

Vita Activa: **On Relationships between Design(ers) and Business**

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Footnotes begin on page 45.

How do designers actually work for business organizations that previously may have neglected¹ to cater to their design issues? A plethora of specialist designers has emerged² and they currently are offering their productive services in multiple ways to business firms and other organizations that still tend to be partly ignorant of design approaches and expertise.³ The relatively young profession of modern “industrial design”⁴ is a case in point because industrial designers commonly offer their productive services to managers, who often are unfamiliar with their specialism.⁵ The highly experienced, Milan-based, German industrial designer Richard Sapper, working for IBM and several other companies, recently claimed: “Today, in many corporations, design decisions are in the hands of people without the slightest knowledge of the subject, asking consumers what they want.”⁶

Rather than predicting the need of more knowledge or organizational “absorptive capacity”⁷ on the one hand, or “survival of the fittest” designers in competitive markets on the other, we need to zoom in on *living-work relationships* between designers and organizational people to understand their interacting abilities and “lifeworlds” while working together. When I started to explore how designers actually work with firms and vice versa, I therefore chose this route—as an industrial organization researcher—approaching the field of design-business collaboration in a fairly open manner to see how it occurs. As I became increasingly aware of the complexities and unconsciousness of design issues in many organized settings, one nagging question emerged as potentially significant: How might dynamic capabilities⁸ in designing repeatedly be *enabled* in connection with organizations when organized agents were working, often temporarily, with designers? This seemed almost paradoxical; how to stabilize something that seemed to be in constant flux?

Approaching Design-Business Work Relationships

Instead of examining designing from a control-oriented or instrumental view, which has dominated many product development textbooks and early design management literature,⁹ I adopted a phenomenologically inspired approach¹⁰ to understand rather than prescribe, but I do not confine my focus to the everyday routine. Design work seems to encompass more than business-as-usual,

especially when we zoom in on new approaches, relationships, and innovating efforts between designers and organizations. No doubt, the design-business relationships are moving targets, but can some reoccurring practices be found? While exploring how designers work with manufacturers, I noticed that designers as well as business people with various disciplinary backgrounds may become highly involved in a wide range of activities connected to design conceptualizing, projecting, and working closely together in order to achieve “something more.” Interestingly, design collaboration towards new solutions seems to offer formative experiences¹¹ and even self-transcending reflections.¹² Although design expressions are embraced as a vital force in designing, we still do not fully understand their potential, for example, for organizations.¹³

This article, therefore, specifically explores the design-innovating activities that seem to flow richly between designers and organizations, and which constitute constructive circles,¹⁴ as well as beyond organizational borders. Design activities—since living work-relationships in business are not merely about products—identities, man-machine interfaces, networks, or projects.¹⁵ Design-in-business may be all this, but it is going on more between designers and their collaborators when they are designing creatively “in the mess.” I use this phrase to refer to conceiving and constructing something with others in the “real world”—typically messy¹⁶—design-business situations attempting to capture more of the complexities and imaginative human actions involved. I find it of particular interest that designing in the mess seems to become a highly activity-based life—*vita activa*¹⁷—between people and situated things, which may evoke emotions, but also tensions and mixed-motive interests. As suggested by designer Richard Sapper:¹⁸

With a brilliant idea, you can solve a problem but you have to refine it to make it practical. You make a sketch or model to give form to the idea, but it doesn't come alive until it is injected into the larger world of a company or factory. Many other people have to have a dialogue with you and make a product out of it. As a result, the model changes—sometimes for the worse, sometimes for the better.

What, then, does it mean to work in concert with business organizations attempting to make something “for the better”? IBM's Thomas Watson, Jr. often is cited from his reflection that “good design is good business,”¹⁹ while British design pioneer James Pilditch always stressed: “See good design and you see a good client,”²⁰ but what is actually a “good client,” or better, a mutually leveraging design-client relationship? How does this collaborative, often highly secret, process take place? Insofar as talented designers *work* with others—whether in repeat client organizations or collaborating on a more short-term basis across a variety of contexts—their work probably would rarely adhere to idealized paradigms of the individual

designer-creator on the one hand, or the anonymous “cog in the wheel” work of inside design-and-development staff on the other. The machine metaphor for designing in highly structured linear ways, progressing harmoniously from clear goals and specifications towards expected outcomes, does not seem appropriate for what is going on between designers and their clients, although I discovered that industrial design students may be enthusiastic about more “ordered” processes.²¹ In practice, however, real-world design challenges tend to be regarded as fascinating but “messy”—i.e., difficult to deal with, and full of awkward complications, fragmentation, and unexpected fluctuations, according to first-hand participants²² who still seek to bring the benefits of more competent design to a variety of stakeholders.

To understand designing in the postmodern²³ society, I believe that we need to open up to the various ways of designing constructively “in the mess”—rather than using the lens of linear order or harmonious compromise—to capture how designers actually are cooperating with business organizations and beyond. A decade ago—before much of the current knowledge-management obsession came about in parts of academia and the consultancy industry—Paul Rand, a pioneering graphic designer, pointed out that “There is no set body of knowledge that must be mastered by the practitioners. What the designer and the client have in common is a license to practice without a license.”²⁴ And yet his graphic design work for IBM suggests that design issues may become, at least temporarily, cultivated and retained in meaningful ways through connecting and synthesizing design-business work. In short, it is feasible to make design significant in the organizational context over time and space, but little is known about how designers work with their common collaborators, such as business firms.²⁵

Grounded in my fieldwork tracing ongoing collaboration between exemplary firms and designers, I could identify a wide range of design activities—I propose at least seven—feeding into the reoccurring collaborative circles unfolding through design-business relationships. As one key informant proposed: “What is really important is that the parties actually *collaborate*, that is, work together.”²⁶ I noticed that collaborative relations also might encompass (partly) autonomous design efforts distributed not merely in the organization, but beyond its borders. Bearing this in mind, my point in this article is not the classification of activities, dividing these into fixed categories or discrete topics. Rather, I wish to open a window allowing access to how designers work with organizations and beyond, including appreciating what actually enables more constructive designing, even “in the mess.”

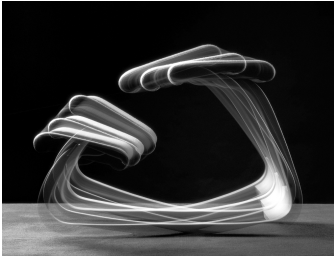


Figure 1 and 2
Example of Balans furniture.

Studies of Outliers

As Starbuck²⁷ recommends, the paper draws mainly on the study of “outliers” to gain new insight into firms and allied designers that have excelled in product design. It draws on several primary data sets. First and foremost, an in-depth study of five Scandinavian small- and medium-sized product companies that have pursued a collaborative product design approach with industrial design consultants, and thus could offer rich experiences (see Tables 1 and 2, and elaboration elsewhere). Secondly, I draw on international cases, which have helped me gain a broader picture (see below). Initially, a focus group, an explorative literature review, and a comparative “most similar”²⁸ case study of two chair-makers of “balans” furniture—definitely an outlier in the Scandinavian furniture industry²⁹—helped to refine the research questions.

Balans (Latin and Norwegian meaning “balance”) means the body’s self-regulating posture, giving freedom for dynamic uses of the muscles while seated, and was a fresh but controversial idea within furniture design at the time. The display of about ten models caused quite a sensation when exhibited at the 1979 Scandinavian furniture fair in Copenhagen.³⁰ Through tracing design-business collaboration in two companies involved in this balans case, I learned about the innovating dynamics between creative designers and championing managers—often from the middle ranks—who helped to extend and eventually transform the scope of these enterprises. Balans was originated by a loosely coupled group of external designers and one inventor to introduce new concepts and ways of thinking to a few “willing” organizations and help them address user problems and nurture alternative ideas of sitting. The new designs generally were met with skepticism, as often happens with innovative solutions. “Whether it will catch on is anybody’s guess,” wrote one journalist outside Scandinavia.³¹ So I also learned what already established ties with business could mean when championing for something new and unfamiliar. Last, but not least, I noticed the continuous design-related work needed to actually realize the innovative solutions—in this case through established organizations—in order to ever reach end users.

