growth in spending on home improvements and a strong desire on the part of consumers to spend more time at home.

[7] A study undertaken by Norum, Lee and Sharp in 2002 on a sample of 14075 American families showed a positive correlation between income and spending on furnishings. Education, occupation, ownership and location were however, irrelevant. Finally, there is a negative correlation between nuclear family size and spending on furnishings.

[8] If we consider units with earnings higher than 75000 dollars, the percentage rises to 24.6% of the total.

[9] All income values are expressed in 2001 dollars, adjusting for nominal wage inflation, which in 2000-2001 was 2.8%. Source: U.S. Census Bureau, Current Population Survey, 2002 Annual Demographic Supplement.

manner, it emerges that the majority of exports relate to upholstery. In the light of the goals of our work, the most important thing to highlight is that Natuzzi's and Nicoletti's exports to the US alone accounted for 70% of the total exports. This means that the majority of the value which we transfer to the US relates to low to medium priced upholstery which is sold in the large department stores, with an industrial or commercial brand. We must therefore say that only the remaining 30% of exports are to be attributed to high to medium end firms.

These assessments leave us in no doubt about the conclusion. We are talking about a small value, especially if we remember the fragmented structure of the sector, where there are over 37,000 small to medium sized firms. Another important fact is that part of Natuzzi's manufacturing activity takes place in China and Brazil, which could partly explain the trade flows from these two countries to the US.[3]

If we extend this analysis to furnishings in general, we are not able to specify the percentage of exports relating to the high-end market because relevant statistics do not exist and firms are reluctant to reveal sales data. However, from very simple empirical evidence we can estimate, with extreme caution, the weighting of high-end firms. Assuming for simplicity that there are fifteen main firms in this segment, only 0.5% of the 8,914,216,000 euros of exports to the US relates to the high-end market.[4]

Demand structure: the potential target for high-end firms

At this point, the main question concerns the size of the potential target market for high-end Italian firms. The first observation is that the pro capita GDP in the US is higher than that in other geographical areas where Italian furnishings imports nonetheless have a higher pro capita value. For example, Great Britain has a pro capita GDP of 23,500 dollars, with

pro capita imports of Italian furnishings of 22.9 dollars, as opposed to 37,600 dollars and 6.72 dollars for the United States.[5] This could mean that a still unexpressed potential exists.[6] Secondly, it is necessary to pay attention to demographic changes and levels of disposable income which, beyond stylistic inclinations, could increase demand for firms producing expensive furnishings. The age group which has grown most notably consists of those between 35 and 60 years old (over 78 million people, 30% of the American population, who represent a substantial portion of the disposable income in the United States), or rather those who are most inclined to spend time, energy and money furnishing and decorating their homes.[7]

In 2001, there were 110 million family units, with an average income of 42,228 dollars, a decrease of 2.2% compared to 2000. Married couples, who represented 51.92% of the total, had an average income level of 60,471 dollars, a decline of only 0.7% compared to the previous year. In terms of age of the head of household, it should be noted that the age group with the highest income level was that of 45 to 54 years, which, together with that of 35 to 44 years, showed income levels considerably higher than 50,000 dollars.

The potential consumer base which high-end firms should refer to is made up of families with the highest income. As a result it is necessary to analyse the characteristics of those 20% of families (or rather, 25,000 units) which have an income higher than 83,500 dollars.[8] 80% of these units are composed of a married couple in which both halves are income earners, six out of ten heads of household are aged between 35 and 54 and over 70% have a full-time job.[9] If we consider those nuclear families with an income above 100,000 dollars (about 15 million units), 25% (3.75 million) state that the style of furnishing which best reflects their personal taste is "contemporary" or

"high-tech" (Home Decorative and Furnishing Survey, Monroe Mendelson Res., 1997). However, among these 3.75 million units, 70% (2.625 million) describe their taste as "casual contemporary". Taking into account the stylistic orientation of the firms in our country, there remain around 1.125 million units, to which you can add those people who describe their style as eclectic. In all, the reference target appears to be about 1.3 million units, equal to 1.2% of the total (that is, of units). This data can appear modest, but one should bear in mind that these potential clients belong to the highest income group with an income available for non-basic goods of 40% and with a strong tendency to spend frequently on domestic improvements and renovation. The potential spending on furniture and furnishings therefore appears to be approximately between 750 million and 1 billion dollars per annum, equal to 1.5-2% of the total furniture market. We should add to this the strong expansion of the segment, which is confirmed by players' optimism regarding the extent of the future distribution of designer furniture.

Summarising the main evidence of this analysis, it appears that the high-end weighting is low compared to the number of consumers and the value of imports/exports. In order to interpret these results, we suggest a reflection on the qualitative data based on interviews with the US players. In line with what we will say in the following paragraphs, we are talking about considerations which do not claim to have a scientific validity, but which act as a starting point for the discussion and subsequent verification.

In particular, we would like to report a common opinion relating to the sociocultural context. Those at the front-end (above all tradesmen and interior decorators) maintain that a design culture and aesthetic sensibility are not yet available to all American clients and this, apart from limiting the potential users of

high-end firms, means that there is little understanding of or ability to value the differences between various offerings. In summary, buying Natuzzi or B&B Italia carries equal weight and this is independent of reasons linked to price or income level. The players in the sector attribute this confusion in positioning to abuse of the "Made in Italy" concept, which is now seen as a large container holding anything which comes from Italy or which reflects Italian style.

There therefore exists a general problem of taste and style, which can be seen in shop layouts and inside American homes and which is relevant when you consider the characteristics of high-end firms' offerings. This, as well as the number of competitors facing our firms, limits the consumer market. The style of Italian firms has a limited public, and despite a few exceptions at the low end of the market, this does not change with the economic or competitive situation.

On the one hand, it is therefore necessary to include some unavoidable necessities in our definition of the product system - something which we will refer to in the conclusion. On the other, however, it is necessary to undertake gradual educational work.

Furnishing isn't a global system?

In the following part we intend to assess some of the features of the purchasing model and distribution structure which are specific to the American market and which require focused strategies.

Buying models. First of all, in contrast to the Italian context, the private client does not choose purchases autonomously, but entrusts himself to interior designers who are given the role of dealing with re-sellers (63% of purchases made by clients with an income above $150,000 are made through an interior designer and 46% of interior designers' work is residential. Furniture Today).

Secondly, our qualitative investigation

shows that we are dealing with both clients and professionals, who are easily influenced in their choices by promotional activities and firms' publicity. Investments in communication therefore take on a much greater importance than in many other markets.

Finally, a third consideration is related to the access channels to some products. There are categories of merchandise (eg kitchens, built-in wardrobes) which are mainly present in the "contract" channel because the client already finds them in his home. Because of this there are notable differences in terms of criteria for choice, business and players involved- as we will see later.

The distribution structure. It is necessary to make a distinction between the "residential" and the "contract" channels. The majority of purchases are concentrated on furniture for the home (55%), leaving a share equal to 35% for office furniture and contract.[10]

In the first case, the private client visits one or more sales points which in turn refer to the manufacturing firm, either directly or through agents and/or distributors and importers.

