Managing Creativity: A Gap Analysis Approach to Identifying Challenges for Industrial Design Consultancy Services

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1. Introduction

This article is an attempt to shed light on the situations and challenges met by the design consultant and the client company through a case in point as the collaboration advances. To examine these challenges, we used the ethnographic material collected during the design research project[1] as monitored in one of the product development projects involving a client and an industrial design consultant. The research method applied was gap analysis,[2] which, in our context, also served as a theory of interpretation.

Faced with future challenges, an industry is supposed to show structural reform as well as the ability to produce client- and user-oriented solutions, along with innovations aesthetically distinct from those of competitors—and in a cost-efficient way. This is not an easy task, but industrial design is a definite asset in facing the competition, because competence in design is what bridges the gap between the user's perspective and technology-oriented product design. Creative industry also has been adapted to drive economic growth both in Finland and the rest of Europe. This creativity is supposed to result from the networks established between leading groups of experts in information technology, culture, and the biosciences. Creative industry also can be generated by extending the range of competence in enterprises, which means increased cooperation among creative professionals such as industrial designers.

1 This research project (2002–2004) was financed by the National Technology Agency of Finland, TEKES (www.tekes.fi). In investigating design as an element in company competence, particular attention was paid to the way in which design was included in company activities. The subjects were four global Finnish enterprises; leaders in their field; representing transportation systems, construction elements, and the paper and timber industry. All of these enterprises had experience using outside design consultants. One of the aspects considered was the interaction between the consultants and their client companies, as well as their contribution to the achievement of the design objectives.

2 Valarie A. Zeithaml, Leonard L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing,* American Marketing Association (April 1988): 35–48.

Finland is regarded as a world leader in design, but this competence is not used effectively in industry. Design of a high standard is associated with the well-documented Finnish design tradition in furniture and household utensils, as well as the creative efforts of individual designers, rather than procedures adopted by company organizations.[3] The proportion of the Finnish gross national product contributed by the culture sector[4] thus far has only been about four percent. Everyday corporate life leaves no room to design, and only a few companies have experienced industrial design developing into a distinct field of competence within the organization.[5] Industrial design usually is outsourced, often incidentally, and related to a single project. Most of these outsourcers do not regard in-house industrial design as a vital competence or a competitive advantage; hence industrial design often is neglected in resource allocation.[6]

The narrow and competitive clientele present a challenge to design consultants. This situation keeps their turnover low which, in turn, weakens their capacity to seek growth in the international market. Furthermore, it is worth noting that the consultants and their clients only rarely manage to establish long-lasting partnership relations, the benefits of which would be unquestionable both in cost-efficiency and quality, compared to unsystematic, project-based operations. This challenge is not peculiar to Finland. On the whole, design consultants do not share the track record of their colleagues of fostering and maintaining long-term client relationships.[7]

Relatively little research has been done on industrial design consultant-client interaction and its major challenges. Industrial design studies have focused on the significance of confidence and openness between partners for the emergence of innovations.[8]

3 Pekka Korvenmaa, *Muotoiltu Etu I & II. Muotoilu, teollisuus ja kansainvälinen kilpailukyky* (English translation: *Designed Advantage I & II: Industrial Design: Industry and International Competitiveness*) (Helsinki: Sitra, 1998).

4 The culture sector includes art, communication, advertising, and entertainment.

5 There is no accurate information available on the use of industrial design in Finland. Of the Finnish companies participating in the organizational survey of the industrial design field, fourteen percent had in-house industrial designers. These mainly were concentrated in medium-size and large companies (Piira ja Järvinen 2002). Nokia is the only company with substantial industrial design resources (approximately two-hundred designers). Polar Electro has the next largest in-house design capacity (six designers). In Finland, an internal design department of five people is regarded as a considerable investment. There are about five enterprises in Finland that have made investments of that size, and the remaining fourteen percent identified by the organizational survey employ only one or two designers.

6 Daniel Buchner, Harry West, and Gianfranco Zaccai, "Getting Design: Bringing External Design Resources into an Organization," *Design Management Journal* (Spring 2000): 54.

7 Philippa Aston and Isla Johnstone, "Transforming Design Consultancies through Learning," *Design Management Journal* (Summer 2003): 72–77; and William H. Faust, "Building and Fostering Long-term Client Relationships," *Design Management Journal* (Spring 2000): 41–45.

8 Margaret Bruce and Catherine Docherty, "It's All in a Relationship: A Comparative Study of Client-design Consultant Relationships," *Design Studies* 14:4 (October 1993): 402–422; Margaret Bruce and Birgit H. Jevnaker, *Management of Design Alliances: Sustaining Competitive Advantage* (Chichester: Wiley & Sons,1998); Christine Ennew and Martin Binks, "Impact of Participative Service Relationships on Quality, Satisfaction, and Retention: An Explanatory Study," *Journal of Business Research* 46 (1999): 121–132; and William J. O'Connor, "Good Chemistry: Client and Consultant Relationships to Uncover the Big Idea," *Design Management Journal* (Spring 2000): 27.

However, most industrial design studies discuss models for progress in R&D projects, emphasizing either the marketing efforts or the technological aspects.[9] On the one hand, these models certainly give a good idea of the essential stages or tasks of R&D as a unidirectional, single-organization activity. On the other hand, they fail to grasp social roles and events, or structural and cultural elements; all of which affect the quality and success of the result produced by R&D, considered an interactive, multilevel activity.