In a study of the *Lillehammer Olympic Design Program 1994*, an entirely new and temporary organization, I learned more about how new design approaches could be proactively communicated and organized across company borders by a fairly small group of dedicated design promoters, even when facing a complex and time-compressed mega event with high stakes and many managerial crossroads.³²

To some extent, this opportunity for rich insight into complex design and development while it was evolving also was possible in my *main multiple-case study of five product-based firms* (two of which were the balans-influenced furniture makers) in order to investigate these further. Scandinavian companies often are fairly open to researchers, and the five firms chosen responded to repeated queries. They were small- and medium-sized firms at the time (approximately 60–300 employees in 1994), and were presumed to have relatively short communication channels between industrial design and the company’s management. Hence, design/business relations and experiences might be transparent. The five firms were picked so as to represent some “constancy” in task environments, as well as some possible variety in knowledge background, because two companies were operating within form-based industries (furniture making) and three were operating in engineering- and technology-oriented industrial settings, although it turned out that both types of industrial milieus had tended to ignore design expertise.³³ In short, they were “most similar” in certain characteristics³⁴ such as size, industry, and product-based competition to allow for sharper focus on possible interesting variations such as the location and integration of design expertise.

To avoid stereotyping, and specifically target the innovating “outliers,” I carefully selected firms and respective design partners actually *working together over time and within more than one project* (i.e., genuine relational data). Being aware that any reconstruction may be subjective, I interviewed and talked repeatedly with both designers and management who no doubt had accumulated firsthand experience of what otherwise is sparsely researched.³⁵ The medium-sized firm settings provided access and transparency in a commonly secret product innovation area, and I got repeat access to rich accounts and documentation of how firms collaborate with designers in practice. Furthermore, collaborations were ongoing while I visited the respective sites, so I also could see work-in-progress while talking *about* it.

Table 1
Five Norwegian/Scandinavian Export-Oriented Manufacturers

Product-based firms	Core products
HAMAX	Consumer-oriented plastics for leisure
TOMRA	Automated machines for handling beverage containers returned by the consumer
GRORUD	Window and door metal-based fittings
HÅG	Ergonomically designed office chairs (for the contract market)
STOKKE	Ergonomically designed furniture (for the individual customer)

The respective design consultants working with the Norwegian-Scandinavian companies also were interviewed and visited. All were highly skilled and experienced designers (more than ten years design work experience), some of whom also had design-relevant international experience of interest to the manufacturing firms. For example, the Dutch design consultancy, n|p|k³⁶ represented the bicycle user country par excellence in Europe, which was targeting HAMAX when planning to redesign its children's bicycle seats. It is also worth noting that one of the independent design experts, Peter Opsvik, worked for two of the firms investigated, the furniture makers HÅG and Stokke, which tended to be seen as unusual when I presented this finding to international audiences. In this article, I present new material from my recent follow-up study³⁷ of HÅG H05, which is an innovative new office chair line designed by Peter Opsvik and his design firm in collaboration with HÅG.

Table 2

Designers or Design Consultancies Selected for the Study of Industrial Design Collaboration

I. Industrial designers working for the Norwegian firms	Position and Background
Roy Tandberg from Tandberg Total Design, Asker.	<ul style="list-style-type: none"> • Part-time employed designer at Tomra, free to work for other clients. • Product design education at the Art Center, Los Angeles, and work experience in the U.S.
Steinar Flo, Oslo.	<ul style="list-style-type: none"> • Independent industrial design consultant. • Metal design/industrial design education in Norway and Sweden.
Wolfram Peters from Ninaber/Peters/Krouwel, Leiden.	<ul style="list-style-type: none"> • Partner of one of the largest industrial design consultancies in the Netherlands. • Educated in industrial design at TU Delft.
Peter Opsvik from Peter Opsvik Ltd., Oslo.	<ul style="list-style-type: none"> • Founder, and alternative seating design pioneer (balans design solutions). • Educated in furniture design in Norway and London, with further studies in ergonomics in Germany. Work practice at the Tandberg Radio Factory, where he worked as an industrial designer.
Additional International Design Consultancies	Characteristics
IDEO Product Design & Development (Bill Moggridge, Ingelise Nielsen, Alison Black, Tim Brown), Palo Alto and London.	<ul style="list-style-type: none"> • Industrial/product design and Engineering design with multiple complementary disciplines. • Offices on three continents: Tokyo, San Francisco, Palo Alto, Chicago, Grand Rapids, Boston, and London.
Fitch (Deane Richardson, Sandra Richardson, David Clare), Ohio and London.	<ul style="list-style-type: none"> • Multidisciplined design and branding consultancy; the British Fitch is famous for its strengths in retail design and branding, and the American Fitch merging with RichardsonSmith in Ohio has a special strength in industrial product design. • Offices on three continents: Ohio, San Francisco, Boston, London, Paris (through Peclers), and Singapore.

The article also draws on international comparisons because there seem to be enabling commonalities in key processes, though several idiosyncrasies are present as well. Open focus-group discussions and long interviews and conversations were conducted initially in order to identify the most critical issues between designers and firms.³⁸ The initial overall intent was to identify and understand “what happens and how,” (i.e., how a capability for design advance of firms occurred in practice). The focus on design/business relationships and the search for other potentially enabling conditions were sharpened in the in-depth company study, since the initial focus group pointed to the critical importance of a *dynamic collaboration* among designers and business firms.

The five design-business collaborations studied in-depth were unique, as are all genuine relationships. However, the collaborating parties all had rich and ongoing experiences of relevance to understanding how design and business can cooperate more significantly. Both process reflections and beneficial outcomes indicated the latter, such as intersubjective experiences of design’s contribution to unique products, increased sales, new national and international markets, and increased knowledge and competence in the organizations. I noticed that designers also had felt the messiness and challenge at work in and between organizations.³⁹

The regional and medium-size characteristics also may represent limitations of the findings (though some of the firms have shown considerable growth beyond the SME-level). Thus, effort was taken to expand the research base with complementary material and insight. Several local design consultancies (in Oslo and Bergen) were visited as part of teaching in design management. Additional international design-consultancies, most notably Fitch and IDEO, were visited and interviewed with repeated follow-up conversations to gain broader understanding (cf. table 2). Moreover, researchers doing related in-depth studies on design/business collaboration were invited to a workshop in Bergen. Afterwards, a researched set of product design cases from Nordic, European, American, and cross-national settings was collected into a *Design Alliance* anthology,⁴⁰ allowing the search for similar patterns and contrasts⁴¹ in the five Norwegian companies, as well as more conceptual discussions. An iterative, multiple-case logic comparison with the additional international cases was exploited and suggests interesting common patterns, although considerable differences in firm characteristics also exist.⁴²

Findings

How do designers actually work for manufacturing firms? Grounded in the cases investigated, it is clear that designing for companies is rooted in a wide range of activities, and some of these go beyond what are currently described in textbooks. Design-constructing consisted of the following seven activities at least:

1. Action-impulse and Direction-setting

Design tends to start with a contextual sensing or enactment of a “problem” or other kinds of action-impulses in everyday life. For example, Peter Opsvik became aware of children’s seating problem when his first son was born: he discovered that no chair existed that was adjustable to a growing size and could allow the child to sit at the table together with the grown-ups. In the case of HÅG’s H05, the project directions were specified and given in 1994/95 (see table 3), but such essential elements as the foot governing were developed long before and the designer already had patented it.

Table 3

Chronology of Product & Design Development:
The case of HÅG H05.



HÅG H05



HÅG H05

Curriculum Vitae H05

1993	HÅG launches HÅG Scio with a combined seat depth and back height adjustment.
1989/99	Peter Opsvik builds the first prototype with a wheel for function adjustment.
1994/95	HÅG starts the development of a new functional work chair, and decides to use Peter Opsvik as designer.
1995/99	HÅG has “integrated product development,” in which market, factory, product development, and designer are represented in the project group. This entire group’s input in terms of customer requirements, ergonomics, environment, and ease of production are fed back into the design process.
2000	HÅG is able to present an entirely new concept—a chair representing the pinnacle of HÅG’s whole philosophy. The name is H05 (HÅG H05).
Experience	This is where it starts: I’m not giving up until the whole world can move when they sit down.

Source: HÅG’s Product Development May 2000. It should be noted that H05 also builds on experiences with HÅG Credo, which was launched in 1982 and 1992 (redesign) (see Jevnaker, 1995a).

2. Design Exploration and Analyses

Behind the new-product models of the firms researched typically is a *prolonged* design exploration of user situations, technical configurations, aesthetic and communicative concerns, and repeat material and component analyses, etc. In fact, design efforts over more than twenty years can be traced behind HÅG H05 launched in 2000 (see table 3, and company / design description elsewhere⁴³).