The proposed style, the price, the delivery time and the product's origin are, in order of importance, the main drivers for the final consumer's purchase.

Before examining how the contract channel works, it is important to clearly identify those shops which deal with high-end Italian products:[11]

- *Italian firms' showrooms*, on the street or inside Design Centres. In this context, Poliform, Cassina, Boffi, Kartell, Artemide, Flou, B&B, Poltrona Frau and Armani Casa should be mentioned. These showrooms are not sales points in the traditional sense, but rather a lever to increase the firm's visibility;

- *Traditional multi-brand stores with an "Italian-based" selection*. As well as "brand" products, some shops deal with Italian firms who imitate the style and trends of the well-known innovative firms. The offering of DDC (Domus

Design Centre) in New York, on the corner between Madison Avenue and 34th Street, is an example of this. Furthermore, Design Within Reach (a chain which has some points of sale and an important on-line sales activity) selects and updates monthly for its catalogue from well-known firms such as Kartell and Artemide as well as from imitators of historical products. Or Dialogica, whose three shops in New York, Chicago and Los Angeles sell to order products made in both Italy and the US.

- *Traditional multi-brand shops which put Italian products side-by-side with furniture from elsewhere*, typically Canadian, Swiss, German and Spanish.

These last two categories can be further segmented according to type of furniture (simple furniture such as seats vs complex furniture) and number of brands (a small number of pieces from several suppliers vs the complete offering of a very few producers with whom there are exclusive relationships). Shops which offer furnishing systems and complex furniture are rare, given the specific US buying models. In reference to the detailed segmentation criteria mentioned above, we propose the illustrated examples in Figure 1. (opposite page)

In Group (a) we find shops such as Repertoire which has selected different Italian firms for its two locations: Kartell and Alias in Boston; Flexform, Gervasoni and Promemoria in New York. We include many different entities in Group (b), from the "design museums" created and run directly by Murray Moss (more than 50% of sales relate to Italian products) who often goes to Italy to select with care and passion some pieces from the collections of Venini, Alessi, Zanotta, Flos and Cassina to Totem which deals with both Italian and Canadian firms, with a contained showroom without windows. Manifesto's experience is very particular as it deals 70% with architects and 30% with the final client.

[10] In the US, the value of "Home Decoration" sales in 2002 reached 200 billion dollars, of which 46% related to specialist shops ($95 billion) and 54% to department stores. Source: Bernstein Research Call, 2003.

[11] We do not therefore consider the American (eg Ethan Allen, Bed, Bath and Beyond, Crate&Barrel, Holly Hunt, Modernica) or international chains (eg Roche Bobois) nor the concessions inside department stores (eg Bloomingdale, Macy's).

Figure 1: High end furniture distribution in the USA: some examples

	Few Suppliers	Many Suppliers
Stand alone products, complements	(a)	(b)
	• Repertoire (Boston, New York) • Modernage (New York) • Diva (Los Angeles) • Montage (Boston)	• Moss (New York) • Troy (New York) • Terence Conran Shop (New York) • Design Within Reach (New York, Oakland, San Francisco, Palo Alto, Santa Monica, Beverly Hills, Newport Beach, Portland, Pasadena, Dallas, Miami, West Palm Beach) • Modern Living (Los Angeles) • Totem (New York) • Manifesto (Boston e Chicago)
Furniture System	(c)	(d)
	• Linea (Miami e Los Angeles) • Format (New York) • M2L (New York e Washington) • The Apartment (New York)	• Luminaire (Miami e Chicago) • Vivendum Italian Design (New York) • The Morson Collection (Chicago)

Group (c) is built around one or a few benchmark brands, as in the case of Format, which is linked to the Molteni group or M2L (30% of sales relating to Italian products) which has an exclusive relationship with Driade or The Apartment with its relationships with Driade, Edra, Magis and Boffi. Finally, in reference to Group (d), we should mention again the experience of Vivendum, a firm owned by: Lema, Album, Lualdi, Matteograssi, Rifra, Schiffini and Concept. Another success story is Luminaire, the brand created by Nasir Kassamali, someone who has contributed to the spread of design culture in the US, thanks to his continuous investments in supplier selection and communication, from responsibility for exhibition spaces to organisation of events. Their two shops, in Miami and Chicago, sell many Italian products from well-known firms such as Misura Emme, Porro, Zanotta, T70, Cappellini, B&B, Ycami and Flos.

In the case of "contract" - "immediate possession" furnishings - the decision process is much more complex: the developer (the owner of a building space) asks architects' studios or interior designers to draw up a "tender document" (a document which includes all the data relating to acquisitions and which gives an initial indication of suppliers) which is then acted upon by general contractors who can substitute the suppliers mentioned in the tender document when they find a better offer. The key message is: if the firms are not in the architects' and interior designers' database, they will not be considered when the tender document is finalised. Another aspect to be considered is the absolute necessity in this channel of conforming to quality standards and product safety.[12]

Incomplete internationalisation: how do Italian firms operate?

In the Italian furnishings system, the concept of internationalisation does not operate in the fullest sense of the word. One should note that the large majority of players only export, both indirectly and directly (using an agent/distributor or through subsidiaries). Mixed formulas which combine an international commercial organisation (the so-called "internationalisation in consumer markets") with the acquisition of raw materials and components and/or the carrying out of production in loco (the so-called "internationalisation in supply markets") are almost inexistent.[13]

In reference to exports,[14] the majority of firms entrust themselves to commercial intermediaries (importers, distributors)

[12] Conforming to rules and standards is a general characteristic of American culture which must be respected by any foreign firm wishing to have a presence in this market. In the contract channel, in order to conform it is absolutely necessary that the producers keep themselves abreast of legal requirements, even at the individual State level (eg anti-fire laws); the residential market is much less restrictive about the matter. In addition to the legal requirements, there are voluntary standards. For example, BIFMA (The Business and Institutional Furniture Manufacturer's Association) and the American National Standards Institute have set out a series of standards for office furniture producers which are designed to provide a common basis on which to assess the furniture's safety, durability and structural adequacy. The Green Building Standards are also voluntary, but they provide financial incentives (eg low insurance rates, loans on favourable terms) to those firms which comply. The architects whom we interviewed predict that the Green Standards will have a strong influence on decision makers in the contract channel. These are rules which have been laid down in order to focus attention on environmental problems and working conditions, with implications for material usage and product transport.

[13] In this context, C. Dematté (1993) defines an internationalisation strategy as "the choice of geographical markets for supply, production and consumption, a choice which affects all firms, as one of the four fundamental vectors of strategic positioning in addition to those which relate to: a) type of client b) needs to be fulfilled c) production processes and factors to employ. In order to classify different types of presence, E. Marafioti (2001), identifies three possible alternatives: presence based on export (indirect and direct); contractual presence (eg licensing, franchising, co-production agreements); investment presence (acquired or newly constituted sole ventures, joint ventures).