The companies are not necessarily aware of the challenges to their own client organization presented by their use of outside industrial design services. Thus resource management does not comply with the jointly agreed upon requirements supposed to be met in the partnership. Network studies have recognized that inter-organizational cooperation does not emerge by itself, but calls for people with a good track record, and the ability to interact with the inter-organizational teams, and to create an open and confidential atmosphere.[10] The parties must be able to foster learning environments that allow the explication and combination of tacit knowledge, and the sharing of new knowledge.[11]

2. Utilizing Design Services—A Challenge Only for Design Consultants?

The interaction between design consultants and their clients considering the competence in their organizations recently has been discussed as a challenge for consultants rather than as demands on the range of skills and learning in the client organization. The research findings suggest that the design consultants are not sufficiently able to package and sell their skills and knowledge and their challenges seem to culminate in the management of the interface between them and their clients.[12]

9 Roy Rothwell, "Innovation and Firm Size: A Case for Dynamic Complementarity," *General Management* 8:3 (Spring 1998); Karl Ulrich and Steven Eppinger, *Product Design and Development* (New York: McGraw-Hill, 1995); and Rachel Cooper, Margaret Bruce, and Delia Vazquez, *Design Management: A Guide to Sourcing, Briefing, and Managing Design for Small- and Medium- Sized Companies,* Design Council Report (London: The Design Council, 1998). See also Margaret Bruce and Delia Vazquez, "Defining a Design Manager's Role in Food Retail, International" *Journal of New Product Development and Innovation Management* 1:2 (1999): 167–79.

10 Jeffrey Dyer and Kentaro Nobeoka, "Creating and Managing a High-Performance, Knowledge-Sharing Network: The Toyota Case," *Strategic Management Journal* 21 (2000): 345–367; Gianni Lorenzoni and Andrea Lipparini, "The Leveraging of Interfirm Relationships as a Distinctive Organizational Capability: A Longitudinal Study," *Strategic Management Journal* 20 (1999): 317–38; and *Managing Industrial Knowledge: Creation, Transfer, and Utilization,* Ikujiro Nonaka and David J. Teece, eds. (Thousand Oaks, CA: Sage, 2001).

11 Ikujiro Nonaka and Hirotaka Takeuchi, *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation* (New York: Oxford University Press, 1995).

12 The organizational survey of industrial design firms in Finland uncovered the threats perceived by design consultants in the immediate future. They regarded their lack of competence in marketing and sales, small size, inadequacies in management, and lack of competence in business activity as major factors retarding their development. Sampsa Piira and Juha Järvinen, *Teollisen muotoilun toimialakartoitus 2002* (Helsinki: Designium, 2002), 11. See also Anne Rindell, "Suunnittelijanäkökulma muotoilupalvelujen kehittämiseksi" in *Muotoiltu etu 2. Muotoilu, teollisuus ja kansainvälinen kilpailukyky,* Pekka Korvenmaa, ed. (Helsinki: Sitra, 1998).

According to Tuulenmäki,[13] the challenge for the design consultant is to identify the intentions of the client organization, and to take action finding means that are practicable in the client's situation. Tuulenmäki identifies two stages at which the design consultant comes to the client company. First, the emergence stage, when the R&D process is only starting, and new ideas are opportunities to control the development positively. This can be seen as an asset for product improvement. Second, the product program stage when the major part of the plans have been finalized, the main features of design have been determined, and the project has proceeded to the implementation stage. The first stage probably is largely characterized by the generation and demonstration of new ideas and concepts while the second involves tight schedules, fixed deadlines for product launch, and possibly serious financial consequences.

The Proactive Design-Research Project,[14] based on ethnographic research, takes a different approach to the question. The findings of this project suggest that the industrial design consultant rarely is used for pre-planning of R&D, irrespective of how the consultant identifies the stage on arrival at the client company. On the whole, the emergence stage seems rather technology-oriented, and the aim is almost without exception to start an R&D project immediately. When the major challenge for industrial design, even for strong, internal organizations, is to increase their capacity for anticipation and take project initiatives, the problem for the design, consultant identified by Tuulenmäki involves rather the ability of the client organizations to change their established practices concerning the initiation of R&D in general. The operations at the emergence stage also are hampered by the attitude of the client company's management. The design consultancy services have been considered

13 Anssi Tuulenmäki, "Finnish Design Consultancies and Their Services" in *From Design Services to Strategic Consulting: Improving Core Competence of Finnish Design Consultancies*, Jaana Hytönen, Juha Järvinen, and Anssi Tuulenmäki, eds. (Helsinki: Designium, 2004), 24–26.

14 The Proactive Design research project was a collaboration between the University of Art and Design Helsinki and the University of Helsinki.

something to be subcontracted in association with R&D, a hierarchic relation in need of control, where the subcontractor provides the product, or some part of it, as the client intended.[15]

Effective use of the potential provided by industrial design consultancies demands resources for organizing shared activities and communication, and the integration of design into R&D. Forest[16] is an instance of a Finnish enterprise that has worked out an operations model in order to overcome the problem of managing the interaction between the organizations. Forest tries to make sure that the outside designers know how to manage the processes, relate to the people concerned, and obtain tacit knowledge. The senior industrial design manager employs assistants from design consultancies or recently graduated young designers for the "rooming-in" period. These apprentices work at Forest as temporary employees for this period, and some of them later become regular partners in Forest's industrial design network.[17] The integration of the industrial design consultancy services into the daily operations of client organization calls for established structures, skills, and knowledge, as well as resources.[18]

The quality of the cooperation, and thus its results, are impaired by the fragmented and unclear division of commitments between the client organization and the industrial design consultant. Their cooperative procedures are not up to standard nor are they adequately resourced or competent in organizing, integrating, and managing their design activities in a network. However, the possibility of influencing the network management from the design consultancy side is limited, first, because of the sheer size difference compared to the customer side. Second, the professional motivation and education, focused mainly on producing design solutions, limits

15 Annaleena Hakatie, "Muotoilu alihankinnan kehittäminen" (English translation: "Developing Outsourcing of Industrial Design") in *Teollinen muotoilu teknologiateollisuudessa: esimerkkejä sovellusalueista, yhteissuunnittelun käytännöistä ja vakiintumisesta* (English translation: *Industrial Design in the Engineering Industry: Illustrating Application Areas, Practices of Participatory Design, and Entrenchment*). Ulla Mutanen, Jaakko Virkkunen, Annaleena Hakatie, and Aleksi Aaltonen, "Loppuraportti: Proaktiivinen muotoilu – hanke" (English translation: "Final Report of Proactive Design Research Project"), 2005.