3. Imaginative Conceptualization

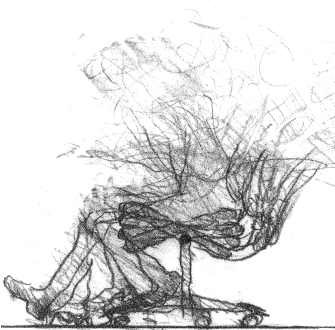
The core idea behind HÅG H05 is the integrative and “brilliantly simple” opportunities for balance, movement, and variation through foot governance support and a flexible, built-in adjustment mechanism so that the chair follows the body’s natural movements while seated. The concept was developed over more than ten years, and is

rooted in dynamic ergonomics, which has emerged as a new field of knowledge during the last two to three decades through the contributions of Opsvik and his colleagues.

This sustained investment of personal and interpersonal efforts also was recognized by Magne Storli, one of the engineers that previously worked at TOMRA, another of the companies studied, when reflecting on the questions, “How do you get a good idea?” and “When can you expect it to come?”

You have to be active. I think you have to *do* something to get a good idea, to put yourself in a position where a good idea is needed. (Then) It can come half-past three in the morning. Before you went to bed you were not finished with your “stuff”; i.e., a need for a solution has been built up. And you need to work on the idea and link to friends you believe in.⁴⁴

As already illustrated in the balans conceptual development in the late 1970s, insight tends to be rooted in conversations around prototyping, body-and-idea-storming use-simulations, and the exploitation of a metaphoric language.⁴⁵



Drawing: Chair use study

4. Visualizing and Prototyping

Every design/business case I have encountered to date is characterized by a lot of drawings, renderings, and 2D, 3D, or 4D (digital) modeling. For example, the creative designer, Peter Opsvik, invests both time and money in building three-dimensional prototypes. Indeed, the designer prefers to be “in” the prototypes—as a potential user:

Therefore we build some prototypes to achieve this.” (interview 30.6.94) He later added, “Hundreds are built—that is what it all consists of.”⁴⁶

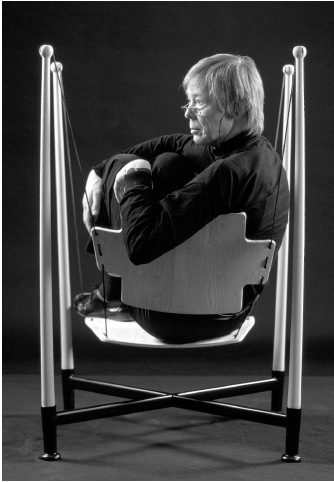
This also was clearly visible while visiting his studio repeatedly in Oslo. This is no surprise for designers—rich activity and samples of prototyping also were found during the author’s visits to IDEO⁴⁷ (London and Palo Alto) and Fitch (London), and they allow enriched conversations—literally speaking, around prototypes. Product development managers in the firms investigated especially appreciated three-dimensional prototypes.

5. Narrating and Making Sensual Sense

Making sense of the new products has been a major activity at HÅG. Indeed, the design efforts have led to a design philosophy that has set a new standard for sitting.⁴⁸ This philosophy is rooted in experimentation and, since the 1970s,⁴⁹ designers, inventors, and middle managers supporting and even fighting for the new and unconventional design approach have proactively enacted and tried to make sense of the user’s sitting problems.⁵⁰ Designers and entrepreneurial



HÅG H05



Peter Opsvik

managers often draw heavily on metaphors and analogies—especially designer Peter Opsvik and the rhetoric-conscious Torgeir Mjør Grimsrud, chairman of HÅG’s board. During the launch event of H05, the designer vividly explicated his ideas on foot governing by comparing humans with apes, who use their arms, while we use our feet in all we do. “The feet have governed us for millions of years, so choose the chair with the best foot governance,” recommends Peter Opsvik.⁵¹

Table 4
Launching Process of a New Product Series: HÅG Chair H05

Step	HÅG H05 Launching Process
1	HÅG Mentors—week 48, 1999.
2	Internal Kick-off, Røros, 13–15 January 2000. Internal Kick-off, Cologne, 24–25 March 2000.
3	Local training of sales force, with exam.
4	External kick-off.
5	External local training with exam
6	Mass communication

Source: HÅG Product Development, May 2000.

6. Testing and Validating

New product designs in the sample investigated were always tested and validated through extensive interaction and conversations among the designers and the companies’ key developers, top and middle management, marketing staff, etc. Contacts during development work “when it is at its most hectic” might be daily, as explained by Opsvik in relation to the Stokke Company.⁵² HÅG has adopted an integrated product development method, and inputs also were sought from a wider network, such as dealers or relevant specialists. For the most part, this testing and validating is orchestrated through the secret product development process. However, the foot governance concept actually was presented in the prototype stage at a furniture fair in Oslo as an additional foot-platform appliance for HÅG Capisco. Comments were collected systematically from anyone interested, which was a new approach. The concept later was incorporated into HÅG H05.



HÅG Capisco

7. Delivering and Following-up

In all the firms and design projects investigated, considerable effort was invested in delivering the best possible solution in time (e.g., trade fairs sometimes have fixed deadlines, which can create problems). Interestingly, in the case of HÅG H05, the product development and design teams were not willing to cut corners to compress the development time. The product development director explained that, since HÅG has a reputation for innovative quality products, it

Table 5
Marketing Materials Used for HÅG H05

Marketing Material

- Ads
- Incentive campaign
- Film
- Manual
- Teaser/invitation
- Diploma
- Brochure/price sheet
- Brief case/bag
- Cheat sheet
- Internet teaser
- User guide
- Press release
- Philosophy book
- Flag
- Newspaper
- 3-D drawings
- Display material/poster

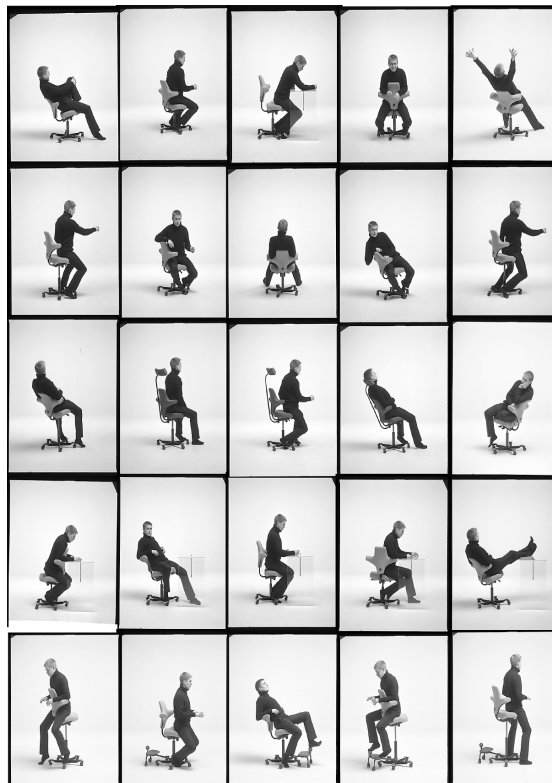
Source: HÅG, May 2000.

was felt that compromise in the short run would be detrimental in the long run if the new chair design was put on the market without the necessary testing and follow-up work. A solution to the increased pressure on HÅG's product development team was to divide all projects into two categories: "green" and "red." Green projects had to be effectively finalized sooner rather than later. Red projects were truly innovative ones that would need special protection from being unduly influenced by upcoming trade fairs and other short-term marketing initiatives. When the H05 series finally was ready, five years after its formal beginning (see table 3 and 4), a comprehensive and creative marketing plan also was in place. It incorporated drama and marketing events, and included a wide range of supporting materials (see table 5) for both internal and external audiences. The internal audience and an extended corporate network were targeted first. This case study illustrates how design can expand knowledge and serious play beyond product creation, and facilitate a coherent creative approach.

Discussion

A new interest in industrial design in relation to business organizations has emerged during the last several decades, according to British design researcher Dumas.⁵³ Svengren⁵⁴ pointed out that design could be a strategic resource for firms but found, in line with others,⁵⁵ that conceptual integration is particularly critical. To date,

HÅG Capisco



it is still not clear how competence for design can emerge in firms, as pinpointed by Kristensen.⁵⁶ With reference to the present study, we may appreciate how design making actually is done on multiple levels in and beyond the firm: designers might engage in nonroutine work that extends from product development to marketing communications and launching-and-learning events that have elements of surprise and pleasure, as well as “edutainment.” This is most evident in HÅG’s setting where design, no doubt, also is drama. Dramaturgical skills are not new concerns for industrial design, with pioneers such as Henry Dreyfuss⁵⁷ who had roots in stage design, but perhaps these elements need to be rediscovered.

