

# The Future in Design



## Country Report: THE NORWEGIAN DESIGN INDUSTRY

December, 2004

Nils Henrik Solum  
Senior researcher  
NIFU STEP center for innovation studies  
[www.nifustep.no](http://www.nifustep.no)  
[nils.solum@step.no](mailto:nils.solum@step.no)

Marit Hubak  
Senior researcher  
SINTEF  
[www.sintef.no](http://www.sintef.no)  
[marit.hubak@sintef.no](mailto:marit.hubak@sintef.no)

Prepared for the research project: The Future in Design: the Competitiveness and Industrial Dynamics of the Nordic Design Industry  
**Funded by the Nordic Innovation Centre**

[www.nordicdesign.org](http://www.nordicdesign.org)



**norden**

Nordic Innovation Centre



## Executive Summary

- Investment in design pays off
- There are structural impediments to Norwegian firms fully exploiting the potential of design, such as size, culture, overweight of non R&D and design using business sectors
- Product design is a vital component deciding the competitiveness of both firms and nations
- Most companies are rather new and small, and while the majority of designers may be struggling with the challenges of everyday life, there are a few offices consolidating into “design supermarkets” or “one-stop-shops” offering all aspects of design and related activities to potential customers.
- Design is an urban activity mainly located in the area around the capital.
- In 2003 there were a total of **2100** firms in the Norwegian design industry. Out of these there were **1173** architecture firms, **186** Interior architecture and decoration firms and **741** design firms. Around **200** firms are estimated to be industrial design firms, some classified in the technical consultancy group and some in the design class.
- In 2003 the design industry had a turnover of **2790** million NOK.
- The design industry is dominated by small to medium sized firms. **89%** of firms involve less than 5 people (2002).
- Many have been founded only very recently.
- **48%** of design industry firms are located in the region around Oslo.
- Between 1993 and 2003 the total number of finished design students doubled.
- Firms that invest in design are more internationally market orientated than firms that do not invest in design
- In basic training there is a dominance of female pupils. In academic training there is a majority of male students
- There are a few government initiatives on design, mainly targeting the professional users of design services, or B2B policy initiatives
- The most prominent of today’s initiatives are actually not concerned with design, at least not in any explicit sense. The “Skattefunn” program is the main government initiative concerning private research and development in Norway. Design should aspire to be recognized as one of categories that will qualify for reimbursement in its own right.
- This report is just one of a set of 5 statistical reports on the Nordic design industries from the research project *the Future in Design: the competitiveness of the Nordic Design Industry* (<http://www.nordicdesign.org/>).

Oslo, December, 2004

Nils Henrik Solum  
Senior researcher  
NIFU STEP senter for innovasjonsstudier  
Hammersborg torg 3  
0179 Oslo  
Norway  
Tlf: +47 22868019  
Fax: +47 22868049

[www.nifustep.no](http://www.nifustep.no)  
[nils.solum@step.no](mailto:nils.solum@step.no)

Marit Hubak  
Senior researcher  
SINTEF  
S.P Andersens vei 5  
7465 Trondheim  
Norway  
Tlf: +47 73592566  
Fax: +4773592570

[www.sintef.no](http://www.sintef.no)  
[marit.hubak@sintef.no](mailto:marit.hubak@sintef.no)



## TABLE OF CONTENTS

<b>Design in Norway</b> .....	<b>1</b>
Introduction .....	1
Norwegian design today.....	1
Literature and data .....	2
<b>The Norwegian design industry in numbers</b> .....	<b>3</b>
Mapping the industry .....	3
Firms that invest in design.....	6
Industry Associations and Representative Bodies .....	7
Education (institutions and people) .....	8
Government initiatives .....	10
<b>Current topics in the Norwegian design industry</b> .....	<b>11</b>
Why design matters .....	11
The design industry we deserve.....	13
Design users.....	14
Design suppliers .....	15
<b>References</b> .....	<b>17</b>

Table 1 Design related business categories in NACE SN2002.....	2
Table 2 Turnover in design businesses .....	3
Table 3 Firms in design and architecture 2002 and 2003 .....	3
Table 4 Size of firms (all firms) 2002 (number of employees).....	4
Table 5 Top 20 design and interior architecture firms in terms of turnover year 2003 .....	4
Table 6 Top 20 architecture firms in terms of turnover year 2003.....	5
Table 7 Design activity, number of firms, employment and turnover by region.....	5
Table 8 Geograohical distribution of firms.....	6
Table 9 Where do designers and architects work .....	6
Table 10 Market orientation of design users .....	7
Table 11 Design users by size.....	7
Table 12 Top 5 design using industries 2001 .....	7
Table 13 Design and architect education in Norway at the university and college level .....	9
Table 14 Educational level in design and architecture .....	9
Table 15 Educational level in design and architecture, by design activity.....	9
Table 16 Gender distribution and educational level in design and architecture .....	10
Table 17 Number of students completing a U or C degree in design programs.....	10
Table 18 Design as a tool for regaining competitiveness.....	12



## Design in Norway

“For many years, “Norwegian design” was a virtually non-existent concept everywhere but in Norway. While the Danes, Finns and Swedes managed to maintain a reputation as design nations as the status of Scandinavian Design ebbed, Norwegian design has led a quiet, more withdrawn life<sup>1</sup>”.

### Introduction

There is not a small sense of self-assuredness in Norwegian design today, but as the quote above indicates, it is still usually accompanied by a note on the superior status of other Scandinavian countries. While style has been Danish, functionality the domain of Swedish Ikea and Volvo, and Industrial innovation and development lead to Nokia dominating the GSM market, Norway has lagged behind; especially in the minds of Norwegians. Today, Norwegian music is played on MTV, Norwegian architects are building the new landmarks of Egypt, and a new generation of well-educated designers have picked up prestigious awards worldwide.

Norwegian design is now combining the stylishness of Danish traditions with the functionality of our Swedish neighbours and the dexterity of Finland. When you then include the cool smugness of everything Icelandic, the result is clear, as witnessed by: a Norway Says nomination for 100% Design awards; young designers on the DesignersBlock; and Norwegian products in The International Design Yearbook 2004. However, while the emergence of “hip Norway” is to be welcomed and may give Norwegians a new source of self-esteem, there are still great difficulties in establishing design as a natural problem-solving, process- or product development tool. Hopefully, the emergence of design as a key element for success in the traditional design related activities will lead to Norwegian industry becoming more aware of design’s natural role in innovation. The growth of an industrial design industry, supplying services to firms in all businesses, and the increase in the number of in-house designers in traditional industries are signs that critical mass is within reach.

### Norwegian design today

The report is a survey of the Norwegian design industry as it stands today. It is not meant to be an exact representation of the state of the industry, but an attempt to capture its characteristic traits and the main challenges of everyday life of the people engaged within design activities. This report will therefore present a summary of data available on the design industry and the main impressions we perceived when talking to representatives from the industry, government agencies and educational institutions.

Consequently, the first part of this report is a mapping exercise. It is an attempt to describe the main characteristics of the industry in regard of traditional demographic factors such as size, location and turnover. In order to assess the industry and the role of design, it is useful to see if some of the state of industry can be ascribed to such factors. The most obvious example is to see if the often touted view, usually supported by anecdotal evidence, of design being an urban activity. If this is really found to be the case, the question then becomes how it is possible to entice small firms in less centralised locations to evaluate if, when and how to use design as a natural part of their day to day activities.