16 The name is a pseudonym.

17 Annaleena Hakatie, "Kohti kumppanuutta eli kuinka kehittää muotoilun alihankintasuhdetta—esimerkkinä Koneen ja Metson muotoilun alihankinnan toimintatavat" (English translation: "Towards Partnership: How to Develop the ID Subcontracting Relationship—The Cases of Practices at Kone and Metso") in Mervi Hasu, Turkka Keinonen, Ulla Mutanen, Aleksi Aaltonen, Annaleena Hakatie, and Esko Kurvinen, *Muotoilun muutos* (English translation: *Transformation of Industrial Design*) (Helsinki: Teknologiateollisuus ry, 2004).

18 The coordination of industrial design usually is handled by a single person; often a project manager whose background, competence, and motivation determine the nature of the cooperation and the development of the relationship. The task area and commitments of the contact person also define the scope of utilizing the external industrial design service. See Annaleena Hakatie and Virva Haltsonen, "Managing Industrial Design Capability in Strategic Nets." (Paper presented at the 2005IDC, International Design Congress—IACDR 2005 in Younlin, Taiwan, November 1–4, 2005).

efforts towards network management issues.[19] The managerial and organizational work is planned to engage the managing director of an industrial design consultancy agency for only about thirty percent of his or her time, as illustrated by the following quotes:

> Thirty to forty percent of my time goes to the management part. (Interview November 11, 2002 with the Managing Director of an industrial design agency)

> I suppose that the joint owner and I use something like thirty percent of our time for management and all that kind of "boring" bureaucracy. (Interview December 11, 2002 with the Managing Director of an industrial design agency)

The network management often depends on incidental relations between individuals. The network is at loss to say who is supposed to carry out the managerial duties, what his or her commitments include, and what kind of competence is necessary in strategic networks based on widely differing systems of value production.[20]

3. The Gap-Analysis Approach to Identifying Challenges to Industrial Design Consultancy Services

The companies vary greatly in their ability to make use of design.[21] The challenges of using industrial design consultant services mainly concern the domain of network-oriented procedures and management.[22] However, these challenges often are not identified, because the documentation of R&D projects does not cover the industrial design aspects, and the parties, both internal and external, often change between projects. The accumulation of knowledge thus often remains insufficient. The existing design studies do not provide full accounts of successful industrial design consultancy services, or possible challenges to cooperation. This is an impediment to the development of the services, and to the integration of the design service into the client organization.

The theoretical frame of reference for this article is gap analysis, applied to the ethnographic material accumulated in our research project. We shall try to identify the challenges to cooperation and the reasons behind them. Gap analysis, developed by Zeithaml, Berry, and Parasuraman, is fundamentally designed for analyzing the sources of quality problems in consultancy, and for outlining proposals for remedial action in quality assurance. A gap emerges when the parties do not share their perception of an event, a situation they are unaware of in practice. This disrupts their interaction, which possibly will have an adverse effect on the quality of the end product.

According to gap analysis theory, the client's expectations of the consultancy services, and the consultant's perception of the client's expectations are conditioned by both parties' previous

19 Ibid.

20 Krister Möller and Senja Svahn, "Managing Strategic Nets: A Capability Perspective," *Marketing Theory* 3:2 (2003):204-34. They identify three kinds of value production system: (1) Core value production via stable and well established networks; (2) Value-added value production via incremental innovation; and (3) Change and future value production via radical innovation and emerging networks. According to them, strategic networks have different goals and require different capabilities based on different value systems, including managerial ones.

21 Mervi Hasu, Turkka Keinonen ja Ulla Mutanen, "Johdanto teknologiateollisuuden muuttuviin muotoilukäytäntöihin" (English translation: "Introduction to the Changing ID Practices in the Engineering Industry") in Mervi Hasu, Turkka Keinonen, Ulla Mutanen, Aleksi Aaltonen, Annaleena Hakatie, and Esko Kurvinen, *Muotoilun muutos* (English translation: *Transformation of Industrial Design*) (Helsinki: Teknologiateollisuus ry, 2004).

22 Annaleena Hakatie, "Muotoilu alihankinnan kehittäminen" (English translation: "Developing Outsourcing of Industrial Design") in *Teollinen muotoilu teknologiateollisuudessa: esimerkkejä sovellusalueista, yhteissuunnittelun käytännöistä ja vakiintumisesta* (English translation: *Industrial Design in the Engineering Industry: Illustrating Application Areas, Practices of Participatory Design, and Entrenchment*). Ulla Mutanen, Jaakko Virkkunen, Annaleena Hakatie, and Aleksi Aaltonen, "Loppuraportti: Proaktiivinen muotoilu – hanke" (English translation: "Final Report of Proactive Design Research Project"), 2005.

experiences, needs, and the interaction between them. The actual services experienced emerge from what both parties think, decide, and deliver. Zeitham, et al.[23] establish that the consultant's perception of the expectations among the clientele fashion the decisions on the quality specifications to be followed during the delivery process. In studying industrial design consultancy services, specifications can be defined as operations determined in the project plan for maximum achievement.