[14] The strategy of presence based on export implies transferring goods across national boundaries using direct or indirect methods. It is usually the first step in an internationalisation process which evolves towards brand licensing, joint ventures or directly controlled overseas production activities. See S.Young, J.Homill, C.Wheeler and J.R.Davies, 1989.

[15] F.R. Root (1987) has classified the type of presence in consumer markets in relation to size of investment and the forces which push a firm to internationalise.

[16] Only as an example, Laz-Boy, with sales of around 2300 million dollars in 2003, has an upholstery production plant in Thailand.

[17] In this context we think of Molteni & C. which is represented by a multifirm agent helped with technical support. The US market, where the firm has 15 multibrand and one monobrand (Molteni and Dada kitchens) shop, represents 12% of total exported value and 4.5% of total sales.

[18] For example M.A.Hitt, R.E.Hoskisson and H.Kim, "International Diversification: Effects on Innovation and Firm Performance in Product-Diversified Firms, The Academy of Management Journal, Vol.40, n.4, August 1997, 767-798, affirm that geographic dispersion of activities results in high costs for distribution, co-ordination and management, as well as requiring sophisticated abilities in the management of local distribution. Other problem areas are linked to the regulations in different countries, to the fluctuation in exchange rates and to cultural differences. The greater the national identity, the more difficult it is to transfer the competitive advantage amongst countries. Presence in more than one market undoubtedly creates advantages: market and growth opportunities; pursuit of the learning curve, economies of scale and scope; skill sharing amongst commercial subsidiaries; exploitation of market imperfections between countries (eg in the endowment of resources);

when dealing with the American market, with activities strongly centralised in Italy, while there are relatively few companies with commercial subsidiaries, either fully controlled or in partnership with local players, and showrooms.[15]

The presence of this tendency in the sales process undoubtedly presents some advantages in terms of containing fixed costs, flexibility and exploitation of local human resources where there is an excellent knowledge of the market. However, this does not allow control in the consumer market in terms of construction of a brand strategy, analysis of client feedback; timely assessment of competitor moves and management of a pricing strategy.

The situation began to change towards the middle of the Nineties as a result of the following developments:

- *The increase in competition* and the economic crisis in European countries;

- *The structural characteristics* of some firms which surpassed processes of dimensional and qualitative growth;

- *The growing increase in Italian design* and, more generally, European design on the part of American resellers and acquirers.

These dynamics further prompted the firms in our country to plan strategies for more direct intervention, channelling human and financial resources towards the control and management of the distribution network - due also to the creation of commercial subsidiaries - and of the business relating to the large "immediate occupation" orders.

However, it does not seem that Italian firms currently see a strong need to use associates in order to develop their presence in such a distant and difficult market. It is more the case that these relationships are looked on with suspicion for reasons strongly linked to the entrepreneurial culture based on individualism. However, we should mention a recent initiative planned by seven Italian firms (Lema, Album, Lualdi,

Matteograssi, Rifra, Schiffini and Concept) who have set up a company in the US (Vivendum Inc). The first step was to open a showroom in New York. They then selected an American partner (Arredo Inc.) in order to sell these firms' products exclusively in the territories of New York, New Jersey and Connecticut. The target market is that of architects, designers, interior decorators as well as private clients. The objective is to open other "Vivendum" showrooms in the US and other parts of the world according to the same partnership logic.

There are similar considerations if we observe upstream activities: firms choose to centralise all activities in Italy, without considering the option of moving production to the US or other countries - except for Natuzzi, in the low to medium end of the market. Literature on the subject does not fail to underline the alternatives, the advantages and disadvantages linked to the international unbundling of upstream activities, both in terms of outsourcing and in terms of moving production. This strategy is influenced by particular advantages linked to geographical location, to type of product, focused on the quality of the finishing and on some phases of craft work, and to distance, which prevents accurate control of the processes. This is in some way a different direction to that taken by some European and American firms who have suppliers or production plants in other countries, although these firms are different in terms of business model.[16]

There are other firms who have developed a "wait and see" attitude and have decided to continue to work with representative agents and/or importers. This choice is linked to the fact that sales in this market, as well as points of sale, are still low.[17] These firms often have a significant presence in the contract channel which is directly managed from Italy with local technical support.

The explanations for the superficial

presence of firms in the American market can be summarised as follows:

- *Tendency to focus on European markets.* The firms of our country are traditionally used to prioritising the Italian market and other EU countries because they are geographically close, have similar aesthetic taste and are controlled by similar operating logic. Our entrepreneurs have historically been worried about carrying out business in distant countries which are very different from Italy from the cultural point of view. Our small to medium sized firms, used to facing each other in a limited competitive arena, have found themselves working in an enormous market where all the competitive challenges are amplified. According to many contributions to the current literature on International Management, there are also many challenges linked to working simultaneously in different locations.[18] In our specific research, we have established how furnishings firms are too multifocused, or rather how they tend to fragment the market,[19] picking opportunities according to the "hit and run" logic, without prioritising areas of investment. In other words, playing the same game in several markets may have prevented them from convincingly channelling resources and energy into large, competitive and developed markets which require a different strategy to that used in EU countries.[20] On the other hand, having portfolios of highly complex products may have given firms experience of managing complexity similar to that of an international environment.[21]

- *Lower knowledge of language and "rules of the game".* Closely linked to the previous point is the fact that the entrepreneur and his close associates do not know the English language well enough, nor do they know the structural characteristics of the American market.

- *Small firm size* in terms of number of employees, sales and company profitability.[22] In particular, limited financial

resources and a simple organisational structure do not allow them to fully exploit development opportunities in overseas markets. From the product strategy point of view, the pursuit of a differentiation advantage in areas which are limited in terms of sector drives these firms into niches which are ever smaller, this limiting the number of potential consumers.

The gradual expansion strategy in the US, in terms of organising commercial activities (from the single sale through to structured exports and the creation of subsidiaries with showrooms, from the residential channel to the contract channel) and areas (from New York to Chicago and Miami), often involves local players, and shows how firms prefer a "learning by doing" approach as a way of gaining the knowledge necessary to operate efficiently in a new dynamic market. In some cases, the creation of subsidiaries has not allowed enough knowledge development nor a useful transfer of information to the parent company due to communication problems; differences in business; less participative and more authoritarian management styles; and financial control systems which reflect not only the strategy but also the co-ordination and the specific economic and socio-cultural environment.

Ever more direct investments could really be justified from the point of view of knowledge development or organisational learning.[23]

The positioning of high-end Italian firms: the perception of local players

Is it enough to have taken care of the relationships with designers and architects to be assured of success in the high-end market? From what the players say, there appear to be other problems which need to be resolved: (a) there is too much variety, which causes excessive managerial complexity, high prices and lengthy delivery times; (b) adapting to the specific

[23] See B.Kogut, U.Zander,
"Knowledge of the Firm
and the Evolutionary
Theory of the Multinational
Corporation", Journal of
International Business Stu-
dies, 1993, 24: 625-645;
J.Love, "Knowledge,
Market Failure and the
Multinational Enterprise:
A Theoretical Note",
Journal of International
Business Studies, 1995,
26: 399-407.

needs of the US market is a slow or non-existent process, especially in the size and comfort of beds; (c) the economic mentality lacks the "sense of urgency" which distinguishes our counterparts across the Atlantic; (d) services (complaints and returns, delivery etc.) and sales support (catalogues, price-lists, samples) are considered inadequate; (e) the price is high. This last point should be clarified. If we compare the price of a high-end Italian product in Italy and the price in the US there is a difference of between 20% and 50% (the Italian price excludes VAT; the US price excludes Sales Taxes) due to transport costs; duties (which are a small proportion and do not seem to be a real barrier); insurance; loading/unloading and brokerage expenses and a higher margin for the distributor who has higher rental and labour costs.