---

<sup>1</sup> Norway - the official site in the United States, it is part of Norway’s official site by Norwegian foreign service, that serves as a portal for websites in 85 countries. [online], <http://www.norway.org/culture/design/design/design.htm>

The importance of design is heralded in many ways, and the use of design as an innovation activity is often proscribed as a means to increase competitiveness of businesses and nations alike. However, the characteristics of this role or the specifics in this relationship is seldom studied and rarely clearly defined. It is the view of the authors that the most realistic and fruitful way to study design is to focus on the generic characteristics of design, in short design as an innovation activity enhancing the ability of other businesses to innovate and create new products. A clearly related and often underemphasized role is the way design is used to improve the production processes thereby either reducing production costs, resulting in either reduced prices or increased margins. In short the focus of the second part in this paper is not the design activities in themselves, but the way design is used (or not used) by Norwegian firms.

### Literature and data

Literature on Norwegian design is if not plentiful, then not hard to come by. The later years have brought an increase in interest for at least some aspects of design, as witnessed by the number of journals, magazines and newspaper articles. Literature on design as an economic activity is, however, almost non-existent in the Norwegian context. In a working paper on the subject of Norwegian history of design, the author rather laconically comments that the existing literature pertain to one of the following “three categories – self promotions, jubilee editions or art history.”<sup>2</sup> A better term than self promotion would perhaps be apologetic literature; the books, pamphlets and articles intend mainly to convince the reader that design is both important and underused.

The classification of design is a complex and multifaceted process and an “authoritative taxonomy” is beyond the scope of this paper. However, a good indicator of the relevant industry categories can be found by looking to the agencies within design. The Norwegian design council operates with the following classes of their Design Awards; “Graphic design”, “Industrial design”, “Textile design”, “Furniture design” and “Digital solutions”. However, in the NACE 2002 industry classification standard these activities are split among four different classes, of which particularly industrial design is well hidden amongst other technical consultancies. The following groups constitute design related activities and architecture:

**Table 1 Design related business categories in NACE SN2002**

22240	Preprint finishing incl. desktop design
<b>74201</b>	<b>Architectural activities</b>
74209	Other technical consultancy activities incl. industrial design
<b>74872</b>	<b>Design activity</b>
<b>74873</b>	<b>Interior architecture and decoration</b>

Source: Statistics Norway, NACE SN2002 classification

Desktop design is mentioned here as part of the total sectors that pertains to the area of design, but will probably be less relevant as a classification for modern (and digital) desktop design providers, after the introduction of design as a national category in 2002. The number of industrial design firms is impossible to ascertain due to them being a subgroup within the technical consultancy group. In this paper, the number of firms classified as industrial design services is estimated from the firms that are included in the NID and the Design Council databases. The total number is estimated to be around 200 firms.

A main problem with the Norwegian data is that most of the design industries were lumped together with “other business services” prior to 2002. To describe the historical development of these firms therefore would require a minutely process of manually identifying the firms over time and is beyond the scope of this report. Having said this every effort has been made to produce the most accurate possible picture, using available statistics, of the design industry and the results presented below are good indicators of the current state of play.

---

<sup>2</sup> Fallan K., Fra kunstig kunst til ekte etos. Om problemer og muligheter i norsk designhistorie. IKON-N3: Arbeidsnotat, juli 2001. [online] <http://www.hf.ntnu.no/itk/ikon/tekster/no-designhist.php>

The data on education is based on the “Matched employer-employee data” from Statistics Norway. The data provide information on Norwegian residents and their highest completed levels of education. These data are then matched against employer information and thus provide insight on the combination of education and current work place - with pertaining information on business sector and financial data - for each employee in Norway.

## The Norwegian design industry in numbers

*“In Norway, the self-employed designer is a small firm, a design company with two workers is medium sized and companies with three employees are large”<sup>3</sup>*

### Mapping the industry

Both design and architecture industries in Norway are small, in absolute figures and relatively speaking. However, overall there is a steady rate of growth. Table 2 shows that the design industry had in 2003 a turnover of around 3099 million NOK rising to 3750 million in 2003.

**Table 2 Turnover in design businesses**

	Architectural activities	Design activity	Interior architecture and decoration
<b>2002</b>	<b>2 497</b>	<b>509</b>	<b>93</b>
<b>2003</b>	<b>2860</b>	<b>746</b>	<b>143</b>

Source: Statistics Norway, business register, (MNOK)

Out of the 200 firms that work within industrial design, some are classified in the design activities even though the category per definition is part of the Nace class 74209. However, some of the firms within the technical consultancy group would classify as industrial design firms<sup>4</sup>. Since five level NACE categories are nationally defined, the separation of industrial design into a group of its own should be considered as well as a possible coordination of these categories on a Nordic level. Of course Nordic variations to some degree reflect structural differences, but perhaps also reflect different linguistic traditions when describing an activity as design or technical consultancy or engineering. Still, using the design classification from the Statistics Norway as presented above, the next table summaries some of the key characteristics of the design and architecture firms.

**Table 3 Firms in design and architecture 2002 and 2003**

2002			
Business category	Employees	Turnover (MNOK)	Number of firms
Architectural activities	4251	2 497	1128 (1099)
Design activity	856	509	479 (465)
Interior architecture	179	93	112 (106)
Total	5 286	3 099	1 719 (1670)
Industrial design			150-200*
2003			
Business category	Employees	Turnover (MNOK)	Number of firms
Architectural activities	4060	2 860	1173
Design activity	1212	746	741
Interior architecture	271	143	186
Total	5543	3749	2100
Industrial design			150-200*

Source: Statistics Norway, business register. (Number in parenthesis is firms with information on employees/turnover)

<sup>3</sup> A saying as retold by one of the informants

<sup>4</sup> Quite a few of the industrial design firms are classified within the design activity category, either as a result of a conscious choice due to the firm engaging in a range of different design services or due to inawareness that industrial design still should be included as “technical consultancy” according to the NACE definition (This maybe ought to be modified in the next revision)

Industrial design consists mainly of independent one person firms, a “large” industrial design firm in Norway is an office of more than 5 designers, and there are only a few that exceed 10 employees.

**Table 4 Size of firms (all firms) 2002 (number of employees)**

Nace	Design activity	1	2-4	5-9	10-19	20-49	50-99	100+
74201	Architectural activities	581	253	151	85	26	3	0
74872	Design activity	345	85	24	11			0
74873	Interior architecture	82	17	6	1			0
	<b>Total</b>	<b>1008</b>	<b>355</b>	<b>181</b>	<b>97</b>	<b>26</b>	<b>3</b>	<b>0</b>

Source: Statistics Norway, business register

Architecture is also dominated by small firms, but there are some larger entities in terms of size. The proliferation of small firms may stem from a lack of market opportunities, but may also be caused by a structural trait of the design market. More than in other industries, projects are temporary and goal driven, leading to the establishment of networks and subgroups that are dynamical in nature and task based and while individual firms are small, projects can often involve more than one firm at a time as some tasks are put out to subcontractors.

In no aspects can design be said to be a large industry in Norway, aggregated turnover and number of employees are rather low even in a Norwegian context. On the other hand, there are some companies growing and the number of companies is also growing. Most companies are rather new, and while the majority of designers may be struggling with the challenges of everyday life, there are a few offices consolidating into “design supermarkets” or “one-stop-shops” offering all aspects of design and related activities to potential customers.