The HÅG H05 case is a fascinating outlier, at least in Scandinavia, where people are “serious.” Yet design making is not merely fun. More often than not, it seems to be tension-rich and tough in terms of hard work, late nights, missing information, unforeseen technical problems, frequent iterations, asymmetric understanding of how “far” design should go, frequent meetings, and perpetual attempts to figure out how things can best be expressed. Given this, it seems significant that design tends to be rooted in a range of seriously inquiring and communicative activities, from problem-finding to making sense and building credibility in strategic terms.

Designing with Reflective Practitioners “in the Mess”

During my fieldwork, I noticed that, when designers⁵⁸ work with organizations, they attempt to relate to the past as well as the present in order to help conceive and construct future possibilities. Within knowledge philosophy⁵⁹ this is an old concern—how do we sort out what to keep or strengthen, and what to change? However, what the (present or past) realities of the organization and its target groups are seems to be elusive and perhaps not shared, as recently discovered by a group of Nokia designers and researchers reflecting on their firsthand mobile usability work experiences.⁶⁰

Organizational psychologist Karl Weick has underlined the typical equivocalities when humans are making sense of organizations,⁶¹ and Donald Schön⁶² used the metaphor of “a swamp” when speaking about the real-life challenges of practice. Being aware of the many indeterminate or “wicked”⁶³ aspects of design, what might be the desirable or appropriate future for organizational stakeholders tends to belong to the fuzzy *not-yet-known* that needs to be explored rather than merely calling for integration of the known. How do designers cope with all of these challenges when working with organizations?

Design Making

In most textbooks on “how to buy design,” the design process starts with either the brief or with the initial strategy and marketing research to define the problem.⁶⁴ Grounded in the author’s research base, design activities do not necessarily start with briefing; designers can be at work preceding the initial business planning or brief. The brief activity is seen as significant,⁶⁵ but designers also work autonomously and design activities can start long before they are formalized as projects or commissions. This tendency also was found by design-historian Karen Freeze,⁶⁶ in her research at the German electric appliance firm Braun:

Design entered product development most often at the “idea” stage, long before a formal project was undertaken.⁶⁷

This is counter to most literature on product development and the management of design, which recommends clear goals and task specification before actual product development begins. When visiting Braun in November 2000, I⁶⁸ had the opportunity to learn more from Braun management and designers: “Everything is in flux, we work (continuously) for things time ahead”; Peter Schneider, the new design director at Braun, informed us. He displayed a long list of all of the activities undertaken by the relatively small design group (twenty-three people at the time), and he reflected on “how difficult it is to plan for success.” In the case of Braun’s new shaver cleaning system, courage and luck ultimately led to the solution. To sum up, Schneider highlighted Braun design as “a living way of thinking.” In principle, “design” (designers and collaborators in design function)⁶⁹ thinks “outside the box” and “this creative part of the product is fairly cheap,” he concluded. I also noticed that ideas can sometimes float around for years and meet skepticism, such as the shaver cleaning system, but they may still be turned into profitable innovations.

Dynamic Processes

A recent orientation in the overlapping areas of economics, organization studies, business history, corporate strategy, and innovation is the focus on dynamic capabilities and knowledge-creation and integration, which is not surprising when recognizing fragmented or highly specialized organization members.⁷⁰ The “dynamic capabilities” concept, introduced by economists and innovation researchers, sensitizes us to firm specific “sensing and seizing” new opportunities and the integration of capabilities, including the capture of its economic values.⁷¹ In brief, it highlights organized capabilities that are more dynamic and entrepreneurial “while nevertheless possessing administrative skills”⁷² in a shifting environment, although I would argue that, so far, this conceptualization does not shed light on how such beneficial capabilities are developed or achieved. From considering dynamic capabilities as an integrated set of resources or

“routines to learn routines,” Eisenhardt and Martin⁷³ reconceptualize them as specific organizational processes by which managers *alter* their resource base. Examples may be drawn from product innovation, strategizing, and allying. Eisenhardt and Martin conclude:

Overall, dynamic capabilities are best conceptualized as tools that manipulate resource configurations.⁷⁴

The industrial design-cases investigated provide insights into how this actually happens through the specific product innovation processes. Thus, from a design perspective, we may agree to this reconceptualization. Yet there is something more going on that is not fully captured by the “tool” analogy, which can be recognized from looking into HÅG’s history since the firm’s reorientation in 1973/74 when it adopted a professional design approach. Creative imagination is typically facilitated by a kind of “probing conversation” around prototypes, and also is expressed in a rich, mediating language of metaphors, body-language, and the improvisational use of analogies in groping for meaning. Particularly creative actors are visible, but more than one creative persona is involved. Management ranks are included, as well as designers.⁷⁵ Managers experienced design making as both fascinating and something that might lead to or involve large, risky investments. Designers find it risky not to invest in design making. What is worth noting, and which can add to our understanding, is their ongoing engagement in a flow of design activities and partly overlapping innovation arenas tuned by their work relationships. In combination, I suggest this can enable designers and business managements to create new values, imagining something more, but also framing and stabilizing the “new” through these rich streams of design-related activities creating or refining the something new for the organization.

In general, more collective creativity-based approaches have been neglected by organizations, but an increased interest is emerging in creative imagination or even “jamming”⁷⁶ in work life. Yet the new creativity guru, John Kao,⁷⁷ stresses both the art and discipline of business creativity. Problem finding and representation is seen as a key to giving full flow to creative design work.⁷⁸ This also is mirrored in my findings: much effort is invested in design exploration and analyses, which support a creative problem-solving approach. In recent literature, the usual stages of creative thought are outlined (preparation, incubation, illumination, and verification/evaluation) together with divergent/convergent abilities.⁷⁹ What is worth noting is that many of the characteristics we often observe⁸⁰ in creative thinkers—especially in the art/design domain—such as rebelliousness, risk taking, playfulness, intuition, humor, and even irony, are being introduced in the current business and organization literature.⁸¹ Management in the firms investigated all point to the value of designers as “fresh thinkers.” Leonard and Swap draw our attention to the need for an “alien”:

It is hard to generate creative abrasion when we are isolated or surrounded by people just like us. We can enrich the pool of ideas by visiting people and environments that are “alien”—outside our normal networks. ... Visits to aliens can build new knowledge, expose us to approaches to a problem that we would never think of, or even inspire a different definition of a problem.... Such visits will be valuable if we are prepared to observe, absorb, and apply the experience back to the occasion triggering the need for creativity.⁸²

For established firms with a conventional-thinking management, management guru Tom Peters has suggested getting in contact with provoking professionals and young talents from the creative sector or “new economy.”⁸³ However, how organizations relate to the kinds of personalities, intersubjective experiences, and rich interaction that may give rise to certain forms of creativity is not dealt with in detail, or often is dismissed in both practice and theory. It is here that, for example, cognitive psychology with its focus on individuals alone, has its limitations.⁸⁴ Also, the concept of an “alien” does not quite fit with several of the cases investigated. With (partly) the notable exception of the Swedish telephone company Ericsson, designers in the exemplary firms were able to gain acquaintance and confidence to collaborate over time.⁸⁵ Therefore, the appreciation of designers as fresh thinkers needs more elaboration, and this will be addressed below.