The real problem is that our product appears very costly because it is compared with that of international firms with a different market positioning: B&B is compared to Ligne Roset without fully understanding that we are talking about different models, not denying that these are excellent firms from the point of view of service to the intermediate (distributor) and final client.

A decisively negative point on which it is necessary to focus is perception of the brand and country of origin. Because of reduced investment in communication, consumers cannot recall furniture producers' brands. If this lasts, it will expose the Italian industry to fierce competition from countries with a low cost of labour who can easily copy aesthetically pleasing products at costs much lower than those of Italian firms. This is already happening at the low end of the market, but there is a tangible risk that it will also affect high-end furniture.

The implications for management: what lessons should be drawn from the experiences analysed?

It is possible, on the basis of what we have stated, to imagine a group of mainly internal actions which could influence the competitiveness of firms in the American market.

The main desirable initiatives can be summarised as follows:

The organisation of international activities: people and trade relations.

Some Italian firms (eg Poliform, Alessi, Kartell, Artemide) have had the good sense to place Americans or people who have lived in the US for some time in positions of responsibility. This choice is justified by the fact that they better understand the local market, the business culture and the needs of counterparts such as resellers, agents and distributors. These players ascribe great importance to time ("time is money") and expect the greatest transparency possible with regard to the elements of negotiation: price, catalogues and price lists, product details, samples, after-sale problems. Americans work with a "sense of urgency" which is not always present in the Italian mentality. Furthermore, in the majority of cases, the commercial counterparts in the US do not speak Italian and take it for granted that all verbal and written communication will be in English. This is a problem for many Italian entrepreneurs who do not know English. The same goes for sales support material (brochures, technical manuals) which should be written and updated regularly by locals who, beyond speaking the language fluently, know better how to communicate with an American audience. A reseller in New York showed us a well-known Italian firm's price list with prices in lire and measurements in metres squared. Finally, all the resellers interviewed wanted a more direct relationship with Italian producers, in terms of reciprocal visits to the shops and

production facilities.

Product and pricing strategy

In reference to the product, only a few firms have made the changes necessary to meet the needs of American clients, above all in terms of size. Americans use very high beds ("Queen" and "King Size"), wide seats and soft sofas whilst wardrobes and built-in suites are placed in bedrooms with much lower ceilings than ours. Besides adapting to local needs, it should be assessed whether there it is possible to provide a low-cost offering outside that of the current catalogue, partly to overcome the competition from the Far East, Canada and South America. A further strengthening of the Euro against the Dollar could further penalise our products in comparison to those coming from other countries which already benefit from a comparative advantage. Another aspect of the problem concerns the economic terms given to interior designers and architects: some firms do not offer discounts to this category of buyers, thus limiting their potential growth in the American market. In the US it is usual to give certain discounts to interior designers with an official licence but not to unauthorised designers.

Distribution strategy

Closely linked to the previous point, it is conceivable that high-end furnishings should have a greater presence in the large sales outlets with similar positioning. This decision would increase volumes, but with the disadvantage of loss of control over price and discount strategy.

Delivery time, logistics, service

The American market is particularly demanding in terms of standards and delivery times. In the residential channel, the maximum waiting time allowed is 8-10 weeks, and in the contract, 6-8 weeks, a period which has halved due to some key players who have invested a great deal in logistics. Beyond delivery time, it would be necessary to be more accurate in pre and post sales service (eg installation, substitution of damaged goods etc.).

Brand strategy

The firms which have had most success in the US are those which have invested time and financial resources in creating a brand. This is a long process which requires the creation of a flagship store to show the product philosophy; a publicity campaign in specialist magazines for resellers and final consumers (for at least 8-10 months per annum), support for commercial activities undertaken by subsidiaries; participation in fairs and organisation of events, increased brand awareness on the part of architects and interior designers through activities designed to capture their attention: receptions, training sessions, exhibitions, presents, incentives etc. Some very small firms without enough capital have gone down an alternative route and worked closely with some trustworthy distributors and resellers in order to benefit from their well-known brands.

There are opportunities arising from the lack of modern design at medium prices (especially for the 25-40 year old age group); the continuing low quality level of American products which are mainly in the classic and traditional style; the potential diffusion (as has happened in Great Britain) of more sophisticated tastes in choosing furniture; the increase in new furnishing needs linked to entertainment centres, "media rooms", teenagers' life styles etc. and laws supporting investment abroad such as Law 394 of 29 July1981 (modified by Circular 12/2001).[24]

These opportunities will be exploited only by firms with the financial resources and managerial culture to create adequate commercial and logistical structures and define effective brand strategies.

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enterprise/smie/index.htm;
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Design av tjänster:
seminarium anordnat av SVID 17 maj 2004

Text: Lisbeth Svengren Holm och Jan Agri

Många tjänsteföretag har på grund av globalisering och ökad lokal konkurrens behov av nya metoder inte minst för att säkra sina erbjudandens kundrelevans och kvalitet. Svensk Industridesign är övertygad om att design-tänkande och designmetoder kommer att användas allt mer för att öka olika tjänsters attraktivitet och relevans. SVID bjöd in personer som arbetar professionellt med design, lärare och forskare med inriktning på design eller tjänster till ett halvdagsseminarium med ett antal internationella talare som arbetar med vad de själva betecknar som servicedesign. Dessa var:
- Birgit Mager, professor i Service Design vid Kölns Internationella Design.
- Ben Reason, delägare i det engelska Livework, "a Service Innovation and Design company".
- Alan South, Europachef för IDEO Design, ett av världen största designföretag.
Syftet var att fördjupa diskussionen i Sverige om vad design av tjänster innebär och vilken roll den kan komma att spela de närmaste åren. Seminariet avslutades med en paneldebatt med talarna och SVIDs Hans Frisk. Hans är ansvarig för SVIDs projekt Design för Tjänster och driver ett antal projekt inriktade på att använda designmetodik och -kunskaper för att utveckla tjänster.