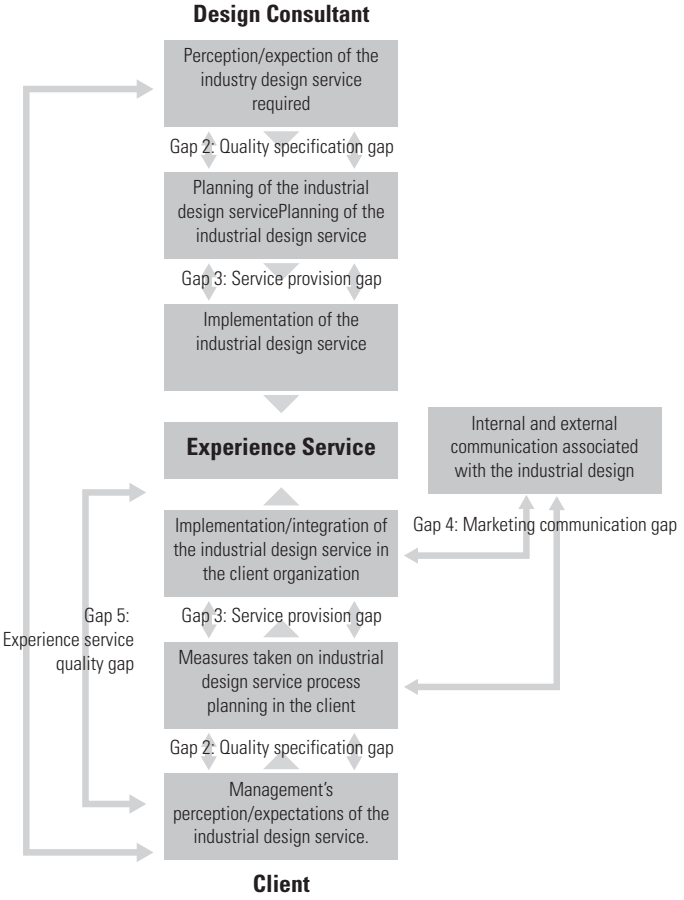
The basic structure consisting of the consultant's and the client's views, decisions, and measures taken produce situations to be considered in analyzing or planning the acquisition or delivery of services. Figure 1 presents five quality gaps between the parts of the basic structure. These gaps appear between the client and the consultant as a result of inconsistencies or tensions in the interaction. The wider gaps impair the quality of the consultancy process, since the means of design are either not effective or not satisfactory to the parties.

23 Valarie A. Zeithaml, Leonard L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing,* American Marketing Association (April 1988): 35–48.

24 This is revised from Valarie A. Zeithaml, Leonard L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing.*

Figure 1

The quality gaps in the design consultancy process both from the perspective of the consultant and the organizations of the client company.[24]



The first gap in Figure 1, the "management gap," appears when the managements of the parties or those in charge of the project find a discrepancy between their initial quality expectations. Either the mission does not create an agreement, or the parties develop differing views in the process for one reason or another. The field of industrial design studies has identified the key to a successful consultant-client relationship as mutual understanding and defining the design problem.[25] Consequently, the reason for the management gap is the misinterpretation of the knowledge of expectations between the parties, the management's inadequate knowledge or commitment, and the organization's lack of skill in communicating required information to the management. The situation of poor communication may result from the organizational hierarchy, and its numerous levels, barring or changing information vital for the process.

The second gap in the process, the "quality specifications gap," appears when mistakes are made in planning the process once the directions have been given. This gap appears if the specifications to be followed in the organizations during the delivery process do not meet the management's expectations. The implementation plan does not support the accomplishment of the mission either in one or both organizations. Another reason for this specifications gap, besides planning errors, is inadequate resources. On the other hand, poor planning management, lack of clear objectives, and imperfect recognition of the plans by the management add to the risk of this gap appearing.[26] The management's blessing and commitment almost always results in more purposeful work at the lower levels of the organization, compared with a situation where motivation, reward, and support are lacking.

The third risk to the design process is called the "service provision gap." This emerges if the terms and conditions laid down for the project plan are not met, or fail in the production and delivery processes. We can discern two classes of factors contributing to this problem: the operative project management does not support and encourage the qualitative goals that the services process sets out to achieve; or the developers at the operational level have different views of their tasks, the rules and regulations of the organization, or the significance or objectives of the industrial design consultancy service. The disagreements between the parties may come from attitudes, education, skills, ambiguous demands by the management or the foremen, excessive workload, or the wrong people in charge of the wrong activities. The technical systems also may be inadequate, the tools not appropriate for the job, or workers have not been trained to use them.[27]

25 Thomas Walton, "Art, Reason, and the Management of the Consultant-Client Relationship," *Design Management Journal* (Spring 2000): 6; and Victor Seidel, "Moving from Design to Strategy: The Four Roles of Design-Led Strategy Consulting," *Design Management Journal* (Spring 2000): 36.

26 Valarie A. Zeithaml, Leonard L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing,* American Marketing Association (April 1988): 35–48.

27 Ibid.

The inconsistencies between the promises given in the marketing and inter-organizational communication, and the services provided, is called the "marketing communication gap." Fundamentally, this fourth gap can emerge in several places. The communication can be slowed down, distorted, or stopped within the consultancy or the client organization. The communication between the organizations also can show problems, and the marketing communication addressed to the client's customers eventually will suffer as well. The use of industrial design has not been considered as a part of marketing communications.

A fifth gap, that between expected and experienced service, appears when the services received are not consistent with the services expected. The results of using the consultancy service do not correspond to the client's expectations, and resources have been wasted on unproductive operations. However, these failures only rarely derive from an intention to spoil the process or from individual incompetence. It is rather a question of cooperation when several gaps have emerged. These gaps and their significance have not been identified and analyzed during the process. This means that no attempts were made to reduce the gap effects in client and consultant cooperation.