### Regional dimensions

Tables 5 and 7 clearly show that the design industry is heavily concentrated in the urban areas of Norway, while architecture is more spread around the country. It seems that in line with international experience, Norwegian design firms tend to agglomerate or cluster together in the larger urban areas. In particular, the capital city region of Akershus/Oslo region dominates the industry: in terms of turnover, number of firms and employees. The firms are also rather “young”, with not a single one of the top 20 being established before 1980.

**Table 5 Top 20 design and interior architecture firms in terms of turnover year 2003**

Company (Rank)	Company (Location)	Employees (Number)	Turnover		Established (year)
			(MNOK)	(% change)	
1	Oslo	6	31	4	1997
2	Oslo	9	20	0	1998
3	Oslo	13	16	42	1983
4	Skedsmo	13	16	19	2000
5	Oslo	10	16	-7	1992
6	Oslo	9	15	25	1997
7	Oslo	2	14	15	1996
8	Oslo	11	14	0	2000
9	Oslo	12	13	10	1995
10	Oslo	7	11	10	1995
11	Oslo	8	11	111	1999
12	Oslo	12	10	-53	1995
13	Oslo	9	8	12	1989
14	Oslo	10	7	22	1994
15	Oslo	4	7	57	1986
16	Oslo		7	254	1985
17	Stavanger	6	7	4	1985
18	Oslo	19	6	0	2000
19	Oslo	5	6	-30	1997
20	Oslo	2	6		2000

Source: Statistics Norway, business register

However, even though table 7 shows that architecture is slightly less concentrated, table 6 shows that the largest architectural firms are localised in Oslo, or at least the headquarters in the case of companies with affiliations in more than one town.

**Table 6 Top 20 architecture firms in terms of turnover year 2003**

Company (Rank)	City	Employees	Turnover ('000 NOK)
1	Oslo	20	75 128
2	Oslo	70	49 829
3	Bærum	57	40 247
4	Oslo	35	37 624
5	Oslo	26	36 951
6	Bærum	3	26 255
7	Oslo	24	24 700
8	Oslo	27	23 720
9	Oslo	29	22 887
10	Oslo	27	21 343
11	Oslo	10	20 943
12	Oslo	30	20 472
13	Sandnes	19	20 376
14	Trondheim	31	20 321
15	Oslo	42	20 216
16	Oslo	50	19 392
17	Oslo	34	18 463
18	Oslo	12	18 284
19	Trondheim	19	17 402
20	Oslo	24	16 421

Maybe the most remarkable feature of the table below is the rather low number of firms in the region of Sør-Trøndelag, which houses university education of both designers and architects. However, a tentative look at the background data suggest that to some extent the design and architecture educated workforce in this particular region is working in technical and engineering companies. Hordaland is the county of the second largest city in Norway, Bergen, and thus not a surprising location for the rather urban activities involved in this mapping.

**Table 7 Design activity, number of firms, employment and turnover by region**

Region	Firms			Employment			Turnover (MNOK)		
	Architect	Design	Interior	Architect	Design	Interior	Architect	Design	Interior
Østfold	47	14	1	156	18	1	70,4	2,3	3,8
Akershus	111	70	14	282	126	18	184,9	63,4	4,6
Oslo	361	229	42	1698	464	91	1119,0	318,2	59,0
Hedmark	32	3	2	94	4	5	37,7	3,0	3,7
Oppland	24	4	4	82	8	4	42,7	3,9	1,9
Buskerud	40	15	4	121	24	6	80,9	16,2	0,2
Vestfold	39	23	9	138	28	9	61,5	20,0	3,4
Telemark	31	12	1	96	11	2	41,3	4,3	0,0
Aust-Agder	17	3	1	53	4	1	33,0	0,6	0,2
Vest-Agder	36	6		104	6		56,4	1,2	0,0
Rogaland	81	25	6	289	49	6	148,8	23,0	1,4
Hordaland	91	40	9	297	52	11	175,4	23,0	3,8
Sogn og Fjordane	24			76			33,4	0,0	0,0
Møre og Romsdal	47	11	6	130	22	6	74,3	11,3	1,9
Sør-Trøndelag	68	12	5	376	24	8	203,2	7,2	4,3
Nord-Trøndelag	17	1	2	64	1	3	29,8	0,1	1,0
Nordland	22	4	3	78	8	6	48,1	6,0	3,9
Troms	33	7	2	103	7	2	51,2	5,2	0,3
Finnmark	6		1	10		0	5,3	0,0	0,0
Total	1127	479	112	4247	856	179	2497,2	508,8	93,4

Source: Statistics Norway, business register

However if one is to break the figures down by activities, it becomes clear that architecture is more evenly distributed in the sense that there are more places with a higher number of firms than in the other two categories. It is also noteworthy that the many of the locations in the table (such as Bærum and Asker) actually are within the limits of a "greater Oslo" even though they formally are localised in the neighbouring county of Akershus. This also holds true for Oppegård and Ås. Thus the prominence and domination of the *Oslo-region* is even more accentuated when one considers the geographical and not the administrative borders of Norway.

**Table 8 Geographical distribution of firms.**

Architectural activities			Design activity			Interior architecture		
Location	Firms	Aggregate share (%)	Location	Firms	Aggregate share (%)	Location	Firms	Aggregate share (%)
Oslo	361	32	Oslo	229	48	Oslo	42	38
Bergen	69	38	Bergen	30	54	Bergen	9	46
Trondheim	59	43	Bærum	23	59	Bærum	9	54
Bærum	45	47	Stavanger	14	62	Sandefjord	4	57
Stavanger	33	50	Asker	14	65	Trondheim	3	60
Kristiansand	21	52	Trondheim	12	67	Larvik	3	63
Tromsø	20	54	Tønsberg	9	69	Sandnes	2	64
Fredrikstad	19	56	Fredrikstad	8	71	Tromsø	2	66
Drammen	18	57	Alesund	7	72	Lillehammer	2	68
Asker	17	59	Sandnes	6	73	Bodø	2	70
Sandnes	17	60	Oppegård	6	75	As	2	71
<b>Total</b>	<b>1128</b>	<b>100</b>	<b>Total</b>	<b>479</b>	<b>100</b>	<b>Total</b>	<b>112</b>	<b>100</b>

Source: Statistics Norway, business register

One interesting aspect can be to see what industries employ workers educated within design studies. In the table below university and college design education is divided into six subgroups, and is listed with the five business sectors with the highest share of employees educated within that particular group. Interestingly enough, only 4% of the holders of degrees in fashion design work with the manufacture of clothes, and they are rather evenly spread among other design related activities. This mainly has the effect that the textile industries are not part of the main industries for students of fashion, mainly because there are more of them working within arts than industries. Possibly, this is a result of a Norwegian tradition of “arts and crafts” being more widely used as a defining term for fashion related activities, rather than “design”, but the boundaries often are blurred. However, the total number is low, so the nomenclature of individual firms also have a large impact on the aggregate numbers. For the other fields of education, the results are perhaps more intuitive, but it should be noted that the figures confirm that a large number of firms that either operate within industrial design or employ designers are classified as technical consultancies.