Inledning av SVIDs VD

Robin Edman inledde seminariet med en reflektion över industridesignens förändrade förutsättningar, både i Sverige och utomlands och kunde konstatera att "the future is not what it used to be". Västvärldens industrisamhälle har onekligen förändrats, inte minst det senaste decenniet och därmed även de uppdrag som designer är involverade i. Den industriella sektorn med produktion av fysiska produkter blir en allt mindre del av näringslivet medan tjänstesektorn stadigt ökar. Industridesign är traditionellt fokuserad på den fysiska produkten och dess roll som identitets- och profilbärare för företagets varumärke. Vad är identitets- och profilbärare hos tjänsteföretaget, som inte säljer fysiska produkter? Vad är industridesignerns framtida arbetsområde och om det är inom tjänstesektorn vilken roll kommer de att ha, hur skiljer det sig från det traditionella sättet att arbeta och vilken kompetens kräver det? Robin menade att detta är en utmaning för design.

Servicedesign - nytt ämne för designutbildningar

Birgit Mager är sedan 1995 professor i Service Design vid Kölns Internationella Designskola. Hon är ursprungligen psykolog och arbetade flera år med organisations- och personalutveckling inom

Human Resource på Hewlett Packard. Som självständig konsult kom hon sedan att specialisera sig på servicesektorn. När hon fick erbjudande om en professur i Service Design i Köln var hon tämligen oförstående till kopplingen, "det var som ett skämt". Design var något som hon förknippade med dyrt och trendigt. Service var något helt annat. Sedan dess har hon ändrat uppfattning och fått en helt annan innebörd i designbegreppet. Dessutom ser hon kopplingen som viktig för näringslivets utveckling. Fortfarande är det så att företagen lever med ett produktparadigm. Det sitter djupt och Birgit menade att redan romarna värderade service lågt. Service var arbete och dessutom arbete för någon annan. Hantverk var OK, men service var slavarbete. Ett serviceparadigm kräver därför en förändrad attityd och värdering.

Att producera service är att utgå ifrån de upplevelser som kunder har av företagets, eller organisationens produkt, som i tjänsteföretagets fall är en immateriell produkt. Daimler Chrysler var ett exempel på ett företag som har börjat utveckla ett nytt paradigm där service och kunden är utgångspunkten. 70 procent av deras verksamhet rör tjänster, till exempel försäkringar, finansiering, service, etc. Även vinsten kommer till 70 procent från denna del av verksamheten. "Affären börjar när bilen rullar ut från bilhandlaren", vilket också betyder förändringar av relationer kring aktörerna kund, detaljist och producent. Detta är inte något som enbart rör storföretag utan i lika hög utsträckning små och medelstora företag.

Birgit nämnde ett exempel med en liten motorcykelhandlare. När de ställde frågor om vad deras kunder egentligen köpte kom de fram till att det handlade om själva upplevelsen av att köra motorcykel. Det ledde till att man anordnade motorcykeltävlingar för amatörer (Motorbike Retail Race Days), vilket blev en stor framgång och stärkte relationen mellan butiken och kunderna. Men omvandlingen till ett servicetänkande går långsamt

och man kan också se skillnaderna i investeringar i forskning och utveckling. Den tyska tillverkningsindustrin investerar årligen ca 6.245 Euro per medarbetare, medan servicesektorn investerar 136 Euro per medarbetare och år.

Service är, menade Birgit, en levande produkt och en svårighet är att kommunicera alla fördelar. Det viktiga för företagen är därför att utveckla en tydlig kommunikations- och servicestrategi och vara medveten om kundens och servicens mötespunkter - touchpoints, som är den beteckning som alla tre talare använde. Eftersom servicen i sig är immateriell, kan det ofta vara en snårskog att komma underfund med servicens innehåll och därmed även dess fördelar.

Eftersom tjänsten måste kommuniceras på ett sätt som gör att användaren lätt kan förstå dess innehåll och fördelar handlar det om att hitta rätt kanal för detta. Idag är det vanligt att tjänster förmedlas via Internet eller mobiltelefonen. Ett av de fall som Birgit Mager tog upp illustrerade vikten av att kommunicera tjänsten utifrån kundens behov och situation, i det här fallet lastbilsförare. Det var i det här fallet Mercedes Benz "Charter Way", en tjänst som tog hand om alla de kringtjänster ett åkeri behöver, alltifrån val av bil och finansiering, till reparationer och olycksfallshantering. Mercedes Benz hade haft svårt att kommunicera tjänstens innehåll och fördelar till åkerierna. En ny design av webbplatsen, med stark förenklad åtkomst och rak kommunikation med tydliga symboler ledde till att tjänsten blev en stor framgång.

Mercedes-Benz CharterWay

Figur 1:
Visualisering av
Mercedes Benz
tjänst
"Charter Way"

### En interaktions designers syn på design av tjänster

Ännu tydligare var sambandet mellan interaktionsdesign och tjänster hos Ben Reason, delägare och projektledare i det engelska företaget LiveWork. Det är ett designföretag med fokus på servicedesign och innovation. Företag grundades 2001 och har tre delägare, två produktdesigner med fokus på multimedia och interaktionsdesign och Ben Reason med bakgrund i konstvetenskap. Alla har arbetat med Internet baserade tjänster. Ben menade att det är en utmaning att utveckla nya tjänster, men också att utveckla kvaliteten på tjänster. En ännu större utmaning är att se hur man kan få människor att uttrycka sin identitet genom service istället för genom ägande av produkter. LiveWork vill åstadkomma något som man kallar "service envy". Detta bygger på samma logik som för fysiska produkter, som har två roller: att utföra sin funktion och att ge ägaren en status och identitet. Hur kan man få en immateriell tjänst, att fylla båda dessa roller? Just den här aspekten är central i service innovation, nämligen att se på tjänsten i ett nytt perspektiv, där funktionen och upplevelsen är central.

Ben Reason beskrev en del av de projekt man arbetar med. Bland annat samarbetar LiveWork med Ivrea Institute of Design, en italiensk utbildning för interaktionsdesign, som grundades med hjälp av Olivetti för ca 30 år sedan. Interaktionsdesign är till stor del basen i mycket av tjänsteutvecklingen och det framgår även av de fall med Ivrea och till exempel Orange, som Ben Reason beskrev.

Vivi Dreams var ett studentprojekt i Ivrea, där man utvecklade något som kan liknas vid ett familjealbum, för att i denna fånga upp de drömmar man haft under natten. I tjänsteutvecklingsprocessen får prototyper en central roll för att kanalisera, kommunicera och inspirera till tjänsten utformning och användning. Det som designer tillför processen är att för olika behov ifrågasätta de verktyg eller produkter som används och ta fram prototyper som skiljer sig från det existerande men ändå knyter an till något som känns igen. Figur 2 på motstående sida är en

Opportunities for *design?*
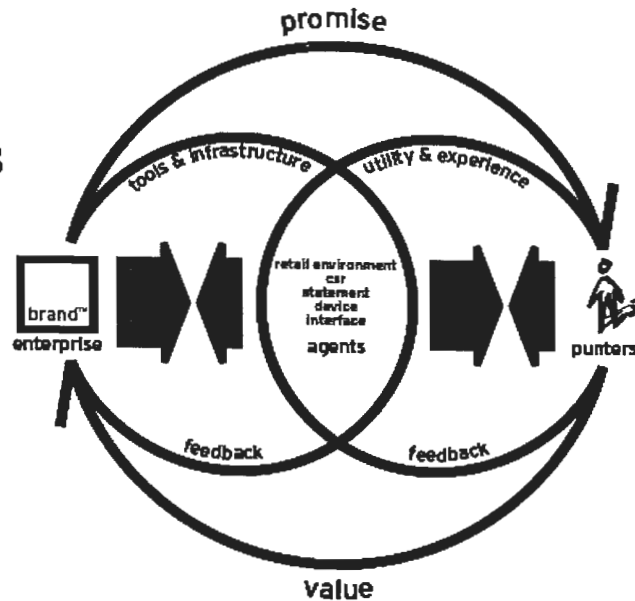
modell som LiveWork använder som utgångspunkt för en innovativ utveckling av tjänsten. Den utgår från företagets verktyg och infrastruktur och kunders behov och upplevelse. I processen måste man få en interaktiv loop med feedback mellan dessa, utgå ifrån de löften man erbjuder och i vilket sammanhang tjänsten kan användas. Löften kan också vara de löften som varumärket står för.