4. Gap Analysis of a Design Process Development—The Case of Econ

The ethnographic material studied in this paper through gap analysis was collected from a developmental project lasting about seven months between an industrial design consultant and its client company. The material consists of interviews, e-mail messages, video and audio recordings of the meetings between the consultant and the client, as well as the field notes of the observing researcher.

Departure

ECON is one of the world's leading producers of transportation systems.[28] The significance of industrial design for their products so far has not been regarded as the most vital competitive factor in the technology-oriented ECON. Industrial design has mainly been perceived as color- and material-oriented interior design in the company's products. Since the late-1990s, however, there has been a more targeted use of industrial design for details such as the differentiation of the product platform, and for planning for contingencies in usability. The responsibility for matters of design was switched to the R&D unit through organizational reforms in the first years of the twenty-first century, and the new middle management received messages from various quarters in the organization about the unclear design practices. The matter was resolved by a project that worked out a process tool for directing design which could be included in the existing R&D regulations.

28 Net sales were EUR 2.9 billion in 2003. The name is a pseudonym. Valarie A. Zeithaml, Leonard L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality": 35–48.

Kickoff

There was a tender for the process tool, with three industrial design consultants bidding, and each bid containing a detailed project plan for the services process after a briefing session. The project's executive group included three managerial representatives from R&D, Global Marketing, and Brand Communication. The industrial design consultant was briefed only by the R&D manager, the project manager, and the coordinator commissioned for this project from the R&D unit. The industrial design consultant chosen describes the mission as follows:

> "The agenda was left blank: I didn't get it in writing. On the other hand, ECON made a good suggestion for an audit system in support of design (The design consultant describing the commission. Interview on October 11, 2002.)

The bids were considered, and Dvector,[29] a well-established, reputable consultancy in user interface design, was selected to carry out the project. The R&D manager, and both the project manager and the coordinator, said that the primary criterion for selecting this particular consultant was the set fee and the schedule. The project was led by the consultancy side managing director of Dvector, the founder of the agency and an experienced senior designer. The design consultant only met the whole project executive group after his bid had been accepted. That was the first time he presented the project plan to them.

> "Well, it was the kind of presentation where I demonstrated the basic idea of what we were about to do. It was sort of a scrutiny of specifications, but they were such bigwigs that they didn't have the energy to start reading such large documents; so that it had to be a question of showing a couple of slides." (The design consultant describing the presentation of the project plan to the project executive group. Interview on October 11, 2002.)

> "The direction team has not made [many] detailed comments." (A member of the project executive group in charge of R & D. Interview on October 9, 2002.)

Gap analysis lets us conclude that the gap in the management's view was open right from the start, because it is likely in light of these remarks that the executive group was poorly committed on the whole, and that they were only negotiating settlement of the objectives of the services process. The contradiction between the consultant's comment on the agenda being left blank on the one hand, and a concrete suggestion on the other, support the view that the parties did not have a consistent view of the objectives of their project.

29 The name is a pseudonym.

Preparations

The industrial design consultant worked out a project plan after the first briefing,[30] specifying the measures to be taken to meet the objective. The assignment was changed slightly after the bid had been accepted, but there was no significant change in the consultant's plans. The consultant was relatively poorly informed when determining the quality specifications, having to base the design of the project plan on an interpretation of the briefing session. The consultant had no previous experience with the customer. The following quotations from the consultant describe some observations made in the process that are critical to the project plan.

> "ECON's processes are extremely intricate." (Design consultant. Interview on October 11, 2002.)

> "I conducted well over ten interviews with ECON's key persons, which yielded general impressions; but no proper, practical experience with industrial design." (Design consultant. Interview on October 11, 2002.)

The consultant discovered in his interviews that most of the industrial design commitments had been entrusted to suppliers. Their knowledge was regarded as necessary to a successful project and, later in the delivery process, another industrial design consultant was added: the Italian-based DesignTroop,[31] which had provided ECON with a design for an earlier R&D product development project.

> "There are any number of things I expect from DT for outlining the practical work on design, because the thing is that I don't know what it's like to cooperate with ECON on R&D in practice." (Design consultant. Interview on October 11, 2002.)

The quality specifications for the service, strictly tied to cost and schedule, did not allow changes at the delivery stage.

> "The schedule is getting too tight. Some time has been spent on involving DT in this. The structure has been tossed back and forth, and even if good things were included, we made it all too broad, and now we'll have to re-jig the whole thing." (Design consultant. Interview on October 11, 2002.)

The quality specifications gap seemed primarily to result from mistakes in the process planning, inadequate resources, and inadequate management of the planning on the client's part. The client invested very little in the project planning, but the design consultant did it at personal expense while the client put the project plans out and invited bids. The consultant based the project planning on knowledge obtained from the client in a briefing session.

30 The briefing session took one hour.

31 The name is a pseudonym, henceforth DT.

Delivery

The design consultant providing the services worked on the project largely on his own. The consultant says of this part:

> "I'm in charge of the implementation and the planning." (Design consultant. Interview on October 11, 2002.)

After the involvement of a second consultant in the project, it was obvious that the client organization had not defined the division of labor and the field of commitment between the consultants. Furthermore, it was beyond Dvector's powers to do this.

> "There is a heap of text produced by DT, surely with many good hints, but all I can do is to slam it into a heavy heap. It is more like a stream of consciousness by the designer ...."(Design consultant. Project Meeting on October 27, 2002.)