**Table 9 Where do designers and architects work**

fashion education	18 %	architecture architectural activities	56 %	General* public administration	15 %
public administration	14 %	public administration	16 %	business activities n.e.c.	13 %
artistic and literary creation	11 %	civil engineering activities	7 %	education	12 %
public sector	8 %	higher education	3 %	artistic and literary	10 %
service activities	8 %	service activities	2 %	higher education	9 %
All other industries	41 %	all industries	16 %	all industries	41 %
graphic Printing etc	9 %	interior architectural activities	25 %	Industrial technical consultancy activities	7 %
advertising	8 %	interior architecture	12 %	education	7 %
design activity	7 %	design activity	12 %	public sector	6 %
education	6 %	education	8 %	software consultancy and supply	5 %
artistic and literary creation	6 %	business activities	5 %	public administration	5 %
All other industries	65 %	all other industries	39 %	all other industries	69 %

\*\*General” refers to courses that are general in nature: e.g. combined arts and crafts, and industrial design courses

Source: Statistics Norway, Matched employer-employee data. Designers and architects are defined as workers with their highest level of education being in design or architect education at university or college level. See annex for a listing of educations

### Firms that invest in design

In this section we want to complement the data above with information from the National Innovation Survey (Statistics Norway, 2001). One of the questions in the survey is whether the firm has invested in “Design and other preparations for production”. Based on the responses of firms to this question, we have separated the firms into three categories, “Non-users”, “Design users” and “R&D users”. The firms are divided according to expenditure on “design and other preparations for production” as at least one innovation expenditure category (“Design” for short) - other innovation spending, but not design (R&D) - or no innovation expenditure at all (Non). The reason for not

simply using two categories such as “design users” and “non-design users” is that the differences within firms in this group, i.e. between firms without investments in R&D at all and firms that do invest in R&D, but not design, are much higher than the differences between this last group and design users. The following tables summarize some characteristics of the firms in the survey, based on whether they belong to one of three groups.

The design users are the most internationally oriented firms in the three groups. While the importance of national markets is equal for both R&D and Design using firms, firms that spend money on design are more likely to operate in international markets than firms which do not.

**Table 10 Market orientation of design users**

Market orientation	Non-users	R&D users	Design users
Local	61	43	26
Local cross border (Sweden/Finland/Russia)	1	1	3
National	31	42	47
International	7	15	24
	100	100	100

Source: Statistics Norway, Table from subject 10.03 Technological indicators and National Innovation Survey

The industrial design services industry in Norway is small, but the firms that invest in design represent a significant share of the Norwegian industry, in total 7% of all firms invested in product design, and nearly ¼ of all large firms. This discrepancy may stem from some firms having in-house design groups, design spending may be concentrated to a few dominant actors, design can be imported from foreign design firms, or expenditure that is defined as spent on design in the survey is going to firms or activities classified as consultancies or engineering in other surveys or databases. As expected, larger firms invest more in design and R&D than smaller firms.

**Table 11 Design users by size**

	Non-users	R&D users	Design users
10-49	71 %	23 %	6 %
50-99	61 %	32 %	7 %
100-249	49 %	37 %	14 %
250-499	44 %	44 %	12 %
500+	31 %	45 %	24 %
Total	68 %	25 %	7 %

Source: Statistics Norway, Table from subject 10.03 Technological indicators and National Innovation Survey

Finally, we have included the top five design-using industries as defined by expenditure on product design. From this we can see that design is obviously being integrated into a wide range of products and industries that are long from the high-culture images the general public often associate with design and designers.

**Table 12 Top 5 design using industries 2001**

Business sector	MNOK
Telecommunications	125,6
Computers and related activities	124,3
Manufacture of chemicals and chemical products	59,2
Manufacture of radio, television and communication equipment and apparatus	43,2
Manufacture of medical, precision and optical instruments	41,6

Source: Statistics Norway, Table from subject 10.03 Technological indicators

## Industry Associations and Representative Bodies

There are two main bodies concerning design and architecture in Norway, Norsk Form and the Norwegian Design Council (NDC). There is also The Norwegian Furniture Industry Council which is a more “traditional” industry association, mainly offering service function for members.

Association	URL	Members
NID - Norwegian Industrial Designers	<a href="http://www.nid.no/">http://www.nid.no/</a>	200
GRAFILL - Norwegian Graphic Designers and Illustrators	<a href="http://www.grafill.no/">http://www.grafill.no/</a>	1500
NTKD - Norwegian Textile and Ready-made Clothing Designers	<a href="http://www.designere.no/">http://www.designere.no/</a>	50
NIL - The Norwegian Organisation of Interior Architects and Furniture Designers	<a href="http://www.nil.no/">http://www.nil.no/</a>	500
NPA - Norwegian Association of Consulting Architects	<a href="http://www.npa.no/">http://www.npa.no/</a>	430 firms
NAL – Association of Norwegian Architects	<a href="http://www.arkitektur.no/">http://www.arkitektur.no/</a>	3650

The two largest associations also include student members. Most of the organisations are a combination of traditional trade associations, unions and brokers of services in their respective industries. Web-based tools for finding possible business partners or suppliers of design services are mostly implemented or on their way.

- **Norwegian Design Council**

The NDC offers advice and support on design issues to Norwegian companies. They offer designer referrals from a database on designers as well as seminars and lectures on design. NDC also has an agreement with Innovation Norway regarding policy initiatives aimed at increasing the use of design by Norwegian firms. (Innovation Norway has replaced the following four organisations: The Norwegian Tourist Board, the Norwegian Trade Council, the Norwegian Industrial and Regional Development Fund (SND) and the Government Consultative Office for Inventors).

- **Innovation Norway**

Innovation Norway provides financial support to viable commercial enterprise projects as well as a range of support, information as well as funding of “Forskning- og utviklingskontrakter (IFU/OFU)” which is a program targeted towards co-operation between firms and public agencies.

- **Norsk Form**

Norsk Form is a “center for the advancement of design, architecture and the built environment”. It is also concerned with launching projects on a wide range of design and building life quality aspects, such as “design without frontiers”.

## Education (institutions and people)

Norway has a range of design educations at all academic levels. There has been strong growth in the number of institutions involved in design education and in the number of graduates produced.

As an alternative to the academic institutions and university and college level courses listed below, there are private and public institutions offering courses at secondary level, i.e. high-school equivalents. Employees are often recruited directly from this level without ever being part of the university or college system, especially in clothing and many graphic fields of study. Industrial design is on the other end of the scale, and is the most “academic” of all the educational groups in design as there is only university and college courses in this field.

Industrial, or product, design is growing in size and is today more or less equal with architecture in the number of students being admitted each year. However, there are an ever increasing number of institutions offering design specialisations. AHO and NTNU are the two main institutions within architecture and also host departments of industrial design. The growing importance of design is acknowledged in the fact that the Oslo School of Architecture recently included Design in its’ official name and is now the Oslo School of Architecture and Design. Fashion is taught only in Oslo, and has only a limited number of students. The rise in both the number of students and institutions in graphical design is due to the inclusion of visual communication, or digital design, in this category. Web-design and media design are popular courses, and even video game design is now offered.