Marknaden för design av tjänster enligt IDEO

Enligt Alan South, Europachef för IDEO Design, är servicesektorn och de krav den ställer ett nytt område för design. Samtidigt är det en hel del som kanske inte framstår som nytt. Alan South hade formulerat detta på följande sätt:

Design: needs service
Service: needs design
Service design: similar but different.

Industridesign är barn av den industriella utvecklingen i allmänhet och massproduktion i synnerhet. Det gör att det fortfarande finns starkt fokus på den fysiska produkten och dess teknologi. IT och telekommunikation har förändrat det tekniska paradigment, men också utvecklingen av servicesektorn. IT och telekommunikation är en integration mellan vara och tjänst, där informationen är en tjänst men den förmedlas via en avancerad teknisk produkt. Denna produkt möjliggör också en individualisering och segmentering av marknaden i mindre nischer.

Alan South menade att servicesektorn är redo att ta till sig ett designtänkande och utnyttja designmetoder för en mer innovativ och kreativ utveckling av tjänster. För IDEO började det när Kaiser Permanante, den största sjukvårdsorganisationen i USA, ringde och undrade om de metoder som IDEO använde för att utveckla produkter även kunde användas för att utveckla sjukhusets tjänster. Kaiser höll på med en plan för att attrahera fler patienter vilket skulle kräva ombyggnader och tillbyggnad av sjukhusen. Det skulle kräva stora investeringar och samtidigt var man tvungen att skära kostnader.
IDEO tog det som en utmaning och satte upp ett team av sociologer, designer,

Figur 3:
Visualisering av förslag
till förbättringar av
sjukvårdstjänst

services are ready to be designed

for the customer, at last
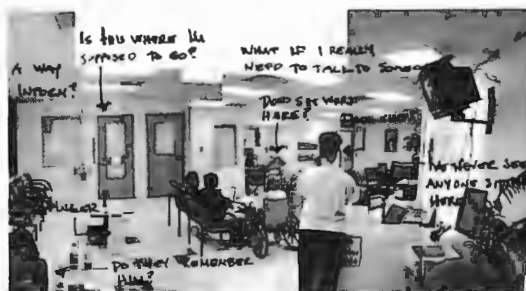
arkitekter och ingenjörer men krävde också samarbete med sjukhusets team av sjuksystrar, läkare och fastighetschefer. Tillsammans började man att observera och följa patienters väg genom vårdkedjan på sjukhuset. Man fotograferade, filmade, gick vid sidan av personalen och lät sig även behandlas som patienter. Med hjälp av det visuella underlaget (se figur 3), upplevelserna som patient och anställd insåg Kaiser att medicinsk vård är en social upplevelse, precis som shopping. Man skulle därför erbjuda en större bekvämlighet och tänka på den känsla patienter fick i mötet med sjukhuset. Resultatet var att projektet handlade till 1/3 om att designa om miljön och byggnaderna, dvs långt mindre än vad Kaiser ursprungligen hade förväntat, och 2/3 om att ändra organisationen.

I samband med en större organisation vintern 2003-04 skapade IDEOs bl a en "service design practice" för att kunna arbeta mer specifikt gentemot servicesektorn. Vad man upptäckte var att service till stor del var producerad för handeln, eller skapad för näringslivet och tekniken, men inte för kunderna. IDEOs motto för att skapa tjänster och service som tillfredsställer kunderna är att tjänsten ska vara meningsfull, användbar

och ge en positiv upplevelse "(delightful").

Serviceföretag levererar en upplevelse genom flera mötespunkter (touchpoints) och dessa utvecklas över tiden. För att utveckla tjänster och service handlar processen därför om att identifiera dessa mötespunkter:

1) förstå och observera;
2) visualisera och förfina;
3) samt genomföra

Skillnaderna finns framförallt i den sista delen då serviceföretag inte har en produktionsenhet där man kan testa produkten. Det som designprocessen kan tillföra servicesektorn är just visualiseringen, men också det kreativa tänkandet i själva processen. Alan South nämnde ett antal projekt där man utvecklat metoder för att företagets representanter, ofta dess toppledning, skulle få uppleva sin egen service på ett sätt som mer liknade kundernas upplevelse, dvs skapa en empati för kunden. Ett var med järnvägsbolaget Amtrak. Man åkte med tåget på olika sträckor och IDEO hade preparerat en kortlek med olika uppgifter, till exempel "du är hungrig och ska hitta något att äta". Dessa delades ut till företagets projektdeltagare som skulle lösa uppgiften.

Denna typ av direkta upplevelser gav också en inlevelse som bidrog till att man kunde utveckla servicen och organisationen av denna på ett från kundens perspektiv bättre sätt.

Det "landskap" som service utvecklas inom skiljer sig från produktutvecklingslandskapet menar Alan. Företagen som tidigare var tillverkare är det inte längre och om de är det är tillverkningen flyttad till andra länder, vilket gör att kontakten med produktionen inte är lika påtaglig som tidigare. Det gör att dessa företag måste och flera är villiga att tänka i nya banor. IDEO Design har därför arbetat med att utveckla fas 0 i processen, den fas där man fortfarande inte har en brief. Alan menar att den kraft som finns i designprocessen är mäktig också för service och därför behöver service design. Och det är lite annorlunda jämfört med den traditionella produktutvecklingsprocessen.

Avslutande kommentarer

Gemensamt för talarna är att designens roll för utveckling av service till stor del handlar om att använda sig av designprocessens antropologiska, etnografiska och visuella metodansats. Med observationer och empati, dvs inlevelse i användarens situation, kan man hitta alla de fysiska mötespunkterna - touchpoints - och visualisera dessa grafiskt eller med prototyper. Det är viktigt att kunden kan "se" tjänsten, men också att företaget själva ökar sin medvetenhet om tjänstens upplevelse genom inlevelse i kundens situation. Det är inte givet att mötespunkten sker via en fysisk produkt, eller ett tekniskt verktyg som mobiltelefon eller datorer. Det kan lika gärna vara rummet, platsen, och inte minst organisationen och inte minst dess personal. Alan South menade därför att detta område till lika stor del berör managementkonsulter som traditionellt sett fokuserar på organisationen och dess beteende. Servicedesign är en kombination. I USA ser man redan nu hur managementkonsulter börjar anlita designer för att utveckla sin verksamhet med just visualisering som metod.