Generation of Consciousness “From Outside”

In accordance with the Russian psychologist Vygotsky, design-collaborating experiences can serve as “generators” of consciousness.⁸⁶ Rich experiences—such as those design activities might lead to—need “thick description.”⁸⁷ For example, the management and staff of chair-maker HÅG became aware of the power of “foot-governed movement”—to achieve the small dynamic movements and variations while seated—through the design, development, and marketing of the new chair H05. While observing one of the major product launching events, I noticed that both the key designer and one project leader, a physiotherapist by background, most vividly showed, using their own bodies onstage, how and why this foot-governing movement was significant for the seated person. Interestingly, this bodily “show-and-tell” was a repeated pattern of reasoning and speaking that I had observed ever more refined over the decade that I had followed this chair maker. It illuminates how a particular kind of discourse and skilled guidance—what I coined “inaugurating” design learning⁸⁸—can develop over time. Through a broad reading,⁸⁹ I later became aware of how this resonates with Vygotsky’s ideas, such as his “developmental method.” In his view:

We need to concentrate not on the *product* of development but on the very *process* by which higher forms are established.... To encompass in research the *process* of a given thing's development in all its phases and changes... fundamentally means to discover its nature, its essence, for "it is only in movement that a body shows what it is." Thus, the historical study of behavior is not an auxiliary aspect of theoretical study, but rather forms its very base.⁹⁰

One aspect of Vygotsky's ideas seems particularly important: building consciousness from outside through relations with others. His theory provides a link between higher mental functions and social behavior. Kozulin⁹¹ stresses that "some outer layer of reality should be referred to in the course of explanation," and he suggests that socially laden activity may serve as such a layer. This helps us understand what happens in the design/business relations investigated. Within the case of HÅG, the design expert located outside the firm was a crucial consciousness-raiser, but he was not the only one. The entrepreneurial new manager of this firm already in the mid-1970s was searching for new ideas in chair design. He arranged meetings within the firm, invited guest speakers, and recruited a physiotherapist for the firm. From the mid-, or at least late-1970s, he also engaged in dialogues within a broader network, most notably the balans design group together with Peter Opsvik and other collaborating designers.⁹² Both designers and creative managers contributed to a new vocabulary that did not come out of the dictionary. It came out of "concrete dialogic situations," which is in line with another Russian, Mikhail Bakhtin.⁹³

Based on the design/business relations, we may add that not only socially laden activity is crucial. Rather, an iterative circle of mediations that create meanings from mind-to-mind through sensing matter (whether physical or virtual) seems important. Because objects can offer some shared space,⁹⁴ but also lead to reflective distance—a kind of third form of communication—between people, I suggest that this can help overcome cultural lock-ins so common to management in established organizations.⁹⁵ As in psychology, Vygotskian ideas may help us move towards recognizing that social origins cannot even stop with the "inter-mental plane" between persons-and-objects. As Wertsch and Tulviste⁹⁶ say: "Instead, the point is that the forms of mediated inter-mental functioning involved must themselves be recognized as being socioculturally situated with respect to activity settings and associated mediational means." Translated to design situations, this can help us become aware of the significance of how design activities actually are organized or otherwise enabled.

Towards an Expanded Value-Seeking Activity

Given the late-industrial or postmodern complexities in external (e.g., shifting market demands) as well as internal relations (people working more independently from one project to the next), our understanding of design-business relations needs to take into account these simultaneous complexities.⁹⁷ At first glance, the design developments at HÅG, as well as Braun, might seem full of particularities. Yet I argue that commonalities exist which can enable innovative design making on a sustainable basis. In line with the sociologist Erving Goffman,⁹⁸ it is possible to identify some implicit routines or capacities that seem to frame the design-related activities and interactions that flourish. Among these routines we may distinguish between the design efforts and interplay that happen externally, and the activities that occur in a more hidden context. Most design making occurs literally “backstage”—in the design studio, workshop, and within the corporate secret spaces (product development departments, boardrooms, executive meetings, steering groups, etc.). As in the theatre, on the soccer field, or in the publishing houses; this distinction apparently helps to create a well-prepared and potentially attractive expression of and stage setting for product design.

Yet the metaphor should not be taken too far because there also are possible differences: industrial design can be more “democratic” or team-based and longer lasting. Designer Peter Opsvik often stressed the long-term values. Indeed, the idea of temporality, such as for a performance, may be missing in design, as pointed out by a reflective interaction designer.⁹⁹ Following Goffman,¹⁰⁰ we may still appreciate the situational context or “framing” of experience as seen from this backstage/front stage metaphor. Based on the cases researched, it is not surprising that design making tends to be structured according to certain interaction rituals and territoriality. What then actually happens within the various arenas that can be valuable for innovation and its realization?

Design Making “Backstage”

Most of the design-related activities outlined in previous sections are performed backstage, such as the first insights and direction for further search, briefing, concept-creation, prototyping, testing, and follow-up work. Much of the work not visible to the public unfolds in the design studio, in the corporate product development premises and related workshops, and in other work or meeting space. In fact, the word “backstage” also is used in fashion design, and a clear demarcation typically can be found in most design consultancies and product development departments. Work-in-progress and not-yet-launched entities are carefully protected from the random visitor (e.g., at IDEO). At HÅG, even Grimsrud, the former CEO, chairman of the board, and main owner, had to give advance warning before he could enter the product development department

with any companion or guest, something which the author also experienced. This was among the sacred rules that no one could break, and it protected the firm's product creation process. It comes as no surprise, from a business-competition perspective, since HÅG has experienced many imitators, but it also may protect a physical space that is safe, informal, and stimulating. Kao reminds us of the need to build and secure a "hot zone" to nurture creativity at work. Based on HÅG's H05, it is worth noting the need to protect not only the design and development territory, but also the time context for genuine innovation-efforts. This indicates a temporality in design making that can be staged with more or less practical wisdom, and the creative "red project" labeling was an attempt to improve signaling in the company context.

Design Making "Front Stage"

In the external design work, HÅG excelled compared to the other firms investigated, and therefore this firm—and especially its last product, the HÅG H05—has been used to illuminate and ground this article's conceptual discussion. In addition to a managed corporate visual profile, this company exploits design as a conscious medium for building knowledge and understanding for the company's product designs, user benefits, and philosophy of dynamic sitting that are cornerstones of HÅG's philosophy. Design also is explicated literally on stage, such as during the recent launch events of the H05 by, for example, the designer's show-and-tell: "What one actually pays for is the air between the chair and the headrest," explained Peter Opsvik.¹⁰¹ Thus, the design making takes on an expanded role as guiding "teacher" and also storyteller (long before this came into fashion). Although corporate financial resources were invested and professional assistance sought, the firm's internal staff also was heavily engaged. One employee even volunteered a new song about the "love for H05," which was seriously rehearsed and taped during the internal launch event in which I took part and observed that people really were enjoying it all, on or off stage. To sustain its innovative profile, it is significant that HÅG continues to invest in design making, and suffuses all of its activities with knowledge creation, catering to as well as mobilizing its networks and also its internal audience.

In these ways, the company has created new territories for its design thinking, sometimes blurring front stage with backstage insights—and vice versa, as experienced during the launching of HÅG H05 (e.g., internal events are covered and explicated in the press). The passion and creativity that repeatedly can be experienced at HÅG may also suffuse the front stage events, as when internal staff members perform in humoristic ways onstage—even cat walking or role-playing with the company's chairs. To a critical eye, this might resemble some form of corporate religion. Yet what I found more triggering is that this spirit also can be traced in the

daily struggle for new and better “sitting solutions” that can refurbish the world, as framed by the top manager. This suggests value seeking through a humanized design ethos¹⁰² and courage,¹⁰³ a bold emphasis to expand value creation, combined with complementary assets full of life that are not readily copied by imitators. Braun’s top management also repeatedly pinpointed the stress on “guts” for creating innovative values. According to the new design director, Braun Design stands for the “preservation of lasting design values,” while at H&A, design expertise is seen more as a means to increase users’ movement and insight in its long-term redesigning project. At any rate, it is a paradox—that designers are aware of—that, in order to build either kind of long-term values, design making, at least at these firms, tends to set new standards which create the need for a constant flow of design-enriched activities. Perhaps this dilemma is why “staging” them with considerable practical wisdom within the corporate networks seems so important to enable and sustain value innovation.

Conclusion and Implications

In this article, I have explored and analyzed how design is enabled through a number of design-related activities, which go beyond the prototyping described in previous literature.¹⁰⁴ By extending the “dynamic capabilities” view in strategy and organizational economics with activity-based and relational perspectives, we may understand how design in firms actually may be enabled through design expertise and unconventional approaches, even from the outside. Or alternatively—as in many of the cases studied—by reflective designers wandering repeatedly in-and-out and in-again. It is significant that this mobile work pattern is a way to provide both imaginative freshness and an engaging continuity in a number of design activities, which is critical when innovating because the meaning, appropriateness, and credibility of design innovations seems to need to be refined, remade, or “reborn” continuously.

The expanded design making can become strategic, thus creating a new or extended consciousness of product innovations for humans, through which firms can gain a competitive advantage and eventually self-transcend their *raison d’être*. This happens through processes that are highly dynamic, and which need to be further researched. A stage-setting metaphor might be adopted, which is a distinction in usage although design is not necessarily “directed” by a single mind or is temporality-conscious. Yet this distinction may help to uncover and differentiate between a profiled design front stage and its more hidden backstage creation and interaction; which mirrors how design activities actually tend to be organized in more or less restricted contexts of space/time, but also how it creates new frontiers and boundaries.