**Table 13 Design and architect education in Norway at the university and college level**

architecture	Level	Students (ca.)
Oslo School of Architecture and Design (AHO)	MD	45
Bergen School of Architecture	M	24
NLH, Dep. of Landscape Architecture and Spatial Planning	BM	40
NTNU Faculty of Architecture and Fine Art	MD	70
design	Level	Students (ca.)
IFID Industrial Design - Oslo School of Architecture	MD	24
Oslo National College of the Arts (KHiO)	BM	24
NTNU Institute for industrial design	MD	20
Akershus University College (HiAK) - Product design	BM	40
Narvik University College (HiN) - Engineering Design	MP	20
Østfold University College (HiØ) - Product design	B	24
KHiB kunsthøgskolen i Bergen	BM	
Oslo University College (HiO)	B	20
Gjøvik College (HiG) - Technology Design	B	15
fashion	Level	Students (ca.)
Oslo National College of the Arts (KHiO)	BM	8
Oslo University College (HiO)	C	10
graphical	Level	Students (ca.)
Gjøvik College (HiG)	B	20
Telemark College (HiT)	C	22
Vestfold University College (HVE)	C	25
Agder University College (HiA) - Multimedia design	B	50
Hedmark University College (HH) - Video Games and media design	B	15
Volda University College (HVO)	B	30
Buskerud University College (HiB) - Visual communication	B	27

A range of private and industry schools, some that offer courses that can be used as part of university degrees.

Levels: B = Bachelor, M=Master, D=PhD, C=Courses that can be used as part of university degrees.

The number of students are students admitted per year.

Source: Universities and Colleges Admission Service (UCAS), supplemented by information directly from some institutions

All in all, general education is done in the universities or the regional college system. In the following tables we summarise the educational information of the Norwegian work-force in 2003. These figures include employable age groups in 2003 and their highest level of completed education at this time. While more than 6 out of 10 have university level courses, there are still very few students going on to doctoral research after finishing graduate studies. This is indicative of the fact that design education tends to be much less focused on research and long-term investments in research/researchers than other academic disciplines.

**Table 14 Educational level in design and architecture**

Educational level	(%)
Grammar school/High school, three year	75
University/College – Bachelor	5
Graduate studies – Master	20
Post-graduate studies – PhD	0,1

Source: Statistics Norway, Matched employer-employee data

If we look at the different design categories there are large variations between groups. Clothing and textiles, the fashion group in the table and graphic design are much more oriented towards supplying the industry with schooled workers than with feeding into academia.

**Table 15 Educational level in design and architecture, by design activity**

	fashion	architecture	general	graphic	interior	industrial	Total
Basic	9594	8	699	4997	2198	234	17730
College/University	264	3994	134	656	404	527	5979

Source: Statistics Norway, Matched employer-employee data

Gender differences are found in some, but not all, educational groups and levels. While there is a clear majority of female employees with basic education (below university/college), there is a male majority of employees with university or college education. The main source of the latter disparity is to be found in architecture, but only two of the six categories maintain the female majority from basic to higher levels.

**Table 16 Gender distribution and educational level in design and architecture**

Basic education in	Male	Female	Number
Fashion	7	93	9594
Architecture	25	75	8
General	34	66	699
Graphic	50	50	4997
Interior	30	70	2198
industrial	4	96	234
Total	23	77	17730

University or college education in	Male	Female	Number
Fashion	6	94	264
Architecture	65	35	3994
General	51	49	134
Graphic	49	51	656
Interior	62	38	527
industrial	31	69	404
Total	58	42	5979

Source: Statistics Norway, Matched employer-employee data

Finally, the total number of students in design and architectural subjects has grown over the last decade, even though the growth is a bit irregular and varies between the groups. The level of growth in the number of graphic design students is due to the growth of the field of web-design and visual communication. Another interesting aspect is perhaps the downward slope of the number of architecture degrees. Since the number of students admitted each year is rather stable this is possibly due to changes in the lengths of programs, etc. or possibly a time lag between finishing a degree and entering the work force caused by the difficulty in getting a job in the industry.

**Table 17 Number of students completing a U or C degree in design programs**

	Pre 1993	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fashion	150	14	5	13	25	2	1	22	12	20
Architecture	3011	137	132	103	123	108	85	98	108	89
Graphic	366	13	27	28	30	21	26	44	52	49
Interior	25	13	14	13	31	4	8	22	36	20
industrial	243	32	68	68	82	37	54	39	67	55

## Government initiatives

- **The Design Year 2005**

The minister of Trade and Industry has recently designated 2005 as the National design year. A program of events is planned and the initiative is supported by a grant to the Norwegian Design Council of 4 million NOK.

- **Norwegian Design Council**

In addition to consultancy services, the designer database and designer referrals, and seminars on design, the council grants a range of awards, most notably the "Award for Design Excellence".

- **NDC/Invanor - "Design underveis" – Design on its way**

This is a new national campaign, it intends to actively bring information to firms and companies Nationwide by actively engaging firms locally. It is a mobile campaign seeking to promote knowledge on the importance of design for profitability and innovativeness.

- **Norsk Form: Design uten grenser – Design without frontiers**

This is a project that seeks to utilise the methods in design as a creative source for solving problems in developing countries and areas of conflict or crisis. One example of the areas is a project on mine clearance financed by The Norwegian Agency for Development Cooperation (Norad).

- **Norsk Form: The Ministry of foreign affairs grants for architecture and design.**

This initiative contributes financially to Norwegian participation in trade fairs and exhibitions abroad, including other Nordic countries.

- **Norsk Form: Designing dreams - D+D Lifestyling**

This is a project that intends to problematise brand values, design and identity and is targeted at pupils in primary and secondary education.

- **GRIP**

The Norwegian foundation for Sustainable Consumption and Production - was established by the Norwegian Ministry of the Environment. GRIP promotes and supports sustainable production and consumption patterns.

- **The Norwegian Patent Office**

The Patent Office do not only process applications for patent protection, and for trademark and design registration, but also organize courses and seminars and do consultancy work for firms and inventors in search for how to proceed with their ideas.

- **VINN**

VINN is a consultancy enterprise offering advisory services, industrial design and prototyping and information systems and services. It stems from a former public information agency serving firms in Northern Norway.

- **However**

The most prominent of today's initiatives are actually *not* concerned with design, at least not in any explicit sense. The "Skattefunn" program is the main government initiative concerning private research and development in Norway. Design should aspire to be recognized as one of categories that will qualify for reimbursement in its own right.

## Current topics in the Norwegian design industry

*the past 10 years, share prices of UK companies that use design effectively have dramatically outperformed the rest of the market.<sup>5</sup>*

### Why design matters

Even though, the term "design" in Norway usually is associated with either pure graphical representation or stylish furniture and home accessory products, the view in this report is that design is vital in the economic development of businesses in a range of ways. Design is not only about communication, branding, aesthetics or story-telling, but can enhance the value and usefulness of products not only to end consumers, but very much in the business to business field as well. By working with materials, form, function and not least viewing a product or process as part of a totality, designers can be said to function as a mediator between firms, or between firms and customers. The role of design is often perceived as interpreting the needs of end users on behalf of the producers. While focus very much is on the aesthetic aspects of products, there are other ways that design impacts