Samtidigt visade de fall som presenterades under eftermiddagen att det inte bara handlar om visualisering. Det är lika mycket en fråga om hur man organiserar själva utvecklingsprocessen, vilket kräver både social och kreativ kompetens hos designkonsulterna. Det är lika mycket dessa kompetenser som visualiseringen som skapar upplevelser, som ger möjlighet för inlevelse och därmed en bättre och mer kreativ utveckling av tjänsten. Detta innebär inte minst krav på att kundföretaget deltar i själva utvecklingsarbetet. Annars blir det inte någon inlevelse. Företagets ledning och personal måste kunna se och förstå sin tjänst ur sina kunders perspektiv. Denna långtgående integration mellan konsult och kundföretag kräver att man som konsult vågar ställa krav på sina kunder. Det minsta man kan säga är att servicedesign är ett heterogent område och att det är ett nytt fält för designkompetens. Det är också en ny aspekt på kompetens som sådan. Vilket är en utmaning både för designerna och för de företag som deltar i detta.

För mer information se;

SVIDs tidigare genomförda projekt om design av tjänster:
[www.svid.se/ Projekt/Avslutade projekt/ Ekodesign ett steg till]

SVIDs pågående projekt Design för tjänster:
[www.svid.se/ Projekt/Design för tjänster]

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Call for paper:
Marketing (and) Management as a Design Process

Following Herbert Simon's definition of design.

"Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design so construed, is the core of all professional training; it is the principal mark that distinguishes the professions from the sciences. Schools of engineering, as well as schools of architecture, business, education, law, and medicine, are all centrally concerned with the process of design" (Simon 1996 p. 111).

The design concept is not a concept of giving form, but rather an epistemological issue, where "imagination, preparedness and situatedness" puts us in the dilemma of long time to prepare for action and very short time to respond to the immediate requirements when action is required. Action requires "situatedness" on the spot or "on-line" to use a metaphor. Another metaphor is "stir fry" or "wok cooking". Strategic cognition is "embodied" in physical people and "embedded" in physical and cultural contexts. We take time to prepare the ingredients we want to cook, but the process of cooking itself is very brief. In practice modular designs and platforms for action seems to be appropriate.

The issue of epistemology is different than in science and the humanities (Romme 2003). Science is concerned with causal explanations of what has already happened and humanities are reflections on what is happing and how we feel about it. Designing is the imaginative faculty in action enabling us to build a future. The validity claim is whether it will work when the situation arrives.

Marketing managers face on a regular basis such situations. Facing competitive action, failing campaigns, or just being summoned to the boardroom to give a statement to the board of directors, all the analyses and preparations are suddenly put to an acid test where designs are made instantly with strategic implications strategic. How does our marketing manager prepare diligently for such situations? Knowledge creating systems, scenarios, platforms for modular elements of strategy and the imagination to see what is conceivable seems to be the tools. How does it work?

Contributions to the EAD 6 conference (in particular section 7) may be submitted for a special issue of Journal of Marketing Management, probably the December issue 2005. There will be a final deadline 1 July 2005 and all articles submitted will be subject to double blind review for the journal.

The special issue will be edited by Tore Kristensen, Copenhagen Business School (tk.marktg@cbs.dk) and Kjell Grønhaug, The Norwegian School of Economics and Business Administration (Gronhaug@nhh.no).

Svensk Industridesigns bokförsäljning

Beställ via webbplatsen www.svid.se under Läsvärt, alternativt telefon 08-783 80 00, fax 08-661 20 35 eller e-post post@svid.se

Den socialt formgivna produkten
Författare: Ulf Mannervik
Utgiven 1997 Chalmers tekniska högskola, exp. för Form och Arkitektur
Ser vi industriell formgivning som en social förändringsprocess, framgår det att en rad olika personer påverkar en produkts form, personer med olika prioriteringar kring problem som den skall lösa. Produkten är socialt formgiven i bemärkelserna att produktutvecklarna skiljer sig åt i sina föreställningar om produkten och dess form växer fram under deras samverkan. Som social förändringsprocess är formgivningen inte begränsad till en enskild och skenbart fristående process, utan måste förstås i ett sammanhang där tidigare och parallella produktutvecklingsprocesser ingår. Produktutvecklarna knyter sig samma i olika allianser som sträcker sig över historien och korsar det enskilda företagets formella gränser. Studien visar bl.a. utmaningar som produktutvecklare behöver kunna hantera för att utveckla en väl sammanhållen produkt. Dessutom visar den villkor som industridesigner måste möta för att kunna skapa gehör för sin kompetens och få utrymme för sitt bidrag inom produktutveckling.
Pris: 176 kronor exkl. moms + frakt

Design
Utgiven 1985 av Design Center Stockholm
Huvudtemat för boken är design i den industriella processen. Boken förklarar vad industridesign är, presenterar dess pionjärer och den internationella konkurrenssituationen. Den redogör för attityder till design bland små och medelstora företag och tar upp relationen mellan design och samhällsekonomi. Tolv svenska företag från den stora koncernen till fåmansföretaget, intervjuas om hur de använder design som konkurrensmedel. Nio industridesigner med olika specialiteter belyser sina erfarenheter från samarbetet med industrin. Boken Design var den första publikationen från Design Center Stockholm och möttes med stort intresse 1985 när den kom ut. Eftersom den är en unik och innehållsrik sammanfattning av industridesignerns möjligheter att ge industrin ökad konkurrenskraft och brukarna mer för pengarna fortsätter vi att använda den √ giltigheten finns kvar.
Pris: 75 kronor exkl. moms + frakt

Design av företags- och produktnamn

Författare: Jens Bernsen

Utgiven 1994, Svensk Industridesign/Industrilitteratur, Stockholm

Ett bra namn är inköpsporten till identifikation, igenkännande och förståelse. Ett dåligt namn kan medverka till att man blir förbisedd eller feltolkad. Ett bra namn ger ett företag eller en produkt en god start, kanske även ett gott liv. Ett dåligt namn är en belastning. Utvecklingen av ett namn på ett företag eller en produkt är en designuppgift i sig. Boken kartlägger beslutspunkter som ligger bakom valet av namn och anger kvalitetskriterier för denna designuppgift. Boken är både på svenska och engelska.

Pris: 50 kr exkl. moms + frakt

Design for Product Understanding

Författare: Rune Monö

Utgiven 1997 av Liber

Industridesignerns uppgift är att forma tingen så att vi förstår hur de ska användas. Boken lägger därför tonvikten på produkten som ett tecken, dess budskap och kommunikativa betydelse. I flera avseenden bryter boken ny mark på produktsemantikens område. Design for Product Understanding är nödvändig vid utbildning av industriella och grafiska designer och ovärderlig för alla, som på ett eller annat sätt arbetar med våra nyttotings gestaltning. Den vill också öppna dörrar ut till vidare forskning på ett fortfarande jungfruligt område.