In considering how the key members of the project team describe their roles, the client organization seemed to have no members committed to the project. The R&D representative in the project executive group claimed to have been "... present at a couple of work meetings." The project manager in charge characterized the duties: "I've attended the project meetings, assuming the role of moral support for the coordinator." The client's internal coordinator did not regard his role as vital for the quality of the service: "... [I am] a contact for the consultant: I participate in the meetings." These remarks corroborate the reading of the situation that the support of the client organization for the consultant in charge was only nominal, and that the overall coordination of the design project had serious shortcomings.

The occurrence of the service provision gap is associated with inadequate support and commitment on the project management's part to the achievement of the quality objectives of the service process.[32] This service provision gap was opened up by the client, because those in charge deserted the project "en masse." One of the main reasons for the in-house parties avoiding commitment probably was previous negative experiences in industrial design projects.

> "A couple of years ago, we had hype around industrial design, but one project had expensive and not very practicable solutions suggested by the industrial designers. The whole project failed completely. We haven't really believed in industrial design in our organization since." (ECON R&D manager. Researcher's field report, April 03, 2003.)

The company's attitude regarding industrial design seems to be unfavorable on the whole. The parties fear failure of the industrial design project, and commitment to industrial design matters is rather regarded as a risk to advancement than an opportunity.

32 Valarie A. Zeithaml, Leonard L. Berry and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality": 35–48.

Presentation

The management view gap can be distinctly observed in the work meeting on October 16, 2002, towards the end of the project. The coordinator, the only representative of the client, conveyed a message from the project executive group that the process tool being developed should concentrate on corporate brand identity rather than the earlier process-oriented objective. In other words, the repeated view and the almost contrary view from the management was that the tool for directing the design activities should basically have been something more market-oriented, rather than a model of design efforts at various stages of the R&D matrix.

According to the agreement and schedule, the delivery of the process tool was due in a month's time, and the project was about to end. The design consultant made a comment to the coordinator that making such a large structural and target-oriented change was no longer possible and still remain on schedule. The management's view of the objectives no longer corresponded to the supplier's view. The consultant got the information far too late, and the consultant's comment did not reach the management, as indicated in later meetings and interviews.

The process tool was to be presented at a global R&D meeting in December 2002. The design consultant in charge commented on the significance of this meeting:

> "The idea is surely that the whole thing has been thought out in broad outline, then it's presented there, and then everybody approves of it, that's OK then, and it's introduced. Some pilot projects are selected that already have been mapped already." (Design consultant. Interview on October 11, 2002.)

It turned out at the global R&D meeting that the project executive group was not interested in the originally assigned process tool for industrial design. This is demonstrated by a comment from a member of the project executive group after the results were presented:

> "*... this tool might be useful, but I'm actually only interested in market segmentation ....*" (A member of the project executive group in charge of global marketing. Global R&D meeting on December 9, 2002.)

The meeting placed new demands on further development. These new expectations were relatively remote from the original R&D process-oriented idea, in which the design efforts were defined at different stages and processes of the technology-oriented R&D. The expectation was not a process tool, but a hybrid: a mixture of database and set of guidelines, a kind of a design management tool designed to direct the consistency between the global product portfo-

lio identity and the brand identity. It was further supposed to contain strong, market-oriented global trend and style studies, as well as rival analyses both from the point of view of industrial design and usability. It was advantageous to include customer and user segmentations to support decision-making on matters of industrial design. The consultant announced that the current services process, with its quality specifications, could not live up to these new expectations, and an entirely new project should be started. Furthermore, the consultant suggested that design of a process tool was to come first. A decision was made to carry on with this development by testing it in some R&D project. There were still no concrete and convincing measures or schedule proposed to support the decision, which suggests an experienced service quality gap. These demands from the project executive group, diametrically opposed to the original commission, also confirm that the management gap was either there all through the project, or emerged at some stage.

Cooling Off

Testing the tool was assigned to a member of in-house staff, the project coordinator, a decision motivated by cost-efficiency. The industrial design consultant who had designed and produced the tool was involved in the pilot project as a designer in charge of designing visual interface of the system under development. The solutions for a transportation system, and the workability and logistics of its user interface, already had been designed, and the industrial design consultancy company DT[33] had worked out alternative solutions for the appearance of the product. The pilot project had been going on for months before the process tool was introduced for testing.

The consultant who had designed the process tool used it as well, but the other members of the product development team had no clear notion of how it was to be tested, and how the observations were to be documented. The indefinite nature of the testing only added to the work load of the pilot project product development team, which resulted in no systematic testing being carried out. Furthermore, the project coordinator had previously communicated internally that the industrial design process tool in preparation was the answer to all industrial design needs, such as the problem engaging the project managers of the R&D teams about how they should decide which of the solutions produced by the industrial designers would be the ideal. Tension grew between the optimistic promises and the actual situation. These factors contributed both to a marketing communication gap and a service provision gap.

No actual material could be collected on this pilot project to support the development of the process tool. Discussion soon started about another pilot project having to be found to test the tool, so that experience could be gained right from the start of the project. The research project from which this ethnographic data was gathered

33 This company also participated in the content production of the tool.

went on for another two years after these events, but no new pilot project was found to test the process tool during that time.[34] The consultant in charge states in an interview towards the end of the research project:

> "...I fear that all this has affected the client relationship between ECON and us badly." (Design consultant. Interview on May 5, 2004.)