---

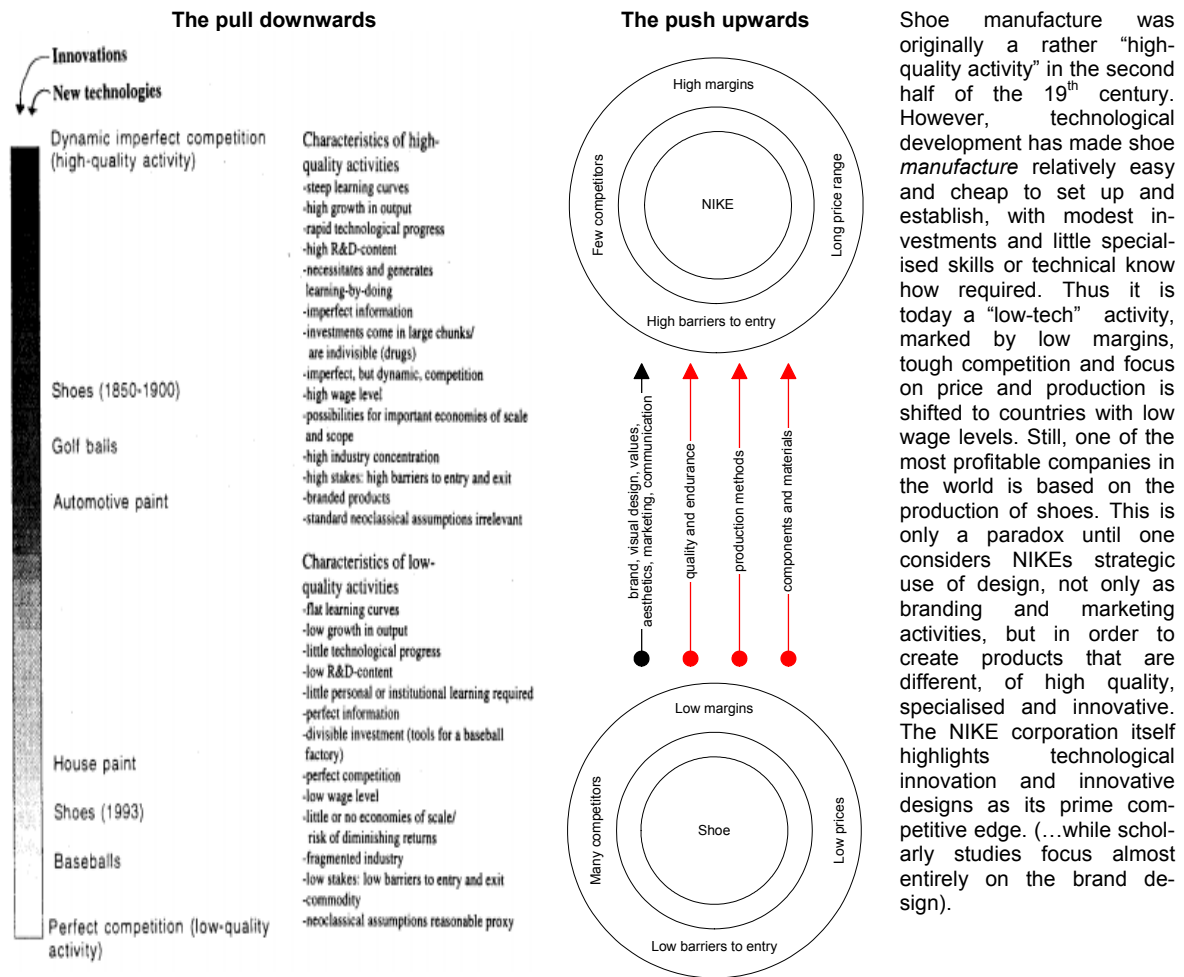
<sup>5</sup> Harry Rich, *Proving the Practical Power of Design*, Design Management Review Vol. 15 No. 4, Design Management Institute, Boston, MA, USA ,2004

upon a product that often are much more important economically for the producer and qualitatively for the end consumer. In short, design will influence;

1. The aesthetics of a product – (Communicative aspects, visual features, story, values and context)
2. The properties of a product – (How it functions, Simplicity of use, Quality and endurance)
3. The production processes of a product – (Machinery, use new methods, alter the composition)
4. The development of a product – (How to build, What components and materials to use)

While the first aspect gets the most attention (*and often is entirely about getting attention*), the three last points of the list illustrates the generic properties of design and the importance of design for most (if not all) economic activities.

**Table 18 Design as a tool for regaining competitiveness**



Shoe manufacture was originally a rather “high-quality activity” in the second half of the 19<sup>th</sup> century. However, technological development has made shoe *manufacture* relatively easy and cheap to set up and establish, with modest investments and little specialised skills or technical know how required. Thus it is today a “low-tech” activity, marked by low margins, tough competition and focus on price and production is shifted to countries with low wage levels. Still, one of the most profitable companies in the world is based on the production of shoes. This is only a paradox until one considers NIKES strategic use of design, not only as branding and marketing activities, but in order to create products that are different, of high quality, specialised and innovative. The NIKE corporation itself highlights technological innovation and innovative designs as its prime competitive edge. (...while scholarly studies focus almost entirely on the brand design).

Innovation theory can also illustrate the role of design. As an example, the idea of the quality index is to demonstrate the differences between business activities according to innovation abilities and technological capabilities. This figure shows that innovation originally contributes to creating activities that are more profitable than others, due to temporary monopolies created from for example technological complex production processes creating barriers to entry from competitors.

“The system must be visualized as a closed one where new activities enter at the top through new technologies or other forms of innovation. These innovations

then fall towards perfect competition with varying speeds - as a result of variable gravitational pull<sup>6</sup>

However, yesterdays "high-tech" products or methods (such as shoe factories in the 1850's) are today ordinary, easy available and marred by fierce competition and products and production facilities abound. However, technological development can make a standardised product competitive by introducing for example new modes of production, thus decreasing costs and reducing prices or by making the product unique in a way that reduces competition. The point of this paper is that design is one of the most cost efficient ways of increasing the competitiveness of individual products, through the four processes outlined above, usually all of them in combination.

The left part of the figure can also be seen as an index of single products, basing their competitiveness on a mixture of price, quality, functionality and goodwill – for lack of better terms<sup>7</sup>. While branding, story-telling and advertising can push a product upwards on the attractivity scale by enhancing the emotional value or communicating the right ideas at the right time, product design pushes the product by increasing the functional value and ease of use or maintenance. Process design can enhance the competitiveness by influencing the cost structure of the products, enabling the manufacturer the choice of lowering prices if the product is at the bottom of the scale or increasing margins at the top of the scale (where there is very little competition), or a little of both. Advertising can tell a story about uniqueness, while design can make a product unique. The result is, however, that there is a range of case studies promoting the use of design and heralding the results for individual products. The problem is of course that these "hero"-stories seldom generate knowledge that is instantly applicable to other potential design users. Likewise, the failures may be suspected to be underreported and thus it is difficult to argue for the need for design based on such case studies alone. Another problem is that the main result from investing in design may not be found when looking for increased profits or sales, but in the survival rates. Many of the participants in the study mention examples of projects that would be hopeless without using design and some even point at design as the life-saving mechanism of firms that otherwise would go out of business.

Capable designers thus translate the (often unexpressed) needs of the users. For instance by observing a product in use, designers can identify additional issues that need to be addressed. Swix is a company that produces ski- and walking poles, and wax and preparation products for skiers and that have let designers observe wax-experts working together with professional skiers, ski manufacturers and others in order to evaluate and develop both the wax and the packaging in order to improve the practical use of waxing skis. In the words of one informant; "the keystone in the process is decoding what is important for the customers, including technical and commercial aspects relating to marketing and sales". The focus needs to be on how to make a difference for the sales figures of the customers.