Pris: 288 kronor exkl. moms + frakt

Designer Carl-Arne Breger

Författare: Susanne Pagold

Utgiven 1996 av Andrén Art Production

Carl-Arne Breger, Det allmängiltigas mästare, gör vanliga saker, säger han själv. För så många som möjligt, annars blir det inga jobb och inga pengar. Carl-Arne Breger har designat en stor mängd bruksföremål av alla slag, diskborste, toalettstol, cykelpump, plasthink, smörpaket, saltströare, hammare och mycket annat. Underhållande och lätt nostalgiska texter av Susanne Pagold.

Pris: 50 kronor exkl. moms + frakt

Handla

Utgiven 1997 av Tullbergs kultur & reklambyrå

Boken handlar om förändring, välfärd, arbete, lärande, konsumtion, arkitektur, design, kultur och framtid utifrån 1930-talets bok "acceptera". Författarna tar upp olika faktorer som styr utvecklingen av arbetslivet och för fram visioner kring lärande och förståelsen av kopplingen människa - maskin.

Pris: 368 exkl. moms + frakt

Ekodesign/Ett steg mot en hållbar framtid

Produktion: EkonoMedia Affärspress AB
Utgiven oktober 2000 Projektledare: Christer Ericson och Hans Frisk

Industridesign är ett kraftigt verktyg i kampen för att rädda miljön. Förr fokuserade man på utsläpp, förpackningar och sopsortering. Nu står det klart att miljötänkandet måste börja redan på ritbordet. När produkten lämnat fabriken är det för sent.
1998 startade projektet EkoDesign, initierat av Svensk Industridesign med finansiering från NUTEK, Näringsdepartementet, EU:s Småföretagsinitiativ och deltagande företag. Elva mindre och två större företag har med hjälp av specialutbildade industridesigner och miljöspecialister gått igenom och miljöanpassat sina produkter och olika arbets-metoder. Målet med EkoDesign-projektet har varit att minska den totala miljöbelastningen med 50 procent- under tillverkningen, när produkten används och när dess livslängd är slut. Ett mål som vi lyckats uppfylla.
Pris: 50 kronor exkl. moms + frakt

Ett steg *till* mot en hållbar framtid

Produktion: EkonoMedia Affärspress AB
Utgiven september 2003 Projektledare: Christer Ericson och Hans Frisk

Ett steg till mot en hållbar framtid (engelska - Another step towards a sustainable futu-re). Flertalet av nystartade företag idag är tjänsteföretag. Vad gäller traditionella produkter anser idag många att design ökar konkurrenskraften. Design skapar attrakti-va produkter som klarar internationell konkurrens. Finns det då någon som arbetar med produktutveckling av tjänster och där användaren sätts i fokus som i fallet med vanlig produktdesign. Vi menar att detta inte sker idag. Se exemplet mobiltjänster. Hittills har dessa tjänster inte anpassats i någon större omfattning till slutanvändaren. I denna rapport har vi tittat närmare på insamling av avfall och vård av psykiskt sjuka och där resultaten är mycket positiva.
Pris: 50 kronor exkl. moms + frakt

Resa i design

Författare: Lisa Warsén och Per Leander
Utgiven 1999 av KFB, Kommunikationsforskningsberedningen

KFB har under ett antal år finansierat ett forskningsprogram om industriell design inom kollektivtrafiken. Detta arbete är nu avslutat och finns sammanfattat i en handbok, som heter Resa i design. Boken vänder sig till alla som arbetar med att förbättra kollektiv-trafiken. De som arbetat inom programmet har funnit att industridesign är ett utmärkt verktyg för utveckling och management när det gäller såväl tjänsten som alla dess olika beståndsdelar. Design är synlig och riktar sig till både resenärer och personal. Dessutom manar design till helhetssyn. Läs boken Resa i design och få inspiration och idéer. Boken behandlar utformning av fysiska produkter, rumsmiljöer och information och hur man skapar en fungerande helhet med människan i centrum. Den beskriver både genom sin huvudtext och ett stort antal exempel hur design genomförs och hur design kan användas. Det handlar om att färdas väl. Om välfärd!
Pris: 350 kronor exkl. moms + frakt

Sverige i god form

Författare: Ann-Kristin Myrman
Utgiven 2000 av LO, Landsorganisationen

Vi vill med skriften Sverige i god form bidra till en ökad diskussion om formgivningens betydelse för sysselsättningen och utvecklingen av svenskt näringsliv. Vi tror att det finns stora utvecklingsmöjligheter för företag som satsar på en genomtänkt formgivning. Det kan leda till sysselsättning, utveckling av arbetets innehåll och bättre produkter. Det finns många aktörer vid en produkts tillkomst: formgivaren, konstruktören, som ibland är samma person som formgivaren, företaget, de anställda, den fackliga organisationen, köparen och brukaren. Alla kan bidra med mer än de gör idag. Alla har kunskaper som inte utnyttjas och inte samordnas. Vi tror att det finns både kunskaper och intresse inom våra egna led som inte tas till vara. Därför vill vi med Sverige i god form framför allt stimulera facket och fackets medlemmar att fundera på och undersök om en satsning på formgivning skulle kunna bidra till att utveckla det egna företaget.

Pris: 32 kronor exkl. moms + frakt

Tänk på saken/Design from western Sweden

Författare: Folke Edwards, Gunilla Grahn-Hinnfors, Torsten Hild, Ingrid Sommar och Anders Westgårdh
Utgiven 2000 av Nordbok Publishing AB

År 2001 är ett av regeringens utlyst år för arkitektur, form och design. För att lyfta fram designlänet Västra Götaland utkom boken "Tänk på saken", ett praktverk i ord och bild om västsvensk design. Närmare 100 utvalda västsvenska föremål, som är designade och/eller producerade i Västsverige. Från bilar till porslin, från möbler till ostar, från servetter till motorsågar. En del föremål är klassiska, andra är samtida. Boken skall skänka kunskap kring design och inspirera till ökat designtänkande bland företag, myndigheter och organisationer. Boken skall vara en upplevelse för dem som tar del av bokens texter, bilder och grafiska form. Finns både på svenska och engelska.

Pris: 250 kr exkl. moms + frakt

The Human Dimension

Utgiven 1994, Svensk Industridesign, Stockholm

I oktober 1994 arrangerade Svensk Industridesign, Arbetsmiljöfonden och Sveriges Tekniska Attachéer utställningen "Den Humanistiska Dimensionen" i Milano. Utställning visade 70 svenska företags produkter, utvecklade med omsorg om dem som skall använda dem. Ett antal namnkunniga personer, t ex Gustaf Rosell, Kerstin Wickman, Anty Pansera och Maria Benktzon, ger sin syn på denna humanistiska dimension, ett förhållningssätt som gör Sverige unikt inom användarinriktad produktutveckling. Boken är på engelska.

Pris 50 kr exkl. moms + frakt