The consultant never was actually informed about the measures taken to further the project. The comment from the consultant, and the measures taken to develop the process tool, indicate a conflict between the expected and the experienced quality in the client organization. The most common reason for switching design consultants is dissatisfaction with either pricing or design quality.[35] Design studies recognized that the consultants and their clients do not necessarily share their views of the reasons for the waning cooperation. It is not customary to arrange debriefings after a finished project, considering the success of the project in terms such as development of cooperation.[36] From the client's point of view, the reason for inadequacies in the services is the incompetence of the consultant, and the situation will be improved by changing consultants. This notion may bring about the descent of the company into the vicious circle of constant trial and error in its attempts to make use of industrial design. The turnover of industrial design consultants can lead to a situation in which one agency after another reshapes the products, each in their own way, and the direction of industrial design is never settled.[37]

Summary of the Case

The starting point of this collaboration project is a classic case. All the ingredients of a good project were apparent right from the start. The project was supported by the highest management of a global company, coordinated by experts, and the industrial design consultant was a recognized industrial design agency. The problem was clearly defined, and both the client organization and the consultant were adequately resourced for successful performance. In spite of the promising start, the design project failed; wasting resources for minimal profit, and resulting in negative experiences and soured client relations.

In terms of gap analysis, this case showed all of the gaps that impair the quality of the services process were apparent at some stage of it. The project execution group was only theoretically committed to the project. The members of this group had not worked out a shared view of the objectives of the project. This possibly resulted from inadequate knowledge of the urge for information in product development teams. They lack the information about how to include industrial design in R&D processes. As the project progressed, the management started forming an idea of the need

34 A single attempt was made to test the tool. The coordinator sent a CD containing the process tool to their R&D industrial design partners in China, hoping that the Chinese product developers could test it. There was no feedback from China during the study period.

35 Mario Vafeas and Toni Hilton, "Client Defection in the Design Industry: A Study of the Causes, Process, and Context of Switching Agencies," *The Design Journal* 5:1 (2002): 14–25.

36 Annaleena Hakatie, "Is It the Organization Model of Design that Also Makes the Difference? How to Develop the Subcontracting of Design," *Journal of the Asian Design International Conference* 1 (2003): 74; and Annaleena Hakatie, "The Ties that Bind: Modeling the Components of Contracted ID Work Collaboration in Finnish Engineering Industry." (Paper presented at the Design Research Society International Conference "FUTUREGROUND," Melbourne, Australia, November 17–21, 2004).

37 Annaleena Hakatie, "Kohti kumppanuutta eli kuinka kehittää muotoilun alihankintasuhdetta—esimerkkinä Koneen ja Metson muotoilun alihankinnan toimintatavat" (English translation: "Towards Partnership: How to Develop the ID Subcontracting Relationship—The Cases of Practices at Kone and Metso") in Mervi Hasu, Turkka Keinonen, Ulla Mutanen, Aleksi Aaltonen, Annaleena Hakatie, and Esko Kurvinen, *Muotoilun muutos* (English translation: *Transformation of Industrial Design*) (Helsinki: Teknologiateollisuus ry, 2004).

for the use of design, but this was communicated to the consultant in charge too late and unclearly. In order to prevent a management gap, the consultant should have established more active contact with the project executive group, trying to commit the participants to the objectives of the project by such means as joint workshops. It would then have been possible to work on the original objectives actively and in mutual interaction. It would have made sense either to organize a workshop after the briefing, or to hear from all the key persons about the project. Those considered the most important could have been included in the project team.[38]

The project planning was flawed as a result of planning on too little knowledge and inadequate resources. The client's management did not support quality planning of the services, because they demanded bids from the design consultants after an hour's briefing. This kind of practice is based on the use of simple design tasks rather than complicated consultations demanding broad knowledge. The industrial design consultant worked out the details of the project alone. Only after the start did the client's processes reveal themselves as complicated. Any number of planning hours and project resources were spent on figuring out the basic processes. Furthermore, the practical industrial design competence was outside the client organization. This frustrated attempts to involve another consultant, because the schedules were tight and the financial resources limited, and the commitments were not clearly determined. These factors contributed to a quality specifications gap.

There was no strong management to be found in the client's organization, which meant that the services operations were not really managed or supported by anyone. The project coordinator was an in-house industrial designer. It is a common mistake to entrust the management and coordination of the consultants to an expert in the matter in question, while the executive group is left in the position of a supervisor. According to Huttunen,[39] this kind of expert may lack credibility or interest in a solution. The service provision gap also is linked with the consultant, who did not demand better control from the client. The consultant actually preferred to work alone without any real interaction with the client. The project managers, from whose needs the project sprang, did not participate in its development.

The internal marketing communication of the client organization was relatively inadequate, making broad promises about the results. The internal communication had not been committed to the design consultant. This also could be taken into account when planning the quality specifications, making internal marketing into one area requiring remedial action to achieve the objectives. The channels of information and interaction should be agreed on in advance as well. The client organization was not happy with the services eventually delivered. The performance of the design project did not live up to expectations. The inconsistencies during the project were

38 For instance, the design consultant met the designer for the general R&D regulations for the first time on October 16, 2002.

39 Pekka Huttunen, *Onnistuneen konsulttihankkeen toteuttaminen* (English translation: *Implementing a Successful Consulting Project*) (Saarijärvi: Gummerus, 2003).

not identified, or were not met with gap-reducing remedial action. The cooperative relationship between the consultant and the client quietly withered away, without either of the parties actually presenting their personal view of the reasons for the failure of the project.

5. Conclusion: Pitfalls of Industrial Design Consultancy Services

This article produces several conclusions on what kind of disturbance can be observed in the interaction between design consultants and their clients. Inadequacies in the client-consultant relationship certainly have been identified before. Open communication and teamwork are critical, and relationships are built on key attributes such as trust, openness, reliability, and performance.[40] Gap analysis and the ethnographic material, however, enable us to look more closely at the factors either supporting or impairing the quality of the services.