In conclusion, I propose that the same forces that make design-business relations fragile are the same that can enable a wider scope for design in organizations. In the settings studied, not merely the number but the scope and dynamics of design-activities as driven by live agents became fundamental for keeping up engagement and continuity in the actual design-business value creation, because there were not many alternative stabilizers in design.¹⁰⁵ In fact, the parties' continuous struggle for something more seemed to "construct" or mobilize the productive relationships among organizational agents and designers as well, allowing creative dialectics and even the designers' "contrabriefs"¹⁰⁶ to achieve something more. In sum, these collaborators' rich *vita activa* included creative abrasions¹⁰⁷ and political action¹⁰⁸ that helped constitute more-dynamic design capabilities for firms and their target groups. On this background, I argue that the firms' "dynamic capabilities" were highly relational and activity-based, and were accumulated as more or less hidden treasures of constructive work relations. A major implication for practice as well as theorizing is the importance of sustained engaging in, and listening and learning from, this innovative designing in the real-life mess of organizations and their multiple stakeholders, even though these dynamics seem to unfold in idiosyncratic ways in or around each firm, and typically develop slowly over time.

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- 1 See Philip Kotler and G. Alexander Rath, "Design: A Powerful but Neglected Strategic Tool" in *Journal of Business Strategy* 5:2 (1984): 16–21. This is a question mainly neglected in both management and organization studies, according to, for example, Bruce and Cooper, who also reprinted Kotler and Rath's seminal article. See Margaret Bruce and Rachel Cooper *Marketing and Design Management* (London: Thompson, 1997).
- 2 A 1987 report by the Design Council, UK, estimated that the rapidly expanding British design consultancy business was worth more than £1 billion a year and employed 29,000 people, according to John A. Walker, *Design History and the History of Design* (London: Pluto Press, 1989), xi. Later reports underscored the significant growth of design consultancies during the 1980s, estimated at up to 3000 companies employing 40,000–50,000 designers, and with 7000 graduates coming into the profession each year, although the recession from 1990 onwards brought about a sharp deterioration in trading conditions, according to an introductory overview in Margaret Bruce and Barny Morris, "A Comparative Study of Design Professionals" in *Management of Design Alliances: Sustaining Competitive Advantage*, Margaret Bruce and Birgit H. Jevnaker, eds. (Chichester: Wiley, 1998), 263. In their own comparative survey of the UK, Sweden, and Denmark, about ninety percent of survey respondents perceived long-term relationships as being "very important" and "important" to the success of a design firm. Slightly more than half of all the relationships that respondents had with clients became long-term (Bruce and Morris, *ibid.*, 277).
- 3 See, e.g., Kotler and Rath, "Design: A Powerful but Neglected Strategic Tool."
- 4 "Industrial design" is complex but, briefly put, it is a transdisciplinary human-centered and visually projecting expertise for industrial purposes, e.g., designing products and product or service systems but, as a "general specialty" it also may contribute to "built" environments, communication, and digital services. See, e.g., John Heskett, *Industrial Design* (London: Thames and Hudson, 1980).
- 5 See, e.g., Vivian Walsh, Robin Roy, Margaret Bruce, and Stephen Potter, *Winning by Design* (Oxford: Blackwell, 1992) and references and further grounding in the anthology, *Management of Design Alliances*, co-edited with Margaret Bruce, with contributions from an international design and management research group.
- 6 Richard Sapper, cited in Michael Webb, "Richard Sapper Out of the Black Box," in *Richard Sapper*, Marisa Bartolucci and Raul Cabra, eds. (San Francisco: Chronicle Books, 2002), 22.
- 7 This concept draws attention to a priori knowledge with regard to the capacity for absorbing related information or learning something new, and was coined by Wesley M. Cohen and David A. Levinthal, "Absorptive Capacity: A New Perspective on Learning and Innovation" in *Administrative Science Quarterly* 35: 1 (1990): 128–152. See brief discussion as applied to design contexts in Birgit H. Jevnaker, "Developing Capabilities for Innovative Product Designs: A Case Study of the Scandinavian Furniture Industry" in *Product Development: Meeting the Challenge of the Design-Marketing Interface*, Margaret Bruce and Wim G. Biemans, eds. (Chichester, UK: Wiley, 1995), 181–201.
- 8 I use the term "dynamic capabilities" as a sensitizing concept and—inspired by a Schumpeterian view on competition and organization—as proposed by a group of economists, most notably David Teece. See, e.g., David J. Teece and Gary Pisano, "The Dynamic Capabilities of Firms: An Introduction" in *Technology, Organization and Competitiveness*, Giovanni Dosi, David J. Teece and Josef Chytry, eds. (Oxford and NY: Oxford University Press, 1998). For use of "sensitizing concepts," see Herber Blumer, *Symbolic Interactionism, Perspective and Method* (Englewood Cliffs, NJ: Prentice-Hall, 1967).
- 9 See, e.g., Robert G. Cooper, *Winning at New Products* (Reading, MA: Addison-Wesley, 1993, 2nd ed.); Glen L. Urban, John R. Hauser, and Nikhilesh Dholakia, *Essentials of New Product Management* (Englewood Cliffs, NJ: Prentice-Hall); and William J. Hollins and Stuart Pugh, *Successful Product Design* (London: Butterworths, 1990). Note, however, that the latter authors make a demarcation between a "mechanistic, fruit-machine type of process—i.e., pulling the handle and hoping to win the jackpot" (forward page, by Stuart Pugh)—and they also acknowledge more fluid membership in design-related activities. Yet they recommend a structured sequence of design actions framed by a systematically layered planning process starting from management commitment to design, financial control, and design requirements.
- 10 Alfred Schutz, *The Phenomenology of the Social World* (original ed. in German, 1932) translated by George Walsh and Frederick Lehnert (Evanston, IL: Northwestern University Press, 1967) and also Amadeo Giorgi, "An Application of Phenomenological Method in Psychology" in *Duquesne Studies in Phenomenological Psychology* (Vol. II), Amadeo Giorgi, C. Fischer, and E. Murray, eds. (Pittsburgh: Duquesne University Press, 1975).
- 11 See John Dewey, "The Live Creature" from *Art As Experience* (1934) in *The Essential Dewey Volume 1*, Larry A. Hickman and Thomas M. Alexander, eds. (Bloomington and Indianapolis, IN: Indiana University Press, 1998); see also, e.g., Victor Margolin, "The Experience of Products" in *The Politics of the Artificial* (Chicago: The University of Chicago Press, 2003), 38–59. For field evidence, see, e.g., Birgit H. Jevnaker, "Make the World a Better Place to Sit In!" in *Design Management Journal* 4:2 (1991): 48–54.
- 12 See my initial focus group discussion with a group of designers and some of their collaborating clients, and additional key informants, moderated and arranged by the author in collaboration with the Design Council of Norway, February 21, 1991. The focus group discussion was video-recorded, fully transcribed (verbal text), and analyzed afterwards. See Birgit H. Jevnaker, "Industridesign som kreativ konkurransefaktor" ("Industrial Design as a Competitive Factor," in Norwegian). Report 54/96. (Bergen: Foundation for Research in Economics and Business Administration SNF, 1996).