### The design industry we deserve

There are only a few manufacturing firms in Norway that have regarded design as a key component of the total concept, being a basis both within product development and communication with the market. According to many of the respondents, design is seen more as a financial matter, than a tool for improving the quality of products. Accordingly, design matters have been deemed as pertaining to styling and aesthetic finish of products. In short, design is seen as an add-on to the product development and not as an inherent part of the whole process. The design industry is getting more and more attention and there is questions whether these are of the wrong kind. Focus is on furniture and styling, and the term is also usurped and is used for a very wide range of phenom-

---

<sup>6</sup> Erik S. Reinert, *Competitiveness and its predecessors - a 500-year cross-national perspective*, STEP report 03-1994, [www.step.no/reports](http://www.step.no/reports)

<sup>7</sup> The terms are many and quite diverse, emotional value and brand value are often used, as for the functional aspect "ease of maintenance", "ease of use", in short all things practical *both* in the production process and for the end user.

ena that only are distantly related to design. At the same time, visual communication and profiling is - almost exclusively - the most prominent features that Norwegian consumers and firms associate with the use of the term “design”. Another aspect is that the scope of other design activities have been historically rather limited, but also the linguistic differences between Norwegian and other languages regarding the use of the term design itself may explain the bias in attention from public and media. There is a feeling that especially English, but also in Sweden and Denmark quite a few of the problem solving activities in the production process is called design that in Norwegian is in the domain of engineering or technical activities. This also results in the expressed problem that engineers believe design to be part of their domain and want to keep design tasks for themselves and oppose buying design expertise from outhouse firms.

Of course, researchers on innovation see design as one of many innovation activities that share characteristics and usability across a range of specific and topical issues. In other words, the rate of, the importance of, the use of, the success of design, as innovation activities in general, depend on the function that these activities are meant to perform. Thus design is expected to be a crucial element in digital solutions for the world wide web or furniture, but maybe not in financial services. However, the role of design in developing a viable solution for internet personal banking can be crucial. Both regarding the acquisition of projects, the allocation of sub suppliers and the design activities within firms, studies have pin pointed personal relationships as the pivotal institutions in Norwegian design. Differences across business sectors may explain quite a lot of differences in design use. While the product quality figure above illustrate differences in use of design within a sector, such as shoes, there is of course a difference concerning the use of design between sectors as well such as “tanning and dressing of leather” and “manufacture of radio, television and communication equipment and apparatus” – both rather design intensive, but perhaps in different ways and “land transport;transport via pipelines”. The second most important defining characteristics of design users is size, while only 6% of small firms invested in product design, 24% of the largest firms included this investment as part of their innovation activities in the year 2000.

“The need to innovate, probably resulting from differences in the life cycle of products, varies considerably among industries, and the mere occurrence of innovation is strongly dependent on the size of the firm - as we see it, because innovation may occur in one of many different product lines<sup>8</sup>.”

A general remark is that “It is not the use of design that counts, but how to use design that is important”. In other words the designers and design managers emphasis that design is not to be sold based on an unsubstantiated need, but on realistic assessments of using design as a tool. Specifically the practicality of design is the defining term and is also used to mark the boundaries between design and advertising, branding or public relations.

## Design users

Design seems to be an activity that is underused and found mostly as an afterthought and within firms that are well off. (The causality of this can always be discussed, proponents of investing in design will of course point to the prosperity being a result of design and not the other way round). The main other user of design services seems to be firms that have discovered the need for design competence often late in the process. One source felt that “Norwegian firms seem to be dead-locked in a market crisis”, often approaching the design firm only when it finds the project or even the company itself in a dire predicament.

Small companies in business sectors that are traditionally not intensive users of design is probably a striking feature of Norwegian industry. This structural boundaries limits the use of design in Norwegian industry. In the business to business market, so important in other countries, designers are

---

<sup>8</sup> Svein Olav Nås, *How innovative is Norwegian industry? An international comparison*, STEP report 02-1996, [www.step.no/reports](http://www.step.no/reports)

selling their services mainly to manufacturing industries. The restricted size of these sectors in Norway is seen as a natural constraint for the use of design. The problem is not only that the size of the sector is small, but that small firms predominate in almost all sectors. However, the practicality of design as a tool for innovation is usually argued without any qualifications, and it is thus implied that even small firms ought to invest in design activities. However, while both designers, design firms, and government agencies are publicising widely the beneficial effects of design, there is a problem of drawing the attention of managers or employers in these small and medium sized firms. The situation has prompted more outwardly activities such as a “design tour”; a mobile exhibition and seminar series visiting all counties in Norway arranged by the two major government agencies promoting the use of design.

Some argue that corrected for population size and economic structure the level of the design industry and design use is more or less on a par with our neighbouring countries and countries such as Germany. In other words, while there is little doubt that the pervasive view in the sector is that design has a role in almost all businesses, there are views that design fulfil more specific functions and that the low design intensity in Norway reflects a natural level of design use and does not need external initiatives or at least not to the extent that is heralded by others.

In small firms, the tasks of management is often related to the day to day running of the establishment and not to building strategic competencies or visions. The work is often of a comprehensive nature, including technical, administrative and HR-related tasks. There is also a growing apprehension of the behavioural aspects of running these firms, such as that companies emulate the behaviour of their neighbours. All in all, the challenge is to convince these firms that investing in design will be beneficial. The cultural barriers is often mentioned as a specific challenge, “the ‘blue collar workers’ in a small machine tool workshop will never visit a design exhibition” as one of the informants put it. The problem is of course that many firms may even suspect that there would be positive effects of investing in design without actually seeing any possibilities to implement such a strategy. The reasons are manifold, the stress from the everyday survival, the dependency on singular persons perceptions of design and needs of the company, fear of change, fear of revealing company secrets to outsiders, are just a few of many examples from the literature on case studies in design.

Another aspect that is often mentioned is that even Norwegian industries that are used to investing in innovation activities are managed by engineers or financial candidates. The result is that the use of designers to a less degree is the result of conscious strategies embedded in management and more the result of firms incidentally employing individuals with a design oriented outlook. Even in large companies, there are obstacles to entering a business. Professional purchasing agents are often very focused on price considerations, and sometimes their decisions can open or close the market in an entire country. Engineers not only work with product design, they often work as designers. In contrast to other countries, design is often integrated into other disciplines. Both product design and industrial design are used concurrently with technological and product development. These technical aspects of Norwegian design leads to the reduced appreciation of design competencies compared to engineering skills and qualification. Thus there are few competent buyers of skilled services, and firms often believe themselves to be sufficiently competent in design and marketing so as not to involve outside designers.

### **Design suppliers**

Design is an urban activity mainly located in the area around the capital. In the words of one firm “you have to be situated near a train station or an airport”. The design *users* may be in every corner of the country, but are usually centred around the capital and the cities of Stavanger, Bergen and Trondheim.

Many design projects are derived from the design firms themselves, actually knocking on doors and creating a market for their services. Research on the Norwegian industry has found that it is relation based, i.e. that contracts and projects often are based on long term relations between de-

signers and a portfolio of clients. Also within the design industry, there is a network based allocation of commissions, often drawing on existing or past cooperation and not as a result of for example public tenders.

The idea of designers as artists, and the fear of departing with control on behalf of managers of owners of companies are mentioned as factors inhibiting the use of designers. Other studies point to a related problem that is a lack of abilities on exploiting creative design commercially and the “incomplete familiarity with business knowledge” on the part of the designer<sup>9</sup>. A lot of creative skills in Norway is expressed in the form of arts and crafts. The tension between creative freedom and economic viability is often explicitly mentioned as a specific problem in the design sector. This tension is also perceived by some clients to be a source of conflict between designers and their customers.