The management of the industrial design consultancy seldom has direct contact with the management of the client. It seems to be customary in industry in Finland for the industrial design consultant to form an idea of the expectations of the client's management through a project manager or some other coordinator.[41] The management gap, resulting from poor information, is a common risk to the service provision process, especially when the industrial design competence has not spread vertically in the client organization, or when there is practically none available. To bridge the management gap, management needs to have a better understanding of the competitive advantage created by the industrial design consultancy procedures and the services provided. Several aspects demand attention, such as organizing the information channels, training, and procedures for disseminating information within and between the organizations. A major risk is that nobody in particular is in charge of the project, and both design management and human resource management are neglected.

The industrial design consultancy services are seldom a contribution separate from the R&D processes of the client company. Nevertheless, the industrial design consultant often is independent in designing the quality specifications for the services provided. This practice derives primarily from the fact that industrial design service usually is linked to a project-oriented purchasing culture in which the client puts the services process out for competitive bids before making any decision; inviting bids based on a fixed price. Producing a "flawless" bid demands an extremely high degree of knowledge and understanding of the client's processes and challenges. The consultant only rarely has such knowledge, especially with new customers. The process design is an essential part of the services as a factor of quality improvement, and organizations should show a higher level of commitment to it.

40 Margaret Bruce and Catherine Docherty, "It's All in a Relationship: A Comparative Study of Client-design Consultant Relationships," *Design Studies* 14:4 (October 1993): 402–422; Margaret Bruce and Birgit H. Jevnaker, *Management of Design Alliances: Sustaining Competitive Advantage* (Chichester, UK: Wiley & Sons,1998); Christine Ennew and Martin Binks, "Impact of Participative Service Relationships on Quality, Satisfaction, and Retention: An Explanatory Study," *Journal of Business Research* 46 (1999): 121–132; and William J. O'Connor, "Good Chemistry: Client and Consultant Relationships to Uncover the Big Idea": 27.

41 Annaleena Hakatie and Virva Haltsonen, "Managing Industrial Design Capability in Strategic Nets." (Paper presented at the 2005IDC, International Design Congress—IACDR 2005 in Younlin, Taiwan, November 1–4, 2005).

In the R&D process, including industrial design, the demands on the product or the service are only rarely possible to define from the outset. Excessive demand specifications and predefined design processes may impair quality in operations of this nature. This should be taken into account when using industrial design consultant services in domains such as innovation-intensive, front-end product conception; where the demands on the product or service are only being mapped out. The process of service provision planning must be open to change as the objectives change. Long-term client relations obviously reduce the risk of a quality specifications gap. As the work goes on, the consultant accumulates information about the procedures in the client organization, which reduces the chances for error. The quality specifications gap also can be reduced through flexible agreement practices that do not tie the design services down to potential process design errors, and which allow change if required.

Design studies have identified factors contributing to a service provision gap that prevent workers from carrying out or accepting plans. Various things about the parties, such as the project manager or in-house coordinator, internal R&D teams, and the design consultant's theoretical and practical competence, resources, and motivation all affect the quality of the services process.[42] The use of design consultant services may demand the introduction of new procedures or entirely new commitments, both from the client and the industrial design consultant. The differences in company culture can become critical for the service provision gap, because changes in procedures and existing processes, as well as management of change, are associated with time-consuming adaptation, almost without exception. The responsibilities, duties, and authorities have to be defined clearly.

Major reasons for the occurrence of the marketing communication gap are to be found both in the communication cultures and the project communication design. Control of this gap is difficult, because internal communication is mainly an in-house matter. Since the design consultant only rarely has the power to interfere in the client organization, the responsibility for the internal marketing of a design services project may be unclear. The industrial design consultant assumes that this area belongs to the client's internal parties and coordinators who, for their part, do not regard the external consultant services and information about it as part of their internal marketing. In fact, the information and marketing concerning consultant services and industrial design projects are assigned to the person in charge of the project and the coordinating staff in the client organization. If not, the client organization has no representative for industrial design activities. The planning of internal marketing communication should be included in the planning of the external services process.

42 Ibid.

Based on this paper, we suggest that the design consultants and their clients seldom assess the services process as a chain of events in which the events and parties affect the quality of the service, and the correspondence between the experienced service and what is expected. The consultant and the client are not used to assessing the collaboration together, nor are they in the habit of making suggestions for improvement. This is symptomatic of a lack of perception of the industrial design services process as an accumulating long-term investment. Instead, people think that the quality of the industrial design service will be improved by switching agencies.

Gap analysis can be used as a method to identify and reduce possible gaps between the industrial design consultant and the client. It also is suggested that, in shifting the focus of consulting from dealing with projects to developing mutual understanding, establishing good communications, and generating creative tensions, new innovations can be achieved.[43] More and more business-related issues such as market opportunities, a project plan to commercialize a preferred option, an approved business plan for the investment required, and other marketing-related issues also are important.[44] This is an interesting point which also is verified by the methodological help gap analysis provides. After all, the increasing demand for speed and competitive advantage should ensure a sound future for industrial design consultants. The client company and the industrial design consultant who are aware of the possible gaps introduced in this paper, and who can insert a proven industrial design process into a client's best practice, probably will succeed in the face of ever-increasing competition.

43 Cameron Watt, Ken Russell, and M. Haslum, "Stronger Relationships Make Stronger Design Solutions," *Design Management Journal* (Spring 2000): 46–52.

44 Cameron Foote, "Thinking More Like a Client," *Design Management Journal* (Summer 2003): 43–47; Mike Tennity, "What Clients Want in Consultants," *Design Management Journal* (Summer 2003): 11–12; and Eric M. Olson, Stanley F. Slater, and Rachel Cooper, "Managing Design for Competitive Advantage: A Process Approach," *Design Management Journal* (Fall 2000):10–17.

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