- 13 See, e.g., Robert Blaich with Janet Blaich, *Product Design and Corporate Strategy: Managing the Connection for Competitive Advantage* (New York: McGraw-Hill, 1993).
- 14 This is grounded in my fieldwork, but accords with the "circle" terminology used by Klaus Krippendorff, "On the Essential Contexts of Artifacts or on the Proposition that 'Design Is Making Sense (of Things)'" in *The Idea of Design*, Victor Margolin and Richard Buchanan, eds. (Boston: MIT Press, 1995).
- 15 Klaus Krippendorff delineates some of these as "steps taken," and proposes a design discourse that I find "triggering." See Klaus Krippendorff, "Propositons of Human-Centeredness: A Philosophy of Design" in *Foundations for the Future: Doctoral Education in Design*, David Durling and Ken Friedman, eds. (Stoke-on-Trent, UK: Staffordshire University Press, 2000), 58–59.
- 16 Examples abound, see, e.g., Blaich, *Product Design and Corporate Strategy*. For a recent report embedded in firsthand design-in-business experiences, see *Mobile Usability: How NOKIA Changed the Face of the Mobile Phone*, Christian Lindholm, Turkkä Keinonen, and Harri Kiljander, eds. (New York: McGraw-Hill, 2003).
- 17 I have borrowed this concept from Hannah Arendt, *Vita Activa oder Vom tätigen Leben* (Chicago: The University of Chicago Press, 1958; Norwegian translation published by Pax Forlag in 1996).
- 18 Webb, "Richard Sapper Out of the Black Box," 18.
- 19 See, e.g., Ellen Shapiro, *Clients and Designers* (New York: Watson-Guptill, 1989), 12. The citation of Thomas J. Watson, Jr., CEO of IBM from 1956 to 1971, is based on an interview with Jonas Klein, formerly responsible for IBM's worldwide graphic design programs. Paul Rand, design consultant to IBM for more than thirty years, cites Watson in a similar way, but he adds that it is equally true that bad design is good business. See Paul Rand, *Design, Form, and Chaos* (New Haven: Yale University Press, 1993), 33.
- 20 James Pilditch, "Using Design Effectively" in *Design Management: Papers from the London School of Business*, Peter Gorb, ed. (London: Architecture Design and Technology Press, 1990), 14. Pilditch makes it clear that he spoke as a design consultant with reference to this statement.
- 21 I discovered this as an educator—and also as part of my fieldwork—while talking with industrial design students reflecting on their experiences with business and other organizations (approximately seventy percent of their education is project work, part of which is with companies). I have been involved in course development and also lectured regularly at the Industrial Design Institute (previously part the National College of Art and Design, now the Oslo School of Architecture) from 1991/92.
- 22 Informed by previous literature, this is grounded in my own field research from 1990/91, including comparative research; see, e.g., Bruce and Jevnaker, *Management of Design Alliances*. See also Blaich in *Product Design and Corporate Strategy*, 112.
- 23 I refer to postmodern or late-industrial society as a matter of fact, although I am aware of other contemporary contexts for designing and business development.
- 24 Paul Rand, *Design, Form, and Chaos*, 15.
- 25 See, e.g., Margaret Bruce and Barney Morris, "A Comparative Study of Design Professionals," 39–61.
- 26 See note 12.
- 27 William H. Starbuck, "Keeping a Butterfly and an Elephant in a House of Cards: The Elements of Exceptional Success" in *Journal of Management Studies* 30:6 (1993): 885–921.
- 28 See Robert K. Yin, *Case Study Research: Design and Methods*, Applied Social Research Methods Series, 5 (Beverly Hills, CA: Sage, 1984/89).
- 29 See, e.g., Fredrik Wildhagen, *Norge i Form. Kunsthåndverk og Design under industrikulturen* (Oslo: Stenersen, 1988, in Norwegian). See also Birgit H. Jevnaker, "Make the World a Better Place to Sit In!," 48–54.
- 30 See case analysis with references in Birgit H. Jevnaker, "Inaugurative Learning: Adapting a New Design Approach" in *Design Studies* 14: 4 (Oxford: Butterworth-Heinemann, 1993): 379–401.
- 31 I. Morden, "Are You Sitting Comfortably?" in *Evening Argus*, Monday, June 11, 1979, cited from press clippings and medical reports on balans furniture, The Balans Alternative Sitting, HÅG Ltd., rykken+co Ltd, STOKKE Factories Ltd and Westnofa, March 1982. See also Jevnaker, "Inaugurative Learning," 381.
- 32 See "Designprogrammet for OL," Petter Moshus, ed., report on the design program for the XVII Olympic Winter Games in Lillehammer 1994 (Oslo: Kulturdepartementet and Norsk Form, 1994, in Norwegian) and Birgit H. Jevnaker, "Designing an Olympic Games in the Face of Chaos: The Case of Lillehammer" in *Design Management Journal* 6:3: 41–49.
- 33 See Birgit H. Jevnaker, "Den skjulte formuen. Industridesign som kreativ konkurransefaktor" ("The Hidden Treasure," in Norwegian). Report 36/95. (Bergen: Foundation for Research in Economics and Business Administration SNF, 1995a) and "The Hidden Treasure-Competitive Advantage through Design Alliances," Working Paper 58/1995 (Bergen: Foundation for Research in Economics and Business Administration SNF, 1995b). The paper also was published in "Hidden Versus Open Rules in Product Development" from the 1996 Product Development Research Workshop at the Delft University of Technology (TU Delft, 1996): 99–114.
- 34 Barney G. Glaser and Anselm L. Strauss, *The Discovery of Grounded Theory: Strategies for Qualitative Research* (New York: Aldine de Gruyter, 1967).
- 35 See, e.g., Angela Dumas, "The Effect of Management Structure and Organizational Process on Decisions in Industrial Design" (Ph.D. thesis, London Business School, 1993).
- 36 The previous name of this Dutch design consultancy was Ninaber|Peters|Krouwel, now just called niplk.

- 37 Data were collected by the author during 1999–2001 through observation of launching events, exhibitions, and presentations to various audiences, repeat conversations with project managers, the key designer; and involved corporate staff; visits to the company; written company material; and press clippings.
- 38 See Jevnaker, “Industridesign som en kreativ konkurransefaktor” (in Norwegian).
- 39 See, e.g., Birgit H. Jevnaker, “Strategic Integration of Design and Innovation: Dilemmas of Design Expertise and Its Management” in *International Journal of New Product Development & Innovation Management* 3:2 (2001): 129–151.
- 40 See Bruce and Jevnaker, *Management of Design Alliances*.
- 41 See, e.g., Yin, *Case Study Research*.
- 42 See, e.g., Birgit H. Jevnaker and Margaret Bruce, “Design as a Strategic Alliance: Expanding the Creative Capability of the Firm” in *Dynamic Strategic Resources: Development, Diffusion, and Integration* Michael A. Hitt, Patricia Gorman Clifford, Kevin P. Coyne, and Robert D. Nixon, eds. (Chichester, UK: Wiley, 1999), 267–298.
- 43 See Jevnaker, “Den skjulte formuen” (The “Hidden Treasure” main empirical report).
- 44 Author’s conversation with Magne Storli, October 18, 1999.
- 45 See Jevnaker, “Inaugurative Learning.” For a seminal discussion on metaphors, see George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* (New York: Basic Books, 1999), and also their previous book, *Methaphors We Live By* (Chicago and London: University of Chicago Press, 1980).
- 46 Jevnaker, “Den skjulte formuen” (The Hidden Treasure report), 401.
- 47 See also Tom Kelley, *The Art of Innovation: Lessons in Creativity from IDEO, America’s Leading Design Firm* (New York: Doubleday, 2001).
- 48 See elaboration and other references in Jevnaker, “Make the World a Better Place to Sit In!,” and also “Inaugurative Learning” and “Developing Capabilities for Innovative Product Designs.”
- 49 Jevnaker, “Inaugurative Learning.” See also Peter Dormer, *Design Since 1945* (London: Thames and Hudson, 1993), 149.
- 50 See Birgit H. Jevnaker, “How Design Becomes Strategic” in *Design Management Journal* 11:1 (Boston: Design Management Institute, 2000), 41–47 and “Championing Design: Perspectives of Design Capabilities” in *Design Management Journal Academic Review* 1 (2000): 25–39.
- 51 Author’s observation during launch event in Oslo, 13 March 2000.
- 52 Jevnaker, “Den skjulte formuen” (The Hidden Treasure report), 401.
- 53 See Dumas, “The Effect of Management Structure and Organizational Process on Decisions in Industrial Design.”
- 54 Lisbeth Svengren, “Industriell design som strategisk ressurs” (in Swedish). (Ph.D. thesis, Lund University Press, 1995) and Lisbeth Svengren, “Integrating Design as a Strategic Resource: The Case of Ericsson Mobile Communications” in Bruce and Jevnaker, *Management of Design Alliances*, 159–178.
- 55 See, e.g., Blaich, *Product Design and Corporate Strategy* and Jevnaker, “Inaugurative Learning.” I would like to add that there seems to be more of creative dialogue rather than any complete or harmonious “conceptual integration” in constructive relationships between organizations and designers, so this needs further exploration and discussion.
- 56 Tore Kristensen, “The Contribution of Design to Business: A Competence-Based Perspective” in Bruce and Jevnaker, *Management of Design Alliances*, 217–241.
- 57 See, e.g., Russell Flinchum, *Henry Dreyfuss, Industrial Designer: The Man in the Brown Suit* (New York: Rizzoli, 1997).
- 58 This is grounded on the present study (see note 33) and complementary observations within, e.g., a Scandinavian communications agency.
- 59 See Bengt Molander, “Kunnskaipers tysta och tystade sidor: ett försök til översikt” in *Nordisk Pedagogik* 3: 90 (Oslo: NFP & Universitetsforlaget, 1990, in Swedish).
- 60 See Christian Lindholm, et al., *Mobile Usability*.
- 61 See, e.g., Karl E. Weick, *Making Sense of the Organization* (Oxford and Malden, MA: Oxford University Press, 2001).
- 62 See Donald A. Schön, *Educating the Reflective Practitioner* (San Francisco: Jossey-Brass, 1987), 3.
- 63 See discussion in Richard Buchanan, “Wicked Problems in Design Thinking” in *The Idea of Design*, Victor Margolin and Richard Buchanan, eds. (Cambridge, MA and London: The MIT Press, 1995), 3–20.
- 64 See, e.g., Dorothy Goslett, *The Professional Practice of Design* (London: Batsford, 1960/1984, 3rd ed.); Marion Hancock, *How to Buy Design* (London: The Design Council, 1992); and Bruce and Cooper, *Marketing and Design Management*.
- 65 A recent visit (Sept. 11, 2003) to Kode Design, a young industrial design consultancy in Oslo, also revealed how designers seek to leverage the brief during their work for organizations, because initial briefs often are highly incomplete and technically oriented.
- 66 Karen Freeze, “Braun: Designing and Developing for a New Oral Care Category (A)” Case Study Braun (Boston: The Design Management Institute/Harvard Business School Press, 2000).
- 67 *Ibid.*, 15.
- 68 “We” are the conference participants at the Tenth International Design Management Research Conference arranged by the Design Management Institute (DMI) in Frankfurt, November, 2000. Thanks also for follow-up “probing” personal conversations with Peter Schneider and Bernhard Wild, design director and chairman of Braun’s board, respectively, in addition to good discussions with design historian Karen Freeze.
- 69 Peter Schneider actually said “design” thinks outside the box, not “designers,” which may connote a broader understanding beyond individual designers, e.g., referring to Braun’s corporate design function.
- 70 See Christian Knudsen, “Pluralism, Scientific Progress, and the Structure of Organization Theory” in *The Oxford Handbook of Organization Theory—Meta-theoretical Perspectives*, Haridimos Tsoukas and Christian Knudsen, eds. (Oxford: Oxford University Press, 2003), 262–286.
- 71 David J. Teece, “Capturing Value from Knowledge Assets: The New Economy, Markets for Know-how, and Intangible Assets” in *California Management Review* 40:3 (1998): 55–79.