A good example of different roles of design is to be found in furniture manufacture where strategies range from the design itself being sold in high end stores and produced by any (no-name) manufacturer (such as Norway Says) and the product being sold in any store, being designed by a no-name (but highly successful) designer, such as Ekornes. Designers have to be both inventive in their design, but also have to cater for the needs of their clients. Thus there is a difficult three ways balance to be held between being creative, being sensitive and being persuasive. Design is often sold as being equally desirable for all firms, but the designers should to a higher degree identify the relevancy of design in each case and not only argue from the point of a general benefit to society. Also, the tendency towards self-employment of designers, strictly out from college, may be detrimental to the promotion of the industry, since small one person firms often lack the routines necessary in establishing a working relationship with their clients. Risk is however an element to be addressed also for the design company. Promoting and selling design to an inexperienced user often involves an insecure investment on part of the designer. Companies that know how to utilise design strategically have more chance of success in using new designers, but will more often employ either an experienced self employed designer or a design bureau.

While there is a clear comprehension that preparation of budgets is the domain of economists and that engineers do differential equations, there is seen a need for business managers to start viewing some tasks as naturally pertaining to the designer. While this may be seen as a typical task for government initiatives and policy measures, there is a general view that too little is done too slowly. The policy measures generally neglect the role of design and are targeted on facilitating R&D projects within the “old” Norwegian infrastructure of technical research institutes, mainly among them SINTEF. However, if a user is capable of connecting to the system of policy measures, these can be used quite successfully. All in all, design is a tool that is easily scaled towards the need of the customers, but is not “sold” as such. Design should be presented as an essential tool that is the *missing link* between innovations based on random alterations resulting from tinkering with existing products and new products provided by large, resourceful companies with well equipped R&D labs. In the future, policy measures on design ought to be based on the Norwegian proliferation of small firms and the measures must be easy to find information on, apply for, use and should implement financial incentives.

---

<sup>9</sup> For an informative discussion on this problem, see Jevnaker, B., Strategic Interaction of Design and Innovation; Dilemmas of Design Expertise and its Management, Norwegian School of Management BI, reprint no 29, 2001

## References

- Aaboen, L. (2003). *Klesdesign i Norge og Sverige : en komparativ casestudie*. Oslo, [Forfatterne].
- Ask, T. *God norsk design : konstitueringen av industridesign som profesjon [i] Norge*. [Oslo], Arkitektthøgskolen i Oslo.
- Bergan, G. Ø. (2003). *Tingenes århundre : 1900-2000 : tiden, stilen, smaken*. Oslo, Gyldendal fakta.
- Bjørnstad, K. (2002). *Casestudie av hvordan designbyrået Scandinavian Design Group AS ser og griper nye muligheter*. [Sandvika], [Forfatterne].
- Ekeberg, J. O. (2004). *Norway : past, present, future*. Oslo, Stenersen.
- Englund, M. (2003). *Scandinavian modern*. London, Ryland Peters & Small.
- Fallan K., *Fra kunstig kunst til ekte etos. Om problemer og muligheter i norsk designhistorie. IKON-N3: Arbeidsnotat, juli 2001*. [online] <http://www.hf.ntnu.no/itk/ikon/tekster/no-designhist.php>
- Fiell, C. (2002). *Scandinavian design*. Köln, Taschen.
- Grennæs, K. H. (2003). *Design:ledelse hos norske møbelprodusenter*. Oslo, [Forfatterne].
- Grzecznowska, A and Emilia Mostowicz, *Industrial Design: A Competitive Strategy*, Design Management Review Vol. 15 No. 4, Design Management Institute, Boston, MA, USA ,2004
- Jevnaker, B. H. (1995). *Den skjulte formuen : industridesign som kreativ konkurransefaktor*. Bergen, Stiftelsen for samfunns- og næringslivsforskning.
- Jevnaker, B. H. (1995). *Developing capabilities for innovative product designs : a case study of the Scandinavian furniture industry*. Bergen, SNF.
- Jevnaker, B. H. (1995). *The hidden treasure : competitive advantage through design alliances*. Bergen, Foundation for Research in Economics and Business Administration.
- Jevnaker, B. H. (1996). *Industridesign som kreativ konkurransefaktor : en forstudie*. Bergen, Stiftelsen for samfunns- og næringslivsforskning.
- Jevnaker, B. H. (1998). *Design alliances : the hidden assets in management of strategic innovation*. Sandvika, Norwegian School of Management BI.
- Jevnaker, B. H. (1998). *Design as a strategic alliance : harnessing the creative capability of the firm*. Sandvika, Norwegian School of Management BI, Department of Innovation and Economic Organization.
- Jevnaker, B. H. (2001). *Championing designed innovation : creative duos and frontiers moving the new value-creation of design-in-business*. Sandvika, Norwegian School of Management BI
- Jevnaker, B. H. (2001). *Dynamikk mellom design og innovasjon i bedrifter*. Sandvika, Norwegian School of Management
- Jevnaker, B. H. (2001). *Strategic integration of design and innovation : dilemmas of design expertise and its management*. Sandvika, Norwegian School of Management BI
- Jevnaker, B. H. (2000). *How design becomes strategic*. Sandvika, Norwegian School of Management
- Jevnaker, B. H. (2003). *Exploring the innovating inbetween : industrial design as boundary work*. Sandvika, Norwegian School of Management
- Kjørup, S. (2004). *Norsk form : en evaluering*. Oslo, Norsk kulturråd.
- Klingenberg, I. A. (2001). *Kunsthåndverk og design i Norge*. Oslo, Gyldendal fakta.
- Ministry of Trade and Industry, NHD, *Design som drivkraft for norsk næringsliv : rapport fra Utvalget for næringsrettet design*. [Oslo]

- Ministry of the Environment (2003). *Programme of action for universal design*. Oslo, Miljøverndepartementet.
- Norsk Form, N. f. (1988). *Norsk form '88 : aktuell design i norsk industriproduksjon : vandretstilling 1988-89*. Oslo, Landsforbundet norsk form.
- Nås, S.O.: *How innovative is Norwegian industry? An international comparison*, STEP report 02-1996, [www.step.no/reports](http://www.step.no/reports)
- Nelson, K. E. (2004). *New Scandinavian design*. San Francisco, Chronicle Books.
- Nyberg, J. (2004). *Circus : design made in Bergen*. [Bergen], Vestlandske kunstindustrimuseum.
- Reinert, E.S., *Competitiveness and its predecessors - a 500-year cross-national perspective*, STEP report 03-1994, [www.step.no/reports](http://www.step.no/reports)
- Rich, H., *Proving the Practical Power of Design*, Design Management Review Vol. 15 No. 4, Design Management Institute, Boston, MA, USA ,2004
- Skjerven, A. (2001). *Goodwill for Scandinavian Design : Lunningprisen 1951-70*. Oslo, Det historisk-filosofiske fakultet, Universitetet i Oslo.
- Sommar, I. (2003). *Den skandinaviska stilen : klassisk och modern design från Sverige, Finland, Danmark, Norge och Island*. Stockholm, Valentin förlag.
- Sommar, I. (2004). *Skandinavisk design : klassisk og moderne skandinavisk livsstil og dens betydning*. København, Nyt Nordisk Forlag Arnold Busck.
- Veggeland, K. (2003). *En stol er ikke bare en stol : ny norsk møbeldesign : møblers verdi i en sosial kontekst*. Bergen, [K. Veggeland].