- 72 Ikujiro Nonaka and David J. Teece, "Research Directions for Knowledge Management" in *Managing Industrial Knowledge*, Ikujiro Nonaka and David J. Teece, eds. (London: Sage, 2001), 333.
- 73 Kathleen M. Eisenhardt and Joan A. Martin, "Dynamic Capabilities: What Are They?" in *Strategic Management Journal* 21:10–11 (2000): 1105–1121.
- 74 Ibid., 1118.
- 75 See also Dumas, "The Effect of Management Structure and Organizational Process on Decisions in Industrial Design."
- 76 John Kao, *Jamming: The Art & Discipline of Business Creativity* (London: HarperCollins Business, 1996). Several other writers in recent management and organization studies also have used jazz metaphors. See, e.g., Karl Weick, *Making Sense of Organizations*, and Max De Pree, *Leadership Jazz* (New York: Dell/Doubleday, 1992/93).
- 77 Kao, *ibid.*
- 78 See, e.g., Jerry Hirschberg, *The Creative Priority: Driving Innovative Business in the Real World* (London: Penguin, 1998) and Kristensen, "The Contribution of Design to Business: A Competence-based Perspective."
- 79 See, e.g., Dorothy Leonard and Walter Swap, *When Sparks Fly: Igniting Creativity in Groups* (Boston: Harvard Business School Press, 1999).
- 80 See also David Durling, *Design Research News*, 6:4 (April 2001) (digital format).
- 81 See, e.g., Gary Hamel and C.K. Prahalad, *Competing for the Future* (Boston: Harvard Business School Press, 1994); Gary Hamel, *Leading the Revolution* (Boston: Harvard Business School Press, 2000); and Mary Jo Hatch, *Organization Theory: Modern, Symbolic, and Postmodern Perspectives* (Oxford: Oxford University Press, 1997).
- 82 Leonard and Swap, *When Sparks Fly*, 79.
- 83 Tom Peters, *The Circle of Innovation: You Can't Shrink Your Way to Greatness* (New York: Knopf and Vintage, 1997/99).
- 84 See Leonard and Swap, *When Sparks Fly*.
- 85 See Bruce and Jevnaker, *Management of Design Alliances*.
- 86 See, e.g., Lev S. Vygotsky/Alex Kozulin, eds., *Thought and Language* (Cambridge, MA and London: The MIT Press, 1986).
- 87 Clifford Geertz, *The Interpretations of Cultures* (New York: Basic Books, 1973), inspired by the philosopher Gilbert Ryle, *The Concept of Mind* (Harmondsworth, Middlesex, UK: Penguin, 1949/1990).
- 88 Jevnaker, "Inaugurative Learning."
- 89 Kathleen M. Eisenhardt, "Building Theories from Case Study Research" in *Academy of Management Review* 14:4 (1989): 532–550.
- 90 Lev S. Vygotsky, cited in James V. Wertsch and Peeter Tulviste, "L.S. Vygotsky and Contemporary Developmental Psychology" in *An Introduction to Vygotsky*, Harry Daniels, ed. (London and NY: Routledge, 1996), 58.
- 91 Alex Kozulin, "The Concept of Activity in Soviet Psychology: Vygotsky, His Disciples and Critics" in *An Introduction to Vygotsky*, Harry Daniels, ed. (London and NY: Routledge, 1996), 101.
- 92 Cf. Jevnaker, "Den skjulte formuen" (The Hidden Treasure report). This also suggests an important boundary work; see Birgit H. Jevnaker, "Exploring the Innovating Inbetween: Industrial Design as Boundary Work" in *International Journal of New Product Development & Innovation Management* (Dec–Jan 2003): 339–358.
- 93 See Caryl Emerson, "The Outer Word and Inner Speech" in *An Introduction to Vygotsky*, Harry Daniels, ed. (London and NY: Routledge, 1996), 126.
- 94 See both Weick, *Making Sense of Organizations*, and Schrage, *Serious Play*.
- 95 See, e.g., Richard Foster and Sarah Kaplan, *Creative Destruction* (New York: Currency & Doubleday, 2001).
- 96 Wertsch and Tulviste, "L.S. Vygotsky and Contemporary Developmental Psychology" in *An Introduction to Vygotsky*, 65.
- 97 Bente Løwendahl and Øivind Revang, "Challenges to Existing Strategy Theory in a Postindustrial Society" in *Strategic Management Journal* 19 (Chichester, UK: Wiley, 1998): 755–73.
- 98 Erving Goffman, *Frame Analysis: An Essay on the Organization of Experience* (New York: Harper & Row, 1974; reprint editon: Boston: Northeastern University Press, 1986).
- 99 I owe this argument to industrial designer Birgitta Cappelen, cofounder of Interaction Design, Oslo (It became part of Adcore, and later Creuna), from a recent discussion, February 2001.
- 100 Goffman, *Frame Analysis*.
- 101 Author's observation from launch event, March 13, 2000.
- 102 See, e.g., Jevnaker, "Inaugurative Learning" and "How Design Becomes Strategic."
- 103 Lisbeth Svengren, "Industriell design som strategisk ressurs" (in Swedish), also identified this courage quality.
- 104 For an overview, see Michael Schrage, *Serious Play*.
- 105 Dumas and Mintzberg delineated some other mechanisms of managing design, such as "design policy," "design program," and "design function"; none of which were particularly salient as drivers of design work in the companies studied, although some firms were working on introducing or sustaining elements. Angela Dumas and Henry Mintzberg, "Managing Design Designing Management" in *Design Management Journal* 1:2 (1989): 8–14.
- 106 Michele de Lucchi once used this phrase in a speech. See Michele de Lucchi, "The Contra-Brief: A New Tool for Fostering Innovation and Beauty" in "Managing Design for Strategic Innovation," Proceedings from the Third European International Design Management Conference (Boston: Design Management Institute, 1999). This accords with actions identified among the designers I have interviewed or more informally talked with, including Michele de Lucchi.
- 107 See Dorothy Leonard (-Barton), *Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation* (Boston: Harvard Business School Press).
- 108 See Hannah Arendt, *Vita Activa*.